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SASSIN

V 28

PRODUCT CATALOG

# SASSIN





## Company Profile

As one of the leading enterprises in the low voltage electrics field in China, Sassin International Electric Shanghai Co., Ltd is committed to offering professional solutions of low voltage electric and smart electricity for different fields customers from the countries and regions around the world, to satisfy worldwide customers' requirements on utilizing energy more safely and conveniently, help customers to constantly improve efficiency of production and energy, and reducing their impact on the environment.

Sassin focuses on the global market, driving the company development with technical R&D. Sassin is committed to researching and developing different low electric products to satisfy the different requirements from customers all over the world. With the trend of

intelligent electricity, Sassin has developed the smart electric devices and Smart Power Management System - SPMS to protect the safety of life and property, make the electricity management easily and remotely in any time at any place, and improve the power efficiency. In order to achieve the quick R&D, Sassin has set up the Test Center including a 10kA Short Circuit Breaking Laboratory, the Test Center has been certified by the CNAS (China National Accreditation Service for Conformity Assessment).

Quality is company's life. Sassin is always sparing no effort to promote the construction of quality management system and improve it. For this purpose, Sassin implemented the Total Quality Management System, and oriented by market and customers, to drive the employees and suppliers focusing on the continuous improvement of product quality. Sassin has been certified by the ISO9001 Quality Management System and ISO14001 Environment Management System.

## Corporate Culture - Value System

### Vision

Better Electric, Better Life.

### Mission

Make Electric Safe, Simple, Smart.

### Value

Confidence, Faith, Credit.

# Catalog Classification

## V 28.1 Power Distribution Electrics

Air Circuit Breakers / Moulded Case Circuit Breakers / Automatic Transfer Switches / Fuses



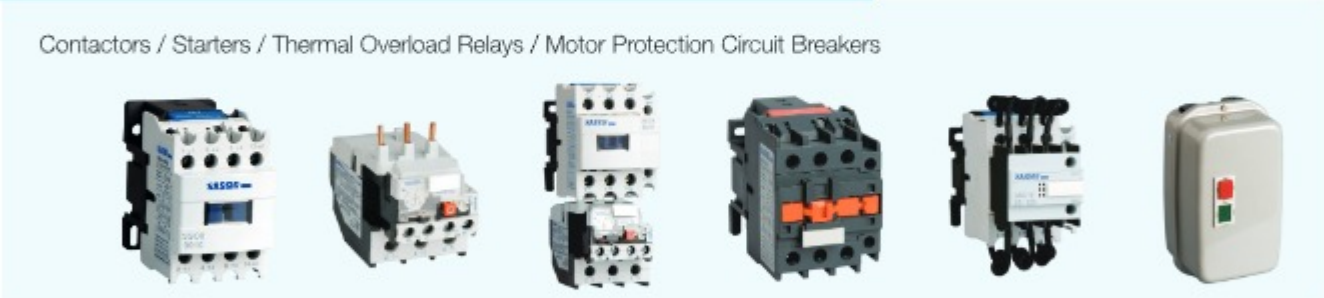
## V 28.2 Modular DIN Rail Devices

MCB / Residual Current Devices / Surge Protective Devices / Switching Devices / Distribution Boxes



## V 28.3 Industrial Control and Protection

Contactors / Starters / Thermal Overload Relays / Motor Protection Circuit Breakers



## Online Catalog

All catalogs can be downloaded as PDF files from SASSIN website.

[www.sassin.com](http://www.sassin.com)



## Power Distribution Electrics

### Air Circuit Breakers

- P 1-87 3SW68
- P 88-116 3SW8

### Moulded Case Circuit Breakers

- P 117-132 3SM8, MCCBs with thermal magnetic trip units
- P 133-160 3SM29, MCCBs with thermal magnetic trip units
- P 161-169 PM61, MCCBs with thermal magnetic trip units
- P 170-179 3SM8E, MCCBs with electronic trip units
- P 180-183 3SM8L, MCCBs with earth leakage protection

### P 184 Automatic Transfer Switches

- P 185-186 3SAQ1, CB class, up to 63 A
- P 187-195 3SAQ2, CB class, up to 800 A
- P 196-210 3SAQ3, PC class, up to 5000 A
- P 211-212 3SAQ5, CB class, up to 100 A
- P 213-219 3SAQ6, PC class, up to 3200 A

### Load Break Switches

- P 220-221 3SGL load break switches

### Fuse Combination Switches

- P 222-223 3SGLR fuse combination switches

### Fuse Disconnecter Switches

- P 224-225 3SHR17 fuse disconnecter switches

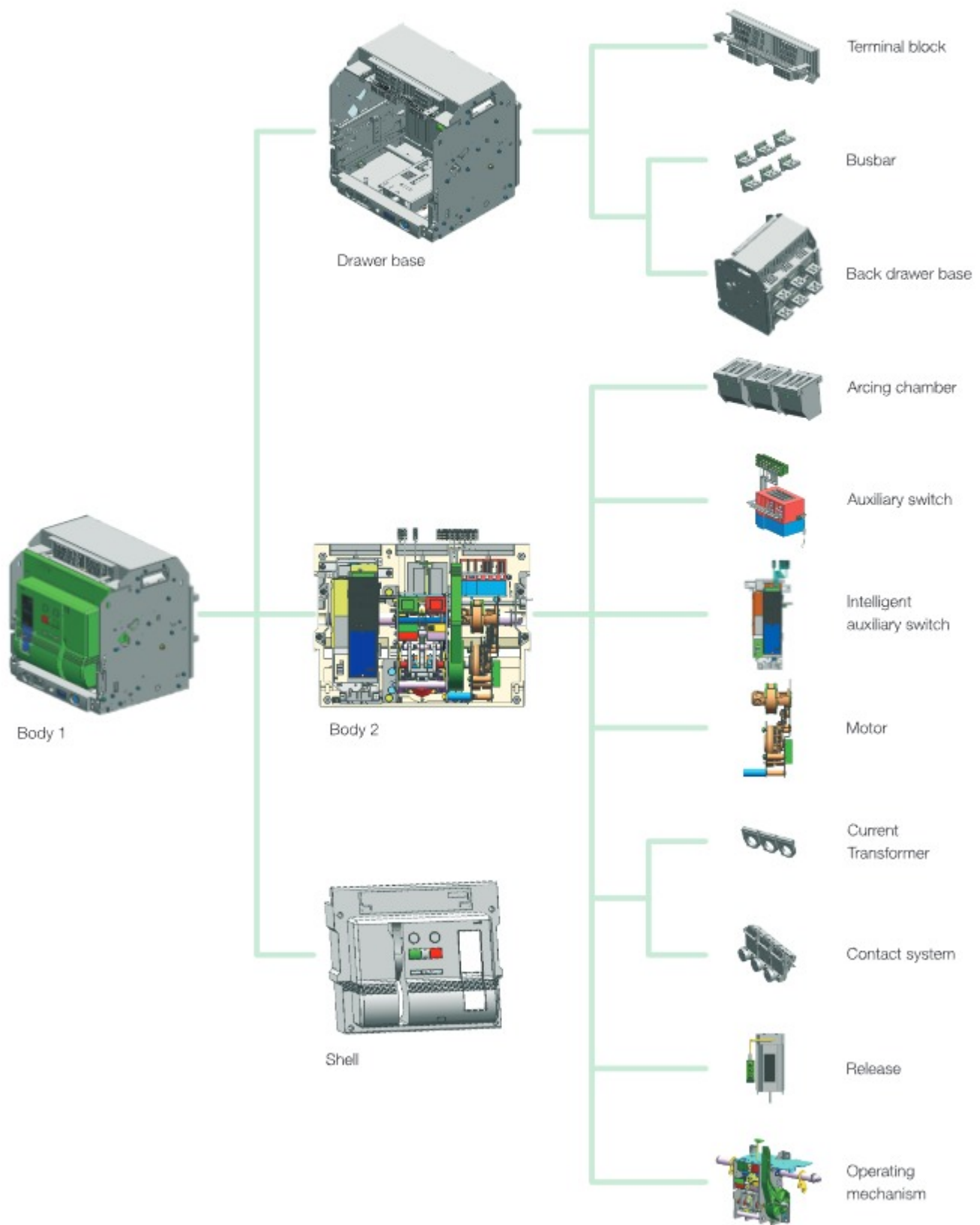
### Low Voltage Fuses

- P 226-228 RT16 low voltage fuses



Overview

The 3SW68 air circuit breaker not only provides protections against overload, short circuit, undervoltage but also has a lot of advantages like optimized size, inner communication module and the function of measurement and management to just name a few.



# Air Circuit Breakers

## Series 3SW68

### Applications and functions

- Distributing electricity and protecting loads from overload, short circuit, undervoltage, and residual current
- Providing high reliability of power supply by smart and optional protection
- Used as an isolator
- Operating the motor directly for occasionally starting and stopping when the rated current of the breaker is not higher than 630A



### Standards

- IEC60947-1: Low-voltage switchgear and controlgear - Part 1: General rules
- IEC60947-2: Low-voltage switchgear and controlgear - Part 2: circuit breaker
- IEC60947-4-1: Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters

### Instruction of type code

**W68 A F 3 N 1000 L3**

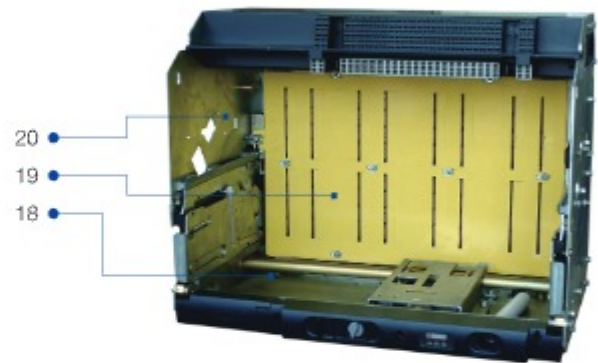
W68	A	F	3	N	1000	L3	Type of electronic trip unit	Size B, C, D:
							Size A:	Size B, C, D:
							AL3: Basic type LSI	BL3: Basic type LSI
							AL4: Basic type LSIG	BL4: Basic type LSIG
							AM: Standard type LSIG, LCD display	BM3: Basic type LSI, LCD display
							AH: Communicate type LSI, LCD display, Communication function	BM4: Basic type LSIG, LCD display
								BHP: Communicate type LSI, LCD display
								BHQ: Communicate type LSI, LCD display, measurement function
								BHG: Communicate type LSI, LCD display, measurement function, motor protection function
							Rated current	
							Size A:      Size B:      Size C:      Size D:	
							200          630          2000        4000	
							400          800          2500        5000	
							630          1000        2900        6300	
							800          1250        3200	
							1000        1600        3600	
							1250        2000        4000	
							1600        2500	
							Short circuit breaking capacity I <sub>cu</sub> (kA) (400 V AC)	
							N: Size A: 65; Size B: 70; Size C: 85; Size D: 100	
							H: Size A: 65; Size B: 85; Size C: 120; Size D: 120	
							S: Size D: 150	
							Poles: 3: 3-pole; 4: 4-pole	
							Installation type	
							F: Fixed type	
							D: Withdrawable type	
							Frame code	
							A: Size A, 3SW68-1600	
							B: Size B, 3SW68-2500	
							C: Size C, 3SW68-4000	
							D: Size D, 3SW68-6300	
							Series code	

## Characteristic

Structure of withdrawable type

Withdrawable type circuit breaker seat

Withdrawable type circuit breaker seat has block board for main circuit, so it can play the protective function when the breaker is removed.



- 1. Electronic trip unit
- 2. Stored energy release indicator
- 3. Switching-ON button
- 4. Lever to manually charge closing springs
- 5. Data label
- 6. Terminal of secondary circuit
- 7. Brand mark
- 8. Wiring diagram of secondary circuit
- 9. Signal for mechanical trip / Resetting button
- 10. Locking device of circuit breaker open (O)
- 11. Switching-OFF button
- 12. Indicator of circuit breaker closed (I) and open (O)
- 13. Safety padlock position
- 14. "Unlocking button" for the three positions ("separated", "test" and "connected")

- 15. Cranking bar operation hole
- 16. Positions indication of the three positions ("separated", "test" and "connected")
- 17. Cranking bar storage hole
- 18. Safety hole
- 19. Safety block board
- 20. Side board

**Note:**

- 1. "separated": Indicating main circuit and secondary circuit are isolated;
- 2. "test": Indicating main circuit is isolated, and secondary circuit is connected;
- 3. "connected": Indicating both main circuit and secondary circuit are connected;
- 4. When the circuit breaker is set to the given positions ("separated" or "test" or "connected"), it will be locked automatically and can be unlocked by sliding the unlock button to the left.



# Air Circuit Breakers

## Series 3SW68

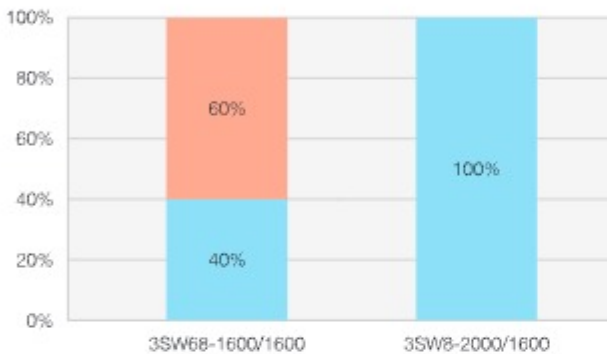
### Features and benefits

- **Low space requirements**

3SW68 devices are very compact require very little space for installation. Frame A devices (up to 1600 A) fit into a 400 mm wide switchgear panel.

Frame B, C, D devices (up to 6300 A) are the smallest of their kind and with their smallest construction width fit into a 800 mm wide switchgear panel.

- **Example of comparison with 3SW8 in measurement**



Four-pole circuit breaker with a drawer as an example

■ Actual body size     ■ Reduction of body size

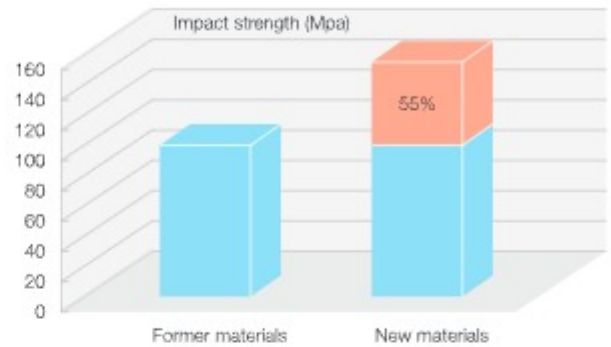
- **Modular design**

Components like auxiliary, motorized operating mechanisms, electronic releases, current sensors, auxiliary circuit signaling switches, automatic reset devices, interlocks and engagement operating mechanisms can all be exchanged or retrofitted in the back-ground, thus allowing the circuit breaker to be adapted to new, changing required.

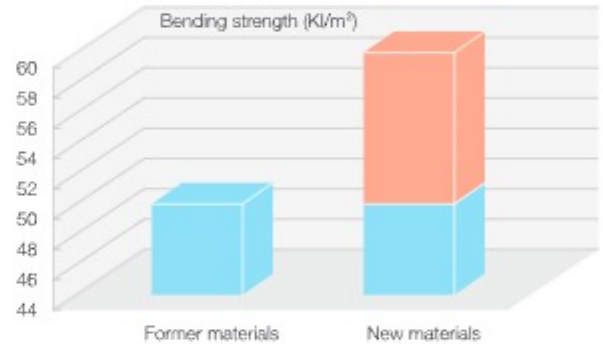
- **Communication**

The use of modern communication capable circuit breakers opens up completely new possibilities in terms of start-up, parameterization, diagnostic, maintenance and operation. This allows varieties of ways to reduce costs and to improve productivity in industrial plants, buildings and infrastructure projects.

- **Strength of new material**



■ Strength of former insulation materials.  
■ Strength increased after adopting new insulation materials using nanotechnology.



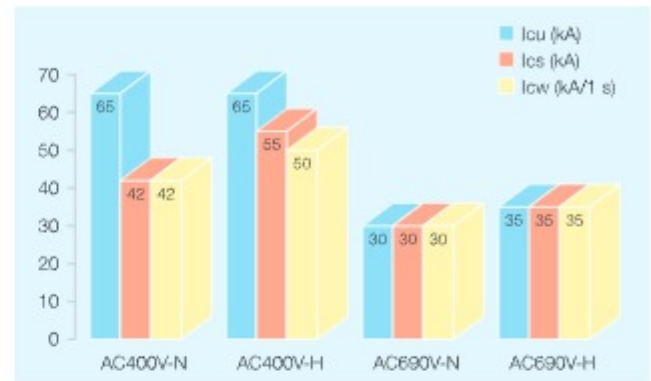
■ Strength of former insulation materials.  
■ Strength increased after adopting new insulation materials using nanotechnology.

Complete current range and high breaking capacity

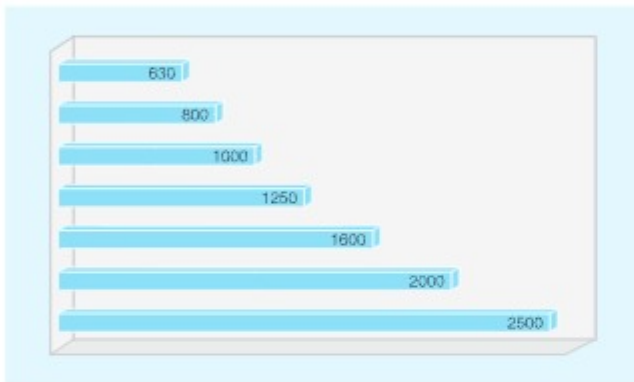
3SW68-1600 Rated current In (A)



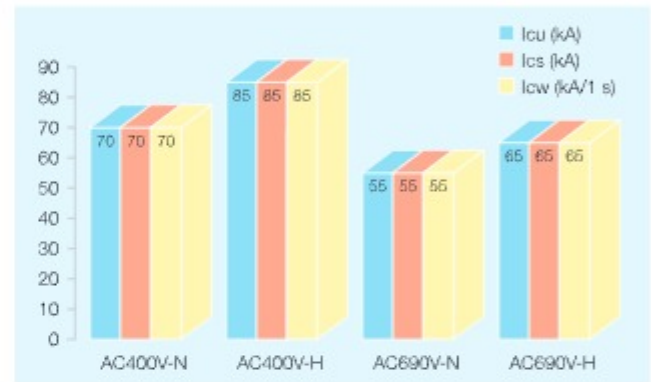
3SW68-1600 Breaking capacity



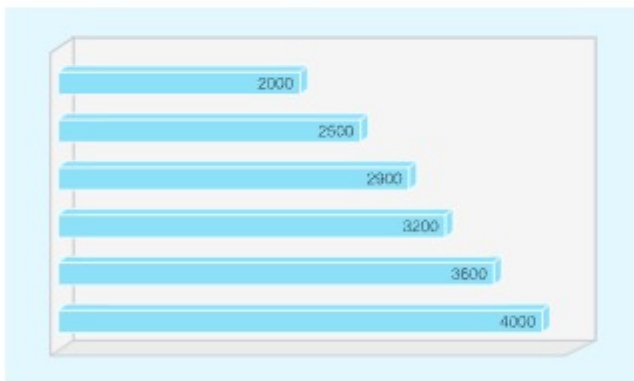
3SW68-2500 Rated current In (A)



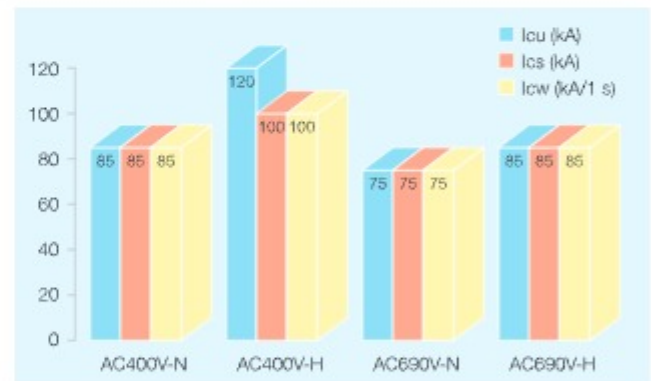
3SW68-2500 Breaking capacity



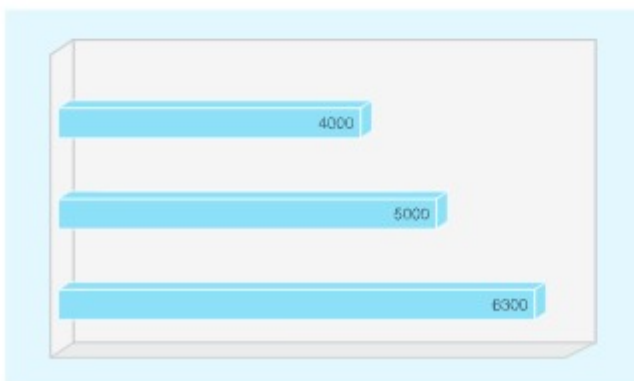
3SW68-4000 Rated current In (A)



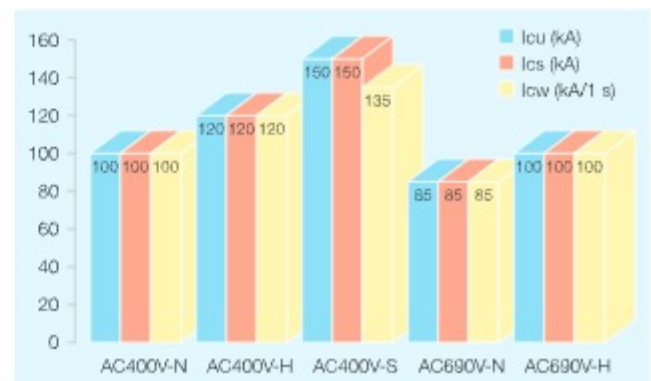
3SW68-4000 Breaking capacity



3SW68-6300 Rated current In (A)



3SW68-6300 Breaking capacity



# Air Circuit Breakers

## Series 3SW68



### Technical specifications

Size		A	B	C	D						
Type		3SW68-1600		3SW68-2500		3SW68-4000		3SW68-6300			
Rated frame current I <sub>nm</sub>	A	1600		2500		4000		6300			
Rated current I <sub>n</sub>	A	200, 400, 630, 800, 1000, 1250, 1600		630, 800, 1000, 1250, 1600, 2000, 2500		2000, 2500, 2900, 3200, 3600, 4000		4000, 5000, 6300			
Rated operational voltage U <sub>e</sub>	V	400, 690		400, 690		400, 690		400, 690			
Rated insulating voltage U <sub>i</sub>	V	1000		1000		1000		1000			
Rated impulsive withstand voltage U <sub>imp</sub>	kV	12		12		12		12			
Power-frequency withstand voltage 1min	V	3500		3500		3500		3500			
Poles	P	3, 4		3, 4		3, 4		3, 4			
Neutral pole current-carrying capacity for 4-pole CBs		100 % I <sub>n</sub>		100 % I <sub>n</sub>		100 % I <sub>n</sub>		100 % I <sub>n</sub>			
Breaking capacity		N	H	N	H	N	H	N	H S		
Rated ultimate short-circuit breaking capacity I <sub>cu</sub>											
O-CO up to 400 V AC 50-60 Hz	kA	65	65	70	85	85	120	100	120 150		
O-CO up to 690 V AC 50-60 Hz	kA	30	35	55	65	75	85	85	100 100		
Rated operating short-circuit breaking capacity I <sub>cs</sub>											
O-CO-CO up to 400 V AC 50-60 Hz	kA	42	55	70	85	85	100	100	120 150		
O-CO-CO up to 690 V AC 50-60 Hz	kA	30	35	55	65	75	85	85	100 100		
Rated short-circuit making capacity I <sub>cm</sub>											
up to 400 V AC 50-60 Hz	kA	143	143	154	187	187	264	220	264 330		
up to 690 V AC 50-60 Hz	kA	63	73	121	143	165	187	187	220 220		
Rated short-time withstand current for 1 s I <sub>sw</sub>											
up to 400 V AC 50-60 Hz	kA	42	50	70	85	85	100	100	120 135		
up to 690 V AC 50-60 Hz	kA	30	35	55	65	65	85	85	100 100		
Breaking time	ms	25-30		25-30		25-30		25-30			
Closing time (max.)	ms	70		70		70		70			
Electrical life											
400 V	cycles	6500		5000		2000		1000			
690 V	cycles	3000		2500		1500		800			
Mechanical life											
Without maintenance	cycles	15000		12500		10000		5000			
With maintenance	cycles	30000		25000		20000		10000			
Available terminal type		Horizontal Vertical Front		Horizontal Vertical Front		Horizontal Vertical Front (1)		Horizontal (2) Vertical			
Versions		Withdrawable Fixed		Withdrawable Fixed		Withdrawable Fixed		Withdrawable Fixed			
Dimensions											
Withdrawable type	3-pole / 4-pole	W	mm	248 / 318		347 / 442		440 / 566		818 / 1070	
		H	mm	360		450		450		490	
		D	mm	310		406.5		406.5		406.5	
Withdrawable type	3-pole / 4-pole	W	mm	254 / 324		368 / 463		461 / 587		839 / 1091	
		H	mm	328.5		415.5		415.5		415.5	
		D	mm	217.5		308		308		308	

1. Front terminal is available for fixed version only.

2. Horizontal terminal is not available for circuit breaker with rated current 6300 A.

## Electronic trip unit

### Functions

Suitable size	A					B, C, D						
	3SW68-AL3	3SW68-AL4	3SW68-AM3	3SW68-AM4	3SW68-AH	3SW68-BL3	3SW68-BL4	3SW68-BM3	3SW68-BM4	3SW68-BHP	3SW68-BHQ	3SW68-BHG
<b>Protection and alarm</b>												
Overload protection	●	●	●	●	●	●	●	●	●	●	●	●
Short-time delayed short-circuit protection	●	●	●	●	●	●	●	●	●	●	●	●
Instantaneous short-circuit protection	●	●	●	●	●	●	●	●	●	●	●	●
Earth fault protection	-	●	-	●	●	-	●	-	●	●	●	●
Current leakage protection	-	-	○	○	○	-	-	-	-	○	○	○
Neutral pole protection	●	●	○	○	○	●	●	●	●	●	●	●
Thermal memory	●	●	●	●	●	●	●	●	●	●	●	●
Fault trip display	●	●	-	-	-	●	●	●	●	●	●	●
MCR & HSISC protection	○	○	●	●	●	○	○	○	○	○	○	○
Zone selective interlocking	-	-	○	○	○	-	-	○	○	○	○	○
Load monitoring display	○	○	●	●	●	○	○	○	○	○	○	○
Overload pre-alarm	-	-	-	-	-	-	-	○	○	○	○	○
Grounding alarm	-	-	●	●	●	-	-	-	-	○	○	○
Current imbalance protection	-	-	●	●	●	-	-	-	-	●	●	●
Required current protection	-	-	○	○	○	-	-	-	-	●	●	●
Phase loss protection	-	-	●	●	●	-	-	-	-	●	●	●
Undervoltage protection	-	-	○	○	○	-	-	-	-	○	○	○
Overvoltage protection	-	-	○	○	○	-	-	-	-	○	○	○
Voltage imbalance protection	-	-	○	○	○	-	-	-	-	○	○	○
Phase sequence protection	-	-	○	○	○	-	-	-	-	○	○	○
Under frequency protection	-	-	○	○	○	-	-	-	-	-	-	●
Over frequency protection	-	-	○	○	○	-	-	-	-	-	-	●
Inverse power protection	-	-	○	○	○	-	-	-	-	-	-	●
<b>Measurement</b>												
Current (three-phase, neutral, earth, current imbalance rate)	-	-	●	●	●	-	-	●	●	●	●	●
Voltage (line, phase, average, voltage imbalance rate)	-	-	○	○	○	-	-	-	-	●	●	●
power (active power, reactive power, power factors)	-	-	○	○	○	-	-	-	-	●	●	●
Frequency	-	-	○	○	○	-	-	-	-	●	●	●
Energy (active energy, reactive energy, apparent energy)	-	-	○	○	○	-	-	-	-	●	●	●
Heat capacity	-	-	●	●	●	-	-	-	-	●	●	●
Phase sequence	-	-	○	○	○	-	-	-	-	●	●	●
Required value (current, power)	-	-	○	○	○	-	-	-	-	●	●	●
Harmonic analysis	-	-	○	○	○	-	-	-	-	-	●	●
Waveform	-	-	-	-	-	-	-	-	-	-	●	●
<b>Maintain</b>												
Test function	●	●	-	-	-	●	●	●	●	●	●	●
Self-diagnostic function	●	●	●	●	●	●	●	●	●	●	●	●
Contact loss indicator	-	-	●	●	●	-	-	●	●	●	●	●
Operation times of trip unit on electricity	-	-	●	●	●	-	-	●	●	●	●	●
Remote reset	-	-	-	-	-	-	-	-	-	○	○	○
<b>Historic record</b>												
Historic fault record	●	●	●	●	●	●	●	●	●	●	●	●
Historic maximum current	-	-	●	●	●	-	-	●	●	●	●	●
Alarm record	-	-	●	●	●	-	-	-	-	●	●	●
Clock function (Y, M, D, h, m, s)	-	-	●	●	●	-	-	-	-	●	●	●
<b>Communication</b>												
Communication output	-	-	-	-	●	-	-	-	-	●	●	●
Modbus	-	-	-	-	-	-	-	-	-	○	○	○
Profibus	-	-	-	-	○	-	-	-	-	○	○	○
Devicenet	-	-	-	-	○	-	-	-	-	○	○	○

# Air Circuit Breakers

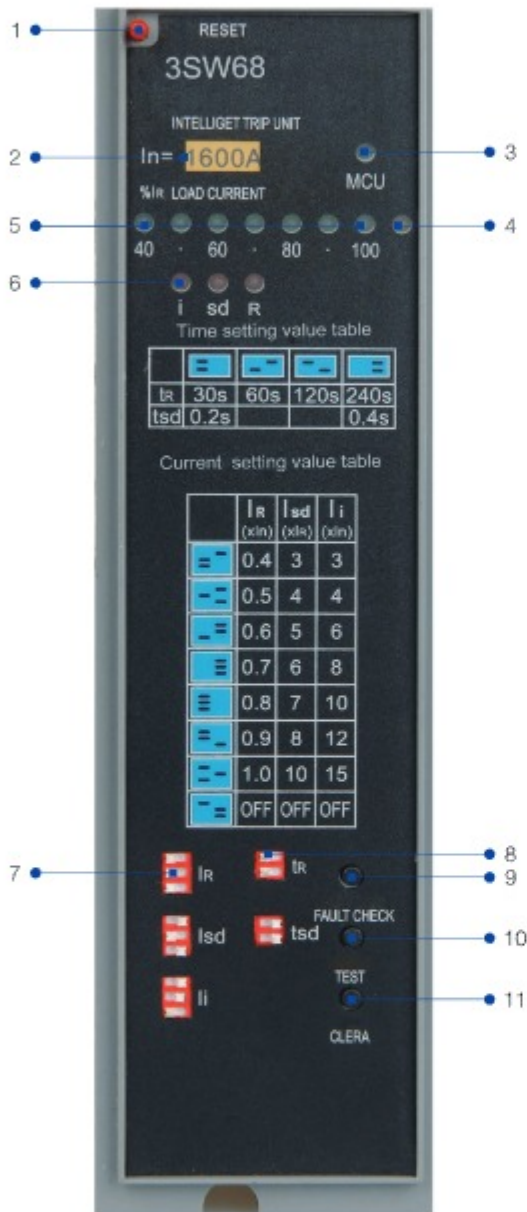
## Series 3SW68 (Electronic trip unit 3SW68-AL)

Suitable for size A (3SW68-1600)

3SW68-AL electronic trip units are with LED displays, the protection value and delay time is set by dialing device.

- Type 3SW68-AL3: provides selective protections of long-time delayed protection, short-time delayed protection and instantaneous protection.
- Type 3SW68-AL4: provides additional selective earth fault protection and all protection functions of type 3SW68-AL3.

1



- RESET button**  
It pops up when fault tripping or test tripping. The circuit breaker can be switched on only when the button is pressed down, together with the fault indicator.
- Indication of rated current (In)**
- MCU indicator**  
It remains lit when the controller is under normal working.
- Overvoltage indicator**  
It lights up when current reaches  $1.15 I_n$ .
- Current bar indicator**  
To display the real time current as the percentage of Ir; 10% each step.
- Fault type indicator**  
To show the fault type after tripping occurs.
  - If power supply works normally, it will indicate the fault type after fault tripping. Press RESET to quit.
  - If power supply is lost, press FAULT CHECK key to show the type of last tripping when power recovers.
- Current settings adjustor**
- Time settings adjustor**
- FAULT CHECK key**  
Press the key to check fault status when the electronic trip unit is under normal working.
- TEST key**  
Press TEST key, the breaker trips immediately, but no fault recorded. Press RESET and CLEAR after test.
- CLEAR key**

Note: Parameter setting  $I_n < I_{sd} < I_i$

### Characteristics

- Protection

Type 3SW68-AL3, suitable for size A 3SW68-1600

		Long-time delayed protection											
		Current setting $I_n$ (A)	$I_n = I_n \times \dots$	0.4	0.5	0.6	0.7	0.8	0.9	1	OFF		
Action characteristics		$\leq 1.05 I_n$ , >2 h no action; >1.3 $I_n$ (generator >1.2 $I_n$ ), <1 h action											
Time delay $t_n$ (s)  $T_n = \frac{(1.5I_n)^2}{I^2} \times t_n$  I - overcurrent	Accuracy $\pm 10\%$ (Original difference $\pm 40$ ms)	Time setting $t_n$ (s)	30	60	120	240							
		$I = 1.5 \times I_n$	30	60	120	240							
		$I = 2 \times I_n$	16.9	33.8	67.5	135							
		$I = 6 \times I_n$	1.88	3.75	7.5	15							
		$I = 7.2 \times I_n$	1.3	2.6	5.2	10							
		$I = 10 \times I_n$	0.68	1.35	2.7	5.4							
Thermal memory		10 min cold reset or remove after trip unit out of electricity											
Short-time delayed protection													
Current setting $I_{sd}$ (A)		$I_{sd} = I_n \times \dots$	3	4	5	6	7	8	10	OFF			
Action characteristics		$\leq 0.9 I_{sd}$ no action; > 1.1 $I_{sd}$ action											
Time delay $T_{sd}$ (s) (definite time protection)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_{sd}$ (s)	0.1	0.2	0.3	0.4							
		Return time (s)	0.06	0.14	0.23	0.35							
Instantaneous protection													
Current setting $I_i$ (A)		$I_i = I_n \times \dots$	3	4	6	8	10	12	15	OFF			
Action characteristics		$\leq 0.85 I_i$ no action; > 1.15 $I_i$ action											
Action time delayed		< 30 ms											

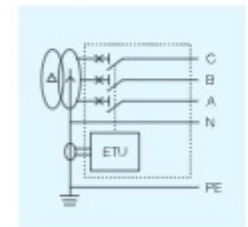
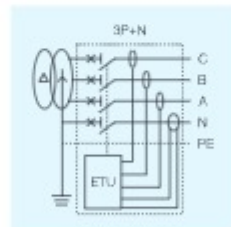
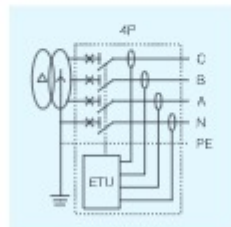
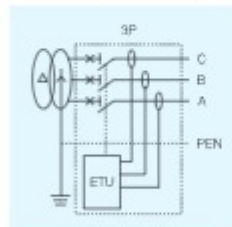
- Protection

Type 3SW68-AL4, suitable for size A 3SW68-1600

		Long-time delayed protection: the same as type 3SW68-AL3											
		Short-time delayed protection: the same as type 3SW68-AL3											
		Instantaneous protection: the same as type 3SW68-AL3											
Earth fault protection													
Current setting $I_g$ (A)		$I_n \leq 1250$ A, $I_g = I_n \times \dots$	0.4	0.5	0.6	0.65	0.7	0.75	0.8	OFF			
		$I_n > 1250$ A, $I_g = \dots$	500	600	700	800	900	1000	1200	OFF			
Action characteristics		$\leq 0.9 I_g$ no action; > 1.1 $I_g$ action											
Time delay $T_g$ (s) (definite time protection)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_g$ (s)	0.2	0.4	0.6	0.8							

Differential protection (type T)

Source ground return (type W)



- Default settings

- $I_n = 1.0 I_n$ ,  $t_n = 15$  s;
- $I_{sd} = 3.0 I_n$ ,  $t_{sd} = 0.4$  s;
- $I_i = 10 I_n$ ;
- $I_g = \text{OFF}$ ,  $t_g = 0.8$  s.

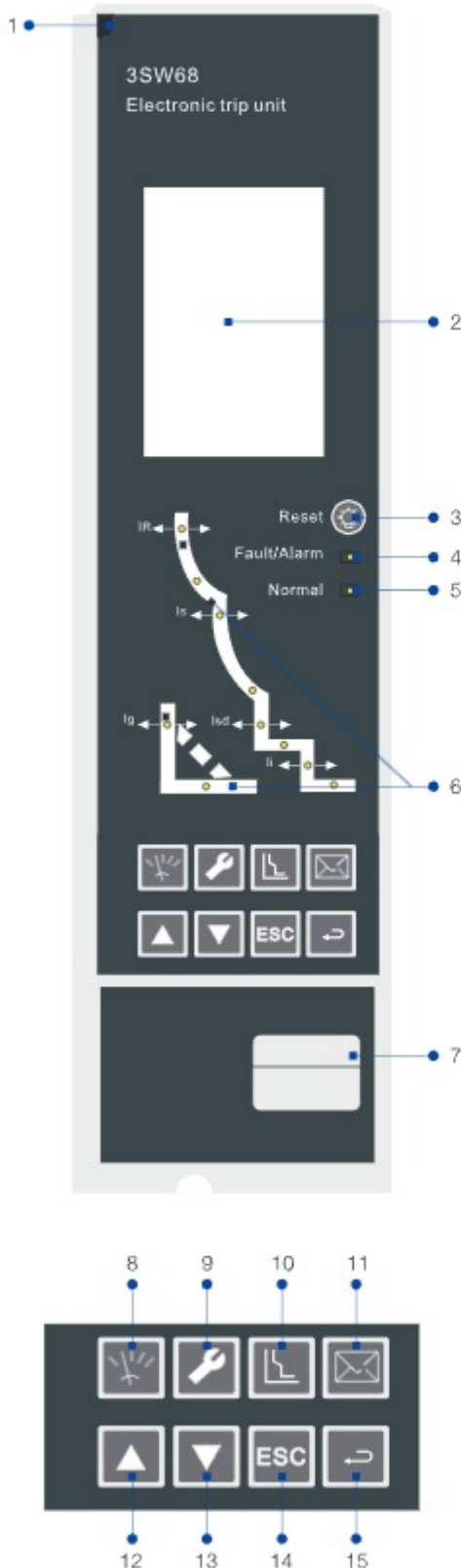
# Air Circuit Breakers

## Series 3SW68 (Electronic trip unit 3SW68-AM, 3SW68-AH)

Suitable for size A (3SW68-1600)

3SW68-AM and 3SW68-AH electronic trip unit equips with a LCD display, and all the operations can be conducted through function buttons.

- 3SW68-AM3: provides selective protections of long-time delayed protection, short-time delayed protection and instantaneous protection.
- 3SW68-AM4: provides additional selective earth fault protection and all protection functions of type 3SW68-AM3.
- 3SW68-AH: provides selective protections of long-time delayed protection, short-time delayed protection, instantaneous protection and earth fault protection, as well as the communication function to take remote measurement, control, setting and communication.



1. RESET button  
It pops up when fault tripping or test tripping. The circuit breaker can be switched on only when the button is pressed down, together with the fault indicator.
2. LCD display
3. Fault and alarm RESET key
4. FAULT/ALARM LED indicator  
The indicator is out when normal working; it flashes quickly when maintenance; it turns on in red when alarm.
5. NORMAL LED indicator  
It always flashes in green when the power is on and under normal working.
6. LED curve  
Red LED indicators are equipped in the curve.  
The corresponding indicator flashes to indicate the fault reason when fault tripping.  
The corresponding indicator remains lit to indicate the current setting when protection settings.
7. Test port  
A 16-pin test port is available on the bottom of front panel for plug-in portable power supply or inspection unit.

### Keyboard

8. Measurement: For measuring (In password input interface, the LEFT key)  
Press to enter the measurement default menu to measure current "I", voltage "U", frequency "F", power "P", energy "E", and harmonic "H".
9. Settings: For system parameter settings (In password input interface, the RIGHT key)  
Press to enter the setting default menu to set "Clock settings", "Meter settings", "Test & Lock", "Communication settings", "I/O settings".
10. Protections: For protection parameter settings Press to set the parameters of "Current protection", "Load monitor", "Voltage protection", and "Other protection".
11. Information: For history record and maintenance Press to check "Current alarm", "Operation times", "Contact wear", "Product information", "Tripping record", "Alarm record", "Transposition record".
12. UP - To move up or change the parameters upwards.
13. DOWN - To move down or change the parameters downwards.
14. Esc - To exit and return to previous menu or cancel the current setting selection.
15. ENTER - To enter the next menu, select the current parameter, or save the updates.

### Characteristics

- Protection

Type 3SW68-AM3, 3SW68-AM4, 3SW68-AH, suitable for size A 3SW68-1600

		Long-time delayed protection		
		Current setting $I_n$ (A)	$I_n = I_n \times \dots$	(0.4 – 1.0) + OFF, setting step: 1 A or 2 A < 1.05 $I_n$ , > 2 h no action; $\geq 1.2 I_n$ , < 1 h action selectable in menu Default setting is I <sup>T</sup> , the same as 3SW68-AL.
		Action characteristics		
		Type of curves	SI: Standard inverse curve VI: Very inverse curve EI(G): Extremely Inverse curve (general power distribution) EI(M): Extremely Inverse curve (motor protection) HV: High-voltage fuse compatibility I2: General inverse time protection	
Time delay $t_n$ (s)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_n$ (s)	C1 – C16, selectable in menu	
Thermal memory		(10, 20, 30, 45) min, (1, 2, 3) h reset or remove after trip unit out of electricity		
Short-time delayed protection				
Current setting $I_{sd}$ (A)		$I_{sd} = I_n \times \dots$		
Action characteristics				
I <sup>T</sup> : (OFF) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_{sd}$ (s)	(1.5 – 15) + OFF, setting step: 1 A or 2 A < 0.9 $I_{sd}$ no action; $\geq 1.1 I_{sd}$ action (0.1 – 0.4) s, setting step: 0.1 s	
Time delay $T_{sd}$ (s)	Accuracy within 10% (Original difference $\pm 40$ ms)			
I2: (ON) (Inverse time)	Accuracy within 10% (Original difference $\pm 40$ ms)		The same as long-time delayed protection, the delayed action time is 1/10 of that long-time delayed.	
Time delay T (s)	Accuracy within 10% (Original difference $\pm 40$ ms)		5 min reset or remove after trip unit out of electricity	
Thermal memory				
Instantaneous protection				
Current setting $I_i$ (A)		$I_i = I_n \times \dots$		
Action characteristics				
Action time delayed		< 30 ms		
Earth fault protection				
Current setting $I_g$ (A)		$I_n \leq 1250$ A, $I_g = I_n \times \dots$ $I_n > 1250$ A, $I_g = \dots$		
Action characteristics				
Time delay $T_g$ (s) (definite time protection)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_g$ (s)	(0.4 – 0.8) + OFF, setting step: 1 A (500 A – 1200 A) + OFF, setting step: 2 A $\leq 0.8 I_g$ no action; $> 1.0 I_g$ action (0.1 – 1.0) s, setting step: 0.1 s	
Differential protection (type T)		Source ground return (type W)		

- Neutral pole protection

- Applications:

- When the neutral line is thin, half value will be applied.
- When the neutral line is the same as others, full value will be applied.
- When harmonic wave is heavy, double or 1.6 times value will be applied.

- Setting range:

- 50 %, 100 %, 160 %, 200 %, OFF



# Air Circuit Breakers

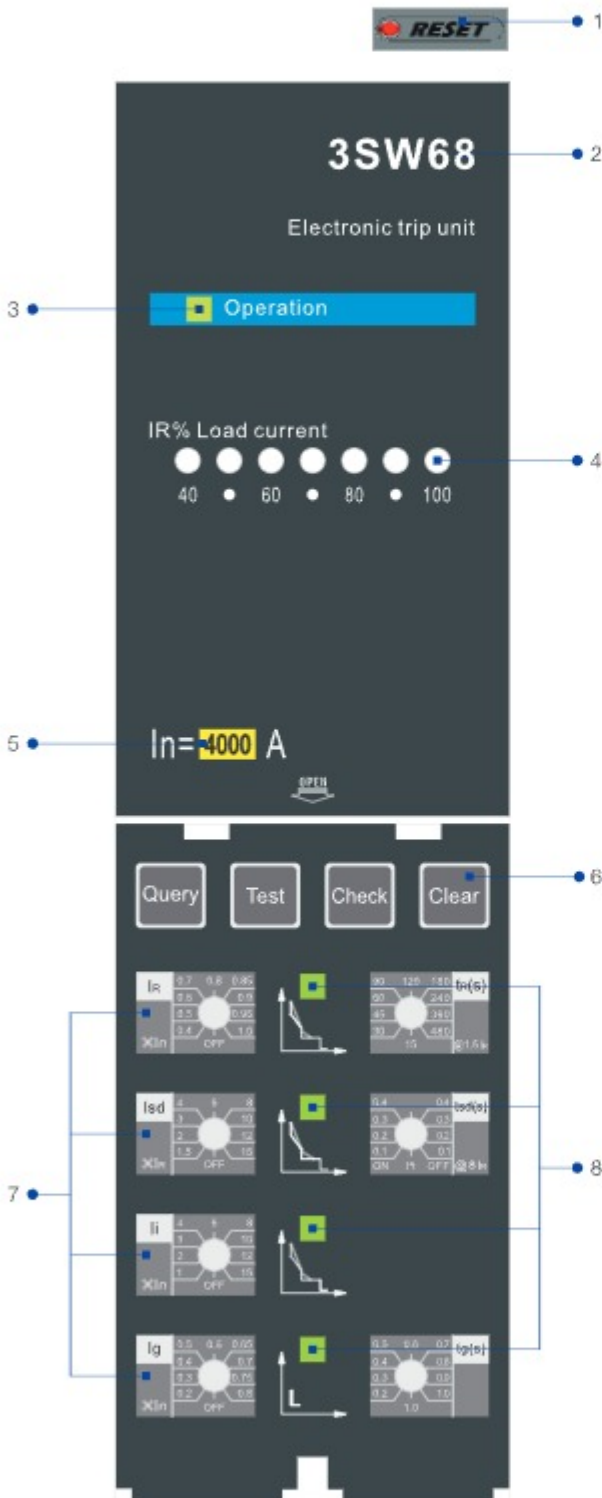
## Series 3SW68 (Electronic trip unit 3SW68-BL)

Suitable for size B/C/D (3SW68-2500/4000/6300)

3SW68-BL electronic trip unit equips with LED displays, the protection value and delay time is set by knobs.

- 3SW68-BL3: provides selective protections of long-time delayed protection, short-time delayed protection and instantaneous protection.
- 3SW68-BL4: provides additional selective earth fault protection and all protection functions of type 3SW68-BL3.

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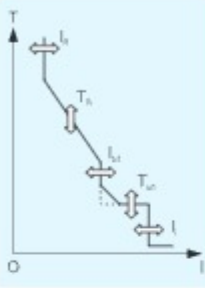


1. Mechanical RESET button  
It pops up after tripping. Manual reset is required.
2. Indication of electronic trip unit
3. Operation indicator  
It remains flashing when the electronic trip unit is under normal working.
4.  $I_n\%$   
40%–100% indicator:  
To display the real time current as the percentage of  $I_n$ .
5. Indication of rated current ( $I_n$ )
6. Simulation test area  
Query: check the last fault record (Record is shown as: one of the four fault indicators, IR, Isd, Ii, and Ig, becomes lighting. Press Clear button to clear indication).  
Test: When press Test Key under normal working status of controller, the breaker, commanded by the controller, trips instantaneously. Meanwhile, Ii fault indicator lights up, but no fault recorded.  
Check: self-diagnosis of inner working, each light will automatically scan, and will show a menu in one minute.  
Clear: clear the fault indicator.
7. Protect characteristic parameter setting area  
Default settings are as follows:  
 $I_n = 1.0 I_n$ ,  $t_n = 15$  s  
 $I_{sd} = 3 I_n$ ,  $t_{sd} = 0.4$  s  
(ON: inverse time status, OFF: definite time status)  
 $I_i = 10 I_n$   
 $I_g = 0.8 I_n$ ,  $t_g = 0.4$  s
8. Fault indicator: Lighting when fault occurs.

**Characteristics**

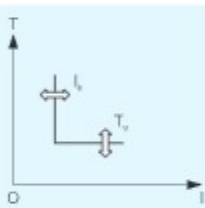
● Protection

Type 3SW68-BL3, suitable for size B/C/D 3SW68-250Q/400Q/630Q



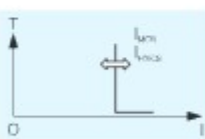
Long-time delayed protection																			
Current setting $I_n$ (A)		$I_n = I_n \times \dots$	0.4	0.5	0.6	0.7	0.8	0.85	0.9	0.95	1	OFF							
Action characteristics			$\leq 1.05 I_n$ , >2 h no action; >1.3 $I_n$ (generator >1.2 $I_n$ ), <1 h action																
Time delay $t_n$ (s)	Accuracy $\pm 10\%$ (Original difference $\pm 40$ ms)	Time setting $t_n$ (s)	15	30	45	60	90	120	180	240	360	480							
		$I = 1.5 \times I_n$	15	30	45	60	90	120	180	240	360	480							
		$I = 2 \times I_n$	8.4	16.9	25.3	33.8	50.6	67.5	101.2	135	203	270							
		$I = 6 \times I_n$	0.94	1.88	3.81	3.75	5.62	7.5	11.3	15	22.5	30							
		$I = 7.2 \times I_n$	0.65	1.3	1.95	2.6	3.9	5.2	7.74	10	15.62	21							
		$I = 10 \times I_n$	0.34	0.68	1.01	1.35	2.03	2.7	4.05	5.4	8.1	10.8							
Thermal memory			10 min cold reset or remove after trip unit out of electricity																
Short-time delayed protection																			
Current setting $I_{sd}$ (A)		$I_{sd} = I_n \times \dots$	1.2	2	3	4	6	8	10	12	15	OFF							
Action characteristics			$\leq 0.9 I_{sd}$ no action; > 1.1 $I_{sd}$ action																
$I^2t$ (OFF) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_{sd}$ (s)	0.1			0.2			0.3			0.4							
Time delay $T_{sd}$ (s)		Return time (s)	0.06			0.14			0.23			0.35							
$I^2t$ (ON) $I > 8 I_n$ (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_{sd}$ (s)	0.1			0.2			0.3			0.4							
Time delay $T_{sd}$ (s)		Return time (s)	0.06			0.14			0.23			0.35							
$I^2t$ (ON) $I \square 8 I_n$ (inverse time)	Accuracy within 10% (Original difference $\pm 40$ ms)	8 $I_n$ , $t_{sd}$ (s)	0.1			0.2			0.3			0.4							
Time delay $T$ (s)		Time delay $T = [(8 \times I_n) / I] \times [(8 \times I_n) / I] \times t_{sd}$																	
Instantaneous protection																			
Current setting $I_i$ (A)	Size B/C	$I_i = I_n \times \dots$	1	2	4	6	8	10	12	15	20	OFF							
	Size D	$I_i = I_n \times \dots$	1	2	3	4	6	8	10	12	15	OFF							
Action characteristics			$\leq 0.85 I_i$ no action; > 1.15 $I_i$ action																
Action time delayed			< 30 ms																

Type 3SW68-BL4, suitable for size B/C/D 3SW68-250Q/400Q/630Q



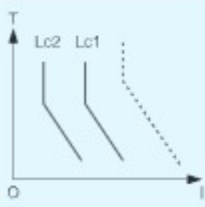
Long-time delayed protection: the same as type 3SW68-BL3																			
Short-time delayed protection: the same as type 3SW68-BL3																			
Instantaneous protection: the same as type 3SW68-BL3																			
Earth fault protection																			
Current setting $I_g$ (A)		$I_n \leq 1250$ A, $I_g = I_n \times \dots$	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	OFF							
		$I_n > 1250$ A, $I_g = \dots$	500	600	700	800	850	900	1000	1100	1200	OFF							
Action characteristics			$\leq 0.9 I_g$ no action; > 1.1 $I_g$ action																
Time delay $T_g$ (s) (definite time protection)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_g$ (s)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1							

● MCR & HSISC (Trip beyond limit) protection (selection function)



MCR & HSISC																			
Current setting IMCR (A)		$IMCR = I_n \times \dots$	10 (Other settings depend on requirement)													OFF			
Current setting IHSISC (A)		$IHSISC = I_n \times \dots$	15 (Other settings depend on requirement)													OFF			
Action characteristics			MCR: $\leq 0.85 IMCR$ , no action; > 1.15 $IMCR$ , action; HSISC: $\leq 0.85 IHSISC$ , no action; > 1.15 $IHSISC$ , action;																
Action time delayed			< 20 ms																

● Load monitoring (selection function)



Load monitoring (discharge current $Lc1$ , discharge current $Lc2$ )																			
Current setting $I_{c1}$ (A)		Setting is unavailable, $I_{c1}$ depends on $IR = I_n \times \dots$	0.4	0.5	0.6	0.7	0.8	0.85	0.9	0.95	1	OFF							
Current setting $I_{c2}$ (A)		Setting is unavailable, $I_{c2}$ depends on $IR = I_n \times \dots$	0.4	0.5	0.6	0.7	0.8	0.85	0.9	0.95	1	OFF							
Action characteristics $Lc1$			$\leq 1.05 I_{c1}$ , > 2 h no pick-up > 1.3 $I_{c1}$ (generator > 1.2 $I_{c1}$ ), < 1 h time delayed pick-up																
Action characteristics $Lc2$			$\leq 1.05 I_{c2}$ , > 2 h no pick-up > 1.3 $I_{c2}$ (generator > 1.2 $I_{c2}$ ), < 1 h time delayed pick-up																
Action time delayed			< 20 ms																
Time delay $T_{c1}$ (s)	Accuracy within 10% (Original difference $\pm 40$ ms)	Setting is unavailable, depends on $t_n$ (s)	15	30	45	60	90	120	180	240	360	480							
		$T_{c1} = 50\% t_n$																	
Time delay $T_{c2}$ (s)	Accuracy within 10% (Original difference $\pm 40$ ms)	Setting is unavailable, depends on $t_n$ (s)	15	30	45	60	90	120	180	240	360	480							
		$T_{c2} = 25\% t_n$																	

● Default settings

$I_n = 1.0 I_n$ ,  $t_n = 15$  s;  $I_{sd} = 3.0 I_n$ ,  $t_{sd} = 0.4$  s; ( $I^2t = OFF$ )  $I_i = 10 I_n$ ;  $I_g = OFF$ ,  $t_g = 0.8$  s.

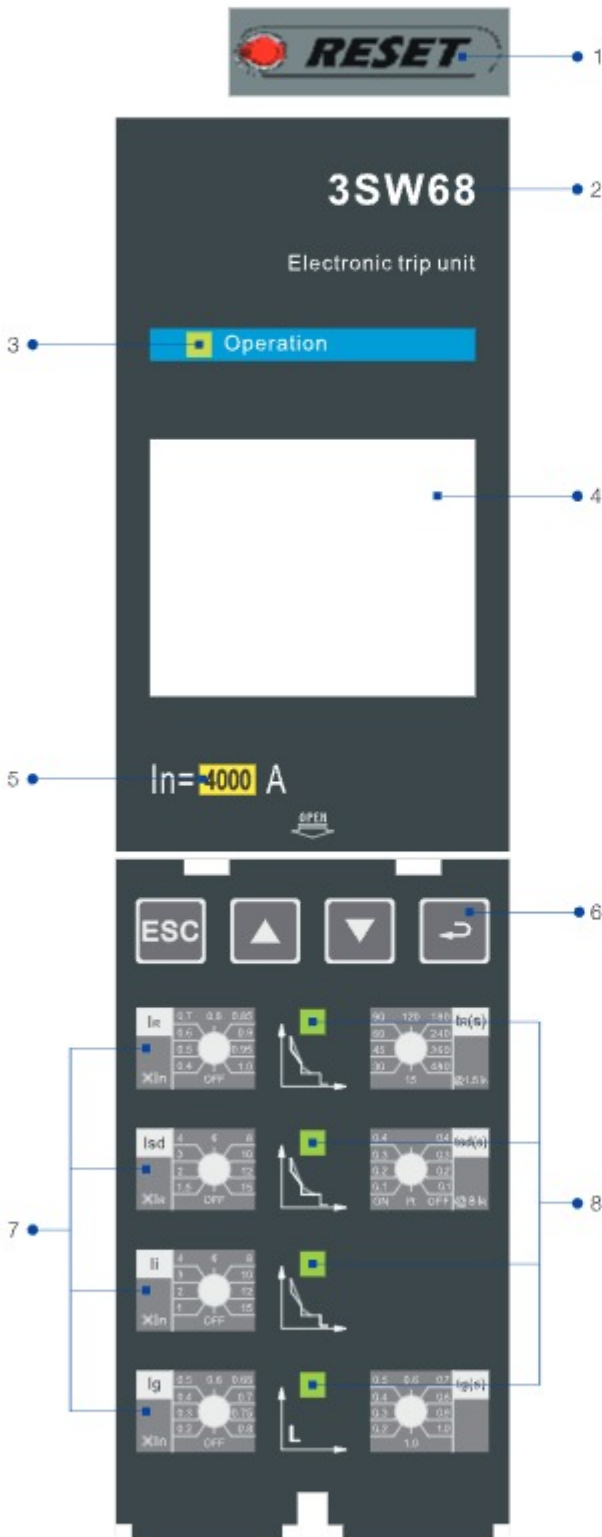
# Air Circuit Breakers

## Series 3SW68 (Electronic trip unit 3SW68-BM)

Suitable for size B/C/D (3SW68-2500/4000/6300)

3SW68-BM electronic trip unit equips with a LCD display, the protection value and delay time are set by knobs, some functions can be set by function keys.

- 3SW68-BM3: provides selective protections of long-time delayed protection, short-time delayed protection and instantaneous protection.
- 3SW68-BM4: provides additional selective earth fault protection and all protection functions of type 3SW68-BM3.



### Function

Except all the functions of 3SW68-BL, 3SW68-BM is with additional or different functions as follows:

- Protection  
Protection value and delay time can be set by the knobs and be checked on the LCD display, some functions can be set by function keys.
- Fault trip display  
When circuit breaker trips due to any fault, the fault type is indicated by LED light accordingly, and the data is shown on the LCD display.
- Measure  
Current measurement.
- Without self- diagnosis
- Indicator of contact loss  
Show the percentage of the contact loss (based on breaking current equivalent and total life)
- Operation cycles when electronic trip unit on charge  
Record the total operation cycles
- Record of historical fault  
Check the latest 10 faults (display fault type and data)
- Historical maximum current  
Record the maximum current since running.
- Zone selective interlocking (ZSI) (selection function)  
ZSI connected with several breakers from upstream and downstream, to provide full selective protection of earth fault protection and short circuit protection, with instantaneous trip.
- Overload pre-alarm(selection function)  
When load current reaches the overload setting values, the electronic trip unit give a DO alarm signal and indicate.

**Characteristics**

● Protection

Type 3SW68-BM3, suitable for size B/C/D 3SW68-2500/4000/6300

Long-time delayed protection: the same as type 3SW68-BL3
Short-time delayed protection: the same as type 3SW68-BL3
Instantaneous protection: the same as type 3SW68-BL3

● Protection

Type 3SW68-BM4, suitable for size B/C/D 3SW68-2500/4000/6300

Long-time delayed protection: the same as type 3SW68-BM3
Short-time delayed protection: the same as type 3SW68-BM3
Instantaneous protection: the same as type 3SW68-BM3
Earth fault protection: the same as type 3SW68-BL4

● Protection

Type 3SW68-BM3, 3SW68-BM4, suitable for size B/C/D 3SW68-2500/4000/6300

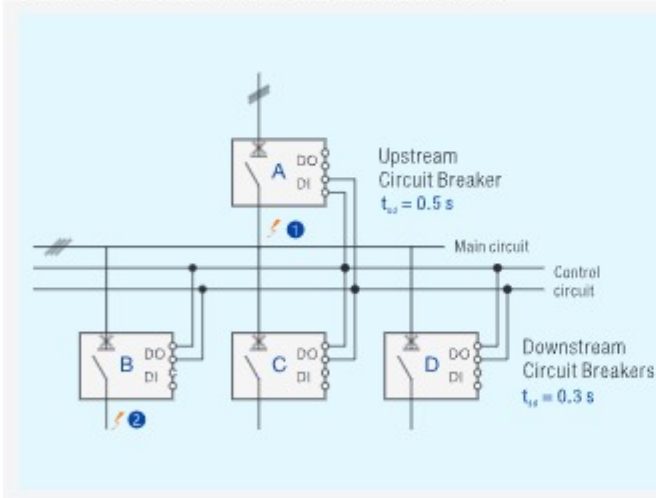
Current (Continuous current measurement)		
Measurement parameters:	Measurement range:	Measurement accuracy:
$I_n, I_{cs}, I_c, I_f, I_e$	$I_n, I_c, I_{cs}, I_e$ based on 25 In	$\leq 2In: \pm 1.5\%; > 2 In: \pm 5\%$

● MCR & HSISC (Trip beyond limit) protection (selection function) - the same as type 3SW68-BL.

● Protection

Type 3SW68-BL3, 3SW68-BL4, suitable for size B/C/D 3SW68-2500/4000/6300

Zone selective interlocking (ZSI) (Selection function)
<p><b>Application:</b>                      Used to reduce the electrodynamic forces exerted on installation by shortening the time required to clear faults, while maintaining time discrimination between the various devices.                      Including short-circuit interlocking and earth fault interlocking.</p>
<p><b>Settings requirements:</b>                      At least 1 DI of upstream circuit breaker is set to detect and receive signal from zone interlocking circuit breakers;                      At least 1 DO of downstream circuit breaker is set to send signal upstream.</p>
<p><b>Operating mode</b>                      The electronic trip unit detecting a fault current sends a signal upstream and checks the signal arriving from downstream. If there is a signal from downstream, the circuit breaker remains closed for the full duration of its tripping-delay time. If there is no signal from downstream, the circuit breaker opens immediately, regardless of its tripping-delay setting.</p>
<p><b>Example explanation</b>  <b>Fault 1:</b>                      Only circuit breaker A detects the fault. Because it does not receive signal from downstream, it opens immediately, regardless of its tripping-delay <math>t_{sd}</math> set to 0.5 s.  <b>Fault 2:</b>                      Both circuit breaks A and B detect the fault. Circuit breaker B does not receive a signal from downstream and opens immediately, in spite of its tripping-delay <math>t_{sd}</math> set to 0.3 s, meanwhile sends a signal to upstream circuit breaker A. Circuit breaker A receives the signal and remains closed for the full duration of its tripping-delay <math>t_{sd}</math> set to 0.5 s. If the fault current disappears within the duration 0.5 s, the circuit breaker A does not trip. If the fault current does not disappear within 0.5 s, the circuit breaker A trips also, to cut off the fault circuit.</p>



● Load monitoring (selection function) - the same as type 3SW68-BL.

● Default settings

- $I_n = 1.0 I_n, t_n = 15 \text{ s};$
- $I_{sd} = 3.0 I_R, t_{sd} = 0.4 \text{ s}; (f't = \text{OFF})$
- $I_l = 10 I_n;$
- $I_g = \text{OFF}, t_g = 0.8 \text{ s}.$

# Air Circuit Breakers

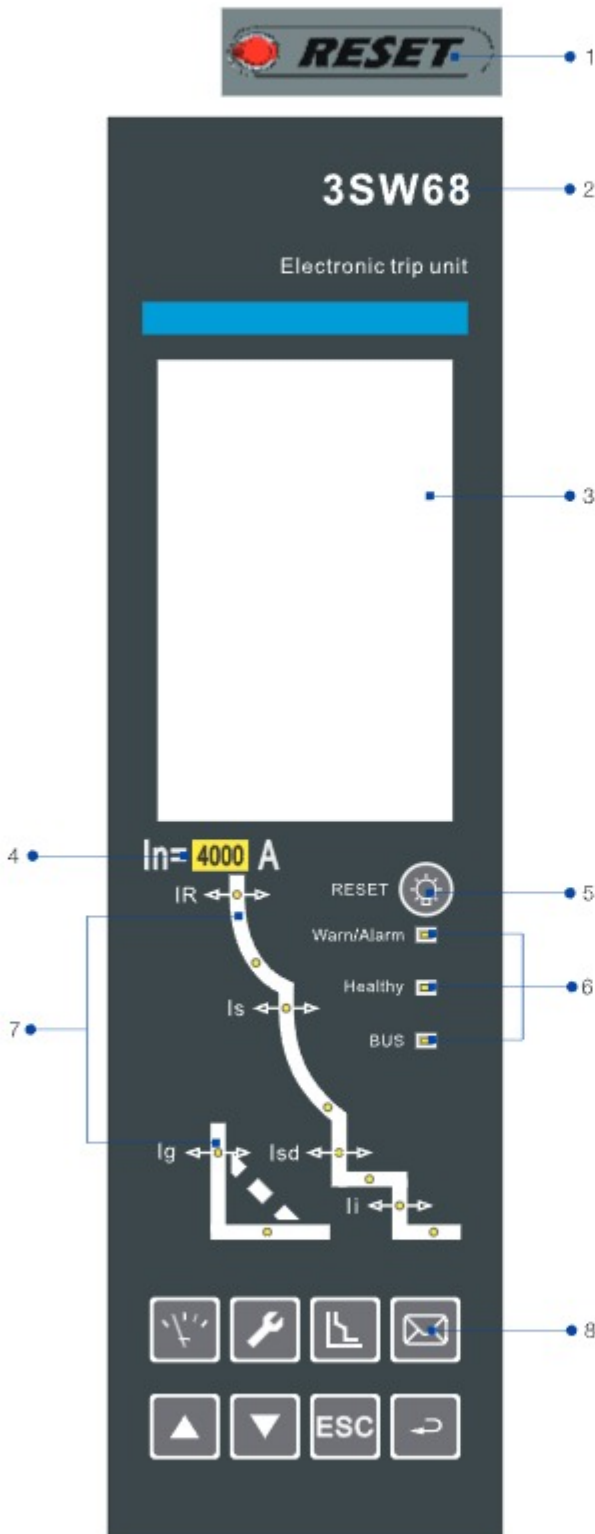
## Series 3SW68 (Electronic trip unit 3SW68-BH)

Suitable for size B/C/D (3SW68-2500/4000/6300)

3SW68-BH electronic trip unit equips with a LCD displays, the protection value and delay time are set by function keys.

Provides full selective protections of long-time delayed protection, short-time delayed protection, instantaneous protection and earth fault protection, as well as the communication function to take remote measurement, control, setting and communication.

1



### Function

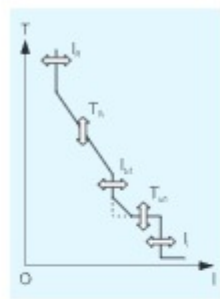
Except all the functions of 3SW68-BM, 3SW68-BM has additional or different functions as follows:

- Protection  
Protection value and delay time are set and checked by function keys.
- Overload protection  
Based on true RMS and long-time delay multi-curve protection, can be switched OFF.  
Thermal memory: The heat accumulation before or after tripping.
- Short-circuit protection  
Short-time delay (RMS) and instantaneous protection, can be switched OFF.  
Short-time delay  $I^2t$  can be switched ON or OFF by function keys.
- Earth fault protection  
Type T and type W both are available, type T is default setting, can be switched OFF.  
Time-delay characteristic  $I^2t$  (definite time protection), can be selected by function keys.
- Neutral protection  
Provide half, whole, 1.6 times and 2 times protection, can be switched ON or OFF.
- Current imbalance, current required, phase-loss protection
- Under frequency, over frequency, reverse frequency protection (only 3SW68-HG)
- Measurement  
Provide measurement of current, voltage, power, frequency, electricity, heat capacity, phase sequence, value required. And type 3W68-BHQ and 3SW68-BHG have additional functions of harmonic analyze and wave display.
- Alarm record  
Record the latest 10 alarms.
- Clock  
Setting date and time.
- Communication  
Provide outputs for communication functions.
- Residual current protection (selection function)  
Sampling by zero sequence current to get high accuracy and sensitivity, applied for protection of lower current.
- Load monitor (selection function)  
Can be used for pre-alarm, as well as the branch load control, act according to current and power.
- Earth alarm (selection function)  
Send alarm signal, can be switched OFF.
- Undervoltage, over voltage, voltage imbalance, phase sequence protection (selection function)
- Remote reset (selection function)  
Remote reset operational button, remove fault indication.
- Communicating (selection function)  
Software support for remote measurement, control, setting and communication.  
Modbus-RTU, Proibus-DP and Devicenet are available.

**Characteristics**

● Protection

Type 3SW68-BH, suitable for size B/C/D 3SW68-2500/4000/6300

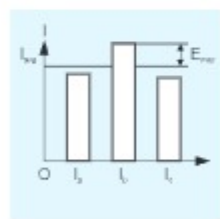


Long-time delayed protection		
Current setting $I_n$ (A)	$I_n = I_n \times \dots$	(0.4 ~ 1.0) + OFF, setting step: 1 A or 2 A
Action characteristics		
Type of curves	SI: Standard inverse time VI: Fast inverse time EI(G): Express inverse time (general power distribution) EI(M): Express inverse time (motor protection) HV: High-voltage fuse compatibility I't: General inverse time protection	<1.05 $I_n$ , >2 h no action; $\geq 1.2 I_n$ , <1 h action selectable in menu Default setting is I't, the same as 3SW68-BL
Time delay $t_n$ (s)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_n$ (s) C1 - C16, selectable in menu
Thermal memory		
(10, 20, 30, 45) min, (1, 2, 3) h reset or remove after trip unit out of electricity		
Short-time delayed protection		
Current setting $I_{sd}$ (A)	$I_{sd} = I_n \times \dots$	(1.5 ~ 15) + OFF, setting step: 1 A or 2 A
Action characteristics		
I't: (OFF) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_{sd}$ (s) < 0.9 $I_{sd}$ no action; $\geq 1.1 I_{sd}$ action (0.1 - 0.4) s, setting step: 0.1 s
Time delay $T_{sd}$ (s)		
I't: (ON) (inverse time)	Accuracy within 10% (Original difference $\pm 40$ ms)	The same as long-time delayed protection, the delayed action time is 1/10 of that long-time delayed.
Time delay T (s)		5 min reset or remove after trip unit out of electricity
Thermal memory		
Instantaneous protection		
Current setting $I_i$ (A)	Size B/C, $I_i = I_n \times \dots$ Size D, $I_i = I_n \times \dots$	(1.0 - 20) + OFF, setting step: 1 A or 2 A (1.0 - 15) + OFF, setting step: 2 A
Action characteristics		
Action time delayed		< 0.85 $I_i$ no action; $\geq 1.15 I_i$ action < 30 ms
Earth fault protection		
Current setting $I_g$ (A)	$I_n \leq 1250$ A, $I_g = I_n \times \dots$ $I_n > 1250$ A, $I_g = \dots$	(0.4 - 0.8) + OFF, setting step: 1 A (500 A - 1200 A) + OFF, setting step: 2 A
Action characteristics		
Time delay $T_g$ (s) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting $t_g$ (s) $\leq 0.8 I_g$ no action; $> 1.0 I_g$ action (0.1 - 1.0) s, setting step: 0.1 s

● Neutral pole protection

Neutral pole protection	
Applications: When the neutral line is thin, half value will be applied. When the neutral line is the same as others, full value will be applied. When harmonic wave is heavy, double or 1.6 times value will be applied.	Setting range: 50 %, 100 %, 160 %, 200 %, OFF

● Current imbalance protection



Current imbalance protection		
Current imbalance rate $I_{nubal}$ setting for protection start-up		(5 - 60) %, setting step: 1 %
Action characteristics		
Time delay (s) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Delayed action time setting (s) < 0.9 $I_{nubal}$ no action; $\geq 1.1 I_{nubal}$ action (0.1 - 40) s, setting step: 0.1 s Definite time is the same as delay time.
Setting for protection return		
5 % - start-up setting. Setting step: 1 % (available when ALARM mode only)		
Return characteristics		
Time delay return (s) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Delayed return time setting (s) >1.1 $I_{nubal}$ no return; $\leq 0.9 I_{nubal}$ return (10 - 200) s, setting step: 1 s (available when ALARM mode only); Definite time is the same as delay time.
Mode		
Alarm / Trip / OFF		

● Required current protection

Required current protection		
Setting for protection start-up		(0.2 - 1) $I_n$ , setting step: 1 A or 2 A
Action characteristics		
Time delay (s) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Delayed action time setting (s) < 0.9 ( $I$ /setting) no action; $\geq 1.1$ ( $I$ /setting) action (15 - 1500) s, setting step: 1 s Definite time is the same as delay time.
Setting for protection return		
0.2 $I_n$ - start-up setting. Setting step: 1 A or 2 A (available when ALARM mode only)		
Return characteristics		
Time delay return (s) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Delayed return time setting (s) >1.1 ( $I$ /setting) no return; $\leq 0.9$ ( $I$ /setting) return (15 - 3000) s, setting step: 1 s (available when ALARM mode only); Definite time is the same as delay time.
Mode		
Alarm / Trip / OFF		

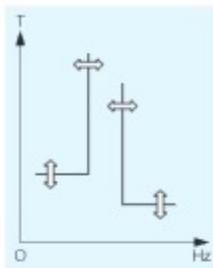
# Air Circuit Breakers

## Series 3SW68 (Electronic trip unit 3SW68-BH)



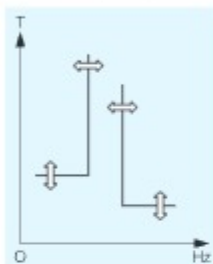
### Characteristics

#### ● Under frequency protection



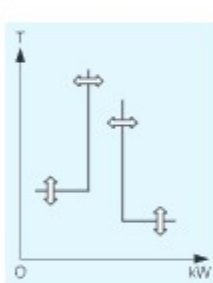
Under frequency protection			
Setting for protection start-up			45 Hz - setting, setting step: 0.5 Hz
Action characteristics			> setting +1 Hz no action; ≤ setting - 1 Hz action
Time delay (s) (definite time)	Accuracy within 10% (Original difference ±40 ms)	Delayed action time setting (s)	(0.2 - 5.0) s, setting step: 1 s Definite time is the same as delay time.
Setting for protection return			Start-up setting - 65 Hz. Setting step: 0.5 Hz (available when ALARM mode only)
Return characteristics			< setting - 1 Hz no return; ≥ setting + 1 Hz return
Time delay return (s) (definite time)	Accuracy within 10% (Original difference ±40 ms)	Delayed return time setting (s)	(0.2 - 36) s, setting step: 0.1 s (available when ALARM mode only); Definite time is the same as delay time.
Mode			Alarm / Trip / OFF

#### ● Over frequency protection



Over frequency protection			
Setting for protection start-up			Return setting - 65 Hz, setting step: 0.5 Hz
Action characteristics			< setting - 1 Hz no action; ≥ setting +1 Hz action
Time delay (s) (definite time)	Accuracy within 10% (Original difference ±40 ms)	Delayed action time setting (s)	(0.2 - 5.0) s, setting step: 1 s Definite time is the same as delay time.
Setting for protection return			45 Hz - start-up setting. Setting step: 0.5 Hz (available when ALARM mode only)
Return characteristics			> setting + 1 Hz no return; ≤ setting - 1 Hz return
Time delay return (s) (definite time)	Accuracy within 10% (Original difference ±40 ms)	Delayed return time setting (s)	(0.2 - 36) s, setting step: 0.1 s (available when ALARM mode only); Definite time is the same as delay time.
Mode			Alarm / Trip / OFF

#### ● Reverse power protection



Reverse power protection			
Setting for protection start-up			5 - 50 kW, setting step: 1 kW
Action characteristics			< 0.9 (reverse power/setting) no action; ≥ 1.1 (reverse power/setting) action
Time delay (s) (definite time)	Accuracy within 10% (Original difference ±40 ms)	Delayed action time setting (s)	(0.2 - 20) s, setting step: 1 s Definite time is the same as delay time.
Setting for protection return			5 kW - start-up setting. Setting step: 1 kW (available when ALARM mode only)
Return characteristics			> 1.1 (reverse power/setting) no return ≤ 0.9 (reverse power/setting) return
Time delay return (s) (definite time)	Accuracy within 10% (Original difference ±40 ms)	Delayed return time setting (s)	(1.0 - 360) s, setting step: 0.1 s (available when ALARM mode only); Definite time is the same as delay time.
Mode			Alarm / Trip / OFF

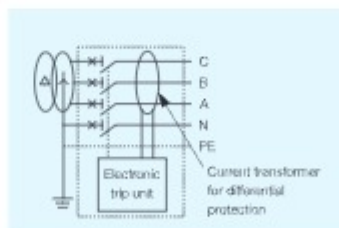
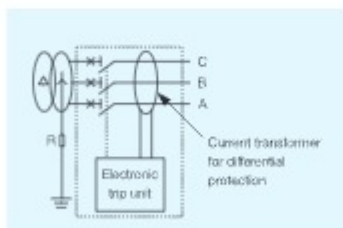
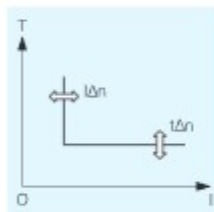
### Characteristics

#### ● Measurement

Current (Continuous current measurement, applied to power system with 50 Hz or 60 Hz)		
Content: $I_a, I_b, I_c$ (three phase) $I_n$ (neutral pole), $I_e$ (earth current) $I_{unb}$ (current imbalance rate)	Range: $I_a, I_b, I_c, I_n, I_e$ : 25 $I_n$	Accuracy: $\leq 2 I_n$ : $\pm 1.5\%$ $> 2 I_n$ : $\pm 5\%$
Current (Continuous current measurement, applied to power system with 50 Hz or 60 Hz)		
Content: Line voltage, phase voltage, average voltage, phase sequence, voltage imbalance rate	Range: Line voltage: 0 ~ 1200 V phase voltage: 0 ~ 600 V display the phase sequence	Accuracy: $\pm 5\%$
Power		
Content: Active power, reactive power, apparent power (not applied to three phase three line)	Range: Active power: - 32768 kW ~ + 32767 kW Reactive power: - 32768 kvar ~ + 32767 kvar Apparent power: 0 kVA ~ 65535 kVA	Accuracy: $\pm 2.5\%$
Power factor		
Content: System power factor, phase power factor (not applied to three phase three line)	Range: - 1.00 ~ + 1.00	Accuracy: $\pm 0.02$
Frequency		
Content: Frequency	Range: 40 Hz ~ 65 Hz	Accuracy: $\pm 0.05$ Hz
Energy		
Content: Input (output) active energy Input (output) reactive energy Total active (reactive, apparent) energy	Range: Active: 0 ~ 4294967295 kWh Reactive: 0 ~ 4294967295 kvarh Apparent: 0 ~ 4294967295 kVAh	Accuracy: $\pm 2.5\%$
Required value		
Content: Required current $I_a, I_b, I_c, I_n$ Required power P, Q, S	Range: The same as real-time measured value of current and power	Accuracy: The same as accuracy of current and power
Harmonic wave (available for type 3SW68-BHQ and 3SW68-BHG)		
Fundamental wave of current, voltage; Total harmonic distortion of current, voltage THD and thd; Latest 31 odd harmonics amplitude Pope;		
Waveform (available for type 3SW68-BHQ and 3SW68-BHG)		
Capture waveform display: 4 current $I_a, I_b, I_c, I_n$ ; 3 phase voltage $U_{ab}, U_{bc}, U_{ca}$		

#### ● Residual current protection (selection function)

Residual current protection		0.5 ~ 30.0 A, setting step: 0.1 A												
Action current setting $I_{\Delta n}$		$< 0.8 (I_{\Delta n})$ no action; $\geq 1.0 (I_{\Delta n})$ action												
Action characteristics														
Time delay $t_{\Delta n}$ (s)	Accuracy within 10% (Original difference $\pm 40$ ms)	Time setting (s)	0.06	0.08	0.17	0.25	0.33	0.42	0.5	0.58	0.67	0.75	0.8.	instantaneous
		$I_{\Delta n}$	0.36	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	0.04
		$2 I_{\Delta n}$	0.18	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	0.04
		$5 I_{\Delta n}$	0.07	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	0.04
		$10 I_{\Delta n}$												
Mode		Trip / OFF												



- MCR & HSISC (Trip beyond limit) protection (selection function) - the same as type 3SW68-BL.
- Zone selective interlocking (ZSI) (selection function) - the same as type 3SW68-BL.



# Air Circuit Breakers

## Series 3SW68 (Electronic trip unit 3SW68-BH)

### Characteristics

#### ● Load monitoring (selection function)

Load monitoring Action according to current or power	Mode 1: Control two loads independently, when actual value over setting value, load monitor DO action with time delay (DO function should be set accordingly), to break the branch load, ensure the main power supply.	Mode 2: Generally used for controlling one load, when value over setting start-up value, load monitor 1 DO action with time delay, open branch load; if actual values after breaking are lower than return value, after setting time delay, load monitor 1 DO returns, load monitor 2 DO action, to close the circuit and recovery the supply power. Note: Load1 start-up value $\geq$ Load 2 return value
	<p>According to current:</p>	<p>According to power:</p>

#### ● Earth alarm (selection function)

	Earth alarm			
	Current setting for alarm		$I_n \leq 1250 \text{ A}$ (0.4 - 0.8) $\times I_n$ + OFF, setting step: 1 A $I_n > 1250 \text{ A}$ (500 A - 1200 A) + OFF, setting step: 2 A	
	Action characteristics			
	Time delay (s) (definite time)	Accuracy within 10% (Original difference $\pm 40 \text{ ms}$ )	Delay time setting (s)	$< 0.8 (I/\text{setting value})$ no action; $\geq 1.0 (I/\text{setting value})$ action (0.1 - 1.0) s, setting step: 0.1 s Definite time is the same as delay time.
	Current setting for alarm return (available when ALARM mode only)		$I_n \leq 1250 \text{ A}$ (0.4 - 0.8) $\times I_n$ , setting step: 0.1 s $I_n > 1250 \text{ A}$ 500 A - 1200 A, setting step: 2 A	
	Return characteristics			
Time delay return (s) (definite time)	Accuracy within 10% (Original difference $\pm 40 \text{ ms}$ )	Delayed return time setting (s)	$> 1.0 (I/\text{setting value})$ no return; $\leq 0.9 (I/\text{setting value})$ return (0.1 - 1.0) s, setting step: 0.1 s (available when ALARM mode only) Definite time is the same as delay time.	
Mode Alarm / OFF				

#### ● Under voltage protection (selection function)

	Under voltage protection			
	Setting for protection start-up		100 V - return value, setting step: 1 V	
	Action characteristics			
	Time delay (s) (definite time)	Accuracy within 10% (Original difference $\pm 40 \text{ ms}$ )	Delay time setting (s)	$> 1.1 (U_{\text{max}}/\text{setting of action value})$ no action $\leq 0.9 (U_{\text{max}}/\text{setting of action value})$ action (0.2 - 60) s, setting step: 0.1 s Definite time is the same as delay time.
	Setting for protection return			
	Return characteristics			
Time delay return (s) (definite time)	Accuracy within 10% (Original difference $\pm 40 \text{ ms}$ )	Delayed return time setting (s)	start-up value - 1200 V, setting step: 1 V (available when ALARM mode only, setting value for return $\geq$ start-up value ) $< 0.9 (U_{\text{max}}/\text{setting of return value})$ no return $\geq 1.1 (U_{\text{max}}/\text{setting of return value})$ return (0.2 - 60) s, setting step: 0.1 s (available when ALARM mode only) Definite time is the same as delay time.	
Mode Alarm / Trip / OFF				

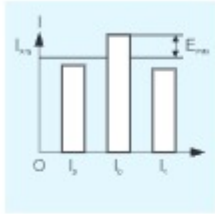
#### ● Over voltage protection (selection function)

	Over voltage protection (setting value for under voltage protection must less than that for over voltage protection)			
	Setting for protection start-up		Return value - 1200 V, setting step: 1 V	
	Action characteristics			
	Time delay (s) (definite time)	Accuracy within 10% (Original difference $\pm 40 \text{ ms}$ )	Delay time setting (s)	$< 0.9 (U_{\text{min}}/\text{setting of action value})$ no action $\geq 1.1 (U_{\text{min}}/\text{setting of action value})$ action (0.2 - 60) s, setting step: 0.1 s Definite time is the same as delay time.
	Setting for protection return			
	Return characteristics			
Time delay return (s) (definite time)	Accuracy within 10% (Original difference $\pm 40 \text{ ms}$ )	Delayed return time setting (s)	100 V - start-up value, setting step: 1 V (available when ALARM mode only, setting value for start-up $\geq$ return value) $\geq 1.1 (U_{\text{min}}/\text{setting of return value})$ no return $< 0.9 (U_{\text{min}}/\text{setting of return value})$ return (0.2 - 60) s, setting step: 0.1 s (available when ALARM mode only) Definite time is the same as delay time.	
Mode Alarm / Trip / OFF				

### Characteristics

- Voltage imbalance protection (selection function)

Voltage imbalance protection			
Voltage imbalance rate U unbal setting for protection start-up		{2 – 30} %, setting step: 1 %	
Action characteristics			
		$< 0.9$ (actual voltage imbalance rate/setting value) no action $\geq 1.1$ (actual voltage imbalance rate/setting value) action	
Time delay (s) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Delay time setting (s)	{0.2 – 60} s, setting step: 0.1 s Definite time is the same as delay time.
Setting for protection return		2 % ~ start-up value, setting step: 1 % (available when ALARM mode only, setting value for return $\geq$ start-up value)	
Return characteristics			
		$> 1.1$ (actual voltage imbalance rate/setting value) no return $\leq 0.9$ (actual voltage imbalance rate/setting value) return	
Time delay return (s) (definite time)	Accuracy within 10% (Original difference $\pm 40$ ms)	Delayed return time setting (s)	{0.2 – 60} s, setting step: 0.1 s (available when ALARM mode only) Definite time is the same as delay time.
Mode		Alarm / Trip / OFF	



- Phase sequence protection (selection function)

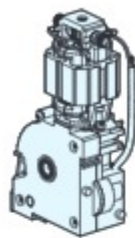
Phase sequence protection	
Action phase sequence	Setting range: $\Delta a$ : A, B, C / $\Delta e$ : A, C, B
Mode	Alarm / Trip / OFF

- Default settings

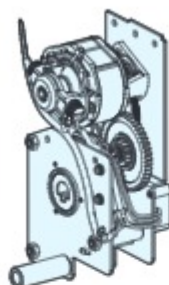
- $I_n = 1.0 I_n$ ,  $t_n = 15$  s;
- $I_{sd} = 3.0 I_n$ ,  $t_{sd} = 0.4$  s; (definite time)
- $I_i = 10 I_n$ ;
- $I_g = \text{OFF}$ ,  $t_g = 0.8$  s.

## Accessories for circuit breakers

1



for size A



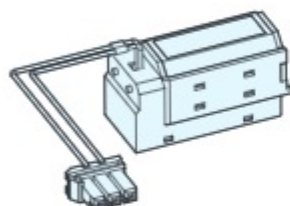
for size B/C/D

- **Motorized operating mechanism - EM (Standard configuration)**  
The motorized operating mechanism can automatically charge and recharge the spring mechanism when the circuit breaker is closed, to ensure the instantaneous reclosing of the breaker after possible opening.  
As a standard configuration, it is already equipped in circuit breaker before delivery.

### General characteristics

Size	Size A	Size B/C	Size D
Power supply Us	AC 230 V AC 400 V DC 110 V DC 220 V		
Operating limits	85 % ... 110 % Us		
Consumption	40 W	50 W	75 W
Charging time	< 5 s	< 7 s	< 7 s

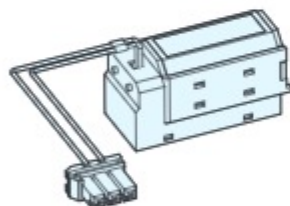
- **Closing coil - CM (Standard configuration)**  
The closing coil can remotely close the circuit breaker if the spring mechanism is charged.  
As a standard configuration, it is already equipped in circuit breaker before delivery.



### General characteristics

Power supply Us	AC 230 V AC 400 V DC 110 V DC 220 V
Operating limits	85 % ... 110 % Us
Consumption	500 W
Closing time	≤ 100 ms

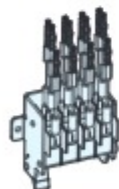
- **Shunt release - SH (Standard configuration)**  
The shunt release can remotely open the circuit breaker instantaneously when energized.  
As a standard configuration, it is already equipped in circuit breaker before delivery.



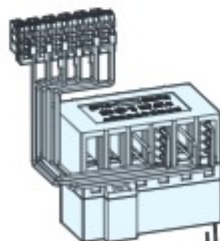
### General characteristics

Power supply Us	AC 230 V AC 400 V DC 110 V DC 220 V
Operating limits	70 % ... 110 % Us
Consumption	500 W
Opening time	≤ 100 ms

- **Auxiliary contact - AU (Standard configuration)**  
The circuit breaker can be equipped with auxiliary contacts that signal the status of the circuit breaker.  
The first block of contacts (4 convertible contact) is always configured inside of the circuit breaker before delivery.  
Special contacts as 4 NO + 4 NC or 6 NO + 6 NC are also available as optional applications.



for size A

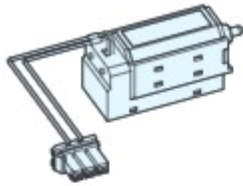


for size B/C/D

### General characteristics

Size	Size A		Size B/C/D	
Type	4NO-C 4NO+4C 6NO+6NC		4NO-C 4NO+4C 6NO+6NC	
Power supply Us	AC 230 V AC 400 V	DC 110 V DC 220 V	AC 230 V AC 400 V AC 415 V	DC 110 V DC 220 V DC 250 V
Rated control capacity	300 VA	60 W	830 VA	75 W
Conventional thermal current	10			

Accessories for circuit breakers

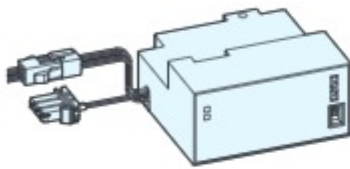


● Under-voltage release - UV (Optional configuration)

The under-voltage release can open the circuit breaker when the supply voltage drops to a value between 35% and 70% of its rated voltage or there is power supply failure. If there is no power supply on the release, it is impossible to close the circuit breaker, either manually or electrically. It can be used for safe remote tripping, for blocking unexpected closing or to control the voltage in the primary and secondary circuits.

Circuit breaker closing is enable again only when the supply voltage returns to 85% of its rated value.

It is an optional accessory which is configured in circuit breaker before delivery unless there is request.



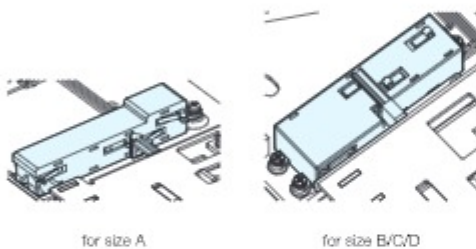
General characteristics

Power supply U <sub>s</sub>	AC 230 V , AC 400 V	
Operating limits	Opening	35 % ... 70 % U <sub>e</sub>
	Closing	85 % ... 110 % U <sub>e</sub>
	Non-closing	≤ 25 % U <sub>e</sub>
Consumption	Starting	500 W
	Holding	12 W
Opening time	≤ 100 ms	
Time delay	0, 1, 2, 3 s	

● Closing coil - CM (Standard configuration)

The closing coil can remotely close the circuit breaker if the spring mechanism is charged.

As a standard configuration, it is already equipped in circuit breaker before delivery.



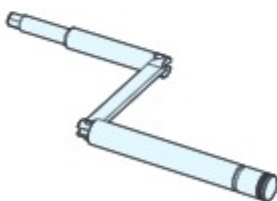
General characteristics

Size	Size A	Size B/C/D
Quantity of contact	1NO (separated), 1NO (test), 1NC (connected)	
Power supply U <sub>e</sub>	AC 230 V, AC 400 V, AC 415 V, DC 110 V, DC 220 V, DC 250 V	
Rated control capacity	300 VA / 60 W	830 VA / 75 W
Conventional thermal current	10 A	



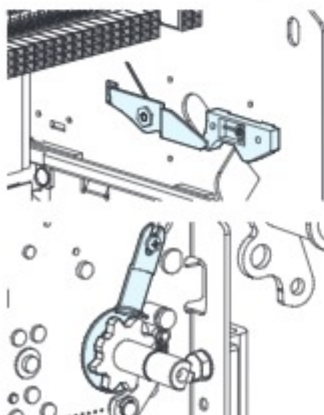
● Mechanical operation counter - MOC (Optional configuration)

The mechanical operation counter makes the number of mechanical operations visible on the front of the circuit breaker, the user knows how many mechanical operations the circuit breaker has performed and determines the frequency of ordinary maintenance operations.



● Crank- CRK (Standard configuration)

The crank is used to rack in or out the mobile part. It is for withdrawable circuit breaker only.



● Opening protection for racking in / racking out- OPC (Standard configuration)

It can automatically open the circuit breaker when the mobile part is racked out from the drawer base, and prohibit the racking in at closing condition. It is for withdrawable circuit breaker only.

● Protection device for unexpected charging - PUC (Standard configuration)

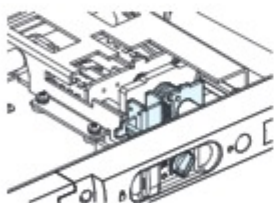
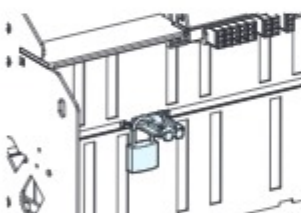
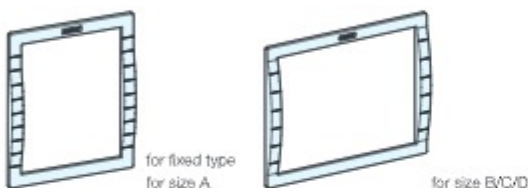
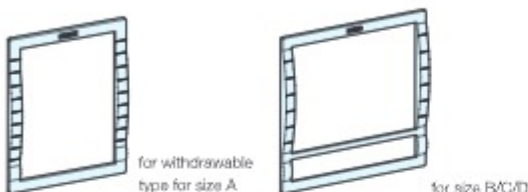
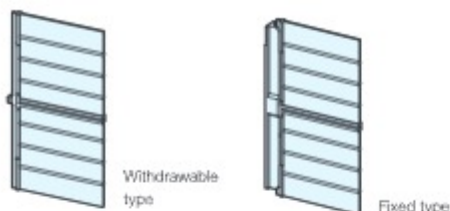
This device is to separate the handle pawl and the mesh surface of the mechanism ratchet when spring charging, and prevent the unexpected charging during process flowing or maintaining. It is unlocked before delivery inspection.

# Air Circuit Breakers

## Series 3SW68

### Accessories for circuit breakers

1



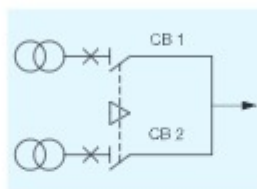
- Separators -PSB (Optional configuration)  
These protection devices increase the insulation distance between adjacent phases. They are available for all the sizes.  
Separators must be used if the operation voltage is higher than 500 V.
- Door frame (Optional configuration)  
The door frame is installed on the door of cabinet to achieve IP40 degree of protection on the front part of the circuit breaker.
- Protection cover for secondary terminal (Optional configuration)  
It is equipped on the drawer base to prevent dust and touching to electrical parts of secondary terminal.  
It is available for withdrawable circuit breaker only.
- Separate lock device (Optional configuration)  
To lock the safety board at OFF position (the lock should be prepared by user):  
- Prevent the mobile part connecting to the drawer base  
- Prevent touching the electrical parts in case of racking in or out the mobile part or taking maintenance.  
It is available for withdrawable circuit breaker only.
- 3-position locking device (Optional configuration)  
This device enables the mobile part to be locked in one of the three positions: separated, test and connected.  
It is available for withdrawable circuit breaker only.
- Position locking device (Optional configuration)  
To prevent crank inserting in and make the circuit breaker to be in the "separated" position.  
It is available for withdrawable circuit breaker only.
- Protection device for opening and closing buttons (Optional configuration)  
This device enables it is possible to prevent any unexpected operation on both the opening and closing buttons (the lock should be prepared by user). The lock of opening button and closing button is independent, usually used for remote operation.

Accessories for circuit breakers



- Key lock in open position (Optional configuration)  
Keep the open button at pressed position by a lock which should be prepared by user, to lock the circuit breaker in OFF position. It is possible to make interlock between different locks of several circuit breakers.

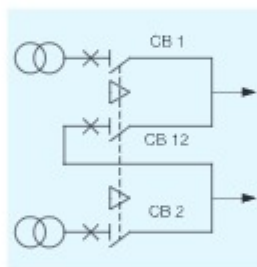
- One key for one lock  
One lock and one key for one circuit breaker. The key could be pull out in locked position only, and the circuit breaker can't be closed.
- Two locks with one key  
There are two same locks and one key for two circuit breakers, to enable that only one circuit breaker can be closed.



CB 1	CB 2
O	O
O	I
I	O

O: open I: close

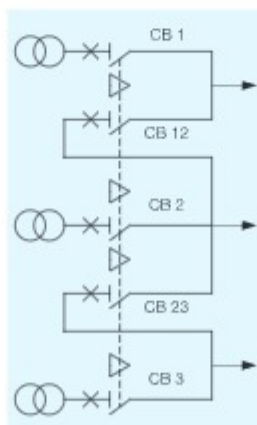
- Three locks with two keys  
There are three same locks and two keys for three circuit breakers, to enable that only two circuit breakers can be closed.



CB 1	CB 12	CB 2
O	O	O
I	O	O
O	I	O
O	O	I
I	I	O
O	I	I
I	O	I

O: open I: close

- Five locks with three keys  
Used in power distribution systems with three power supplies and two bus couples, and breakers are dispersedly installed.

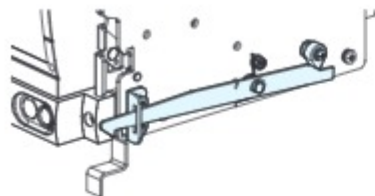


CB 1	CB 12	CB 2	CB 23	CB 3
O	O	O	O	O
I	O	O	O	O
O	I	O	O	O
O	O	I	O	O
O	O	O	I	O
I	I	O	O	O
I	O	I	O	O
I	O	O	I	O
O	I	I	O	O
O	I	O	I	O
O	O	I	I	O
O	O	I	O	I
O	O	O	I	I
I	I	O	I	O
I	I	O	O	I
I	O	I	O	I
I	O	O	I	I
O	I	I	I	O
O	I	O	I	I

O: open I: close

## Accessories for circuit breakers

1



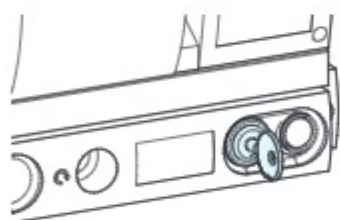
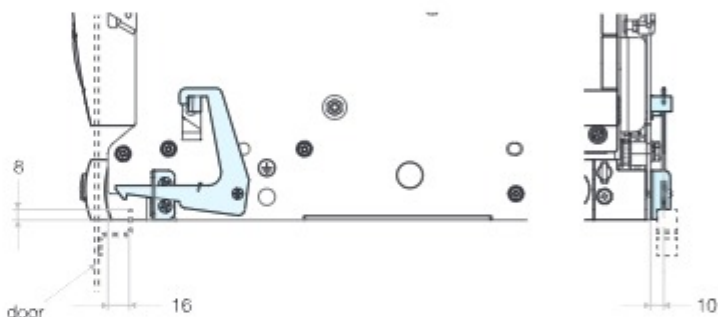
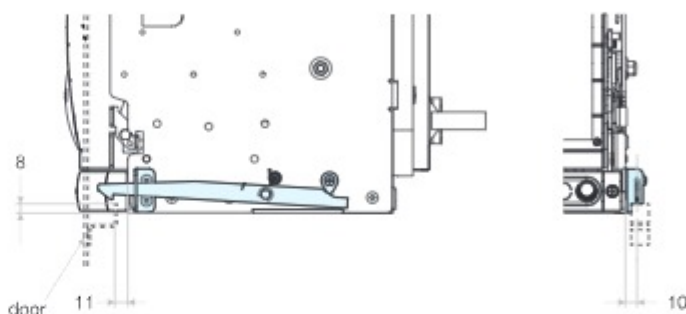
for size A



for size B/C/D

- Interlock for switchgear door (Optional configuration)

This device can be installed on either the left side or right side of the drawer base to prevent the switchgear door from being opened when the mobile part of the withdrawable version of circuit breaker is in position of "test" or "connected". If the switchgear door is open and circuit breaker is in "connected" position, then it can be closed directly without opening the circuit breaker. It is available for withdrawable circuit breaker only.

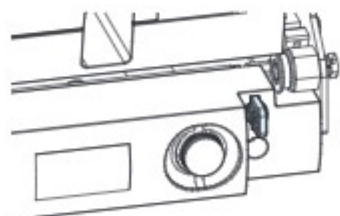


- Position key lock (Optional configuration)

The same as position locking devices, this position key lock can lock the circuit-breaker in "separated" position.

Besides, it is possible to install two same locks on two circuit breakers with only one key, to achieve the interlock of "separated" position between these two circuit breakers.

It is available for size A (3SW68-1600) of withdrawable version of circuit breaker.

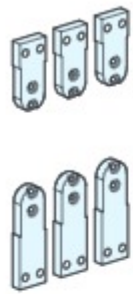


- Blocking device for inserting in crank when the door is open (Optional configuration)

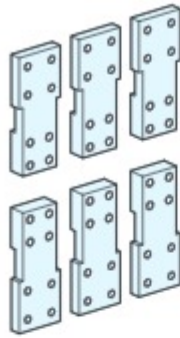
It is used to block the crank being inserted in and prevent the mobile part from being racked in or out when the switchgear door is open.

It is available for size B/C/D (3SW68-2500/4000/6300) of withdrawable version of circuit breaker.

## Accessories for circuit breakers

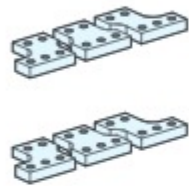


for size A of  
withdrawable type

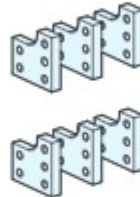


for size B/C/D

- Front terminals (Optional configuration)  
Used for circuit breakers with rated current up to 4000A.

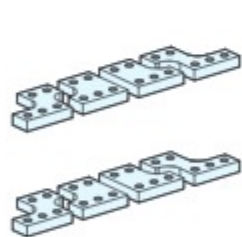


Horizontal

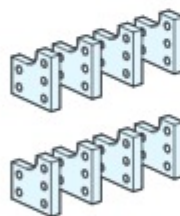


Vertical

- Spread terminals for 3-pole circuit breakers (Optional configuration)  
The terminals are available for size A (3SW68-1600) of 3-pole circuit breakers with purpose to enlarge the phase distances and ensure the electric safety by reducing the temperature rise.



Horizontal



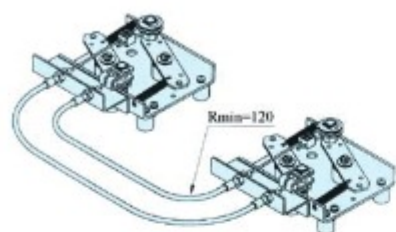
Vertical

- Spread terminals for 4-pole circuit breakers (Optional configuration)  
The terminals are available for size A (3SW68-1600) of 4-pole circuit breakers with purpose to enlarge the phase distances and ensure the electric safety by reducing the temperature rise.

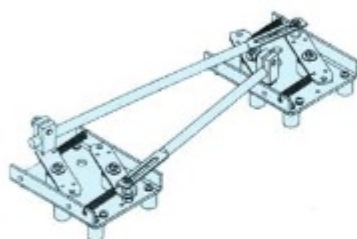


## Accessories for circuit breakers

1



Cable type



Connecting rod type

- Mechanical interlock (Optional configuration)  
It is installed on the right side of drawer base to enable various opening and closing configurations to be obtained between two or three circuit breakers.  
The mechanical interlock is installed by user.

- Two types of mechanical interlock are available:

- Cable type
- Connecting rod type

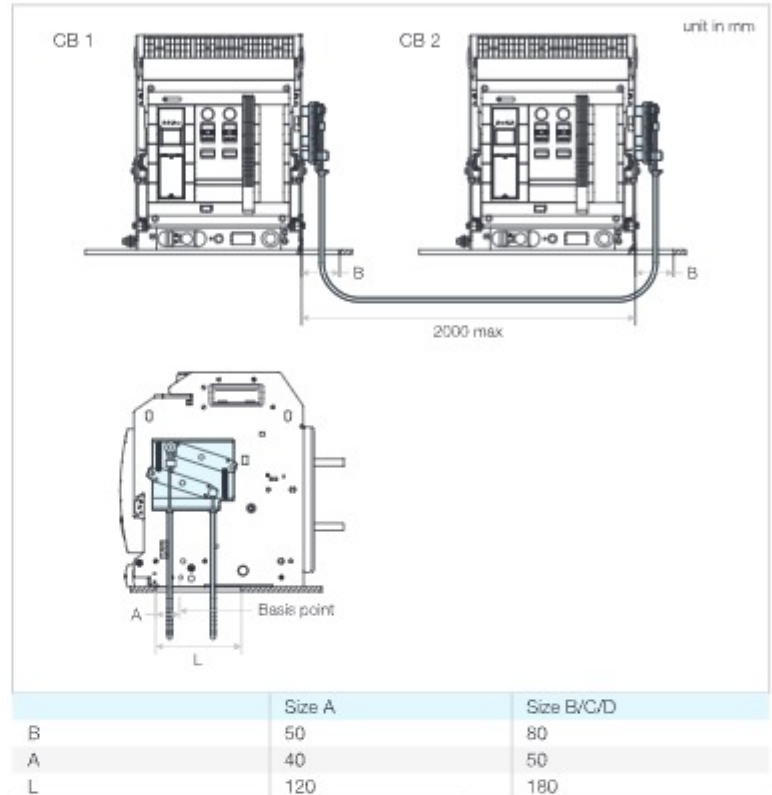
- Four types of interlock configuration are available:

Possible running status	Typical application																								
<p>Type A</p> <p>Two circuit breakers can't be in closed position at the same time.</p> <table border="1"> <thead> <tr> <th>CB 1</th> <th>CB 2</th> </tr> </thead> <tbody> <tr> <td>O</td> <td>O</td> </tr> <tr> <td>O</td> <td>I</td> </tr> <tr> <td>I</td> <td>O</td> </tr> </tbody> </table>	CB 1	CB 2	O	O	O	I	I	O																	
CB 1	CB 2																								
O	O																								
O	I																								
I	O																								
<p>Type B</p> <p>One out of three interlocked circuit breakers can be closed.</p> <table border="1"> <thead> <tr> <th>CB 1</th> <th>CB 2</th> <th>CB 3</th> </tr> </thead> <tbody> <tr> <td>O</td> <td>O</td> <td>O</td> </tr> <tr> <td>I</td> <td>O</td> <td>O</td> </tr> <tr> <td>O</td> <td>I</td> <td>O</td> </tr> <tr> <td>O</td> <td>O</td> <td>I</td> </tr> </tbody> </table>	CB 1	CB 2	CB 3	O	O	O	I	O	O	O	I	O	O	O	I										
CB 1	CB 2	CB 3																							
O	O	O																							
I	O	O																							
O	I	O																							
O	O	I																							
<p>Type C</p> <p>Two circuit breakers can be closed if the third is open. The latter can only be closed when the two circuit-breakers are open.</p> <table border="1"> <thead> <tr> <th>CB 1</th> <th>CB 2</th> <th>CB 3</th> </tr> </thead> <tbody> <tr> <td>O</td> <td>O</td> <td>O</td> </tr> <tr> <td>I</td> <td>O</td> <td>O</td> </tr> <tr> <td>O</td> <td>I</td> <td>O</td> </tr> <tr> <td>I</td> <td>O</td> <td>I</td> </tr> <tr> <td>O</td> <td>O</td> <td>I</td> </tr> </tbody> </table>	CB 1	CB 2	CB 3	O	O	O	I	O	O	O	I	O	I	O	I	O	O	I							
CB 1	CB 2	CB 3																							
O	O	O																							
I	O	O																							
O	I	O																							
I	O	I																							
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<p>Type D</p> <p>Two out of three circuit breakers can be closed at the same time.</p> <table border="1"> <thead> <tr> <th>CB 1</th> <th>CB 2</th> <th>CB 3</th> </tr> </thead> <tbody> <tr> <td>O</td> <td>O</td> <td>O</td> </tr> <tr> <td>I</td> <td>O</td> <td>O</td> </tr> <tr> <td>O</td> <td>I</td> <td>O</td> </tr> <tr> <td>O</td> <td>O</td> <td>I</td> </tr> <tr> <td>I</td> <td>I</td> <td>O</td> </tr> <tr> <td>O</td> <td>I</td> <td>I</td> </tr> <tr> <td>I</td> <td>O</td> <td>I</td> </tr> </tbody> </table>	CB 1	CB 2	CB 3	O	O	O	I	O	O	O	I	O	O	O	I	I	I	O	O	I	I	I	O	I	
CB 1	CB 2	CB 3																							
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Accessories for circuit breakers

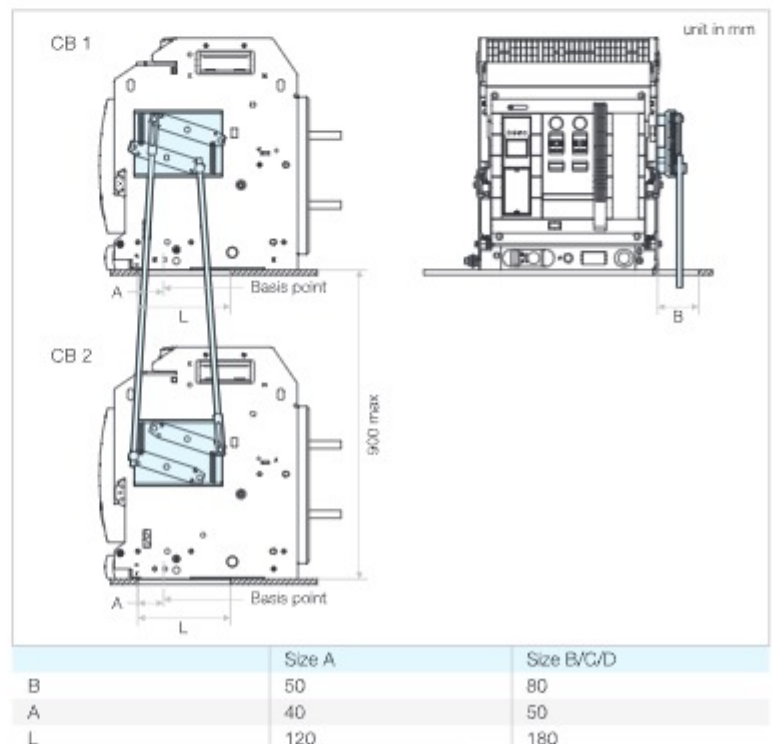
- Mechanical interlock (Optional configuration)
- Cable type mechanical interlock for two horizontal installed circuit breakers

Dimensions



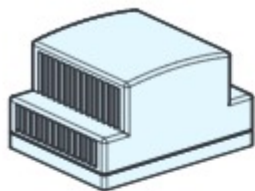
- Connecting rod type mechanical interlock for two vertical installed circuit breakers

Dimensions



## Accessories for electronic trip units

1



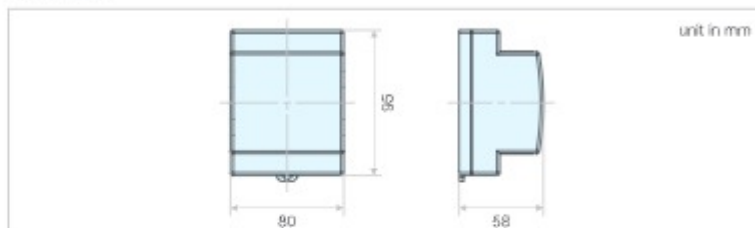
- DC power supply module (optional)

If the control voltage is DC 220 V or DC 110 V, a DC power supply module is necessary.

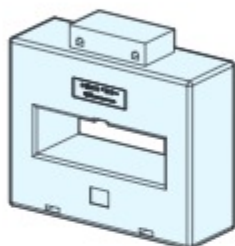
The DC power supply module can be installed on 35 mm DIN-rail.

Characteristics	
Input voltage	DC 220 V $\pm$ 15% or DC 110 V $\pm$ 15%
Output voltage	DC 24 V $\pm$ 5%
Output current	1.5 A

### Dimensions



Electrical diagram reference: Wiring diagram



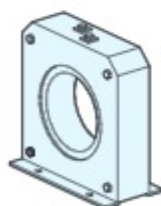
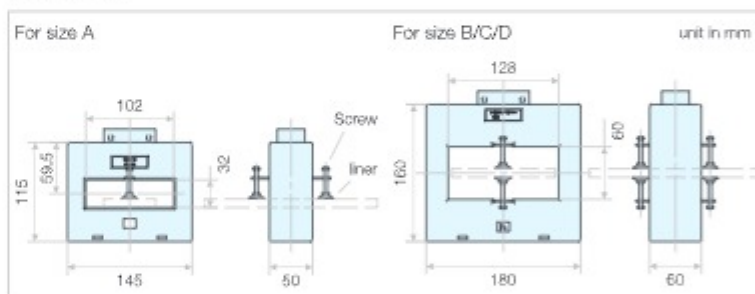
- External current transformer for neutral conductor

This is only for 3-pole circuit breakers;

According to requirements of particular situations, connecting a current transformer to the electronic trip unit, to enable the protection of the neutral conductor. A different electronic trip unit is needed accordingly.

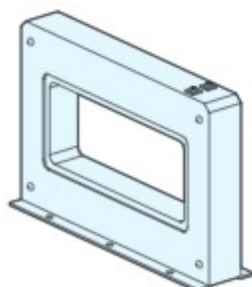
The distance between current transformer and circuit breaker should be less than 2 meters.

### Dimensions:



- External current transformer for earth-fault protection

In the case of grounding connection named Source Ground Return (type W), the external current transformer can be used to check the current on the earthing cables and protect the circuits from both upstream and downstream from the earth-fault at the same time. The distance between current transformer and circuit-breaker should be less than 10 meters.

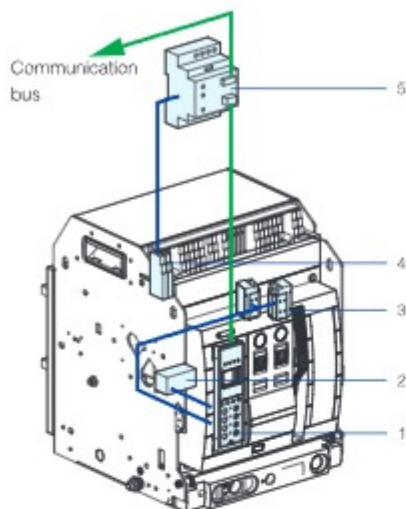


- External current transformer for differential protection

It is used in the case of grounding connection is with differential protection. The distance between current transformer and circuit breakers should be less than 2 meters.

**Accessories for communication**

Including software, data transformer, communication module, data collector, relay module, power-supply module, and kinds of communication cables etc.



Structure and network

- 1. Internal communication module
- 2. Micro switch (Open/Close, fault trip, Ready to close, charged)
- 3. Coil of close and open
- 4. Signal of connected, test and separated
- 5. External communication module

- For fixed circuit breakers, the communication COM option is made up of:
  - an internal communication module installed behind the electronic trip unit and signals are given by auxiliary contacts (open/close, fault trip, ready to close, charged) which is connected to the communicating voltage release.
- For withdrawable circuit breakers, the communication COM option is made up of:
  - an internal communication module installed behind the electronic trip unit and signals are given by auxiliary contacts (open/close, fault trip, ready to close, charged) which is connected to the communicating voltage release.
  - an external communication module with signals given by 3-position micro switch (connected, test, separated).
- The status indication by the COM option is independent of the circuit breaker indication contacts. These contacts remain available for conventional uses.
- Internal communication module
 

This module is installed behind the electronic trip unit and is independent of the control unit. It receives and transmits information on the communicating network. An infra-red link transmits data between the control unit and the communication module.
- External communication module
 

This module makes it possible to address the frame and to maintain the address when the circuit breaker is in the separated position. A power-supply with DC 24 V is needed.
- Communication voltage release of open/close
 

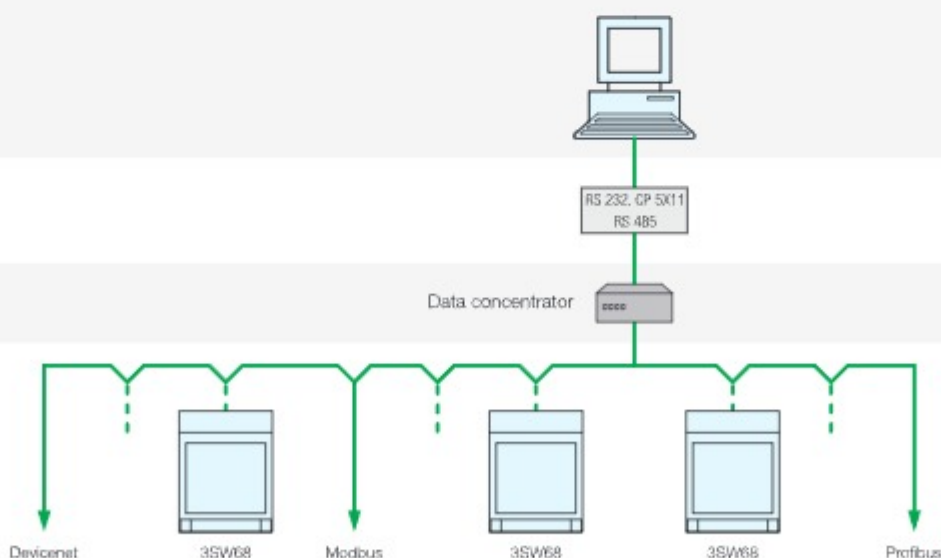
The communication voltage release of open/close is connected to the internal communication module. The remote-tripping function (the second voltage release of open or under voltage release) are independent of the communication option. They are not connected to the internal communication module.

**Software**

**Communication port**

**Communication bus**

**circuit breakers**



- Hard wire
- Communication port

# Air Circuit Breakers

## Series 3SW68



### Installation - Installation environment

- Utilization category (according to IEC 60947-2)

Main circuit:

- type A: without selective protection
- type B: with selective protection
- AC-3: motor protection

Auxiliary circuit:

- AC-15: for controlling the electromagnet load which capacity is higher than 72 VA
- DC-13: for controlling the DC electromagnet load

- Electromagnetic compatibility (EMC)

Applies to environment A: relates to low-voltage non-public or industrial networks/locations/installations including highly disturbing sources.

- Ambient temperature

The circuit breakers can be operated in temperature range from -5 °C to + 40 °C, and the average temperature in 24 hours should below + 35 °C. Under certain installation conditions, the circuit breakers can be operated at higher temperature than the reference temperature of + 40 °C. In this case the current-carrying capacity of the circuit breaker may be lower than the rated current-carrying capacity at the reference temperature, therefore the derating rated current shown in the table must be applied.

Size	Rated frame current I <sub>nm</sub> (A)	Rated current (A)	Maximum rated current under different ambient temperature		
			+ 40 °C (A)	+ 50 °C	+ 60 °C
A	1600	200	200	200	200
		400	400	400	400
		630	630	630	630
		800	800	800	800
		1000	1000	900	800
		1250	1250	1250	1250
B	2500	1600	1600	1440	1280
		630	630	630	630
		800	800	800	800
		1000	1000	900	800
		1250	1250	1250	1250
		1600	1600	1600	1600
C	4000	2000	2000	2000	2000
		2500	2500	2500	2500
		2900	2900	2900	2880
		3200	3200	3200	2880
		3600	3600	3240	2880
		4000	4000	3600	3200
D	6300	4000	4000	4000	4000
		5000	5000	4500	4000
		6300	6300	5670	5040

- Altitude

The rated performance of circuit breaker remains unchanged with altitude up to 2000 meters. Beyond this altitude, the properties of the atmosphere in terms of composition, dielectric capacitance, cooling power and pressure can vary, and effects the rated operational voltage, rated insulating voltage and rated current, which are subject to derating.

Altitude	m	2000	3000	4000	5000
Rated insulating voltage	V	1000	900	700	600
Max. operational voltage	V	690	590	520	460
Rated current	% I <sub>n</sub>	100	98	95	93

- Atmospheric conditions

- Humidity: air relative humidity no higher than 50 % when the ambient temperature is + 40 °C. The higher relative humidity is allowable under lower ambient temperature. In the most humidity month, the average relative humidity no higher than 90 %, and the average lowest temperature no lower than + 25 °C, special measures should be adopted also for the condensation occasionally produced due to the temperature change.

- Pollution degree: 3

Note:

User should negotiate with manufacturer about the circuit breakers which may be used under conditions of over + 40 °C or below - 25 °C or the altitude higher than 2000 meters.

### Installation - Installation environment

- Overvoltage category
  - Main circuit: IV
  - Coil of under-voltage release: IV
  - Primary coil of power transformer: IV
  - Auxiliary circuit, control circuit: III
  
- Other installation conditions
  - The circuit breaker should be installed under the conditions without risks of explosive, without conductive dust, and without gas which would corrode metal or destroy the insulation.
  - The vertical gradient should be less than 5 °C.
  
- Power loss and resistance
 

The power loss of a circuit breaker is the total power consumption between the input and output of main circuits, usually they are measured under the rated frame current.

The resistance between input/output is the value measured per pole (cold state).

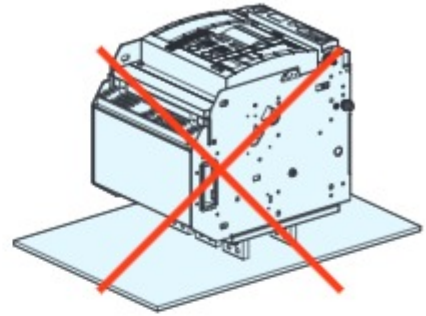
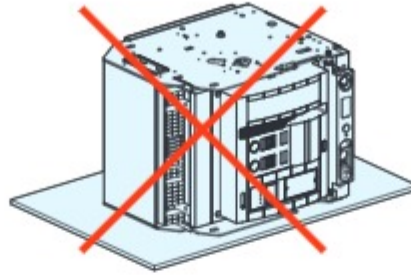
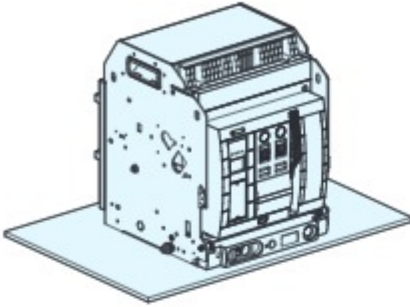
Version		Withdrawable circuit breaker		Fixed circuit breaker	
Size	Rated frame current (A)	Power loss (W)	Input/output resistance (μΩ)	Power loss (W)	Input/output resistance (μΩ)
A	1600	460	36	220	26
B	2500	600	20	260	12
C	4000	900	12	650	8
D	6300	1200	8	1050	5

# Air Circuit Breakers Series 3SW68

## Installation - Installation environment

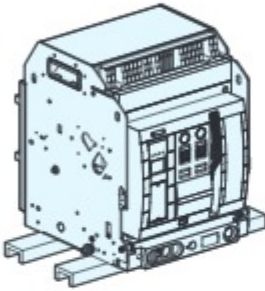
- Permitted placing of circuit breaker before installing

1



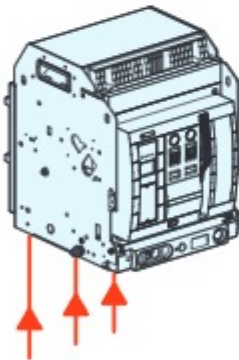
- Installation position

The circuit breaker is required to be installed on the flat surface which is hard without deformation, and make the weight evenly distributed on it.



- Power incoming

The circuit breaker is available to connect the incoming power from either the top side or the bottom side without any impact on performance.



### Installation - Power connection

- Clamping

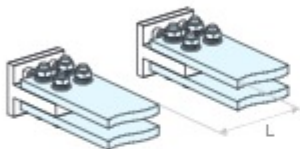
The copper busbars connected to the circuit breaker should be fixed with steel nuts and bolts, class 8.8, and with proper tightening torque which are shown in the table below, over-tightening may have the same consequences as under-tightening and is prohibited.

Example



Ø Nominal (mm)	Ø Drilling (mm)	Tightening torques	
		with grower or flat washers (Nm)	with contact or corrugatec washers
10	11	37.5	50
12	13	45	60

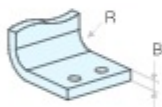
- Isolation distance



Rated impulse withstand voltage Uimp (kV)	L minimum (mm)
12	14

- Busbar bending

When bending busbars maintain the radius indicated below (a smaller radius would cause cracks).



Dimensions (mm)

B	Radius of curvature R	
	Minimum	Recommended
5	5	7.5
10	15	18 - 20

- Busbar sizing and quantity

Size of circuit breaker	Rated frame current	Rated current (A)	Thickness	Width	Quantity per pole
A	1600	200	5	50	1
		400	5	50	1
		630	5	50	2
		800	5	50	2
		1000	5	50	3
		1250	5	50	3
		1600	5	50	4
B	2500	630	5	80	1
		800	5	60	2
		1000	5	60	2
		1250	5	80	2
		1600	10	60	2
		2000	10	80	2
		2500	10	80	3
C	4000	2000	5	100	3
		2500	10	100	2
		2900	10	100	3
		3200	10	100	3
		3600	10	100	4
		4000	10	100	4
		6300	10	100	6
D	6300	4000	10	100	4
		5000	10	100	6
		6300	10	100	6 (vertical)



# Air Circuit Breakers

## Series 3SW68

### Installation - Power connection

There are four types of connection are available:

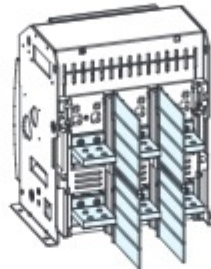
- Horizontal connection or vertical connection
- Front connection
- Mix connection
- Spread connection

1

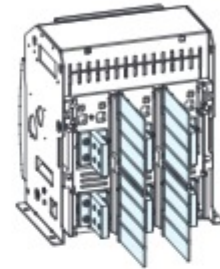
#### Horizontal connection or vertical connection

- For size A/B, just simply turn the horizontal terminals at 90° to make vertical terminals
- For size D, only vertical connections available
- Phase separators are optional depending on user's requirement

Horizontal connection

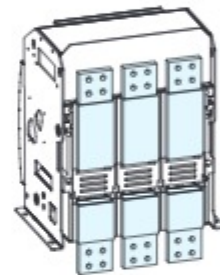


Vertical connection



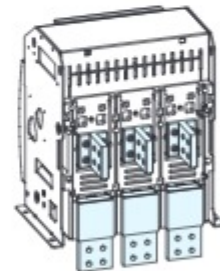
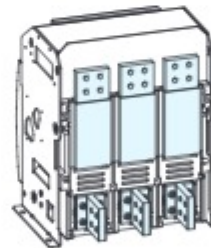
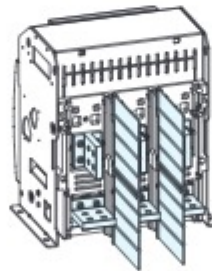
#### Front connection

- Front connection is available for circuit breakers with rated current up to 4000 A, but excluding the circuit-breakers of size A



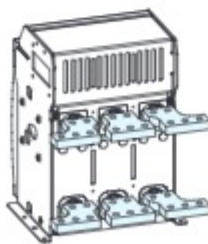
#### Mixed connection

- For the mixed connections involved front connections, only available for the circuit breakers with rated current up to 4000 A, but excluding the circuit breakers of size A.

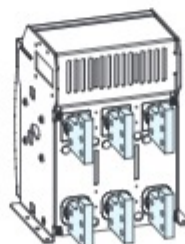


#### Spread connection (available for size A only)

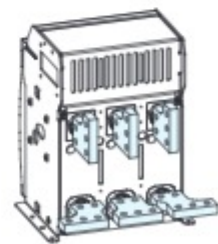
Horizontal



Vertical

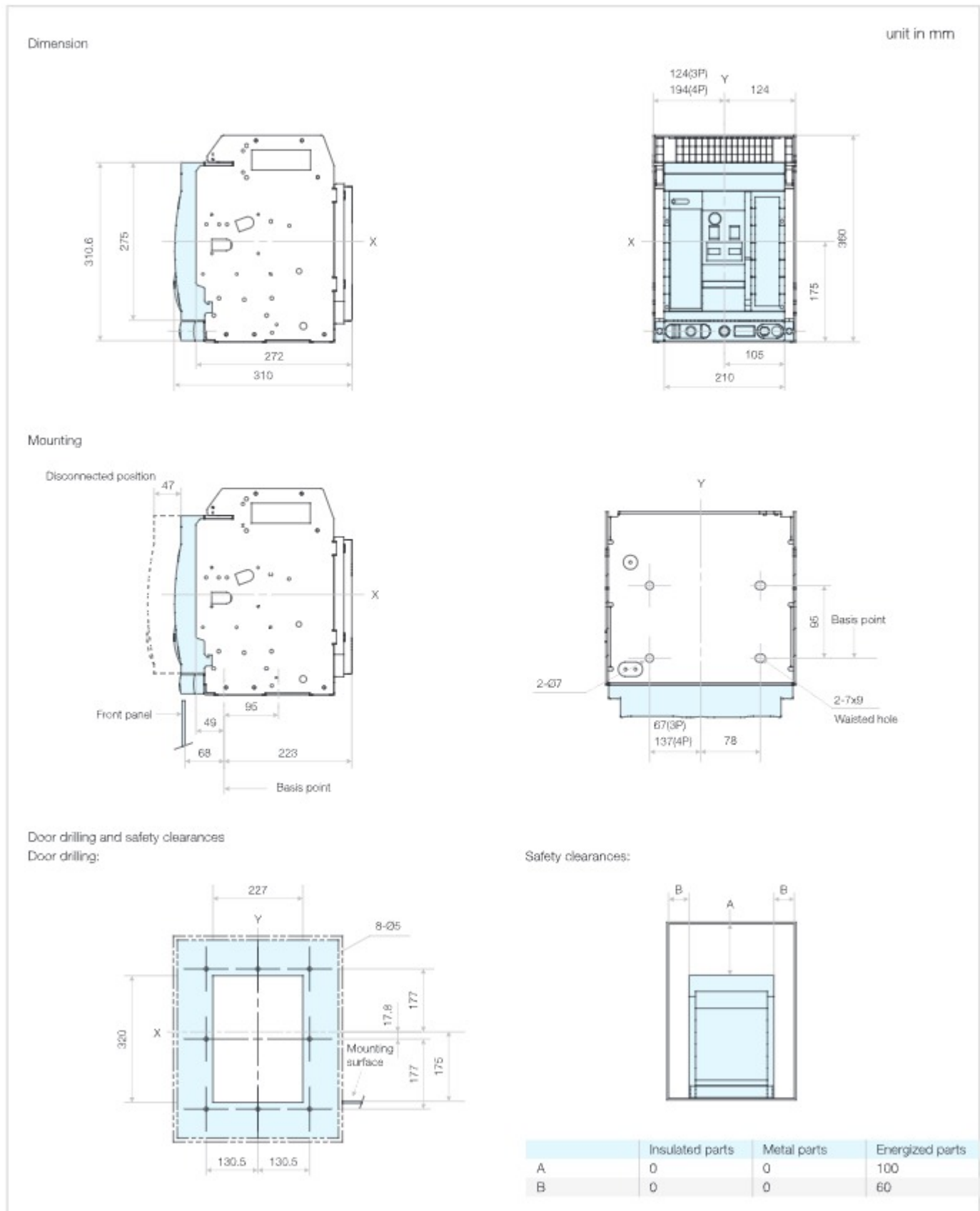


Mixed



**Dimensions**

Size A (3SW68-1600) withdrawable circuit breaker, 3-pole/4-pole



Note:  
"X" and "Y" are the symmetry planes of circuit breaker cover.

# Air Circuit Breakers Series 3SW68

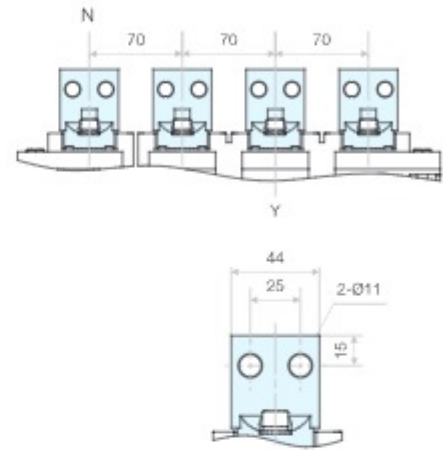
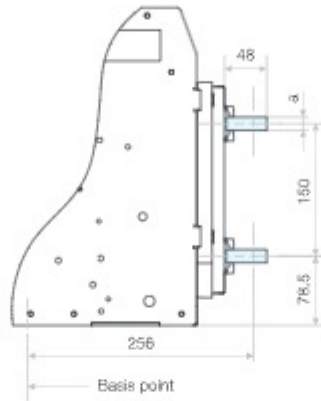
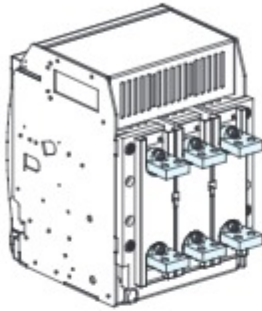
## Dimensions

Size A (3SW68-1600) withdrawable circuit breaker, 3-pole/4-pole

1

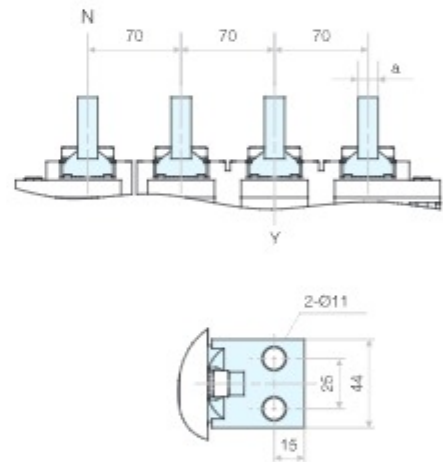
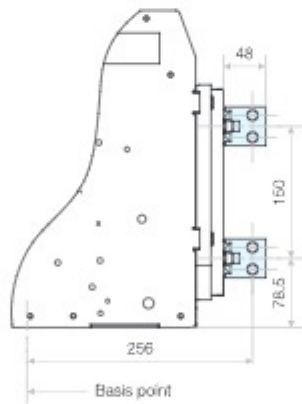
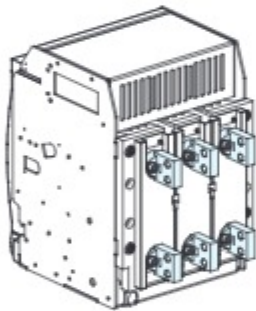
Horizontal rear connections (standard configuration)

unit in mm



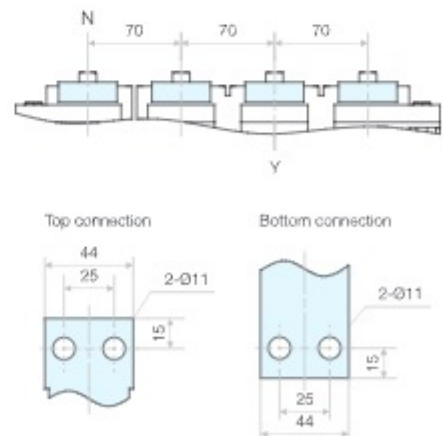
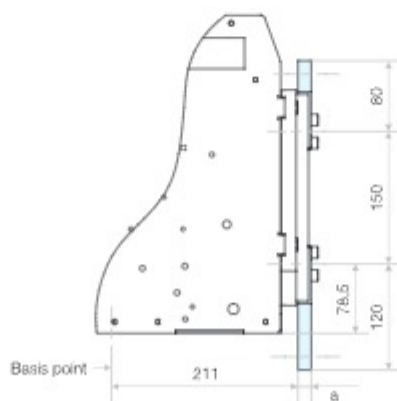
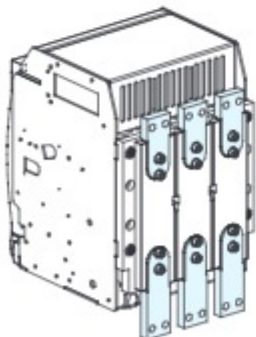
In	a
200 - 1000 A	8
1250 - 1600 A	15

Vertical rear connections



In	a
200 - 1000 A	8
1250 - 1600 A	15

Front connections

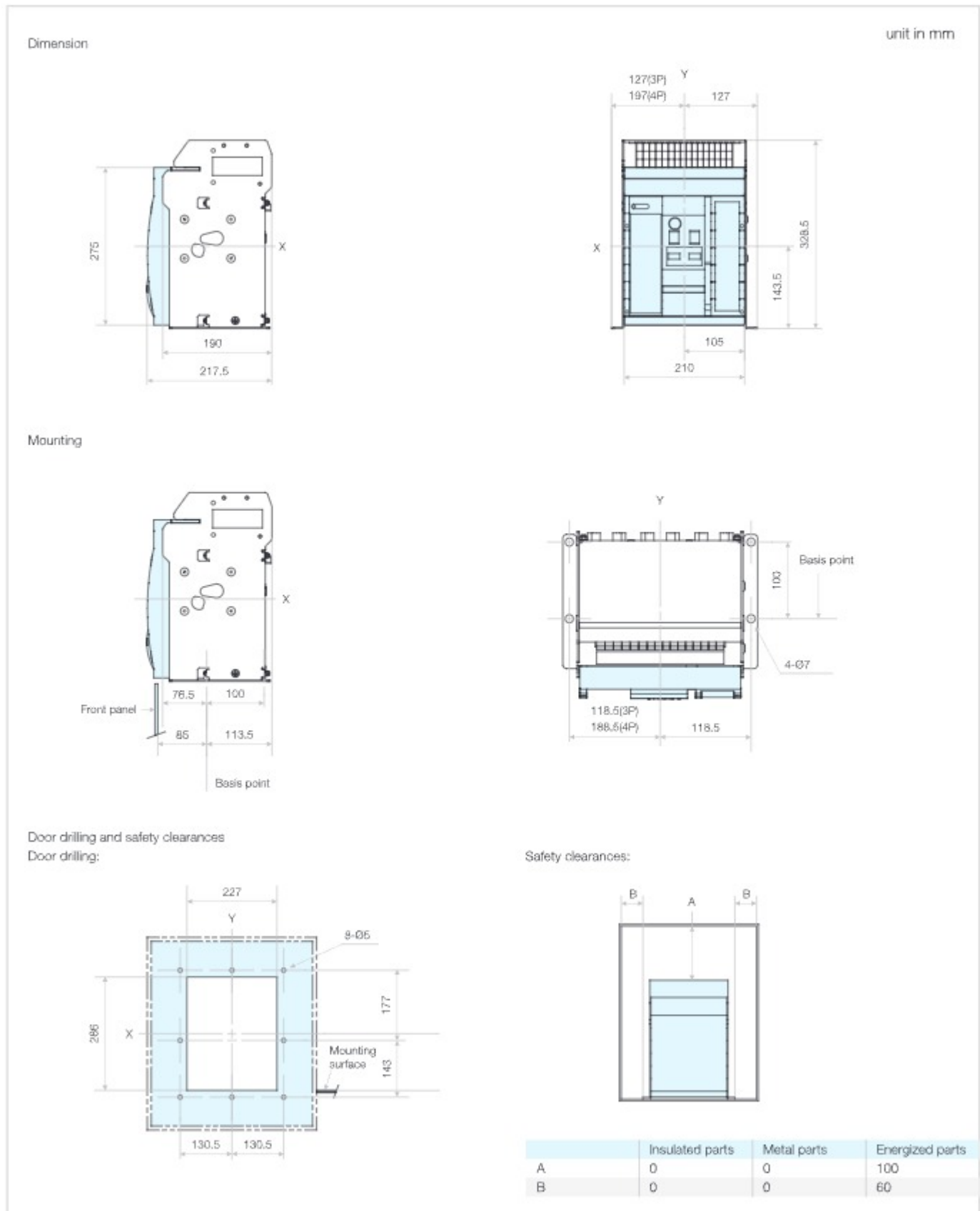


In	a
200 - 1000 A	8
1250 - 1600 A	15

Note:  
"Y" is the symmetry plane of circuit breaker cover.

**Dimensions**

Size A (3SW68-1600) fixed circuit breaker, 3-pole/4-pole



Note:  
"X" and "Y" are the symmetry planes of circuit breaker cover.

# Air Circuit Breakers Series 3SW68

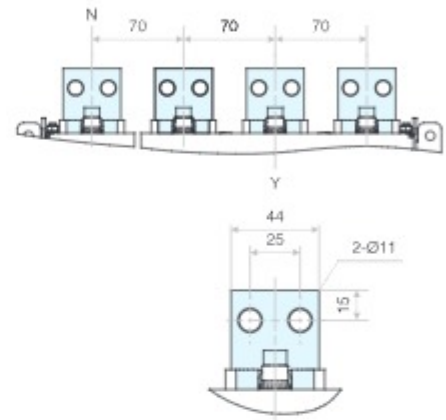
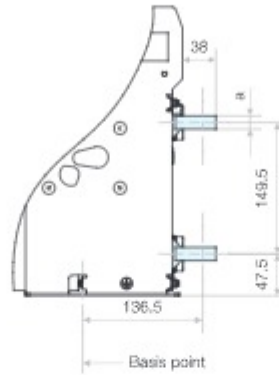
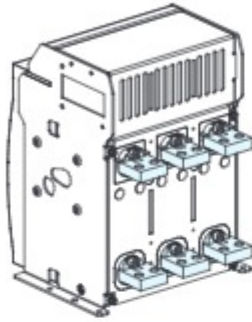
## Dimensions

Size A (3SW68-1600) fixed circuit breaker, 3-pole/4-pole

1

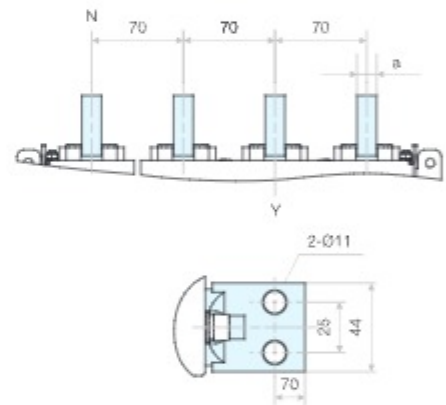
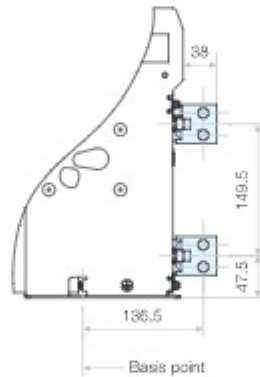
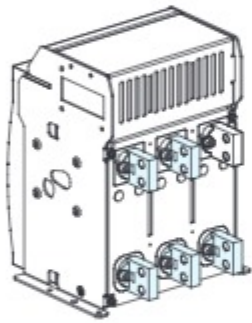
Horizontal rear connections (standard configuration)

unit in mm



In	a
200 - 1000 A	8
1250 - 1600 A	15

Vertical rear connections

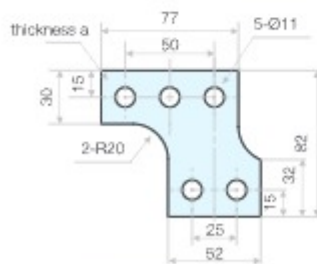
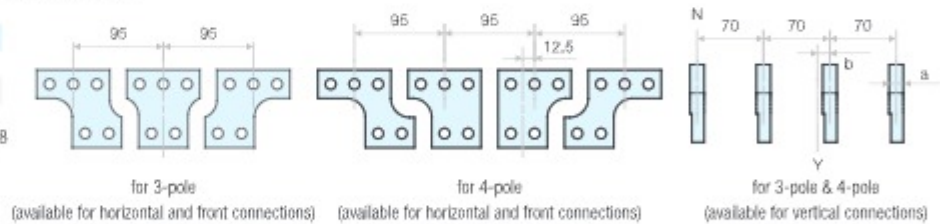


In	a
200 - 1000 A	8
1250 - 1600 A	15

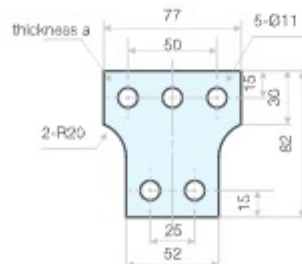
Spread busbar (available for withdrawable circuit breakers also)

In	a	b
200 - 1000 A	8	6
1250 - 1600 A	15	13

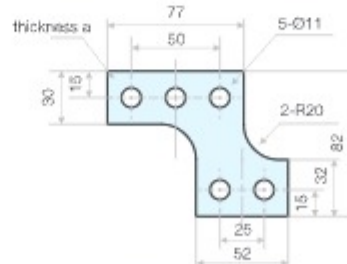
Note: Recommended connection screws: M10 class 8.8  
Tightening torque: 50 Nm with contact washer



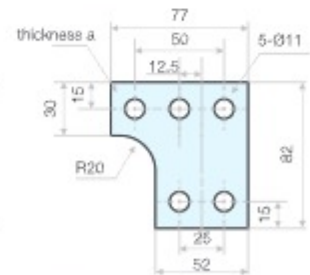
Left or right spread connection for 3-pole



Middle spread connection for 3-pole



Left or right spread connection for 4-pole



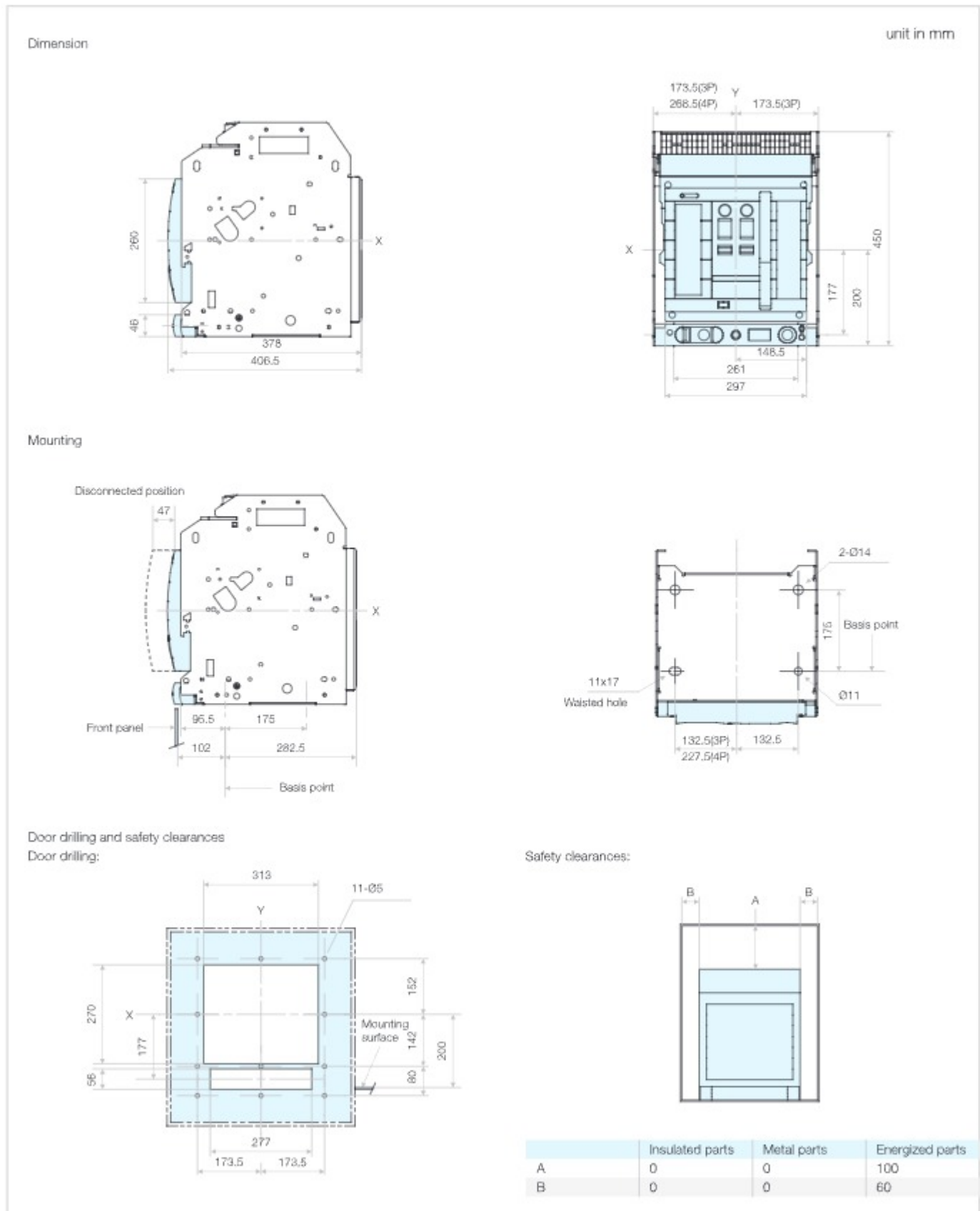
Middle spread connections for 4-pole  
Vertical spread connection

Note:

"Y" is the symmetry plane of circuit breaker cover.

**Dimensions**

Size B (3SW68-2500) withdrawable circuit breaker, 3-pole/4-pole



# Air Circuit Breakers Series 3SW68

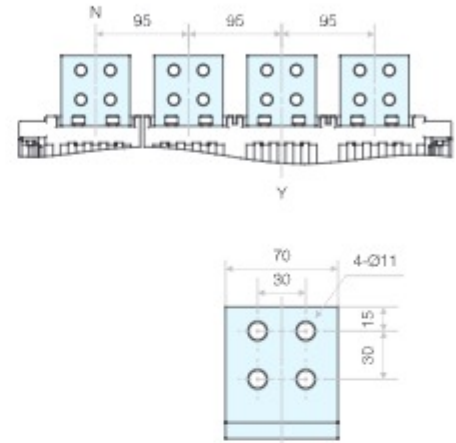
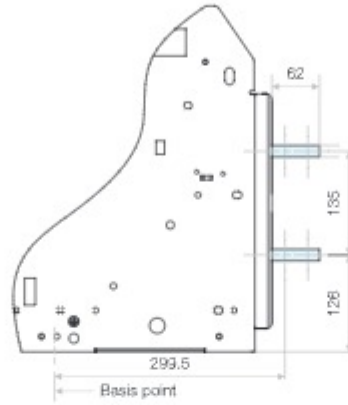
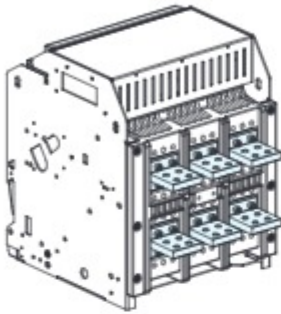
## Dimensions

Size B (3SW68-2500) withdrawable circuit breaker, 3-pole/4-pole

1

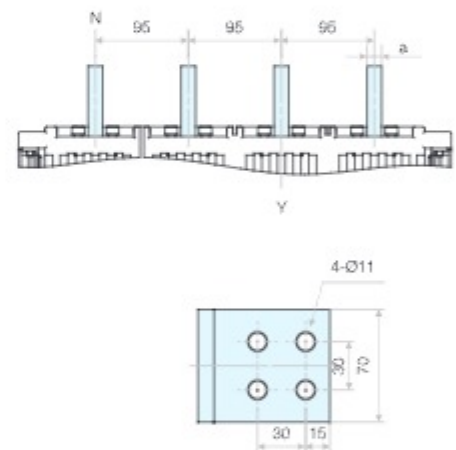
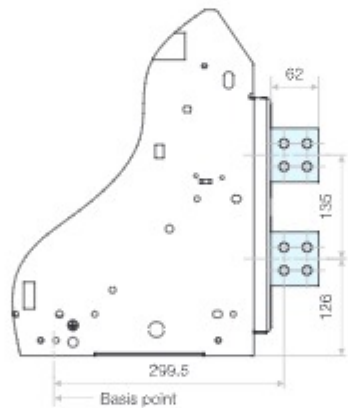
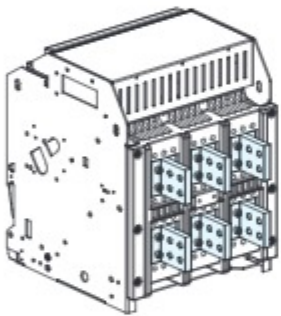
Horizontal rear connections (standard configuration)

unit in mm



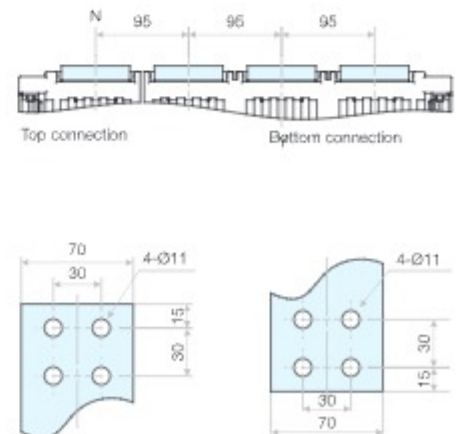
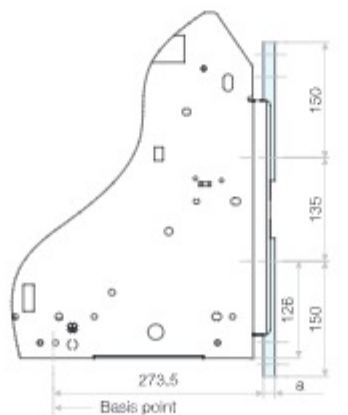
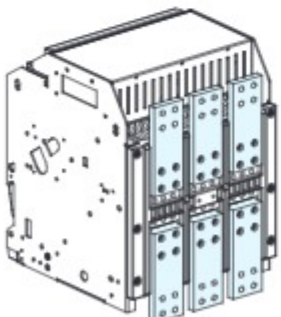
In	a
630 - 1000 A	10
1250 - 2500 A	15

Vertical rear connections



In	a
630 - 1000 A	10
1250 - 2500 A	15

Front connection



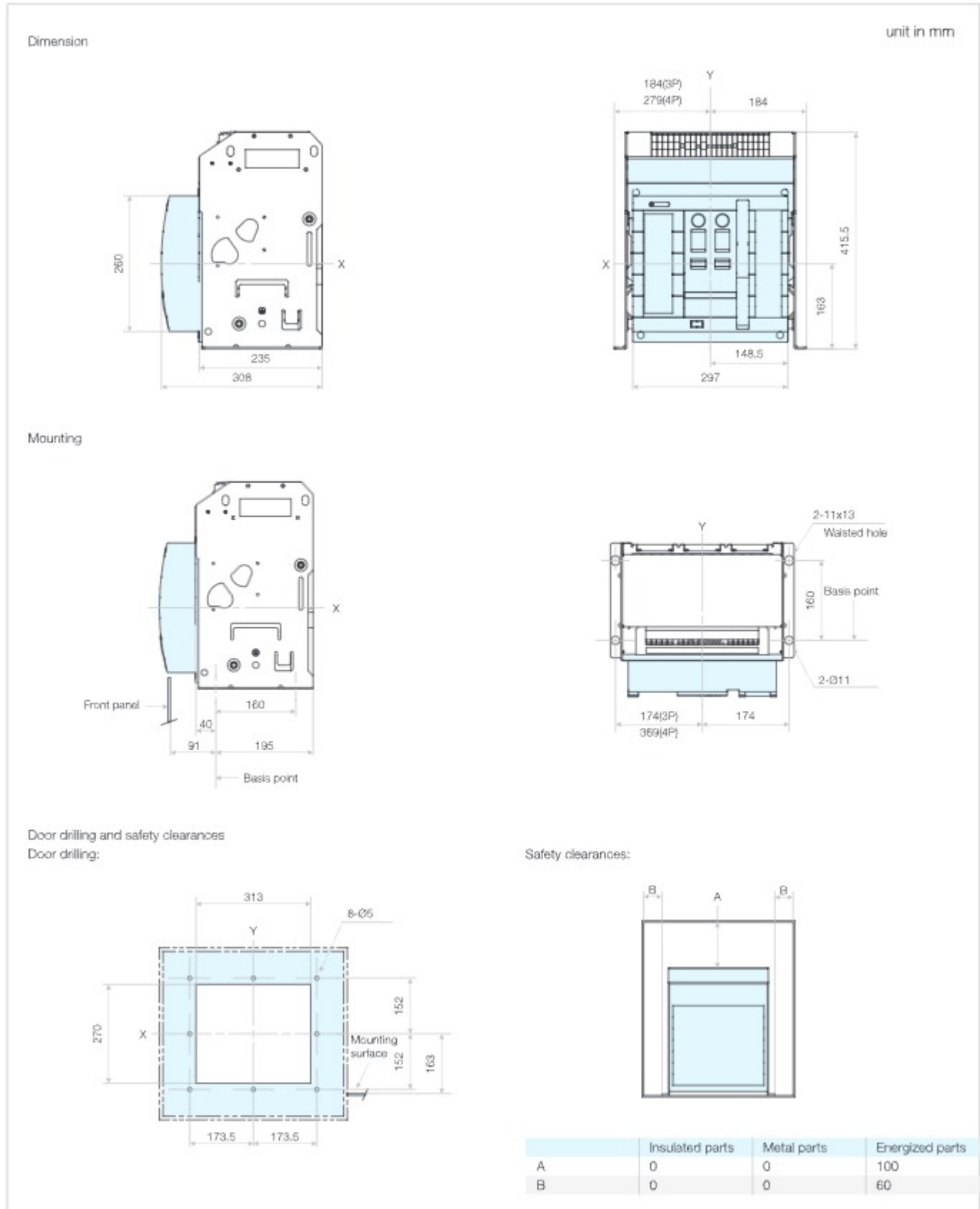
In	a
630 - 1000 A	10
1250 - 2500 A	15

Note:

"Y" is the symmetry plane of circuit breaker cover.

**Dimensions**

Size B (3SW68-2500) fixed circuit breaker, 3-pole/4-pole



Note:  
"X" and "Y" are the symmetry planes of circuit breaker cover.



# Air Circuit Breakers Series 3SW68



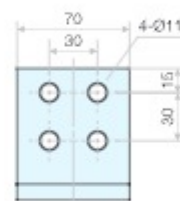
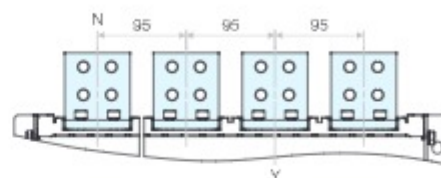
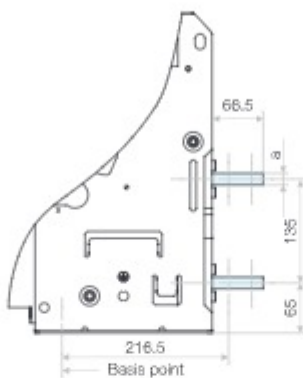
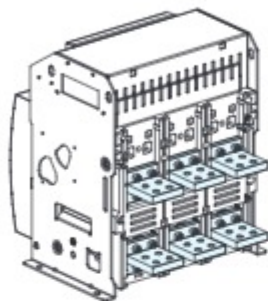
## Dimensions

Size B (3SW68-2500) fixed circuit breaker, 3-pole/4-pole

1

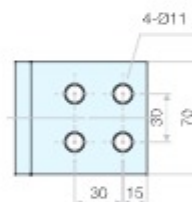
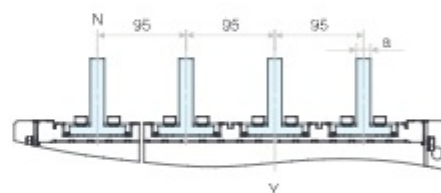
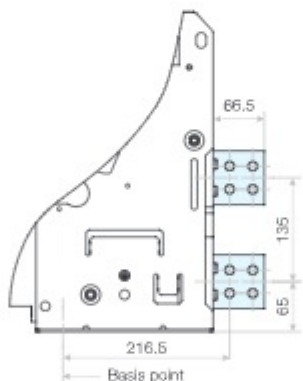
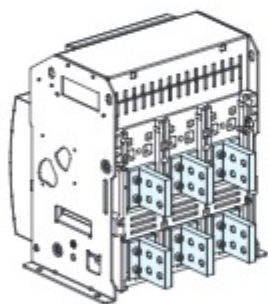
Horizontal rear connections (standard configuration)

unit in mm



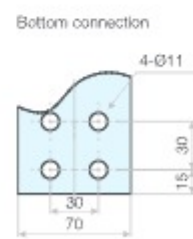
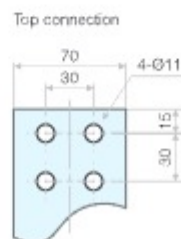
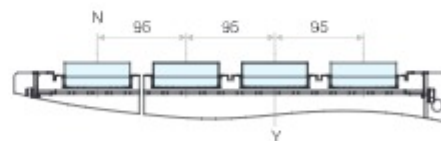
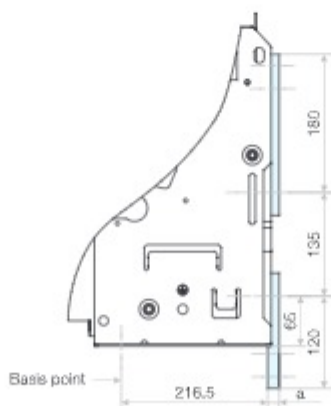
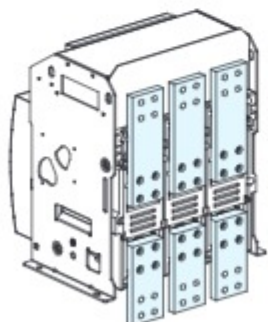
In	a
630 - 1000 A	10
1250 - 2500 A	15

Vertical rear connections



In	a
630 - 1000 A	10
1250 - 2500 A	15

Front connection



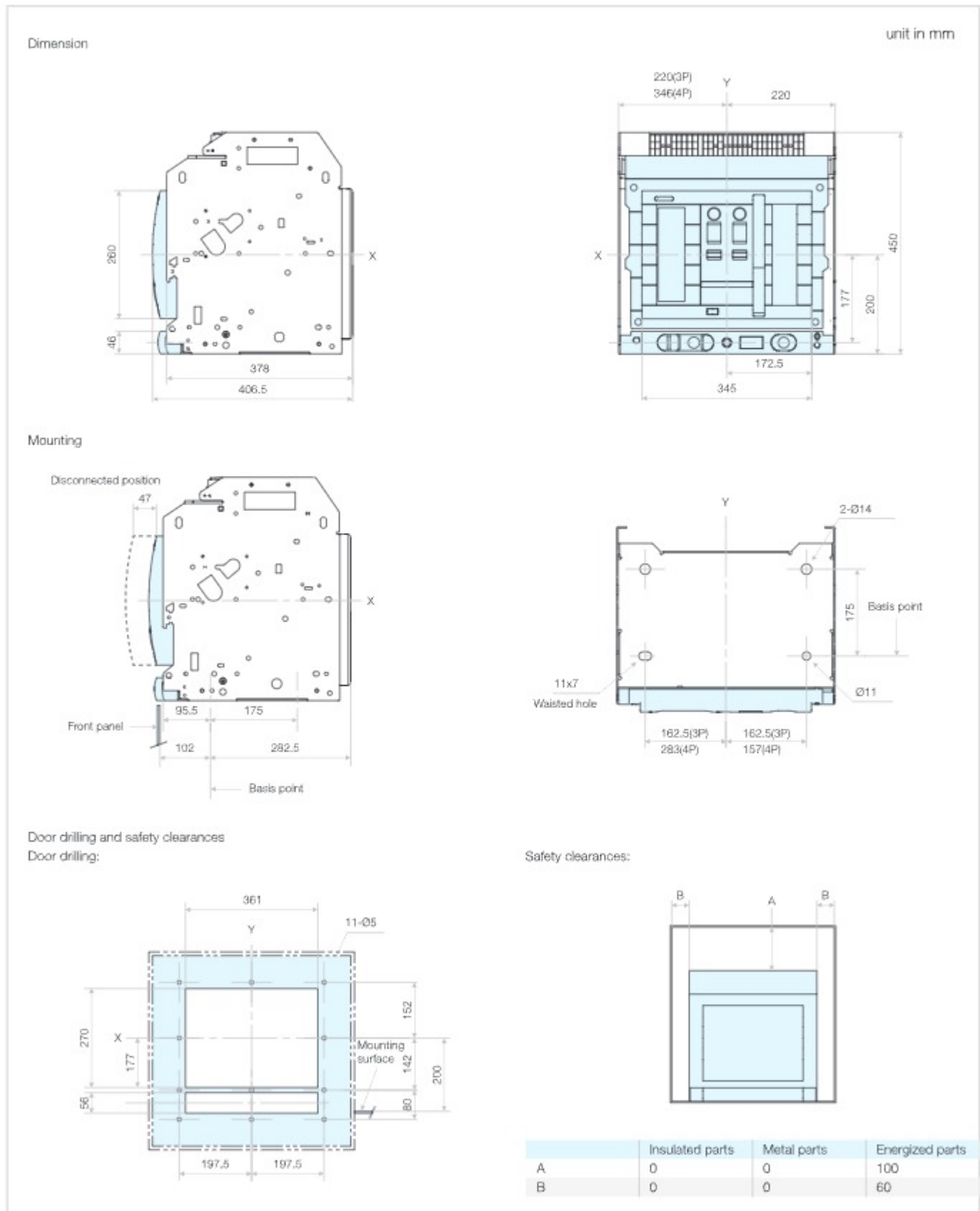
In	a
630 - 1000 A	10
1250 - 2500 A	15

Note:

"Y" is the symmetry plane of circuit breaker cover.

**Dimensions**

Size C (3SW68-4000) withdrawable circuit breaker, 3-pole/4-pole



Note:  
"X" and "Y" are the symmetry planes of circuit breaker cover.

# Air Circuit Breakers Series 3SW68

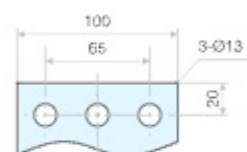
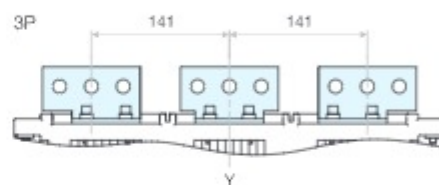
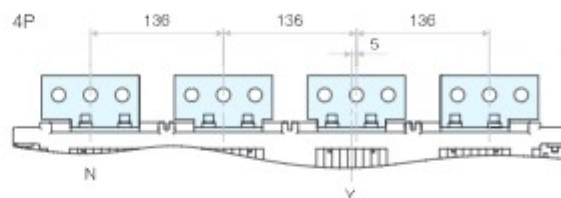
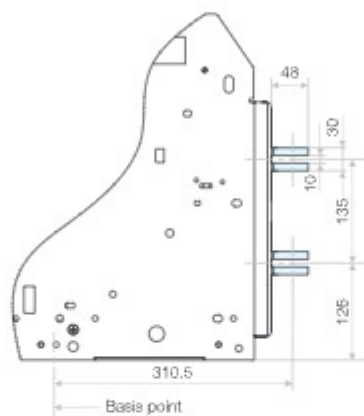
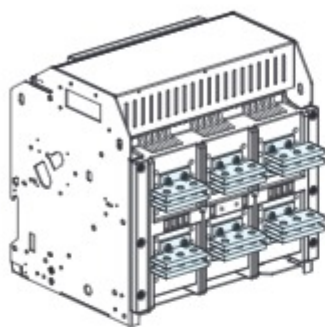
## Dimensions

Size C (3SW68-4000) withdrawable circuit breaker, 3-pole/4-pole

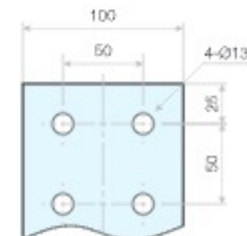
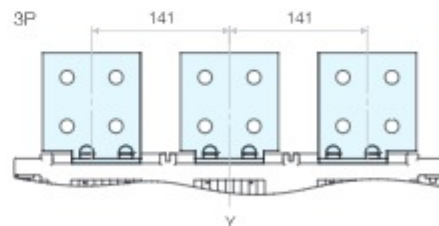
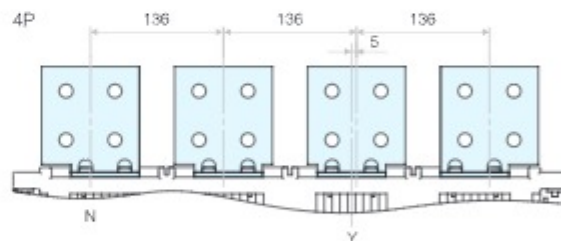
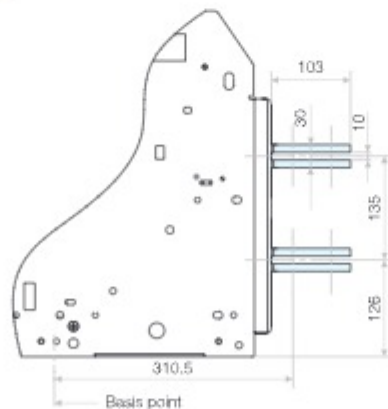
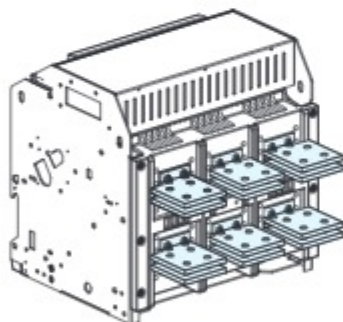
1

Horizontal rear connections for 2000 A to 3600 A (standard configuration)

unit in mm



Horizontal rear connections for 4000 A (standard configuration)



Note:

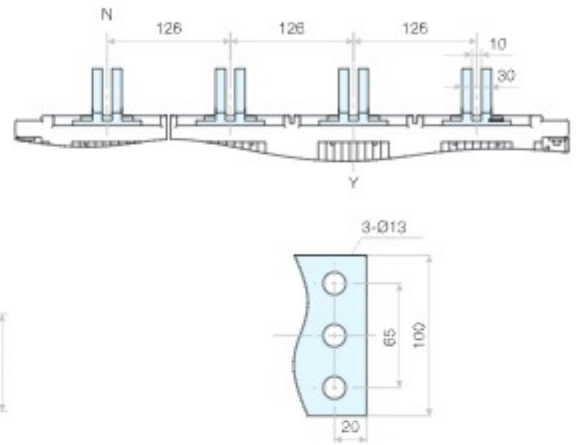
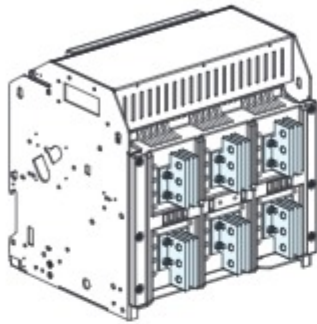
"Y" is the symmetry plane of circuit breaker cover.

Dimensions

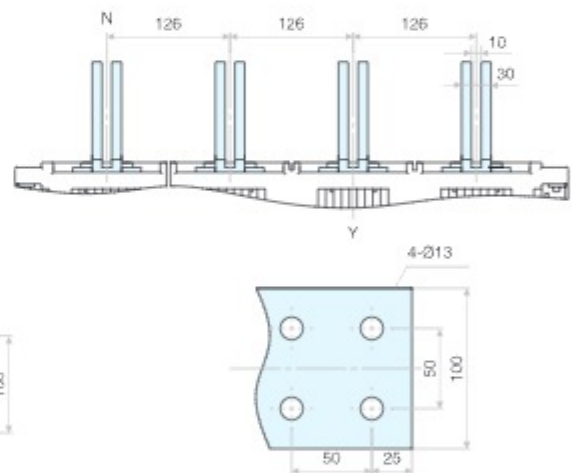
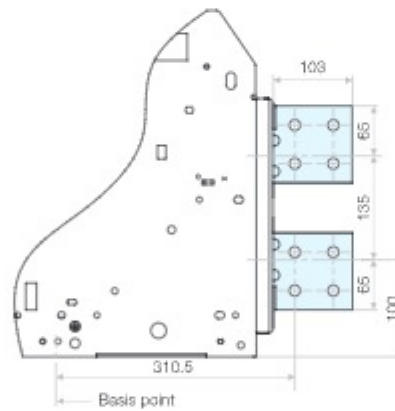
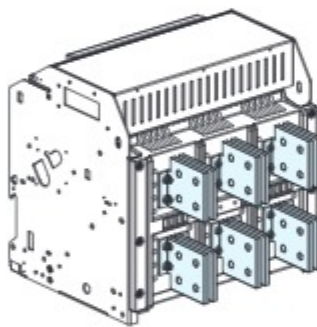
Size C (3SW68-4000) withdrawable circuit breaker, 3-pole/4-pole

Vertical rear connections for 2000 A to 3600 A

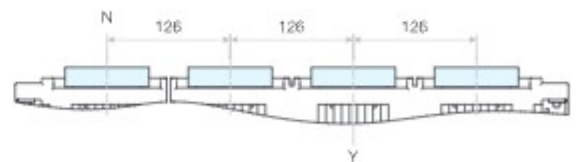
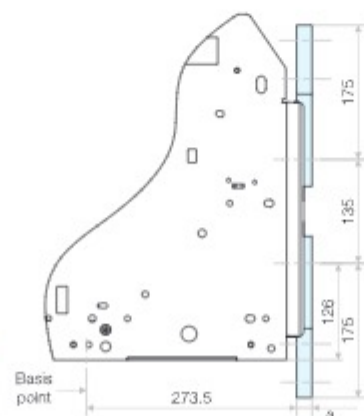
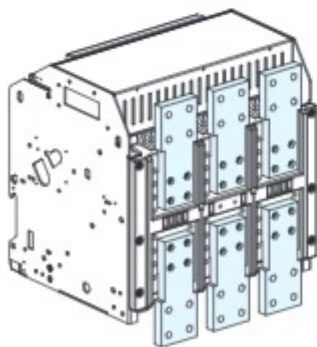
unit in mm



Vertical rear connections for 4000 A

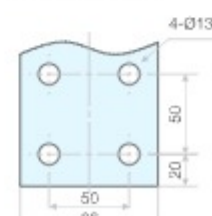
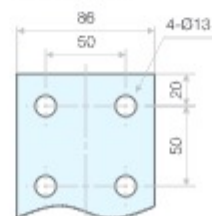


Front connection



Top connection

Bottom connection



In	a
2000 - 3600 A	15
4000 A	20

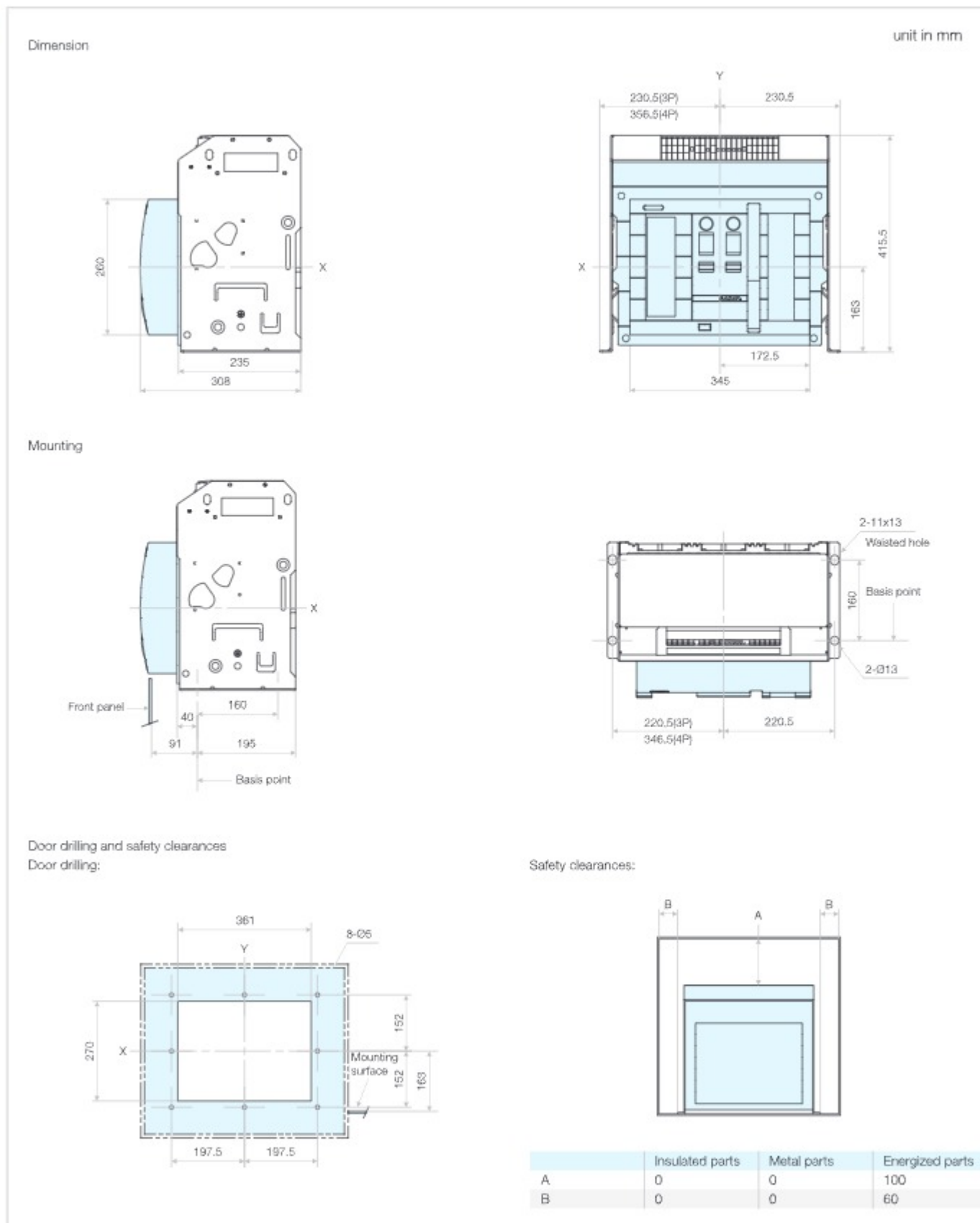
Note:  
"Y" is the symmetry plane of circuit breaker cover.

# Air Circuit Breakers Series 3SW68

## Dimensions

Size C (3SW68-4000) fixed circuit breaker, 3-pole/4-pole

1



Note:

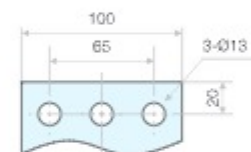
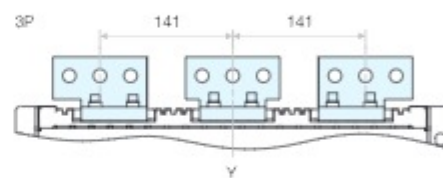
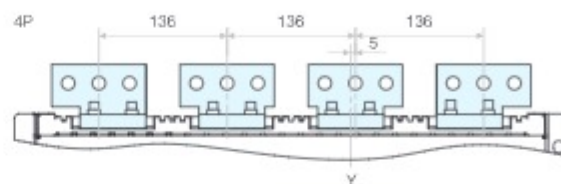
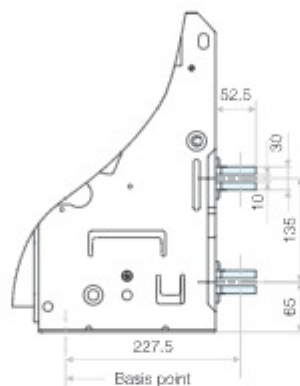
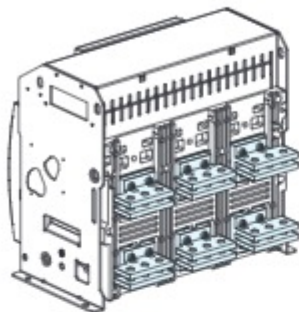
"X" and "Y" are the symmetry planes of circuit breaker cover.

**Dimensions**

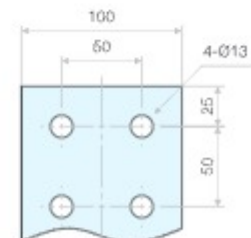
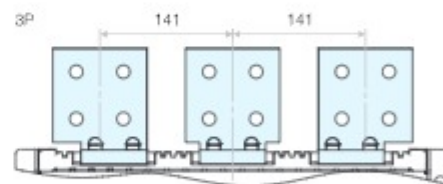
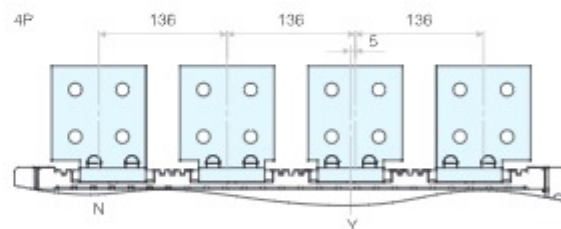
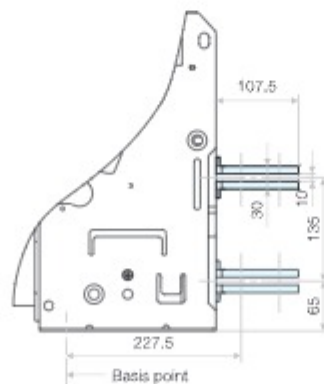
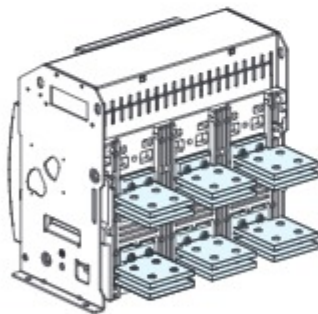
Size C (3SW68-4000) fixed circuit breaker, 3-pole/4-pole

Horizontal rear connections for 2000 A to 3600 A (standard configuration)

unit in mm



Horizontal rear connections for 4000 A (standard configuration)



Note:

"X" and "Y" are the symmetry planes of circuit breaker cover.

# Air Circuit Breakers Series 3SW68

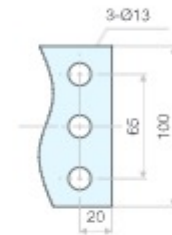
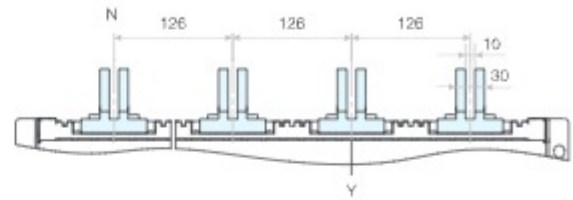
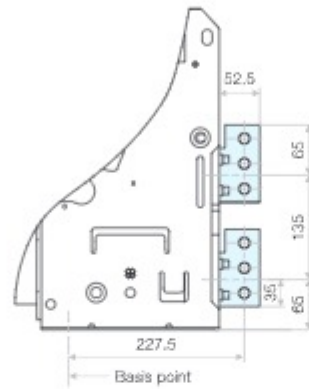
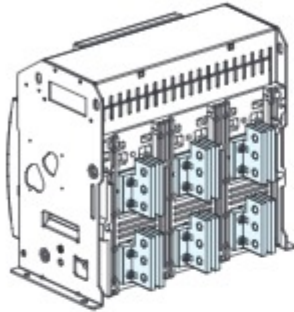
## Dimensions

Size C (3SW68-4000) fixed circuit breaker, 3-pole/4-pole

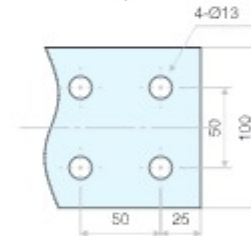
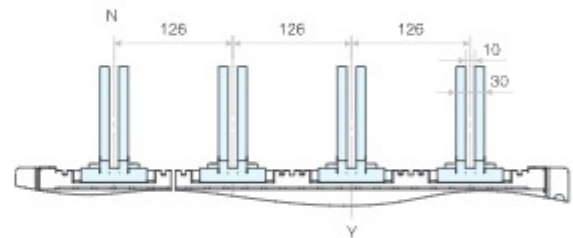
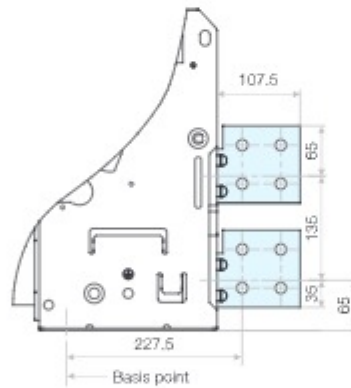
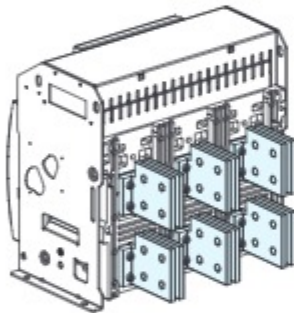
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Vertical rear connections for 2000 A to 3600 A

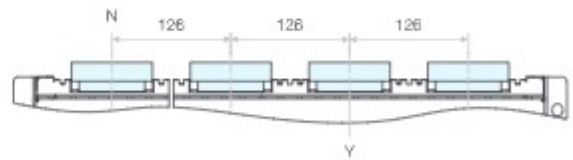
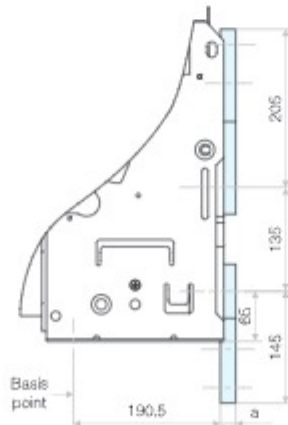
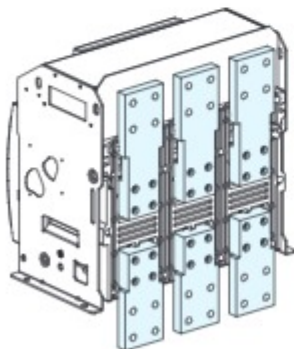
unit in mm



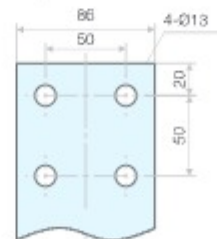
Vertical rear connections for 4000 A



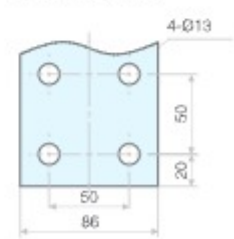
Front connection



Top connection



Bottom connection



In	a
2000 - 3600 A	15
4000 A	20

Note:

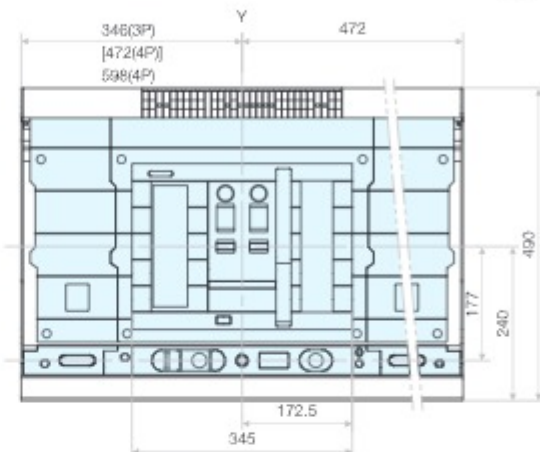
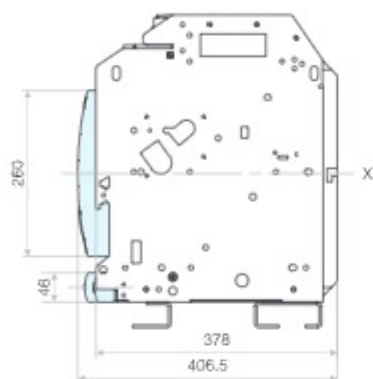
"Y" is the symmetry plane of circuit breaker cover.

**Dimensions**

Size D (3SW68-6300) withdrawable circuit breaker, 3-pole/4-pole

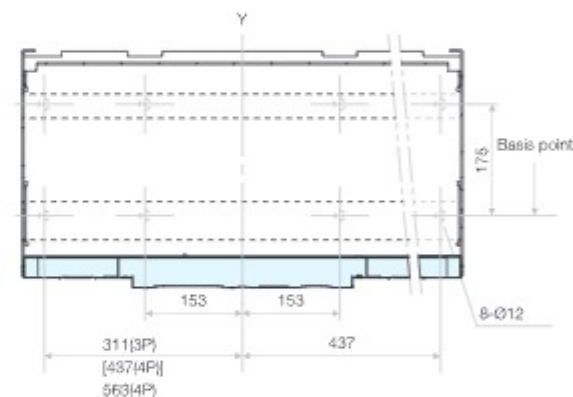
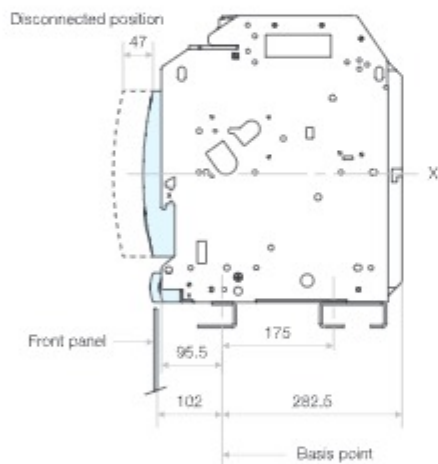
Dimension

unit in mm



Note:  
Value in [ ] is the dimension when the current of Neutral = 0,5 In.

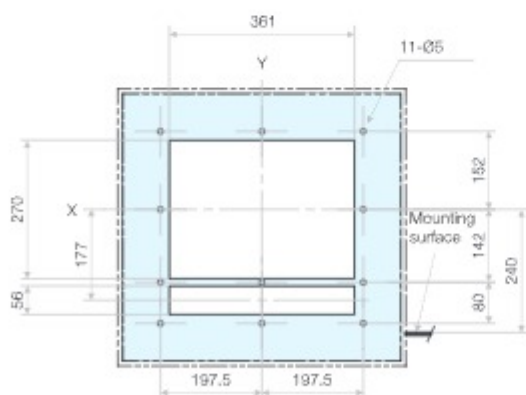
Mounting



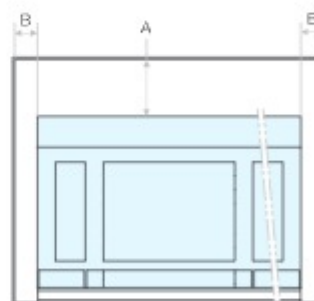
Note:  
Value in [ ] is the dimension when the current of Neutral = 0,5 In.

Door drilling and safety clearances

Door drilling:



Safety clearances:



	Insulated parts	Metal parts	Energized parts
A	0	0	100
B	0	0	60

Note:

"X" and "Y" are the symmetry planes of circuit breaker cover.



# Air Circuit Breakers

## Series 3SW68

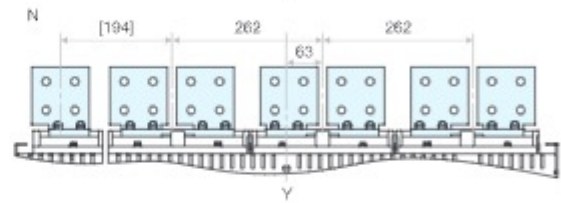
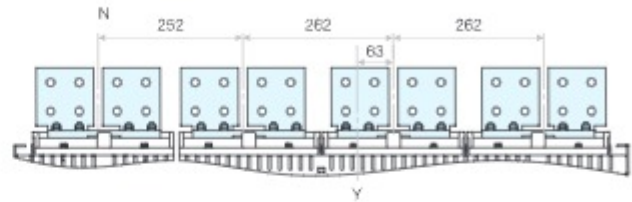
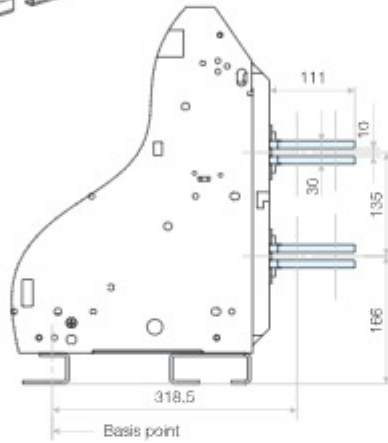
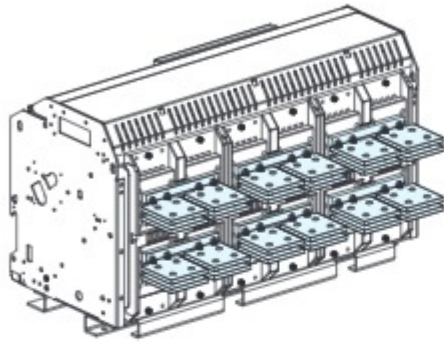
### Dimensions

Size D (3SW68-6300) withdrawable circuit breaker, 3-pole/4-pole

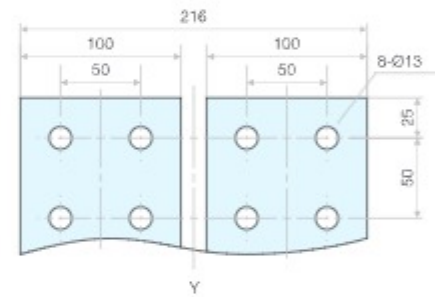
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Horizontal rear connections for 4000 A and 5000 A (standard configuration)

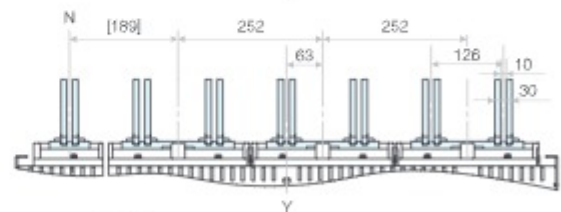
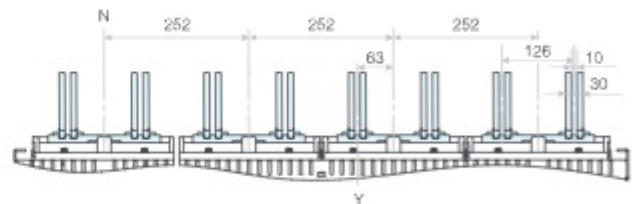
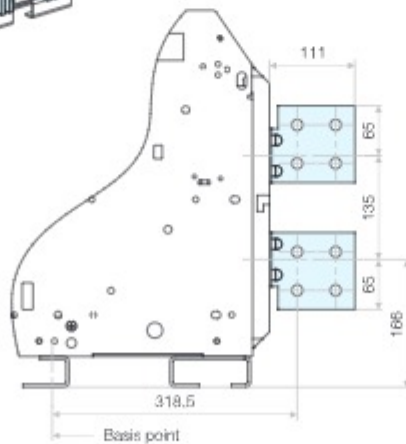
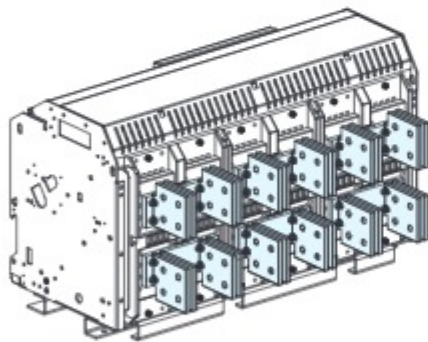
unit in mm



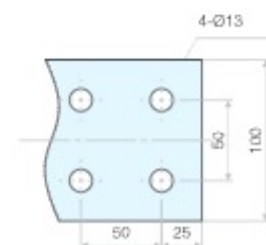
Note:  
Value in [ ] is the dimension when the current of Neutral = 0.5 In.



Vertical rear connections for 6300 A (standard configuration)



Note:  
Value in [ ] is the dimension when the current of Neutral = 0.5 In.



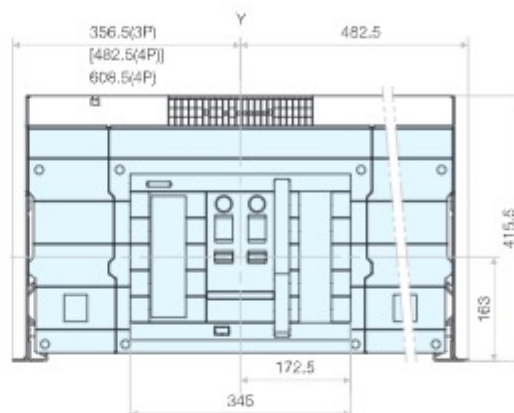
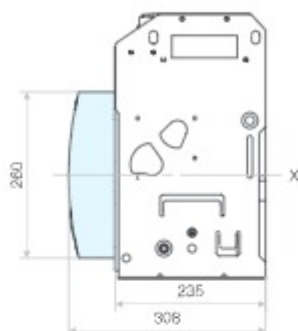
Note:  
"Y" is the symmetry plane of circuit breaker cover.

**Dimensions**

Size D (3SW68-6300) fixed circuit breaker, 3-pole/4-pole

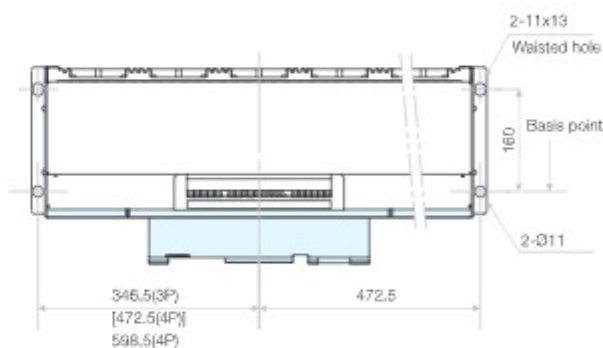
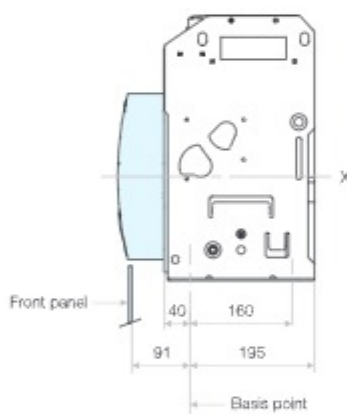
Dimension

unit in mm



Note:  
Value in [ ] is the dimension when the current of Neutral = 0,5 In.

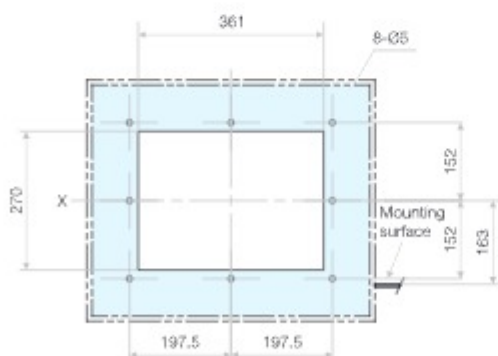
Mounting



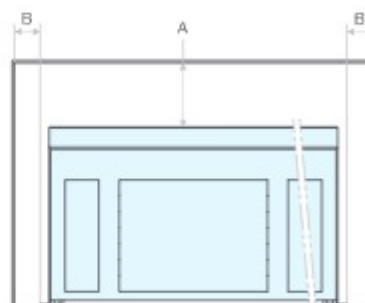
Note:  
Value in [ ] is the dimension when the current of Neutral = 0,5 In.

Door drilling and safety clearances

Door drilling:



Safety clearances:



	Insulated parts	Metal parts	Energized parts
A	0	0	100
B	0	0	60

Note:  
"X" and "Y" are the symmetry planes of circuit breaker cover.

# Air Circuit Breakers Series 3SW68

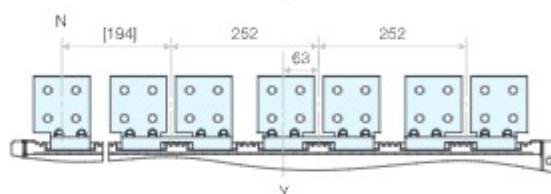
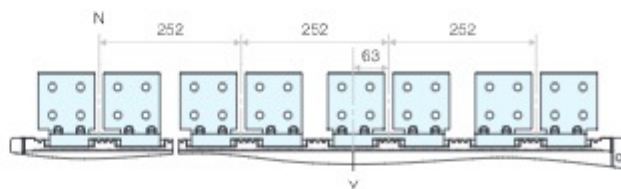
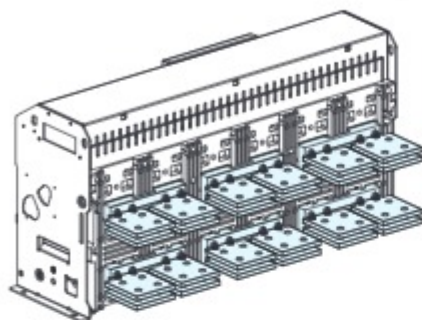
## Dimensions

Size D (3SW68-6300) fixed circuit breaker, 3-pole/4-pole

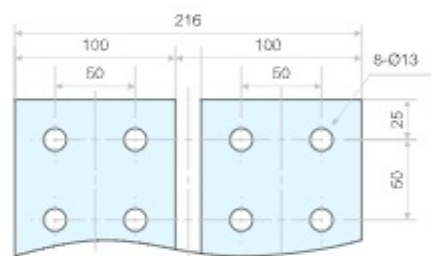
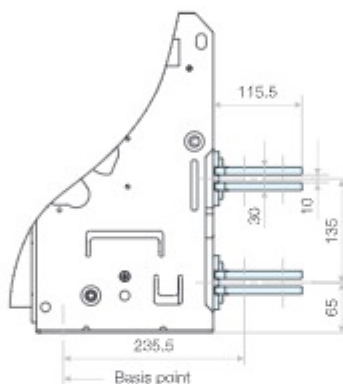
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Horizontal rear connections for 4000 A and 5000 A (standard configuration)

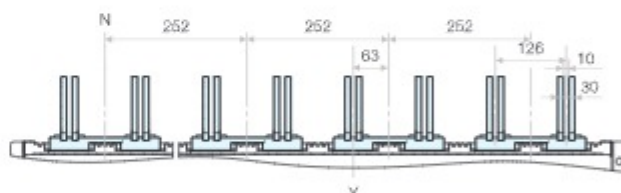
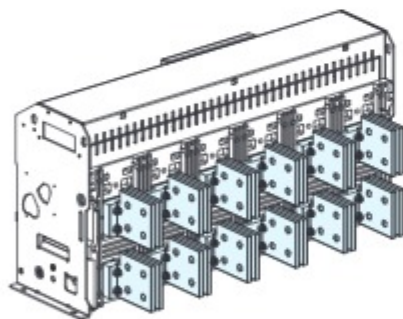
unit in mm



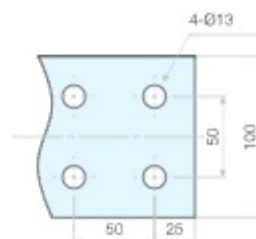
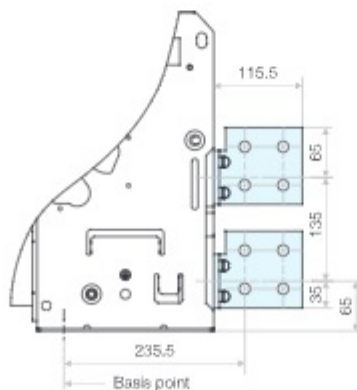
Note:  
Value in [ ] is the dimension when the current of Neutral = 0,5 In.



Vertical rear connections for 6300 A (standard configuration)



Note:  
Value in [ ] is the dimension when the current of Neutral = 0,5 In.



Note:  
"Y" is the symmetry plane of circuit breaker cover.

## Electrical diagram

- Reading information

### Versions

The electrical diagrams shown are for withdrawable circuit breakers, but they are also valid for fixed circuit breakers.

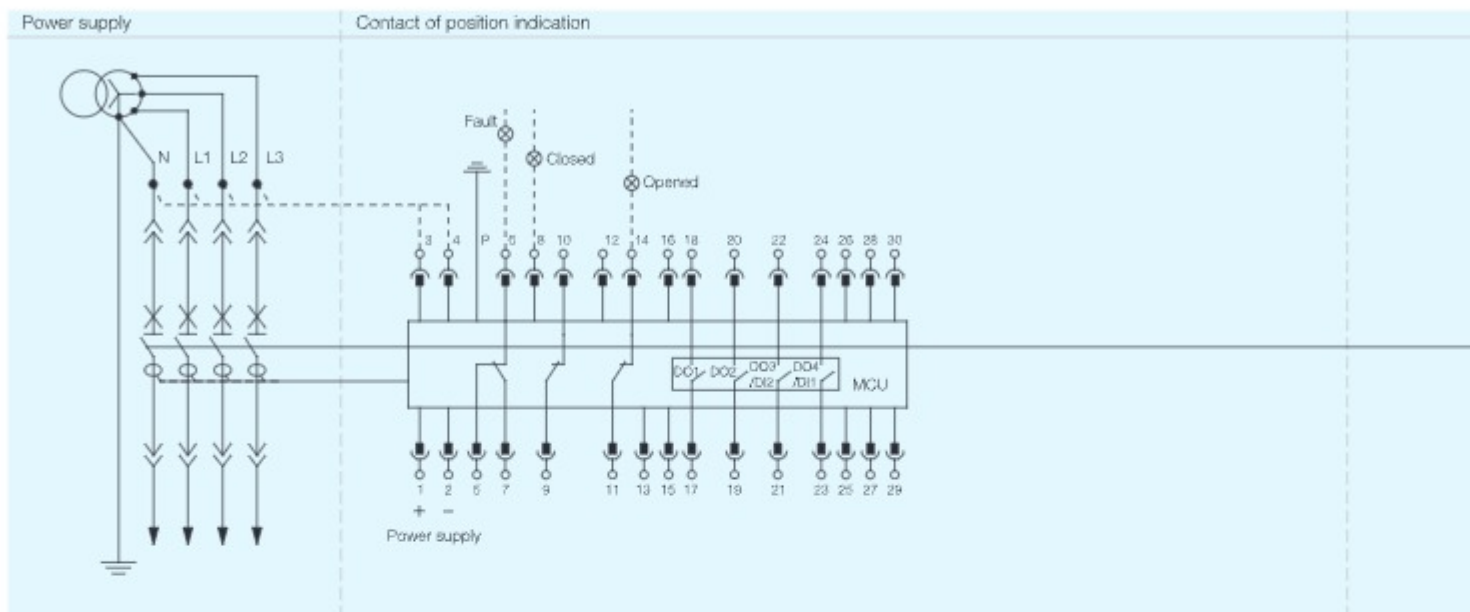
### Key

AX	Auxiliary switch	
DT	Closing electromagnet	
DW	Circuit breaker	
ETU	Electronic trip unit	
F	Shunt release	
FU	Fuse	Equipped by user
J1	Relay for remote closing	Equipped by user
J2	Relay for remote opening	Equipped by user
M	Motorized operating mechanism	
Q	Under-voltage release	
Q1 ... Q8	Auxiliary contact 4 NO + 4 NC	
Q9 ... Q14	3-position indication for withdrawable circuit breakers	
Qa, Qb	Closing indication contact	
Qc, Qd	Open indication contact	
QY	Time-delay under-voltage release	
Res	Remote reset	
S1 ... S7	Indicators	Equipped by user
SA	Limit switch of motor	
SAL	Indicator contact for fault trip	
SB1	Closing button	Equipped by user
SB2	Shunt release button	Equipped by user
SB3	Under-voltage release button	Equipped by user
SB4	Remote reset button	Equipped by user
TA	Current transformer	
TN	Residual current transformer	Offered upon request
XT	Secondary wiring	

### Electrical diagram

- Electrical diagram of secondary circuit for electronic trip unit 3SW68-AL, 3SW68-AM & 3SW68-AH

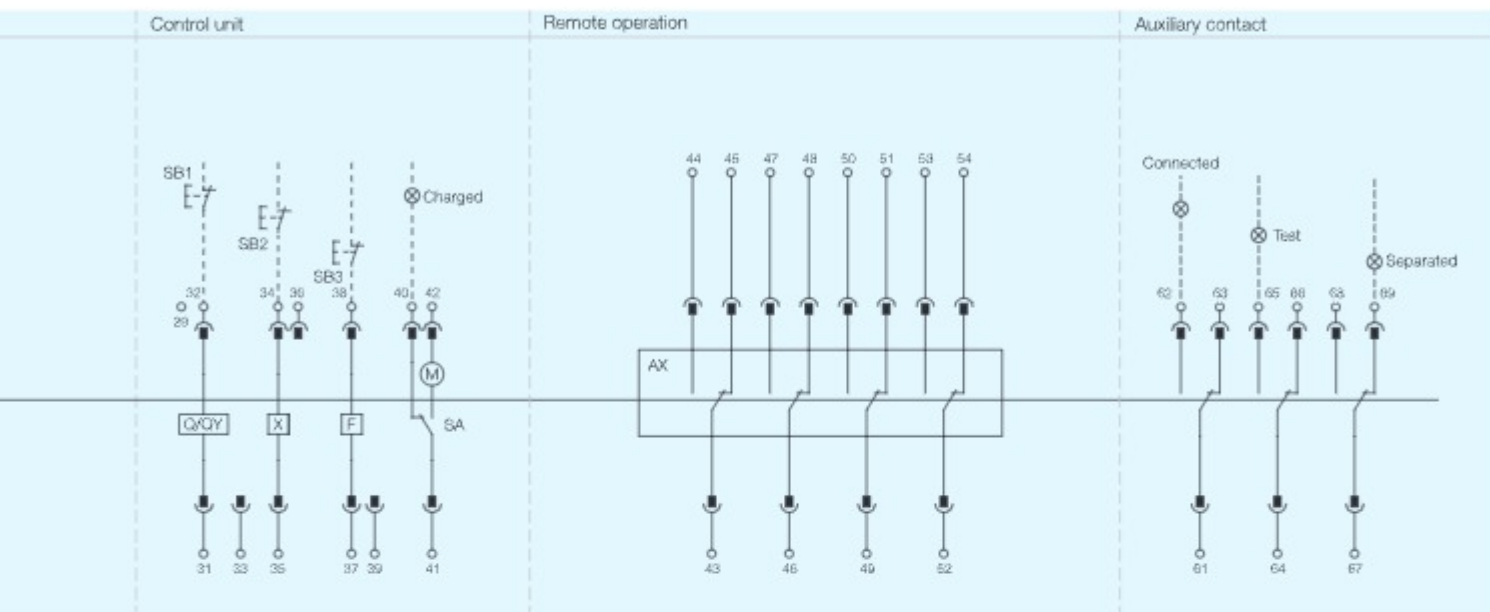
1



Power supply	Contact of position indication										
	1	3	5	8	11	14	17	20	23	26	29
Terminal box	2	4	6	9	12	15	18	21	24	27	30
		P	7	10	13	16	19	22	25	28	

- 1, 2: Auxiliary power supply for electronic trip unit
- P: Protection for earth connection, connect to side board of circuit breaker
- 3, 4: Input of signal for external current transformer
  - Type T: connect to output terminal of external ZT100
  - Type W: connect to output terminal of external ZCT1
- 5, 6, 7: Signal output of fault trip indication
- 8, 9, 10: Signal output of closing indication
- 11, 12, 14: Signal output of opening indication
- 13: Shield grounding for communication
- 15, 16: Output of communication
- 17 ... 24: Programmable I/O
  - DO: DC 110 V 0.5 A or AC 250 V 5A
  - DI: DC 110 ... 130 V or AC 110 ... 250 V
  - No signal unit: all terminals are blank
  - Type S1 signal unit: 4 DO mode
    - 17, 18: Programmable output contact 1 (DO 1)
    - 19, 20: Programmable output contact 2 (DO 2)
    - 21, 22: Programmable output contact 3 (DO 3)
    - 23, 24: Programmable output contact 4 (DO 4)
  - Type S2 signal unit: 3 DO + 1 DI mode
    - 17, 18: Programmable output contact 1 (DO 1)
    - 19, 20: Programmable output contact 2 (DO 2)
    - 21, 22: Programmable output contact 3 (DO 3)
    - 23, 24: Programmable switch input contact 1 (DI 1)
  - Type S3 signal unit: 2 DO + 2 DI mode
    - 17, 18: Programmable output contact 1 (DO 1)
    - 19, 20: Programmable output contact 2 (DO 2)
    - 21, 22: Programmable switch input contact 2 (DI 2)
    - 23, 24: Programmable switch input contact 1 (DI 1)
- 25 ... 28: Input of voltage signal
  - Must be connected to incoming side of power supply.
  - Keep blank if no any optional function is selected.
- 29, 30: Input of signal for external N-pole CT under 3P+N type grounding protection

Electrical diagram

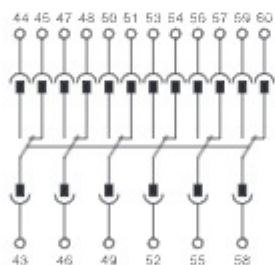


Control unit				Remote operation						Auxiliary contact		
○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	
31	33	37	40	43	46	49	52	55	58	61	64	67
○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○
32	34	38	41	44	47	50	53	56	59	62	65	69
			○—○	○—○	○—○	○—○	○—○	○—○	○—○			
			42	45	48	51	54	57	60			

31, 32: Power supply for under voltage (or with time delay) release  
 34, 35: Power supply for closing coil  
 37, 38: Power supply for shunt release  
 40, 41, 42: Power supply and signal output of charged

43, 46: Output terminals of auxiliary switch

6 convertible contact is optional:



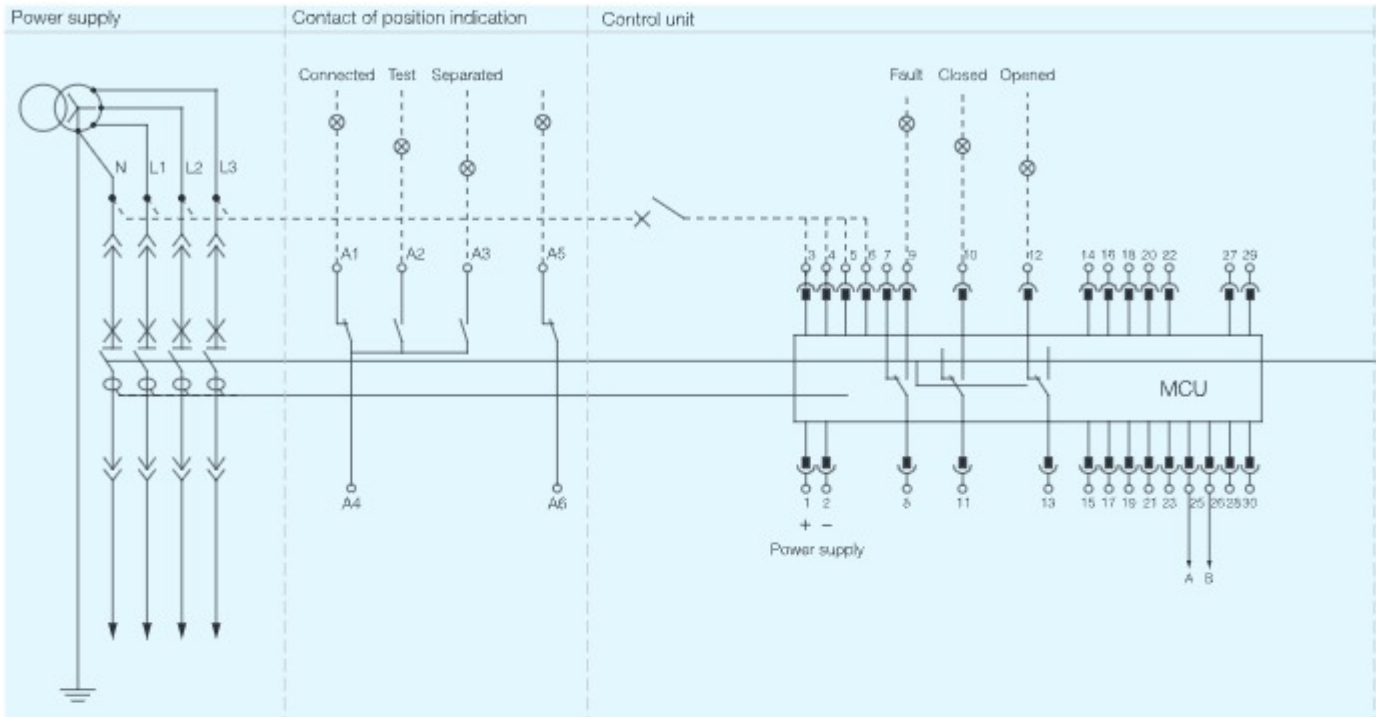
61, 62: Contact of "connected" position indication  
 64, 65: Contact of "test" position indication  
 67, 69: Contact of "separated" position indication

# Air Circuit Breakers

## Series 3SW68

### Electrical diagram

● Electrical diagram of secondary circuit for electronic trip unit 3SW68-BL, 3SW68-BM & 3SW68-BH



Power supply	Contact of position indication		Control unit									
	A1	A4	1	4	7	10	13	16	19	22	25	28
	A2	A5	2	5	8	11	14	17	20	23	26	29
	A3	A6	3	6	9	12	15	18	21		27	30

A1, A2: Connect to contact of position (optional)  
A4, A2: Contact of "test" position indication (optional)  
A4, A3: Contact of "separated" position indication (optional)  
A6, A5: Contact of locked position indication (optional)

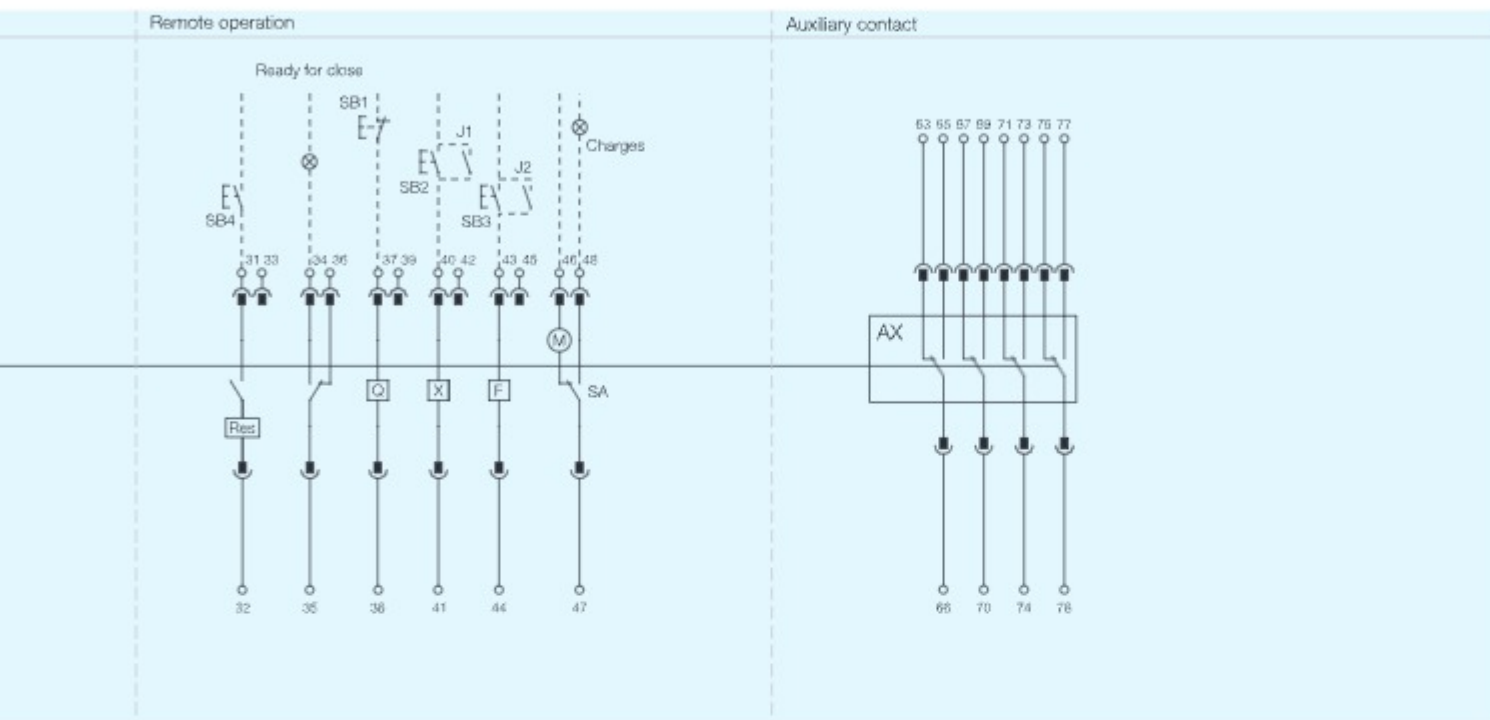
1, 2: Auxiliary power supply for electronic trip unit  
3, 4, 5, 6: For voltage display, three-phase voltage input of A, B, C and N (optional)  
7, 8, 9: Signal output of fault trip indication  
10, 11: Signal output of closing indication  
12, 13: Signal output of opening indication  
14, 15: Relay input DI1 (optional, see below table 1), "Zone interlock" if default  
16, 17: Relay input DO1 (optional, see below table 2), "Zone interlock" if default  
18, 19: Relay input DO2 (optional, see below table 2), general use if default  
20, 21: Relay input DO3 (optional, see below table 2), general use if default  
22, 23: Relay input DO4 (optional, see below table 2), general use if default  
25, 26: Communication output of electronic trip unit  
27, 28: Input of signal for external current transformer (type W) (optional)  
29, 30: Input of signal for external current transformer (type T) (optional)

Table 1: function of relay output DI1

General	Alarm	Trip
Zone interlock	Earth interlock	Short-circuit interlock

Table 2: function of relay output DO1 ... Do4

General	Alarm	Fault trip
Self-diagnosis alarm	Load monitor 1	Load monitor 2
Overload pre-alarm	Overload fault	Short-time delay fault
Instantaneous fault	Earth/residual current fault	Earth alarm
Current imbalance fault	Neutral fault	Under voltage fault
Over voltages fault	Voltage imbalance fault	Under frequency fault
Over frequency fault	Required value fault	Reverse power fault
Zone interlock	Closing	Opening
Phase sequence fault	MCR fault	Earth interlock
Short-circuit interlock	Required value fault of phase A	Required value fault of phase B
Required value fault of phase C	Required value fault of phase N	Required value over limit



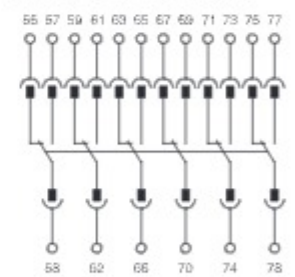
Remote operation						Auxiliary contact								
○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○
31	33	37	40	43	46	55	58	61	64	67	70	73	76	
○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○
32	34	38	41	44	47	56	59	62	65	68	71	74	77	
					○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○
					48	57	60	63	66	69	72	75	78	

31, 32: Power supply for remote reset (optional)  
 34, 25: Signal output of ready for closing (optional)  
 37, 38: Power supply for under voltage (or with time delay) release  
 40, 41: Power supply for closing coil  
 43, 44: Power supply for shunt release  
 46, 47, 48: Power supply and signal output of charged

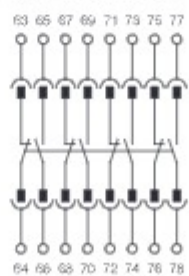
55 ... 78: Terminal output connected to auxiliary switch

There are three optional modes:

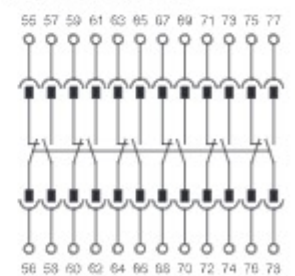
Mode 1: 6 convertible contact



Mode 2: 4 NO + 4 NC



Mode 3: 6 NO + 6 NC



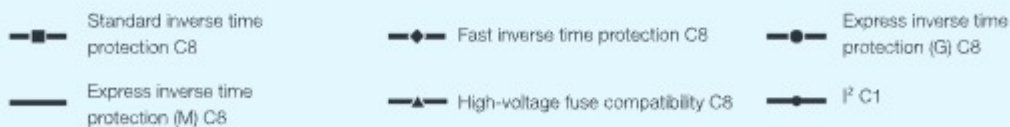
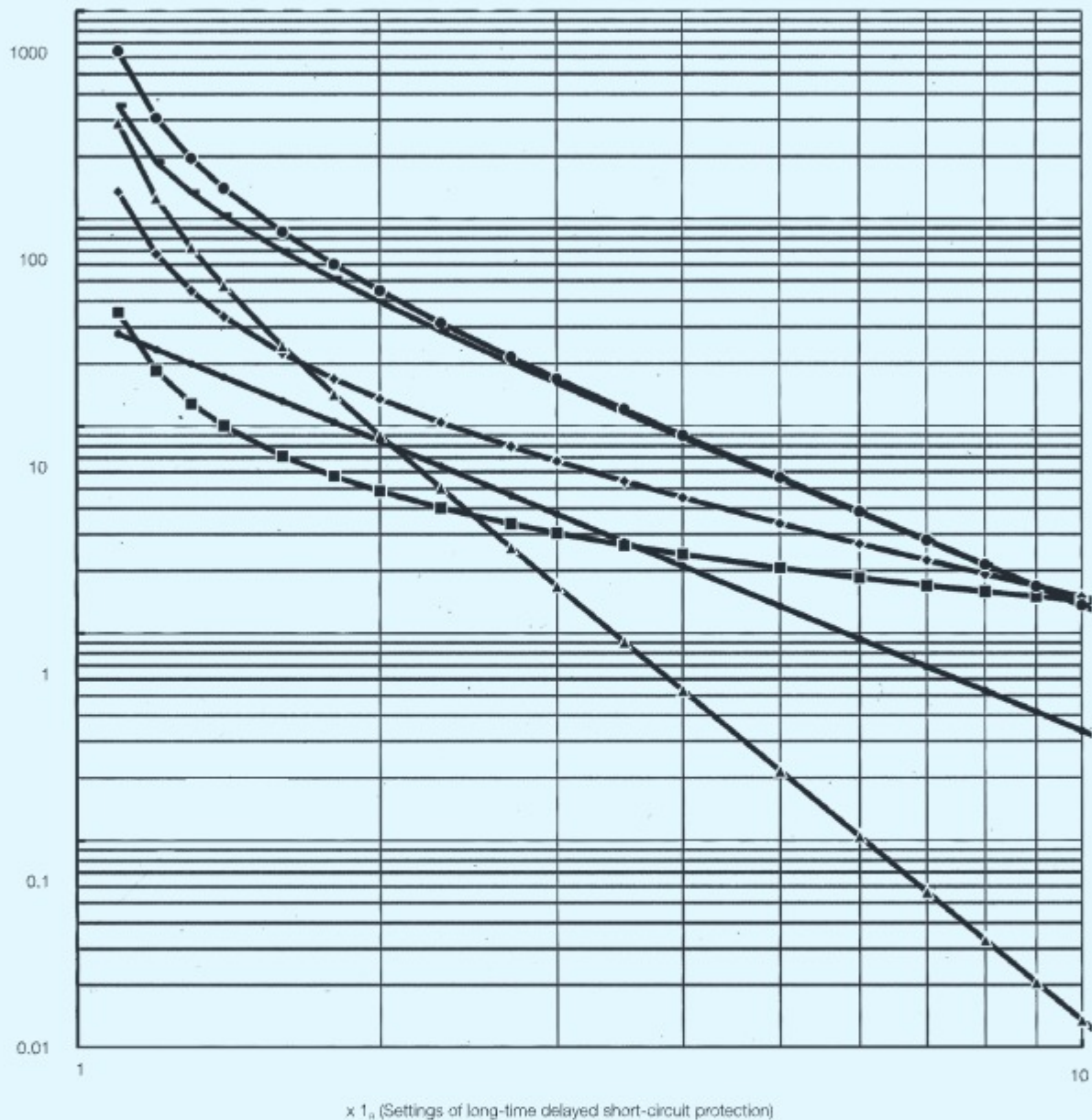


## Characteristic curves for overload protection

● Comparison between different curves (curve rate: C8)

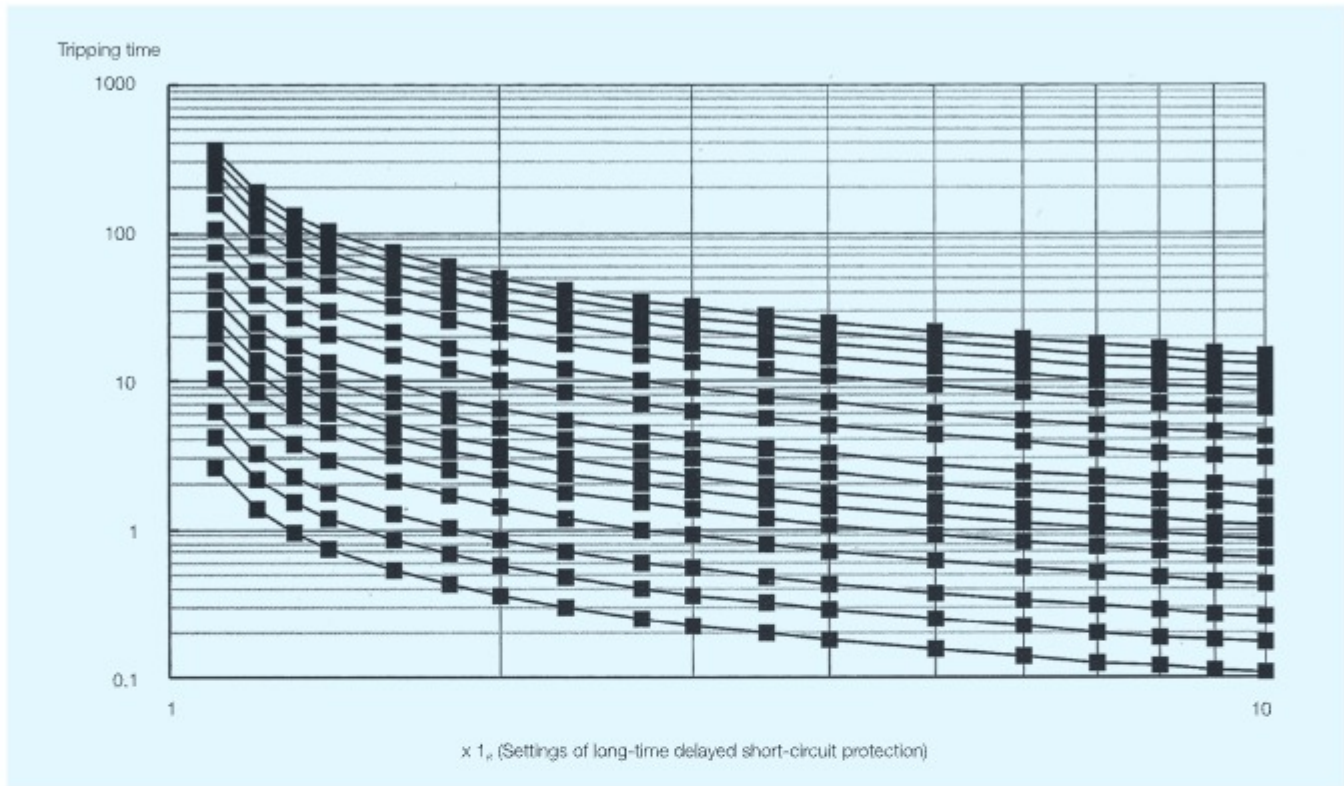
1

Tripping time



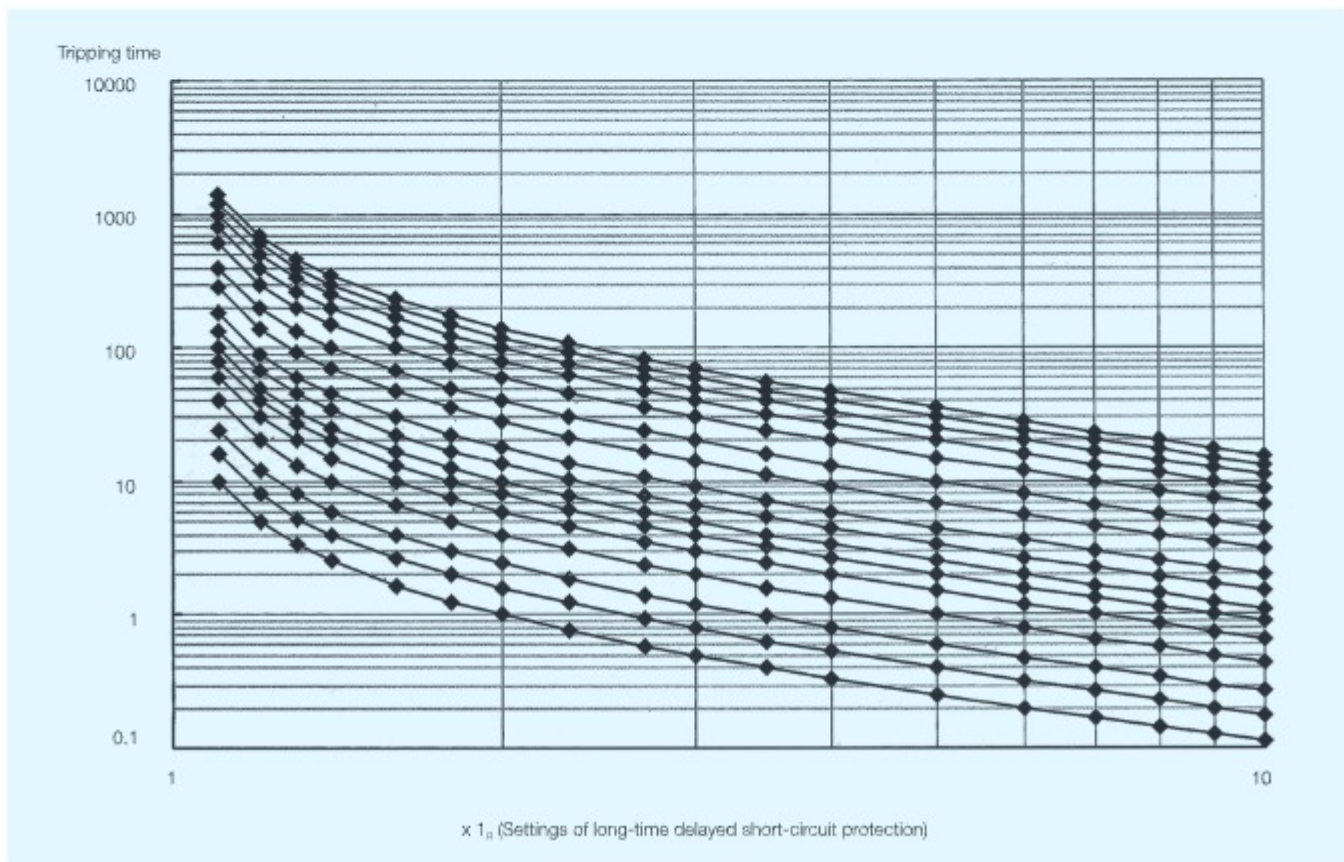
Characteristic curves for overload protection

- Standard inverse time protection C8



1

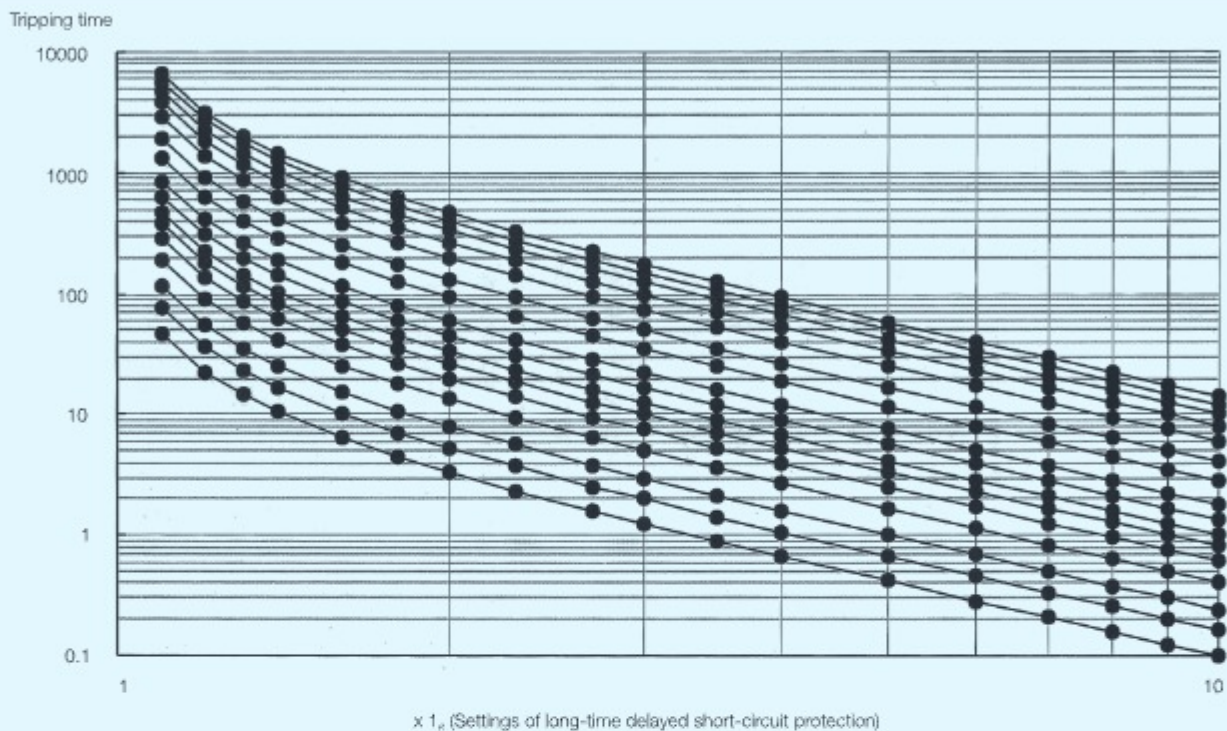
- Fast inverse time protection C8



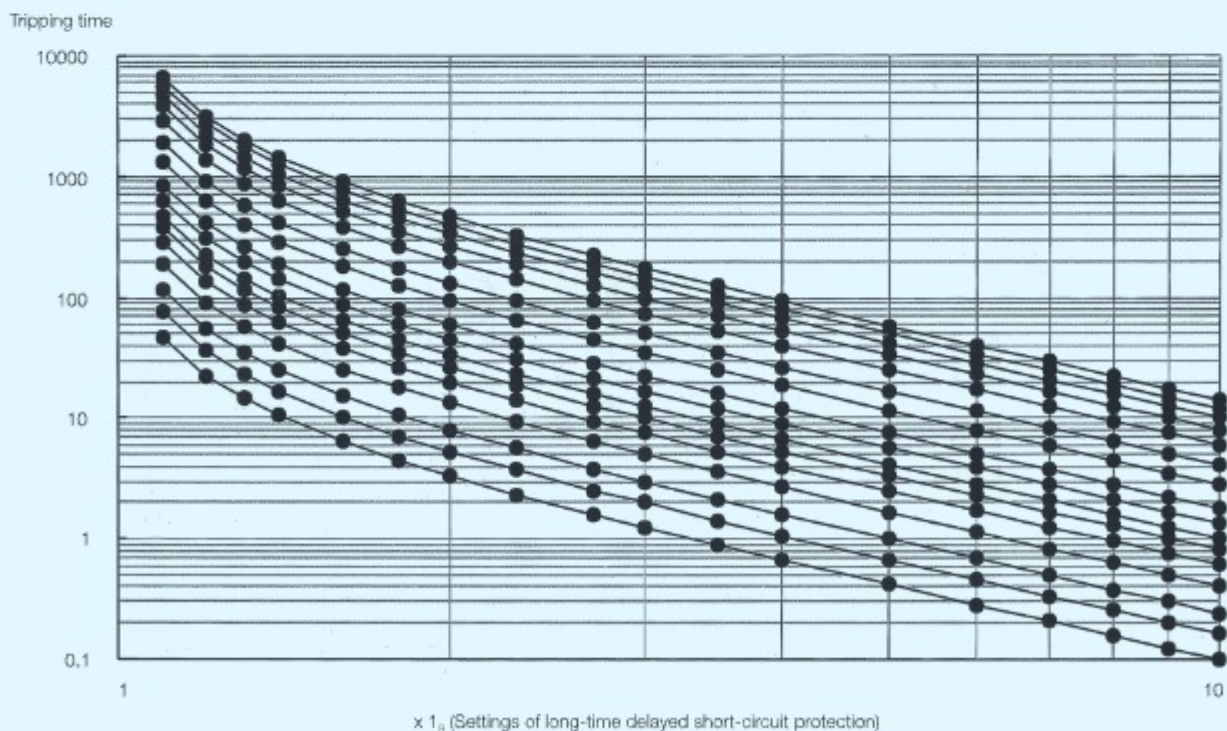
## Characteristic curves for overload protection

- Express inverse time protection (for power distribution) C8

1

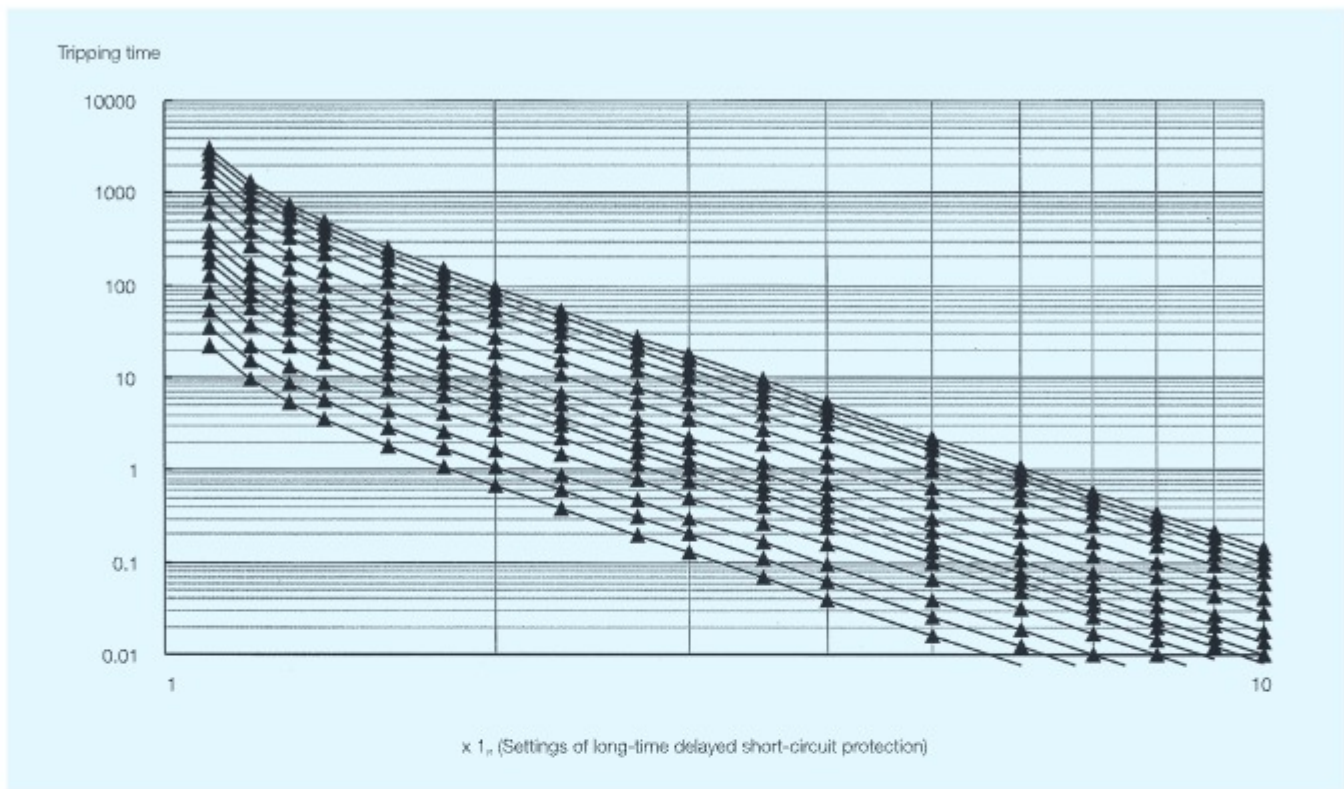


- Express inverse time protection (for motor protection) C8

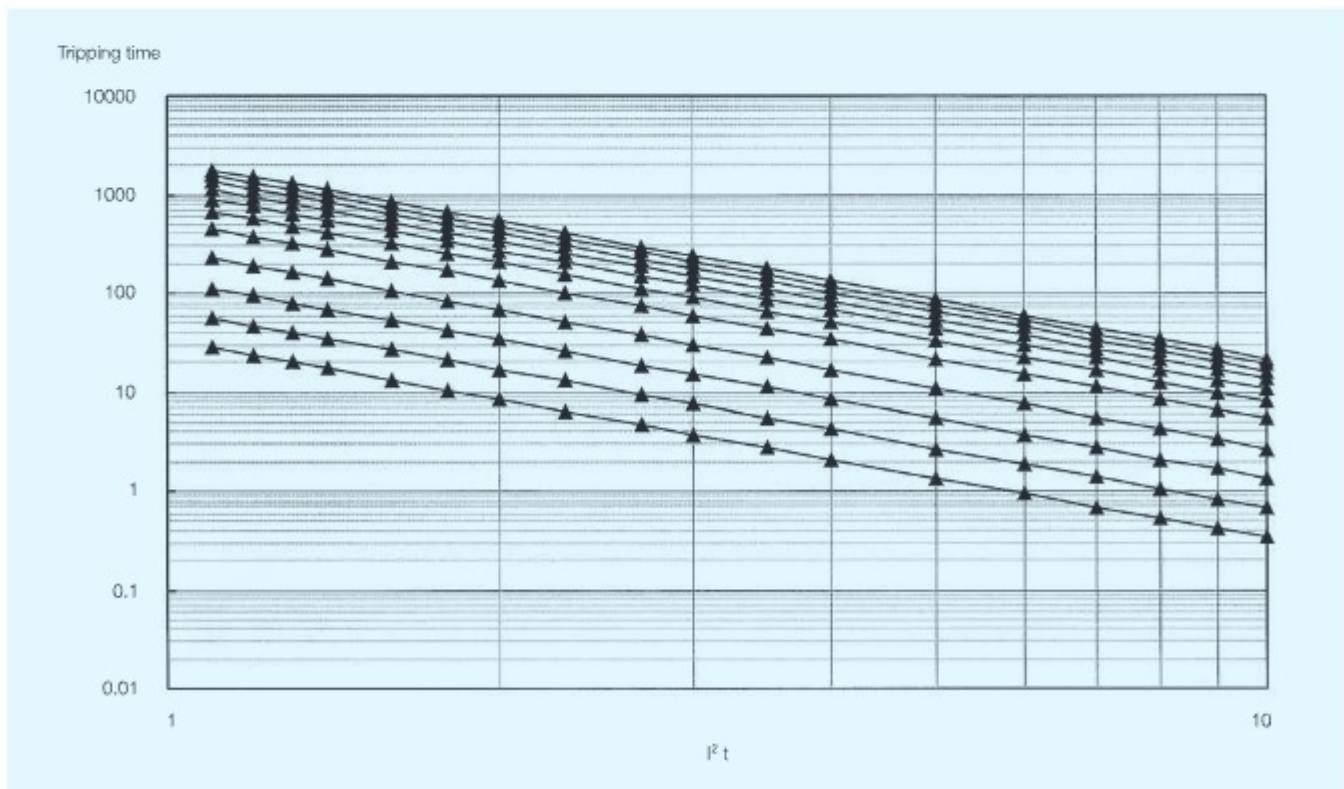


Characteristic curves for overload protection

- High-voltage fuse compatibility C8



- Express inverse time protection (for motor protection) C8

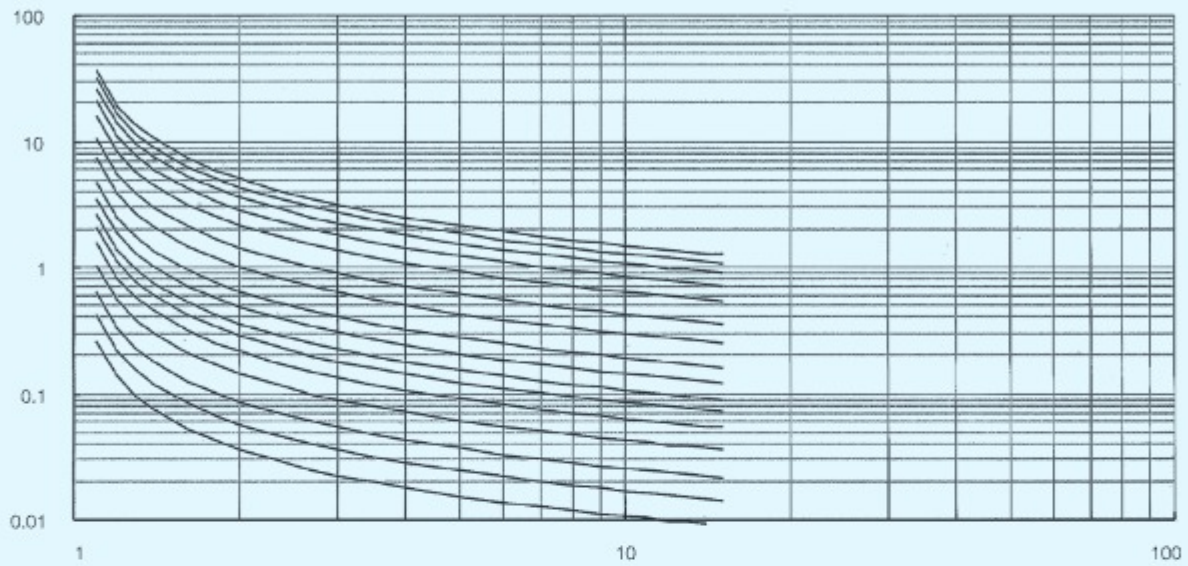


## Characteristic curves for overload protection

- Short-time delayed inverse time protection - Standard inverse time

1

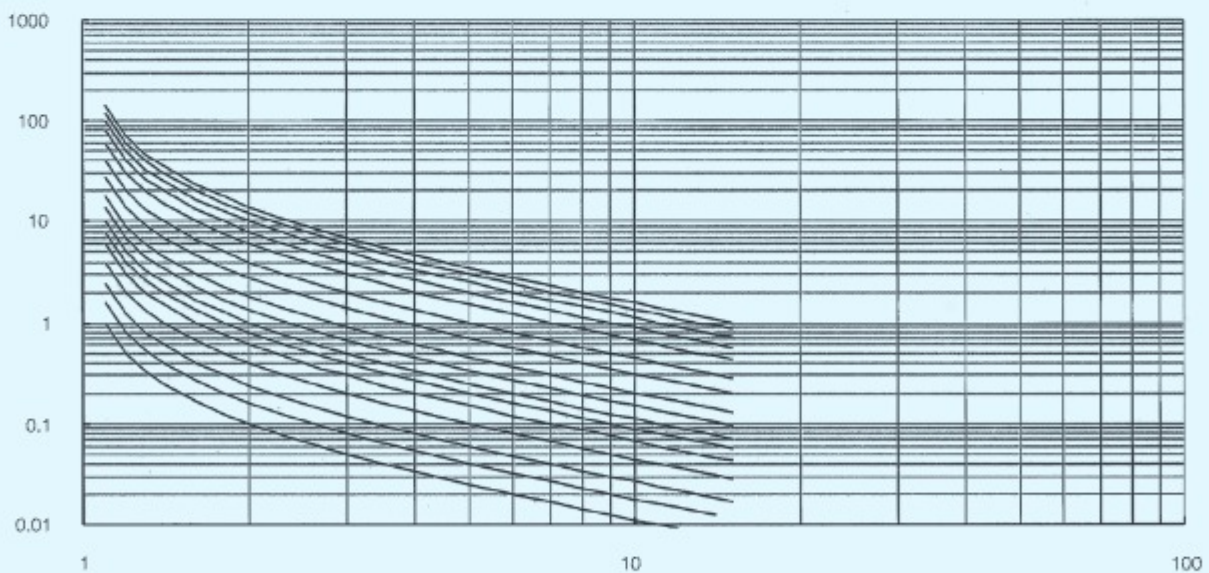
Tripping time



$x I_n$  (Settings of long-time delayed short-circuit protection)

- Short-time delayed inverse time protection - Fast inverse time

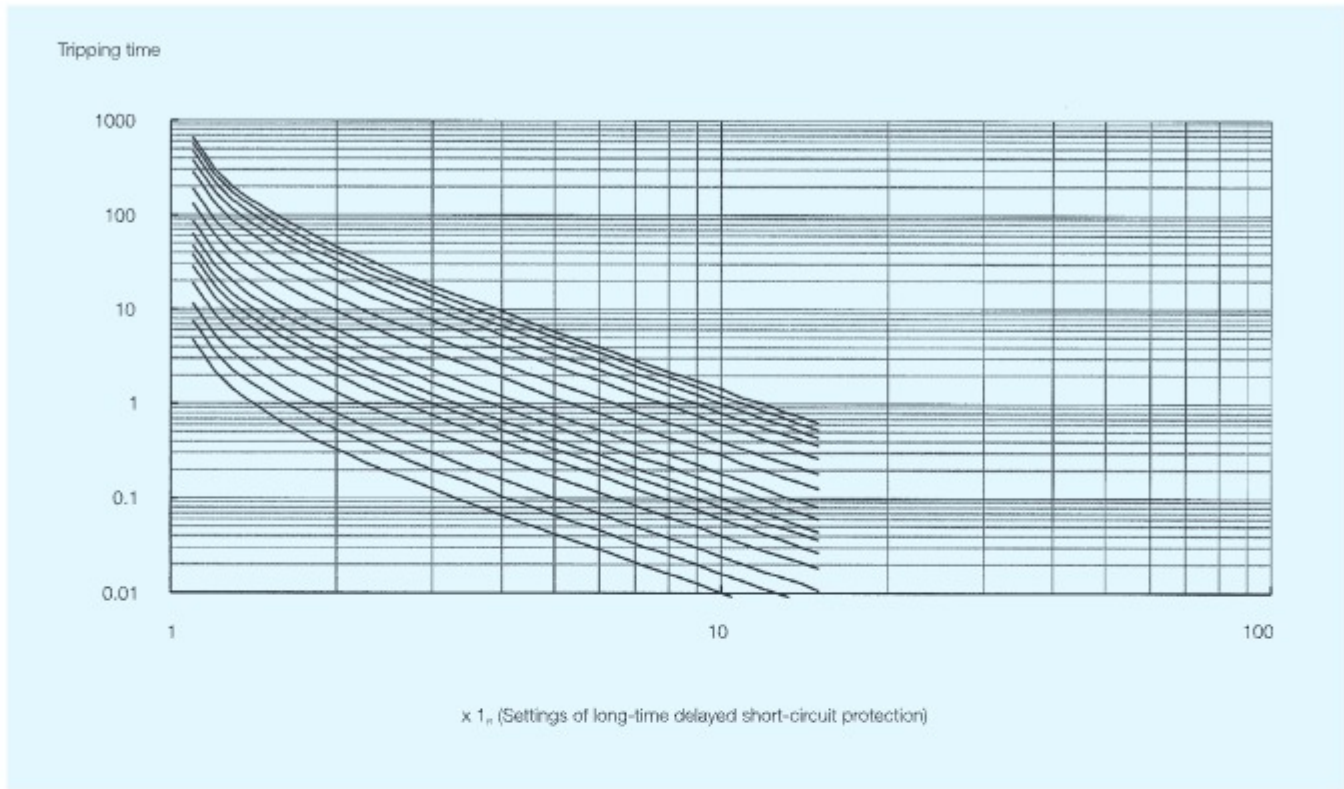
Tripping time



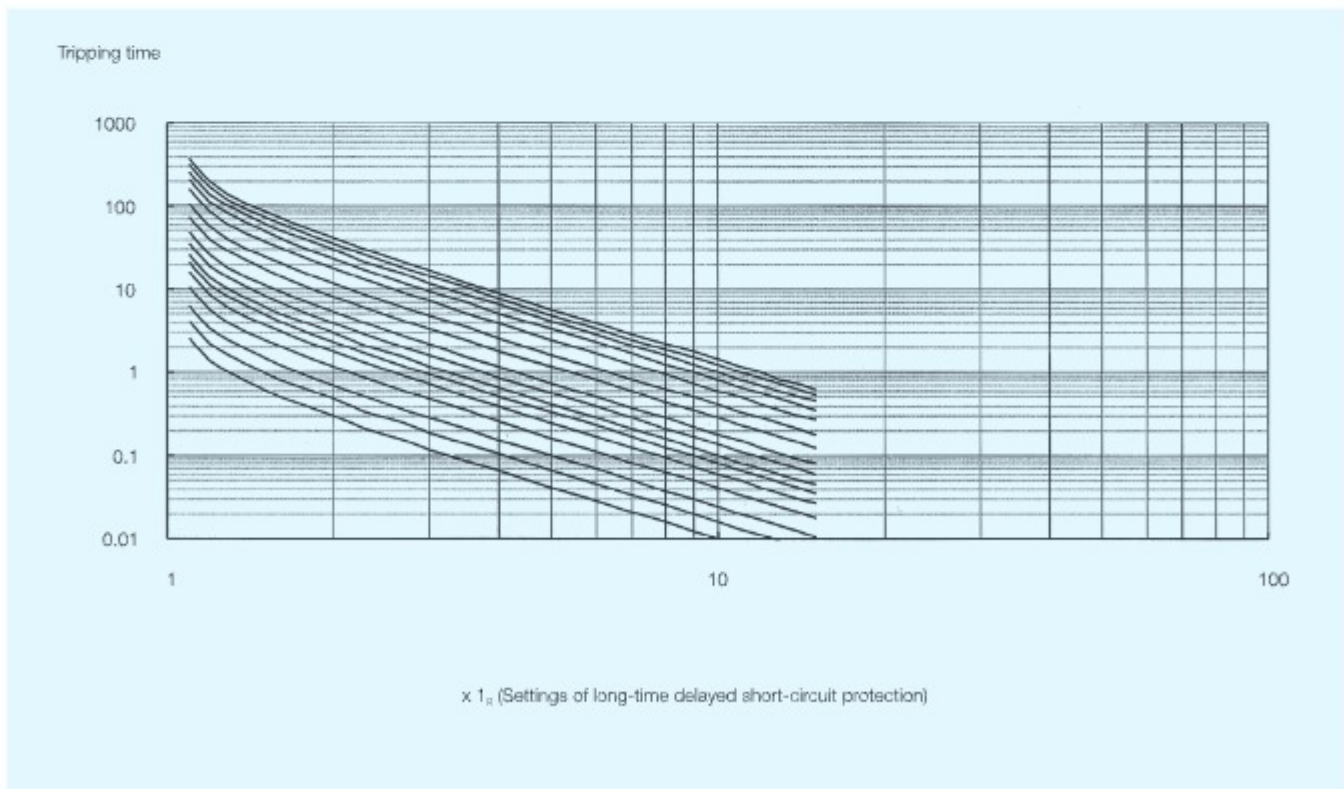
$x I_n$  (Settings of long-time delayed short-circuit protection)

**Characteristic curves for overload protection**

- Short-time delayed inverse time protection - Express inverse time (for power distribution)



- Short-time delayed inverse time protection - Express inverse time (for power distribution)

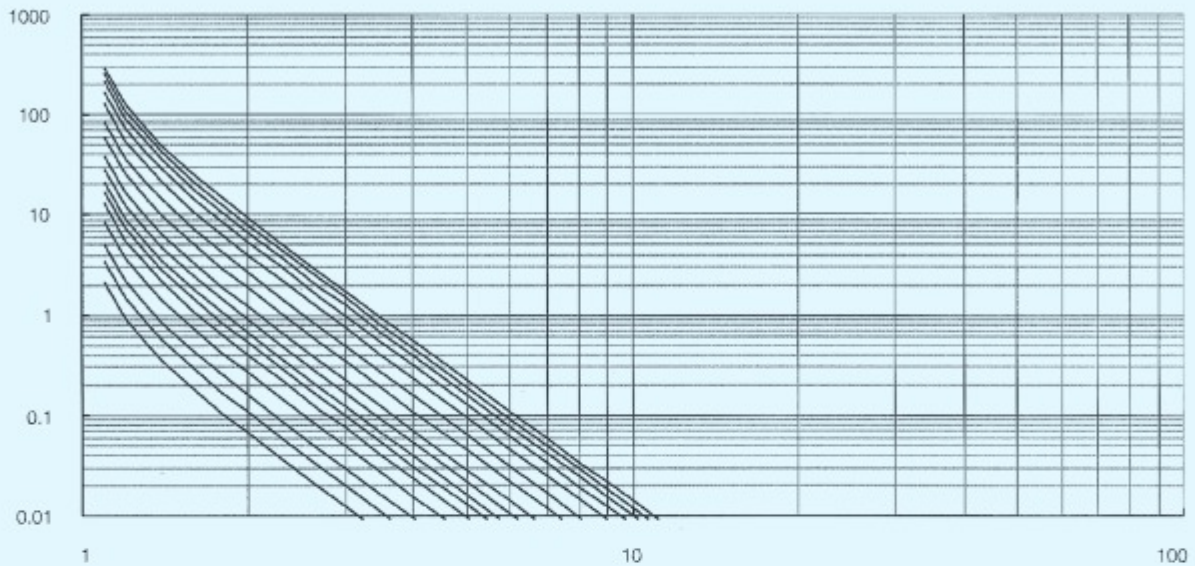


## Characteristic curves for overload protection

- Short-time delayed inverse time protection - high voltage fuse compatibility

1

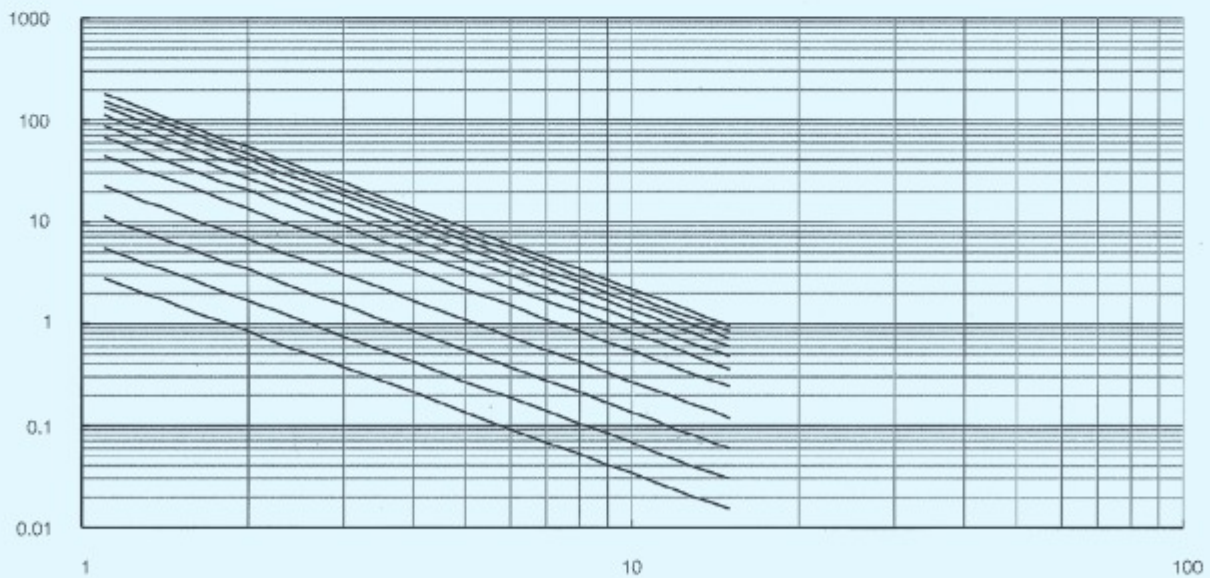
Tripping time



$x I_n$  (Settings of long-time delayed short-circuit protection)

- Short-time delayed inverse time protection

Tripping time

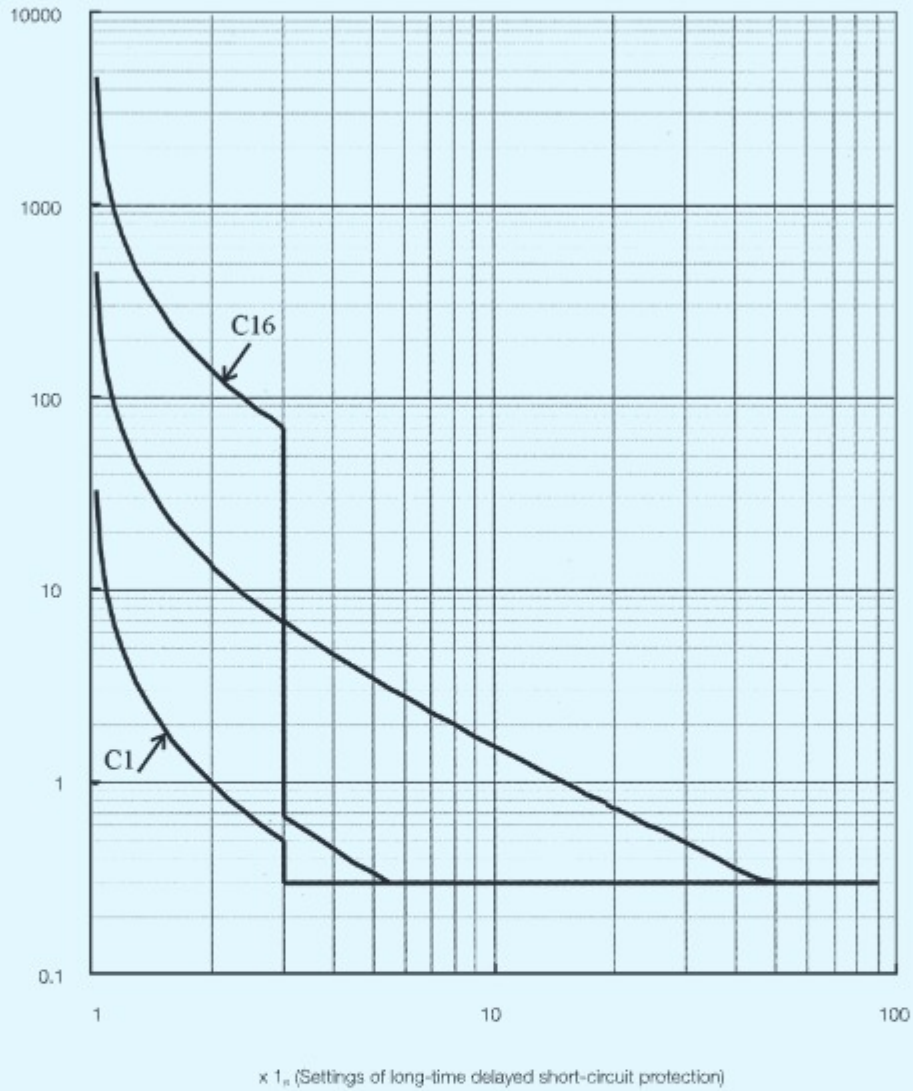


$x I_n$  (Settings of long-time delayed short-circuit protection)

Curve examples

- Example of inverse time protection

Tripping time



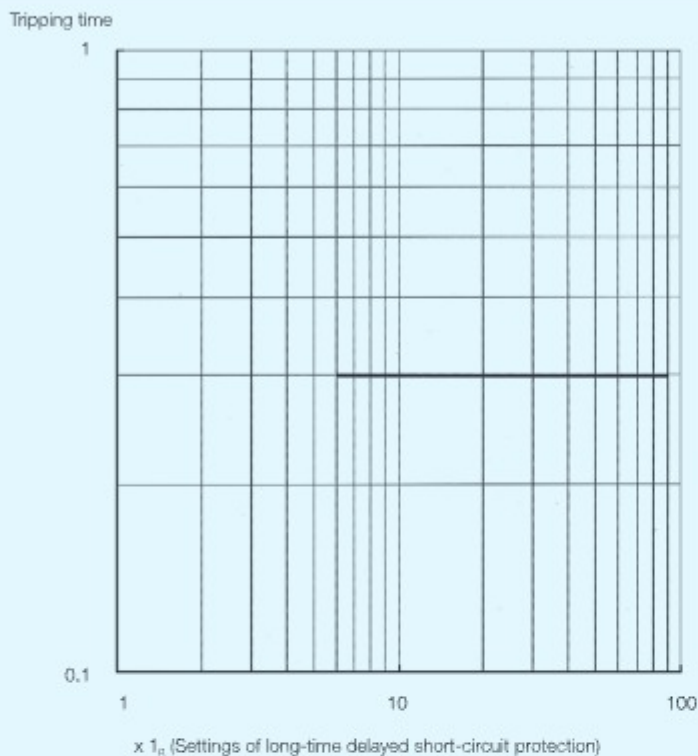
The curve example is based on below the settings:  
 Curve type: Fast inverse time protection  
 Curve rate: C1, C8 and C16  
 Action value setting of short-time delayed inverse time:  $3 \times I_{set}$   
 Time setting of short-time delayed definite time: 0.3 s



## Curve examples

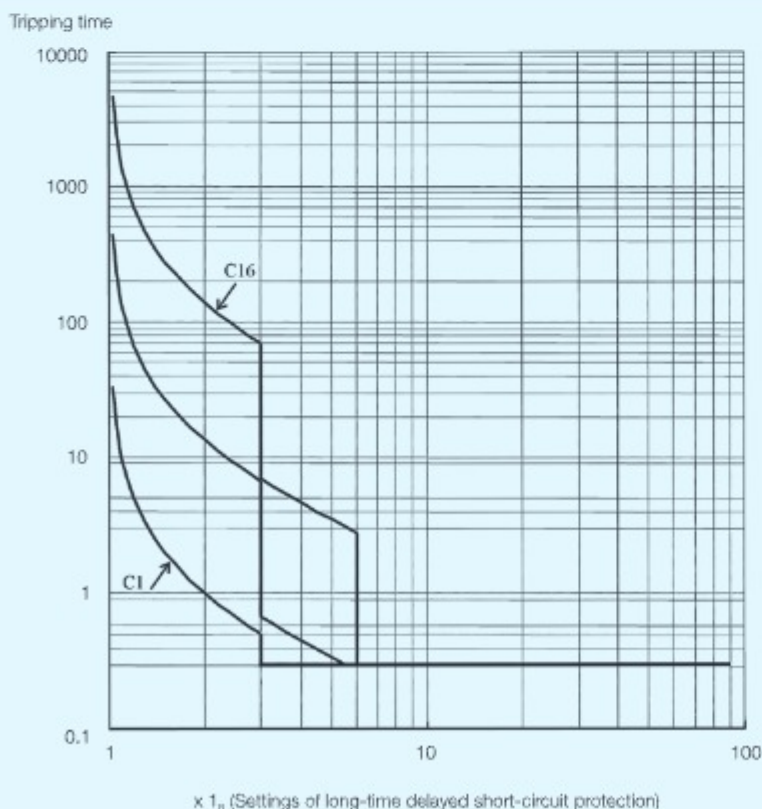
- Example of definite time protection

1



The curve example is based on below the settings:  
Action value setting of short-time delayed definite time:  $6 \times I_n$   
Time setting of short-time delayed definite time: 0.3 s

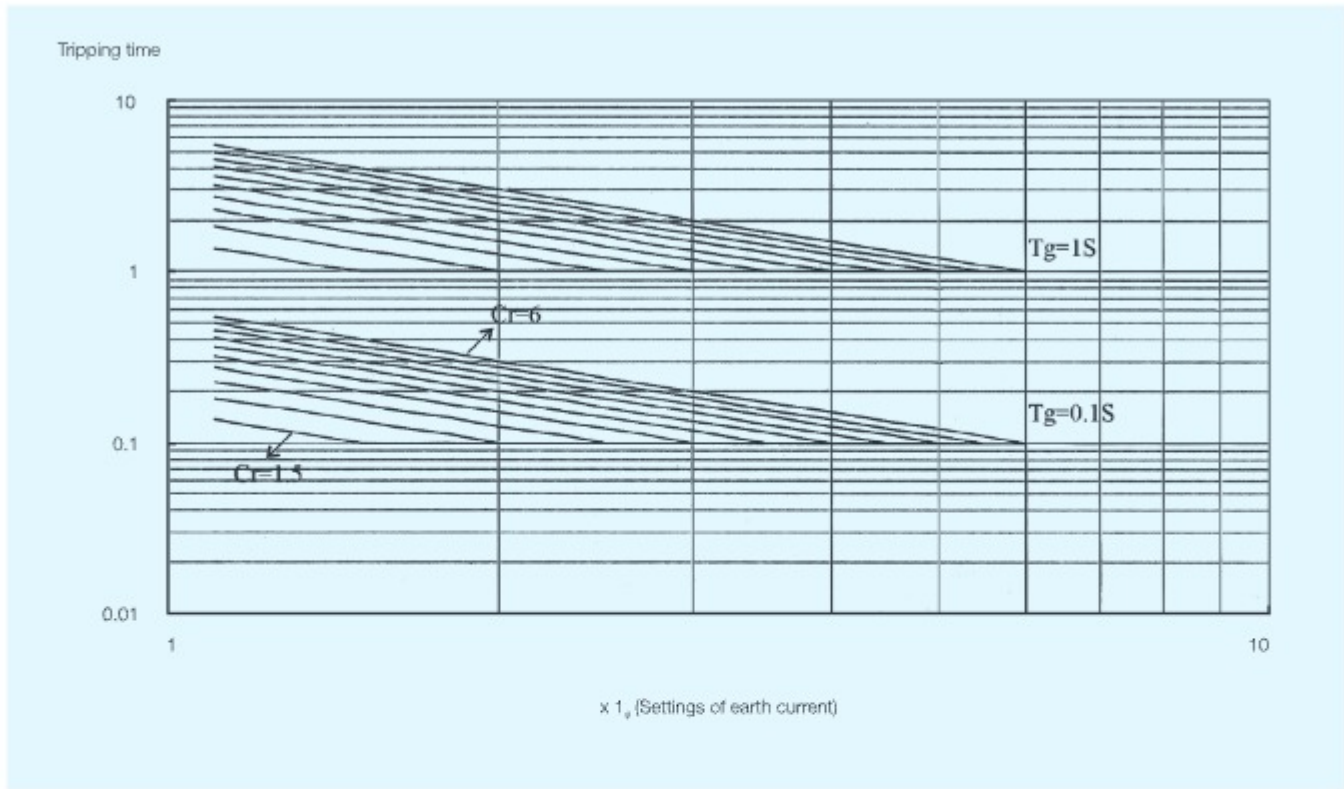
- Example of inverse time and definite time protection



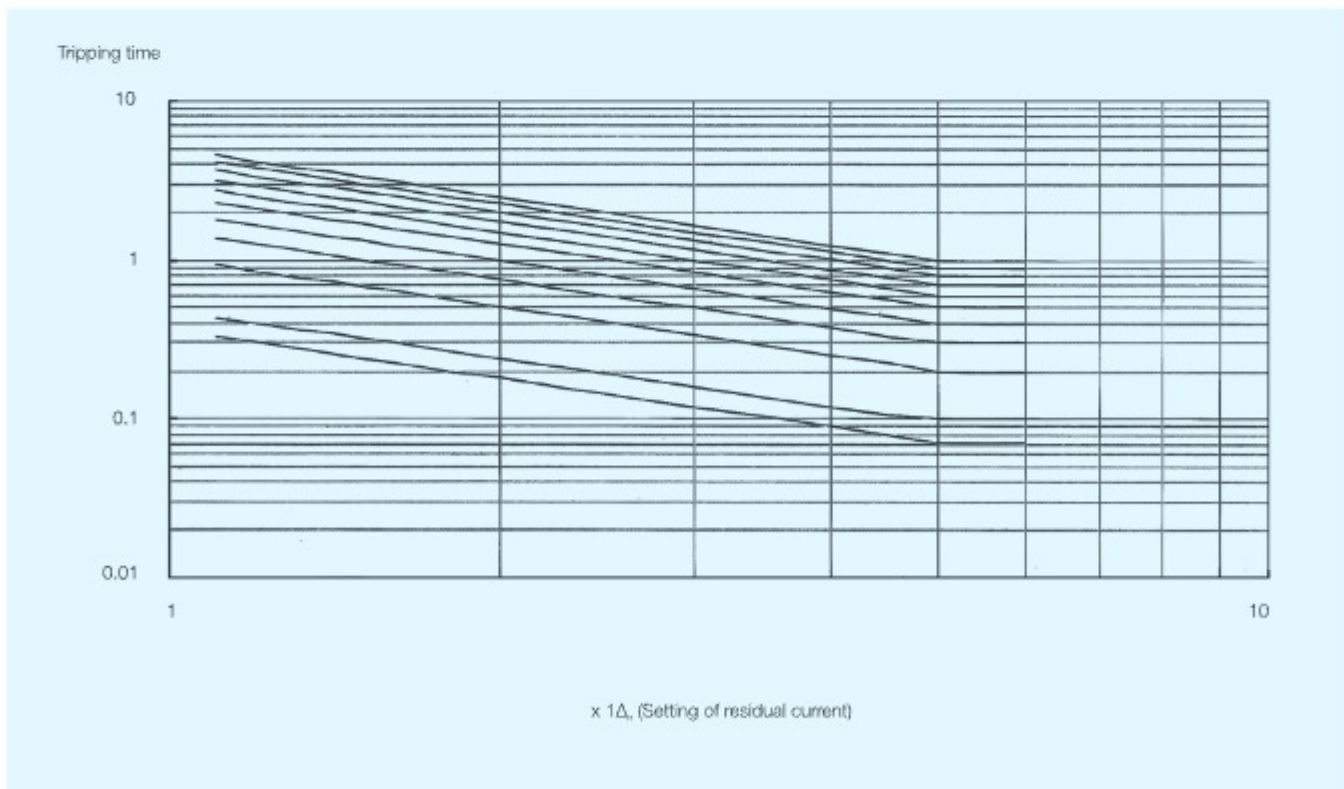
The curve example is based on below the settings:  
Curve type: Fast inverse time protection  
Curve rate: C1, C8 and C16  
Action value setting of short-time delayed inverse time:  $3 \times I_n$   
Action value setting of short-time delayed definite time:  $6 \times I_n$   
Time setting of short-time definite time: 0.3 s

Characteristic curve of earth/residual current protection

- Earth protection



- Residual current protection



# Air Circuit Breakers Series 3SW68

## Selection and ordering data

Size A, fixed version, horizontal rear connection, Icu = 65 kA, Ics = 42 kA, with standard accessories <sup>(1)</sup>

1



Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with AL3 electronic trip unit				
200	W68AF 3N200AL3	28057	W68AF 4N200AL3	28127
400	W68AF 3N400AL3	28058	W68AF 4N400AL3	28128
630	W68AF 3N630AL3	28059	W68AF 4N630AL3	28129
800	W68AF 3N800AL3	28060	W68AF 4N800AL3	28130
1000	W68AF 3N1000AL3	28061	W68AF 4N1000AL3	28131
1250	W68AF 3N1250AL3	28062	W68AF 4N1250AL3	28132
1600	W68AF 3N1600AL3	28063	W68AF 4N1600AL3	28133
Equipped with AL4 electronic trip unit				
200	W68AF 3N200AL4	28064	W68AF 4N200AL4	28134
400	W68AF 3N400AL4	28065	W68AF 4N400AL4	28135
630	W68AF 3N630AL4	28066	W68AF 4N630AL4	28136
800	W68AF 3N800AL4	28067	W68AF 4N800AL4	28137
1000	W68AF 3N1000AL4	28068	W68AF 4N1000AL4	28138
1250	W68AF 3N1250AL4	28069	W68AF 4N1250AL4	28139
1600	W68AF 3N1600AL4	28070	W68AF 4N1600AL4	28140
Equipped with AM3 electronic trip unit				
200	W68AF 3N200AM3	28071	W68AF 4N200AM3	28141
400	W68AF 3N400AM3	28072	W68AF 4N400AM3	28142
630	W68AF 3N630AM3	28073	W68AF 4N630AM3	28143
800	W68AF 3N800AM3	28074	W68AF 4N800AM3	28144
1000	W68AF 3N1000AM3	28075	W68AF 4N1000AM3	28145
1250	W68AF 3N1250AM3	28076	W68AF 4N1250AM3	28146
1600	W68AF 3N1600AM3	28077	W68AF 4N1600AM3	28147
Equipped with AM4 electronic trip unit				
200	W68AF 3N200AM4	28078	W68AF 4N200AM4	28148
400	W68AF 3N400AM4	28079	W68AF 4N400AM4	28149
630	W68AF 3N630AM4	28080	W68AF 4N630AM4	28150
800	W68AF 3N800AM4	28081	W68AF 4N800AM4	28151
1000	W68AF 3N1000AM4	28082	W68AF 4N1000AM4	28152
1250	W68AF 3N1250AM4	28083	W68AF 4N1250AM4	28153
1600	W68AF 3N1600AM4	28084	W68AF 4N1600AM4	28154
Equipped with AH4 electronic trip unit				
200	W68AF 3N200AH	28085	W68AF 4N200AH	28155
400	W68AF 3N400AH	28086	W68AF 4N400AH	28156
630	W68AF 3N630AH	28087	W68AF 4N630AH	28157
800	W68AF 3N800AH	28088	W68AF 4N800AH	28158
1000	W68AF 3N1000AH	28089	W68AF 4N1000AH	28159
1250	W68AF 3N1250AH	28090	W68AF 4N1250AH	28160
1600	W68AF 3N1600AH	28091	W68AF 4N1600AH	28161

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators

## Selection and ordering data

Size A, fixed version, horizontal rear connection, Icu = 65 kA, Ics = 55 kA, with standard accessories <sup>(1)</sup>

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with AL3 electronic trip unit				
200	W68AF 3H200AL3	28092	W68AF 4H200AL3	28162
400	W68AF 3H400AL3	28093	W68AF 4H400AL3	28163
630	W68AF 3H630AL3	28094	W68AF 4H630AL3	28164
800	W68AF 3H800AL3	28095	W68AF 4H800AL3	28165
1000	W68AF 3H1000AL3	28096	W68AF 4H1000AL3	28166
1250	W68AF 3H1250AL3	28097	W68AF 4H1250AL3	28167
1600	W68AF 3H1600AL3	28098	W68AF 4H1600AL3	28168
Equipped with AL4 electronic trip unit				
200	W68AF 3H200AL4	28099	W68AF 4H200AL4	28169
400	W68AF 3H400AL4	28100	W68AF 4H400AL4	28170
630	W68AF 3H630AL4	28101	W68AF 4H630AL4	28171
800	W68AF 3H800AL4	28102	W68AF 4H800AL4	28172
1000	W68AF 3H1000AL4	28103	W68AF 4H1000AL4	28173
1250	W68AF 3H1250AL4	28104	W68AF 4H1250AL4	28174
1600	W68AF 3H1600AL4	28105	W68AF 4H1600AL4	28175
Equipped with AM3 electronic trip unit				
200	W68AF 3H200AM3	28106	W68AF 4H200AM3	28176
400	W68AF 3H400AM3	28107	W68AF 4H400AM3	28177
630	W68AF 3H630AM3	28108	W68AF 4H630AM3	28178
800	W68AF 3H800AM3	28109	W68AF 4H800AM3	28179
1000	W68AF 3H1000AM3	28110	W68AF 4H1000AM3	28180
1250	W68AF 3H1250AM3	28111	W68AF 4H1250AM3	28181
1600	W68AF 3H1600AM3	28112	W68AF 4H1600AM3	28182
Equipped with AM4 electronic trip unit				
200	W68AF 3H200AM4	28113	W68AF 4H200AM4	28183
400	W68AF 3H400AM4	28114	W68AF 4H400AM4	28184
630	W68AF 3H630AM4	28115	W68AF 4H630AM4	28185
800	W68AF 3H800AM4	28116	W68AF 4H800AM4	28186
1000	W68AF 3H1000AM4	28117	W68AF 4H1000AM4	28187
1250	W68AF 3H1250AM4	28118	W68AF 4H1250AM4	28188
1600	W68AF 3H1600AM4	28119	W68AF 4H1600AM4	28189
Equipped with AH electronic trip unit				
200	W68AF 3H200AH	28120	W68AF 4H200AH	28190
400	W68AF 3H400AH	28121	W68AF 4H400AH	28191
630	W68AF 3H630AH	28122	W68AF 4H630AH	28192
800	W68AF 3H800AH	28123	W68AF 4H800AH	28193
1000	W68AF 3H1000AH	28124	W68AF 4H1000AH	28194
1250	W68AF 3H1250AH	28125	W68AF 4H1250AH	28195
1600	W68AF 3H1600AH	28126	W68AF 4H1600AH	28196



Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators

# Air Circuit Breakers Series 3SW68

## Selection and ordering data

Size A, withdrawable version, horizontal rear connection, Icu = 65 kA, Ics = 42 kA, with standard accessories <sup>(1)</sup>

1



Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with AL3 electronic trip unit				
200	W68AD 3N200AL3	28197	W68AD 4N200AL3	28267
400	W68AD 3N400AL3	28198	W68AD 4N400AL3	28268
630	W68AD 3N630AL3	28199	W68AD 4N630AL3	28269
800	W68AD 3N800AL3	28200	W68AD 4N800AL3	28270
1000	W68AD 3N1000AL3	28201	W68AD 4N1000AL3	28271
1250	W68AD 3N1250AL3	28202	W68AD 4N1250AL3	28272
1600	W68AD 3N1600AL3	28203	W68AD 4N1600AL3	28273
Equipped with AL4 electronic trip unit				
200	W68AD 3N200AL4	28204	W68AD 4N200AL4	28274
400	W68AD 3N400AL4	28205	W68AD 4N400AL4	28275
630	W68AD 3N630AL4	28206	W68AD 4N630AL4	28276
800	W68AD 3N800AL4	28207	W68AD 4N800AL4	28277
1000	W68AD 3N1000AL4	28208	W68AD 4N1000AL4	28278
1250	W68AD 3N1250AL4	28209	W68AD 4N1250AL4	28279
1600	W68AD 3N1600AL4	28210	W68AD 4N1600AL4	28280
Equipped with AM3 electronic trip unit				
200	W68AD 3N200AM3	28211	W68AD 4N200AM3	28281
400	W68AD 3N400AM3	28212	W68AD 4N400AM3	28282
630	W68AD 3N630AM3	28213	W68AD 4N630AM3	28283
800	W68AD 3N800AM3	28214	W68AD 4N800AM3	28284
1000	W68AD 3N1000AM3	28215	W68AD 4N1000AM3	28285
1250	W68AD 3N1250AM3	28216	W68AD 4N1250AM3	28286
1600	W68AD 3N1600AM3	28217	W68AD 4N1600AM3	28287
Equipped with AM4 electronic trip unit				
200	W68AD 3N200AM4	28218	W68AD 4N200AM4	28288
400	W68AD 3N400AM4	28219	W68AD 4N400AM4	28289
630	W68AD 3N630AM4	28220	W68AD 4N630AM4	28290
800	W68AD 3N800AM4	28221	W68AD 4N800AM4	28291
1000	W68AD 3N1000AM4	28222	W68AD 4N1000AM4	28292
1250	W68AD 3N1250AM4	28223	W68AD 4N1250AM4	28293
1600	W68AD 3N1600AM4	28224	W68AD 4N1600AM4	28294
Equipped with AH electronic trip unit				
200	W68AD 3N200AH	28225	W68AD 4N200AH	28295
400	W68AD 3N400AH	28226	W68AD 4N400AH	28296
630	W68AD 3N630AH	28227	W68AD 4N630AH	28297
800	W68AD 3N800AH	28228	W68AD 4N800AH	28298
1000	W68AD 3N1000AH	28229	W68AD 4N1000AH	28299
1250	W68AD 3N1250AH	28230	W68AD 4N1250AH	28300
1600	W68AD 3N1600AH	28231	W68AD 4N1600AH	28301

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators

## Selection and ordering data

Size A, withdrawable version, horizontal rear connection, Icu = 65 kA, Ics = 55 kA, with standard accessories <sup>(1)</sup>

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with AL3 electronic trip unit				
200	W68AD 3H200AL3	28232	W68AD 4H200AL3	28302
400	W68AD 3H400AL3	28233	W68AD 4H400AL3	28303
630	W68AD 3H630AL3	28234	W68AD 4H630AL3	28304
800	W68AD 3H800AL3	28235	W68AD 4H800AL3	28305
1000	W68AD 3H1000AL3	28236	W68AD 4H1000AL3	28306
1250	W68AD 3H1250AL3	28237	W68AD 4H1250AL3	28307
1600	W68AD 3H1600AL3	28238	W68AD 4H1600AL3	28308
Equipped with AL4 electronic trip unit				
200	W68AD 3H200AL4	28239	W68AD 4H200AL4	28309
400	W68AD 3H400AL4	28240	W68AD 4H400AL4	28310
630	W68AD 3H630AL4	28241	W68AD 4H630AL4	28311
800	W68AD 3H800AL4	28242	W68AD 4H800AL4	28312
1000	W68AD 3H1000AL4	28243	W68AD 4H1000AL4	28313
1250	W68AD 3H1250AL4	28244	W68AD 4H1250AL4	28314
1600	W68AD 3H1600AL4	28245	W68AD 4H1600AL4	28315
Equipped with AM3 electronic trip unit				
200	W68AD 3H200AM3	28246	W68AD 4H200AM3	28316
400	W68AD 3H400AM3	28247	W68AD 4H400AM3	28317
630	W68AD 3H630AM3	28248	W68AD 4H630AM3	28318
800	W68AD 3H800AM3	28249	W68AD 4H800AM3	28319
1000	W68AD 3H1000AM3	28250	W68AD 4H1000AM3	28320
1250	W68AD 3H1250AM3	28251	W68AD 4H1250AM3	28321
1600	W68AD 3H1600AM3	28252	W68AD 4H1600AM3	28322
Equipped with AM4 electronic trip unit				
200	W68AD 3H200AM4	28253	W68AD 4H200AM4	28323
400	W68AD 3H400AM4	28254	W68AD 4H400AM4	28324
630	W68AD 3H630AM4	28255	W68AD 4H630AM4	28325
800	W68AD 3H800AM4	28256	W68AD 4H800AM4	28326
1000	W68AD 3H1000AM4	28257	W68AD 4H1000AM4	28327
1250	W68AD 3H1250AM4	28258	W68AD 4H1250AM4	28328
1600	W68AD 3H1600AM4	28259	W68AD 4H1600AM4	28329
Equipped with AH electronic trip unit				
200	W68AD 3H200AH	28260	W68AD 4H200AH	28330
400	W68AD 3H400AH	28261	W68AD 4H400AH	28331
630	W68AD 3H630AH	28262	W68AD 4H630AH	28332
800	W68AD 3H800AH	28263	W68AD 4H800AH	28333
1000	W68AD 3H1000AH	28264	W68AD 4H1000AH	28334
1250	W68AD 3H1250AH	28265	W68AD 4H1250AH	28335
1600	W68AD 3H1600AH	28266	W68AD 4H1600AH	28336



Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators

# Air Circuit Breakers Series 3SW68

## Selection and ordering data

Size B, fixed version, horizontal rear connection, Icu = Ics = 70 kA, with standard accessories <sup>(1)</sup>

1



Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
630	W68BF 3N630BL3	28337	W68BF 4N630BL3	28435
800	W68BF 3N800BL3	28338	W68BF 4N800BL3	28436
1000	W68BF 3N1000BL3	28339	W68BF 4N1000BL3	28437
1250	W68BF 3N1250BL3	28340	W68BF 4N1250BL3	28438
1600	W68BF 3N1600BL3	28341	W68BF 4N1600BL3	28439
2000	W68BF 3N2000BL3	28342	W68BF 4N2000BL3	28440
2500	W68BF 3N2500BL3	28343	W68BF 4N2500BL3	28441
Equipped with BL4 electronic trip unit				
630	W68BF 3N630BL4	28344	W68BF 4N630BL4	28442
800	W68BF 3N800BL4	28345	W68BF 4N800BL4	28443
1000	W68BF 3N1000BL4	28346	W68BF 4N1000BL4	28444
1250	W68BF 3N1250BL4	28347	W68BF 4N1250BL4	28445
1600	W68BF 3N1600BL4	28348	W68BF 4N1600BL4	28446
2000	W68BF 3N2000BL4	28349	W68BF 4N2000BL4	28447
2500	W68BF 3N2500BL4	28350	W68BF 4N2500BL4	28448
Equipped with BM3 electronic trip unit				
630	W68BF 3N630BM3	28351	W68BF 4N630BM3	28449
800	W68BF 3N800BM3	28352	W68BF 4N800BM3	28450
1000	W68BF 3N1000BM3	28353	W68BF 4N1000BM3	28451
1250	W68BF 3N1250BM3	28354	W68BF 4N1250BM3	28452
1600	W68BF 3N1600BM3	28355	W68BF 4N1600BM3	28453
2000	W68BF 3N2000BM3	28356	W68BF 4N2000BM3	28454
2500	W68BF 3N2500BM3	28357	W68BF 4N2500BM3	28455
Equipped with BM4 electronic trip unit				
630	W68BF 3N630BM4	28358	W68BF 4N630BM4	28456
800	W68BF 3N800BM4	28359	W68BF 4N800BM4	28457
1000	W68BF 3N1000BM4	28360	W68BF 4N1000BM4	28458
1250	W68BF 3N1250BM4	28361	W68BF 4N1250BM4	28459
1600	W68BF 3N1600BM4	28362	W68BF 4N1600BM4	28460
2000	W68BF 3N2000BM4	28363	W68BF 4N2000BM4	28461
2500	W68BF 3N2500BM4	28364	W68BF 4N2500BM4	28462
Equipped with BHP electronic trip unit				
630	W68BF 3N630BHP	28365	W68BF 4N630BHP	28463
800	W68BF 3N800BHP	28366	W68BF 4N800BHP	28464
1000	W68BF 3N1000BHP	28367	W68BF 4N1000BHP	28465
1250	W68BF 3N1250BHP	28368	W68BF 4N1250BHP	28466
1600	W68BF 3N1600BHP	28369	W68BF 4N1600BHP	28467
2000	W68BF 3N2000BHP	28370	W68BF 4N2000BHP	28468
2500	W68BF 3N2500BHP	28371	W68BF 4N2500BHP	28469
Equipped with BHQ electronic trip unit				
630	W68BF 3N630BHQ	28372	W68BF 4N630BHQ	28470
800	W68BF 3N800BHQ	28373	W68BF 4N800BHQ	28471
1000	W68BF 3N1000BHQ	28374	W68BF 4N1000BHQ	28472
1250	W68BF 3N1250BHQ	28375	W68BF 4N1250BHQ	28473
1600	W68BF 3N1600BHQ	28376	W68BF 4N1600BHQ	28474
2000	W68BF 3N2000BHQ	28377	W68BF 4N2000BHQ	28475
2500	W68BF 3N2500BHQ	28378	W68BF 4N2500BHQ	28476
Equipped with BHG electronic trip unit				
630	W68BF 3N630BHG	28379	W68BF 4N630BHG	28477
800	W68BF 3N800BHG	28380	W68BF 4N800BHG	28478
1000	W68BF 3N1000BHG	28381	W68BF 4N1000BHG	28479
1250	W68BF 3N1250BHG	28382	W68BF 4N1250BHG	28480
1600	W68BF 3N1600BHG	28383	W68BF 4N1600BHG	28481
2000	W68BF 3N2000BHG	28384	W68BF 4N2000BHG	28482
2500	W68BF 3N2500BHG	28385	W68BF 4N2500BHG	28483

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators

## Selection and ordering data

Size B, fixed version, horizontal rear connection, Icu = Ics = 85 kA, with standard accessories <sup>(1)</sup>

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
630	W68BF 3H630BL3	28386	W68BF 4H630BL3	28484
800	W68BF 3H800BL3	28387	W68BF 4H800BL3	28485
1000	W68BF 3H1000BL3	28388	W68BF 4H1000BL3	28486
1250	W68BF 3H1250BL3	28389	W68BF 4H1250BL3	28487
1600	W68BF 3H1600BL3	28390	W68BF 4H1600BL3	28488
2000	W68BF 3H2000BL3	28391	W68BF 4H2000BL3	28489
2500	W68BF 3H2500BL3	28392	W68BF 4H2500BL3	28490
Equipped with BL4 electronic trip unit				
630	W68BF 3H630BL4	28393	W68BF 4H630BL4	28491
800	W68BF 3H800BL4	28394	W68BF 4H800BL4	28492
1000	W68BF 3H1000BL4	28395	W68BF 4H1000BL4	28493
1250	W68BF 3H1250BL4	28396	W68BF 4H1250BL4	28494
1600	W68BF 3H1600BL4	28397	W68BF 4H1600BL4	28495
2000	W68BF 3H2000BL4	28398	W68BF 4H2000BL4	28496
2500	W68BF 3H2500BL4	28399	W68BF 4H2500BL4	28497
Equipped with BM3 electronic trip unit				
630	W68BF 3H630BM3	28400	W68BF 4H630BM3	28498
800	W68BF 3H800BM3	28401	W68BF 4H800BM3	28499
1000	W68BF 3H1000BM3	28402	W68BF 4H1000BM3	28500
1250	W68BF 3H1250BM3	28403	W68BF 4H1250BM3	28501
1600	W68BF 3H1600BM3	28404	W68BF 4H1600BM3	28502
2000	W68BF 3H2000BM3	28405	W68BF 4H2000BM3	28503
2500	W68BF 3H2500BM3	28406	W68BF 4H2500BM3	28504
Equipped with BM4 electronic trip unit				
630	W68BF 3H630BM4	28407	W68BF 4H630BM4	28505
800	W68BF 3H800BM4	28408	W68BF 4H800BM4	28506
1000	W68BF 3H1000BM4	28409	W68BF 4H1000BM4	28507
1250	W68BF 3H1250BM4	28410	W68BF 4H1250BM4	28508
1600	W68BF 3H1600BM4	28411	W68BF 4H1600BM4	28509
2000	W68BF 3H2000BM4	28412	W68BF 4H2000BM4	28510
2500	W68BF 3H2500BM4	28413	W68BF 4H2500BM4	28511
Equipped with BHP electronic trip unit				
630	W68BF 3H630BHP	28414	W68BF 4H630BHP	28512
800	W68BF 3H800BHP	28415	W68BF 4H800BHP	28513
1000	W68BF 3H1000BHP	28416	W68BF 4H1000BHP	28514
1250	W68BF 3H1250BHP	28417	W68BF 4H1250BHP	28515
1600	W68BF 3H1600BHP	28418	W68BF 4H1600BHP	28516
2000	W68BF 3H2000BHP	28419	W68BF 4H2000BHP	28517
2500	W68BF 3H2500BHP	28420	W68BF 4H2500BHP	28518
Equipped with BHQ electronic trip unit				
630	W68BF 3H630BHQ	28421	W68BF 4H630BHQ	28519
800	W68BF 3H800BHQ	28422	W68BF 4H800BHQ	28520
1000	W68BF 3H1000BHQ	28423	W68BF 4H1000BHQ	28521
1250	W68BF 3H1250BHQ	28424	W68BF 4H1250BHQ	28522
1600	W68BF 3H1600BHQ	28425	W68BF 4H1600BHQ	28523
2000	W68BF 3H2000BHQ	28426	W68BF 4H2000BHQ	28524
2500	W68BF 3H2500BHQ	28427	W68BF 4H2500BHQ	28525
Equipped with BHG electronic trip unit				
630	W68BF 3H630BHG	28428	W68BF 4H630BHG	28526
800	W68BF 3H800BHG	28429	W68BF 4H800BHG	28527
1000	W68BF 3H1000BHG	28430	W68BF 4H1000BHG	28528
1250	W68BF 3H1250BHG	28431	W68BF 4H1250BHG	28529
1600	W68BF 3H1600BHG	28432	W68BF 4H1600BHG	28530
2000	W68BF 3H2000BHG	28433	W68BF 4H2000BHG	28531
2500	W68BF 3H2500BHG	28434	W68BF 4H2500BHG	28532

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators





## Selection and ordering data

Size B, withdrawable version, horizontal rear connection, I<sub>cu</sub> = I<sub>cs</sub> = 70 kA, with standard accessories <sup>(1)</sup>

1



Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
630	W68BD 3N630BL3	28533	W68BD 4N630BL3	18228
800	W68BD 3N800BL3	28534	W68BD 4N800BL3	18229
1000	W68BD 3N1000BL3	28535	W68BD 4N1000BL3	18230
1250	W68BD 3N1250BL3	28536	W68BD 4N1250BL3	18231
1600	W68BD 3N1600BL3	28537	W68BD 4N1600BL3	18232
2000	W68BD 3N2000BL3	28538	W68BD 4N2000BL3	18233
2500	W68BD 3N2500BL3	28539	W68BD 4N2500BL3	18234
Equipped with BL4 electronic trip unit				
630	W68BD 3N630BL4	28540	W68BD 4N630BL4	18235
800	W68BD 3N800BL4	28541	W68BD 4N800BL4	18236
1000	W68BD 3N1000BL4	28542	W68BD 4N1000BL4	18237
1250	W68BD 3N1250BL4	28543	W68BD 4N1250BL4	18238
1600	W68BD 3N1600BL4	28544	W68BD 4N1600BL4	18239
2000	W68BD 3N2000BL4	28545	W68BD 4N2000BL4	18240
2500	W68BD 3N2500BL4	28546	W68BD 4N2500BL4	18241
Equipped with BM3 electronic trip unit				
630	W68BD 3N630BM3	28547	W68BD 4N630BM3	18242
800	W68BD 3N800BM3	28548	W68BD 4N800BM3	18243
1000	W68BD 3N1000BM3	28549	W68BD 4N1000BM3	18244
1250	W68BD 3N1250BM3	28550	W68BD 4N1250BM3	18245
1600	W68BD 3N1600BM3	28551	W68BD 4N1600BM3	18246
2000	W68BD 3N2000BM3	28552	W68BD 4N2000BM3	18247
2500	W68BD 3N2500BM3	28553	W68BD 4N2500BM3	18248
Equipped with BM4 electronic trip unit				
630	W68BD 3N630BM4	28554	W68BD 4N630BM4	18249
800	W68BD 3N800BM4	28555	W68BD 4N800BM4	18250
1000	W68BD 3N1000BM4	28556	W68BD 4N1000BM4	18251
1250	W68BD 3N1250BM4	28557	W68BD 4N1250BM4	18252
1600	W68BD 3N1600BM4	28558	W68BD 4N1600BM4	18253
2000	W68BD 3N2000BM4	28559	W68BD 4N2000BM4	18254
2500	W68BD 3N2500BM4	28560	W68BD 4N2500BM4	18255
Equipped with BHP electronic trip unit				
630	W68BD 3N630BHP	28561	W68BD 4N630BHP	18256
800	W68BD 3N800BHP	28562	W68BD 4N800BHP	18257
1000	W68BD 3N1000BHP	28563	W68BD 4N1000BHP	18258
1250	W68BD 3N1250BHP	28564	W68BD 4N1250BHP	18259
1600	W68BD 3N1600BHP	28565	W68BD 4N1600BHP	18260
2000	W68BD 3N2000BHP	28566	W68BD 4N2000BHP	18261
2500	W68BD 3N2500BHP	28567	W68BD 4N2500BHP	18262
Equipped with BHQ electronic trip unit				
630	W68BD 3N630BHQ	28568	W68BD 4N630BHQ	18263
800	W68BD 3N800BHQ	28569	W68BD 4N800BHQ	18264
1000	W68BD 3N1000BHQ	28570	W68BD 4N1000BHQ	18265
1250	W68BD 3N1250BHQ	28571	W68BD 4N1250BHQ	18266
1600	W68BD 3N1600BHQ	28572	W68BD 4N1600BHQ	18267
2000	W68BD 3N2000BHQ	28573	W68BD 4N2000BHQ	18268
2500	W68BD 3N2500BHQ	28574	W68BD 4N2500BHQ	18269
Equipped with BHG electronic trip unit				
630	W68BD 3N630BHG	28575	W68BD 4N630BHG	18270
800	W68BD 3N800BHG	28576	W68BD 4N800BHG	18271
1000	W68BD 3N1000BHG	28577	W68BD 4N1000BHG	18272
1250	W68BD 3N1250BHG	28578	W68BD 4N1250BHG	18273
1600	W68BD 3N1600BHG	28579	W68BD 4N1600BHG	18274
2000	W68BD 3N2000BHG	28580	W68BD 4N2000BHG	18275
2500	W68BD 3N2500BHG	28581	W68BD 4N2500BHG	18276

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators

## Selection and ordering data

Size B, withdrawable version, horizontal rear connection, I<sub>cu</sub> = I<sub>cs</sub> = 85 kA, with standard accessories <sup>(1)</sup>

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
630	W68BD 3H630BL3	28582	W68BD 4H630BL3	18277
800	W68BD 3H800BL3	28583	W68BD 4H800BL3	18278
1000	W68BD 3H1000BL3	28584	W68BD 4H1000BL3	18279
1250	W68BD 3H1250BL3	28585	W68BD 4H1250BL3	18280
1600	W68BD 3H1600BL3	28586	W68BD 4H1600BL3	18281
2000	W68BD 3H2000BL3	28587	W68BD 4H2000BL3	18282
2500	W68BD 3H2500BL3	28588	W68BD 4H2500BL3	18283
Equipped with BL4 electronic trip unit				
630	W68BD 3H630BL4	28589	W68BD 4H630BL4	18284
800	W68BD 3H800BL4	28590	W68BD 4H800BL4	18285
1000	W68BD 3H1000BL4	28591	W68BD 4H1000BL4	18286
1250	W68BD 3H1250BL4	28592	W68BD 4H1250BL4	18287
1600	W68BD 3H1600BL4	28593	W68BD 4H1600BL4	18288
2000	W68BD 3H2000BL4	28594	W68BD 4H2000BL4	18289
2500	W68BD 3H2500BL4	28595	W68BD 4H2500BL4	18290
Equipped with BM3 electronic trip unit				
630	W68BD 3H630BM3	28596	W68BD 4H630BM3	18291
800	W68BD 3H800BM3	28597	W68BD 4H800BM3	18292
1000	W68BD 3H1000BM3	28598	W68BD 4H1000BM3	18293
1250	W68BD 3H1250BM3	28599	W68BD 4H1250BM3	18294
1600	W68BD 3H1600BM3	28600	W68BD 4H1600BM3	18295
2000	W68BD 3H2000BM3	28601	W68BD 4H2000BM3	18296
2500	W68BD 3H2500BM3	28602	W68BD 4H2500BM3	18297
Equipped with BM4 electronic trip unit				
630	W68BD 3H630BM4	28603	W68BD 4H630BM4	18298
800	W68BD 3H800BM4	28604	W68BD 4H800BM4	18299
1000	W68BD 3H1000BM4	28605	W68BD 4H1000BM4	18300
1250	W68BD 3H1250BM4	28606	W68BD 4H1250BM4	18301
1600	W68BD 3H1600BM4	28607	W68BD 4H1600BM4	18302
2000	W68BD 3H2000BM4	28608	W68BD 4H2000BM4	18303
2500	W68BD 3H2500BM4	28609	W68BD 4H2500BM4	18304
Equipped with BHP electronic trip unit				
630	W68BD 3H630BHP	28610	W68BD 4H630BHP	18305
800	W68BD 3H800BHP	28611	W68BD 4H800BHP	18306
1000	W68BD 3H1000BHP	28612	W68BD 4H1000BHP	18307
1250	W68BD 3H1250BHP	28613	W68BD 4H1250BHP	18308
1600	W68BD 3H1600BHP	28614	W68BD 4H1600BHP	18309
2000	W68BD 3H2000BHP	28615	W68BD 4H2000BHP	18310
2500	W68BD 3H2500BHP	28616	W68BD 4H2500BHP	18311
Equipped with BHQ electronic trip unit				
630	W68BD 3H630BHQ	18214	W68BD 4H630BHQ	18312
800	W68BD 3H800BHQ	18215	W68BD 4H800BHQ	18313
1000	W68BD 3H1000BHQ	18216	W68BD 4H1000BHQ	18314
1250	W68BD 3H1250BHQ	18217	W68BD 4H1250BHQ	18315
1600	W68BD 3H1600BHQ	18218	W68BD 4H1600BHQ	18316
2000	W68BD 3H2000BHQ	18219	W68BD 4H2000BHQ	18317
2500	W68BD 3H2500BHQ	18220	W68BD 4H2500BHQ	18318
Equipped with BHG electronic trip unit				
630	W68BD 3H630BHG	18221	W68BD 4H630BHG	18319
800	W68BD 3H800BHG	18222	W68BD 4H800BHG	18320
1000	W68BD 3H1000BHG	18223	W68BD 4H1000BHG	18321
1250	W68BD 3H1250BHG	18224	W68BD 4H1250BHG	18322
1600	W68BD 3H1600BHG	18225	W68BD 4H1600BHG	18323
2000	W68BD 3H2000BHG	18226	W68BD 4H2000BHG	18324
2500	W68BD 3H2500BHG	18227	W68BD 4H2500BHG	18325

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators



# Air Circuit Breakers Series 3SW68

## Selection and ordering data

Size C, fixed version, horizontal rear connection,  $I_{cu} = I_{cs} = 85 \text{ kA}$ , with standard accessories <sup>(1)</sup>

1

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
2000	W68CF 3N2000BL3	18326	W68CF 34N2000BL3	18410
2500	W68CF 3N2500BL3	18327	W68CF 34N2500BL3	18411
2900	W68CF 3N2900BL3	18328	W68CF 34N2900BL3	18412
3200	W68CF 3N3200BL3	18329	W68CF 34N3200BL3	18413
3600	W68CF 3N3600BL3	18330	W68CF 34N3600BL3	18414
4000	W68CF 3N4000BL3	18331	W68CF 34N4000BL3	18415
Equipped with BL4 electronic trip unit				
2000	W68CF 3N2000BL4	18332	W68CF 34N2000BL4	18416
2500	W68CF 3N2500BL4	18333	W68CF 34N2500BL4	18417
2900	W68CF 3N2900BL4	18334	W68CF 34N2900BL4	18418
3200	W68CF 3N3200BL4	18335	W68CF 34N3200BL4	18419
3600	W68CF 3N3600BL4	18336	W68CF 34N3600BL4	18420
4000	W68CF 3N4000BL4	18337	W68CF 34N4000BL4	18421
Equipped with BM3 electronic trip unit				
2000	W68CF 3N2000BM3	18338	W68CF 34N2000BM3	18422
2500	W68CF 3N2500BM3	18339	W68CF 34N2500BM3	18423
2900	W68CF 3N2900BM3	18340	W68CF 34N2900BM3	18424
3200	W68CF 3N3200BM3	18341	W68CF 34N3200BM3	18425
3600A	W68CF 3N3600BM3	18342	W68CF 34N3600BM3	18426
4000	W68CF 3N4000BM3	18343	W68CF 34N4000BM3	18427
Equipped with BM4 electronic trip unit				
2000	W68CF 3N2000BM4	18344	W68CF 34N2000BM4	18428
2500	W68CF 3N2500BM4	18345	W68CF 34N2500BM4	18429
2900	W68CF 3N2900BM4	18346	W68CF 34N2900BM4	18430
3200	W68CF 3N3200BM4	18347	W68CF 34N3200BM4	18431
3600	W68CF 3N3600BM4	18348	W68CF 34N3600BM4	18432
4000	W68CF 3N4000BM4	18349	W68CF 34N4000BM4	18433
Equipped with BHP electronic trip unit				
2000	W68CF 3N2000BHP	18350	W68CF 34N2000BH4P	18434
2500	W68CF 3N2500BHP	18351	W68CF 34N2500BH4P	18435
2900	W68CF 3N2900BHP	18352	W68CF 34N2900BH4P	18436
3200	W68CF 3N3200BHP	18353	W68CF 34N3200BH4P	18437
3600	W68CF 3N3600BHP	18354	W68CF 34N3600BH4P	18438
4000	W68CF 3N4000BHP	18355	W68CF 34N4000BH4P	18439
Equipped with BHQ electronic trip unit				
2000	W68CF 3N2000BHQ	18356	W68CF 34N2000BHQ	18440
2500	W68CF 3N2500BHQ	18357	W68CF 34N2500BHQ	18441
2900	W68CF 3N2900BHQ	18358	W68CF 34N2900BHQ	18442
3200	W68CF 3N3200BHQ	18359	W68CF 34N3200BHQ	18443
3600	W68CF 3N3600BHQ	18360	W68CF 34N3600BHQ	18444
4000	W68CF 3N4000BHQ	18361	W68CF 34N4000BHQ	18445
Equipped with BHG electronic trip unit				
2000	W68CF 3N2000BHG	18362	W68CF 34N2000BHG	18446
2500	W68CF 3N2500BHG	18363	W68CF 34N2500BHG	18447
2900	W68CF 3N2900BHG	18364	W68CF 34N2900BHG	18448
3200	W68CF 3N3200BHG	18365	W68CF 34N3200BHG	18449
3600	W68CF 3N3600BHG	18366	W68CF 34N3600BHG	18450
4000	W68CF 3N4000BHG	18367	W68CF 34N4000BHG	18451

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators

## Selection and ordering data

Size C, fixed version, horizontal rear connection, Icu 120 kA, Ics = 100 kA, with standard accessories<sup>(1)</sup>

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
2000	W68CF 3H2000BL3	<b>18368</b>	W68CF 34H2000BL3	<b>18452</b>
2500	W68CF 3H2500BL3	<b>18369</b>	W68CF 34H2500BL3	<b>18453</b>
2900	W68CF 3H2900BL3	<b>18370</b>	W68CF 34H2900BL3	<b>18454</b>
3200	W68CF 3H3200BL3	<b>18371</b>	W68CF 34H3200BL3	<b>18455</b>
3600	W68CF 3H3600BL3	<b>18372</b>	W68CF 34H3600BL3	<b>18456</b>
4000	W68CF 3H4000BL3	<b>18373</b>	W68CF 34H4000BL3	<b>18457</b>
Equipped with BL4 electronic trip unit				
2000	W68CF 3H2000BL4	<b>18374</b>	W68CF 34H2000BL4	<b>18458</b>
2500	W68CF 3H2500BL4	<b>18375</b>	W68CF 34H2500BL4	<b>18459</b>
2900	W68CF 3H2900BL4	<b>18376</b>	W68CF 34H2900BL4	<b>18460</b>
3200	W68CF 3H3200BL4	<b>18377</b>	W68CF 34H3200BL4	<b>18461</b>
3600	W68CF 3H3600BL4	<b>18378</b>	W68CF 34H3600BL4	<b>18462</b>
4000	W68CF 3H4000BL4	<b>18379</b>	W68CF 34H4000BL4	<b>18463</b>
Equipped with BM3 electronic trip unit				
2000	W68CF 3H2000BM3	<b>18380</b>	W68CF 34H2000BM3	<b>18464</b>
2500	W68CF 3H2500BM3	<b>18381</b>	W68CF 34H2500BM3	<b>18465</b>
2900	W68CF 3H2900BM3	<b>18382</b>	W68CF 34H2900BM3	<b>18466</b>
3200	W68CF 3H3200BM3	<b>18383</b>	W68CF 34H3200BM3	<b>18467</b>
3600A	W68CF 3H3600BM3	<b>18384</b>	W68CF 34H3600BM3	<b>18468</b>
4000	W68CF 3H4000BM3	<b>18385</b>	W68CF 34H4000BM3	<b>18469</b>
Equipped with BM4 electronic trip unit				
2000	W68CF 3H2000BM4	<b>18386</b>	W68CF 34H2000BM4	<b>18470</b>
2500	W68CF 3H2500BM4	<b>18387</b>	W68CF 34H2500BM4	<b>18471</b>
2900	W68CF 3H2900BM4	<b>18388</b>	W68CF 34H2900BM4	<b>18472</b>
3200	W68CF 3H3200BM4	<b>18389</b>	W68CF 34H3200BM4	<b>18473</b>
3600	W68CF 3H3600BM4	<b>18390</b>	W68CF 34H3600BM4	<b>18474</b>
4000	W68CF 3H4000BM4	<b>18391</b>	W68CF 34H4000BM4	<b>18475</b>
Equipped with BHP electronic trip unit				
2000	W68CF 3H2000BHP	<b>18392</b>	W68CF 34H2000BH4P	<b>18476</b>
2500	W68CF 3H2500BHP	<b>18393</b>	W68CF 34H2500BH4P	<b>18477</b>
2900	W68CF 3H2900BHP	<b>18394</b>	W68CF 34H2900BH4P	<b>18478</b>
3200	W68CF 3H3200BHP	<b>18395</b>	W68CF 34H3200BH4P	<b>18479</b>
3600	W68CF 3H3600BHP	<b>18396</b>	W68CF 34H3600BH4P	<b>18480</b>
4000	W68CF 3H4000BHP	<b>18397</b>	W68CF 34H4000BH4P	<b>18481</b>
Equipped with BHQ electronic trip unit				
2000	W68CF 3H2000BHQ	<b>18398</b>	W68CF 34H2000BHQ	<b>18482</b>
2500	W68CF 3H2500BHQ	<b>18399</b>	W68CF 34H2500BHQ	<b>18483</b>
2900	W68CF 3H2900BHQ	<b>18400</b>	W68CF 34H2900BHQ	<b>18484</b>
3200	W68CF 3H3200BHQ	<b>18401</b>	W68CF 34H3200BHQ	<b>18485</b>
3600	W68CF 3H3600BHQ	<b>18402</b>	W68CF 34H3600BHQ	<b>18486</b>
4000	W68CF 3H4000BHQ	<b>18403</b>	W68CF 34H4000BHQ	<b>18487</b>
Equipped with BHG electronic trip unit				
2000	W68CF 3H2000BHG	<b>18404</b>	W68CF 34H2000BHG	<b>18488</b>
2500	W68CF 3H2500BHG	<b>18405</b>	W68CF 34H2500BHG	<b>18489</b>
2900	W68CF 3H2900BHG	<b>18406</b>	W68CF 34H2900BHG	<b>18490</b>
3200	W68CF 3H3200BHG	<b>18407</b>	W68CF 34H3200BHG	<b>18491</b>
3600	W68CF 3H3600BHG	<b>18408</b>	W68CF 34H3600BHG	<b>18492</b>
4000	W68CF 3H4000BHG	<b>18409</b>	W68CF 34H4000BHG	<b>18493</b>

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators



# Air Circuit Breakers Series 3SW68

## Selection and ordering data

Size C, withdrawable version, horizontal rear connection, Icu = Ics = 85 kA, with standard accessories<sup>01</sup>

1

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
2000	W68CD 3N2000BL3	18494	W68CD 34N2000BL3	32145
2500	W68CD 3N2500BL3	18495	W68CD 34N2500BL3	32146
2900	W68CD 3N2900BL3	18496	W68CD 34N2900BL3	32147
3200	W68CD 3N3200BL3	18497	W68CD 34N3200BL3	32148
3600	W68CD 3N3600BL3	18498	W68CD 34N3600BL3	32149
4000	W68CD 3N4000BL3	18499	W68CD 34N4000BL3	32150
Equipped with BL4 electronic trip unit				
2000	W68CD 3N2000BL4	18500	W68CD 34N2000BL4	32151
2500	W68CD 3N2500BL4	18501	W68CD 34N2500BL4	32152
2900	W68CD 3N2900BL4	32069	W68CD 34N2900BL4	32153
3200	W68CD 3N3200BL4	32070	W68CD 34N3200BL4	32154
3600	W68CD 3N3600BL4	32071	W68CD 34N3600BL4	32155
4000	W68CD 3N4000BL4	32072	W68CD 34N4000BL4	32156
Equipped with BM3 electronic trip unit				
2000	W68CD 3N2000BM3	32073	W68CD 34N2000BM3	32157
2500	W68CD 3N2500BM3	32074	W68CD 34N2500BM3	32158
2900	W68CD 3N2900BM3	32075	W68CD 34N2900BM3	32159
3200	W68CD 3N3200BM3	32076	W68CD 34N3200BM3	32160
3600A	W68CD 3N3600BM3	32077	W68CD 34N3600BM3	32161
4000	W68CD 3N4000BM3	32078	W68CD 34N4000BM3	32162
Equipped with BM4 electronic trip unit				
2000	W68CD 3N2000BM4	32079	W68CD 34N2000BM4	32163
2500	W68CD 3N2500BM4	32080	W68CD 34N2500BM4	32164
2900	W68CD 3N2900BM4	32081	W68CD 34N2900BM4	32165
3200	W68CD 3N3200BM4	32082	W68CD 34N3200BM4	32166
3600	W68CD 3N3600BM4	32083	W68CD 34N3600BM4	32167
4000	W68CD 3N4000BM4	32084	W68CD 34N4000BM4	32168
Equipped with BHP electronic trip unit				
2000	W68CD 3N2000BHP	32085	W68CD 34N2000BH4P	32169
2500	W68CD 3N2500BHP	32086	W68CD 34N2500BH4P	32170
2900	W68CD 3N2900BHP	32087	W68CD 34N2900BH4P	32171
3200	W68CD 3N3200BHP	32088	W68CD 34N3200BH4P	32172
3600	W68CD 3N3600BHP	32089	W68CD 34N3600BH4P	32173
4000	W68CD 3N4000BHP	32090	W68CD 34N4000BH4P	32174
Equipped with BHQ electronic trip unit				
2000	W68CD 3N2000BHQ	32091	W68CD 34N2000BHQ	32175
2500	W68CD 3N2500BHQ	32092	W68CD 34N2500BHQ	32176
2900	W68CD 3N2900BHQ	32093	W68CD 34N2900BHQ	32177
3200	W68CD 3N3200BHQ	32094	W68CD 34N3200BHQ	32178
3600	W68CD 3N3600BHQ	32095	W68CD 34N3600BHQ	32179
4000	W68CD 3N4000BHQ	32096	W68CD 34N4000BHQ	32180
Equipped with BHG electronic trip unit				
2000	W68CD 3N2000BHG	32097	W68CD 34N2000BHG	32181
2500	W68CD 3N2500BHG	32098	W68CD 34N2500BHG	32182
2900	W68CD 3N2900BHG	32099	W68CD 34N2900BHG	32183
3200	W68CD 3N3200BHG	32100	W68CD 34N3200BHG	32184
3600	W68CD 3N3600BHG	32101	W68CD 34N3600BHG	32185
4000	W68CD 3N4000BHG	32102	W68CD 34N4000BHG	32186

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators

## Selection and ordering data

Size C, withdrawable version, horizontal rear connection, Icu 120 kA, Ics = 100 kA, with standard accessories<sup>(1)</sup>

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
2000	W68CD 3H2000BL3	32103	W68CD 34H2000BL3	32187
2500	W68CD 3H2500BL3	32104	W68CD 34H2500BL3	32188
2900	W68CD 3H2900BL3	32105	W68CD 34H2900BL3	32189
3200	W68CD 3H3200BL3	32106	W68CD 34H3200BL3	32190
3600	W68CD 3H3600BL3	32107	W68CD 34H3600BL3	32191
4000	W68CD 3H4000BL3	32108	W68CD 34H4000BL3	32192
Equipped with BL4 electronic trip unit				
2000	W68CD 3H2000BL4	32109	W68CD 34H2000BL4	32193
2500	W68CD 3H2500BL4	32110	W68CD 34H2500BL4	32194
2900	W68CD 3H2900BL4	32111	W68CD 34H2900BL4	32195
3200	W68CD 3H3200BL4	32112	W68CD 34H3200BL4	32196
3600	W68CD 3H3600BL4	32113	W68CD 34H3600BL4	32197
4000	W68CD 3H4000BL4	32114	W68CD 34H4000BL4	32198
Equipped with BM3 electronic trip unit				
2000	W68CD 3H2000BM3	32115	W68CD 34H2000BM3	32199
2500	W68CD 3H2500BM3	32116	W68CD 34H2500BM3	32200
2900	W68CD 3H2900BM3	32117	W68CD 34H2900BM3	32201
3200	W68CD 3H3200BM3	32118	W68CD 34H3200BM3	32202
3600A	W68CD 3H3600BM3	32119	W68CD 34H3600BM3	32203
4000	W68CD 3H4000BM3	32120	W68CD 34H4000BM3	32204
Equipped with BM4 electronic trip unit				
2000	W68CD 3H2000BM4	32121	W68CD 34H2000BM4	32205
2500	W68CD 3H2500BM4	32122	W68CD 34H2500BM4	32206
2900	W68CD 3H2900BM4	32123	W68CD 34H2900BM4	32207
3200	W68CD 3H3200BM4	32124	W68CD 34H3200BM4	32208
3600	W68CD 3H3600BM4	32125	W68CD 34H3600BM4	32209
4000	W68CD 3H4000BM4	32126	W68CD 34H4000BM4	32210
Equipped with BHP electronic trip unit				
2000	W68CD 3H2000BHP	32127	W68CD 34H2000BH4P	32211
2500	W68CD 3H2500BHP	32128	W68CD 34H2500BH4P	32212
2900	W68CD 3H2900BHP	32129	W68CD 34H2900BH4P	32213
3200	W68CD 3H3200BHP	32130	W68CD 34H3200BH4P	32214
3600	W68CD 3H3600BHP	32131	W68CD 34H3600BH4P	32215
4000	W68CD 3H4000BHP	32132	W68CD 34H4000BH4P	32216
Equipped with BHQ electronic trip unit				
2000	W68CD 3H2000BHQ	32133	W68CD 34H2000BHQ	32217
2500	W68CD 3H2500BHQ	32134	W68CD 34H2500BHQ	32218
2900	W68CD 3H2900BHQ	32135	W68CD 34H2900BHQ	32219
3200	W68CD 3H3200BHQ	32136	W68CD 34H3200BHQ	32220
3600	W68CD 3H3600BHQ	32137	W68CD 34H3600BHQ	32221
4000	W68CD 3H4000BHQ	32138	W68CD 34H4000BHQ	32222
Equipped with BHG electronic trip unit				
2000	W68CD 3H2000BHG	32139	W68CD 34H2000BHG	32223
2500	W68CD 3H2500BHG	32140	W68CD 34H2500BHG	32224
2900	W68CD 3H2900BHG	32141	W68CD 34H2900BHG	32225
3200	W68CD 3H3200BHG	32142	W68CD 34H3200BHG	32226
3600	W68CD 3H3600BHG	32143	W68CD 34H3600BHG	32227
4000	W68CD 3H4000BHG	32144	W68CD 34H4000BHG	32228

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)
- Separators



### Selection and ordering data

Size D, fixed version, Icu = Ics = 100 kA, with standard accessories<sup>(1)</sup>

4000 A & 5000 A: Horizontal rear connection; 6300 A: Vertical rear connection

1

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
4000	W68DF 3N4000BL3	32229	W68DF 4N4000BL3	32292
5000	W68DF 3N5000BL3	32230	W68DF 4N5000BL3	32293
6300	W68DF 3N6300BL3	32231	W68DF 4N6300BL3	32294
Equipped with BL4 electronic trip unit				
4000	W68DF 3N4000BL4	32232	W68DF 4N4000BL4	32295
5000	W68DF 3N5000BL4	32233	W68DF 4N5000BL4	32296
6300	W68DF 3N6300BL4	32234	W68DF 4N6300BL4	32297
Equipped with BM3 electronic trip unit				
4000	W68DF 3N4000BM3	32235	W68DF 4N4000BM3	32298
5000	W68DF 3N5000BM3	32236	W68DF 4N5000BM3	32299
6300	W68DF 3N6300BM3	32237	W68DF 4N6300BM3	32300
Equipped with BM4 electronic trip unit				
4000	W68DF 3N4000BM4	32238	W68DF 4N4000BM4	32301
5000	W68DF 3N5000BM4	32239	W68DF 4N5000BM4	32302
6300	W68DF 3N6300BM4	32240	W68DF 4N6300BM4	32303
Equipped with BHP electronic trip unit				
4000	W68DF 3N4000BHP	32241	W68DF 4N4000BHP	32304
5000	W68DF 3N5000BHP	32242	W68DF 4N5000BHP	32305
6300	W68DF 3N6300BHP	32243	W68DF 4N6300BHP	32306
Equipped with BHQ electronic trip unit				
4000	W68DF 3N4000BHQ	32244	W68DF 4N4000BHQ	32307
5000	W68DF 3N5000BHQ	32245	W68DF 4N5000BHQ	32308
6300	W68DF 3N6300BHQ	32246	W68DF 4N6300BHQ	32309
Equipped with BHG electronic trip unit				
4000	W68DF 3N4000BHG	32247	W68DF 4N4000BHG	32310
5000	W68DF 3N5000BHG	32248	W68DF 4N5000BHG	32311
6300	W68DF 3N6300BHG	32249	W68DF 4N6300BHG	32312

Size D, fixed version, Icu = Ics = 120 kA, with standard accessories<sup>(1)</sup>

4000 A & 5000 A: Horizontal rear connection; 6300 A: Vertical rear connection

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
4000	W68DF 3H4000BL3	32250	W68DF 4H4000BL3	32313
5000	W68DF 3H5000BL3	32251	W68DF 4H5000BL3	32314
6300	W68DF 3H6300BL3	32252	W68DF 4H6300BL3	32315
Equipped with BL4 electronic trip unit				
4000	W68DF 3H4000BL4	32253	W68DF 4H4000BL4	32316
5000	W68DF 3H5000BL4	32254	W68DF 4H5000BL4	32317
6300	W68DF 3H6300BL4	32255	W68DF 4H6300BL4	32318
Equipped with BM3 electronic trip unit				
4000	W68DF 3H4000BM3	32256	W68DF 4H4000BM3	32319
5000	W68DF 3H5000BM3	32257	W68DF 4H5000BM3	32320
6300	W68DF 3H6300BM3	32258	W68DF 4H6300BM3	32321
Equipped with BM4 electronic trip unit				
4000	W68DF 3H4000BM4	32259	W68DF 4H4000BM4	32322
5000	W68DF 3H5000BM4	32260	W68DF 4H5000BM4	32323
6300	W68DF 3H6300BM4	32261	W68DF 4H6300BM4	32324
Equipped with BHP electronic trip unit				
4000	W68DF 3H4000BHP	32262	W68DF 4H4000BHP	32325
5000	W68DF 3H5000BHP	32263	W68DF 4H5000BHP	32326
6300	W68DF 3H6300BHP	32264	W68DF 4H6300BHP	32327
Equipped with BHQ electronic trip unit				
4000	W68DF 3H4000BHQ	32265	W68DF 4H4000BHQ	32328
5000	W68DF 3H5000BHQ	32266	W68DF 4H5000BHQ	32329
6300	W68DF 3H6300BHQ	32267	W68DF 4H6300BHQ	32330
Equipped with BHG electronic trip unit				
4000	W68DF 3H4000BHG	32268	W68DF 4H4000BHG	32331
5000	W68DF 3H5000BHG	32269	W68DF 4H5000BHG	32332
6300	W68DF 3H6300BHG	32270	W68DF 4H6300BHG	32333

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil

- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)

- Separators

## Selection and ordering data

Size D, fixed version, Icu = Ics = 150 kA, with standard accessories<sup>(1)</sup>  
4000 A & 5000 A: Horizontal rear connection; 6300 A: Vertical rear connection

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
4000	W68DF 3S4000BL3	32271	W68DF 4S4000BL3	32334
5000	W68DF 3S5000BL3	32272	W68DF 4S5000BL3	32335
6300	W68DF 3S6300BL3	32273	W68DF 4S6300BL3	32336
Equipped with BL4 electronic trip unit				
4000	W68DF 3S4000BL4	32274	W68DF 4S4000BL4	32337
5000	W68DF 3S5000BL4	32275	W68DF 4S5000BL4	32338
6300	W68DF 3S6300BL4	32276	W68DF 4S6300BL4	32339
Equipped with BM3 electronic trip unit				
4000	W68DF 3S4000BM3	32277	W68DF 4S4000BM3	32340
5000	W68DF 3S5000BM3	32278	W68DF 4S5000BM3	32341
6300	W68DF 3S6300BM3	32279	W68DF 4S6300BM3	32342
Equipped with BM4 electronic trip unit				
4000	W68DF 3S4000BM4	32280	W68DF 4S4000BM4	32343
5000	W68DF 3S5000BM4	32281	W68DF 4S5000BM4	32344
6300	W68DF 3S6300BM4	32282	W68DF 4S6300BM4	32345
Equipped with BHP electronic trip unit				
4000	W68DF 3S4000BHP	32283	W68DF 4S4000BHP	32346
5000	W68DF 3S5000BHP	32284	W68DF 4S5000BHP	32347
6300	W68DF 3S6300BHP	32285	W68DF 4S6300BHP	32348
Equipped with BHQ electronic trip unit				
4000	W68DF 3S4000BHQ	32286	W68DF 4S4000BHQ	32349
5000	W68DF 3S5000BHQ	32287	W68DF 4S5000BHQ	32350
6300	W68DF 3S6300BHQ	32288	W68DF 4S6300BHQ	32351
Equipped with BHG electronic trip unit				
4000	W68DF 3S4000BHG	32289	W68DF 4S4000BHG	32352
5000	W68DF 3S5000BHG	32290	W68DF 4S5000BHG	32353
6300	W68DF 3S6300BHG	32291	W68DF 4S6300BHG	32354

Size D, withdrawable version, Icu = Ics = 100 kA, with standard accessories<sup>(1)</sup>  
4000 A & 5000 A: Horizontal rear connection; 6300 A: Vertical rear connection

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
4000	W68DD 3N4000BL3	32355	W68DD 4N4000BL3	32418
5000	W68DD 3N5000BL3	32356	W68DD 4N5000BL3	32419
6300	W68DD 3N6300BL3	32357	W68DD 4N6300BL3	32420
Equipped with BL4 electronic trip unit				
4000	W68DD 3N4000BL4	32358	W68DD 4N4000BL4	13898
5000	W68DD 3N5000BL4	32359	W68DD 4N5000BL4	13899
6300	W68DD 3N6300BL4	32360	W68DD 4N6300BL4	13900
Equipped with BM3 electronic trip unit				
4000	W68DD 3N4000BM3	32361	W68DD 4N4000BM3	13901
5000	W68DD 3N5000BM3	32362	W68DD 4N5000BM3	13902
6300	W68DD 3N6300BM3	32363	W68DD 4N6300BM3	13903
Equipped with BM4 electronic trip unit				
4000	W68DD 3N4000BM4	32364	W68DD 4N4000BM4	13904
5000	W68DD 3N5000BM4	32365	W68DD 4N5000BM4	13905
6300	W68DD 3N6300BM4	32366	W68DD 4N6300BM4	13906
Equipped with BHP electronic trip unit				
4000	W68DD 3N4000BHP	32367	W68DD 4N4000BHP	13907
5000	W68DD 3N5000BHP	32368	W68DD 4N5000BHP	13908
6300	W68DD 3N6300BHP	32369	W68DD 4N6300BHP	13909
Equipped with BHQ electronic trip unit				
4000	W68DD 3N4000BHQ	32370	W68DD 4N4000BHQ	13910
5000	W68DD 3N5000BHQ	32371	W68DD 4N5000BHQ	13911
6300	W68DD 3N6300BHQ	32372	W68DD 4N6300BHQ	13912
Equipped with BHG electronic trip unit				
4000	W68DD 3N4000BHG	32373	W68DD 4N4000BHG	13913
5000	W68DD 3N5000BHG	32374	W68DD 4N5000BHG	13914
6300	W68DD 3N6300BHG	32375	W68DD 4N6300BHG	13915

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil

- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)

- Separators



### Selection and ordering data

Size D, withdrawable version, Icu = Ics = 120 kA, with standard accessories<sup>(1)</sup>  
 4000 A & 5000 A: Horizontal rear connection; 6300 A: Vertical rear connection

1

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
4000	W68DD 3H4000BL3	32376	W68DD 4H4000BL3	13916
5000	W68DD 3H5000BL3	32377	W68DD 4H5000BL3	13917
6300	W68DD 3H6300BL3	32378	W68DD 4H6300BL3	13918
Equipped with BL4 electronic trip unit				
4000	W68DD 3H4000BL4	32379	W68DD 4H4000BL4	13919
5000	W68DD 3H5000BL4	32380	W68DD 4H5000BL4	13920
6300	W68DD 3H6300BL4	32381	W68DD 4H6300BL4	13921
Equipped with BM3 electronic trip unit				
4000	W68DD 3H4000BM3	32382	W68DD 4H4000BM3	13922
5000	W68DD 3H5000BM3	32383	W68DD 4H5000BM3	13923
6300	W68DD 3H6300BM3	32384	W68DD 4H6300BM3	13924
Equipped with BM4 electronic trip unit				
4000	W68DD 3H4000BM4	32385	W68DD 4H4000BM4	13925
5000	W68DD 3H5000BM4	32386	W68DD 4H5000BM4	13926
6300	W68DD 3H6300BM4	32387	W68DD 4H6300BM4	13927
Equipped with BHP electronic trip unit				
4000	W68DD 3H4000BHP	32388	W68DD 4H4000BHP	13928
5000	W68DD 3H5000BHP	32389	W68DD 4H5000BHP	13929
6300	W68DD 3H6300BHP	32390	W68DD 4H6300BHP	13930
Equipped with BHQ electronic trip unit				
4000	W68DD 3H4000BHQ	32391	W68DD 4H4000BHQ	13931
5000	W68DD 3H5000BHQ	32392	W68DD 4H5000BHQ	13932
6300	W68DD 3H6300BHQ	32393	W68DD 4H6300BHQ	13933
Equipped with BHG electronic trip unit				
4000	W68DD 3H4000BHG	32394	W68DD 4H4000BHG	13934
5000	W68DD 3H5000BHG	32395	W68DD 4H5000BHG	13935
6300	W68DD 3H6300BHG	32396	W68DD 4H6300BHG	13936

Size D, withdrawable version, Icu = Ics = 150 kA, with standard accessories<sup>(1)</sup>  
 4000 A & 5000 A: Horizontal rear connection; 6300 A: Vertical rear connection

Rated current In (A)	3-pole		4-pole	
	Type code	Order code	Type code	Order code
Equipped with BL3 electronic trip unit				
4000	W68DD 3S4000BL3	32397	W68DD 4S4000BL3	13937
5000	W68DD 3S5000BL3	32398	W68DD 4S5000BL3	13938
6300	W68DD 3S6300BL3	32399	W68DD 4S6300BL3	13939
Equipped with BL4 electronic trip unit				
4000	W68DD 3S4000BL4	32400	W68DD 4S4000BL4	13940
5000	W68DD 3S5000BL4	32401	W68DD 4S5000BL4	13941
6300	W68DD 3S6300BL4	32402	W68DD 4S6300BL4	13942
Equipped with BM3 electronic trip unit				
4000	W68DD 3S4000BM3	32403	W68DD 4S4000BM3	13943
5000	W68DD 3S5000BM3	32404	W68DD 4S5000BM3	13944
6300	W68DD 3S6300BM3	32405	W68DD 4S6300BM3	13945
Equipped with BM4 electronic trip unit				
4000	W68DD 3S4000BM4	32406	W68DD 4S4000BM4	13946
5000	W68DD 3S5000BM4	32407	W68DD 4S5000BM4	13947
6300	W68DD 3S6300BM4	32408	W68DD 4S6300BM4	13948
Equipped with BHP electronic trip unit				
4000	W68DD 3S4000BHP	32409	W68DD 4S4000BHP	13949
5000	W68DD 3S5000BHP	32410	W68DD 4S5000BHP	13950
6300	W68DD 3S6300BHP	32411	W68DD 4S6300BHP	13951
Equipped with BHQ electronic trip unit				
4000	W68DD 3S4000BHQ	32412	W68DD 4S4000BHQ	13952
5000	W68DD 3S5000BHQ	32413	W68DD 4S5000BHQ	13953
6300	W68DD 3S6300BHQ	32414	W68DD 4S6300BHQ	13954
Equipped with BHG electronic trip unit				
4000	W68DD 3S4000BHG	32415	W68DD 4S4000BHG	13955
5000	W68DD 3S5000BHG	32416	W68DD 4S5000BHG	13956
6300	W68DD 3S6300BHG	32417	W68DD 4S6300BHG	13957

Note:

(1) The standard accessories includes:

- Shunt release
- Closing coil

- Motorized operating mechanism
- Auxiliary contact (4 convertible contacts)

- Separators

## Selection and ordering data

### Electrical accessories for circuit breakers

Size	Rated Voltage Un	Description	Type code	Order code	
<b>Motorized operating mechanism - EM</b>					
Size A	AC 230 V	EM AC 230 V for 3SW68-1600	W68A EM230A	39684	
	AC 400 V	EM AC 400 V for 3SW68-1600	W68A EM400A	39685	
	DC 110 V	EM DC 110 V for 3SW68-1600	W68A EM110D	39686	
Size B/C/D	DC 220 V	EM DC 220 V for 3SW68-1600	W68A EM220D	39687	
	AC 230 V	EM AC 230 V for 3SW68-2500...6300	W68B EM230A	39688	
	AC 400 V	EM AC 400 V for 3SW68-2500...6300	W68B EM400A	39689	
	DC 110 V	EM DC 110 V for 3SW68-2500...6300	W68B EM110D	39690	
	DC 220 V	EM DC 220 V for 3SW68-2500...6300	W68B EM220D	39691	
<b>Closing coil - CM</b>					
Size A/B/C/D	AC 230 V	CM AC 230 V for 3SW68	W68 CM230A	39692	
	AC 400 V	CM AC 400 V for 3SW68	W68 CM400A	39693	
	DC 110 V	CM DC 110 V for 3SW68	W68 CM110D	39694	
	DC 220 V	CM DC 220 V for 3SW68	W68 CM220D	39695	
<b>Shunt release - SH</b>					
Size A/B/C/D	AC 230 V	SH AC 230 V for 3SW68	W68 SH230A	39696	
	AC 400 V	SH AC 400 V for 3SW68	W68 SH400A	39697	
	DC 110 V	SH DC 110 V for 3SW68	W68 SH110D	39698	
	DC 220 V	SH DC 220 V for 3SW68	W68 SH220D	39699	
<b>Under-voltage release - UV</b>					
Size A/B/C/D	AC 230 V	UV AC 230 V for 3SW68	W68 UV230A	39700	
	AC 400 V	UV AC 400 V for 3SW68	W68 UV400A	39701	
<b>Time-delay module for under-voltage release - UVD</b>					
Size A/B/C/D	AC 230 V	UVD AC 230 V for 3SW68	W68 UVD230A	39702	
	AC 400 V	UVD AC 400 V for 3SW68	W68 UVD400A	39703	
<b>Auxiliary contact - AU</b>					
Size A	AC 230 V	AU 4 convertible contact AC 230 V for 3SW68-1600	W68A AU4X230A	39704	
	AC 400 V	AU 4 convertible contact AC 400 V for 3SW68-1600	W68A AU4X400A	39705	
	DC 110 V	AU 4 convertible contact DC 110 V for 3SW68-1600	W68A AU4X110D	39706	
	DC 220 V	AU 4 convertible contact DC 220 V for 3SW68-1600	W68A AU4X220D	39707	
	AC 230 V	AU 4 NO + 4 NC AC 230 V for 3SW68-1600	W68A AU44230A	39708	
	AC 400 V	AU 4 NO + 4 NC AC 400 V for 3SW68-1600	W68A AU44400A	39709	
	DC 110 V	AU 4 NO + 4 NC DC 110 V for 3SW68-1600	W68A AU44110D	39710	
	DC 220 V	AU 4 NO + 4 NC DC 220 V for 3SW68-1600	W68A AU44220D	39711	
	AC 230 V	AU 6 NO + 6 NC AC 230 V for 3SW68-1600	W68A AU66230A	39712	
	AC 400 V	AU 6 NO + 6 NC AC 400 V for 3SW68-1600	W68A AU66400A	39713	
	DC 110 V	AU 6 NO + 6 NC DC 110 V for 3SW68-1600	W68A AU66110D	39714	
	DC 220 V	AU 6 NO + 6 NC DC 220 V for 3SW68-1600	W68A AU66220D	39715	
	Size B/C/D	AC 230 V	AU 4 convertible contact AC 230 V for 3SW68-2500...6300	W68B AU4X230A	39716
		AC 400 V	AU 4 convertible contact AC 400 V for 3SW68-2500...6300	W68B AU4X400A	39717
		AC 415 V	AU 4 convertible contact AC 415 V for 3SW68-2500...6300	W68B AU4X415A	39718
		DC 110 V	AU 4 convertible contact DC 110 V for 3SW68-2500...6300	W68B AU4X110D	39719
		DC 220 V	AU 4 convertible contact DC 220 V for 3SW68-2500...6300	W68B AU4X220D	39720
DC 250 V		AU 4 convertible contact DC 250 V for 3SW68-2500...6300	W68B AU4X250D	39721	
AC 230 V		AU 4 NO + 4 NC AC 230 V for 3SW68-2500...6300	W68B AU44230A	39722	
AC 400 V		AU 4 NO + 4 NC AC 400 V for 3SW68-2500...6300	W68B AU44400A	39723	
AC 415 V		AU 4 NO + 4 NC AC 415 V for 3SW68-2500...6300	W68B AU44415A	39724	
DC 110 V		AU 4 NO + 4 NC DC 110 V for 3SW68-2500...6300	W68B AU44110D	39725	
DC 220 V		AU 4 NO + 4 NC DC 220 V for 3SW68-2500...6300	W68B AU44220D	39726	
DC 250 V		AU 4 NO + 4 NC DC 250 V for 3SW68-2500...6300	W68B AU44250D	39727	
AC 230 V		AU 6 NO + 6 NC AC 230 V for 3SW68-2500...6300	W68B AU66230A	39728	
AC 400 V		AU 6 NO + 6 NC AC 400 V for 3SW68-2500...6300	W68B AU66400A	39729	
AC 415 V		AU 6 NO + 6 NC AC 415 V for 3SW68-2500...6300	W68B AU66415A	39730	
DC 110 V		AU 6 NO + 6 NC DC 110 V for 3SW68-2500...6300	W68B AU66110D	39731	
DC 220 V		AU 6 NO + 6 NC DC 220 V for 3SW68-2500...6300	W68B AU66220D	39732	
DC 250 V	AU 6 NO + 6 NC DC 250 V for 3SW68-2500...6300	W68B AU66250D	39733		
<b>Auxiliary position contacts - AUP</b>					
Size A		AUP for 3SW68-1600	W68A AUP	39734	
Size B/C/D		AUP for 3SW68-2500...6300	W68B AUP	39735	

# Air Circuit Breakers

## Series 3SW68



### Selection and ordering data

#### Mechanical accessories for circuit breakers

Size	Description	4-pole	
		Type code	Order code
<b>Safety protection devices</b>			
Size A/B/C/D	Opening protection for racking in / racking out for 3SW68 - OPC	W68 OPC	39737
Size A/B/C/D	Protection device for unexpected charging for 3SW68 - PUC	W68 PUC	39738
Size A	Protection cover for secondary terminal for 3SW68-1600 - CST	W68A CST	13959
Size B/C/D	Protection cover for secondary terminal for 3SW68-2500...6300 - CST	W68B CST	13960
Size A/B/C/D	Separate lock device for 3SW68 - SLD	W68 SLD	13961
Size A	3-position locking device for 3SW68-1600 - TPL	W68A TPL	13962
Size B	3-position locking device for 3SW68-2500...6300 - TPL	W68B TPL	13963
Size A/B/C/D	Position locking device for 3SW68 - PLD	W68 PLD	13964
Size A/B/C/D	Protection device for opening and closing buttons for 3SW68 - PDOC	W68 PDOC	13965
Size A/B/C/D	Key lock in open position for 3SW68 - KLO	W68 KLO	13966
Size A/B/C/D	Interlock for switchgear door for 3SW68 - ISD	W68 ISD	13967
Size A/B/C/D	Position key lock for 3SW68 - PKL	W68 PKL	13968
Size A/B/C/D	Blocking device for inserting in crank when the door is open for 3SW68 - BDI	W68 BDI	13969
<b>Separators</b>			
Size A	Separators 2 pieces for 3-pole 3SW68-1600 - PSB	W68A PSB3	39739
	Separators 3 pieces for 4-pole 3SW68-1600 - PSB	W68A PSB4	39740
Size B/C/D	Separators 2 pieces for 3-pole 3SW68-2500...6300 - PSB	W68B PSB3	39741
	Separators 3 pieces for 4-pole 3SW68-2500...6300 - PSB	W68B PSB4	39742
<b>Door frame</b>			
Size A	Door frame for withdrawable 3SW68-1600 - DF	W68A DFD	39744
Size B	Door frame for withdrawable 3SW68-2500 - DF	W68B DFD	39745
Size C	Door frame for withdrawable 3SW68-4000 - DF	W68C DFD	39746
Size D	Door frame for withdrawable 3SW68-6300 - DF	W68D DFD	39747
Size A	Door frame for fixed 3SW68-1600 - DF	W68A DFF	39748
Size B	Door frame for fixed 3SW68-2500 - DF	W68B DFF	32490
Size C	Door frame for fixed 3SW68-4000 - DF	W68C DFF	32491
Size D	Door frame for fixed 3SW68-6300 - DF	W68D DFF	13958
<b>Connection terminals</b>			
Size A	Front terminals for 3-pole 3SW68-1600 200...1000 A thickness 8 mm - BR	W68A BRF31	13970
	Front terminals for 3-pole 3SW68-1600 1250...1600 A thickness 15 mm - BR	W68A BRF32	13971
Size B	Front terminals for 3-pole 3SW68-2500 630...1000 A thickness 10 mm - BR	W68B BRF31	13972
	Front terminals for 3-pole 3SW68-2500 1250...2500 A thickness 10 mm - BR	W68B BRF32	13973
Size C	Front terminals for 3-pole 3SW68-4000 2000...3600 A thickness 15 mm - BR	W68C BRF31	13974
	Front terminals for 3-pole 3SW68-4000 4000 A thickness 20 mm - BR	W68C BRF32	13975
Size A	Front terminals for 4-pole 3SW68-1600 200...1000 A thickness 8 mm - BR	W68A BRF41	13976
	Front terminals for 4-pole 3SW68-1600 1250...1600 A thickness 15 mm - BR	W68A BRF42	13977
Size B	Front terminals for 4-pole 3SW68-2500 630...1000 A thickness 10 mm - BR	W68B BRF41	13978
	Front terminals for 4-pole 3SW68-2500 1250...2500 A thickness 10 mm - BR	W68B BRF42	13979
Size C	Front terminals for 4-pole 3SW68-4000 2000...3600 A thickness 15 mm - BR	W68C BRF41	13980
	Front terminals for 4-pole 3SW68-4000 4000 A thickness 20 mm - BR	W68C BRF42	13981
Size A	Spread terminals for 3-pole 3SW68-1600 200...1000 A thickness 8 mm - BR	W68A BRE31	13982
	Spread terminals for 3-pole 3SW68-1600 1250...1600 A thickness 15 mm - BR	W68A BRE32	13983
	Spread terminals for 4-pole 3SW68-1600 200...1000 A thickness 8 mm - BR	W68A BRE41	13984
	Spread terminals for 4-pole 3SW68-1600 1250...1600 A thickness 15 mm - BR	W68A BRE42	13985
<b>Mechanical interlock</b>			
Size A/B/C/D	Mechanical interlock cable type - LM	W68 LMC	13986
Size A/B/C/D	Mechanical interlock connecting rod type - LM	W68 LML	13987
<b>Other accessories</b>			
Size A/B/C/D	Crank for 3SW68 - CRK	W68 CRK	39736
Size A/B/C/D	Mechanical operation counter - MOC	MOC	39743

### Selection and ordering data

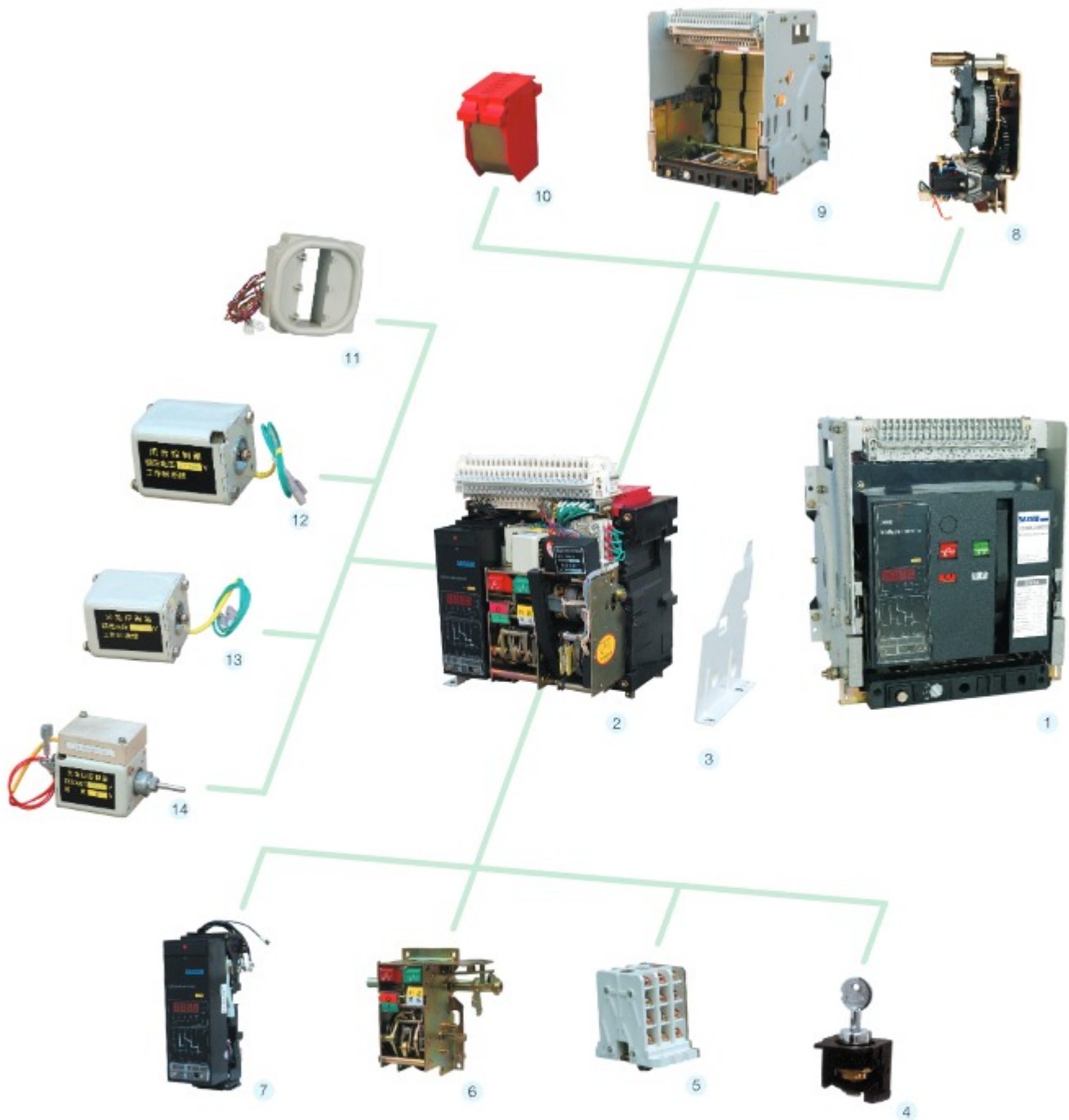
#### Accessories for electronic trip unit

Size	Rated Voltage Un	Description	Type code	Order code
<b>DC power supply – PSM</b>				
Size A/B/C/D	DC 220 V	Power supply DC 220 V	W68 PSM220D	13988
	DC 110 V	Power supply DC 110 V	W68 PSM110D	13989
<b>External current transformer for neutral conductor – CTN</b>				
Size A		CTN for 3SW68-1600 200...1000 A	W68A CTN1	13990
		CTN for 3SW68-1600 1250...1600 A	W68A CTN2	13991
Size B		CTN for 3SW68-2500 630...1000 A	W68B CTN1	13992
		CTN for 3SW68-2500 1250...1600 A	W68B CTN2	13993
Size C		CTN for 3SW68-4000 2000...3600 A	W68C CTN1	13994
		CTN for 3SW68-4000 4000 A	W68C CTN2	13995
Size D		CTN for 3SW68-6300	W68D CTN	13996
<b>External current transformer for earth-fault protection – CTE</b>				
Size A		CTE for 3SW68-1600 200...1000 A	W68A CTE1	13997
		CTE for 3SW68-1600 1250...1600 A	W68A CTE2	13998
Size B		CTE for 3SW68-2500 630...1000 A	W68B CTE1	13999
		CTE for 3SW68-2500 1250...1600 A	W68B CTE2	14000
Size C		CTE for 3SW68-4000 2000...3600 A	W68C CTE1	14001
		CTE for 3SW68-4000 4000 A	W68C CTE2	14002
Size D		CTE for 3SW68-6300	W68D CTE	14003
<b>External current transformer for differential protection – CTD</b>				
Size A		CTD for 3SW68-1600 200...1000 A	W68A CTD1	14004
		CTD for 3SW68-1600 1250...1600 A	W68A CTD2	14005
Size B		CTD for 3SW68-2500 630...1000 A	W68B CTD1	14006
		CTD for 3SW68-2500 1250...1600 A	W68B CTD2	14007
Size C		CTD for 3SW68-4000 2000...3600 A	W68C CTD1	14008
		CTD for 3SW68-4000 4000 A	W68C CTD2	14009
Size D		CTD for 3SW68-6300	W68D CTD	14010

# Air Circuit Breakers Series 3SW8

## Overview

1



- |                        |                                 |                          |                          |
|------------------------|---------------------------------|--------------------------|--------------------------|
| 1 Body 1               | 5 Auxiliary contact             | 9 Drawer base            | 13 Shunt release         |
| 2 Body 2               | 6 Operating mechanism           | 10 Arcing chamber        | 14 Under-voltage release |
| 3 Fixed plate          | 7 Electronic trip unit          | 11 Transformers          |                          |
| 4 Lock breaking device | 8 Motorized operating mechanism | 12 Closing electromagnet |                          |

## Applications and functions

- Incoming-feeder and outgoing-feeder function in distribution systems
- Switching and protecting large powers, motors, capacitors, generators, transformers, busbars and cables
- Overload protection
- Short-time delayed short-circuit protection
- Instantaneous short-circuit protection used in buildings, industries, energy and infrastructures

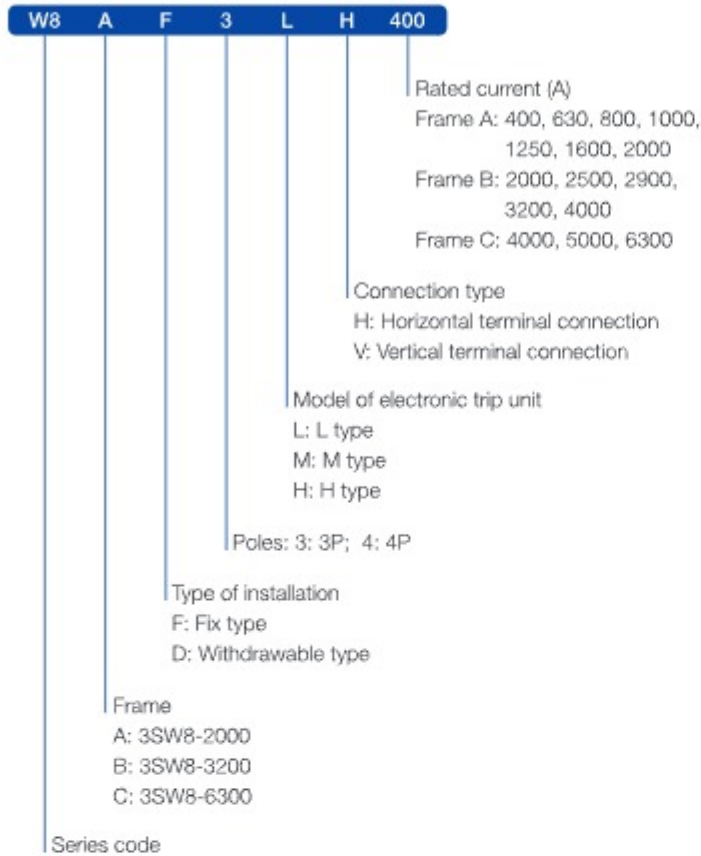
## Technical specifications

Type	3SW8-2000		3SW8-3200		3SW8-6300	
Standard	IEC 60947-2		IEC 60947-2		IEC 60947-2	
Type of frame	A		B		C	
Rated frame current I <sub>nm</sub>	A	2000	3200		6300	
Number of poles	P	3, 4	3, 4 (not for 4000 A)		3, 4	
Rated current I <sub>n</sub>	A	400, 630, 800, 1000 1250, 1600, 2000	2000, 2500, 2900, 3200	4000	4000	5000, 6300
Rated frequency	Hz	50/60	50/60		50/60	
Rated voltage, U <sub>e</sub>	V	400, 690	400, 690		400, 690	
Rated insulating voltage U <sub>i</sub>	V	1000	1000		1000	
Rated impulsive withstand voltage, U <sub>imp</sub>	kV	12	12		12	
N-pole rated current		100% I <sub>n</sub>	100% I <sub>n</sub>		100% I <sub>n</sub>	
Rated ultimate short-circuit breaking capacity, I <sub>cu</sub>						
(AC) 50-60 Hz 400V O-CO	kA	80	100		120	
(AC) 50-60 Hz 690V O-CO	kA	50	65		75	
Rated operating short-circuit breaking capacity, I <sub>cs</sub>						
(AC) 50-60 Hz 400V O-CO	kA	50	80		100	
(AC) 50-60 Hz 690V O-CO	kA	40	50		65	
Rated short-circuit making capacity (peak), I <sub>cm</sub>						
(AC) 50-60 Hz 400V	kA	176	220		264	
(AC) 50-60 Hz 690V	kA	105	143		165	
Rated short-time withstand current for 1s I <sub>sw</sub>						
(AC) 50-60 Hz 400V	kA/s	50	80		100	
(AC) 50-60 Hz 690V	kA/s	40	50		65	
Making time	ms	25-30	25-30		25-30	
Breaking time	ms	70	70		70	
Electrical life (times)						
in 400V	cycles	6000	3000		1000	
in 690V	cycles	3000	1500		600	
Mechanical life (times)						
without maintenance	cycles	15000	10000		4000	
with maintenance	cycles	30000	20000		8000	
Mounting position						
Type of installation	Fixed / Withdrawable		Fixed (not for 4000 A) / Withdrawable		Withdrawable	
Dimension (mm)	HxWxD		HxWxD	HxWxD	HxWxD	HxWxD
Fixed, 3P	402x362x322		402x422x322	-	-	-
Fixed, 4P	402x467x322		402x537x322	-	-	-
Drawer, 3P	433x375x420		433x435x420	433x550x420	-	450x930x492
Drawer, 4P	433x470x420		433x550x420	-	450x930x492	450x930x492
Type of electronic trip unit	Electronic type L, Standard type M, Communication type H					
Ambient temperature	-5 to +40°C, max. 95% humidity					
Storage temperature	-40 to +75°C					
Altitude (Max)	2000 m					

# Air Circuit Breakers

## Series 3SW8

### Instruction of type code



### Product structure

3SW8 series ACB has fixed type and withdrawable type. Putting the fixed breaker into the drawer base becomes drawer type circuit breaker. The breaker consists of contact system, arc extinction system, operation mechanism, electronic trip unit, auxiliary switch, secondary circuit wiring terminal, under voltage release, shunt release, closing coil, etc.

### Drawer type



1. Rocker hole
2. "Separation", "Test" and "Connection" three-position Indicator
3. Electronic trip unit
4. ON-OFF switch button
5. Switch off button
6. Trip indicator and reset button
7. "opening" lock mechanism
8. Secondary circuit terminals
9. Switch on button
10. Manual charging handle
11. Energy charging and discharging Indicator
12. Nameplate
13. Mask
14. Safety padlock mechanism on "Separation" indicator
15. Rocker operating hole

#### Note:

"Separation": indicates that main circuit and secondary circuit are both in isolation.

"Test": indicates that main circuit is in isolation and secondary circuit is in connection.

"Connection": indicates that main circuit and secondary circuit are both in connection.

### Normal Operation and Installation Conditions

- Ambient temperature: -5°C ~ +40 °C, and the average temperature does not exceed +35 °C within 24 h.
- Altitude: Not higher than 2000 m. The capacity should be decreased if the altitude is above 2000 m.
- Humidity: When the ambient air temperature is +40 °C, the relative humidity of the air shall not be higher than 50%, a higher relative humidity is allowed at a lower temperature. For example, the relative humidity should be 90% when temperature is 20 °C. Special measures should be adopted for the condensation occasionally produced due to change of temperature.
- Pollution degree: 3.
- The circuit breaker can be used in electromagnetic environment A.
- Installing category: IV for main circuit; III for other auxiliary and control circuits.
- The vertical gradient: no more than 5°.
- Mounting Ambient: There must be no explosive medium, no gas which would corrode metal or any conducting dust which would destroy the insulation.
- The circuit breakers should be installed in the compartment of switchgear cabinet with doorframes fixed additionally. Protection grade is up to IP40.

### Installation

- Check the following items before installation:
  - Check the label plate on the breaker panel to see if it fits the specifications of the ordered goods rated current;
  - Voltage and time delay of under voltage release;
  - Voltage of shunt release;
  - Voltage of closing coil;
  - Voltage of motorized operating mechanism.
- Before installation, operation, maintenance and inspection, you shall read this manual, and consult the manufacturer for questions if any.
- Preparations before installation:
  - Before the breaker is installed, check the insulation resistance of the breaker by using a 1000V megohmmeter according to regulations; when the surrounding media temperature is 25 °C ± 5 °C and the relative humidity is 5% ~ 70%, the insulation resistance shall not be less than 20 megohm.
  - The place with the insulation resistance to be tested includes: the place between various phases and between various phases and the frame when the breaker is closed; the place between in-and out-lines of various phases when the breaker is switched off.
- Installation of the fixed type breaker:
  - Place the breaker into the distribution cabinet, and fasten it by using 4 pieces of M6 (Inm=1600 A) or M10 (Inm=3200 A or above) bolts and washers; the breaker shall be installed stably with no d=additional mechanical stress to avoid damage of the breaker or bad contact of the main busbar and the secondary circuit. After the work is completed, mount the body into the draw-out socket.
- The specification of the wiring copper bars for the primary circuit of the breaker shall meet the copper bar specification used under the conditions of conventional heating in IEC 60947-2.
- The breaker shall be grounded substantially.

### Power loss

Power loss is the total loss measured when the breaker is charged with the rated current

Breaker type	Rated current (A)	Withdrawable (w)	Fixed type (w)
3SW8-2000	630	24	15
	800	39	25
	1000	61	40
	1250	87	54
	1600	128	64
	2000	160	80
3SW8-3200	2000	150	80
	2500	180	100
	2900	230	120
	3200	250	130
3SW8-6300	4000	290	-
	5000	330	-
	6300	360	-

Note:

The data and parameters above result from tests and theoretical calculation, and can only be used as a general type selection guide. They cannot replace industrial practical experiences or proof tests.



# Air Circuit Breakers

## Series 3SW8



### Characteristics of intelligent controller

Function	Model	L	M	H
Basic protection	Overload protection	✓	✓	✓
	Short circuit short delay protection	✓	✓	✓
	Instantaneous short-circuit protection	✓	✓	✓
	Ground fault protection or neutral pole protection G/N	✓	✓	✓
Additional Function	MCR	○	○	○
	Thermal memory	✓	✓	✓
	Contact loss indication	○	✓	✓
	Self-diagnosis	○	✓	✓
	Fault memory	✓	✓	✓
	Test	✓	✓	✓
	Operation times	○	✓	✓
Parameterization and display	Fault trip display	✓	✓	✓
	Load monitor display	○	✓	✓
	Current display	✓	✓	✓
	Time display	-	✓	✓
Measurement	Current measurement	-	✓	✓
	Voltage measurement	-	○	○
	Frequency measurement	-	○	○
	Power measurement	-	○	○
	Power factor measurement	-	○	○
	Phase sequence detection	-	○	○
	Voltage unbalance measurement	-	○	○
	Electric power measurement	-	○	○
	Harmonic measurement	-	○	○
	Overvoltage protection	-	○	○
	Undervoltage protection	-	○	○
	Voltage unbalance protection	-	○	○
	Over frequency protection	-	○	○
	Under-frequency protection	-	○	○
Phase sequence protection	-	○	○	
Reverse power protection	-	○	○	
Communication	Communication Interface	-	-	○
	Achieve communication through the Modbus	-	-	○
	Achieve communication through the Profibus-DP	-	-	○
	Achieve communication through the Device Net	-	-	○

Note: ✓ standard    - unavailable    ○ selectable

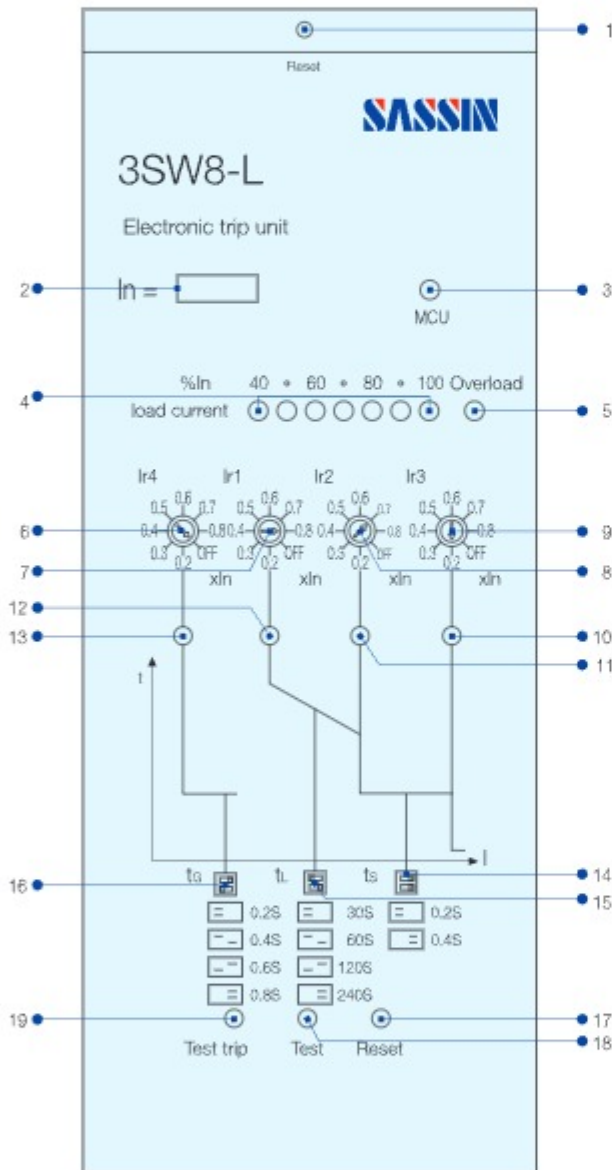
### Types of electronic trip unit

There are three types available:

- L type-Basic type (histogram display current, dial for adjustment)
- M type-Standard type (figures display current, button for adjustment)
- H type-Communication type (figures display current, button for adjustment and for communication)

### L type - panel structure instruction

L-type electronic trip unit adopts code switch and pull switch, simple and easy to handle.



1. Reset button
2. Rated current label
3. Operation indicator
4. 40% ~ 100% Ir1 current light beam indicator
5. Overload indicator
6. Code switch for ground fault protection
7. Code switch for long time delayed overload protection
8. Code switch for short time delayed overload protection
9. Code switch for instantaneous short-circuit protection
10. Fault indicator for instantaneous short-circuit protection
11. Fault indicator short time delayed short circuit protection
12. Fault indicator for long time delayed overload protection
13. Fault Indicator for ground protection
14. Pull switch for short time delayed short-circuit protection
15. Pull switch for long time delayed overload protection
16. Pull switch for time setting of ground protection
17. Reset key
18. Test trip button
19. Fault-checking button

**Note:**

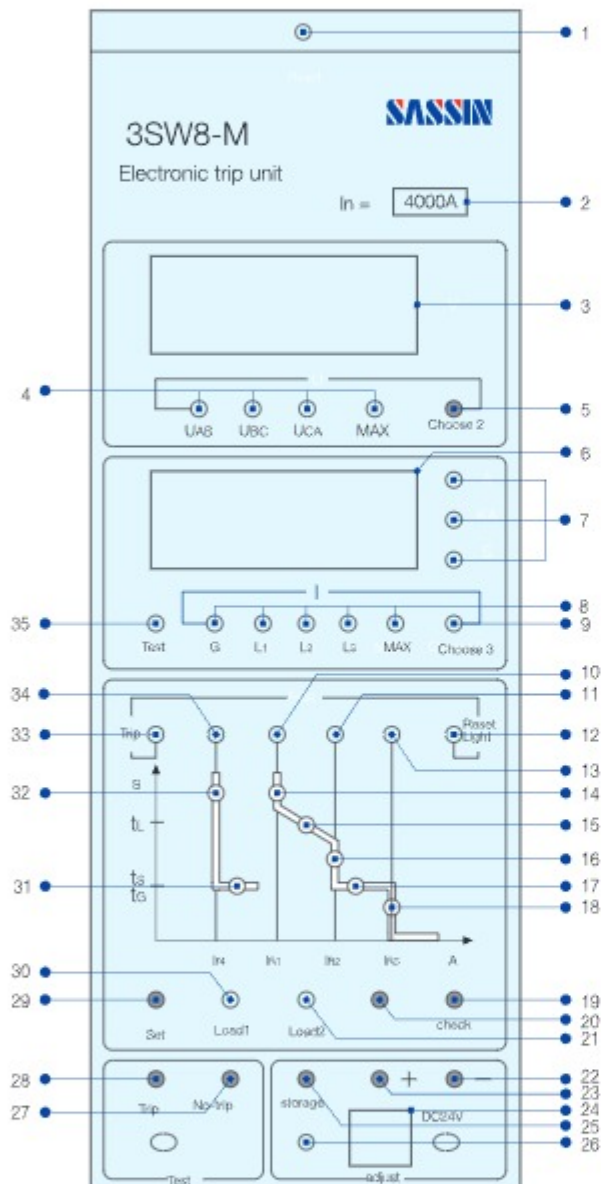
- (1) "OFF" function is available for every protection function, user can chose different protection functions as per actual requirements.
- (2) MCU light: blink in normal operation, constantly light in self-diagnostic fault.
- (3) 40% to 100% light: show the percentage of maximum phase current to Ir1, the grade is 10%.
- (4) Overload light lighting: when the current reaches 1.15 IR the overload light lighting; when IR = OFF, current reaches 1.15 IR the overload light lighting.
- (5) Fault reason indicator: check the reason for malfunction. When fault tripping occurs, the light indicator relevant fault reason, press the reset button to exit; if the power supply lost, press the check button to display the last fault trip reason when the power is on again.
- (6) Test trip button: check the status of release and circuit breakers.

### Types of electronic trip unit (Power distribution protection)

#### M type-panel structure instruction

1

M-type electronic trip unit, adopt button setting, digit and lights display modes, featured in a large range of protection parameters which can be reorganize according to different application requirement, suitable for most industrial applications.



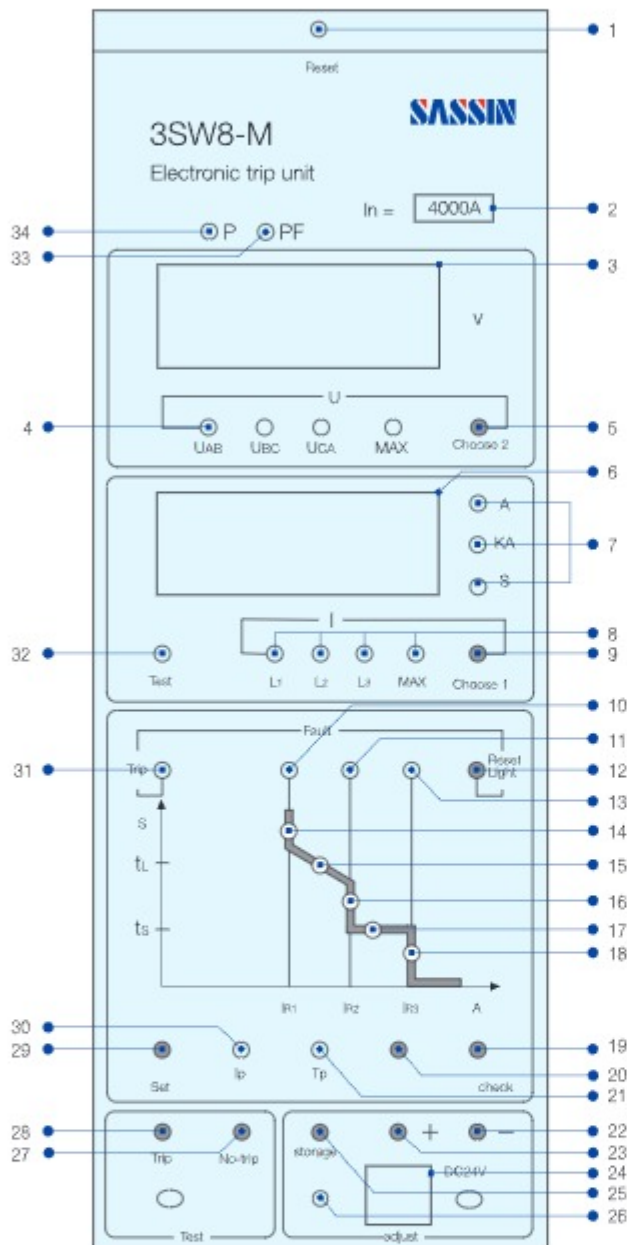
1. Reset button
2. Rated current label
3. Voltage display
4. Three-phase line voltage and maximum voltage indicator
5. Voltage- checking button
6. Three-phase current display
7. Current and time indicator
8. Four-phase, ground and the maximum phase current indicator
9. Current checking button
10. Long time delayed overload fault indicator
11. Short time delayed short circuit fault indicator
12. Light clear reset button
13. Instantaneous short-circuit fault indicator
14. Current setting for long time delayed overload protection and alarm indicator
15. Time setting indicator of long time delayed overload protection
16. Current setting for short time delayed short circuit protection and alarm indicator
17. Time setting indicator for short time delayed short circuit protection
18. Instantaneous short circuit current protection settings and alarm indicator
19. Fault checking button
20. Spare key
21. Load monitoring 1, current setting and alarm indicator
22. Decrease button
23. Increase button
24. Power supply socket
25. Save button
26. Extra Indicator
27. Non trip test button
28. Trip test button
29. Parameter setting button
30. Load monitoring 2, current setting and alarm indicator
31. Time setting indicator for ground protection
32. Ground protection current setting and alarm indicator
33. Fault trip indicator
34. Fault indicator for ground protection
35. Test status lights

#### Note:

- (1) Fault current signal appears when the M type controller in the process of parameter setting, testing, fault checking, all the functional setting will be automatically turn off and enter the fault handling;
- (2) Cross-setting of protection parameters is forbidden and make sure  $I_{r1} < I_{r2} < I_{r3}$
- (3) "Voltage display" is an optional function, users should specify when place the order.

## Types of electronic trip unit (motor protection)

### M-type panel structure instruction



1. Reset button
2. Rated current label
3. Voltage display
4. Three-phase line voltage and maximum voltage indicator
5. Voltage-checking button
6. Three-phase current display
7. Current and time indicator
8. Four-phase, ground and the maximum phase current indicator
9. Current-checking button
10. Long time delayed overload fault indicator
11. Short time delayed short circuit fault indicator
12. Light clear reset button
13. Instantaneous short-circuit fault indicator
14. Current setting for long time delayed overload protection and alarm indicator
15. Long time delayed overload protection time setting indicator
16. Current settings for short time delayed short circuit protection and alarm indicator
17. Short time delayed short circuit protection time setting indicator
18. Instantaneous short circuit current protection settings and alarm indicator
19. Fault checking button
20. Spare key
21. Pre-alarm overload time setting indicator
22. Decrease button
23. Increase button
24. Power supply socket
25. Save button
26. Extra Indicator
27. Non trip test button
28. Trip test button
29. Parameter setting button
30. Pre-alarm overload current setting and alarm indicator
31. Fault trip indicator
32. Test status light
33. Power factor measurement indicator
34. Active power measurement indicator

#### Note:

- (1) No ground fault protection for motor protection type.
- (2) "Voltage display" is an optional function, users should specify when place the order.

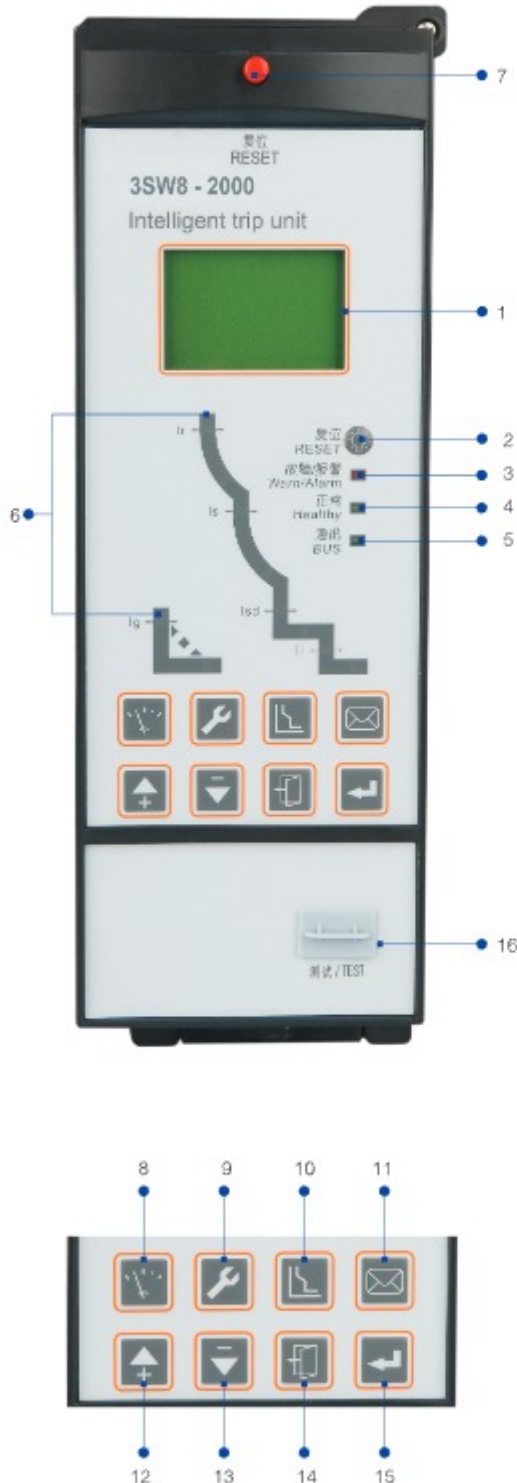
# Air Circuit Breakers

## Series 3SW8

### Types of electronic trip unit

#### H-type controller panel structure instruction

1



#### ● Instruction

1. LCD display
2. Fault and alarm reset button
3. "Fault and alarm" LED indicator will not lighten when normal operation; LED flash quickly when maintenance; LED turns red when alarm.
4. LED blinking green color on normal working condition
5. Communication indicator  
Communication status as follows:  
Light goes out when no communication, keeps lighting when in communication.  
Light goes out when no communication, keeps flashing when in communication.  
Flashing when no communication, keeps lighting when in communication.
6. Curve LED  
The red LED hide inside curve. The corresponding LED flashes to indicate the type of fault when fault trip occurs.  
LED constantly lighten to indicate the current set projects when protection of parameter settings.
7. Reset button:  
Reset button pops up when tripping or test tripping. The circuit-breaker can't switch on if the button hasn't pressed down; press down the button and the fault indications will recovery.

#### ● Keyboard

8. Measurement function key 1, can be switched to the default theme menu. (Measurement function key is the "left" key in the password input interface).
9. Setting function key 2: can be switched to the parameter setting menu. (Setting function key is the "right" key in the password input screen).
10. Protection function key 3: switch to the parameter setting protection menu.
11. Information function 4: switch to history record and menu maintenance.
12. Up-move up or change the parameters.
13. Down-move down or change the parameter.
14. Exit-exit and enter the previous menu or cancel the current selected parameters.
15. Choice-enter into the next menu or select the parameters and save the amendment.
16. Test port  
There is a 16-pin test plug at the bottom of the front panel, a portable power pack or detection unit can be inserted.

## Protection characteristic of electronic trip unit type M and H

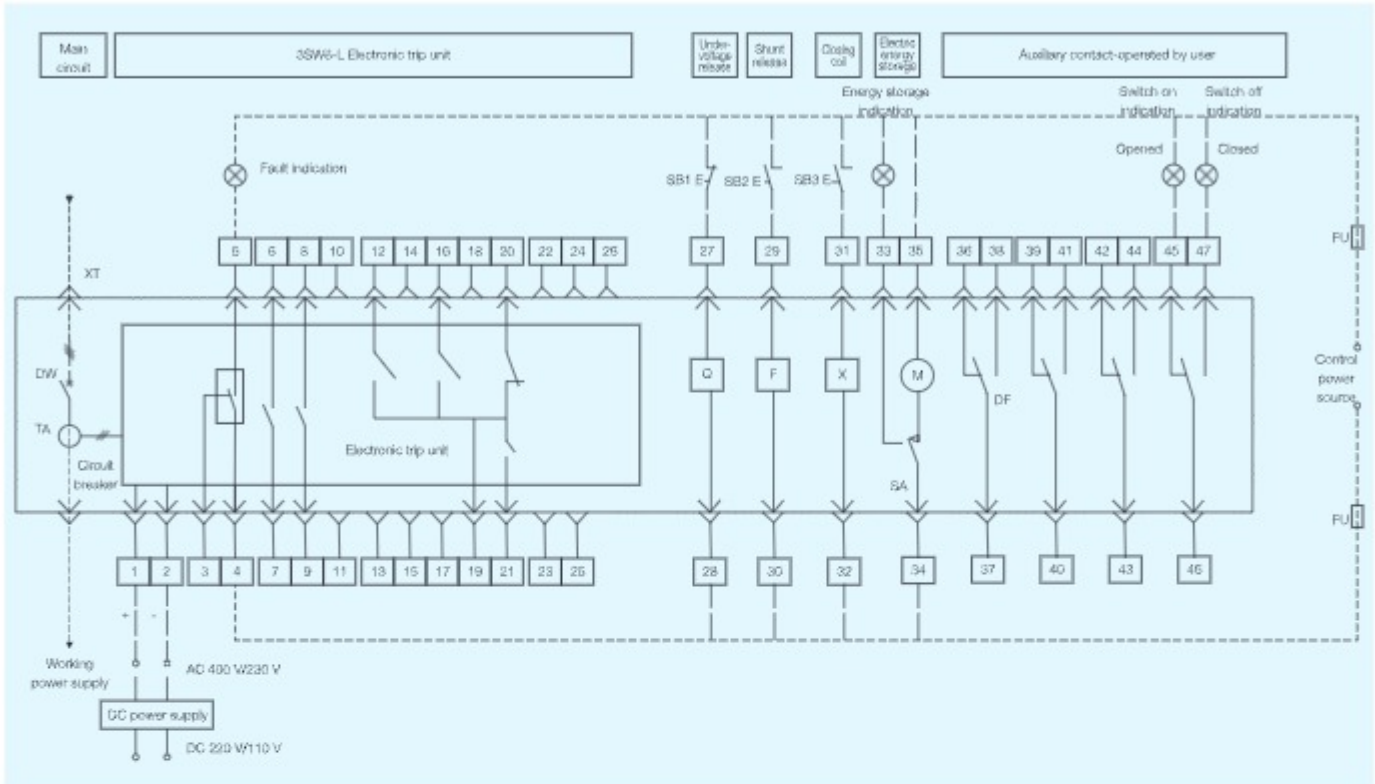
Overload thermal tripping L	NO/OFF selectable							
Setting current value adjustment range Ir1	(0.4-1.0) In stepless adjustment							
Inverse time characteristic	1.05 Ir1	2 h no action						
Set by the user	1.30 Ir1	≤ 2 h action						
1.5 Ir tL (s)	1.50 Ir1	15	30	60	120	240	480	
± 10% accuracy	2.00 Ir1	8.4	16.9	33.8	67.5	135	270	
	6.00 Ir1	0.94	1.88	3.75	7.50	15.0	30.0	
	7.20 Ir1	0.65	1.30	2.60	5.20	10.0	21.0	
Thermal memory (min)	≤ 30 + Off							
Short-circuit short delay (s)	NO/OFF Selectable							
Setting current value adjustment range Ir 2 ± 10% accuracy	(1.0 - 15) Ir1 stepless adjustment							
Setting delay time ts (s)	I > 8 Ir1	0.1	0.2	0.3	0.4			
± 15% accuracy	Time to return	0.06	0.14	0.23	0.35			
	I ≤ 8 Ir1	With inverse time characteristic						
Thermal memory(min)	≤ 15							
Instantaneous short-circuit (I)	NO/OFF Selectable							
Short-circuit current value adjustment range Ir 3 ± 15 % accuracy	(1.0-20) In							
Ground fault	NO/OFF Selectable							
Setting current value adjustment range Ir4 ± 10 % accuracy	(0.2 - 1.0) Ir stepless adjustment							
Ground fault delay time tG (s)	s	0.1	0.2	0.3	0.4			
Time to return	ms	60	160	225	340			
Maximum breaking time	ms	140	240	345	460			
Load monitoring								
Two load limit	A	Ic1 = In x ...	0.2-1 (≤ 2% differential, min 160 A)					
		tr1 =	0.5 t1, when 1.5 Ic1, T = 1.5 Ir1 x tr 1/I <sup>2</sup>					
	A	Ic2 = In x ...	0.2-1 (≤ 2% differential, min 160 A)					
		tr2 =	0.25 t1, when 1.5 Ic1, T = 1.5 Ir1 x tr1/I <sup>2</sup>					
One load limit and one reclose	A	Ic1 = In x ...	0.2-1 (≤ 2% differential, min 160 A)					
		tr1 =	0.25 t1, when 1.5 Ic1, T = 1.5 Ir1 x tr1/I <sup>2</sup>					
	A	Ic2 = In x ...	0.2-1 (≤ 2% differential, min 160 A)					
		tr2 =	Fixed 60 s					
Accuracy	± 10%							
Thermal memory (30 min. clear power)	Standard+off							
Fault trip								
Fault trip indication	Machinery	Mechanical reset button (red)						
	Electrical installations	Remote indication contact						
Overcurrent fault alarm	Fault trip display	Flash after fault trip						
Fault type display	Fault trip display	Long-time delayed overload protection, short-time delayed short-circuit protection, Instantaneous short-circuit protection, Earth fault protection						
Time display of fault current	Digital display, LCD display	Current and action time of overload, short-circuit, earth fault etc.						
Display of main contacts losses	Digital display, LCD display	Display the equivalent value						
Test	Trip button	Test the current-time characteristic of electronic trip unit and mechanical execution of circuit-breaker						
	Non trip button	Test the current-time characteristic of electronic trip unit						

# Air Circuit Breakers

## Series 3SW8

### Secondary circuit wiring diagram

- Secondary circuit wiring equipped with L type electronic trip unit



#### Note:

- 1) If the control voltage of F, X, M are different, they should connect different power sources .
- 2) Terminal 35# can connect the power source directly (automatic pre-energy storage), after series connecting with normally open button, it can connect the power source (manual pre-storage).
- 3) The #6 - #7 are normally closed terminal if user requires.
- 4) Additional accessories should be provided by user.

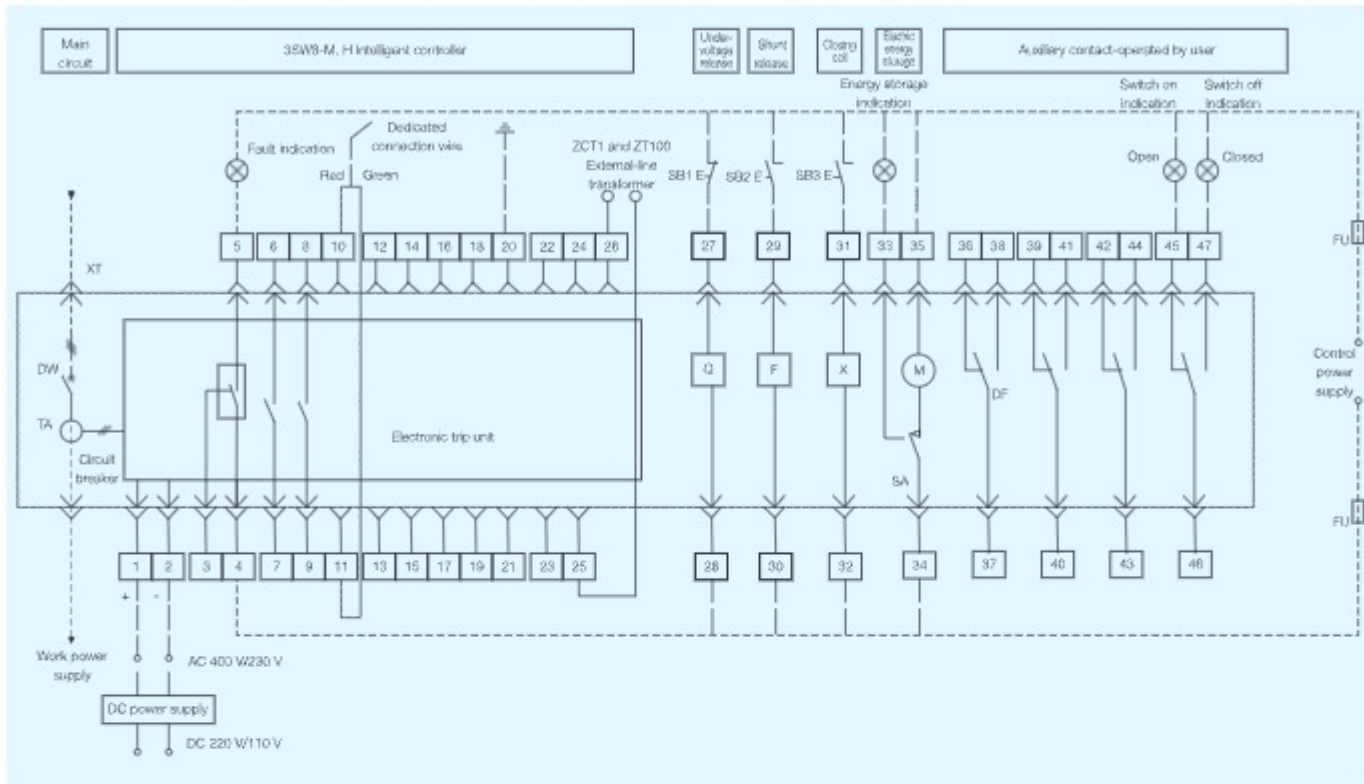
Abbreviation	Meaning	Abbreviation	Meaning
SB1	Under-voltage button (provided by user)	DF	Auxiliary contact
SB2	Shunt button (provided by user)	F	Shunt release
SB3	Switching on button	SA	Motor micro operation switch
X	Closing electromagnet	Q	Under-voltage release or under voltage time delay release
M	Motorized operating mechanism	⊗	Signal light (provided by user)
XT	Terminal		

#### Pin function

- 1#, 2#: Auxiliary power source input terminal 1# is "+" if it is direct current  
 3#, 4#, 5#: Fault trip contact output (#4 is common terminal), contact capacity: AC 250 V/16 A  
 6#, 7# & 8#, 9#: Two groups breaker status auxiliary contacts, contact capacity: AC 250 V/16 A  
 12#, 19#: DO signal alarm output, function: normally open, overload pre-alarm, contact capacity AC 250 V/5 A  
 16#, 19#: DO signal alarm output, function: normally open, ground trip or alarm, contact capacity AC 250 V/5 A  
 20#, 19#: DO signal alarm output, function: normally open, self-diagnosis alarm, contact capacity AC 250 V/5 A  
 21#, 19#: DO signal alarm output, function: normally open, OCR fault trip, contact capacity AC 250 V/5 A  
 25#, 26#: External current transformer input terminal (only 3P+N is available)

## Secondary circuit wiring diagram

- Secondary circuit wiring equipped with M, electronic trip unit



### Note:

- If the control voltage of F, X, M are different, they should connect different power source
- Terminal 35# can connect the power source directly (automatic pre-energy storage), After series connecting with normally open button, it can connect the power source (manual pre-storage)
- The #6 - #7 are normally closed terminal if the client requires
- Additional accessory should be self-provided by user

Abbreviation	Meaning	Abbreviation	Meaning
SB1	Under-voltage button (self-provided by user)	DF	Auxiliary contact
SB2	Shunt button (self-provided by user)	F	Shunt release
SB3	Switching on button	SA	Motor micro operation switch
X	Closing electromagnet	Q	Under-voltage release or under-voltage time delay release
M	Motorized operating mechanism	⊗	Signal light (User prepares)
XT	Terminal		

### Pin function

1#, 2#: Auxiliary power source input terminal 1# is "+" if it is direct current. Because the controller has several optional types of power source, please note the input power source is same with the working power source of the controller; otherwise the controller will be broken.

3#, 4#, 5#: Fault trip contact output (#4 is common terminal), contact capacity: AC 250 V/16 A

6#, 7# & 8#, 9#: Two groups of breaker status auxiliary contacts, contact capacity: AC 250 V/16 A

10#, 11#: Communication interface output, the three Communication protocol outputs are the same. 10#, 11# are empty if there is no communication (communication output).

12#, 19#: [DO: DC 11 V 0.5 A, AC 250 V, 5 A, DI: DC 110 V ~ 13 V or AC 110 V ~ AC 250 V]

When the signal unit type is S1: (4DO mode)

12#, 13#: Programmable output contact 1 (DO1)

14#, 15#: Programmable output contact 2 (DO2)

16#, 17#: Programmable output contact 3 (DO3)

18#, 19#: Programmable output contact 4 (DO4)

When the signal unit type is S2: (3DO+1DI mode)

12#, 13#: Programmable output contact 1 (DO1)

14#, 15#: Programmable output contact 2 (DO2)

16#, 17#: Programmable Discrete Output (DO3)

18#, 19#: Programmable Discrete Output (DI1)

When the signal unit type is S3: (2DO+2DI mode)

12#, 13#: Programmable output contact 1 (DO1)

14#, 15#: Programmable output contact 2 (DO2)

16#, 17#: Programmable Discrete Output 2 (DI3)

18#, 19#: Programmable Discrete Output 1 (DI1)

20# is the earth protection line of the controller

21#-24# pins are voltage signal input terminal, connecting with the input side of the power by correct order. The pin is empty if there is no added function

25#, 26# pins are used for input of external transformer

The pin is connected with the output terminal of external transformer ZT100 if the earth protection way is current returned type (T)

The pin is connected with the output terminal of external ZCT rectangle transformer if the ground mode is current leakage type.

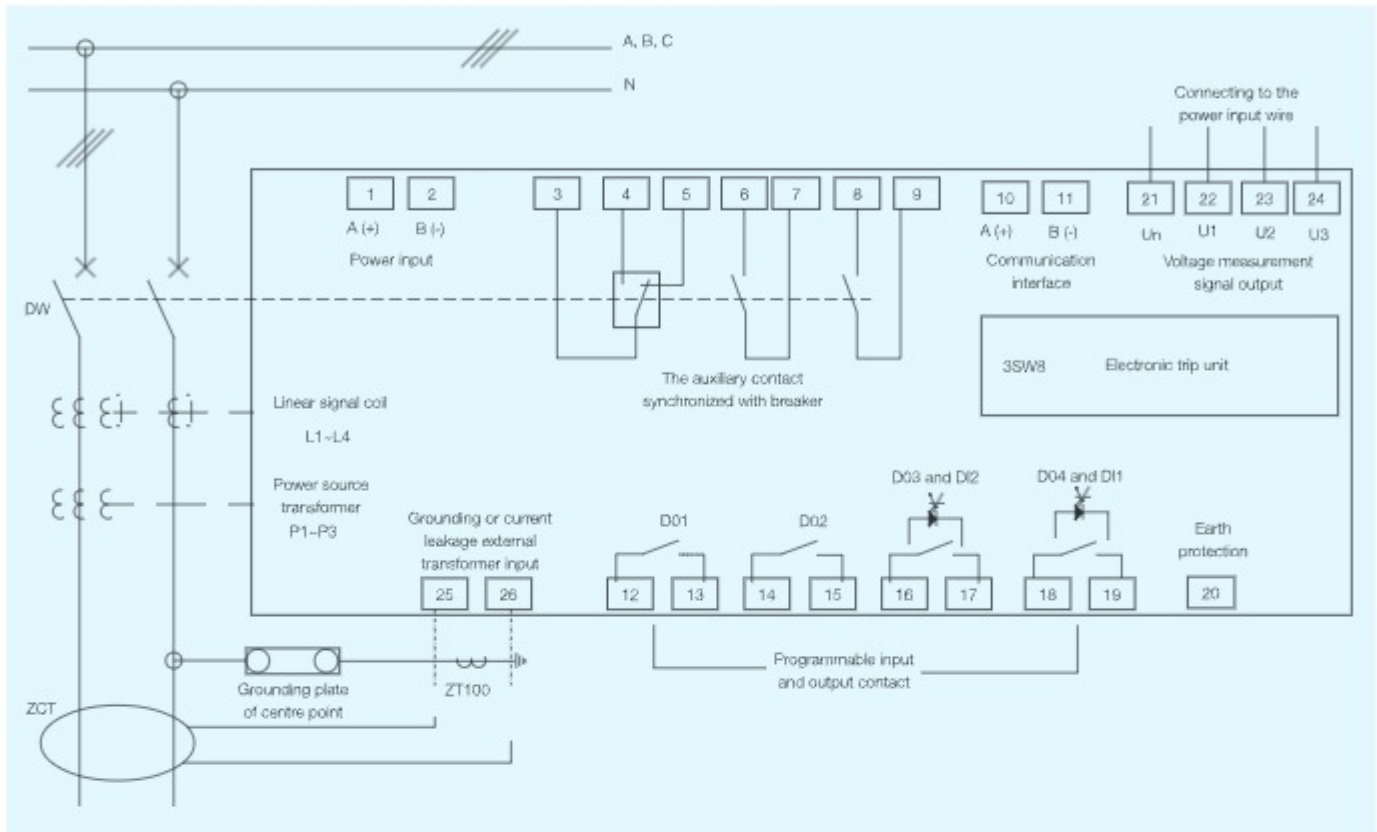
The pin is connected with external added N phase transformer is when the ground protection mode is 3P+N value difference type.



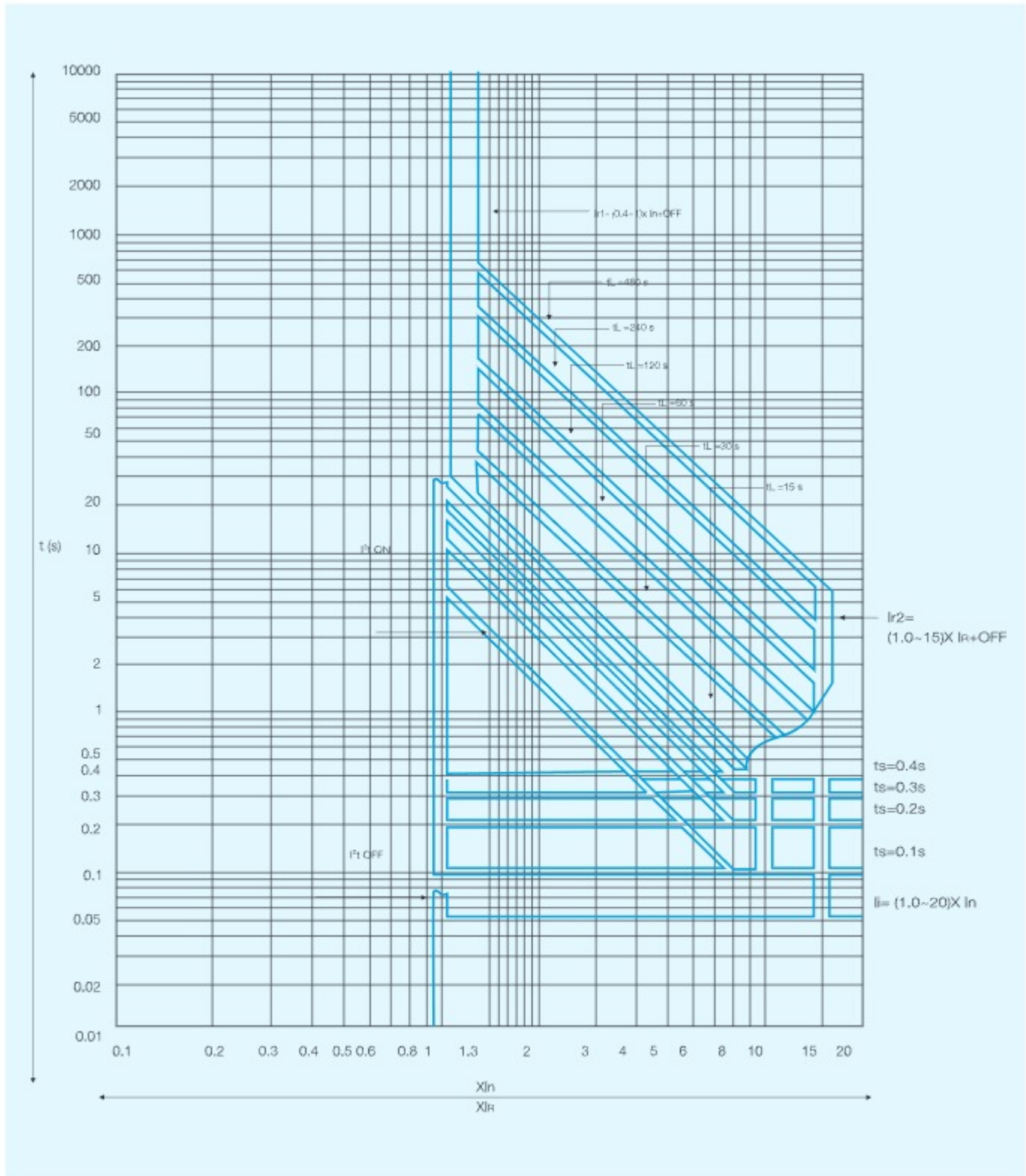
# Air Circuit Breakers Series 3SW8

## Secondary circuit wiring diagram

- Wiring diagram for circuit breaker equipped with type M/H electronic trip unit



Characteristic curves for overload protection



$I_n$  Rated current

$I_{r1}$  Current setting of long-time delayed overload protection

$I_{r2}$  Current setting of short-time delayed short-circuit protection

$I_i$  Current setting of instantaneous short-circuit protection

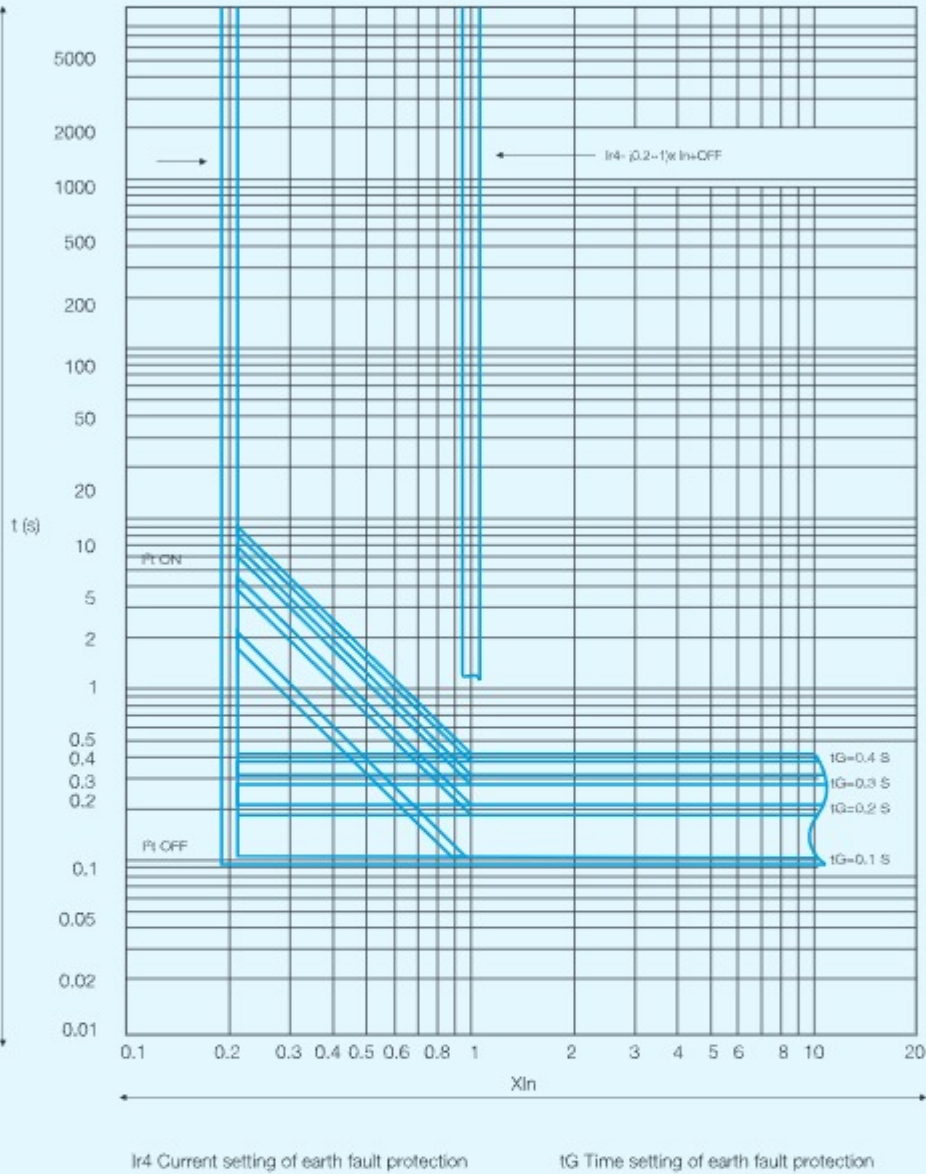
$t_L$  Time setting of long-time delayed overload protection

$t_s$  Time setting of short-time delayed short-circuit protection

$I_{2t}$  ON Inverse time characteristic

$I_{2t}$  OFF Definite time characteristic

## Characteristic curves for overload protection



## Selection and ordering data

Frame A	Number of poles	Rated current In (A)	Fixed type		Withdrawable type	
			Type code	Order code	Type code	Order code
3SW8-2000	<b>L type electronic trip unit</b>					
	Horizontal terminal connection					
	3P	400	W8F 3LH400	27997	W8D 3LH400	27977
		630	W8F 3LH630	32508	W8D 3LH630	27981
		800	W8F 3LH800	32510	W8D 3LH800	27985
		1000	W8F 3LH1000	32512	W8D 3LH1000	27987
		1250	W8F 3LH1250	32516	W8D 3LH1250	27989
		1600	W8F 3LH1600	32426	W8D 3LH1600	27991
		2000	W8F 3LH2000	32428	W8D 3LH2000	27993
	4P	400	W8F 4LH400	32444	W8D 4LH400	32430
		630	W8F 4LH630	32446	W8D 4LH630	32432
		800	W8F 4LH800	32448	W8D 4LH800	32434
		1000	W8F 4LH1000	32450	W8D 4LH1000	32436
		1250	W8F 4LH1250	32452	W8D 4LH1250	32438
		1600	W8F 4LH1600	32454	W8D 4LH1600	32440
		2000	W8F 4LH2000	32456	W8D 4LH2000	32442
	Vertical terminal connection					
	3P	400	W8F 3LV400	27998	W8D 3LV400	27978
		630	W8F 3LV630	32509	W8D 3LV630	27982
		800	W8F 3LV800	32511	W8D 3LV800	27986
		1000	W8F 3LV1000	32513	W8D 3LV1000	27988
		1250	W8F 3LV1250	32517	W8D 3LV1250	27990
		1600	W8F 3LV1600	32427	W8D 3LV1600	27992
		2000	W8F 3LV2000	32429	W8D 3LV2000	27994
	4P	400	W8F 4LV400	32445	W8D 4LV400	32431
		630	W8F 4LV630	32447	W8D 4LV630	32433
		800	W8F 4LV800	32449	W8D 4LV800	32435
		1000	W8F 4LV1000	32451	W8D 4LV1000	32437
		1250	W8F 4LV1250	32453	W8D 4LV1250	32439
		1600	W8F 4LV1600	32455	W8D 4LV1600	32441
		2000	W8F 4LV2000	32457	W8D 4LV2000	32443
	<b>M type electronic trip unit</b>					
	Horizontal terminal connection					
	3P	400	W8F 3MH400	27815	W8D 3MH400	27801
		630	W8F 3MH630	27817	W8D 3MH630	27803
		800	W8F 3MH800	27819	W8D 3MH800	27805
		1000	W8F 3MH1000	27821	W8D 3MH1000	27807
		1250	W8F 3MH1250	27823	W8D 3MH1250	27809
		1600	W8F 3MH1600	27825	W8D 3MH1600	27811
		2000	W8F 3MH2000	27827	W8D 3MH2000	27813
	4P	400	W8F 4MH400	27843	W8D 4MH400	27829
		630	W8F 4MH630	27845	W8D 4MH630	27831
		800	W8F 4MH800	27847	W8D 4MH800	27833
		1000	W8F 4MH1000	27849	W8D 4MH1000	27835
		1250	W8F 4MH1250	27851	W8D 4MH1250	27837
		1600	W8F 4MH1600	27853	W8D 4MH1600	27839
		2000	W8F 4MH2000	27855	W8D 4MH2000	27841

Note:

(1) The standard accessories include:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact
- Separators



# Air Circuit Breakers

## Series 3SW8



### Selection and ordering data

Frame A	Number of poles	Rated current In (A)	Fixed type		Withdrawable type		
			Type code	Order code	Type code	Order code	
3SW8-2000	<b>M type electronic trip unit</b>						
	Vertical terminal connection						
	3P	400	W8F 3MV400	27816	W8D 3MV400	27802	
		630	W8F 3MV630	27818	W8D 3MV630	27804	
		800	W8F 3MV800	27820	W8D 3MV800	27806	
		1000	W8F 3MV1000	27822	W8D 3MV1000	27808	
		1250	W8F 3MV1250	27824	W8D 3MV1250	27810	
		1600	W8F 3MV1600	27826	W8D 3MV1600	27812	
		2000	W8F 3MV2000	27828	W8D 3MV2000	27814	
	4P	400	W8F 4MV400	27844	W8D 4MV400	27830	
		630	W8F 4MV630	27846	W8D 4MV630	27832	
		800	W8F 4MV800	27848	W8D 4MV800	27834	
		1000	W8F 4MV1000	27850	W8D 4MV1000	27836	
		1250	W8F 4MV1250	27852	W8D 4MV1250	27838	
		1600	W8F 4MV1600	27854	W8D 4MV1600	27840	
		2000	W8F 4MV2000	27856	W8D 4MV2000	27842	
	<b>H type electronic trip unit</b>						
	Horizontal terminal connection						
	3P	400	W8F 3HH400	27871	W8D 3HH400	27857	
		630	W8F 3HH630	27873	W8D 3HH630	27859	
		800	W8F 3HH800	27875	W8D 3HH800	27861	
		1000	W8F 3HH1000	27877	W8D 3HH1000	27863	
		1250	W8F 3HH1250	27879	W8D 3HH1250	27865	
		1600	W8F 3HH1600	27881	W8D 3HH1600	27867	
		2000	W8F 3HH2000	27883	W8D 3HH2000	27869	
		4P	400	W8F 4HH400	27899	W8D 4HH400	27885
			630	W8F 4HH630	27901	W8D 4HH630	27887
			800	W8F 4HH800	27903	W8D 4HH800	27889
			1000	W8F 4HH1000	27905	W8D 4HH1000	27891
			1250	W8F 4HH1250	27907	W8D 4HH1250	27893
			1600	W8F 4HH1600	27909	W8D 4HH1600	27895
			2000	W8F 4HH2000	27911	W8D 4HH2000	27897
	Vertical terminal connection						
	3P	400	W8F 3HV400	27872	W8D 3HV400	27858	
		630	W8F 3HV630	27874	W8D 3HV630	27860	
		800	W8F 3HV800	27876	W8D 3HV800	27862	
		1000	W8F 3HV1000	27878	W8D 3HV1000	27864	
		1250	W8F 3HV1250	27880	W8D 3HV1250	27866	
		1600	W8F 3HV1600	27882	W8D 3HV1600	27868	
		2000	W8F 3HV2000	27884	W8D 3HV2000	27870	
		4P	400	W8F 4HV400	27900	W8D 4HV400	27886
			630	W8F 4HV630	27902	W8D 4HV630	27888
			800	W8F 4HV800	27904	W8D 4HV800	27890
			1000	W8F 4HV1000	27906	W8D 4HV1000	27892
			1250	W8F 4HV1250	27908	W8D 4HV1250	27894
			1600	W8F 4HV1600	27910	W8D 4HV1600	27896
			2000	W8F 4HV2000	27912	W8D 4HV2000	27898

Note:

(1) The standard accessories include:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact
- Separators

## Selection and ordering data

Frame B	Number of poles	Rated current In (A)	Fixed type		Withdrawable type	
			Type code	Order code	Type code	Order code
3SW8-3200	<b>L type electronic trip unit</b>					
	Horizontal terminal connection					
	3P	2000	W8BF 3LH2000	32466	W8BD 3LH2000	32458
		2500	W8BF 3LH2500	32468	W8BD 3LH2500	32460
		2900	W8BF 3LH2900	32470	W8BD 3LH2900	32462
		3200	W8BF 3LH3200	32472	W8BD 3LH3200	32464
	4P	2000	W8BF 4LH2000	32482	W8BD 4LH2000	32474
		2500	W8BF 4LH2500	32484	W8BD 4LH2500	32476
		2900	W8BF 4LH2900	32486	W8BD 4LH2900	32478
		3200	W8BF 4LH3200	32488	W8BD 4LH3200	32480
	Vertical terminal connection					
	3P	2000	W8BF 3LV2000	32467	W8BD 3LV2000	32459
		2500	W8BF 3LV2500	32469	W8BD 3LV2500	32461
		2900	W8BF 3LV2900	32471	W8BD 3LV2900	32463
		3200	W8BF 3LV3200	32473	W8BD 3LV3200	32465
	4P	2000	W8BF 4LV2000	32483	W8BD 4LV2000	32475
		2500	W8BF 4LV2500	32485	W8BD 4LV2500	32477
		2900	W8BF 4LV2900	32487	W8BD 4LV2900	32479
		3200	W8BF 4LV3200	32489	W8BD 4LV3200	32481
	<b>M type electronic trip unit</b>					
	Horizontal terminal connection					
	3P	2000	W8BF 3MH2000	27921	W8BD 3MH2000	27913
		2500	W8BF 3MH2500	27923	W8BD 3MH2500	27915
		2900	W8BF 3MH2900	27925	W8BD 3MH2900	27917
		3200	W8BF 3MH3200	27927	W8BD 3MH3200	27919
	4P	2000	W8BF 4MH2000	27937	W8BD 4MH2000	27929
		2500	W8BF 4MH2500	27939	W8BD 4MH2500	27931
		2900	W8BF 4MH2900	27941	W8BD 4MH2900	27933
		3200	W8BF 4MH3200	27943	W8BD 4MH3200	27935
	Vertical terminal connection					
	3P	2000	W8BF 3MV2000	27922	W8BD 3MV2000	27914
		2500	W8BF 3MV2500	27924	W8BD 3MV2500	27916
		2900	W8BF 3MV2900	27926	W8BD 3MV2900	27918
		3200	W8BF 3MV3200	27928	W8BD 3MV3200	27980
	4P	2000	W8BF 4MV2000	27938	W8BD 4MV2000	27930
		2500	W8BF 4MV2500	27940	W8BD 4MV2500	27932
		2900	W8BF 4MV2900	27942	W8BD 4MV2900	27934
		3200	W8BF 4MV3200	27944	W8BD 4MV3200	27936
	<b>H type electronic trip unit</b>					
	Horizontal terminal connection					
	3P	2000	W8BF 3HH2000	27953	W8BD 3HH2000	27945
		2500	W8BF 3HH2500	27955	W8BD 3HH2500	27947
		2900	W8BF 3HH2900	27957	W8BD 3HH2900	27949
		3200	W8BF 3HH3200	27959	W8BD 3HH3200	27951
	4P	2000	W8BF 4HH2000	27969	W8BD 4HH2000	27961
		2500	W8BF 4HH2500	27971	W8BD 4HH2500	27963
		2900	W8BF 4HH2900	27973	W8BD 4HH2900	27965
		3200	W8BF 4HH3200	27975	W8BD 4HH3200	27967
	Vertical terminal connection					
	3P	2000	W8BF 3HV2000	27954	W8BD 3HV2000	27946
		2500	W8BF 3HV2500	27956	W8BD 3HV2500	27948
		2900	W8BF 3HV2900	27958	W8BD 3HV2900	27950
		3200	W8BF 3HV3200	27960	W8BD 3HV3200	27952
	4P	2000	W8BF 4HV2000	27970	W8BD 4HV2000	27962
		2500	W8BF 4HV2500	27972	W8BD 4HV2500	27964
		2900	W8BF 4HV2900	27974	W8BD 4HV2900	27966
		3200	W8BF 4HV3200	27976	W8BD 4HV3200	27968

Note:

(1) The standard accessories include:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact
- Separators

### Selection and ordering data

Frame C	Number of poles	Rated current In (A)	Fixed type		Withdrawable type	
			Type code	Order code	Type code	Order code
3SW8-6300	<b>L type electronic trip unit</b>					
Horizontal terminal connection						
3P	4000	4000	W8CF 3LH4000	15295	W8CD 3LH5000	32492
	5000	5000	W8CF 3LH5000	15311	W8CD 3LH6300	32494
	6300	6300	W8CF 3LH6300	15553	W8CD 3LH4000	15289
4P	4000	4000	W8CF 4LH4000	15301	W8CD 4LH4000	32502
	5000	5000	W8CF 4LH5000	15313	W8CD 4LH5000	32504
	6300	6300	W8CF 4LH6300	15555	W8CD 4LH6300	32506
Vertical terminal connection						
3P	4000	4000	W8CF 3LV4000	15296	W8CD 3LV5000	32493
	5000	5000	W8CF 3LV5000	15312	W8CD 3LV6300	32495
	6300	6300	W8CF 3LV6300	15554	W8CD 3LV4000	15290
4P	4000	4000	W8CF 4LV4000	15302	W8CD 4LV4000	32503
	5000	5000	W8CF 4LV5000	15314	W8CD 4LV5000	32505
	6300	6300	W8CF 4LV6300	15556	W8CD 4LV6300	32507
<b>M type electronic trip unit</b>						
Horizontal terminal connection						
3P	4000	4000	W8CF 3MH4000	15291	W8CD 3MH5000	28011
	5000	5000	W8CF 3MH5000	15303	W8CD 3MH6300	28013
	6300	6300	W8CF 3MH6300	15315	W8CD 3MH4000	15285
4P	4000	4000	W8CF 4MH4000	15297	W8CD 4MH4000	28021
	5000	5000	W8CF 4MH5000	15305	W8CD 4MH5000	28023
	6300	6300	W8CF 4MH6300	15547	W8CD 4MH6300	28025
Vertical terminal connection						
3P	4000	4000	W8CF 3MV4000	15292	W8CD 3MV5000	28012
	5000	5000	W8CF 3MV5000	15304	W8CD 3MV6300	28014
	6300	6300	W8CF 3MV6300	15316	W8CD 3MV4000	15286
4P	4000	4000	W8CF 4MV4000	15298	W8CD 4MV4000	28022
	5000	5000	W8CF 4MV5000	15306	W8CD 4MV5000	28024
	6300	6300	W8CF 4MV6300	15548	W8CD 4MV6300	28026
<b>H type electronic trip unit</b>						
Horizontal terminal connection						
3P	4000	4000	W8CF 3HH4000	15293	W8CD 3HH5000	28035
	5000	5000	W8CF 3HH5000	15307	W8CD 3HH6300	28037
	6300	6300	W8CF 3HH6300	15549	W8CD 3HH4000	15287
4P	4000	4000	W8CF 4HH4000	15299	W8CD 4HH4000	28045
	5000	5000	W8CF 4HH5000	15309	W8CD 4HH5000	28047
	6300	6300	W8CF 4HH6300	15551	W8CD 4HH6300	28049
Vertical terminal connection						
3P	4000	4000	W8CF 3HV4000	15294	W8CD 3HV5000	28036
	5000	5000	W8CF 3HV5000	15308	W8CD 3HV6300	28038
	6300	6300	W8CF 3HV6300	15550	W8CD 3HV4000	15288
4P	4000	4000	W8CF 4HV4000	15300	W8CD 4HV4000	28046
	5000	5000	W8CF 4HV5000	15310	W8CD 4HV5000	28048
	6300	6300	W8CF 4HV6300	15552	W8CD 4HV6300	28050

Note:

(1) The standard accessories include:

- Shunt release
- Closing coil
- Motorized operating mechanism
- Auxiliary contact
- Separators

Accessory



● Under-voltage release

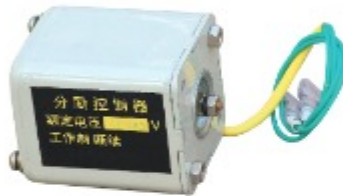
When circuit breaker is power off, it requires automatic break, user should adopt under-voltage instantaneous release; when breaker is instantaneous power failure or under voltage, it does not require break, user adopt under-voltage delay release. Thus, it is not a necessary accessory, it is optional. It should always connect the power source if circuit breaker is equipped with such release.

Note:

In the thunderstorm-prone areas or in unstable voltage grids, it is recommended to use under voltage time-delayed release. It can prevent the breaker tripping caused by instantaneous voltage decrease. The delayed time are normally 0.5 s, 1 s, 2 s, 3 s, for users to choose.

Characteristics:

Rated working voltage $U_e$ (V)	AC 400, AC 230
Tripping voltage (V)	$(0.35-0.7) U_e$
Reliable closing voltage (V)	$(0.85-1.1) U_e$
Reliable open voltage (V)	$\leq 0.35 U_e$
Power consumption	12 VA



● Shunt release

Shunt release can break circuit breaker through remote operation instead of on the spot, which can avoid contacting with circuit breaker during circuit operation and make worker safer. Shunt release can't always be connected to power source, otherwise coil will be burned.

Characteristics:

Rated control power source voltage $U_s$ (V)	AC 400, AC 230, DC 220, DC 110
Tripping voltage (V)	$(0.7-1.1) U_s$
Limit current	0.7, 1.3, 1.3, 2.4
Breaking time (ms)	$\leq 30$



● Closing electromagnet

Closing electromagnet can switch on circuit breaker through remote operation instead of on the spot, which can avoid contact with circuit breaker during circuit operation and make worker safer. Such release can't always be connected to power source, otherwise coil will be burned. After energy storage is finished, the closing electromagnet will make the energy storage spring of operation mechanism to release its energy instantly so that the circuit breaker is closed rapidly.

Characteristics:

Rated control power source voltage $U_e$ (V)	AC 400, AC 230, DC 220, DC 110
Tripping voltage (V)	$(0.8-1.1) U_s$
Limit current (A)	0.7, 1.3, 1.3, 2.4
Closing time (ms)	$\leq 70$



## Accessories

1



- Electric operation mechanism  
The breaker consists of operation mechanism energy storage and re-storage function. The breaker can store energy manually.

Characteristics:

Rated control power source voltage $U_s$ (V)	AC 400, AC 230, DC 220, DC 110
Tripping voltage (V)	(0.85~1.1) $U_s$
Power consumption	192 VA, 192 W
Storage time (s)	$\leq 5$



- Disconnecting lock device
  - Disconnecting lock device can lock the switch off button at the off location, thus breaker can not be closed;
  - The factory will provide the key and lock;
  - One circuit breaker is equipped with one independent lock and key;
  - Two circuit breakers are equipped with two same locks and one key;
  - Three circuit breakers are equipped with three same locks and two keys.



- Partition plate of the withdrawable type circuit breaker;  
The partition strengthens the busbar insulation. It is optional.

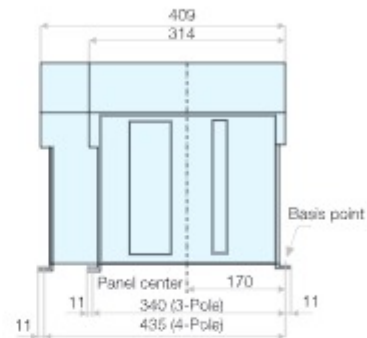
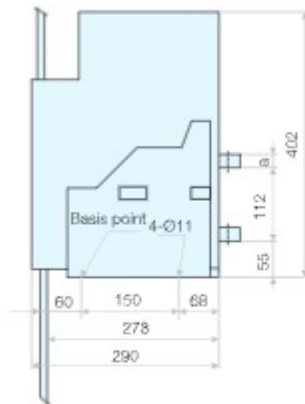


- Door frame
  - It is fixed on the door cabinet and used as seal. Protection grade is up to IP40;
  - Beautiful and practical;
  - The door frame has withdrawable type and fixed type.

## Outline and installation dimensions

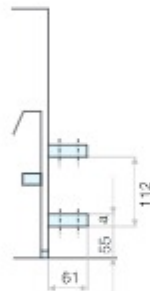
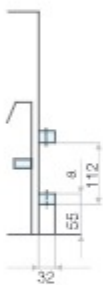
3SW8-2000

Fixed type 3-pole/4-pole



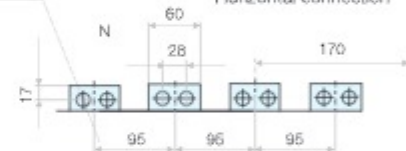
Horizontal connection

Extended horizontal connection



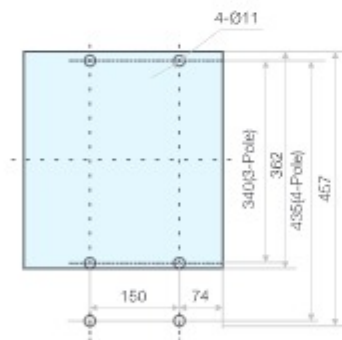
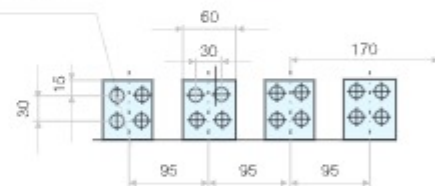
3-Pole 12-Ø15  
4-Pole 16-Ø15

Horizontal connection



3-Pole 24-Ø13  
4-Pole 32-Ø13

Extended horizontal connection



Basis point

Withdrawable 3-pole 4-pole

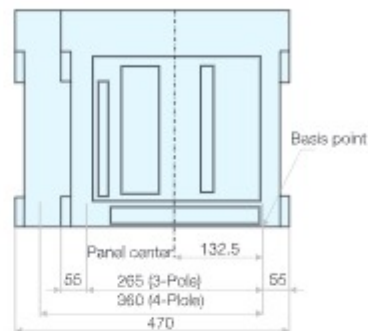
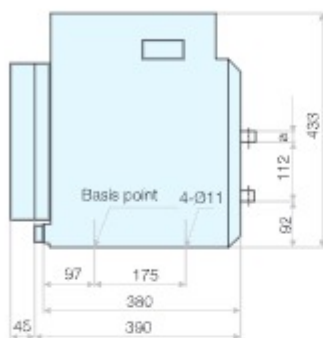
In A	a mm
400-800	10
1000-1600	15
2000	20

# Air Circuit Breakers Series 3SW8

## Outline and installation dimensions

3SW8-2000

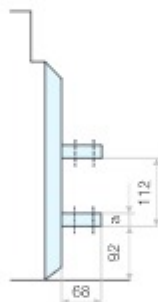
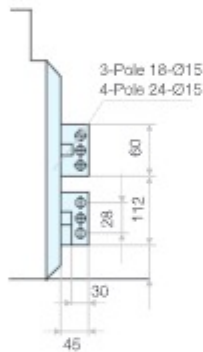
Withdrawable type 3-pole/4-pole



Horizontal connection

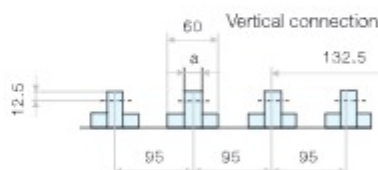
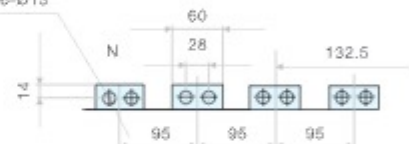
Vertical connection

Extended horizontal connection



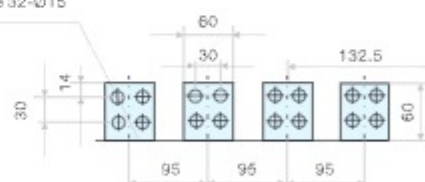
3-Pole 12-Ø13  
4-Pole 16-Ø13

Horizontal connection

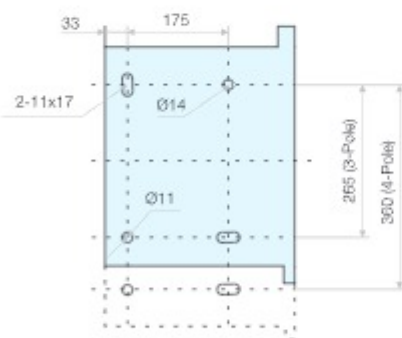


3-Pole 24-Ø15  
4-Pole 32-Ø15

Extended horizontal connection



Basis point



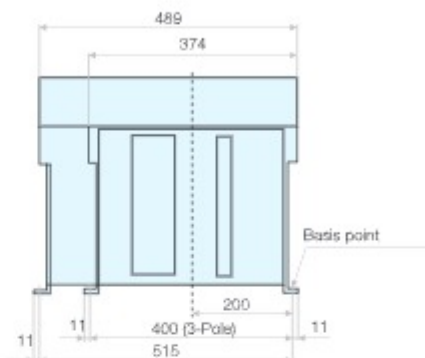
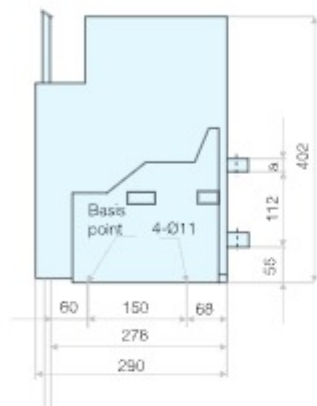
Withdrawable 3-pole 4-pole

In A	a mm
400-800	10
1000-1600	15
2000	20

## Outline and installation dimensions

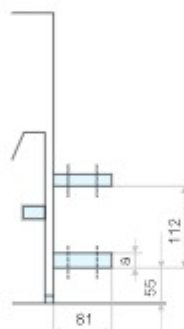
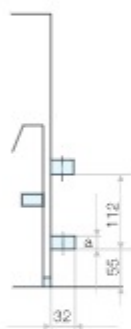
3SW8-3200

Fixed type 3-pole/4-pole



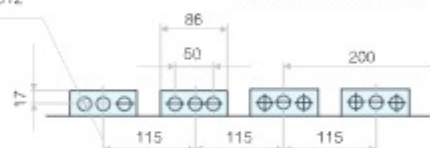
Horizontal connection

Extended horizontal connection



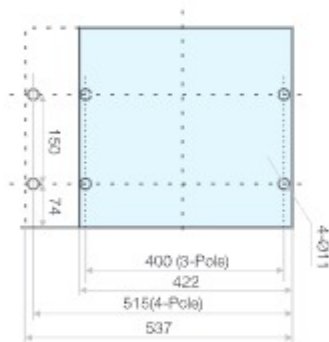
3-Pole 18-Ø12  
4-Pole 24-Ø12

Horizontal connection



3-Pole 24-Ø12  
4-Pole 32-Ø12

Extended horizontal connection



Basis point

Withdrawable 3-pole 4-pole

In A	a mm
2000~2500	20
2900~3200	30

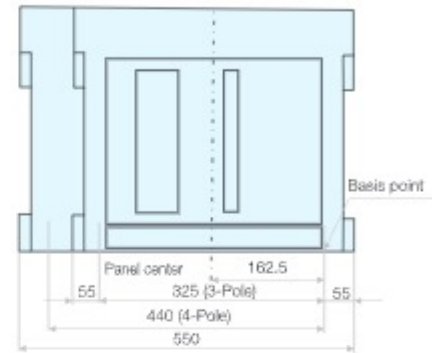
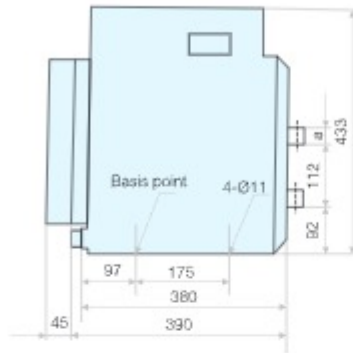
# Air Circuit Breakers Series 3SW8

## Outline and installation dimensions

3SW8-3200

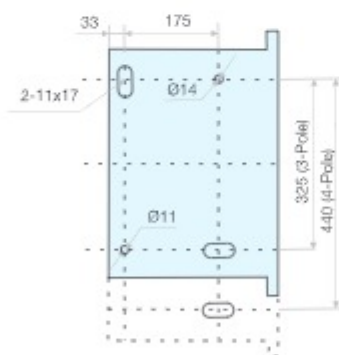
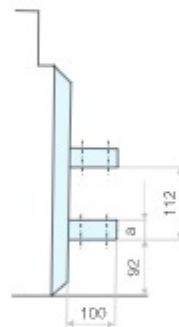
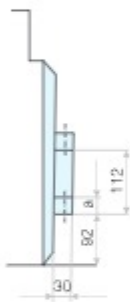
Withdrawable type 3-pole/4-pole

1

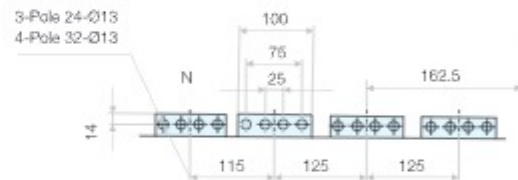


Horizontal connection

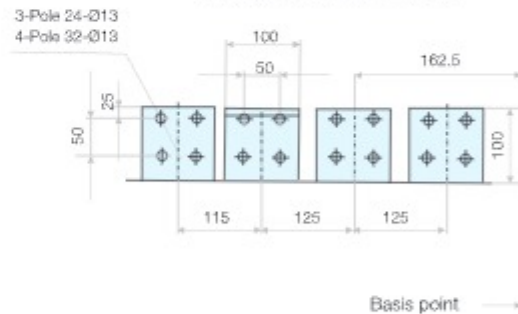
Extended horizontal connection



Horizontal connection



Extended horizontal connection



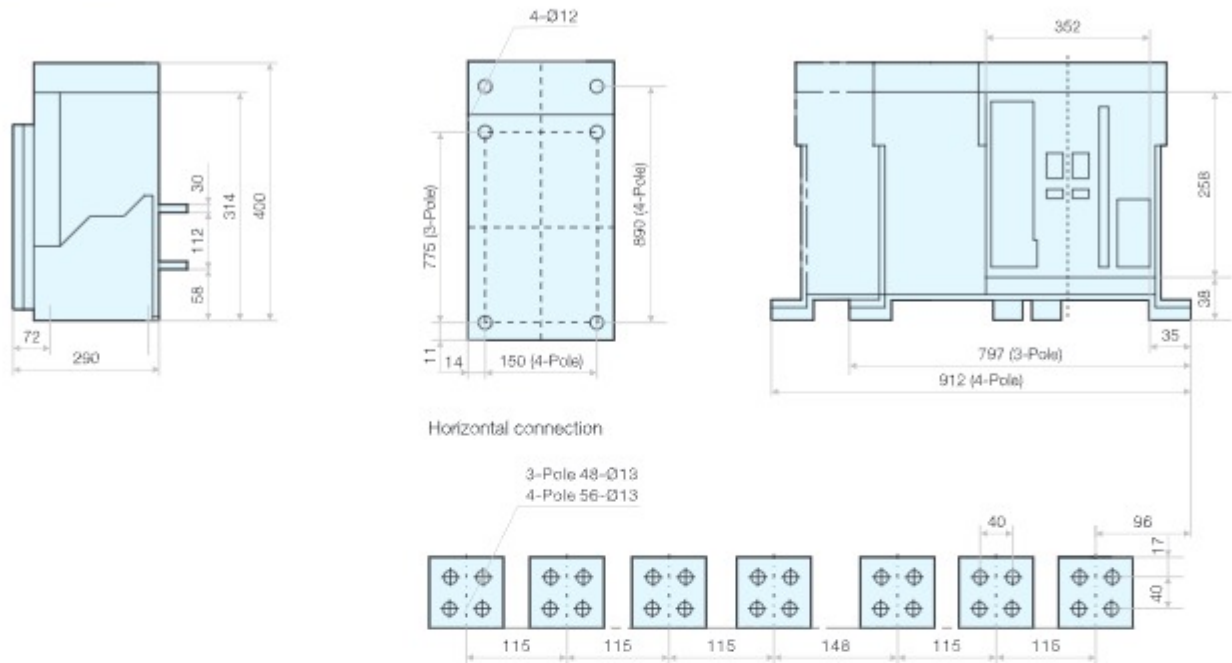
Withdrawable 3-pole 4-pole

In A	a mm
2000-2500	20
2900-3200	30

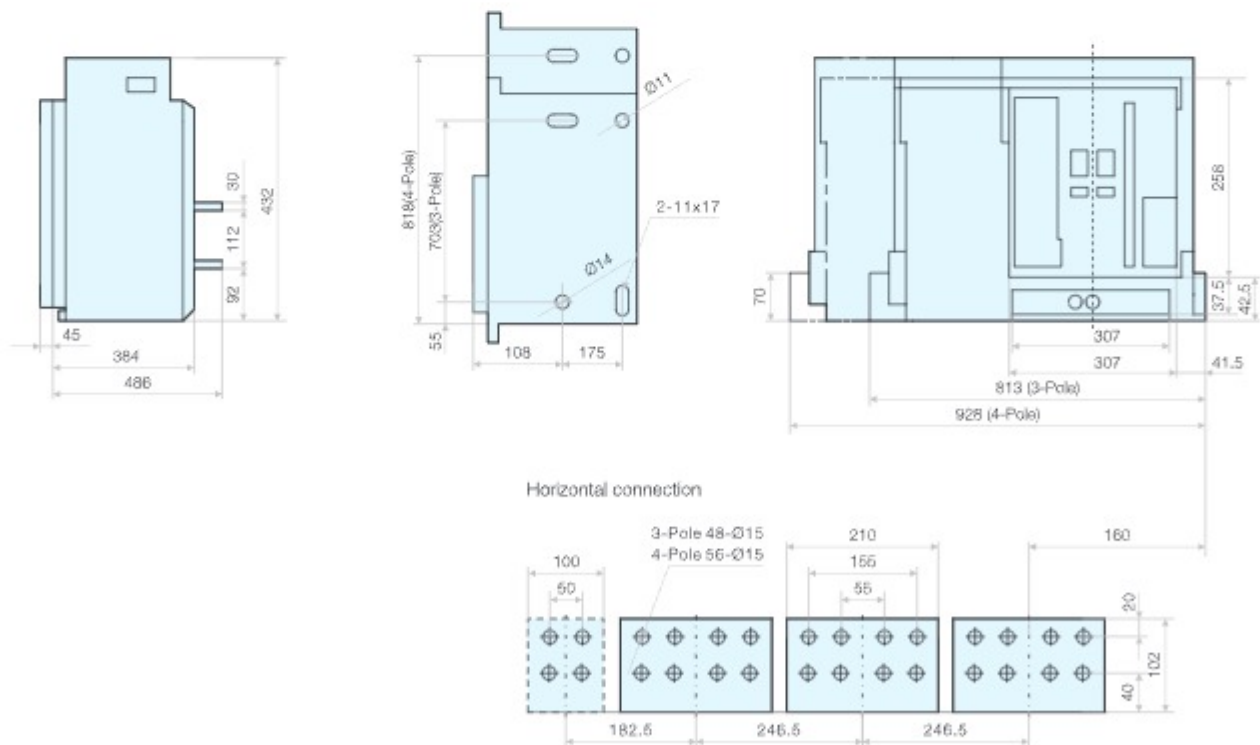
**Outline and installation dimensions**

3SW8-6300/4000-5000 A

Fixed type 3-pole/4-pole



Withdrawable type 3-pole/4-pole

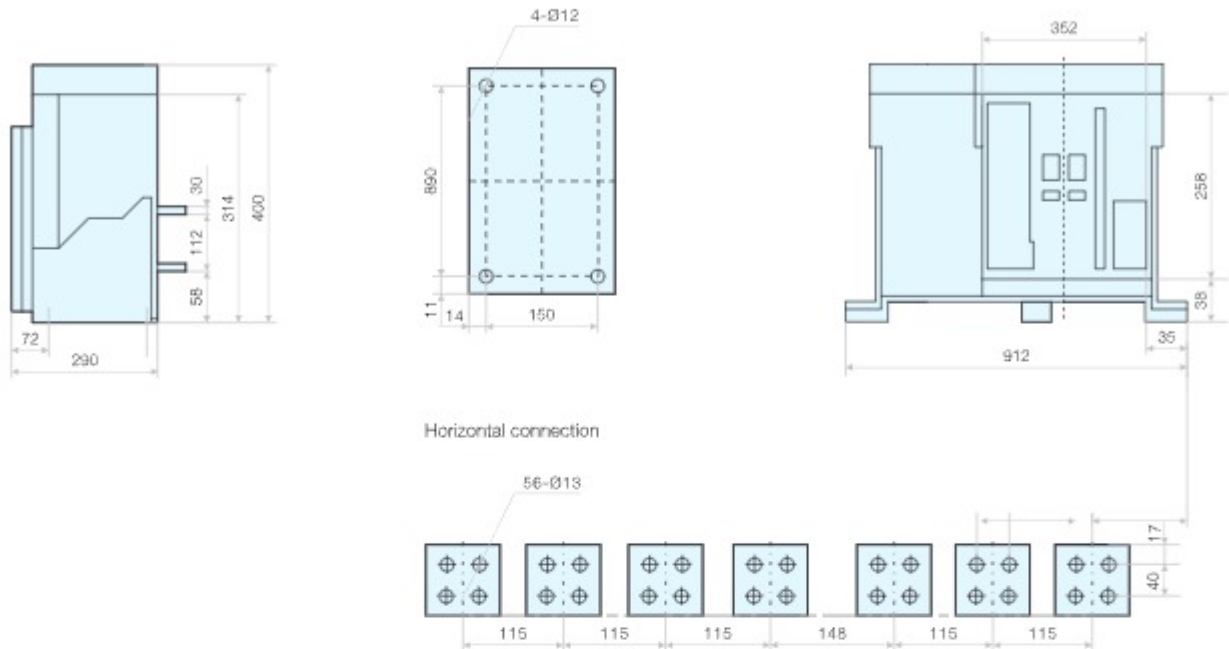


# Air Circuit Breakers Series 3SW8

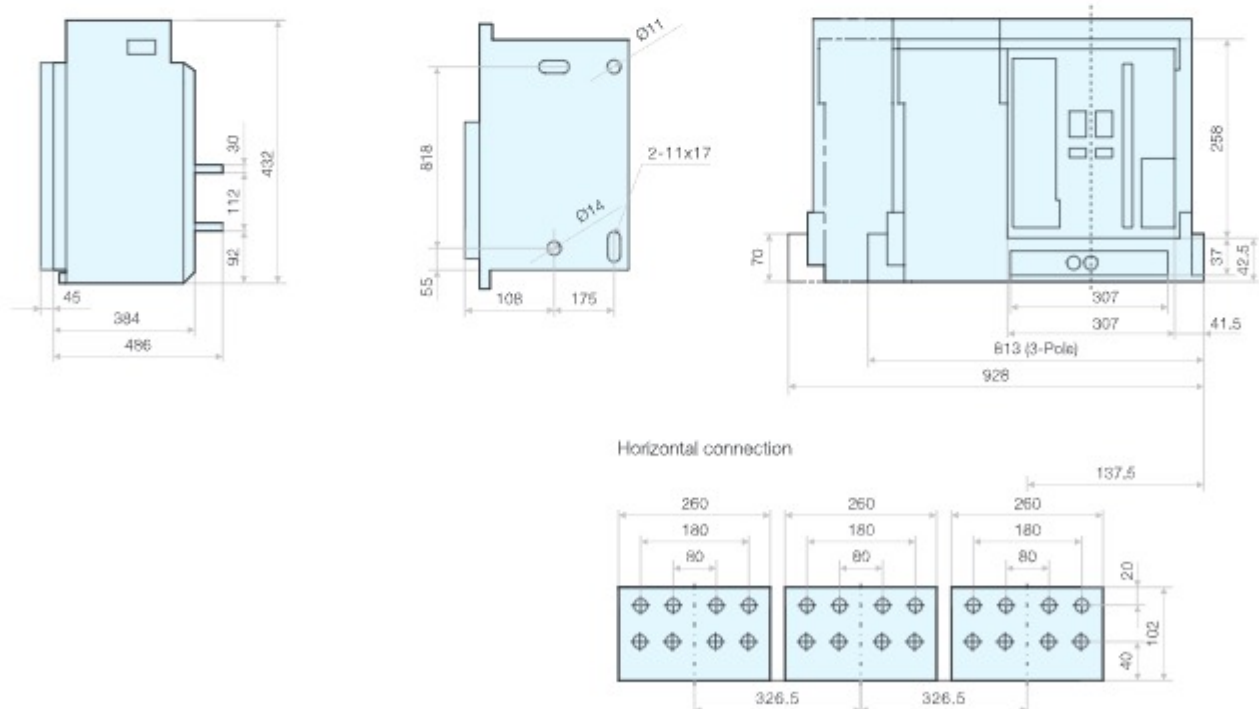
## Outline and installation dimensions

3SW8-6300/6300 A

Fixed type 3-pole/4-pole

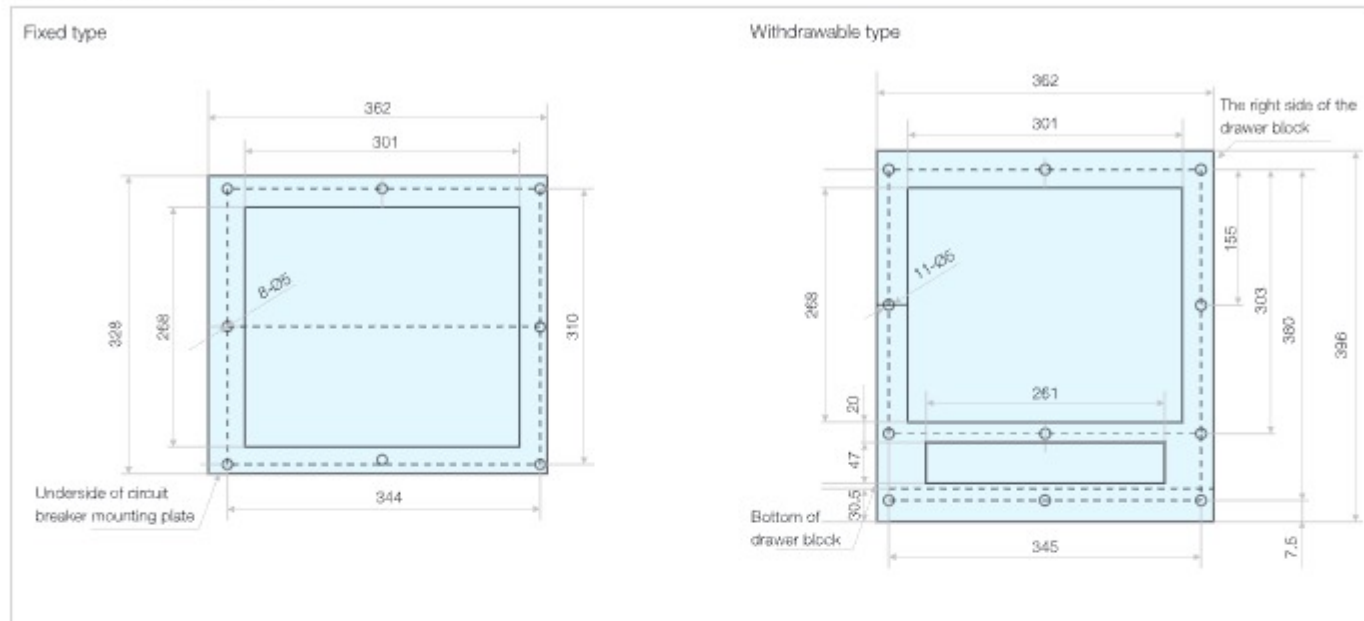


Withdrawable type 3-pole

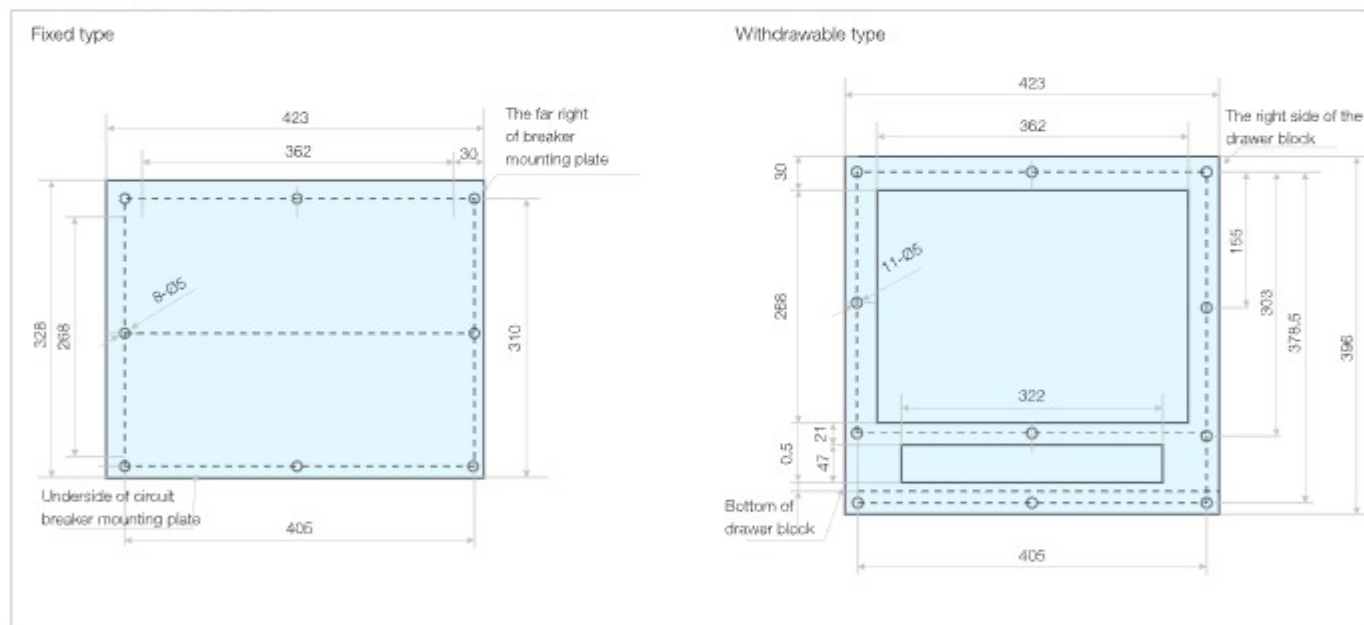


Outline and installation dimensions

3SW8-2000 (3-pole, 4-pole)



3SW8-3200 (3-pole, 4-pole)



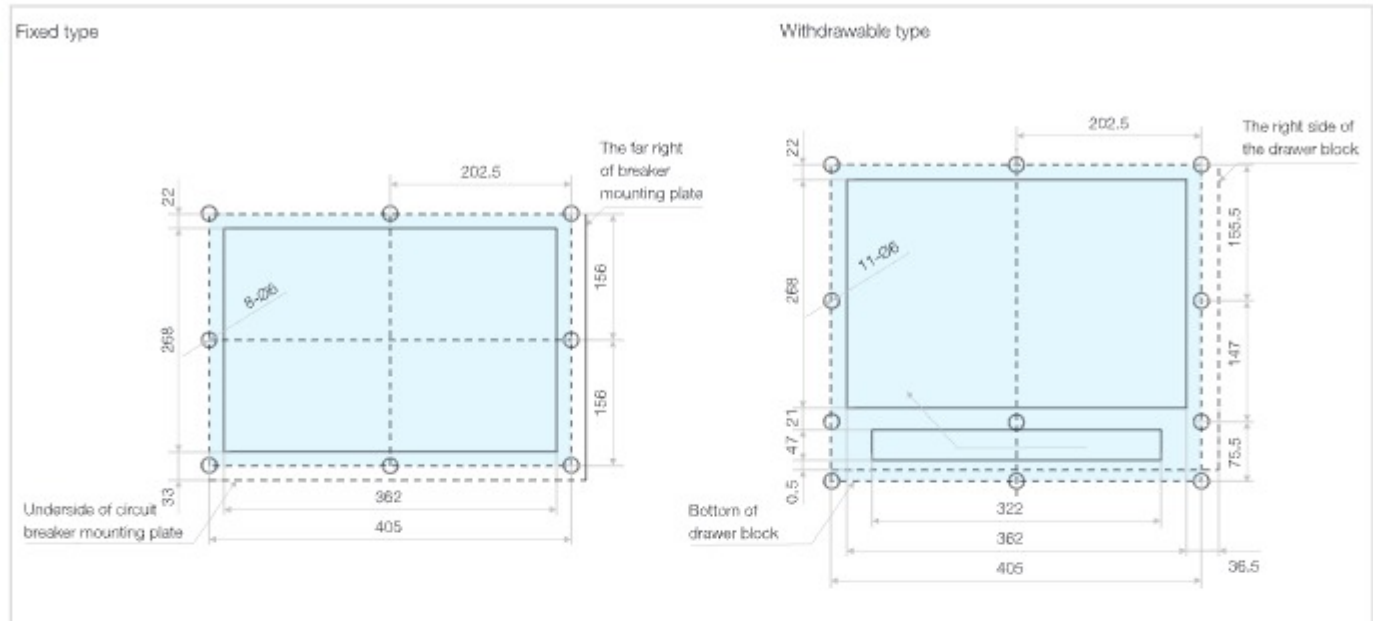


# Air Circuit Breakers Series 3SW8

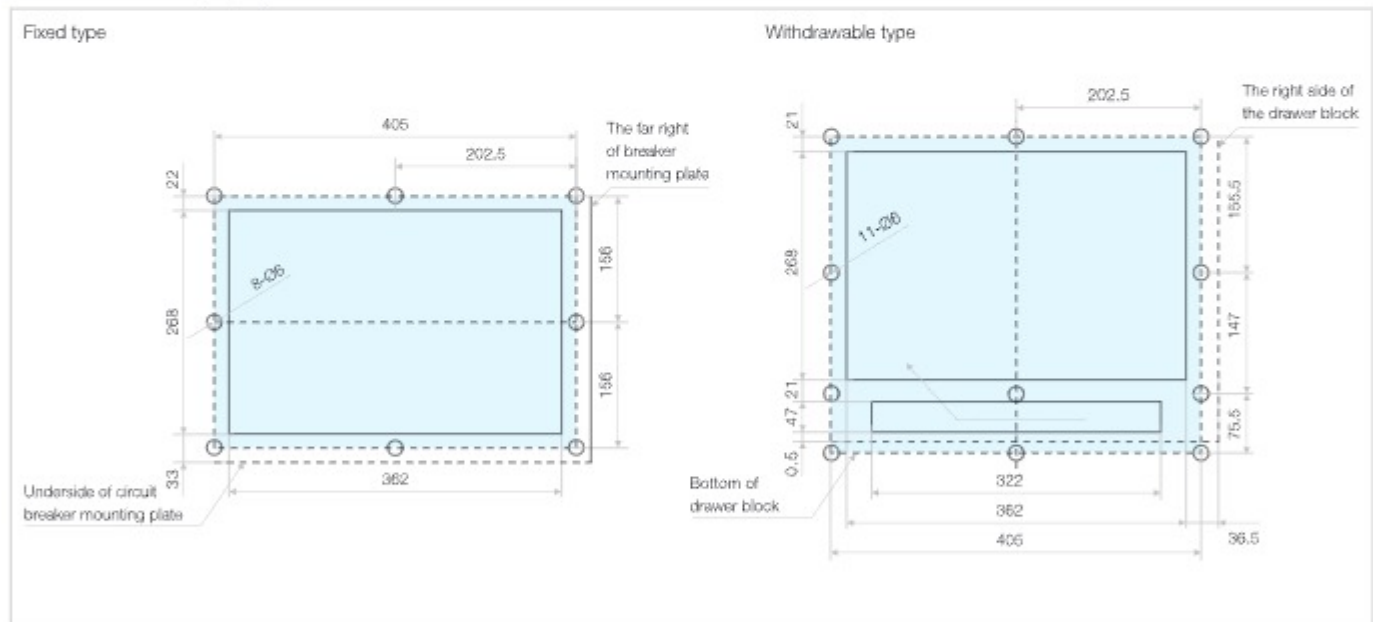
## Outline and installation dimensions

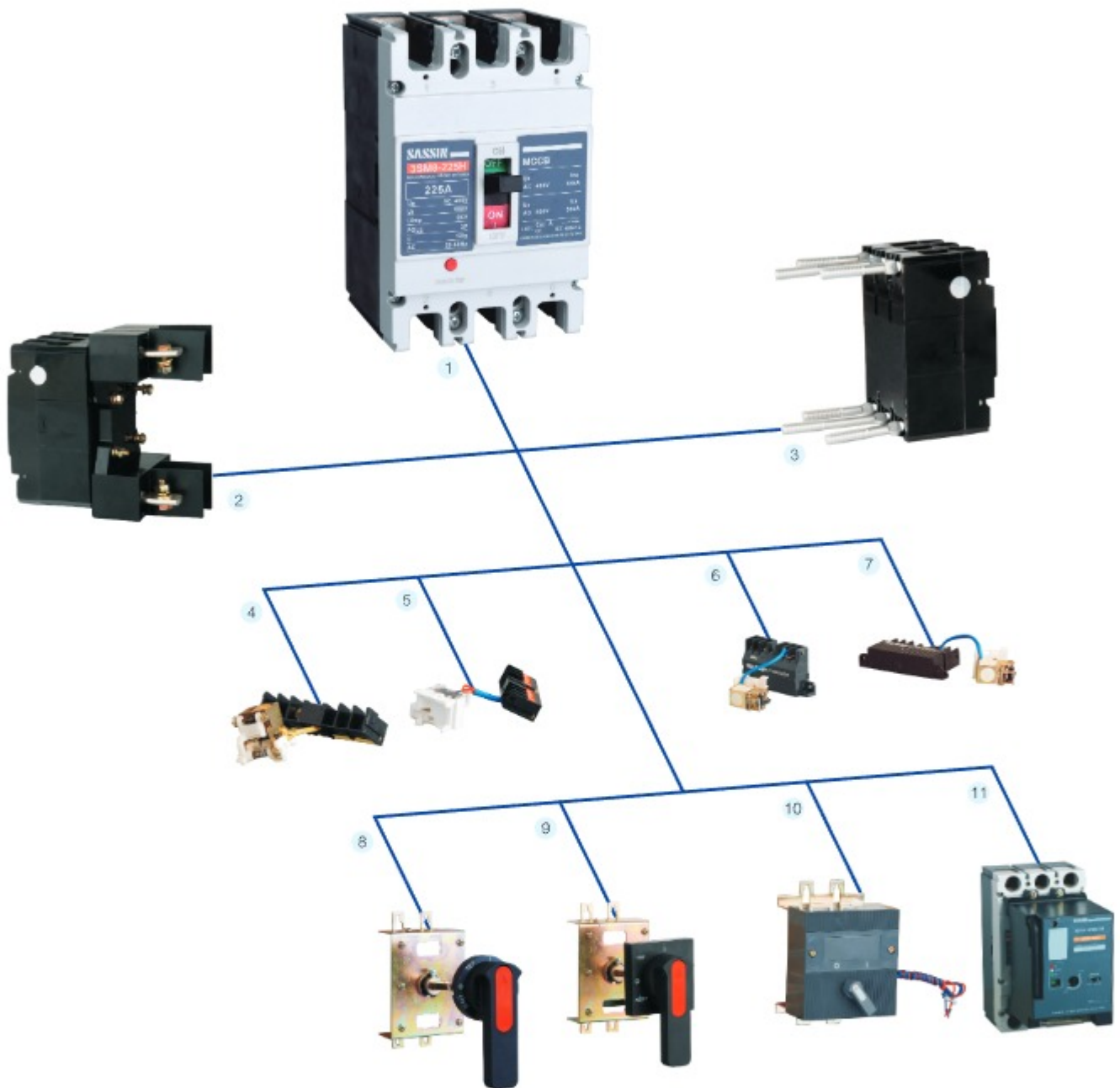
3SW8-6300/4000-5000 A (3-pole, 4-pole)

1



3SW8-6300/6300 A (3-pole)





**3SM8 series product overview**

- 1 Body
- 2 Plug-in connection
- 3 Rear panel connection
- 4 Auxiliary contact

- 5 Alarm contact
- 6 Shunt release
- 7 Under-voltage release
- 8 Rotary handle operating mechanism

- 9 Rotary handle operating mechanism
- 10 Electromagnetic operating mechanism
- 11 Electric motor operating mechanism

# Moulded Case Circuit Breakers

## Series 3SM8 with thermal-magnetic trip unit

### Applications and functions

- Incoming and outgoing function in distribution systems
- Switching and protection devices for motors, transformers and capacitors
- Disconnect or units with features for stopping and switching off in emergency mechanisms and terminal covers in conjunction with likeable rotary operating
- Available in the following versions
  - Power protection: the overload and short-circuit releases are designed for the protection of cables, leads and non-motor loads
  - Motor protection: the overload and short-circuit releases are designed for optimized protection and direct-on-line starting of induction squirrel-cage motors. The circuit breakers for motor protection are susceptible to phase failure and feature an adjustable trip class



### Instruction of type code

M8	A	3	P	400	L
					Breaking capacity
					L: Standard breaking capacity
					M: Middle breaking capacity
					H: High breaking capacity
					Rated current (A)
					10, 16, 20, 25, 32, 40, 50,
					63 (Frame A)
					16, 20, 25, 32, 40, 50, 63, 80,
					100, 125 (Frame B)
					100, 125, 160, 180, 200,
					225, 250 (Frame C)
					225, 250, 315, 350, 400 (Frame D)
					400, 500, 630 (Frame E)
					630, 700, 800 (Frame F)
					Protection type
					P: Power protection
					M: Motor protection
					Poles (P): 1: 1P; 2: 2P; 3: 3P; 4: 4P
					Frame
					A: 3SM8-63; B: 3SM8-100; C: 3SM8-225
					D: 3SM8-400; E: 3SM8-630; F: 3SM8-800
					Series code

- There is no frame E and F for motor protection.
- Only M type (medium breaking capacity type) has 4 poles:
  - 4A: N-pole fixed without over-current release unit, it has been connected all along, and does not act with other three poles to turn on or off.
  - 4B: N-pole fixed without over-current release unit, it acts with other three poles.
  - 4C: N-pole fixed with over-current release unit, it acts with other three poles.
  - 4D: N-pole fixed with over-current release unit, it has been all along, and does not act with other three poles to turn on or off.

## Technical Specifications

Type	3SM8-63		3SM8-100			3SM8-225			3SM8-400			3SM8-630			3SM8-800	
Standards	IEC 60947-2		IEC 60947-2			IEC 60947-2			IEC 60947-2			IEC 60947-2			IEC 60947-2	
Frame type	A		B			C			D			E			F	
Class of breaking capacity	L	M	L	M	H	L	M	H	L	M	H	L	M	H	M	H
Number of poles (P)	3	3, 4	1, 2, 3	2, 3, 4	3	1, 2, 3	2, 3, 4	3	3	3, 4	3	3	3, 4	3	3, 4	3
Frame current Inm (A)	63		100			225			400			630			800	
Rated current In (A)	10, 16, 20, 25, 32, 40, 50, 63		16, 20, 25, 32, 40, 50, 63, 80, 100, 125			100, 125, 160, 180, 200, 225, 250			225, 250, 315, 350, 400			400, 500, 630			630, 700, 800	
Rated insulating voltage Ui (V)	500		800			800			800			800			800	
Rated operating voltage, Ue (V)	400		400	690	400	400	690	400	400	690	400	400	690	400	690	400
Rated frequency (Hz)	50/60		50/60			50/60			50/60			50/60			50/60	
Rated impulse withstand voltage, Uimp (kV)	6		8			8			8			8			8	
Rated ultimate short-circuit breaking capacity, Icu																
(AC) 50-60 Hz 230 V O-CO (kA) (1P)	-	-	35	50	-	35	50	-	-	-	-	-	-	-	-	-
(AC) 50-60 Hz 400 V O-CO (kA)	25	50	35	50	85	35	50	85	50	65	100	50	65	100	65	100
(AC) 50-60 Hz 690 V O-CO (kA)	-	-	-	20	-	-	20	-	-	20	-	-	20	-	20	-
Rated operating short-circuit breaking capacity, Ics																
(AC) 50-60 Hz 230 V O-CO-CO (kA) (1P)	-	-	22	35	-	22	35	-	-	-	-	-	-	-	-	-
(AC) 50-60 Hz 400 V O-CO-CO (kA)	18	35	22	35	50	22	35	50	35	42	65	35	42	65	42	65
(AC) 50-60 Hz 690 V O-CO-CO (kA)	-	-	-	10	-	-	10	-	-	10	-	-	10	-	15	-
Mechanical life (times)	20000		20000			20000			10000			10000			8000	
Electrical life (times)	10000		10000			10000			8000			8000			5000	
Flashover distance (mm)	≤ 50		≤ 50			≤ 50			≤ 50			≤ 100			≤ 100	
Thermal magnetic release	■		■			■			■			■			■	
Electronic release	-		-			-			-			-			-	
Utilization category (IEC 60947-2)	A		A			A			A			A			A	
Under-voltage release	■		■			■			■			■			■	
Shunt-release	■		■			■			■			■			■	
Auxiliary contact	■		■			■			■			■			■	
Alarm Contact	■		■			■			■			■			■	
Weight	-		-			-			-			-			-	
Ambient temperature	-5 to +40 °C, max. 95% humidity															
Storage temperature	-40 to +75 °C															
Altitude (Max)	2000 m															

# Moulded Case Circuit Breakers

## Series 3SM8 with thermal-magnetic trip unit

### Selection and ordering data

1

	Breaking capacity at 400 V AC	Number of poles (P)	Rated current In (A)	Power distribution		Motor protection		
				Type code	Order code	Type code	Order code	
For 4 poles, please complete the code by adding N-pole code.								
Frame A 3SM8-63	L 25 kA	3	10	M8A 3P10L	35290	M8A 3M10L	35291	
			16	M8A 3P16L	25016	M8A 3M16L	10139	
			20	M8A 3P20L	25017	M8A 3M20L	10140	
			25	M8A 3P25L	25018	M8A 3M25L	10141	
			32	M8A 3P32L	25019	M8A 3M32L	10142	
			40	M8A 3P40L	25020	M8A 3M40L	10143	
			50	M8A 3P50L	25021	M8A 3M50L	10144	
	M 50 kA	3	63	M8A 3P63L	25022	M8A 3M63L	10145	
			10	M8A 3P10M	35292	M8A 3M10M	35293	
			16	M8A 3P16M	25025	M8A 3M16M	10148	
			20	M8A 3P20M	25026	M8A 3M20M	10149	
			25	M8A 3P25M	25027	M8A 3M25M	10150	
			32	M8A 3P32M	25028	M8A 3M32M	10151	
			40	M8A 3P40M	25029	M8A 3M40M	10152	
		50	M8A 3P50M	25030	M8A 3M50M	10153		
		63	M8A 3P63M	25031	M8A 3M63M	10154		
		4	10	M8A 4+P10M	35294	M8A 4+M10M	35295	
			16	M8A 4+P16M	25034*	M8A 4+M16M	10157*	
			20	M8A 4+P20M	25035*	M8A 4+M20M	10158*	
			25	M8A 4+P25M	25036*	M8A 4+M25M	10159*	
32	M8A 4+P32M		25037*	M8A 4+M32M	10160*			
40	M8A 4+P40M		25038*	M8A 4+M40M	10161*			
Frame B 3SM8-100	L 35 kA	1	16	M8B 1P16L	13579	M8B 1M16L	38227	
			20	M8B 1P20L	13580	M8B 1M20L	38228	
			25	M8B 1P25L	13581	M8B 1M25L	38229	
			32	M8B 1P32L	13582	M8B 1M32L	38230	
			40	M8B 1P40L	13583	M8B 1M40L	38231	
			50	M8B 1P50L	13584	M8B 1M50L	38232	
			63	M8B 1P63L	13585	M8B 1M63L	38233	
			80	M8B 1P80L	13586	M8B 1M80L	38234	
			100	M8B 1P100L	13587	M8B 1M100L	38235	
			125	M8B 1P125L	13588	M8B 1M125L	38236	
			2	16	M8B 2P16L	13596	M8B 2M16L	38237
				20	M8B 2P20L	13597	M8B 2M20L	38238
				25	M8B 2P25L	13598	M8B 2M25L	38239
		32		M8B 2P32L	13599	M8B 2M32L	38240	
		40		M8B 2P40L	13600	M8B 2M40L	38241	
		50		M8B 2P50L	13601	M8B 2M50L	38242	
		3	63	M8B 2P63L	13602	M8B 2M63L	38243	
			80	M8B 2P80L	13603	M8B 2M80L	38244	
			100	M8B 2P100L	13604	M8B 2M100L	38245	
125	M8B 2P125L		13605	M8B 2M125L	38246			
16	M8B 3P016L		25041	M8B 3M016L	10164			
20	M8B 3P020L		25042	M8B 3M020L	10165			
25	M8B 3P025L		25043	M8B 3M025L	10166			
32	M8B 3P032L		25044	M8B 3M032L	10167			
40	M8B 3P040L		25045	M8B 3M040L	10168			
50	M8B 3P050L		25046	M8B 3M050L	10169			
63	M8B 3P063L	25047	M8B 3M063L	10170				
80	M8B 3P080L	25048	M8B 3M080L	10171				
100	M8B 3P100L	25049	M8B 3M100L	10172				
125	M8B 3P125L	38247	M8B 3M125L	38248				



## Selection and ordering data

	Breaking capacity at 400 V AC	Number of poles (P)	Rated current I <sub>n</sub> (A)	Power distribution		Motor protection	
				Type code	Order code	Type code	Order code
For 4 poles, please complete the code by adding N-pole code.							
Frame B 3SM8-100	M	2	16	M8B 2P16M	35280	M8B 2M16M	35281
	50 kA		20	M8B 2P20M	38249	M8B 2M20M	38260
25			M8B 2P25M	38250	M8B 2M25M	38261	
32			M8B 2P32M	38251	M8B 2M32M	38262	
40			M8B 2P40M	38252	M8B 2M40M	38263	
50			M8B 2P50M	38253	M8B 2M50M	38264	
63			M8B 2P63M	38254	M8B 2M63M	38265	
80			M8B 2P80M	38255	M8B 2M80M	38266	
100			M8B 2P100M	38256	M8B 2M100M	38267	
125			M8B 2P125M	38257	M8B 2M125M	38268	
3			16	M8B 3P16M	25050	M8B 3M16M	10173
			20	M8B 3P20M	25051	M8B 3M20M	10174
	25	M8B 3P25M	25052	M8B 3M25M	10175		
	32	M8B 3P32M	25053	M8B 3M32M	10176		
	40	M8B 3P40M	25054	M8B 3M40M	10177		
	50	M8B 3P50M	25055	M8B 3M50M	10178		
	63	M8B 3P63M	25056	M8B 3M63M	10179		
	80	M8B 3P80M	25057	M8B 3M80M	10180		
	100	M8B 3P100M	25058	M8B 3M100M	10181		
	125	M8B 3P125M	38258	M8B 3M125M	38269		
	4	16	M8B 4+P16M	25059*	M8B 4+M16M	10182*	
		20	M8B 4+P20M	25060*	M8B 4+M20M	10183*	
25		M8B 4+P25M	25061*	M8B 4+M25M	10184*		
32		M8B 4+P32M	25062*	M8B 4+M32M	10185*		
40		M8B 4+P40M	25063*	M8B 4+M40M	10186*		
50		M8B 4+P50M	25064*	M8B 4+M50M	10187*		
63		M8B 4+P63M	25065*	M8B 4+M63M	10188*		
80		M8B 4+P80M	25066*	M8B 4+M80M	10189*		
100		M8B 4+P100M	25067*	M8B 4+M100M	10190*		
125		M8B 4P125M	38259	M8B 4M125M	38270		
H 85 kA		3	16	M8B 3P020H	25068	M8B 3M016H	10191
			20	M8B 3P016H	25069	M8B 3M020H	10192
	25		M8B 3P025H	25070	M8B 3M025H	10193	
	32		M8B 3P032H	25071	M8B 3M032H	10194	
	40		M8B 3P040H	25072	M8B 3M040H	10195	
	50		M8B 3P050H	25073	M8B 3M050H	10196	
	63		M8B 3P063H	25074	M8B 3M063H	10197	
	80		M8B 3P080H	25075	M8B 3M080H	10198	
	100		M8B 3P100H	25076	M8B 3M100H	10199	
	125		M8B 3P125H	38271	M8B 3M125H	38272	



# Moulded Case Circuit Breakers

## Series 3SM8 with thermal-magnetic trip unit






### Selection and ordering data

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	Breaking capacity at 400 V AC	Number of poles (P)	Rated current I <sub>n</sub> (A)	Power distribution		Motor protection	
				Type code	Order code	Type code	Order code
For 4 poles, please complete the code by adding N-pole code.							
Frame C 3SM8-225	L 35 kA	1	100	M8C 1P100L	35282	M8C 1M100L	35283
			125	M8C 1P125L	13589	M8C 1M125L	38273
			140	M8C 1P140L	13590	M8C 1M140L	38274
			160	M8C 1P160L	13591	M8C 1M160L	38275
			180	M8C 1P180L	13592	M8C 1M180L	38276
			200	M8C 1P200L	13593	M8C 1M200L	38277
		225	M8C 1P225L	13594	M8C 1M225L	38278	
		250	M8C 1P250L	13595	M8C 1M250L	38279	
		2	100	M8C 2P100L	35284	M8C 2M100L	35285
			125	M8C 2P125L	13606	M8C 2M125L	38280
			140	M8C 2P140L	13607	M8C 2M140L	38281
			160	M8C 2P160L	13608	M8C 2M160L	38282
	180		M8C 2P180L	13609	M8C 2M180L	38283	
	200		M8C 2P200L	13610	M8C 2M200L	38284	
	3	100	M8C 3P100L	25077	M8C 3M100L	10200	
		125	M8C 3P125L	25078	M8C 3M125L	10201	
		160	M8C 3P160L	25079	M8C 3M160L	10202	
		180	M8C 3P180L	25080	M8C 3M180L	10203	
		200	M8C 3P200L	25081	M8C 3M200L	10204	
		225	M8C 3P225L	25082	M8C 3M225L	10205	
	M 50 kA	2	100	M8C 2P100M	35286	M8C 2M100M	35287
			125	M8C 2P125M	38289	M8C 2M125M	38298
			140	M8C 2P140M	38290	M8C 2M140M	38299
			160	M8C 2P160M	38291	M8C 2M160M	38300
180			M8C 2P180M	38292	M8C 2M180M	38301	
200			M8C 2P200M	38293	M8C 2M200M	38302	
225			M8C 2P225M	38294	M8C 2M225M	38303	
250			M8C 2P250M	38295	M8C 2M250M	38304	
3			100	M8C 3P100M	25083	M8C 3M100M	10206
			125	M8C 3P125M	25084	M8C 3M125M	10207
			160	M8C 3P160M	25085	M8C 3M160M	10208
			180	M8C 3P180M	25086	M8C 3M180M	10209
		200	M8C 3P200M	25087	M8C 3M200M	10210	
		225	M8C 3P225M	25088	M8C 3M225M	10211	
4		100	M8C 4P100M	25089*	M8C 4M100M	10212*	
		125	M8C 4P125M	25090*	M8C 4M125M	10213*	
		160	M8C 4P160M	25091*	M8C 4M160M	10214*	
		180	M8C 4P180M	25092*	M8C 4M180M	10215*	
		200	M8C 4P200M	25093*	M8C 4M200M	10216*	
		225	M8C 4P225M	25094*	M8C 4M225M	10217*	
H 85 kA		3	100	M8C 3P100H	25095	M8C 3M100H	10218
			125	M8C 3P125H	25096	M8C 3M125H	10219
			160	M8C 3P160H	25097	M8C 3M160H	10220
			180	M8C 3P180H	25098	M8C 3M180H	10221
	200		M8C 3P200H	25099	M8C 3M200H	10222	
	225		M8C 3P225H	25100	M8C 3M225H	10223	
	250	M8C 3P250H	38307	M8C 3M250H	38308		



## Selection and ordering data

	Breaking capacity at 400 V AC	Number of poles (P)	Rated current In (A)	Power distribution		Motor protection	
				Type code	Order code	Type code	Order code
For 4 poles, please complete the code by adding N-pole code.							
<b>Frame D</b> 3SM8-400  	L 50 kA	3	225	M8D 3P225L	25101	M8D 3M225L	10224
			250	M8D 3P250L	25102	M8D 3M250L	10225
			315	M8D 3P315L	25103	M8D 3M315L	10226
			350	M8D 3P350L	25104	M8D 3M350L	10227
			400	M8D 3P400L	25105	M8D 3M400L	10228
	M 65 kA	3	225	M8D 3P225M	25106	M8D 3M225M	10229
			250	M8D 3P250M	25107	M8D 3M250M	10230
			315	M8D 3P315M	25108	M8D 3M315M	10231
			350	M8D 3P350M	25109	M8D 3M350M	10232
		4	400	M8D 3P400M	25110	M8D 3M400M	10233
			225	M8D 4+P225M	25111*	M8D 4+M225M	10234*
			250	M8D 4+P250M	25112*	M8D 4+M250M	10235*
			315	M8D 4+P315M	25113*	M8D 4+M315M	10236*
	H 100 kA	3	350	M8D 4+P350M	25114*	M8D 4+M350M	10237*
			400	M8D 4+P400M	25115*	M8D 4+M400M	10238*
			225	M8D 3P225H	25116	M8D 3M225H	10239
250			M8D 3P250H	25117	M8D 3M250H	10240	
315		M8D 3P315H	25118	M8D 3M315H	10241		
350		M8D 3P350H	25119	M8D 3M350H	10242		
400		M8D 3P400H	25120	M8D 3M400H	10243		
<b>Frame E</b> 3SM8-630  	L 50 kA	3	400	M8E 3P400L	25121	-	-
			500	M8E 3P500L	25122	-	-
			630	M8E 3P630L	25123	-	-
	M 65 kA	3	400	M8E 3P400M	25124	-	-
			500	M8E 3P500M	25125	-	-
		4	630	M8E 3P630M	25126	-	-
			400	M8E 4+P400M	25127*	-	-
			500	M8E 4+P500M	25128*	-	-
	H 100 kA	3	630	M8E 4+P630M	25129*	-	-
			400	M8E 3P400H	25130	-	-
			500	M8E 3P500H	25131	-	-
			630	M8E 3P630H	25132	-	-
<b>Frame F</b> 3SM8-800  	M 65 kA	3	630	M8F 3P630M	25133	-	-
			700	M8F 3P700M	25134	-	-
			800	M8F 3P800M	25135	-	-
	H 100 kA	4	630	M8F 4+P630M	25136*	-	-
			700	M8F 4+P700M	25137*	-	-
		3	800	M8F 4+P800M	25138*	-	-
			630	M8F 3P630H	25139	-	-
	700	3	700	M8F 3P700H	25140	-	-
800			M8F 3P800H	25141	-	-	



# Moulded Case Circuit Breakers

## Series 3SM8 with thermal-magnetic trip unit

### Motor driven mechanism


#### Function

- Used for opening and closing the circuit breaker remotely

#### Technical specifications

Model type	CD2	
Application	3SM8-63, 3SM8-100, 3SM8-225	3SM8-400, 3SM8-630, 3SM8-800
Rated control voltage	230 V AC, 400 V AC	230 V AC, 400 V AC
Operating current (A)	≤ 0.5	≤ 2
Mechanical life (times)	14000	5000
Motor power (W)	14	35

#### Selection and ordering data


Model	Application		Rated control voltage (V AC)	Type code	Order code
	Frame A	3SM8-63	230 V AC	M8A EM230A	25184
			400 V AC	M8A EM400A	25196
	Frame B	3SM8-100	230 V AC	M8B EM230A	25185
			400 V AC	M8B EM400A	25197
	Frame C	3SM8-225	230 V AC	M8C EM230A	25186
			400 V AC	M8C EM400A	25198
	Frame D	3SM8-400	230 V AC	M8D EM230A	25187
			400 V AC	M8D EM400A	25199
	Frame E	3SM8-630	230 V AC	M8E EM230A	25188
			400 V AC	M8E EM400A	25200
	Frame F	3SM8-800	230 V AC	M8F EM230A	25189
			400 V AC	M8F EM400A	25201

## Rotary handle operation mechanism

### Function

- Used for opening and closing the circuit breaker
- Used for rotating the circuit breaker, not pushing-pulling it upwards-downwards

### Selection and ordering data

Installation	Operation device	Rotary handle	Suitable frame	Without interlock	
				Type code	Order code
	RM1F	Round type	Frame A 3SM8-63	M8A RM1F	25202
			Frame B 3SM8-100	M8B RM1F	25203
			Frame C 3SM8-225	M8C RM1F	25204
			Frame D 3SM8-400	M8D RM1F	25205
			Frame E 3SM8-630	M8E RM1F	25206
			Frame F 3SM8-800	M8F RM1F	25207
		Square type	Frame A 3SM8-63	M8A RM1A	25208
			Frame B 3SM8-100	M8B RM1A	25209
			Frame C 3SM8-225	M8C RM1A	25210
			Frame D 3SM8-400	M8D RM1A	25211
			Frame E 3SM8-630	M8E RM1A	25212
			Frame F 3SM8-800	M8F RM1A	25213

### Accessories

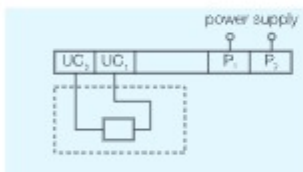
- Under-voltage release



When voltage is 35 – 70 % of rated voltage, the under voltage release should make the breaker reliable operation.

When the voltage is more than 85 – 110 % of rated voltage, the under voltage release should make the breaker reliable operation.

When voltage is less than 35 % of rated voltage, the under voltage release should prevent breaker from making.



Frame	Rated voltage	Without interlock	
		Type code	Order code
A 3SM8-63	230V AC	M8A UR230A	25154
	400V AC	M8A UR400A	25160
B 3SM8-100	230V AC	M8B UR230A	25155
	400V AC	M8B UR400A	25161
C 3SM8-225	230V AC	M8C UR230A	25156
	400V AC	M8C UR400A	25162
D 3SM8-400	230V AC	M8D UR230A	25157
	400V AC	M8D UR400A	25163
E 3SM8-630	230V AC	M8E UR230A	25158
	400V AC	M8E UR400A	25164
F 3SM8-800	230V AC	M8F UR230A	25159
	400V AC	M8F UR400A	25165

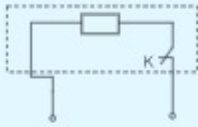
# Moulded Case Circuit Breakers

## Series 3SM8 with thermal-magnetic trip unit

### Accessories

#### ● Shunt release

In 70% – 110% of the rated voltage, the breaker can reliably operate.



Frame	Rated voltage	Type code	Order code
A 3SM8-63	230 V AC	M8A SR230A	25142
	400 V AC	M8A SR400A	25148
	110 V DC	M8A SR110D	10244
	220 V DC	M8A SR220D	10250
B 3SM8-100	230 V AC	M8B SR230A	25143
	400 V AC	M8B SR400A	25149
	110 V DC	M8B SR110D	10245
	220 V DC	M8B SR220D	10251
C 3SM8-225	230 V AC	M8C SR230A	25144
	400 V AC	M8C SR400A	25150
	110 V DC	M8C SR110D	10246
	220 V DC	M8C SR220D	10252
D 3SM8-400	230 V AC	M8D SR230A	25145
	400 V AC	M8D SR400A	25151
	110 V DC	M8D SR110D	10247
	220 V DC	M8D SR220D	10253
E 3SM8-630	230 V AC	M8E SR230A	25146
	400 V AC	M8E SR400A	25152
	110 V DC	M8E SR110D	10248
	220 V DC	M8E SR220D	10254
F 3SM8-800	230 V AC	M8F SR230A	25147
	400 V AC	M8F SR400A	25153
	110 V DC	M8F SR110D	10249
	220 V DC	M8F SR220D	10255

#### ● Auxiliary contact

Indication of contacting status.

Frame		Type code	Order code
A 3SM8-63	Left	M8A ACL	25166
	Right	M8A ACR	10256
B 3SM8-100	Left	M8B ACL	25167
	Right	M8B ACR	10257
C 3SM8-225	Left	M8C ACL	25168
	Right	M8C ACR	10258
D 3SM8-400	Left	M8D ACL	25169
	Right	M8D ACR	10259
E 3SM8-630	Left	M8E ACL	25170
	Right	M8E ACR	10260
F 3SM8-800	Left	M8F ACL	25171
	Right	M8F ACR	10261

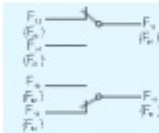
#### ● Alarm contact

Indication of contacting status.

Frame		Type code	Order code
A 3SM8-63		M8A AMC	25172
B 3SM8-100		M8B AMC	25173
C 3SM8-225		M8C AMC	25174
D 3SM8-400		M8D AMC	25175
E 3SM8-630		M8E AMC	25176
F 3SM8-800		M8F AMC	25177



when circuit breaker is at "locking" state



when circuit breaker is at "unlocking" state

Connection chart



when circuit breaker is at "locking" state



when circuit breaker is at "unlocking" state

Connection chart



## Tripping Characteristic

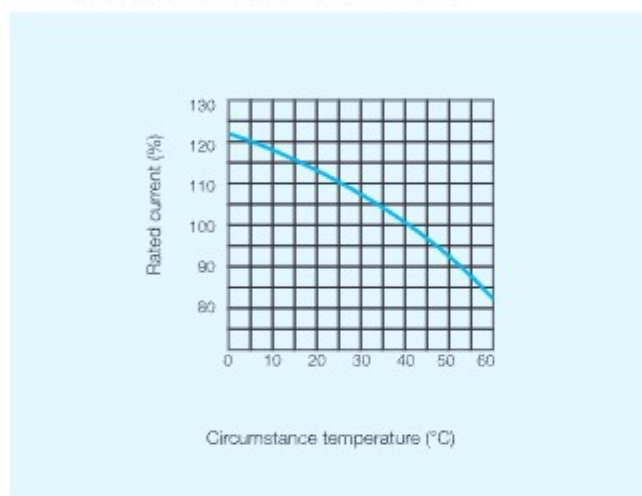
For power distribution

No.	Test current	I <sub>th</sub>	Conventional time	Start status
1	Conventional non-trip current	1.05	2h (I <sub>n</sub> > 63 A), 1h (I <sub>n</sub> ≤ 63 A)	Cold status
2	Conventional trip current	1.3	2h (I <sub>n</sub> > 63 A), 1h (I <sub>n</sub> ≤ 63 A)	Right after test No.1

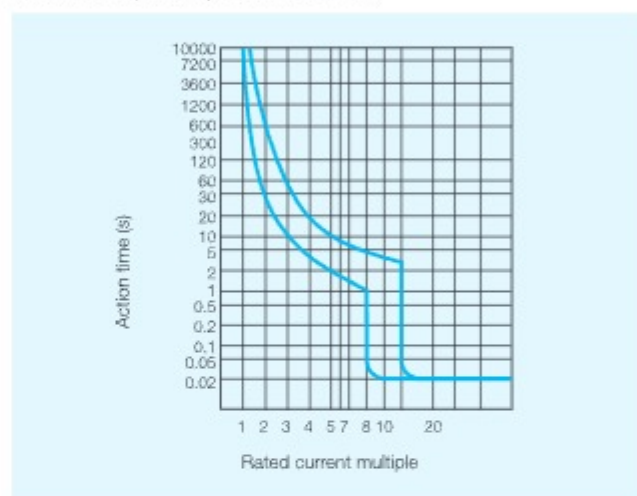
For motor protection

No.	Operational current	Conventional time	Start status	Remark
1	1.0 I <sub>n</sub>	2 h	Cold status	-
2	1.2 I <sub>n</sub>	≤ 2 h	Right after test No.1	-
3	1.5 I <sub>n</sub>	≤ 4 min ≤ 8 min	Cold status Cold status	10 ≤ I <sub>n</sub> ≤ 225 225 < I <sub>n</sub> ≤ 630
4	7.2 I <sub>n</sub>	4 s ≤ T ≤ 10 s 6 s ≤ T ≤ 20 s	Cold status Cold status	10 ≤ I <sub>n</sub> ≤ 225 225 < I <sub>n</sub> ≤ 630

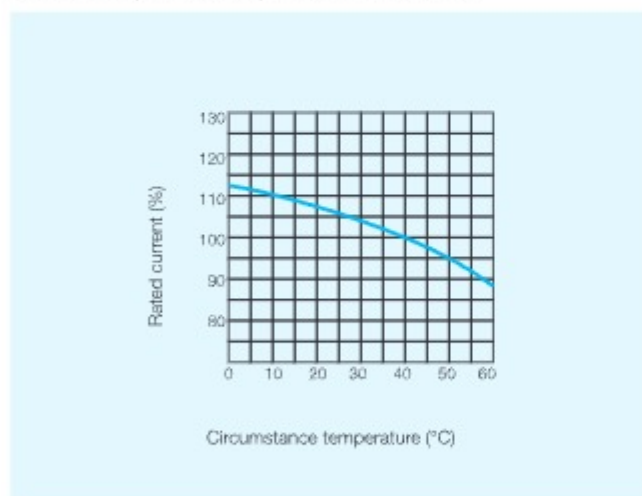
3SM8-63, 100 (10-32 A) Temperature emendation curve



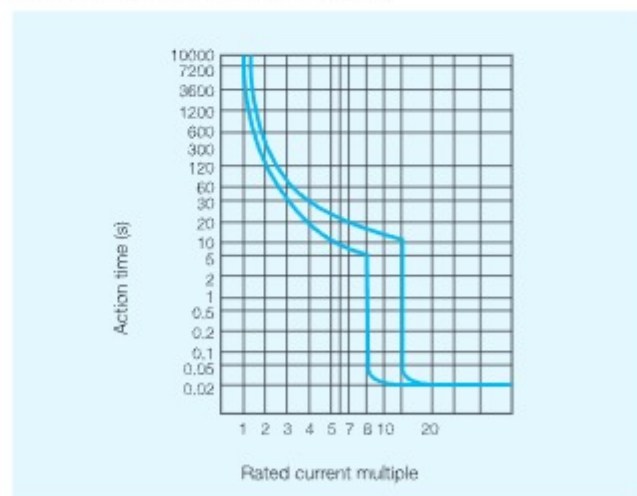
3SM8-63, 100 (10-32 A) Characteristic curve



3SM8-63, 100 (40-100 A) Temperature emendation curve



3SM8-63, 100 (40-100 A) Characteristic curve



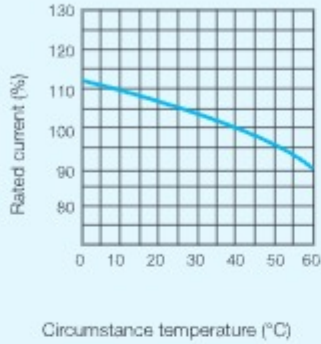
# Moulded Case Circuit Breakers

## Series 3SM8 with thermal-magnetic trip unit

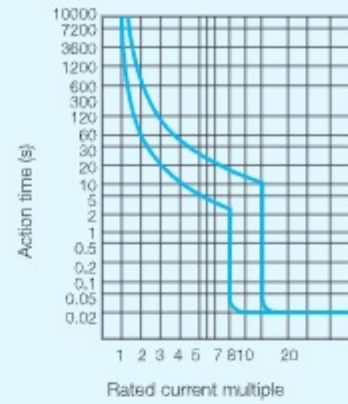
1

### Temperature performance curve

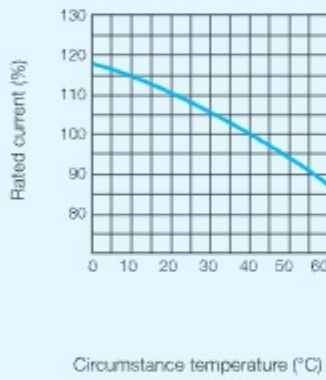
3SM8-225 Temperature emendation curve



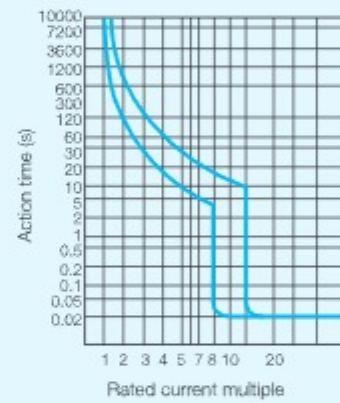
3SM8-225 Characteristic curve



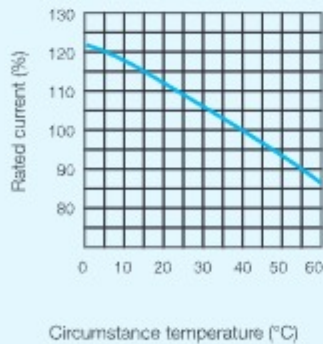
3SM8-400 Temperature emendation curve



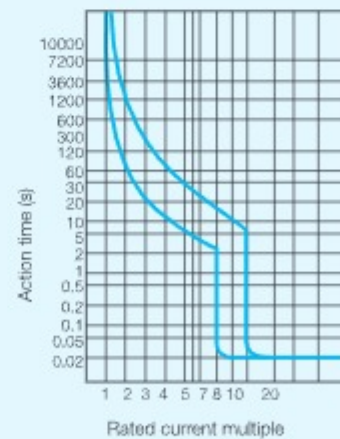
3SM8-400 Characteristic curve



3SM8-630, 800 Temperature emendation curve

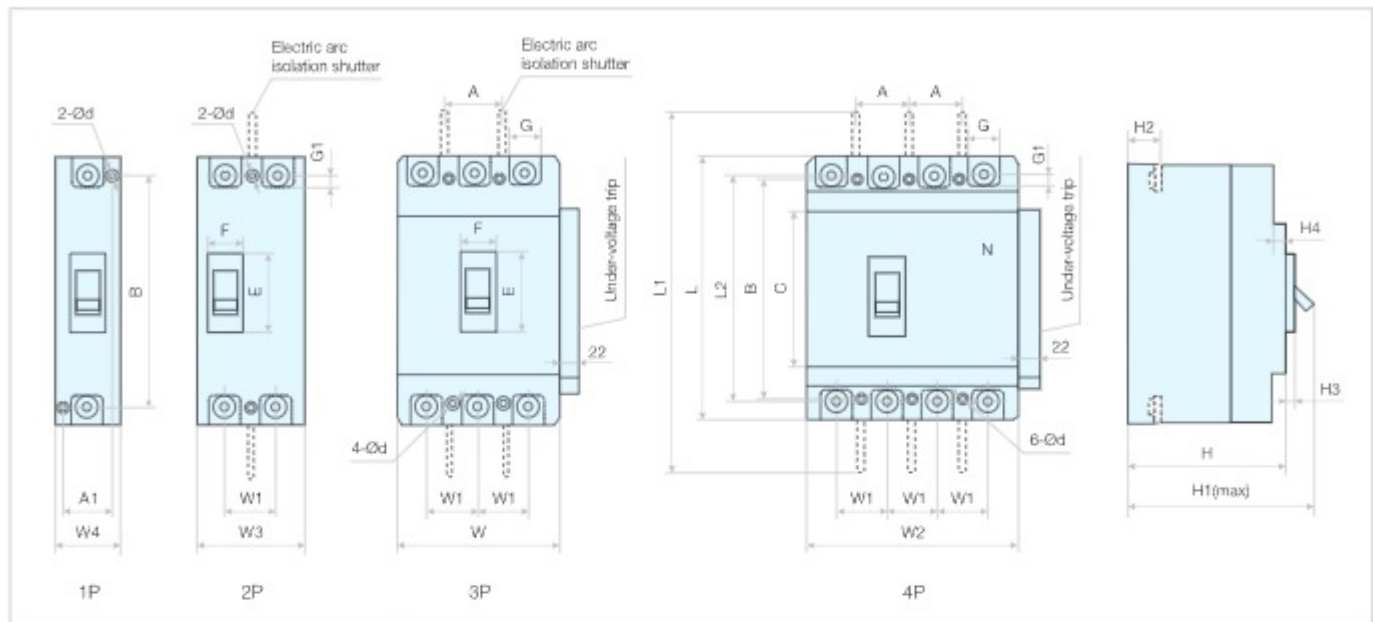


3SM8-630, 800 Characteristic curve



## Outline and installation dimensions

3SM8-63, 100, 225 (front connection)



		Model					
		3SM8-63L	3SM8-63M	3SM8-100L 3SM8-100H	3SM8-100M	3SM8-225L 3SM8-225H	3SM8-225M
Dimensions	C	85	85	88.5	88.5	102	102
	E	50	50	50	50	55	55
	F	26	26	26	26	29	29
	G	14	14	17	17	22	22
	G1	6	6	7.5	7.5	16	10
	H	73.5	82.5	88	86	86.5	103
	H1	92	98.5	86	103	110	127
	H2	20	28	24	24	24	24
	H3	4.8	4.8	4.8	4	4	4
	H4	6.5	6.5	6.5	6.5	5	5
	L	135	135	150	150	165	165
	L1	172	172	255	255	360	360
	L2	114	114	132	132	144	144
	W	78	78	90	90	107	107
	W1	25	25	30	30	35	35
	W2	-	103	-	122	-	142
W3	-	-	64.5	64.5	74.5	74.5	
W4	-	-	38	-	43	-	
Installation dimensions	A1	-	-	29	-	32	-
	A	25	25	30	30	35	35
	B	117	117	129	130	126	126
	Ød	4.2	4.2	4.5	4.5	4.5	4.5

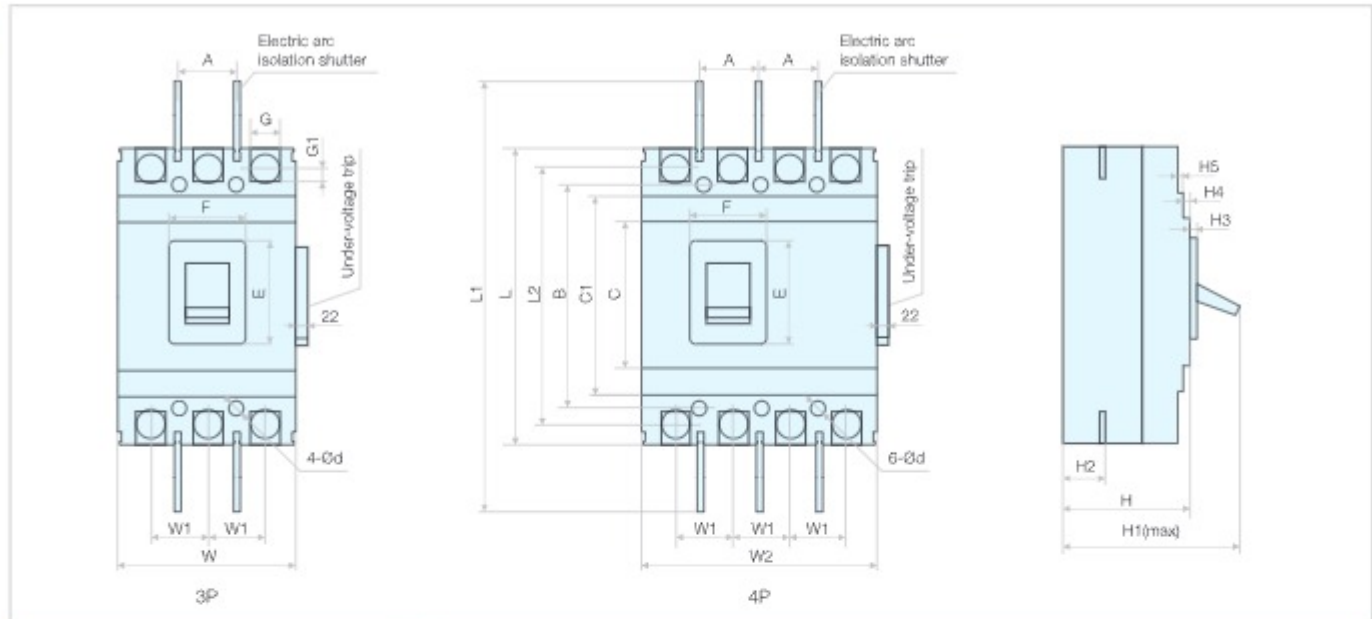
# Moulded Case Circuit Breakers

## Series 3SM8 with thermal-magnetic trip unit

### Outline and installation dimensions

3SM8-400, 630, 800 (front connection)

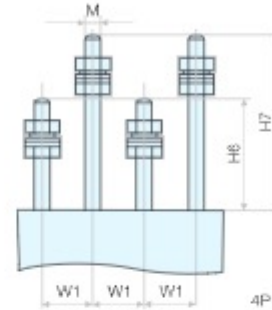
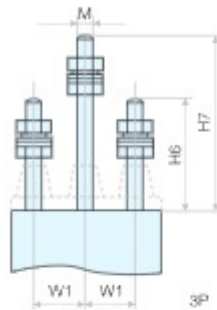
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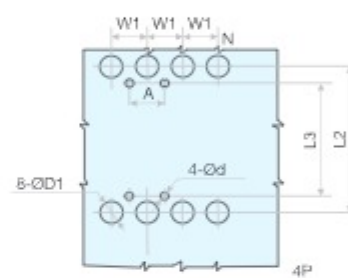
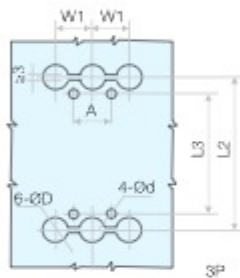
		Model				
		3SM8-400L	3SM8-400M	3SM8-630L 3SM8-630H	3SM8-630M	3SM8-800M 3SM8-800H
Dimensions	C	120	120	134	134	154
	C1	174	174	184	184	204
	E	89	89	89	89	81
	F	65	65	65	65	66
	G	32	32	44	44	46
	G1	11	11	14	14	14
	H	107	107	112.5	112.5	111.5
	H1	146.5	146.5	160	160	155
	H2	38	38	43	43	44
	H3	9	9	10	10	10
	H4	7.5	7.5	10	10	10.5
	H5	4.5	4.5	4.5	4.5	4.5
	L	257	257	270	270	280
	L1	457	457	470	470	470
	L2	224	224	234	234	243
W	150	150	182	182	210	
W1	44	44	58	58	70	
W2	-	198	-	240	280	
Installation dimensions	A	44	44	58	58	70
	B	194	194	200	200	243
	Ød	7	7	7	7	7

## Outline and installation dimensions

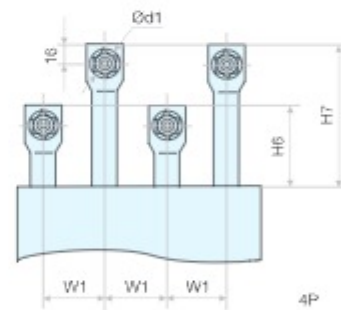
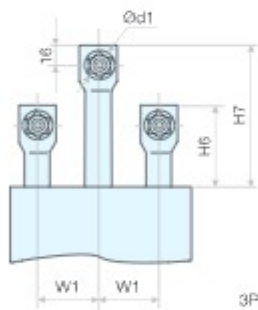
3SM8-63, 100, 225 (Rear connection)



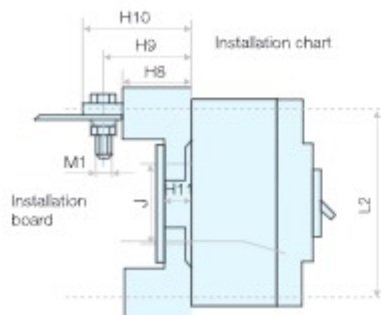
Rear connection stiletto chart



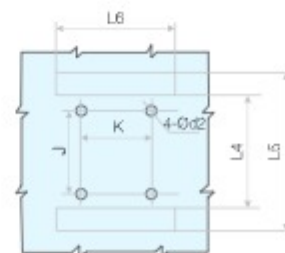
3SM8-400, 630, 800 (Rear connection)



Insert style



Installation board stiletto chart





# Moulded Case Circuit Breakers

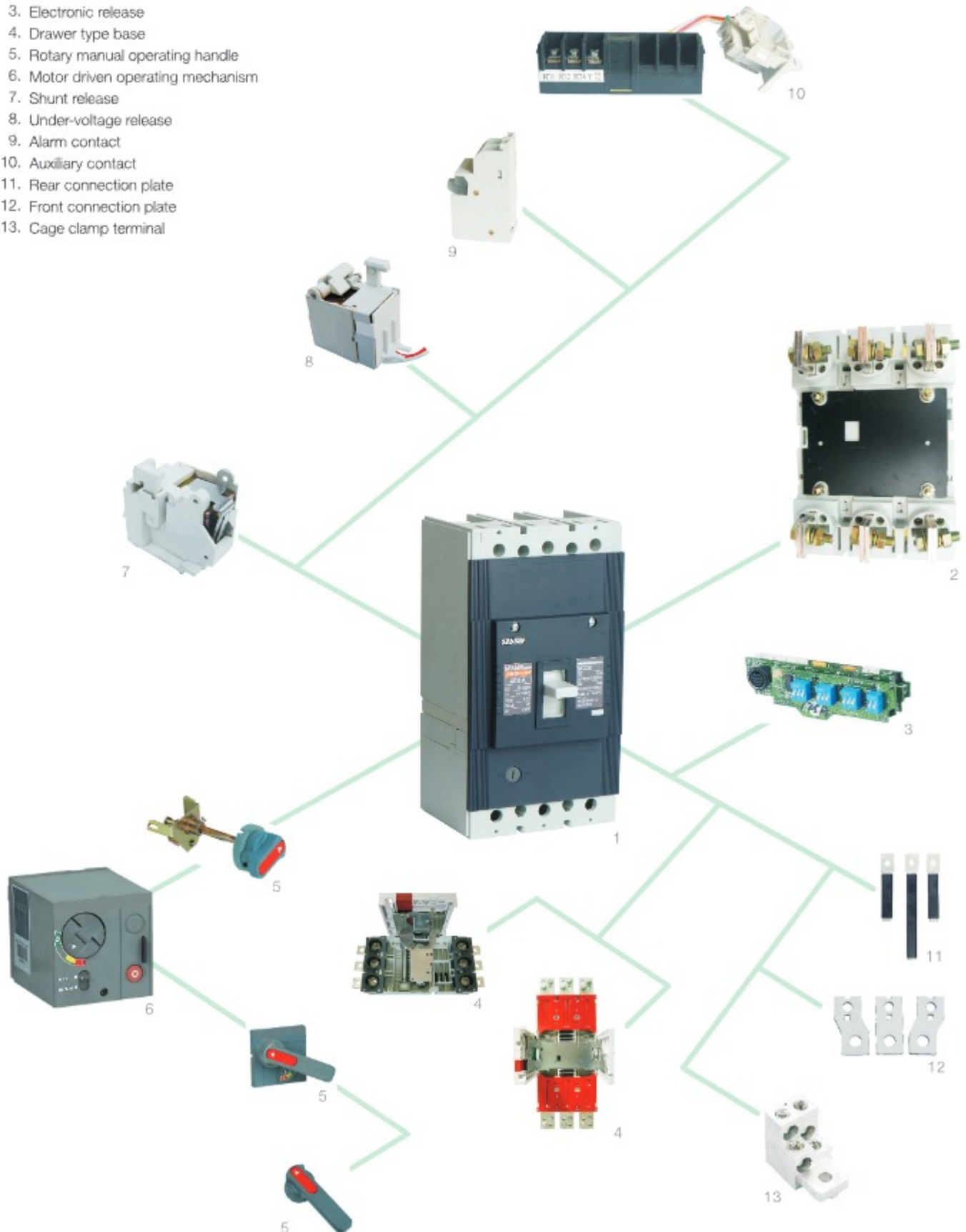
## Series 3SM8 with thermal-magnetic trip unit

### Outline and installation dimensions

	3SM8-63L 3SM8-63M	3SM8-100L 3SM8-100M 3SM8-100H	3SM8-225L 3SM8-225M 3SM8-225H	3SM8-400L 3SM8-400M 3SM8-400H	3SM8-630L 3SM8-630M 3SM8-630H	3SM8-800M 3SM8-800H
A	25	30	35	44	58	70
Ød	Ø4.2	Ø4.5	Ø4.5	Ø6.5	Ø6.5	Ø7
Ød1	-	-	-	Ø12.5	Ø16.5	Ø16.5
Ød2	Ø5.5	Ø6.5	Ø6.5	Ø8.5	Ø8.5	Ø11.5
ØD	Ø14	Ø25	Ø25	Ø32	Ø40	Ø48
ØD1	Ø14	Ø25	Ø25	Ø32	Ø40	Ø48
H6	30	53	68	63.2	63.5	84
H7	50	88	89	104.5	104.5	84
H8	28	50	58	63.5	60	74
H9	36	64	65	80	92	-
H10	43	80	80	102	110	104
H11	10	15	17.5	20	21	30
L2	117	132	144	224	234	243
L3	117	107	126	194	200	243
L4	90	90	88	166	167	175
L5	146	172	190	282	303	305
L6	79	94	110	152	185	213
M	M5	M8	M8	-	-	-
K	50	60	70	60	100	90
J	60	56	54	129	123	123
M1	M5	M8	M8	M12	M12	M14
W1	25	30	35	48	58	70

**Overview**

1. Body
2. Plug-in base
3. Electronic release
4. Drawer type base
5. Rotary manual operating handle
6. Motor driven operating mechanism
7. Shunt release
8. Under-voltage release
9. Alarm contact
10. Auxiliary contact
11. Rear connection plate
12. Front connection plate
13. Cage clamp terminal



# Moulded Case Circuit Breakers

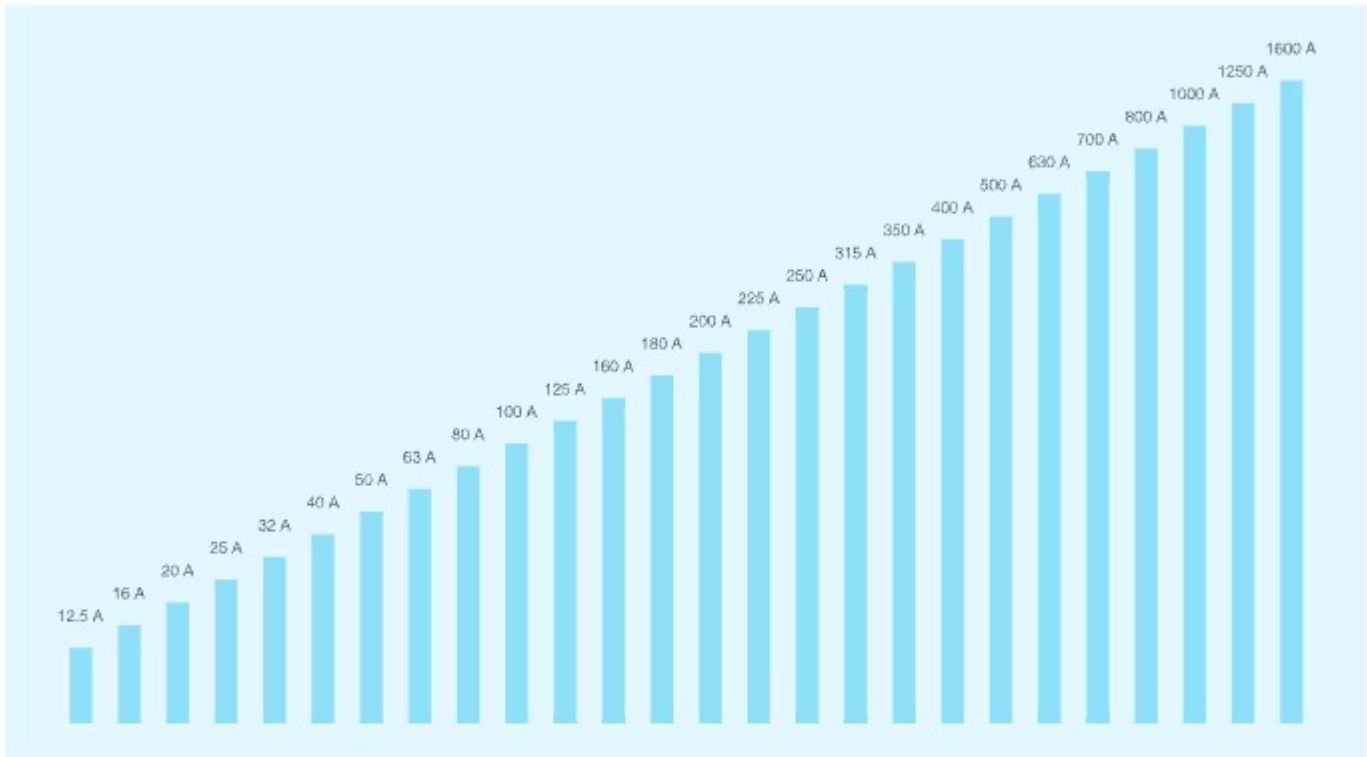
## Series 3SM29

### Applications and functions

- Incoming and outgoing function in distribution systems
- Switching and protection of short circuit and overload for motors, transformers and capacitors
- Stopping and switching off in an emergency in conjunction with lockable rotary operating mechanisms and terminal covers
- Available in the following versions:
  - System protection: the overload and short-circuit releases are designed for the protection of cables, leads and non-motor loads.
  - Motor protection: the overload and short-circuit releases are designed for optimized protection and direct-on-line starting of induction squirrel-cage motors.

### Features

- Complete current range



- High-breaking capacity
  - (1) B: Basic breaking capacity type
  - (2) N: Normal breaking capacity type
  - (3) S: Standard breaking capacity type
  - (4) H: High-breaking capacity type
  - (5) G: Ultrahigh breaking capacity type

Frame rated current	Rated ultimate short circuit breaking capacity Icu				
	20 kA	35 kA	50 kA	65 kA	85 kA
A: 125 A		N			
B: 160 A	B	N	S		
C: 250 A	B	N	S	H	
D: 400 A		N	S	H	
E: 630 A		N	S	H	
F: 800 A		N	S	H	
G: 1250 A			S	H	G
H: 1600 A			S	H	G

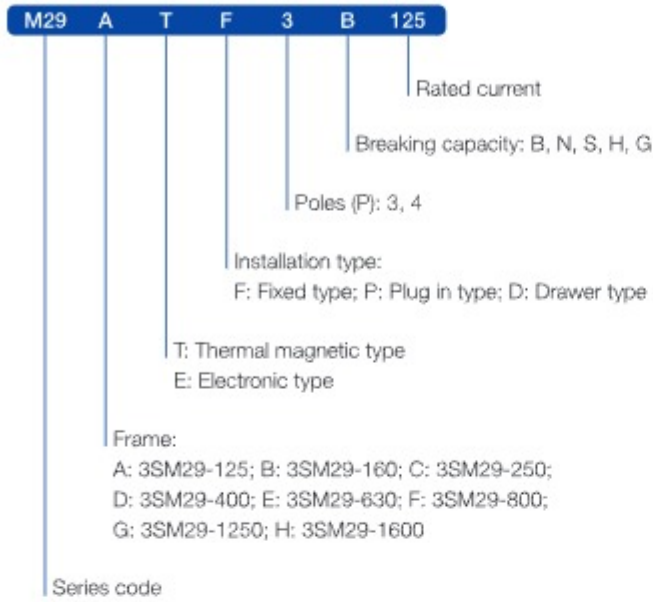
- Microprocess controlled
 

3SM29 series circuit breaker (Inm ≥ 250) adopt advanced microprocess electronic release that can intelligentize the protection.
- Convenient installation
 

3SM29 series circuit breaker provides three installation types as follow:

  - Fixed installation with front connection and rear connection
  - Plug-in installation with front connection and rear connection
  - Drawer installation

## Instruction of type code



# Moulded Case Circuit Breakers

## Series 3SM29



### Technical specifications

Type	3SM29-125			3SM29-160			3SM29-250			3SM29-400			3SM29-630, 3SM29-800			3SM29-1250, 3SM29-1600		
Standards	IEC 60947-2			IEC 60947-2			IEC 60947-2			IEC 60947-2			IEC 60947-2			IEC 60947-2		
Frame type	A			B			C			D			E, F			G, H		
Poles (No)	3, 4			3, 4			3, 4			3, 4			3, 4			3		
N-pole rated current	= In			= In			= In			= In			= In			= In		
Frame Current Inm (A)	125			160			250			400			630, 800			1250, 1600		
Rated current In (A)	12.5, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125			32, 40, 50, 63, 80, 100, 125, 160			125, 160, 180, 200, 225, 250			250, 315, 350, 400			400, 500, 630, 700, 800			800, 1000, 1250, 1600		
Rated insulating voltage Ui (V)	500			690			690			690			690			690		
Rated service voltage Ue (V)	400			400			400			400			400			400		
Rated frequency in AC (Hz)	50/60			50/60			50/60			50/60			50/60			50/60		
Rated impulsive withstand voltage Uimp (Kv)	6			6			8			8			8			8		
Class of breaking capacity	B N			B N S			N S H			N S H			N S H			S H G		
Rated ultimate short-circuit breaking capacity, Icu (kA)																		
(AC) 50-60 Hz 400V O-CO (kA)	20	35	20	35	50	35	50	65	35	50	65	35	50	65	50	65	85	
(AC) 50-60 Hz 690V O-CO-CO	15	20	16	25	35	20	30	35	20	30	35	20	30	35	30	35	50	
Rated operating short-circuit breaking capacity, Ics																		
(AC) 50-60 Hz 400V O-CO-CO (kA)	10	17.5	10	17.5	25	35	37.5	48.8	35	37.5	48.8	35	37.5	48.8	50	48.75	50	
(AC) 50-60 Hz 690V O-CO-CO (kA)	-	-	5	10	15	20	30	35	20	30	35	20	30	35	30	35	35	
Rated short-time withstand current for 1s (kA)	-			-			-			5			10			20		
Mechanical life (times)	8500			7000			7000			4000			4000			2500		
Electrical life (times)	1500			1000			1000			1000			1000			500		
Flashover distance (mm)	≤ 30			≤ 30			≤ 50			≤ 50			≤ 60			≤ 80		
Thermal magnetic release	■			■			■			■			■			■		
Electronic release	-			-			■			■			■			■		
Utilization category (IEC 60947-2)	A			A			A			A, B			A, B			A, B		
Motor control mechanism	■			■			■			■			■			■		
Rotary handle operation mechanism	■			■			■			■			■			■		
Shunt and under voltage release	■			■			■			■			■			■		
Auxiliary contact and alarm contact	■			■			■			■			■			■		
Dimension		W (mm)	3P	76	90	105	140	210	210									
			4P	101	120	140	184	280	280									
		L (mm)	3P	120	120	170	254	268	406									
			4P	120	120	170	254	268	406									
H (mm)	3P	70	70	103.5	103.5	103.5	138.5											
	4P	70	70	103.5	103.5	103.5	138.5											
Weight	Fixed	3P/4P	0.92/1.3	1.2/1.6	2.7/3.5	5.1/7	9.6/12.2	17.2/22.2										
		Plug in	3P/4P	1.2/1.5	1.4/1.8	3.2/4.2	6.2/8.5	-	-									
		Withdrawable	3P/4P	-	-	3.6/4.6	6.5/8.7	12.2/15.3	22/30.1									
Ambient temperature	-5 ~ 40 °C, max. 95 % humidity																	
Storage temperature	-40 ~ +75 °C																	
Altitude (Max)	2,000																	

## Selection and ordering data

### Thermal Magnetic Type

	Breaking capacity	Poles	Rated current (A)	Fixed type		Plug in type		Withdrawable type		
				Type code	Order code	Type code	Order code	Type code	Order code	
3SM29-125	20 kA (B)	3	12.5	M29ATF 3B12.5	10484	M29ATP 3B12.5	10506	-	-	
			16	M29ATF 3B16	10485	M29ATP 3B16	10507	-	-	
			20	M29ATF 3B20	10486	M29ATP 3B20	10508	-	-	
			25	M29ATF 3B25	10487	M29ATP 3B25	10509	-	-	
			32	M29ATF 3B32	10488	M29ATP 3B32	10510	-	-	
			40	M29ATF 3B40	10489	M29ATP 3B40	10511	-	-	
			50	M29ATF 3B50	10490	M29ATP 3B50	10512	-	-	
			63	M29ATF 3B63	10491	M29ATP 3B63	10513	-	-	
			80	M29ATF 3B80	10492	M29ATP 3B80	10514	-	-	
			100	M29ATF 3B100	10493	M29ATP 3B100	10515	-	-	
			125	M29ATF 3B125	10494	M29ATP 3B125	10516	-	-	
			35 kA (N)	3	4	12.5	M29ATF 4B12.5	10528	M29ATP 4B12.5	10550
	16	M29ATF 4B16				10529	M29ATP 4B16	10551	-	-
	20	M29ATF 4B20				10530	M29ATP 4B20	10552	-	-
	25	M29ATF 4B25				10531	M29ATP 4B25	10553	-	-
	32	M29ATF 4B32				10532	M29ATP 4B32	10554	-	-
	40	M29ATF 4B40				10533	M29ATP 4B40	10555	-	-
	50	M29ATF 4B50				10534	M29ATP 4B50	10556	-	-
	63	M29ATF 4B63				10535	M29ATP 4B63	10557	-	-
	80	M29ATF 4B80				10536	M29ATP 4B80	10558	-	-
	100	M29ATF 4B100				10537	M29ATP 4B100	10559	-	-
	125	M29ATF 4B125				10538	M29ATP 4B125	10560	-	-
	35 kA (N)	3				4	12.5	M29ATF 3N12.5	10495	M29ATP 3N12.5
			16	M29ATF 3N16	10496		M29ATP 3N16	10518	-	-
			20	M29ATF 3N20	10497		M29ATP 3N20	10519	-	-
			25	M29ATF 3N25	10498		M29ATP 3N25	10520	-	-
			32	M29ATF 3N32	10499		M29ATP 3N32	10521	-	-
			40	M29ATF 3N40	10500		M29ATP 3N40	10522	-	-
			50	M29ATF 3N50	10501		M29ATP 3N50	10523	-	-
			63	M29ATF 3N63	10502		M29ATP 3N63	10524	-	-
			80	M29ATF 3N80	10503		M29ATP 3N80	10525	-	-
			100	M29ATF 3N100	10504		M29ATP 3N100	10526	-	-
			125	M29ATF 3N125	10505		M29ATP 3N125	10527	-	-
			35 kA (N)	3	4		12.5	M29ATF 4N12.5	10539	M29ATP 4N12.5
	16	M29ATF 4N16				10540	M29ATP 4N16	10562	-	-
	20	M29ATF 4N20				10541	M29ATP 4N20	10563	-	-
25	M29ATF 4N25	10542				M29ATP 4N25	10564	-	-	
32	M29ATF 4N32	10543				M29ATP 4N32	10565	-	-	
40	M29ATF 4N40	10544				M29ATP 4N40	10566	-	-	
50	M29ATF 4N50	10545				M29ATP 4N50	10567	-	-	
63	M29ATF 4N63	10546				M29ATP 4N63	10568	-	-	
80	M29ATF 4N80	10547				M29ATP 4N80	10569	-	-	
100	M29ATF 4N100	10548				M29ATP 4N100	10570	-	-	
125	M29ATF 4N125	10549				M29ATP 4N125	10571	-	-	
3SM29-160	20 kA (B)	3				32	M29BTF 3B32	10572	M29BTP 3B32	34331
			40	M29BTF 3B40	10573	M29BTP 3B40	34332	-	-	
			50	M29BTF 3B50	10574	M29BTP 3B50	34333	-	-	
			63	M29BTF 3B63	10575	M29BTP 3B63	34334	-	-	
			80	M29BTF 3B80	10576	M29BTP 3B80	34335	-	-	
			100	M29BTF 3B100	10577	M29BTP 3B100	34336	-	-	
		4	125	M29BTF 3B125	10578	M29BTP 3B125	34337	-	-	
			160	M29BTF 3B160	10579	M29BTP 3B160	34338	-	-	
			32	M29BTF 4B32	34339	M29BTP 4B32	34347	-	-	
			40	M29BTF 4B40	34340	M29BTP 4B40	34348	-	-	
			50	M29BTF 4B50	34341	M29BTP 4B50	34349	-	-	
			63	M29BTF 4B63	34342	M29BTP 4B63	34350	-	-	
			80	M29BTF 4B80	34343	M29BTP 4B80	34351	-	-	
			100	M29BTF 4B100	34344	M29BTP 4B100	34352	-	-	
			125	M29BTF 4B125	34345	M29BTP 4B125	34353	-	-	
			160	M29BTF 4B160	34346	M29BTP 4B160	34354	-	-	



# Moulded Case Circuit Breakers

## Series 3SM29



### Selection and ordering data

#### Thermal Magnetic Type

	Breaking capacity	Poles	Rated current (A)	Fixed type		Plug in type		Withdrawable type				
				Type code	Order code	Type code	Order code	Type code	Order code			
<b>3SM29-160</b>	35 kA (N)	3	32	M29BTF 3N32	10580	M29BTP 3N32	39925	-	-			
			40	M29BTF 3N40	10581	M29BTP 3N40	39926	-	-			
			50	M29BTF 3N50	10582	M29BTP 3N50	39927	-	-			
			63	M29BTF 3N63	10583	M29BTP 3N63	39928	-	-			
			80	M29BTF 3N80	10584	M29BTP 3N80	39929	-	-			
			100	M29BTF 3N100	10585	M29BTP 3N100	39930	-	-			
			125	M29BTF 3N125	10586	M29BTP 3N125	39931	-	-			
			160	M29BTF 3N160	10587	M29BTP 3N160	39932	-	-			
		4	32	M29BTF 4N32	10604	M29BTP 4N32	10612	-	-			
			40	M29BTF 4N40	10605	M29BTP 4N40	10613	-	-			
			50	M29BTF 4N50	10606	M29BTP 4N50	10614	-	-			
			63	M29BTF 4N63	10607	M29BTP 4N63	10615	-	-			
			80	M29BTF 4N80	10608	M29BTP 4N80	10616	-	-			
			100	M29BTF 4N100	10609	M29BTP 4N100	10617	-	-			
			125	M29BTF 4N125	10610	M29BTP 4N125	10618	-	-			
			160	M29BTF 4N160	10611	M29BTP 4N160	10619	-	-			
	50 kA (S)	3	32	M29BTF 3S32	10588	M29BTP 3S32	10596	-	-			
			40	M29BTF 3S40	10589	M29BTP 3S40	10597	-	-			
			50	M29BTF 3S50	10590	M29BTP 3S50	10598	-	-			
			63	M29BTF 3S63	10591	M29BTP 3S63	10599	-	-			
			80	M29BTF 3S80	10592	M29BTP 3S80	10600	-	-			
			100	M29BTF 3S100	10593	M29BTP 3S100	10601	-	-			
			125	M29BTF 3S125	10594	M29BTP 3S125	10602	-	-			
			160	M29BTF 3S160	10595	M29BTP 3S160	10603	-	-			
			4	32	M29BTF 4S32	39933	M29BTP 4S32	10620	-	-		
				40	M29BTF 4S40	39934	M29BTP 4S40	10621	-	-		
				50	M29BTF 4S50	39935	M29BTP 4S50	10622	-	-		
				63	M29BTF 4S63	39936	M29BTP 4S63	10623	-	-		
		80		M29BTF 4S80	39937	M29BTP 4S80	10624	-	-			
		100		M29BTF 4S100	39938	M29BTP 4S100	10625	-	-			
		125		M29BTF 4S125	39939	M29BTP 4S125	10626	-	-			
		160		M29BTF 4S160	39940	M29BTP 4S160	10627	-	-			
		<b>3SM29-250</b>		35 kA (N)	3	125	M29CTF 3N125	39941	M29CTP 3N125	10638	M29CTD 3N125	10656
						160	M29CTF 3N160	39942	M29CTP 3N160	10639	M29CTD 3N160	10657
						180	M29CTF 3N180	39943	M29CTP 3N180	10640	M29CTD 3N180	10658
						200	M29CTF 3N200	39944	M29CTP 3N200	10641	M29CTD 3N200	10659
			225			M29CTF 3N225	39945	M29CTP 3N225	10642	M29CTD 3N225	10660	
			250			M29CTF 3N250	39946	M29CTP 3N250	10643	M29CTD 3N250	10661	
			4		125	M29CTF 4N125	10674	M29CTP 4N125	10692	M29CTD 4N125	16011	
					160	M29CTF 4N160	10675	M29CTP 4N160	10693	M29CTD 4N160	16012	
	180				M29CTF 4N180	10676	M29CTP 4N180	10694	M29CTD 4N180	16013		
	200				M29CTF 4N200	10677	M29CTP 4N200	10695	M29CTD 4N200	16014		
	225				M29CTF 4N225	10678	M29CTP 4N225	10696	M29CTD 4N225	16015		
	250				M29CTF 4N250	10679	M29CTP 4N250	10697	M29CTD 4N250	16016		
	50 kA (S)		3	125	M29CTF 3S125	39947	M29CTP 3S125	10644	M29CTD 3S125	10662		
				160	M29CTF 3S160	39948	M29CTP 3S160	10645	M29CTD 3S160	10663		
				180	M29CTF 3S180	10628	M29CTP 3S180	10646	M29CTD 3S180	10664		
				200	M29CTF 3S200	10629	M29CTP 3S200	10647	M29CTD 3S200	10665		
225				M29CTF 3S225	10630	M29CTP 3S225	10648	M29CTD 3S225	10666			
250				M29CTF 3S250	10631	M29CTP 3S250	10649	M29CTD 3S250	10667			
4			125	M29CTF 4S125	10680	M29CTP 4S125	10698	M29CTD 4S125	16017			
			160	M29CTF 4S160	10681	M29CTP 4S160	10699	M29CTD 4S160	16018			
			180	M29CTF 4S180	10682	M29CTP 4S180	10700	M29CTD 4S180	16019			
			200	M29CTF 4S200	10683	M29CTP 4S200	16002	M29CTD 4S200	16020			
			225	M29CTF 4S225	10684	M29CTP 4S225	16003	M29CTD 4S225	16021			
			250	M29CTF 4S250	10685	M29CTP 4S250	16004	M29CTD 4S250	16022			



## Selection and ordering data

### Thermal Magnetic Type

	Breaking capacity	Poles	Rated current (A)	Fixed type		Plug in type		Withdrawable type			
				Type code	Order code	Type code	Order code	Type code	Order code		
<b>3SM29-250</b>	65 kA (H)	3	125	M29CTF 3H125	<b>10632</b>	M29CTP 3H125	<b>10650</b>	M29CTD 3H125	<b>10668</b>		
			160	M29CTF 3H160	<b>10633</b>	M29CTP 3H160	<b>10651</b>	M29CTD 3H160	<b>10669</b>		
			180	M29CTF 3H180	<b>10634</b>	M29CTP 3H180	<b>10652</b>	M29CTD 3H180	<b>10670</b>		
			200	M29CTF 3H200	<b>10635</b>	M29CTP 3H200	<b>10653</b>	M29CTD 3H200	<b>10671</b>		
			225	M29CTF 3H225	<b>10636</b>	M29CTP 3H225	<b>10654</b>	M29CTD 3H225	<b>10672</b>		
			250	M29CTF 3H250	<b>10637</b>	M29CTP 3H250	<b>10655</b>	M29CTD 3H250	<b>10673</b>		
	4	125	M29CTF 4H125	<b>10686</b>	M29CTP 4H125	<b>16005</b>	M29CTD 4H125	<b>16023</b>			
		160	M29CTF 4H160	<b>10687</b>	M29CTP 4H160	<b>16006</b>	M29CTD 4H160	<b>16024</b>			
		180	M29CTF 4H180	<b>10688</b>	M29CTP 4H180	<b>16007</b>	M29CTD 4H180	<b>16025</b>			
		200	M29CTF 4H200	<b>10689</b>	M29CTP 4H200	<b>16008</b>	M29CTD 4H200	<b>16026</b>			
		225	M29CTF 4H225	<b>10690</b>	M29CTP 4H225	<b>16009</b>	M29CTD 4H225	<b>16027</b>			
		250	M29CTF 4H250	<b>10691</b>	M29CTP 4H250	<b>16010</b>	M29CTD 4H250	<b>16028</b>			
	<b>3SM29-400</b>	35 kA (N)	3	250	M29DTF 3N250	<b>16029</b>	M29DTP 3N250	<b>16041</b>	M29DTD 3N250	<b>16053</b>	
				315	M29DTF 3N315	<b>16030</b>	M29DTP 3N315	<b>16042</b>	M29DTD 3N315	<b>16054</b>	
				350	M29DTF 3N350	<b>16031</b>	M29DTP 3N350	<b>16043</b>	M29DTD 3N350	<b>16055</b>	
				400	M29DTF 3N400	<b>16032</b>	M29DTP 3N400	<b>16044</b>	M29DTD 3N400	<b>16056</b>	
		4	250	M29DTF 4N250	<b>16065</b>	M29DTP 4N250	<b>34097</b>	M29DTD 4N250	<b>34109</b>		
			315	M29DTF 4N315	<b>16066</b>	M29DTP 4N315	<b>34098</b>	M29DTD 4N315	<b>34110</b>		
350			M29DTF 4N350	<b>34087</b>	M29DTP 4N350	<b>34099</b>	M29DTD 4N350	<b>34111</b>			
400			M29DTF 4N400	<b>34088</b>	M29DTP 4N400	<b>34100</b>	M29DTD 4N400	<b>34112</b>			
50 kA (S)		3	250	M29DTF 3S250	<b>16033</b>	M29DTP 3S250	<b>16045</b>	M29DTD 3S250	<b>16057</b>		
			315	M29DTF 3S315	<b>16034</b>	M29DTP 3S315	<b>16046</b>	M29DTD 3S315	<b>16058</b>		
			350	M29DTF 3S350	<b>16035</b>	M29DTP 3S350	<b>16047</b>	M29DTD 3S350	<b>16059</b>		
			400	M29DTF 3S400	<b>16036</b>	M29DTP 3S400	<b>16048</b>	M29DTD 3S400	<b>16060</b>		
		4	250	M29DTF 4S250	<b>34089</b>	M29DTP 4S250	<b>34101</b>	M29DTD 4S250	<b>34113</b>		
			315	M29DTF 4S315	<b>34090</b>	M29DTP 4S315	<b>34102</b>	M29DTD 4S315	<b>34114</b>		
			350	M29DTF 4S350	<b>34091</b>	M29DTP 4S350	<b>34103</b>	M29DTD 4S350	<b>34115</b>		
			400	M29DTF 4S400	<b>34092</b>	M29DTP 4S400	<b>34104</b>	M29DTD 4S400	<b>34116</b>		
65 kA (H)		3	250	M29DTF 3H250	<b>16037</b>	M29DTP 3H250	<b>16049</b>	M29DTD 3H250	<b>16061</b>		
			315	M29DTF 3H315	<b>16038</b>	M29DTP 3H315	<b>16050</b>	M29DTD 3H315	<b>16062</b>		
	350		M29DTF 3H350	<b>16039</b>	M29DTP 3H350	<b>16051</b>	M29DTD 3H350	<b>16063</b>			
	400		M29DTF 3H400	<b>16040</b>	M29DTP 3H400	<b>16052</b>	M29DTD 3H400	<b>16064</b>			
	4	250	M29DTF 4H250	<b>34093</b>	M29DTP 4H250	<b>34105</b>	M29DTD 4H250	<b>34117</b>			
		315	M29DTF 4H315	<b>34094</b>	M29DTP 4H315	<b>34106</b>	M29DTD 4H315	<b>34118</b>			
		350	M29DTF 4H350	<b>34095</b>	M29DTP 4H350	<b>34107</b>	M29DTD 4H350	<b>34119</b>			
		400	M29DTF 4H400	<b>34096</b>	M29DTP 4H400	<b>34108</b>	M29DTD 4H400	<b>34120</b>			
		<b>3SM29-630</b>	35 kA (N)	3	400	M29ETF 3N400	<b>34124</b>	-	-	M29ETD 3N400	<b>34160</b>
					500	M29ETF 3N500	<b>34125</b>	-	-	M29ETD 3N500	<b>34161</b>
630	M29ETF 3N630				<b>34126</b>	-	-	M29ETD 3N630	<b>34162</b>		
4	400			M29ETF 4N400	<b>34178</b>	-	-	M29ETD 4N400	<b>34214</b>		
	500			M29ETF 4N500	<b>34179</b>	-	-	M29ETD 4N500	<b>34215</b>		
	630			M29ETF 4N630	<b>34180</b>	-	-	M29ETD 4N630	<b>34216</b>		
50 kA (S)	3		400	M29ETF 3S400	<b>34130</b>	-	-	M29ETD 3S400	<b>34166</b>		
			500	M29ETF 3S500	<b>34131</b>	-	-	M29ETD 3S500	<b>34167</b>		
			630	M29ETF 3S630	<b>34132</b>	-	-	M29ETD 3S630	<b>34168</b>		
	4		400	M29ETF 4S400	<b>34184</b>	-	-	M29ETD 4S400	<b>34220</b>		
			500	M29ETF 4S500	<b>34185</b>	-	-	M29ETD 4S500	<b>34221</b>		
			630	M29ETF 4S630	<b>34186</b>	-	-	M29ETD 4S630	<b>34222</b>		
65 kA (H)	3		400	M29ETF 3H400	<b>34136</b>	-	-	M29ETD 3H400	<b>34172</b>		
			500	M29ETF 3H500	<b>34137</b>	-	-	M29ETD 3H500	<b>34173</b>		
			630	M29ETF 3H630	<b>34138</b>	-	-	M29ETD 3H630	<b>34174</b>		
	4		400	M29ETF 4H400	<b>34190</b>	-	-	M29ETD 4H400	<b>34226</b>		
			500	M29ETF 4H500	<b>34191</b>	-	-	M29ETD 4H500	<b>34227</b>		
			630	M29ETF 4H630	<b>34192</b>	-	-	M29ETD 4H630	<b>34228</b>		






# Moulded Case Circuit Breakers

## Series 3SM29


### Selection and ordering data

#### Thermal Magnetic Type

3SM29-800	Breaking capacity	Poles	Rated current (A)	Fixed type		Plug in type		Withdrawable type			
				Type code	Order code	Type code	Order code	Type code	Order code		
	35 kA (N)	3	400	M29FTF 3N400	34229	-	-	M29FTD 3N400	34244		
			500	M29FTF 3N500	34230	-	-	M29FTD 3N500	34245		
			630	M29FTF 3N630	34231	-	-	M29FTD 3N630	34246		
			700	M29FTF 3N700	34232	-	-	M29FTD 3N700	34247		
		800	M29FTF 3N800	34233	-	-	M29FTD 3N800	34248			
		4	400	M29FTF 4N400	34259	-	-	M29FTD 4N400	34274		
			500	M29FTF 4N500	34260	-	-	M29FTD 4N500	34275		
			630	M29FTF 4N630	34261	-	-	M29FTD 4N630	34276		
	700		M29FTF 4N700	34262	-	-	M29FTD 4N700	34277			
	50 kA (S)	3	4	400	M29FTF 4N800	34263	-	-	M29FTD 4N800	34278	
				500	M29FTF 4N500	34260	-	-	M29FTD 4N500	34275	
				630	M29FTF 4N630	34261	-	-	M29FTD 4N630	34276	
				700	M29FTF 4N700	34262	-	-	M29FTD 4N700	34277	
			3	400	M29FTF 3S400	34234	-	-	M29FTD 3S400	34249	
				500	M29FTF 3S500	34235	-	-	M29FTD 3S500	34250	
				630	M29FTF 3S630	34236	-	-	M29FTD 3S630	34251	
				700	M29FTF 3S700	34237	-	-	M29FTD 3S700	34252	
		4	800	M29FTF 3S800	34238	-	-	M29FTD 3S800	34253		
				400	M29FTF 4S400	34264	-	-	M29FTD 4S400	34279	
				500	M29FTF 4S500	34265	-	-	M29FTD 4S500	34280	
				630	M29FTF 4S630	34266	-	-	M29FTD 4S630	34281	
			3	700	M29FTF 4S700	34267	-	-	M29FTD 4S700	34282	
				800	M29FTF 4S800	34268	-	-	M29FTD 4S800	34283	
				65 kA (H)	3	400	M29FTF 3H400	34239	-	-	M29FTD 3H400
500						M29FTF 3H500	34240	-	-	M29FTD 3H500	34255
630	M29FTF 3H630	34241	-			-	M29FTD 3H630	34256			
700	M29FTF 3H700	34242	-			-	M29FTD 3H700	34257			
4	800	M29FTF 3H800	34243		-	-	M29FTD 3H800	34258			
	400	M29FTF 4H400	34269		-	-	M29FTD 4H400	34284			
	500	M29FTF 4H500	34270		-	-	M29FTD 4H500	34285			
	630	M29FTF 4H630	34271		-	-	M29FTD 4H630	34286			
3	700	M29FTF 4H700	34272	-	-	M29FTD 4H700	34287				
	800	M29FTF 4H800	34273	-	-	M29FTD 4H800	34288				

## Selection and ordering data

### Electronic Type

	Breaking capacity	Poles	Rated current (A)	Fixed type		Plug in type		Withdrawable type		
				Type code	Order code	Type code	Order code	Type code	Order code	
	35 kA (N)	3	125	M29CEF 3N125	34139	M29CEP 3N125	34145	M29CED 3N125	34151	
			160	M29CEF 3N160	34140	M29CEP 3N160	34146	M29CED 3N160	34152	
			180	M29CEF 3N180	34141	M29CEP 3N180	34147	M29CED 3N180	34153	
			200	M29CEF 3N200	34142	M29CEP 3N200	34148	M29CED 3N200	34154	
			225	M29CEF 3N225	34143	M29CEP 3N225	34149	M29CED 3N225	34155	
			250	M29CEF 3N250	34144	M29CEP 3N250	34150	M29CED 3N250	34156	
		4	125	M29CEF 4N125	34193	-	-	-	-	
			160	M29CEF 4N160	34194	-	-	-	-	
			180	M29CEF 4N180	34195	-	-	-	-	
			200	M29CEF 4N200	34196	-	-	-	-	
			225	M29CEF 4N225	34197	-	-	-	-	
			250	M29CEF 4N250	34198	-	-	-	-	
	50 kA (S)	3	125	M29CEF 3S125	34199	M29CEP 3S125	34205	M29CED 3S125	36229	
			160	M29CEF 3S160	34200	M29CEP 3S160	34206	M29CED 3S160	36230	
			180	M29CEF 3S180	34201	M29CEP 3S180	34207	M29CED 3S180	36231	
			200	M29CEF 3S200	34202	M29CEP 3S200	34208	M29CED 3S200	36232	
			225	M29CEF 3S225	34203	M29CEP 3S225	34209	M29CED 3S225	36233	
			250	M29CEF 3S250	34204	M29CEP 3S250	34210	M29CED 3S250	36234	
		4	125	M29CEF 4S125	36235	-	-	-	-	
			160	M29CEF 4S160	36236	-	-	-	-	
			180	M29CEF 4S180	36237	-	-	-	-	
			200	M29CEF 4S200	36238	-	-	-	-	
			225	M29CEF 4S225	36239	-	-	-	-	
			250	M29CEF 4S250	36240	-	-	-	-	
	65 kA (H)	3	125	M29CEF 3H125	36241	M29CEP 3H125	36247	M29CED 3H125	36253	
			160	M29CEF 3H160	36242	M29CEP 3H160	36248	M29CED 3H160	36254	
			180	M29CEF 3H180	36243	M29CEP 3H180	36249	M29CED 3H180	36255	
			200	M29CEF 3H200	36244	M29CEP 3H200	36250	M29CED 3H200	36256	
			225	M29CEF 3H225	36245	M29CEP 3H225	36251	M29CED 3H225	36257	
			250	M29CEF 3H250	36246	M29CEP 3H250	36252	M29CED 3H250	36258	
		4	125	M29CEF 4H125	36259	-	-	-	-	
			160	M29CEF 4H160	36260	-	-	-	-	
			180	M29CEF 4H180	36261	-	-	-	-	
			200	M29CEF 4H200	36262	-	-	-	-	
			225	M29CEF 4H225	36263	-	-	-	-	
			250	M29CEF 4H250	36264	-	-	-	-	
	35 kA (N)	3	250	M29DEF 3N250	36289	M29DEP 3N250	36293	M29DED 3N250	36297	
			315	M29DEF 3N315	36290	M29DEP 3N315	36294	M29DED 3N315	36298	
			350	M29DEF 3N350	36291	M29DEP 3N350	36295	M29DED 3N350	36299	
			400	M29DEF 3N400	36292	M29DEP 3N400	36296	M29DED 3N400	36300	
		4	250	M29DEF 4N250	36301	-	-	-	-	
			315	M29DEF 4N315	36302	-	-	-	-	
			350	M29DEF 4N350	36303	-	-	-	-	
			400	M29DEF 4N400	36304	-	-	-	-	
		50 kA (S)	3	250	M29DEF 3S250	36305	M29DEP 3S250	36309	M29DED 3S250	36313
				315	M29DEF 3S315	36306	M29DEP 3S315	36310	M29DED 3S315	36314
				350	M29DEF 3S350	36307	M29DEP 3S350	36311	M29DED 3S350	36315
			4	400	M29DEF 3S400	36308	M29DEP 3S400	36312	M29DED 3S400	36316
	250			M29DEF 4S250	36317	-	-	-	-	
	315			M29DEF 4S315	36318	-	-	-	-	
	65 kA (H)	3	350	M29DEF 4S350	36319	-	-	-	-	
			400	M29DEF 4S400	36320	-	-	-	-	
			250	M29DEF 3H250	36321	M29DEP 3H250	36325	M29DED 3H250	36329	
			315	M29DEF 3H315	36322	M29DEP 3H315	36326	M29DED 3H315	36330	
			350	M29DEF 3H350	36323	M29DEP 3H350	36327	M29DED 3H350	36331	
			400	M29DEF 3H400	36324	M29DEP 3H400	36328	M29DED 3H400	36332	
		4	250	M29DEF 4H250	36333	-	-	-	-	
			315	M29DEF 4H315	36334	-	-	-	-	
			350	M29DEF 4H350	36335	-	-	-	-	
			400	M29DEF 4H400	36336	-	-	-	-	

# Moulded Case Circuit Breakers



## Series 3SM29



### Selection and ordering data



#### Electronic Type

1

	Breaking capacity	Poles	Rated current (A)	Fixed type		Plug in type		Withdrawable type		
				Type code	Order code	Type code	Order code	Type code	Order code	
	35 kA (N)	3	400	M29EEF 3N400	36340	-	-	M29EED 3N400	36346	
			500	M29EEF 3N500	36341	-	-	M29EED 3N500	36347	
			630	M29EEF 3N630	36342	-	-	M29EED 3N630	36348	
		4	400	M29EEF 4N400	36352	-	-	-	-	
			500	M29EEF 4N500	36353	-	-	-	-	
			630	M29EEF 4N630	36354	-	-	-	-	
	50 kA (S)	3	400	M29EEF 3S400	36358	-	-	M29EED 3S400	36364	
			500	M29EEF 3S500	36359	-	-	M29EED 3S500	36365	
			630	M29EEF 3S630	36360	-	-	M29EED 3S630	36366	
		4	400	M29EEF 4S400	36370	-	-	-	-	
			500	M29EEF 4S500	36371	-	-	-	-	
			630	M29EEF 4S630	36372	-	-	-	-	
	65 kA (H)	3	400	M29EEF 3H400	36376	-	-	M29EED 3H400	36382	
			500	M29EEF 3H500	36377	-	-	M29EED 3H500	36383	
			630	M29EEF 3H630	36378	-	-	M29EED 3H630	36384	
		4	400	M29EEF 4H400	36388	-	-	-	-	
			500	M29EEF 4H500	36389	-	-	-	-	
			630	M29EEF 4H630	36390	-	-	-	-	
	35 kA (N)	3	400	M29FEF 3N400	36433	-	-	M29FED 3N400	36438	
			500	M29FEF 3N500	36434	-	-	M29FED 3N500	36439	
			630	M29FEF 3N630	36435	-	-	M29FED 3N630	36440	
			700	M29FEF 3N700	36436	-	-	M29FED 3N700	36441	
		4	800	M29FEF 3N800	36437	-	-	M29FED 3N800	36442	
			400	M29FEF 4N400	36443	-	-	-	-	
			500	M29FEF 4N500	36444	-	-	-	-	
			630	M29FEF 4N630	36445	-	-	-	-	
		50 kA (S)	3	700	M29FEF 4N700	36446	-	-	-	-
				800	M29FEF 4N800	36447	-	-	-	-
				400	M29FEF 3S400	36448	-	-	M29FED 3S400	36453
				500	M29FEF 3S500	36449	-	-	M29FED 3S500	36454
	4		630	M29FEF 3S630	36450	-	-	M29FED 3S630	36455	
			700	M29FEF 3S700	36451	-	-	M29FED 3S700	36456	
			800	M29FEF 3S800	36452	-	-	M29FED 3S800	36457	
			400	M29FEF 4S400	36458	-	-	-	-	
	65 kA (H)	3	500	M29FEF 4S500	36459	-	-	-	-	
			630	M29FEF 4S630	36460	-	-	-	-	
			700	M29FEF 4S700	36461	-	-	-	-	
			800	M29FEF 4S800	36462	-	-	-	-	
			400	M29FEF 3H400	36463	-	-	M29FED 3H400	36468	
			500	M29FEF 3H500	36464	-	-	M29FED 3H500	36469	
		4	630	M29FEF 3H630	36465	-	-	M29FED 3H630	36470	
			700	M29FEF 3H700	36466	-	-	M29FED 3H700	36471	
800			M29FEF 3H800	36467	-	-	M29FED 3H800	36472		
400			M29FEF 4H400	36473	-	-	-	-		
500			M29FEF 4H500	36474	-	-	-	-		
630			M29FEF 4H630	36475	-	-	-	-		
	3	700	M29FEF 4H700	36476	-	-	-	-		
		800	M29FEF 4H800	36477	-	-	-	-		
		400	M29FEF 4H400	36473	-	-	-	-		
	4	500	M29FEF 4H500	36474	-	-	-	-		
		630	M29FEF 4H630	36475	-	-	-	-		
		700	M29FEF 4H700	36476	-	-	-	-		

## Selection and ordering data

### Electronic Type

	Breaking capacity	Poles	Rated current (A)	Fixed type		Plug in type		Withdrawable type		
				Type code	Order code	Type code	Order code	Type code	Order code	
	50 kA (S)	3	800	M29GEF 3S800	34289	-	-	M29GED 3S800	34298	
			1000	M29GEF 3S1000	34290	-	-	M29GED 3S1000	34299	
			1250	M29GEF 3S1250	34291	-	-	M29GED 3S1250	34300	
		4	800	M29GEF 4S800	23073	-	-	M29GED 4S800	23076	
			1000	M29GEF 4S1000	23074	-	-	M29GED 4S1000	23077	
			1250	M29GEF 4S1250	23075	-	-	M29GED 4S1250	23078	
	65 kA (H)	3	800	M29GEF 3H800	34292	-	-	M29GED 3H800	34301	
			1000	M29GEF 3H1000	34293	-	-	M29GED 3H1000	34302	
			1250	M29GEF 3H1250	34294	-	-	M29GED 3H1250	34303	
		4	800	M29GEF 4H800	23079	-	-	M29GED 4H800	23082	
			1000	M29GEF 4H1000	23080	-	-	M29GED 4H1000	23083	
			1250	M29GEF 4H1250	23081	-	-	M29GED 4H1250	23084	
	85 kA (G)	3	800	M29GEF 3G800	34295	-	-	M29GED 3G800	34304	
			1000	M29GEF 3G1000	34296	-	-	M29GED 3G1000	34305	
			1250	M29GEF 3G1250	34297	-	-	M29GED 3G1250	34306	
		4	800	M29GEF 4G800	23085	-	-	M29GED 4G800	23088	
			1000	M29GEF 4G1000	23086	-	-	M29GED 4G1000	23089	
			1250	M29GEF 4G1250	23087	-	-	M29GED 4G1250	23090	
	50 kA (S)	3	800	M29HEF 3S800	34307	-	-	M29HED 3S800	34319	
			1000	M29HEF 3S1000	34308	-	-	M29HED 3S1000	34320	
			1250	M29HEF 3S1250	34309	-	-	M29HED 3S1250	34321	
			1600	M29HEF 3S1600	34310	-	-	M29HED 3S1600	34322	
		4	800	M29HEF 4S800	23091	-	-	M29HED 4S800	23095	
			1000	M29HEF 4S1000	23092	-	-	M29HED 4S1000	23096	
			1250	M29HEF 4S1250	23093	-	-	M29HED 4S1250	23097	
			1600	M29HEF 4S1600	23094	-	-	M29HED 4S1600	23098	
		65 kA (H)	3	800	M29HEF 3H800	34311	-	-	M29HED 3H800	34323
				1000	M29HEF 3H1000	34312	-	-	M29HED 3H1000	34324
				1250	M29HEF 3H1250	34313	-	-	M29HED 3H1250	34325
			4	1600	M29HEF 3H1600	34314	-	-	M29HED 3H1600	34326
	800			M29HEF 4H800	23099	-	-	M29HED 4H800	23103	
	1000			M29HEF 4H1000	23100	-	-	M29HED 4H1000	23104	
	85 kA (G)	3	1250	M29HEF 4H1250	23101	-	-	M29HED 4H1250	23105	
			1600	M29HEF 4H1600	23102	-	-	M29HED 4H1600	23106	
			800	M29HEF 3G800	34315	-	-	M29HED 3G800	34327	
			1000	M29HEF 3G1000	34316	-	-	M29HED 3G1000	34328	
		4	1250	M29HEF 3G1250	34317	-	-	M29HED 3G1250	34329	
			1600	M29HEF 3G1600	34318	-	-	M29HED 3G1600	34330	
			800	M29HEF 4G800	23107	-	-	M29HED 4G800	23111	
			1000	M29HEF 4G1000	23108	-	-	M29HED 4G1000	23112	
		4	1250	M29HEF 4G1250	23109	-	-	M29HED 4G1250	23113	
			1600	M29HEF 4G1600	23110	-	-	M29HED 4G1600	23114	

# Moulded Case Circuit Breakers

## Series 3SM29

### Motor driven mechanism




#### Function

- Used for opening and closing the circuit breaker remotely

#### Technical specifications

Model type	MD1	MD2	MD3
Application	3SM29-250, 3SM29-400	3SM29-125, 3SM29-160	3SM29-630, 3SM29-800 3SM29-1600
Operating voltage range	(85 % - 110 %) Un		
Rated control voltage	220 V AC, 380 V AC, 220 V DC, 110 V DC	220 V AC, 380 V AC, 220 V DC, 110 V DC	220 V AC, 380 V AC, 220 V DC, 110 V DC
Operating current (A)	≤ 2	≤ 0.5	≤ 7.5
Start power consumption in 220/380 V AC (VA)	510	220	660
Continuance power consumption in 220/380 V AC (VA)	360	110	110 (180)
Start power consumption in 110/220 V DC (W)	510	220	600
Continuance power consumption in 110/220 V DC (W)	360	110	180
Opening time (s)	0.1	0.1	0.1
Closing time (s)	0.1	0.1	0.3
Electrical life (times)	4000	8000	3000
Protection degree	IP40		

#### Selection and ordering data





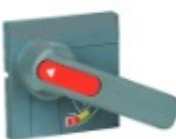
Model	Application		Rated control voltage (V AC)	Type code	Order code
	Frame A	3SM29-125	220...240 V AC	M29A MM240A	10709
			380...415 V AC	M29A MM415A	32727
	Frame B	3SM29-160	220...240 V AC	M29B MM240A	10719
			380...415 V AC	M29B MM415A	32728
	Frame C	3SM29-250	220...240 V AC	M29C MM240A	10729
			380...415 V AC	M29C MM415A	32729
	Frame D	3SM29-400	220...240 V AC	M29DMM240A	10739
			380...415 V AC	M29D MM415A	32730
	Frame E/F	3SM29-630...800	220...240 V AC	M29EF MM240A	10749
			380...415 V AC	M29EF MM415A	32731
	Frame G/H	3SM29-1250...1600	220...240 V AC	M29GH MM240A	10759
			380...415 V AC	M29GH MM415A	32732

## Rotary handle operation mechanism

### Function

- Used for opening and closing the circuit breaker
- Used for rotating the circuit breaker, not pushing-pulling it upwards-downwards

### Selection and ordering data

Installation	Operation device	Rotary handle	Suitable frame	Without interlock		With interlock	
				Type code	Order code	Type code	Order code
In breaker 	RM2		Frame A 3SM29-125	-	-	-	-
			Frame B 3SM29-160	-	-	-	-
			Frame C 3SM29-250	M29C RM1	<b>10750</b>	M29C RM1L	<b>10711</b>
			Frame D 3SM29-400	M29D RM1	<b>10755</b>	M29D RM1L	<b>10712</b>
			Frame E/F 3SM29-630...800	M29EF RM1	<b>10756</b>	M29EF RM1L	<b>10713</b>
			Frame G/H 3SM29-1250...1600	M29GH Rm1	<b>10760</b>	M29GH RM1L	<b>10714</b>
On door of switchboard       	RM2 central type	Round type Short handle	Frame A 3SM29-125	-	-	-	-
			Frame B 3SM29-160	-	-	-	-
			Frame C 3SM29-250	M29C RM2AS	<b>10731</b>	M29C RM2ASL	<b>10751</b>
			Frame D 3SM29-400	M29D RM2AS	<b>10732</b>	M29D RM2ASL	<b>10752</b>
			Frame E/F 3SM29-630...800	M29EF RM2AL	<b>10733</b>	M29EF RM2ALL	<b>10753</b>
			Frame G/H 3SM29-1250...1600	M29GH RM2AL	<b>10734</b>	M29GH RM2ALL	<b>10754</b>
		Square type Short handle	Frame A 3SM29-125	-	-	-	-
			Frame B 3SM29-160	-	-	-	-
			Frame C 3SM29-250	M29C RM2BS	<b>32745</b>	M29C RM2BSL	<b>32749</b>
			Frame D 3SM29-400	M29D RM2BS	<b>32746</b>	M29D RM2BSL	<b>32750</b>
			Frame E/F 3SM29-630...800	M29EF RM2BL	<b>32747</b>	M29EF RM2BLL	<b>32751</b>
			Frame G/H 3SM29-1250...1600	M29GH RM2BL	<b>32748</b>	M29GH RM2BLL	<b>32752</b>
	RM3 eccentricity	Round type Short handle	Frame A 3SM29-125	M29A RM3AS	<b>32753</b>	M29A RM3ASL	<b>10730</b>
			Frame B 3SM29-160	M29B RM3AS	<b>32754</b>	M29B RM3ASL	<b>10736</b>
			Frame C 3SM29-250	M29C RM3AS	<b>32755</b>	M29C RM3ASL	<b>33040</b>
			Frame D 3SM29-400	M29D RM3AS	<b>32756</b>	M29D RM3ASL	<b>33041</b>
			Frame E/F 3SM29-630...800	M29EF RM3AL	<b>10710</b>	M29EF RM3ALL	<b>33042</b>
			Frame G/H 3SM29-1250...1600	M29GH RM3AL	<b>10720</b>	M29GH RM3ALL	<b>33043</b>
		Square type Short handle	Frame A 3SM29-125	M29A RM3BS	<b>33044</b>	M29A RM3BSL	<b>33050</b>
			Frame B 3SM29-160	M29B RM3BS	<b>33045</b>	M29B RM3BSL	<b>33051</b>
			Frame C 3SM29-250	M29C RM3BS	<b>33046</b>	M29C RM3BSL	<b>33052</b>
			Frame D 3SM29-400	M29D RM3BS	<b>33047</b>	M29D RM3BSL	<b>33053</b>
			Frame E/F 3SM29-630...800	M29EF RM3BL	<b>33048</b>	M29EF RM3BLL	<b>33054</b>
			Frame G/H 3SM29-1250...1600	M29GH RM3BL	<b>33049</b>	M29GH RM3BLL	<b>33055</b>

# Moulded Case Circuit Breakers

## Series 3SM29

### Shunt release




#### Function

- Used for opening the circuit breaker remotely

#### Technical specifications

Model type	SR91	SR92	SR93
Application	3SM29-125 3SM29-160	3SM29-250 3SM29-400	3SM29-630, 3SM29-800 3SM29-1600
Operating voltage range	(70 % - 110 %) Un		
Rated control voltage	220 V AC, 380 V AC, 220 V DC, 110 V DC	220 V AC, 380 V AC, 220 V DC, 110 V DC	220 V AC, 380 V AC, 220 V DC, 110 V DC
Response time (ms)	≥ 20, ≤ 60		
Power consumption in 220/380 V AC (VA)	150	150	150
Power consumption in 110/220 V DC (W)	150	150	150

#### Selection and ordering data

Model	Application	Rated control voltage (V AC)	Type code	Order code
	Frame A/B 3SM29-125...160	220...240 V AC	M29AB SH240A	10701
		380...415 V AC	M29AB SH415A	10702
		110 V DC	M29AB SH110D	32733
		220 V DC	M29AB SH220D	32734
	Frame C/D 3M29-250...400	220...240 V AC	M29CD SH240A	10721
		380...415 V AC	M29CD SH415A	10722
		110 V DC	M29CD SH110D	32735
		220 V DC	M29CD SH220D	32736
	Frame E/F/G/H 3SM29-630...1600	220...240 V AC	M29FEGH SH240A	10741
		380...415 V AC	M29FEGH SH415A	10742
		110 V DC	M29FEGH SH110D	32737
		220 V DC	M29FEGH SH220D	32738

### Under-voltage release




#### Function

- Used for opening the circuit breaker when energy cuts off or voltage goes below 70 % of the operating voltage

#### Technical specifications

Model type	UR91	UR92	UR93
Application	3SM29-125, 3SM29-160	3SM29-250, 3SM29-400	3SM29-630, 3SM29-800, 3SM29-1600
Action voltage range	(35 % - 70 %) U <sub>e</sub>		
Guarantee close voltage range	(85 % - 110 %) U <sub>e</sub>		
Guarantee no-close voltage range	≤ 35 % U <sub>e</sub>		
Rated control voltage (V)	220 V AC, 380 V AC, 220 V DC, 110 V DC	220 V AC, 380 V AC, 220 V DC, 110 V DC	220 V AC, 380 V AC, 220 V DC, 110 V DC
Response time (ms)	≥ 20, ≤ 60		
Power consumption in 220/380 V AC (VA)	10	10	10
Power consumption in 110/220 V DC (W)	4	4	4

#### Selection and ordering data

Model	Application		Rated control voltage (V AC)	Type code	Order code
	Frame A/B	3SM29-125...160	220...240 V AC	M29AB UV240A	10703
			380...415 V AC	M29AB UV415A	10704
			110 V DC	M29AB UV110D	32739
			220 V DC	M29AB UV220D	32740
	Frame C/D	3M29-250...400	220...240 V AC	M29CD UV240A	10723
			380...415 V AC	M29CD UV415A	10724
			110 V DC	M29CD UV110D	32741
			220 V DC	M29CD UV220D	32742
	Frame E/F/G/H	3SM29-630...1600	220...240 V AC	M29EFGH UV240A	10743
			380...415 V AC	M29EFGH UV415A	10744
			110 V DC	M29EFGH UV110D	32743
			220 V DC	M29EFGH UV220D	32744



# Moulded Case Circuit Breakers

## Series 3SM29




### Auxiliary contact and alarm contact

#### Function

1

- Indication of contacting status
- Used for supplying electrical signal of the circuit breaker according to the operating position

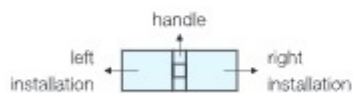
#### Selection and ordering data

Model	Application	Function	Contact position	Type code	Order code	
	Frame A/B	3SM29-125...160	Auxiliary contact	1NO+1NC	M29AB AC11	10705
			Auxiliary contact + alarm contact	1NO+1NC+1W	M29AB CW11	10726
	Frame C/D	3M29-250...400	Auxiliary contact	1NO+1NC	M29CD AC11	10706
				2NO+2NC	M29CD AC22	10715
			Auxiliary contact + alarm contact	1NO+1NC+1W	M29CD CW11	10735
	Frame E/F/G/H	3SM29-630...1600	Auxiliary contact	1NO+1NC	M29EFGH AC11	10716
				2NO+2NC	M29EFGH AC22	10725
			Auxiliary contact + alarm contact	1NO+1NC+1W	M29EFGH CW11	10745

## Accessories introduction

Name of accessories	Accessory code		Accessory installation and lead cable method			
	Thermal magnetic release	Duplex release	3SM29-125, 3SM29-160 3P, 4P	3SM29-250, 3SM29-400 3P, 4P	3SM29-630, 3SM29-800 3P, 4P	3SM29-1250, 3SM29-1600 3P, 4P
Alarm Contact	208	308				
Shunt release	210	310				
Shunt Release Alarm Contact	218	318				
Auxiliary Contact	220	320				
Auxiliary Contact Alarm Contact	228	328				
Under voltage release	230	330				
Under voltage release Alarm Contact	238	338				
Shunt release Auxiliary Contact	240	340				
Shunt Release Under voltage release Two-sets Auxiliary Contact	248	348				
Two-sets Auxiliary Contact	260	360				
Two-sets Auxiliary Contact Alarm Contact	268	368				
Under voltage release Auxiliary Contact	270	370				
Under voltage release Auxiliary Contact Alarm Contact	278	378				

Attention:



Alarm Contact  
 Auxiliary Contact

Two-sets Auxiliary Contact  
 Under voltage release

Shunt release  
 Lead cable direction

# Moulded Case Circuit Breakers

## Series 3SM29



### Protection characteristic

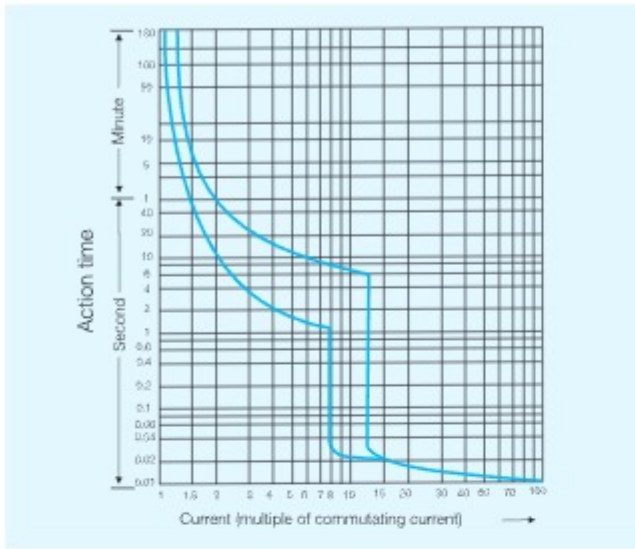
- Variable parameters of thermal overload protection current setting
- Characteristics of thermal magnetic over-current release
- Characteristics of inverse time delay thermal releasing-ranges of current settings of thermal inverse time delay

1

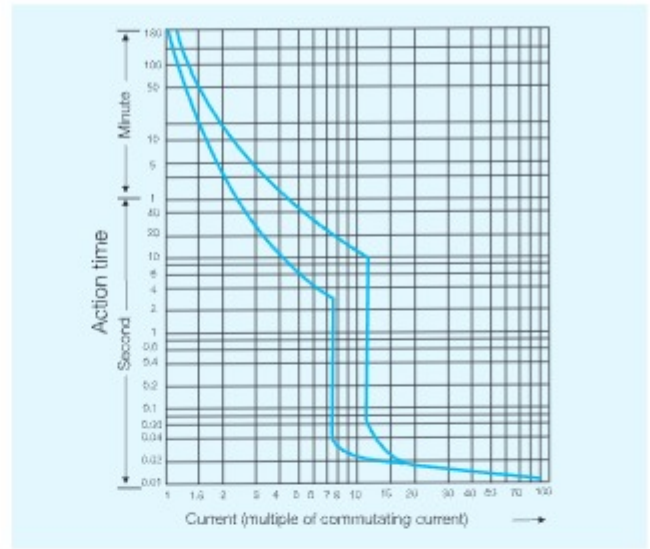
Frame rated current size I <sub>m</sub> (A)	Circumstance temperature						Rated current	Current settings of inverse time delay		Adjustable instantaneous current			Instantaneous releasing current	In	
	+10	+20	+30	+40	+50	+60		40 °C A/B/C phase	Setting IRI N pole	5 I <sub>n</sub>	7.5 I <sub>n</sub>	10 I <sub>n</sub>			
	°C	°C	°C	°C	°C	°C									(A)
125	1.19	1.03	1.06	1.0	I <sub>n</sub>	0.93	0.87	12.5 A	12.5 A	12.5A	-	-	-	500 A	-
								16 A	16 A	16 A	-	-	-	500 A	10
								20 A	20 A	20 A	-	-	-	500 A	10
								25 A	25 A	25 A	-	-	-	500 A	10
								32 A	32 A	32 A	-	-	-	500 A	10
								40 A	40 A	40 A	-	-	-	500 A	10
								50 A	50 A	50 A	-	-	-	500 A	10
								63 A	63 A	63 A	-	-	-	630 A	12
								80 A	80 A	80 A	-	-	-	800 A	12
								100 A	100 A	100 A	-	-	-	1000 A	12
							125 A	125 A	125 A	-	-	-	1250 A	12	
160	1.15	1.10	1.05	1.0	I <sub>n</sub>	0.94	0.88	32 A	22.4 ~ 32 A	22.4 ~ 32 A	-	-	-	500 A	10
								40 A	28 ~ 40 A	28 ~ 40 A	-	-	-	500 A	10
								50 A	35 ~ 50 A	35 ~ 50 A	-	-	-	500 A	10
								63 A	44.1 ~ 63 A	44.1 ~ 63 A	-	-	-	630 A	12
								80 A	56 ~ 80 A	56 ~ 80 A	-	-	-	800 A	12
								100 A	70 ~ 100 A	70 ~ 100 A	-	-	-	1000 A	12
								125 A	87.5 ~ 125 A	87.5 ~ 125 A	-	-	-	1250 A	12
250	1.14	1.10	1.05	1.0	I <sub>n</sub>	0.95	0.87	125 A	87.5 ~ 125 A	87.5 ~ 125 A	-	-	-	1250 A	12
								160 A	112 ~ 160 A	112 ~ 160 A	-	-	-	1600 A	12
								180 A	126 ~ 180 A	126 ~ 180 A	-	-	-	1800 A	12
								200 A	140 ~ 200 A	140 ~ 200 A	-	-	-	2000 A	12
								225 A	157.5 ~ 225 A	157.5 ~ 225 A	-	-	-	2250 A	12
								250 A	175 ~ 225 A	175 ~ 225 A	-	-	-	2500 A	12
	400	1.13	1.11	1.04	1.0	I <sub>n</sub>	0.92	0.85	250 A	175 ~ 250 A	175 ~ 250 A	1250	1875	2500	2500 A
								315 A	220.5 ~ 315 A	220.5 ~ 315 A	1575	2363	3150	3150 A	12
								350 A	245 ~ 350 A	245 ~ 350 A	1750	2625	3500	3500 A	12
								400 A	280 ~ 400 A	280 ~ 400 A	1750	2625	4000	4000 A	12
630 800	1.10	1.08	1.03	1.0	I <sub>n</sub>	0.84	0.77	400 A	400 A	400 A	-	-	-	4000 A	-
								500 A	500 A	500 A	-	-	-	5000 A	-
								630 A	630 A	630 A	-	-	-	6300 A	-
								700 A	700 A	700 A	-	-	-	7000 A	-
								800 A	800 A	800 A	-	-	-	8000 A	-
1600 1250	1.08	1.06	1.02	1.0	I <sub>n</sub>	0.8	0.73	800 A	800 A	800 A	-	-	-	-	-
								1000 A	1000 A	1000 A	-	-	-	-	-
								1250 A	1250 A	1250 A	-	-	-	-	-
								1600 A	1600 A	1600 A	-	-	-	-	-

Tripping curve

3SM29-125

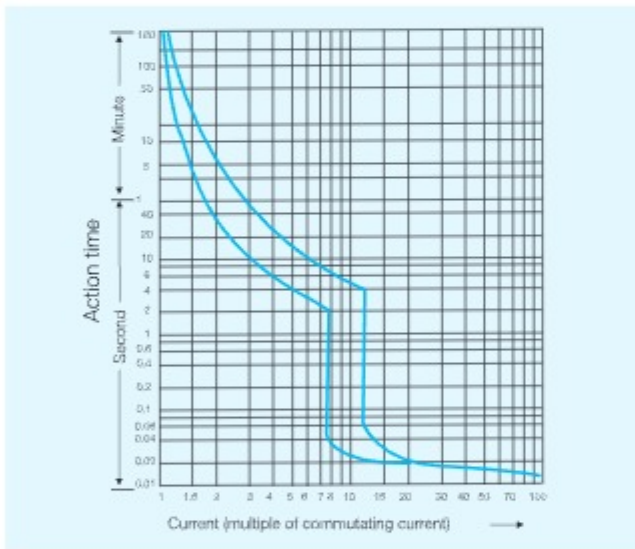


3SM29-160

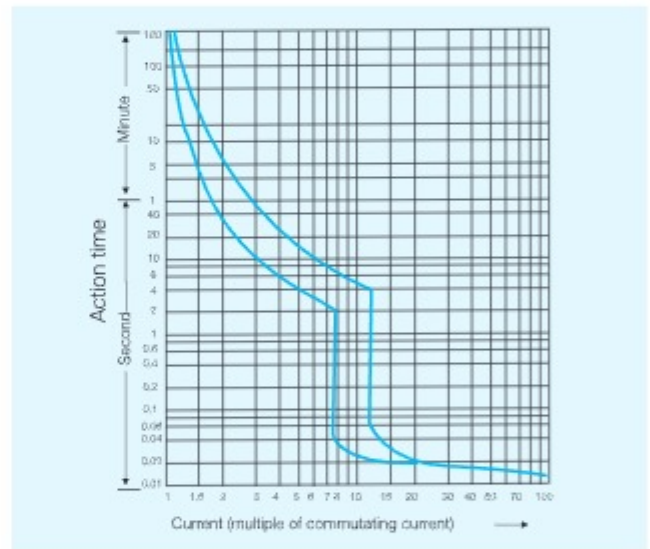


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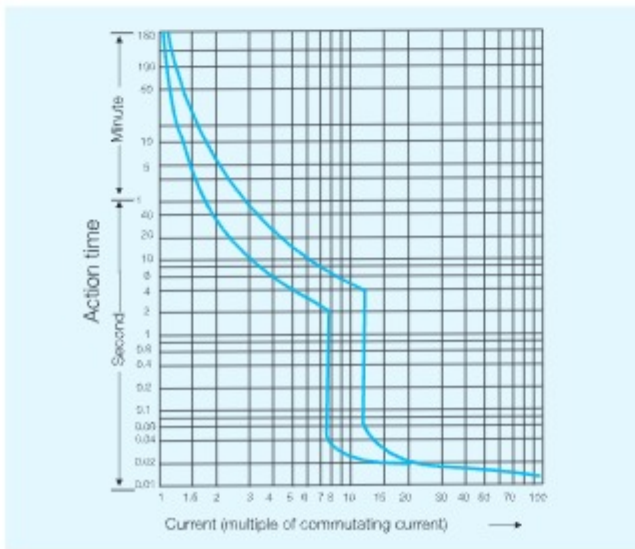
3SM29-250



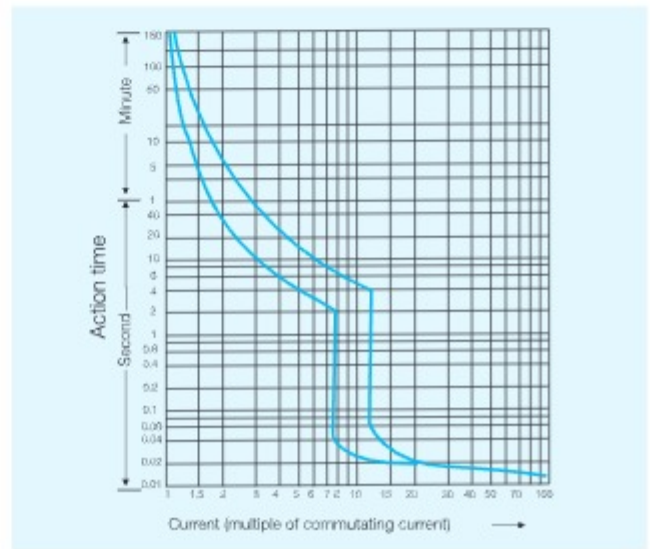
3SM29-400



3SM29-630



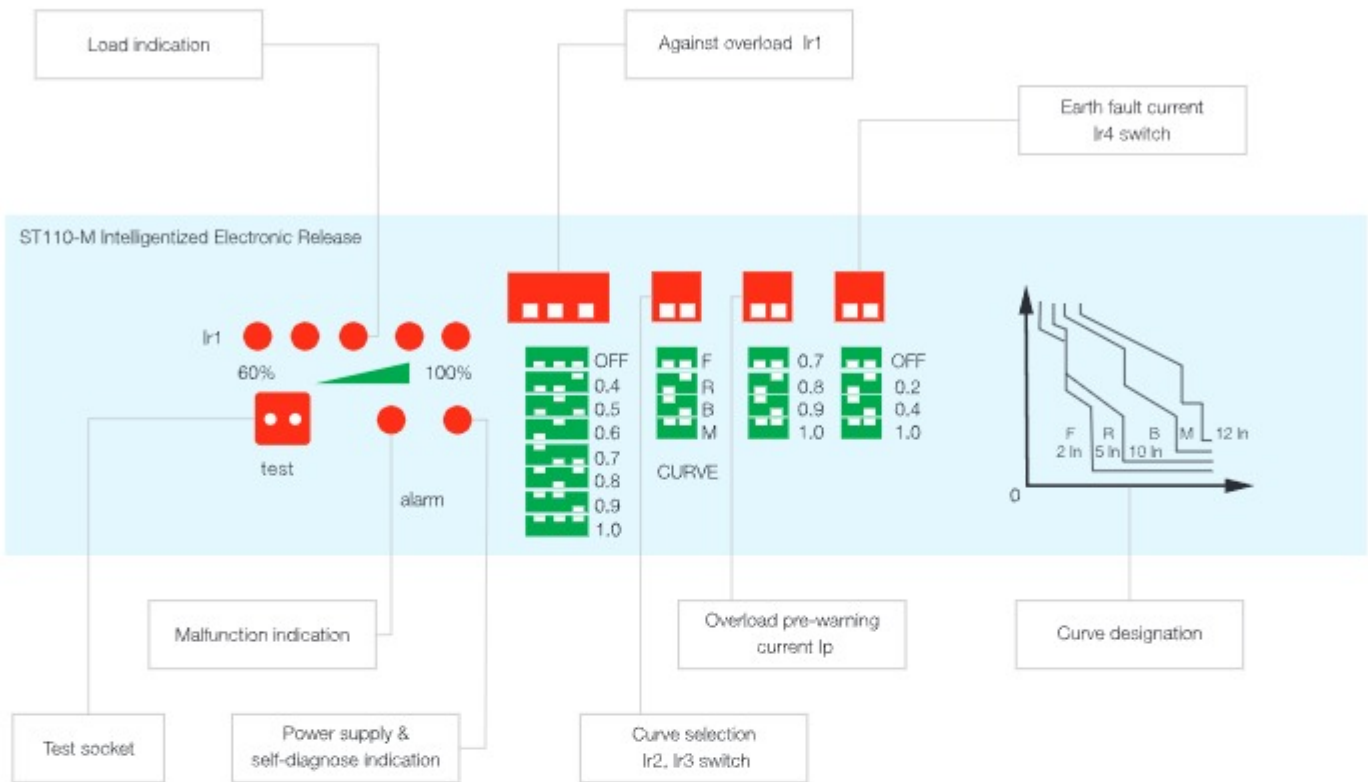
3SM29-800



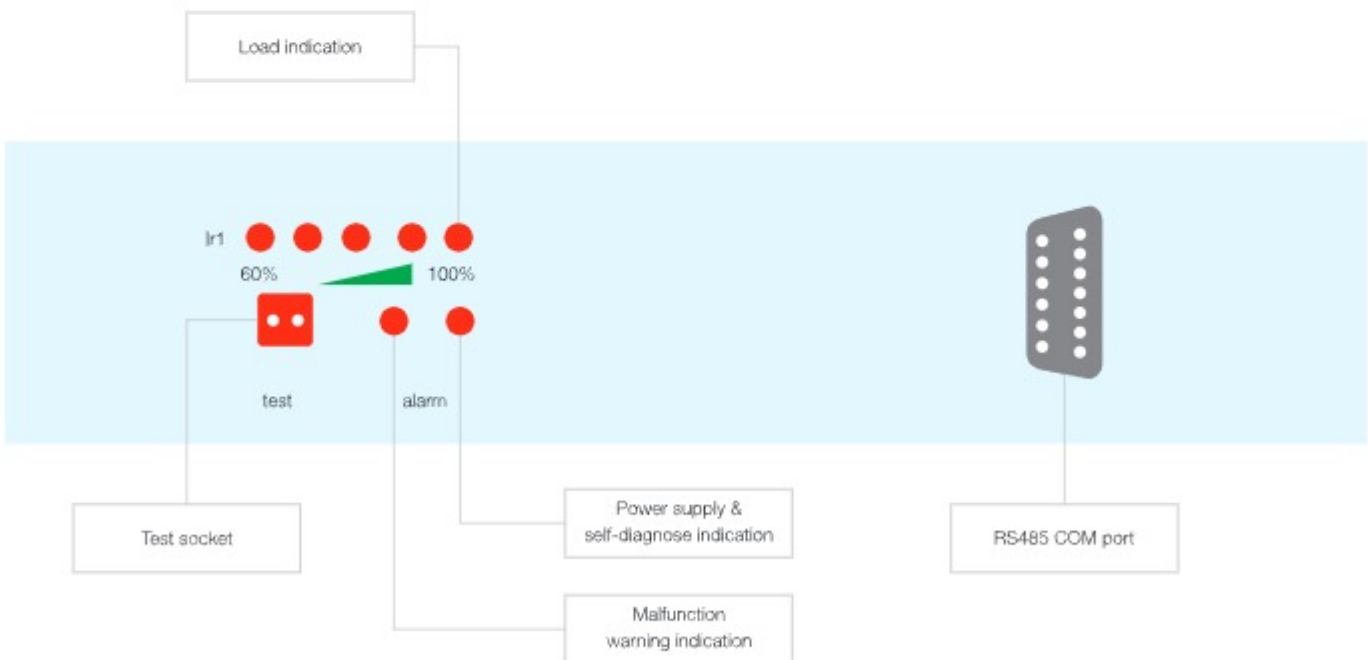
# Moulded Case Circuit Breakers Series 3SM29

## Microprocessor control panel

### ST110-M (ST110-M/F) Microprocessor electronic release panel



### ST110-H (ST110-H/F) Microprocessor electronic release's panel



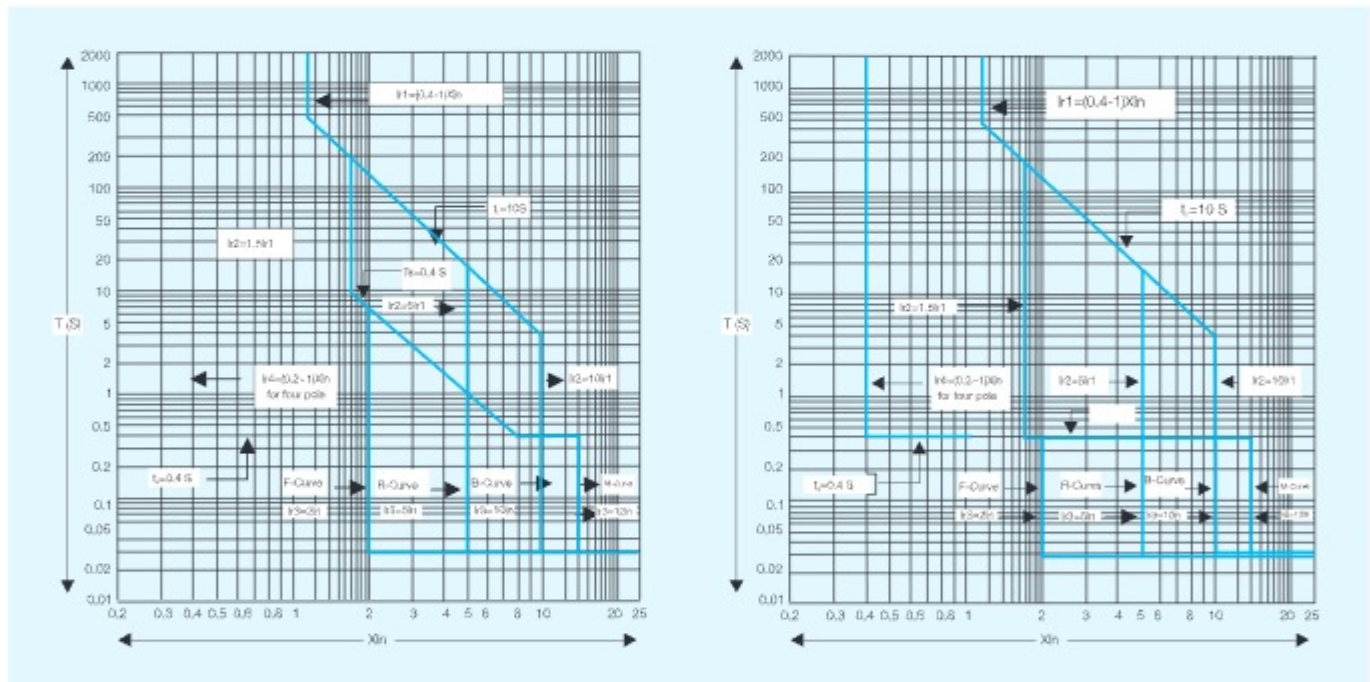
## Releasing curve

### Microprocessor electronic release main function

Main function of microprocessor electronic release	
Main circuit load indication	The LED in panel indicates 60 %, 80 %, 90 %, 100 %.
Power supply indication	The LED in panel indicates
Self-diagnose indication	The LED in panel indicates
Overload pre-warning indication	The LED in panel indicates
Earth fault indication	The LED in panel indicates
Thermal memory	Record over-load cumulate caloric effect
Fast set protection character curve	Basis on different purpose ,user can choose short-circuit release's character (curve F, R, B, M)
Signal output of the transition ray contact between breaker and ST-200 Intelligentized control module	Overload pre-warning releasing alarm Earth fault alarm Signal of breaker's ON / OFF
Releasing test	Test socket
Setting panel parameter	Switch commutating
User can reset the protection character when the main circuit with or without power running	Switch commutating Switch commutating Switch commutating Switch commutating

1

### Electronic release protection character curve



### Protection performance of residual current release

Protective performance of circuit breaker's residual current release for power distribution:

No.	Test current type	$I/I_n$	Engaged time endurance	Start state
1	Engaged non-release current	1.05	2 h ( $I_n > 63$ A) 1 h ( $I_n \leq 63$ A)	Cold
2	Engaged release current	1.30	2 h ( $I_n > 63$ A) 1 h ( $I_n \leq 63$ A)	Hot

Protective performance of circuit breaker's residual current release for motor protection:

No.	Test current type	$I/I_n$	Engaged time endurance	Start state
1	Engaged non-release current	1.0	> 2 h	Cold state
2	Engaged release current	1.2	$\leq 2$ h	Hot
		1.5	$\leq 2$ min ( $I_n \leq 200$ A) $\leq 4$ min ( $200$ A < $I_n \leq 400$ A)	Cold
		7.2	$2$ s < $T_p \leq 10$ s ( $I_n \leq 200$ A) $4$ s < $T_p \leq 10$ s ( $200$ A < $I_n \leq 400$ A)	

# Moulded Case Circuit Breakers Series 3SM29

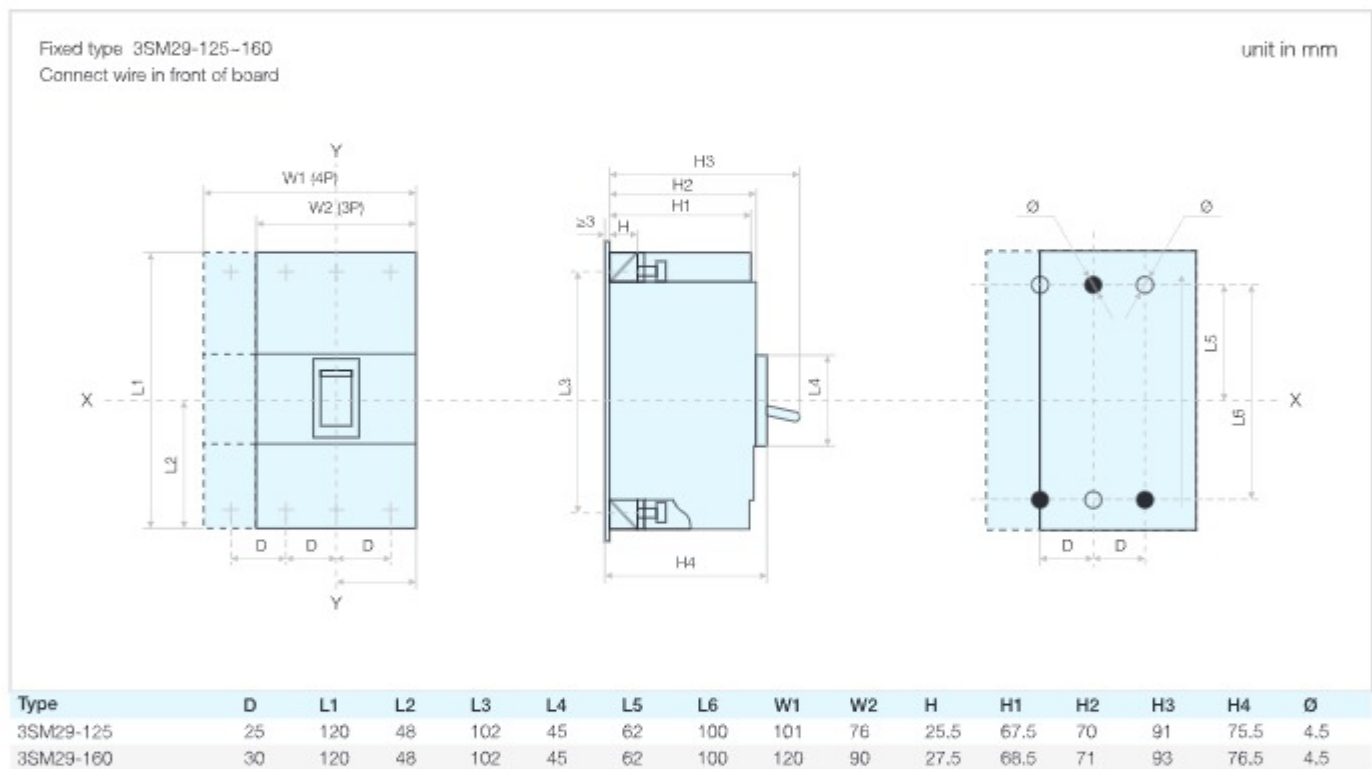
## Outline and installation dimensions

Installation type: Fixed, Plug-in, Withdrawable type

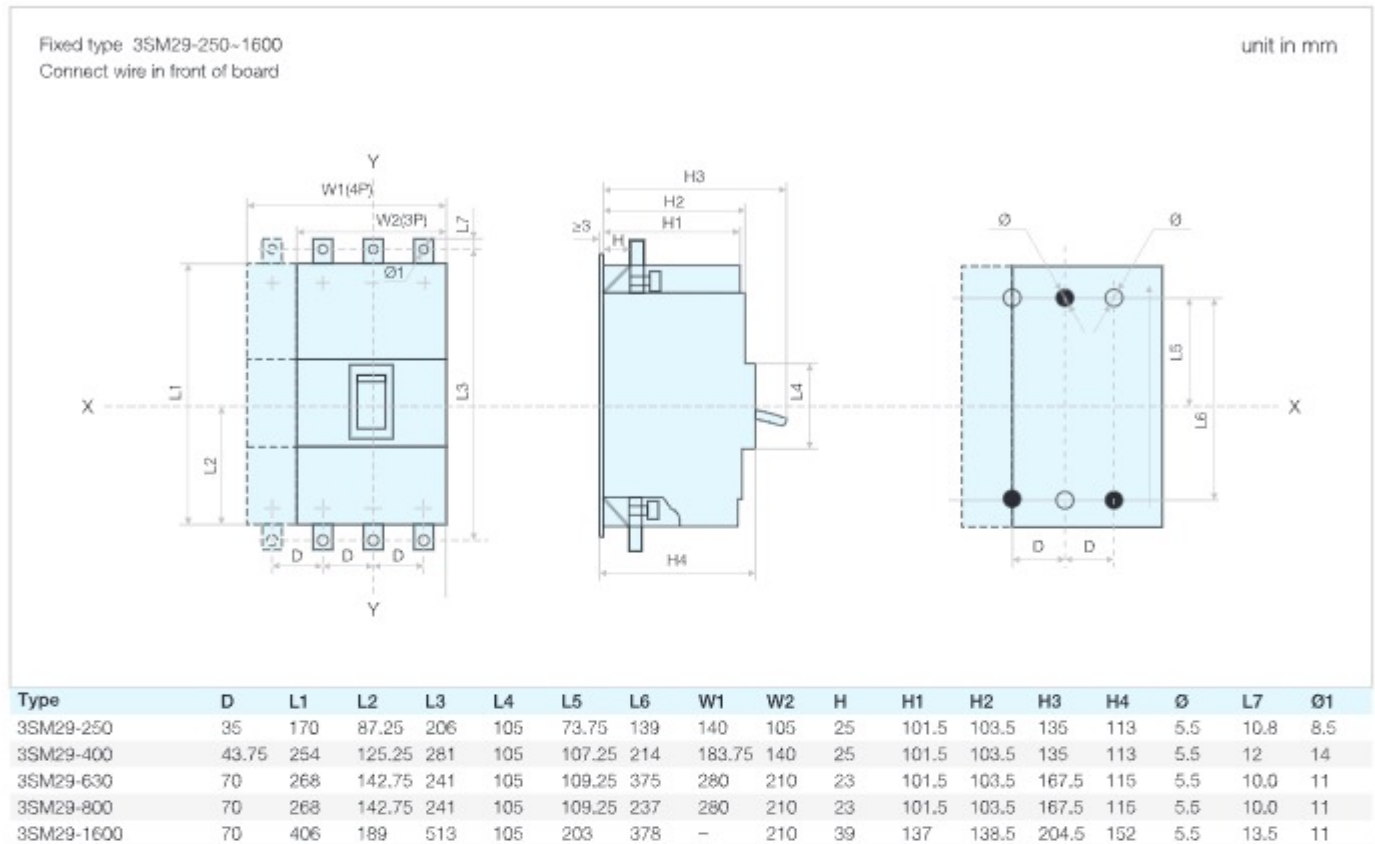
1

Frame rated current	Installation					
	Fixed		Plug in		Withdrawable	
	3P	4P	3P	4P	3P	4P
125 A	■	■	■	■		
160 A	■	■	■	■		
250 A	■	■		■	■	■
400 A	■	■	■	■	■	■
630 A	■	■			■	■
800 A	■	■			■	■
1250 A	■				■	
1600 A	■				■	

## Breaker's installation dimensions



## Outline and installation dimensions





# Moulded Case Circuit Breakers

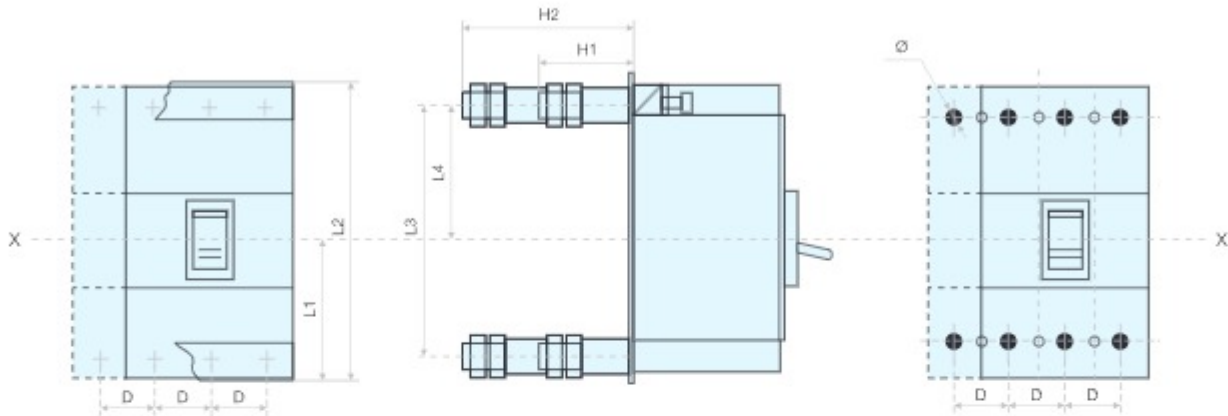
## Series 3SM29

### Outline and installation dimensions

1

Fixed type 3SM29-125-800  
Connect wire behind board

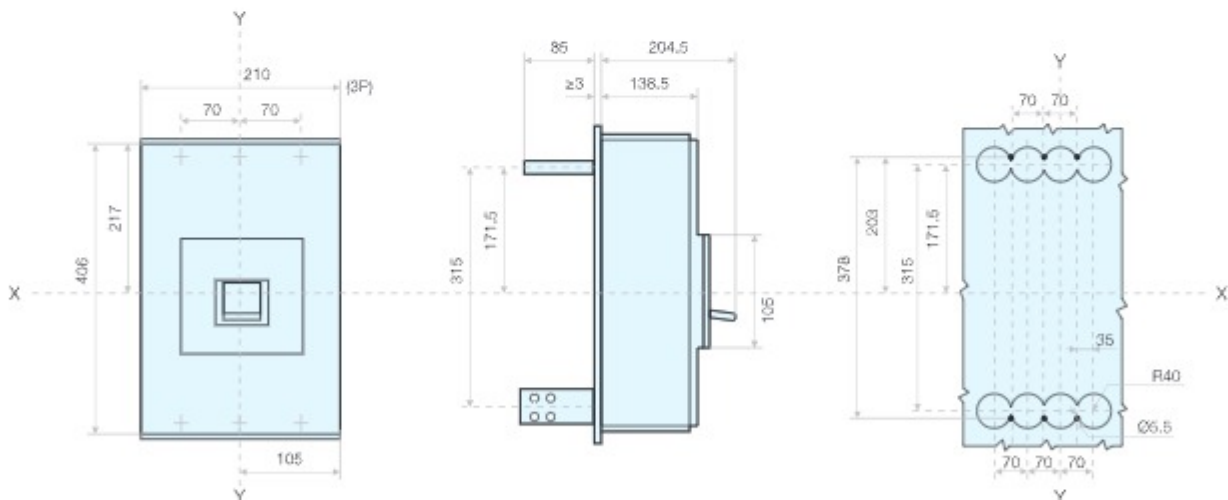
unit in mm



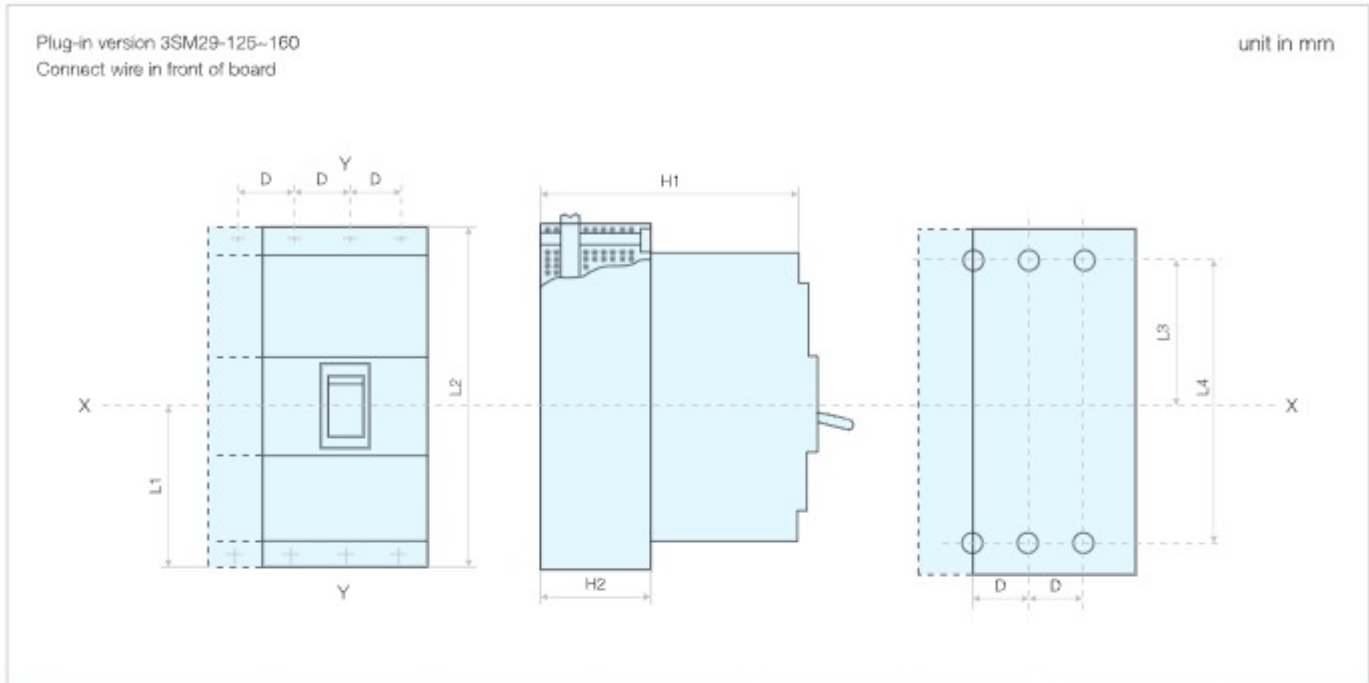
Type	D	L1	L2	L3	L4	H1	H2	Ø
3SM29-125	25	50	124	102	39	43	76	18
3SM29-160	30	50	124	102	39	43	76	18
3SM29-250	35	85,25	175	145	73,75	55	105	24
3SM29-400	43,75	131,25	259	218	107,25	55	105	30
3SM29-630	70	145,25	273	241	117,25	55	74,5	50
3SM29-800	70	145,25	273	241	117,25	55	74,5	50

Fixed type 3SM29-1600  
Connect wire in front of board

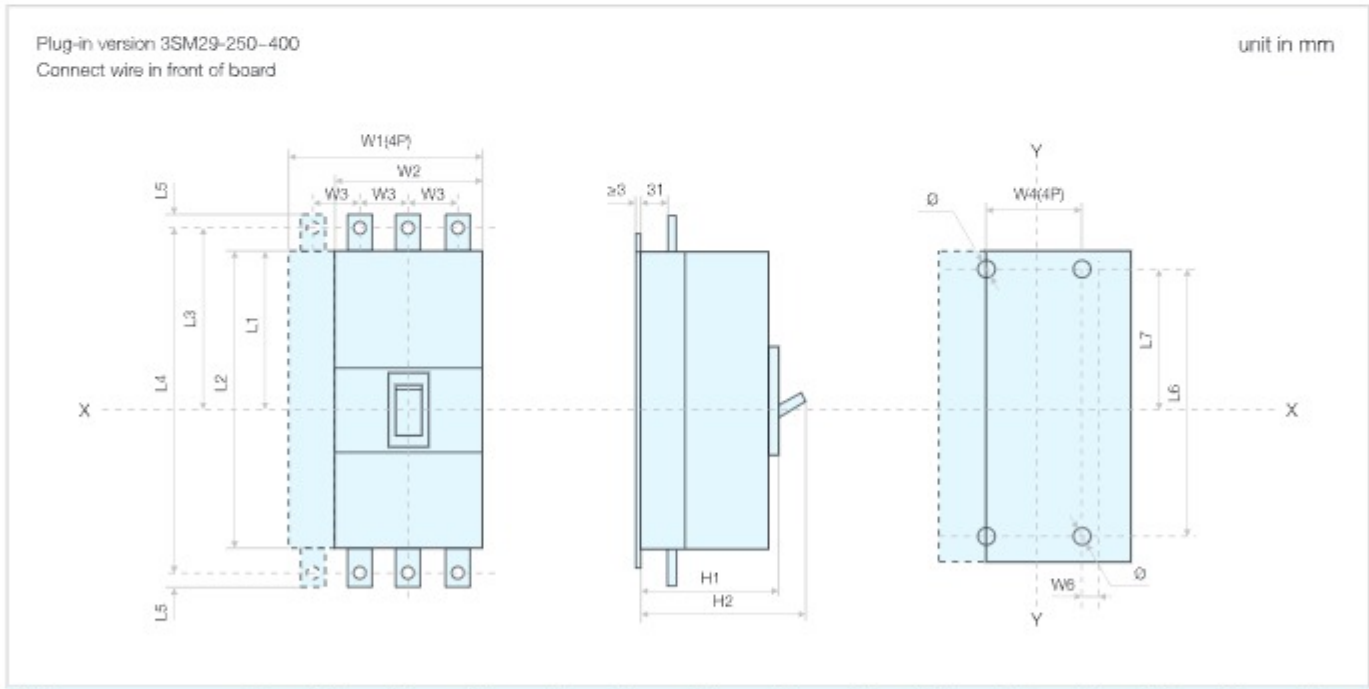
unit in mm



## Outline and installation dimensions



Type	D	L1	L2	L3	L4	H1	H2
3SM29-125	25	70	163	84	144	123	52
3SM29-160	30	70	163	84	144	123	52



Type	L1	L2	L3	L4	L5	L6	L7	W1	W2	W3	W4	W6	H1	H2	Ø
3SM29-250	89.7	175	107.25	210	10	52.25	100	140	105	35	105	25	153	184.5	5
3SM29-400	127.75	259	150.75	305	14	65.75	135	183.75	140	43.75	160	58	153	184.5	6

# Moulded Case Circuit Breakers

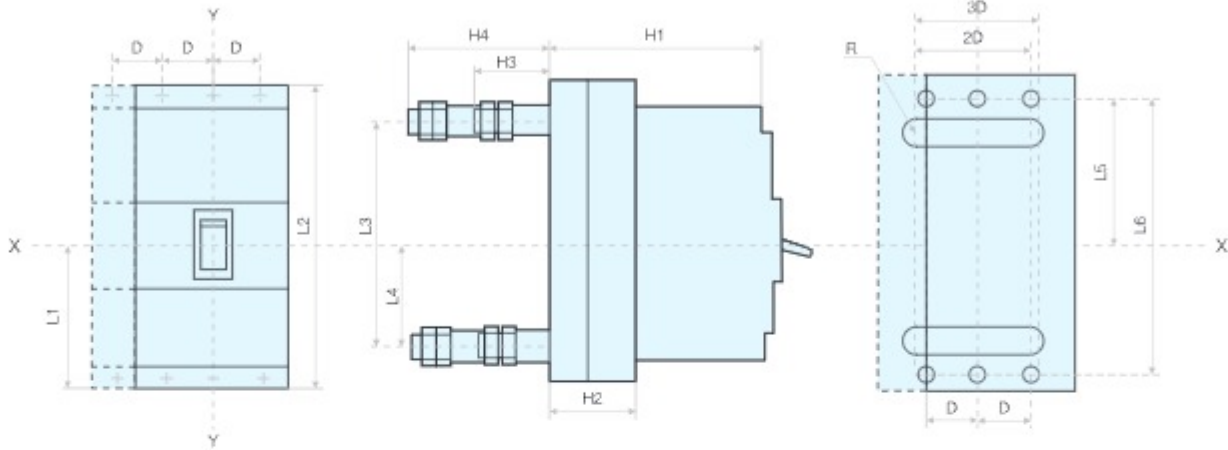
## Series 3SM29

### Outline and installation dimensions

1

Plug-in version 3SM29-125-400  
Connect wire in front of board

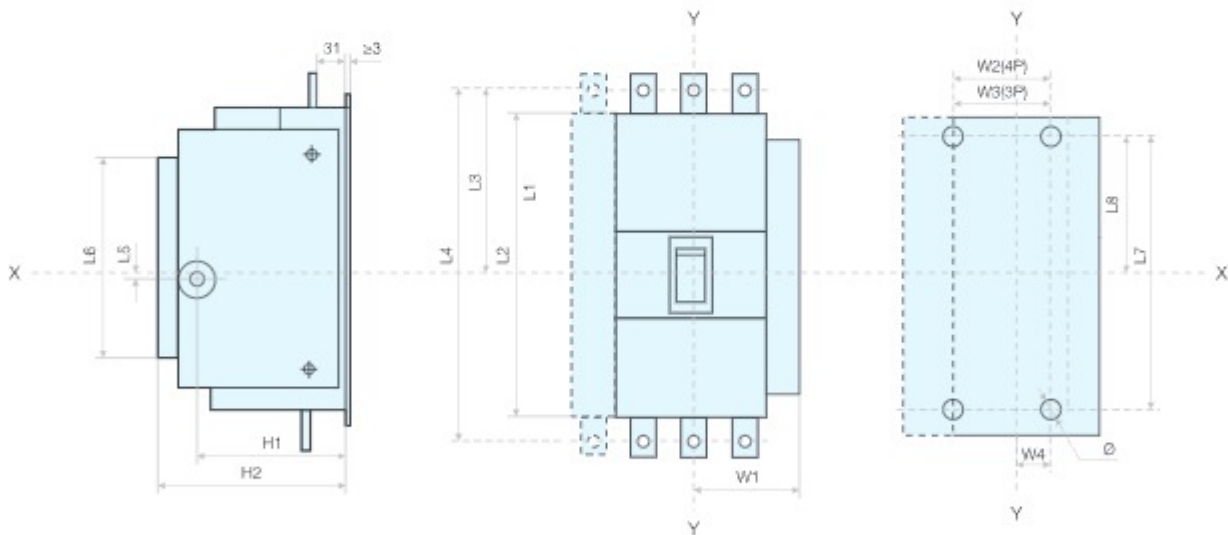
unit in mm



Type	D	L1	L2	L3	L4	L5	L6	H1	H2	H3	H4
3SM29-125	25	70	163	102	39	84	144	123	52	50	80
3SM29-160	30	70	163	102	39	84	144	123	52	50	80
3SM29-250	35	85.25	175	143	69.2	52.5	100	184.5	83	52	96
3SM29-400	43.75	131.25	259	218	110.75	107.25	218	184.5	83	55	100

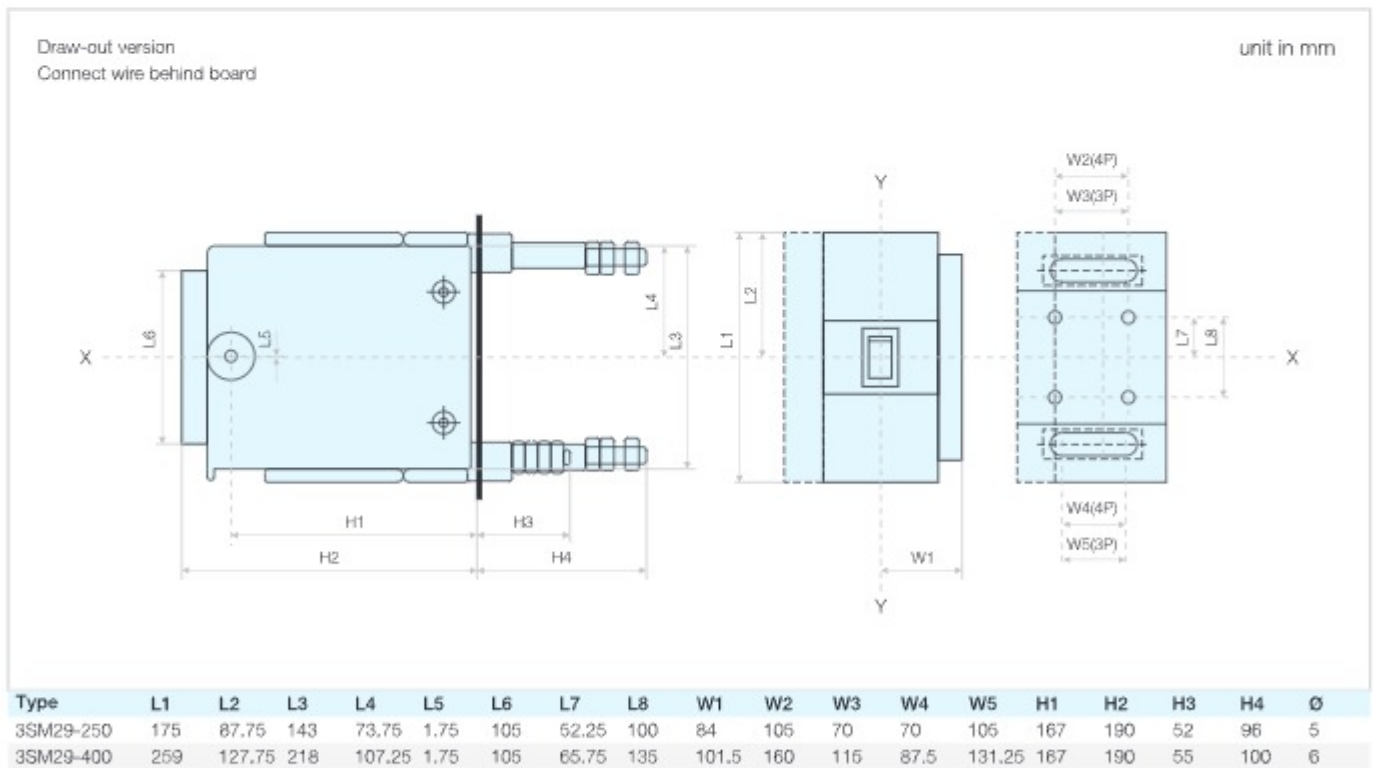
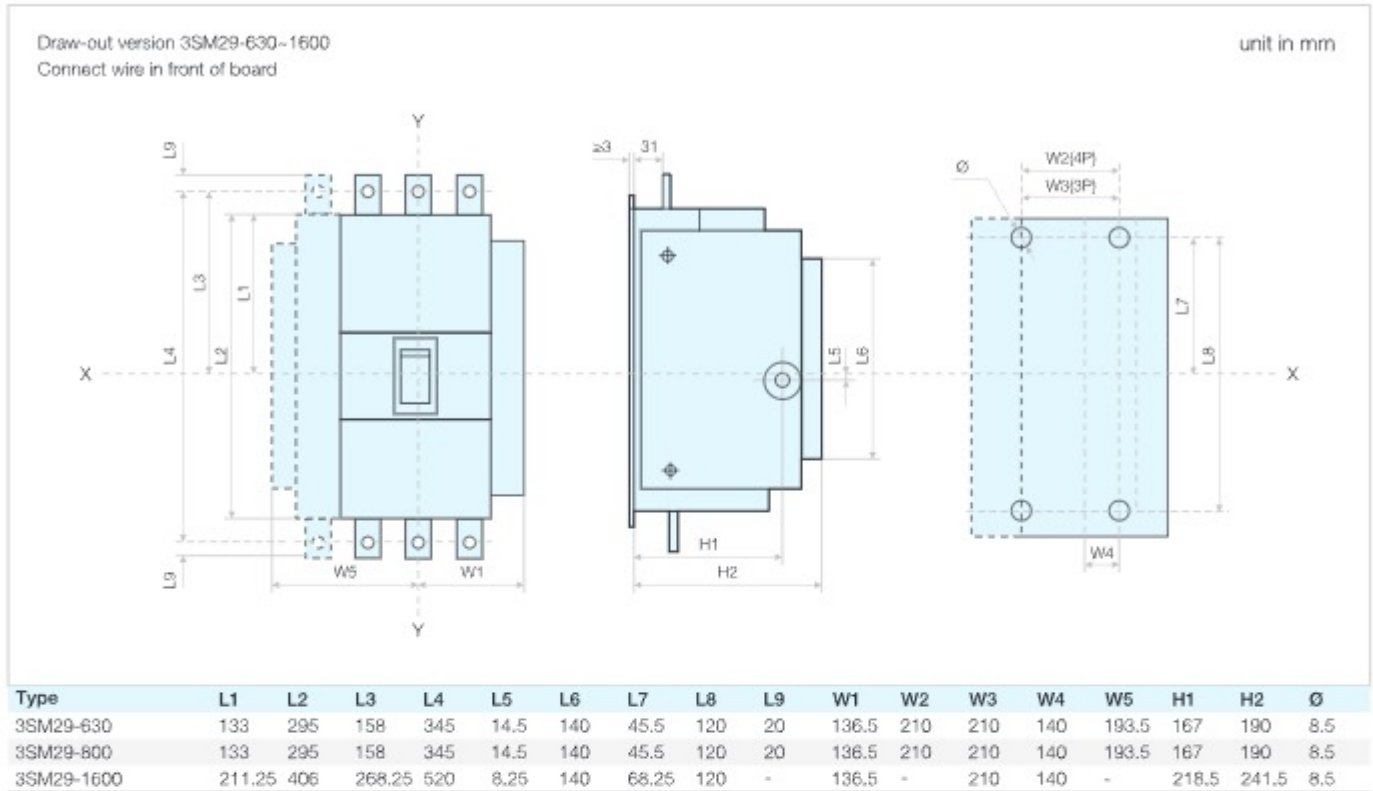
Draw-out version 3SM29-250-400  
Connect wire in front of board

unit in mm



Type	L1	L2	L3	L4	L5	L6	L7	L8	W1	W2	W3	W4	H1	H2	Ø
3SM29-250	89.75	175	107.25	210	1.75	105	52.25	100	84	105	70	25	167	190	5
3SM29-400	127.75	259	150.75	306	1.75	105	65.75	135	101.5	160	115	58	167	190	6

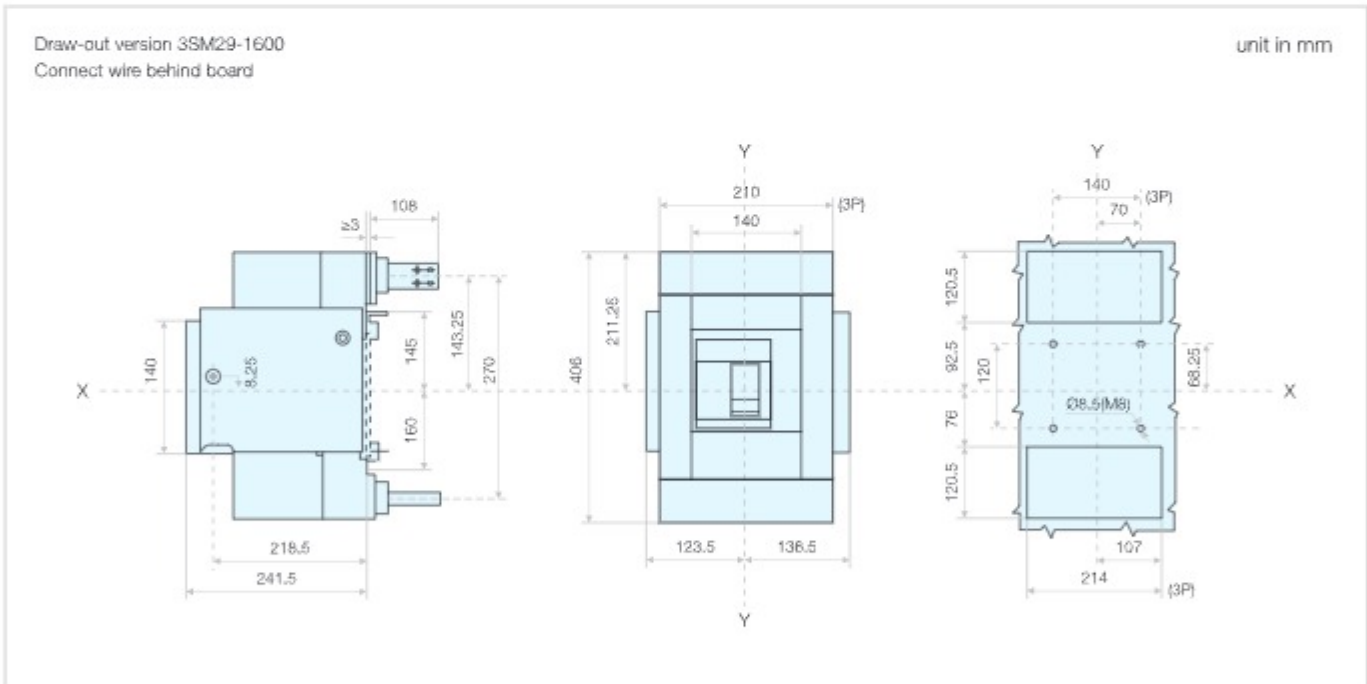
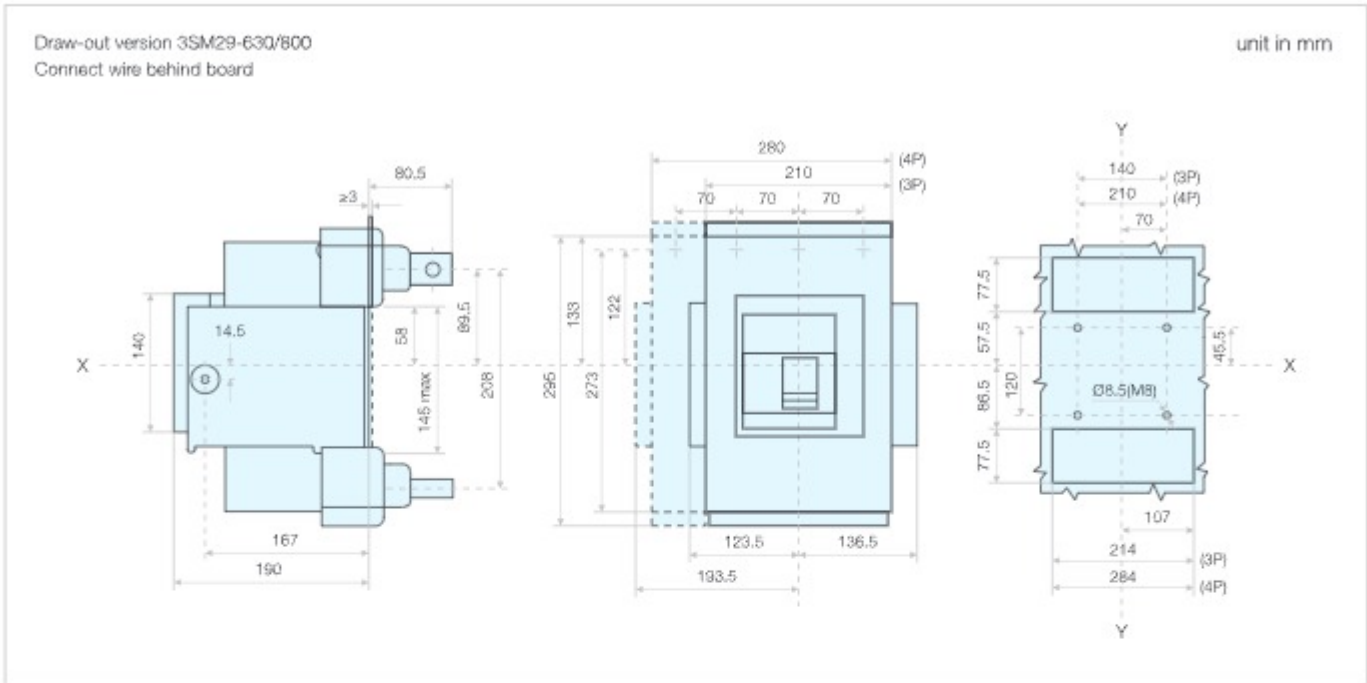
## Outline and installation dimensions




# Moulded Case Circuit Breakers Series 3SM29

## Outline and installation dimensions

1



## Product profile

- PM61 series moulded case circuit breaker is our new circuit breaker with international design and advanced manufacturing technology. It is applicable to infrequent conversions and motor protections under working condition: rated insulation voltage - 800 V (for size PM6100 - 500 V), rated impulse withstand voltage Uimp - 8 kV (for size PM6100 - 6 kV), AC 50/60 Hz, rated working voltage - 690 V and below (for type PM6100 - 400 V), rated working Current- up to 800 A. The circuit breaker has overload, short circuit and under voltage protection functions, which could protect circuits and power equipments from damage.
- The circuit breaker has the characteristics of small volume, high breaking, short arcing (for some models - zero arcing), and vibration resistance.
- The circuit breaker can be installed vertically or horizontally
- The circuit breaker has an isolation function and the corresponding symbol is: .
- The circuit breaker complies with the IEC 60947-2 standard.



1

## Breaking capacity

Frame size	Rated frame current	Rated ultimate short-circuit breaking capacity Icu				
		35 kA	50 kA	65 kA	70 kA	75 kA
PM6100	63 A	D	G			
PM6101	100 A	D	G		L	
PM6102	250 A	D	G		L	
PM6104	400 A	D	G		L	
PM6106	630 A	D	G		L	
PM6108	800 A			H		M

## Conditions of normal use and the installation

- Ambient temperature : -5 °C ~ +40 °C.
- The altitude of the installation site does not exceed 2000 m.
- Air conditions: Relative humidity does not exceed 50 % at the max temperature of +40 °C, higher relative humidity is allowable under a lower temperature. For example, RH could be 90 % at +20 °C. Special measures should be taken due to the occurrence of dews.
- Pollution grade: 3.
- Installation category of main circuit: III;  
Installation category of auxiliary circuit and control circuit: II.
- The circuit breaker is available for electromagnetic environment A.
- Installed in an environment which is not enough to erode the metal or destroy the insulating gas and without explosive danger.
- Installed in an environment without attack from rain and snow.
- Storage conditions: -40 °C ~ +70 °C.

# Moulded Case Circuit Breakers

## Series PM61



### Main technical specifications

Type	PM6100			PM6101			PM6102			PM6104			PM6106			PM6108		
Standard	IEC 60947-2																	
Breaking capacity	D	G		D	G	L	D	G	L	D	G	L	D	G	L	H	M	
Poles (P)	3, 4	3		3	3, 4	3	3	3, 4	3	3	3, 4	3	3	3, 4	3	3, 4	3	
Frame current I <sub>nm</sub> (A)	63			100			250			400			630			800		
Rated current I <sub>n</sub> (A)	10, 16, 20, 25, 32, 40, 50, 63			10, 16, 20, 25, 32, 40, 50, 63, 80, 100			100, 125, 140, 160, 180, 200, 225, 250			225, 250, 315, 350, 400			400, 500, 630			400, 500, 630, 700, 800		
Rated insulation voltage U <sub>i</sub> (V)	AC 800			AC 800			AC 800			AC 800			AC 800			AC 800		
Rated impulse withstand voltage U <sub>imp</sub> (V)	8000			8000			8000			8000			8000			8000		
Rated operating voltage U <sub>e</sub> (V) AC 50/60 Hz	400			400, 400, 690			400, 400, 690			400, 400, 690			400, 400, 690			400, 400, 690		
Arcing distance (mm)	≤ 50			≤ 50			≤ 50			≤ 100			≤ 100			≤ 100		
Rated limit short-circuit breaking capacity I <sub>cu</sub> (kA)	AC 400 V	35	50	35	50	70	35	50	70	35	50	70	35	50	70	65	75	
	AC 690 V	-	-	-	-	20	-	-	20	-	-	20	-	-	20	-	30	
Rated short-circuit breaking capacity I <sub>cs</sub> (kA)	AC 400 V	22	35	22	35	50	22	35	50	22	50	50	35	50	50	65	65	
	AC 690 V	-	-	-	-	10	-	-	10	-	-	15	-	-	15	-	20	
Utilization category	A			A			A			A			A			A		
Electrical life (times)	AC 400 V	8000			8000			8000			7500			7500			7500	
	AC 690 V	-			1500			1000			1000			1000			500	
Mechanical life (times)	Maintenance free	20000			20000			20000			10000			10000			10000	
	Maintenance	40000			40000			40000			20000			20000			20000	
Outline dimension (mm)	Width (3P/4P)	75/100	75	75	92/122	92	105	107/142	107	150	150/198	150	182	182/240	182	210/280	210	
	Length	130			130			150			165			165			257	
	Height	60			60			83			60			103			106.5	

Notes: The term "lifetime" according to IEC 60947-1 indicates the probability of the number of operating cycles that an appliance completes before repairing or replacing a component.

### Tripping Characteristics

Protection characteristics for power distribution

Protective function	Type	Rated Current I <sub>n</sub> (A)	Tripping characteristics
Overload protection	All type	10 ~ 800	I <sup>2</sup> t Action 1.05 I <sub>n</sub> (cold status), non-action within 1h (I <sub>n</sub> ≤ 63 A) 1.3 I <sub>n</sub> (Right after test No.1), ≤ 1 h action (I <sub>n</sub> ≤ 63 A) 1.05 I <sub>n</sub> (cold status), no action within 2 h (I <sub>n</sub> > 63 A) 1.3 I <sub>n</sub> (Right after test No.1), ≤ 2 h action (I <sub>n</sub> > 63 A)
Overload alarm (non-tripping)	PM6101 ... PM6108	10 ~ 800	Non-tripping (alarm)

Protective function	Type	Rated Current I <sub>n</sub> (A)	Current setting of Short circuit protection I <sub>r</sub> (A)	Action time
Short circuit protection	PM6100	10-25	300	Instantaneous action
		32-63	10 I <sub>n</sub>	
	PM6101D	10-25	300	
		32-100	10 I <sub>n</sub>	
	PM6101G, PM6101L	10-100	10 I <sub>n</sub>	
	PM6102	100-140	10 I <sub>n</sub>	
		160-250	10 I <sub>n</sub> (5 I <sub>n</sub> is available)	
	PM6104	225-400	10 I <sub>n</sub>	
PM6106	400-630	10 I <sub>n</sub>		
PM6108	400-800	10 I <sub>n</sub>		
Action tolerance			±20 %	

## Tripping Characteristics

Protection characteristics for power distribution

Protective function		Type	Rated Current In (A)	Neutral pole overload protection current setting value, neutral pole short circuit protection current setting value (A)	
Neutral pole protection (four-pole circuit breaker)	N-pole protected	PM6100	10-63	$I_n, I_r$	
		PM6101	10-63	$I_n, I_r$	
		PM6102	80/100	63, 630	$I_n$ (Neutral pole overload protection current setting value), $I_r$ (neutral pole short circuit protection current setting value)
			100-200	100, 1000	
		PM6104	225/250	125, 1250	
			225-315	225, 2250	
		PM6106	350/400	250, 2500	
			400-630	400, 4000	
		PM6108	400/500	400, 4000	
	N-pole unprotected	All types	630-800	500, 5000	
10-800			No protection		

Protection characteristics for motor protection

Protective function	Type	Rated Current In (A)	Tripping characteristics
Overload protection	All types	10 ~ 630	$I^2t$ Action 1.0 $I_n$ (cold status), non-action within 2 h 1.0 $I_n$ (Right after test NO.1), action within 2 h 1.5 $I_n$ (Right after test NO.1), $\leq 2$ min (PM6100L, PM6100M, PM6101C) $\leq 4$ min (PM6101C, PM6101L, PM6101M) $\leq 8$ min ( $I_n \leq 630$ A in PM6102, PM6104, PM6106 and PM6108) 7.2 $I_n$ (cold status), 0.5 < $T_p \leq 5$ s (PM6100L, PM6100M, PM6101C) 4 < $T_p \leq 10$ s (PM6101C, PM6101L, PM6101M) 6 < $T_p \leq 20$ s ( $I_n \leq 630$ A in PM6102, PM6104, PM6106 and PM6108) Tripping level, 5 (PM6100C, PM6100M, PM6101C) 10 (PM6101C, PM6101L, PM6101M) 20 ( $I_n \leq 630$ A in PM6102, PM6104, PM6106 and PM6108)
Overload alarm (non-tripping)	PM6101 ... PM6108	10 - 630	Non-tripping (alarm)

Protective function	Type	Rated Current In (A)	Current setting of Short circuit protection $I_r$ (A)	Action time
Short circuit protection	PM6100	10-25	300	Instantaneous action
		32-63	12 $I_n$	
	PM6101D	10-25	300	
		32-100	12 $I_n$	
	PM6101G, PM6101L	10-100	12 $I_n$	
	PM6102	100-250	12 $I_n$	
	PM6104	225-400	12 $I_n$	
	PM6106	400-630	12 $I_n$	
PM6108	400-630	12 $I_n$		
Action tolerance			$\pm 20$ %	

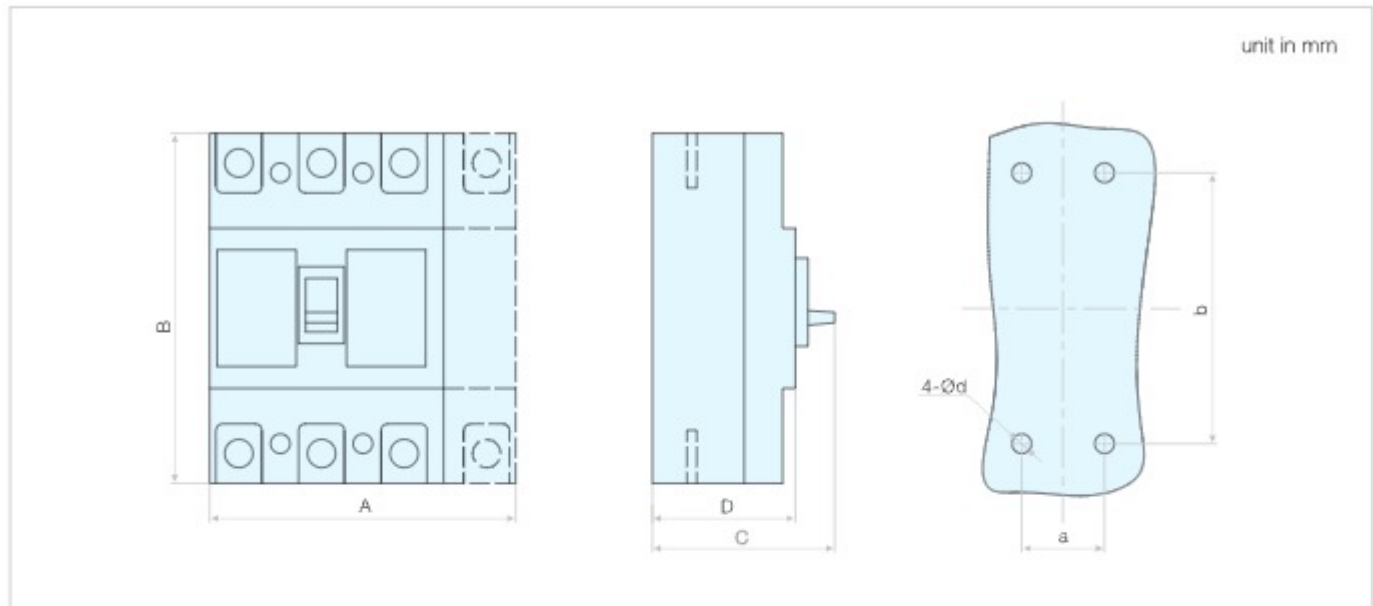
Protective function		Type	Rated Current In (A)	Neutral pole overload protection current setting value, neutral pole short circuit protection current setting value (A)	
Neutral pole protection (four-pole circuit breaker)	N-pole protected	PM6100	10-63	$I_n, I_r$	
		PM6101	10-63	$I_n, I_r$	
		PM6102	80/100	63, 756	$I_n$ (Neutral pole overload protection current setting value), $I_r$ (neutral pole short circuit protection current setting value)
			100-200	100, 1200	
		PM6104	225/250	125, 1500	
			225-315	225, 2700	
		PM6106	350/400	250, 3000	
			400-630	400, 4800	
		PM6108	400/500	400, 4800	
	N-pole unprotected	All types	630	500, 6000	
10-630			No protection		



# Moulded Case Circuit Breakers Series PM61

## Outline and installation dimensions

1



Type	Poles (P)	Outline dimensions				Installation dimensions		
		A (mm)	B (mm)	C (mm)	D (mm)	a (mm)	b (mm)	Ød (mm)
PM6100D/G	3	75	130	81	60	25	111	3.5
	4	100				50		
PM6101D	3	75	130	81	60	25	111	3.5
	4	100				50		
PM6101G/L	3	92	150	104	83	30	129	4.5
	4	122				60		
PM6102D	3	105	165	88	60	35	126	4.5
PM6102G/L	3	107	165	127	105.5	35	126	4.5
	4	142				70		
PM6104D	3	150	257	146.5	106.5	44	194	7
PM6104G/L	3	150	257	146.5	106.5	44	194	7
	4	198				94		
PM6106D	3	182	270	150	110	58	200	7
PM6106G/L	3	182	270	150	110	58	200	7
	4	240				116		
PM6108H/M	3	210	280	155	115.5	70	243	7
	4	280				140		

## Selection and ordering data

### 3-pole

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection
			Type code	Type code
D 35 kA		10	PM6100D-3P-10	PM6100D-3M-10
		16	PM6100D-3P-16	PM6100D-3M-16
		20	PM6100D-3P-20	PM6100D-3M-20
		25	PM6100D-3P-25	PM6100D-3M-25
		32	PM6100D-3P-32	PM6100D-3M-32
		40	PM6100D-3P-40	PM6100D-3M-40
		50	PM6100D-3P-50	PM6100D-3M-50
G 50 kA		63	PM6100D-3P-63	PM6100D-3M-63
		10	PM6100G-3P-10	PM6100G-3M-10
		16	PM6100G-3P-16	PM6100G-3M-16
		20	PM6100G-3P-20	PM6100G-3M-20
		25	PM6100G-3P-25	PM6100G-3M-25
		32	PM6100G-3P-32	PM6100G-3M-32
		40	PM6100G-3P-40	PM6100G-3M-40
50	PM6100G-3P-50	PM6100G-3M-50		
		63	PM6100G-3P-63	PM6100G-3M-63

### 4 pole - 4 trips

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection
			Type code	Type code
Neutral unprotected				
G 50 kA		10	PM6100G-4BP-10	PM6100G-4BM-10
		16	PM6100G-4BP-16	PM6100G-4BM-16
		20	PM6100G-4BP-20	PM6100G-4BM-20
		25	PM6100G-4BP-25	PM6100G-4BM-25
		32	PM6100G-4BP-32	PM6100G-4BM-32
		40	PM6100G-4BP-40	PM6100G-4BM-40
		50	PM6100G-4BP-50	PM6100G-4BM-50
		63	PM6100G-4BP-63	PM6100G-4BM-63
Neutral protected				
G 50 kA		10	PM6100G-4CP-10	PM6100G-4CM-10
		16	PM6100G-4CP-16	PM6100G-4CM-16
		20	PM6100G-4CP-20	PM6100G-4CM-20
		25	PM6100G-4CP-25	PM6100G-4CM-25
		32	PM6100G-4CP-32	PM6100G-4CM-32
		40	PM6100G-4CP-40	PM6100G-4CM-40
		50	PM6100G-4CP-50	PM6100G-4CM-50
		63	PM6100G-4CP-63	PM6100G-4CM-63

# Moulded Case Circuit Breakers

## PM6101 up to 100 A



### Selection and ordering data

#### 3-pole

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection
			Type code	Type code
D 35 kA		10	PM6101D-3P-10	PM6101D-3M-10
		16	PM6101D-3P-16	PM6101D-3M-16
		20	PM6101D-3P-20	PM6101D-3M-20
		25	PM6101D-3P-25	PM6101D-3M-25
		32	PM6101D-3P-32	PM6101D-3M-32
		40	PM6101D-3P-40	PM6101D-3M-40
		50	PM6101D-3P-50	PM6101D-3M-50
		63	PM6101D-3P-63	PM6101D-3M-63
		80	PM6101D-3P-80	PM6101D-3M-80
		100	PM6101D-3P-100	PM6101D-3M-100
G 50 kA		10	PM6101G-3P-10	PM6101G-3M-10
		16	PM6101G-3P-16	PM6101G-3M-16
		20	PM6101G-3P-20	PM6101G-3M-20
		25	PM6101G-3P-25	PM6101G-3M-25
		32	PM6101G-3P-32	PM6101G-3M-32
		40	PM6101G-3P-40	PM6101G-3M-40
		50	PM6101G-3P-50	PM6101G-3M-50
		63	PM6101G-3P-63	PM6101G-3M-63
		80	PM6101G-3P-80	PM6101G-3M-80
		100	PM6101G-3P-100	PM6101G-3M-100
L 70 kA		10	PM6101L-3P-10	PM6101L-3M-10
		16	PM6101L-3P-16	PM6101L-3M-16
		20	PM6101L-3P-20	PM6101L-3M-20
		25	PM6101L-3P-25	PM6101L-3M-25
		32	PM6101L-3P-32	PM6101L-3M-32
		40	PM6101L-3P-40	PM6101L-3M-40
		50	PM6101L-3P-50	PM6101L-3M-50
		63	PM6101L-3P-63	PM6101L-3M-63
		80	PM6101L-3P-80	PM6101L-3M-80
		100	PM6101L-3P-100	PM6101L-3M-100

#### 4 pole - 4 trips

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection
			Type code	Type code
Neutral unprotected				
G 50 kA		10	PM6101G-4BP-10	PM6101G-4BM-10
		16	PM6101G-4BP-16	PM6101G-4BM-16
		20	PM6101G-4BP-20	PM6101G-4BM-20
		25	PM6101G-4BP-25	PM6101G-4BM-25
		32	PM6101G-4BP-32	PM6101G-4BM-32
		40	PM6101G-4BP-40	PM6101G-4BM-40
		50	PM6101G-4BP-50	PM6101G-4BM-50
		63	PM6101G-4BP-63	PM6101G-4BM-63
		80	PM6101G-4BP-80	PM6101G-4BM-80
		100	PM6101G-4BP-100	PM6101G-4BM-100
Neutral protected				
G 50kA		10	PM6101G-4CP-10	PM6101G-4CM-10
		16	PM6101G-4CP-16	PM6101G-4CM-16
		20	PM6101G-4CP-20	PM6101G-4CM-20
		25	PM6101G-4CP-25	PM6101G-4CM-25
		32	PM6101G-4CP-32	PM6101G-4CM-32
		40	PM6101G-4CP-40	PM6101G-4CM-40
		50	PM6101G-4CP-50	PM6101G-4CM-50
		63	PM6101G-4CP-63	PM6101G-4CM-63
		80	PM6101G-4CP-80	PM6101G-4CM-80
		100	PM6101G-4CP-100	PM6101G-4CM-100

## Selection and ordering data

### 3-pole

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection
			Type code	Type code
D 35 kA		100	PM6102D-3P-100	PM6102D-3M-100
		125	PM6102D-3P-125	PM6102D-3M-125
		140	PM6102D-3P-140	PM6102D-3M-140
		160	PM6102D-3P-160	PM6102D-3M-160
		180	PM6102D-3P-180	PM6102D-3M-180
		200	PM6102D-3P-200	PM6102D-3M-200
		225	PM6102D-3P-225	PM6102D-3M-225
		250	PM6102D-3P-250	PM6102D-3M-250
G 50 kA		100	PM6102G-3P-100	PM6102G-3M-100
		125	PM6102G-3P-125	PM6102G-3M-125
		140	PM6102G-3P-140	PM6102G-3M-140
		160	PM6102G-3P-160	PM6102G-3M-160
		180	PM6102G-3P-180	PM6102G-3M-180
		200	PM6102G-3P-200	PM6102G-3M-200
		225	PM6102G-3P-225	PM6102G-3M-225
		250	PM6102G-3P-250	PM6102G-3M-250
L 70 kA		100	PM6102L-3P-100	PM6102L-3M-100
		125	PM6102L-3P-125	PM6102L-3M-125
		140	PM6102L-3P-140	PM6102L-3M-140
		160	PM6102L-3P-160	PM6102L-3M-160
		180	PM6102L-3P-180	PM6102L-3M-180
		200	PM6102L-3P-200	PM6102L-3M-200
		225	PM6102L-3P-225	PM6102L-3M-225
		250	PM6102L-3P-250	PM6102L-3M-250

### 4 pole - 4 trips

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection
			Type code	Type code
Neutral unprotected				
G 50 kA		100	PM6102G-4BP-100	PM6102G-4BM-100
		125	PM6102G-4BP-125	PM6102G-4BM-125
		140	PM6102G-4BP-140	PM6102G-4BM-140
		160	PM6102G-4BP-160	PM6102G-4BM-160
		180	PM6102G-4BP-180	PM6102G-4BM-180
		200	PM6102G-4BP-200	PM6102G-4BM-200
		225	PM6102G-4BP-225	PM6102G-4BM-225
		250	PM6102G-4BP-250	PM6102G-4BM-250
Neutral protected				
G 50 kA		100	PM6102G-4CP-100	PM6102G-4CM-100
		125	PM6102G-4CP-125	PM6102G-4CM-125
		140	PM6102G-4CP-140	PM6102G-4CM-140
		160	PM6102G-4CP-160	PM6102G-4CM-160
		180	PM6102G-4CP-180	PM6102G-4CM-180
		200	PM6102G-4CP-200	PM6102G-4CM-200
		225	PM6102G-4CP-225	PM6102G-4CM-225
		250	PM6102G-4CP-250	PM6102G-4CM-250

# Moulded Case Circuit Breakers

## PM6104 up to 400 A



### Selection and ordering data

#### 3-pole

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection
			Type code	Type code
D 35 kA		225	PM6104D-3P-225	PM6104D-3M-225
		250	PM6104D-3P-250	PM6104D-3M-250
		315	PM6104D-3P-315	PM6104D-3M-315
		350	PM6104D-3P-350	PM6104D-3M-350
		400	PM6104D-3P-400	PM6104D-3M-400
G 50 kA		225	PM6104G-3P-225	PM6104G-3M-225
		250	PM6104G-3P-250	PM6104G-3M-250
		315	PM6104G-3P-315	PM6104G-3M-315
		350	PM6104G-3P-350	PM6104G-3M-350
		400	PM6104G-3P-400	PM6104G-3M-400
L 70 kA		225	PM6104L-3P-225	PM6104L-3M-225
		250	PM6104L-3P-250	PM6104L-3M-250
		315	PM6104L-3P-315	PM6104L-3M-315
		350	PM6104L-3P-350	PM6104L-3M-350
		400	PM6104L-3P-400	PM6104L-3M-400

#### 4 pole - 4 trips

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection
			Type code	Type code
Neutral unprotected				
G 50 kA		225	PM6104G-4BP-225	PM6104G-4BM-225
		250	PM6104G-4BP-250	PM6104G-4BM-250
		315	PM6104G-4BP-315	PM6104G-4BM-315
		350	PM6104G-4BP-350	PM6104G-4BM-350
		400	PM6104G-4BP-400	PM6104G-4BM-400
Neutral protected				
G 50 kA		225	PM6104G-4CP-225	PM6104G-4CM-225
		250	PM6104G-4CP-250	PM6104G-4CM-250
		315	PM6104G-4CP-315	PM6104G-4CM-315
		350	PM6104G-4CP-350	PM6104G-4CM-350
		400	PM6104G-4CP-400	PM6104G-4CM-400

### Selection and ordering data

#### PM6106, 3-pole

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection	
			Type code	Type code	
D 35 kA			400	PM6106D-3P-400	PM6106D-3M-400
			500	PM6106D-3P-500	PM6106D-3M-500
			630	PM6106D-3P-630	PM6106D-3M-630
G 50 kA			400	PM6106G-3P-400	PM6106G-3M-400
			500	PM6106G-3P-500	PM6106G-3M-500
			630	PM6106G-3P-630	PM6106G-3M-630
L 70 kA			400	PM6106L-3P-400	PM6106L-3M-400
			500	PM6106L-3P-500	PM6106L-3M-500
			630	PM6106L-3P-630	PM6106L-3M-630

#### PM6106, 4 pole - 4 trips

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection	
			Type code	Type code	
Neutral unprotected					
G 50 kA			400	PM6106G-4BP-400	PM6106G-4BM-400
			500	PM6106G-4BP-500	PM6106G-4BM-500
			630	PM6106G-4BP-630	PM6106G-4BM-630
Neutral protected					
G 50 kA			400	PM6106G-4CP-400	PM6106G-4CM-400
			500	PM6106G-4CP-500	PM6106G-4CM-500
			630	PM6106G-4CP-630	PM6106G-4CM-630

#### PM6108, 3-pole

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection	
			Type code	Type code	
H 65 kA			400	PM6108H-3P-400	PM6108H-3M-400
			500	PM6108H-3P-500	PM6108H-3M-500
			630	PM6108H-3P-630	PM6108H-3M-630
			700	PM6108H-3P-700	PM6108H-3M-700
			800	PM6108H-3P-800	PM6108H-3M-800
M 75 kA			400	PM6108M-3P-400	PM6108M-3M-400
			500	PM6108M-3P-500	PM6108M-3M-500
			630	PM6108M-3P-630	PM6108M-3M-630
			700	PM6108M-3P-700	PM6108M-3M-700
			800	PM6108M-3P-800	PM6108M-3M-800

#### PM6108, 4 pole - 4 trips

	Breaking capacity at 400 V AC	Rated current (A)	For power distribution	For motor protection	
			Type code	Type code	
Neutral unprotected					
H 65 kA			400	PM6108H-4BP-400	PM6108H-4BM-400
			500	PM6108H-4BP-500	PM6108H-4BM-500
			630	PM6108H-4BP-630	PM6108H-4BM-630
			700	PM6108H-4BP-700	PM6108H-4BM-700
			800	PM6108H-4BP-800	PM6108H-4BM-800
Neutral protected					
H 65 kA			400	PM6108H-4CP-400	PM6108H-4CM-400
			500	PM6108H-4CP-500	PM6108H-4CM-500
			630	PM6108H-4CP-630	PM6108H-4CM-630
			700	PM6108H-4CP-700	PM6108H-4CM-700
			800	PM6108H-4CP-800	PM6108H-4CM-800

# Moulded Case Circuit Breakers

## Series 3SM8E with electronic trip unit

### Applications and functions

- Incoming and outgoing function in distribution systems
- Switching and protection devices for motors, transformers and capacitors
- Protect circuits and power supply devices against overload, short-circuit, under-voltage etc.
- Used in new energy, power, industry control, buildings,
- Available in the following versions
  - Power protection
 

The overload and short-circuit releases are designed for the protection of cables, leads and non-motor loads
  - Motor protection
 

The overload and short-circuit releases are designed for optimized protection and direct-on-line starting of induction squirrel-cage motors.



### Instruction of type code

M8E	A	3	P	400	M
					Breaking capacity
					M: Medium
					H: High
					Rated current
					32: 16...32 A
					63: 32...63 A
					125: 63...125 A
					250: 100...250 A
					400: 200...400 A
					630: 400...630 A
					800: 630...800 A
					1600: 640...1600 A
					Versions
					P: Power distribution
					M: Motor protection
					Number of poles
					3: 3-pole
					4: 4-pole
					Code of size
					A: 3SM8E-125
					B: 3SM8E-250
					C: 3SM8E-400
					D: 3SM8E-630
					E: 3SM8E-800
					F: 3SM8E-1600
					Series code

## Technical specifications

Size	A		B		C		D		E		F
Type	3SM8E-125		3SM8E-250		3SM8E-400		3SM8E-630		3SM8E-800		3SM8E-1600
Standard	IEC 60947-2 IEC 60947-4-1										
Rated current $I_n$ , adjustable	16-20-25-32, 32-36-40-45-50-55-60-63, 63-65-70-75-80-85-90-95-100-125		100-125-140-160-180-200-225-250		200-225-250-280-315-350-400		400-429-440-460-480-500-530-560-600-630		630-640-660-680-700-720-740-760-780-800		640-800-960-1120-1280-1440-1600
Breaking capacity	M	H	M	H	M	H	M	H	M	H	H
Number of poles	3 4		3 4		3 4		3 4		3 4		3 4
Rated operating voltage $U_n$	V AC 400										
Rated insulating voltage $U_i$	V AC 800										
Rated impulsive withstand voltage $U_{imp}$	kV 8										
Rated frequency	Hz 50/60										
Rated ultimate short-circuit breaking capacity at AC 400 V 50/60 Hz $I_{cu}$	50	85	50	85	65	100	65	100	65	100	80
Rated operating short-circuit breaking capacity at AC 400 V 50/60 Hz $I_{cs}$	35	50	35	50	42	65	42	65	42	65	40
Rated short-time withstand current for 1 s at AC 400 V 50/60 Hz $I_{sw}$					5		8		10		20
Category	A		A		B		B		B		B
Mechanical life	cycles 7000		cycles 7000		cycles 4000		cycles 3000		cycles 3000		cycles 2500
Electrical life	cycles 3000		cycles 3000		cycles 2000		cycles 1500		cycles 1500		cycles 1000
Flashover distance	mm $\leq 50$		mm $\leq 50$		mm $\leq 100$		mm $\leq 100$		mm $\leq 100$		mm $\leq 120$

## Normal working environment

### Altitude

The rated performance of the circuit breaker does not change up to 2000 meters.

Beyond this altitude, the performance of the circuit breaker is subject to derating, see the derating coefficients table on Electronic trip unit.

### Temperature

Storage: -40 °C to + 70 °C

Operating: -5 °C to + 40 °C

In case the circuit breaker operates at higher temperatures than +40 °C, the current-carrying capacity of the circuit breaker may be lower than the rated current-carry capacity at the reference temperature, therefore the derating coefficients must be applied, see the derating coefficients table on Electronic trip unit.

### Relative humidity

When maximum temperature is 40 °C, relative humidity shall be less than 50%.

When the temperature is relative low, the relative humidity is allowed to be higher.

Condensation caused by change of temperature shall be taken special measures.

### Pollution level

3

### Installation category

Main circuit: III

Auxiliary circuit and control circuit: II

### Installation environment

Horizontal or vertical, maximum inclination: 22.5 °.

Resistance to moist air, salt mist and oil mist.

Installed in an environment which is not enough to erode the metal or to destroy the insulating gas and without explosive danger.

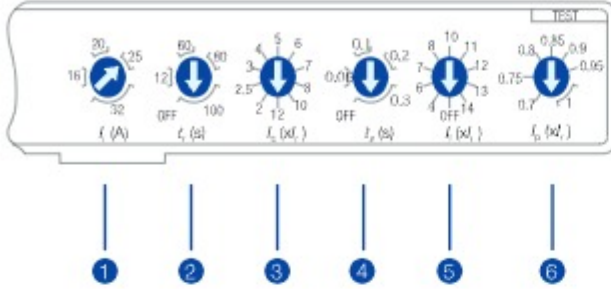
Installed in an environment without attack from rain and snow.



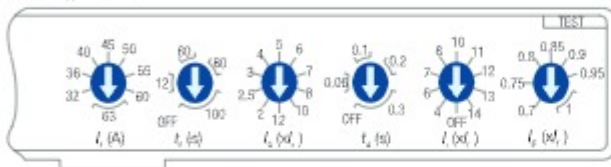
# Moulded Case Circuit Breakers Series 3SM8E with electronic trip unit

## Electronic trip unit

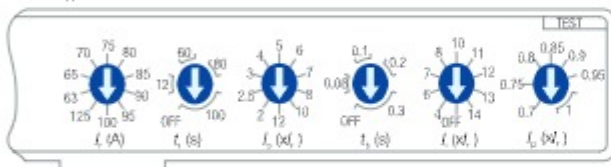
Size A  $I_n = 32$  A



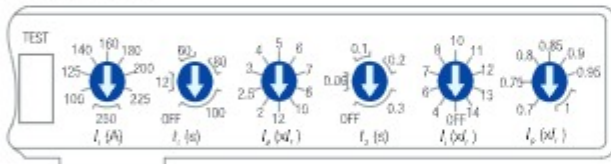
Size A  $I_n = 63$  A



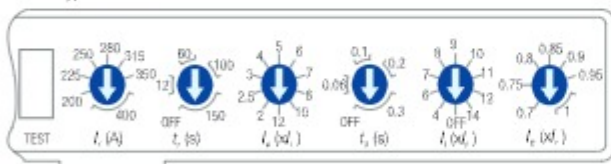
Size A  $I_n = 125$  A



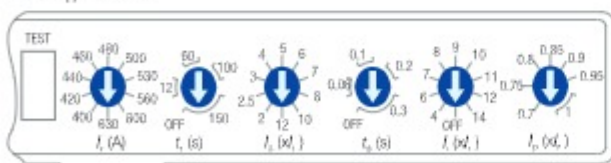
Size B  $I_n = 250$  A



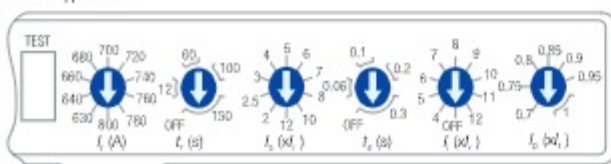
Size C  $I_n = 400$  A



Size D  $I_n = 630$  A



Size E  $I_n = 800$  A



Due to the configured electronic trip units, 3SM8E moulded case circuit breaker is able to supply following the reliable protection and act correctly:

- Overload protection (L)
- Short-time delayed short-circuit protection (S)
- Instantaneous short-circuit protection (I)

### 1 $I_1$

Current setting range of long-time delayed overload protection

Size A	up to 32 A	16-20-25-32 A
	up to 63 A	32-36-40-45-50-55-60-63 A
	up to 100 A	63-65-70-75-80-85-90-95-100-125 A
Size B	up to 225 A	100-125-140-160-180-200-225-250 A
Size C	up to 400 A	200-225-250-280-315-350-400 A
Size D	up to 630 A	400-420-440-460-480-500-530-560-600-630 A
Size E	up to 800 A	630-640-660-680-700-720-740-760-780-800 A

### 2 $t_1$

Setting range of time-lag class for overload protection

Size A/B	up to 225 A	OFF, 12-60-80-100 s
Size C/D/E	up to 800 A	OFF, 12-60-100-150 s

### 3 $I_2 = I_1 \times \dots$

Current setting range of short-time delayed short-circuit protection

Size A/B/C/D/E	up to 800 A	2-2.5-3-4-5-6-7-8-10-12
----------------	-------------	-------------------------

### 4 $t_2$

Setting range of time-lag class for short-circuit protection

Size A/B/C/D/E	up to 800 A	OFF, 0.06-0.1-0.2-0.3 s
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### 5 $I_3 = I_1 \times \dots$

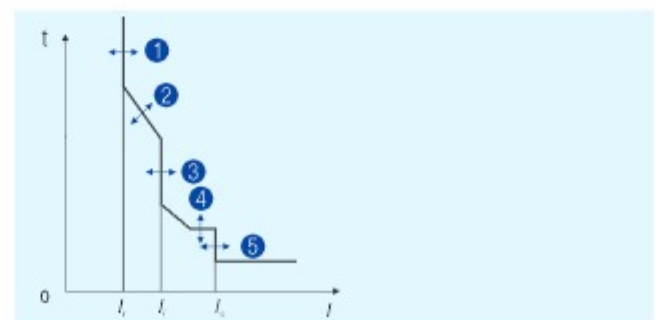
Current setting range of instantaneous short-circuit protection

Size A/B	up to 225 A	OFF, 4-6-7-8-10-11-12-13-14
Size C/D	up to 630 A	OFF, 4-6-7-8-9-10-11-12-14
Size E	up to 800 A	OFF, 4-5-6-7-8-9-10-11-12

### 6 $I_4 = I_1 \times \dots$

Current setting range of pre-alarm function

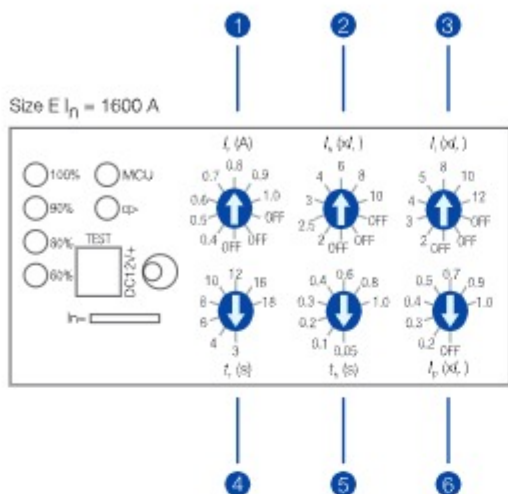
Size A/B/C/D/E	up to 800 A	0.7-0.75-0.8-0.85-0.9-0.95-1
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Note

"TEST" is used to test the trip performance.

## Electronic trip unit



Due to the configured electronic trip units, 3SM8E molded case circuit breaker is able to supply following the reliable protection and act correctly:

- Overload protection (L)
- Short-time delayed short-circuit protection (S)
- Instantaneous short-circuit protection (I)

### 1 $I_1$

Current setting range of long-time delayed overload protection

Size F	up to 1600 A	640-800-960-1120-1280-1440-1600 A
--------	--------------	-----------------------------------

### 2 $I_2 = I_1 \times \dots$

Current setting range of short-time delayed short-circuit protection

Size F	up to 1600 A	2-2.5-3-4-6-8-10
--------	--------------	------------------

### 3 $I_3 = I_1 \times \dots$

Current setting range of instantaneous short-circuit protection

Size F	up to 1600 A	OFF, 2-3-4-5-8-10-12
--------	--------------	----------------------

### 4 $t_1$

Setting range of time-lag class for overload protection

Size F	up to 1600 A	OFF, 3-4-6-8-10-12-16-18 s
--------	--------------	----------------------------

### 5 $t_s$

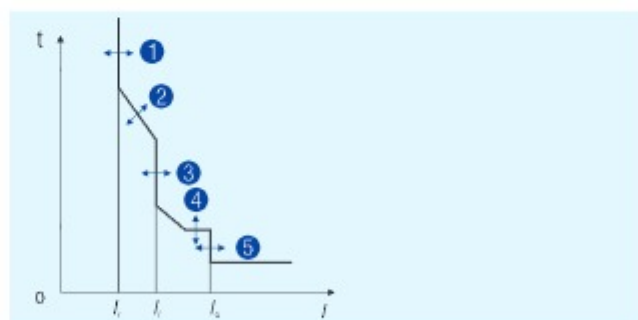
Setting range of time-lag class for short-circuit protection

Size F	up to 1600 A	OFF, 0.05-0.1-0.2-0.3-0.4-0.5-0.6-0.8-1.0 s
--------	--------------	---

### 6 $I_4 = I_1 \times \dots$

Current setting range of pre-alarm function

Size F	up to 1600 A	0.7-0.75-0.8-0.85-0.9-0.95-1
--------	--------------	------------------------------



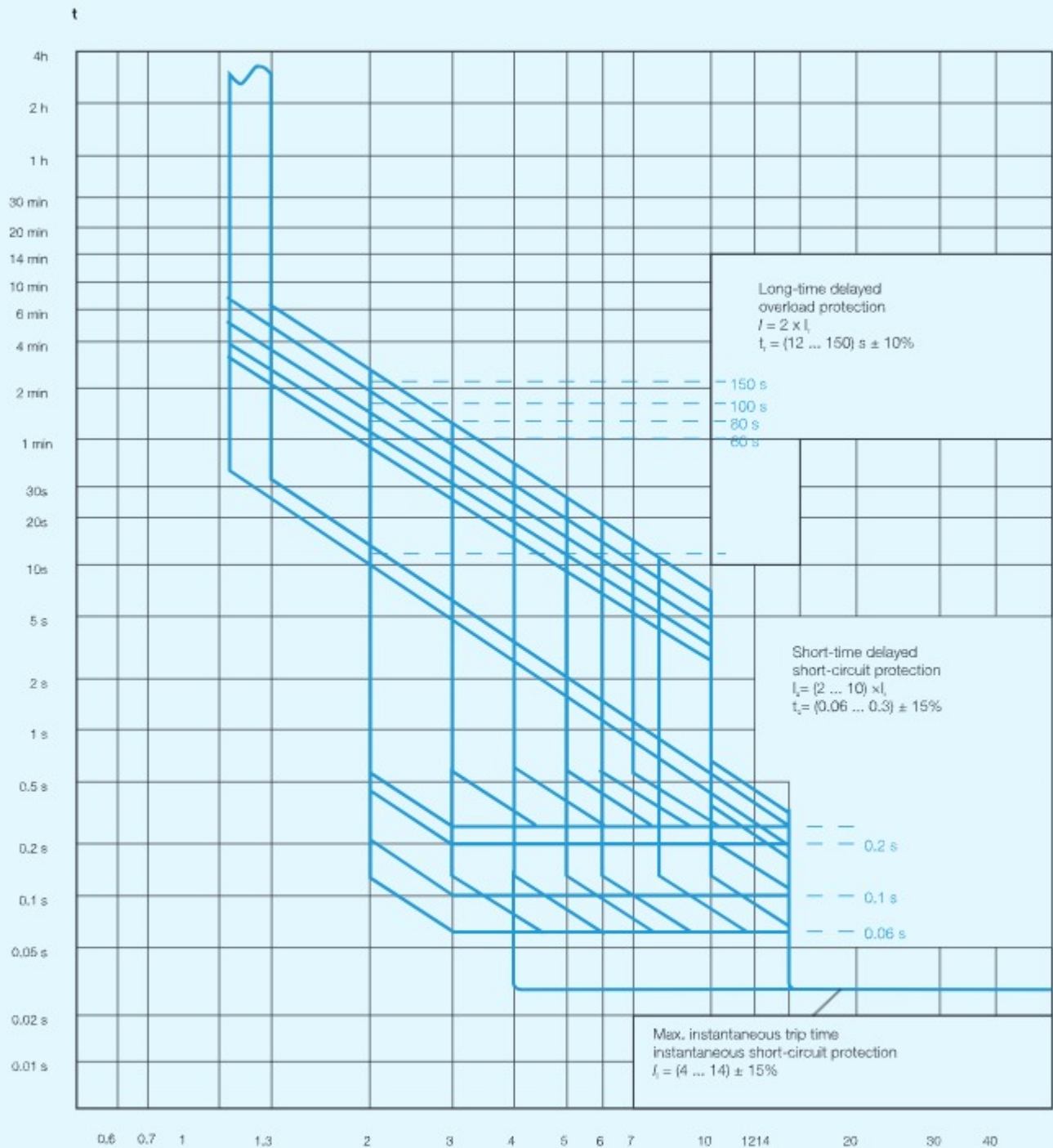
Note

\*TEST\* is used to test the trip performance.

# Moulded Case Circuit Breakers Series 3SM8E with electronic trip unit

## Characteristic curve

1



## Selection and ordering data



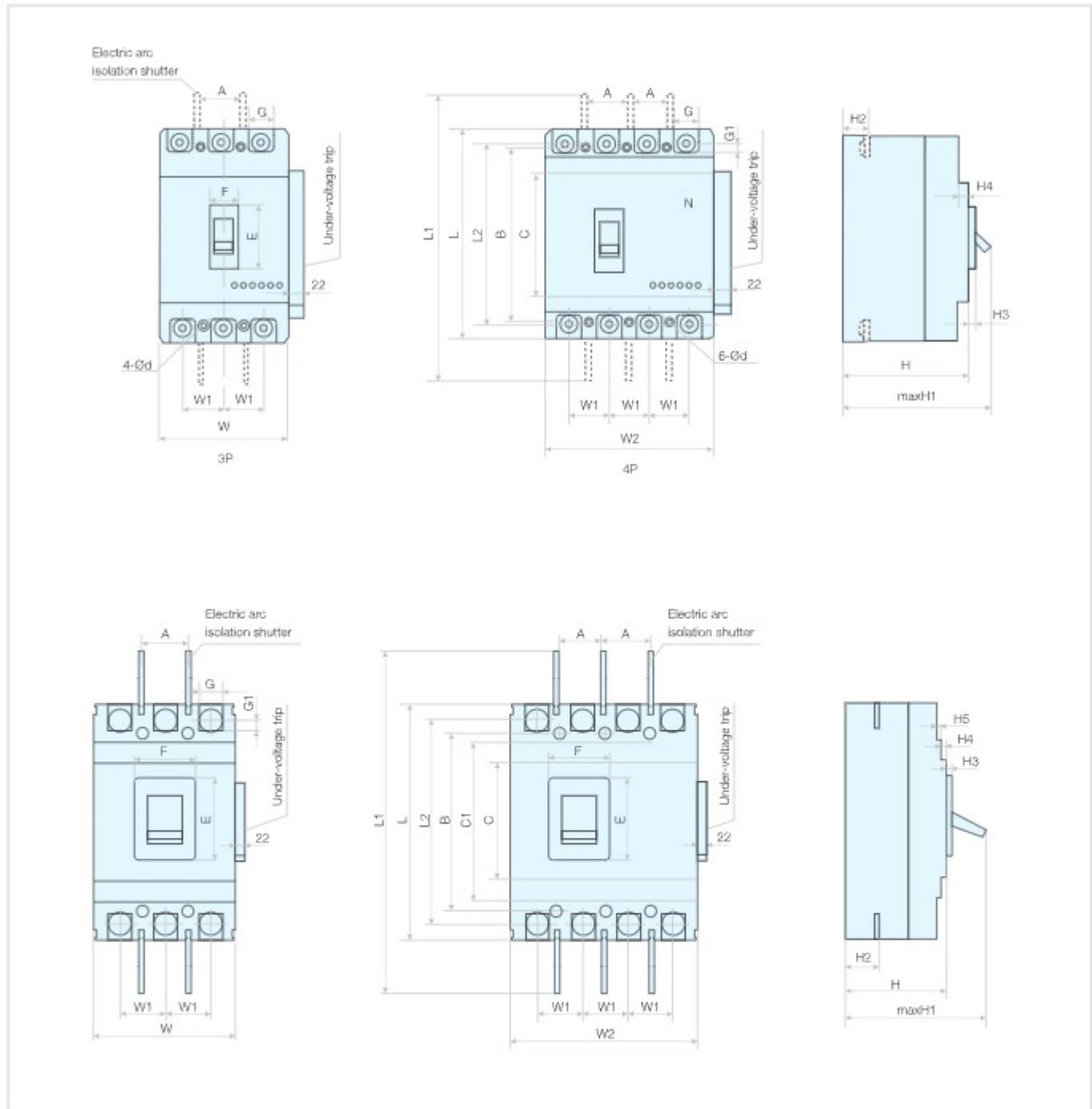
Rated current $I_n$ (A)	Power distribution		Motor protection	
	Type code	Order code	Type code	Order code
<b>3-pole</b>				
Size A				
$I_{cs} = 50 \text{ kA}, I_{cm} = 35 \text{ kA}$				
16 ... 32	M8EA 3P32M	39835	M8EA 3M32M	39844
32 ... 63	M8EA 3P63M	39836	M8EA 3M63M	39845
63 ... 125	M8EA 3P125M	39837	M8EA 3M125M	39846
$I_{cs} = 85 \text{ kA}, I_{cm} = 50 \text{ kA}$				
16 ... 32	M8EA 3P32H	39838	M8EA 3M32H	39847
32 ... 63	M8EA 3P63H	39839	M8EA 3M63H	39848
63 ... 125	M8EA 3P125H	39840	M8EA 3M125H	39849
Size B				
$I_{cs} = 50 \text{ kA}, I_{cm} = 35 \text{ kA}$				
100 ... 250	M8EB 3P250M	39853	M8EB 3M250M	39856
$I_{cs} = 85 \text{ kA}, I_{cm} = 50 \text{ kA}$				
100 ... 250	M8EB 3P250H	39854	M8EB 3M250H	39857
Size C				
$I_{cs} = 65 \text{ kA}, I_{cm} = 42 \text{ kA}$				
200 ... 400	M8EC 3P400M	39859	M8EC 3M400M	39862
$I_{cs} = 100 \text{ kA}, I_{cm} = 65 \text{ kA}$				
200 ... 400	M8EC 3P400H	39860	M8EC 3M400H	39863
Size D				
$I_{cs} = 65 \text{ kA}, I_{cm} = 42 \text{ kA}$				
400 ... 630	M8ED 3P630M	39865	M8ED 3M630M	39868
$I_{cs} = 100 \text{ kA}, I_{cm} = 65 \text{ kA}$				
400 ... 630	M8ED 3P630H	39866	M8ED 3M630H	39869
Size E				
$I_{cs} = 65 \text{ kA}, I_{cm} = 42 \text{ kA}$				
630 ... 800	M8EE 3P800M	39871	M8EE 3M800M	39874
$I_{cs} = 100 \text{ kA}, I_{cm} = 65 \text{ kA}$				
630 ... 800	M8EE 3P800H	39872	M8EE 3M800H	39875
Size F				
$I_{cs} = 80 \text{ kA}, I_{cm} = 40 \text{ kA}$				
640 ... 1600	M8EF 3P1600H	39131		
<b>4-pole</b>				
Size A				
$I_{cs} = 50 \text{ kA}, I_{cm} = 35 \text{ kA}$				
16 ... 32	M8EA 4P32M	39841	M8EA 4M32M	39850
32 ... 63	M8EA 4P63M	39842	M8EA 4M63M	39851
63 ... 125	M8EA 4P125M	39843	M8EA 4M125M	39852
Size B				
$I_{cs} = 50 \text{ kA}, I_{cm} = 35 \text{ kA}$				
100 ... 225	M8EB 4P250M	39855	M8EB 4M250M	39858
Size C				
$I_{cs} = 65 \text{ kA}, I_{cm} = 42 \text{ kA}$				
200 ... 400	M8EC 4P400M	39861	M8EC 4M400M	39864
Size D				
$I_{cs} = 65 \text{ kA}, I_{cm} = 42 \text{ kA}$				
400 ... 630	M8ED 4P630M	39867	M8ED 4M630M	39870
Size E				
$I_{cs} = 65 \text{ kA}, I_{cm} = 42 \text{ kA}$				
630 ... 800	M8EE 4P800M	39873	M8EE 4M800M	39876
Size F				
$I_{cs} = 80 \text{ kA}, I_{cm} = 40 \text{ kA}$				
640 ... 1600	M8EF 4P1600H	39132		

# Moulded Case Circuit Breakers Series 3SM8E with electronic trip unit

## Outline and installation dimensions

3SM8E-125, 250, 400, 630, 800, 1600 (front connection)

1



## Outline and installation dimensions

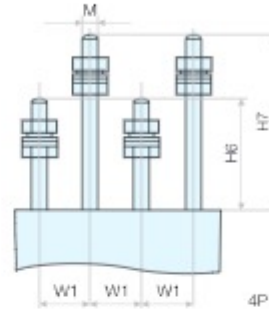
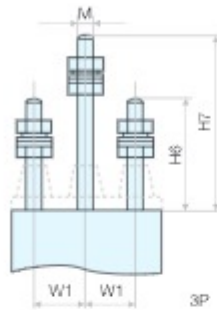
		Model					
		3SM8E-125	3SM8E-250	3SM8E-400	3SM8E-630	3SM8E-800	3SM8E-1600
Dimensions	C	88	102	126	128,5	128,5	
	C1			174	204	204	
	E	50	57,5	90,5	81	81	
	F	22	24	60	66	66	
	G	19,2	22	32	46	46	
	G1	7,5	10	11	14	14	
	H	91,7	91,2	107,5	112	112	137
	H1	109,4	106,7	149	155	155	191
	H2	28	22,8	38	37,5	37,5	41
	H3	4	4	9	10	10	15
	H4	10	5,5	4	10,5	10,5	
	H5			5,6	8,5	8,5	
	L	150	165	258	280	280	330
	L1	255	360	457	470	470	506
	L2	132	145	225	243	243	
	W	92	127	150	210	210	210
	W1	30	35	48	70	70	70
W2	122	162	198	280	280	280	
Installation Dimensions	A	35	35	48	70	70	70
	B	129	126	195	244	244	299
	Ød	4,5	4,5	7	7	7	9

# Moulded Case Circuit Breakers Series 3SM8E with electronic trip unit

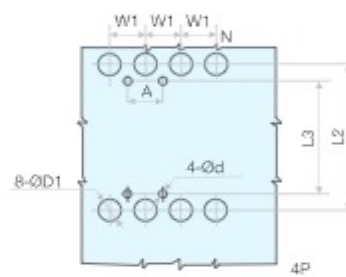
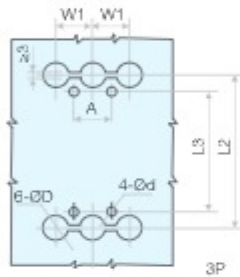
## Outline and installation dimensions

1

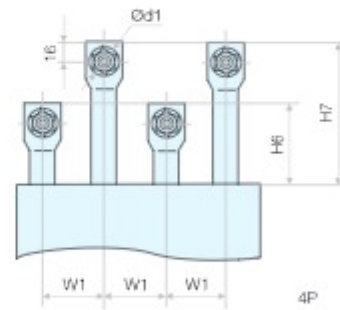
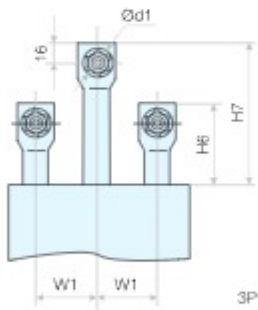
3SM8E-125, 250 (Rear connection)



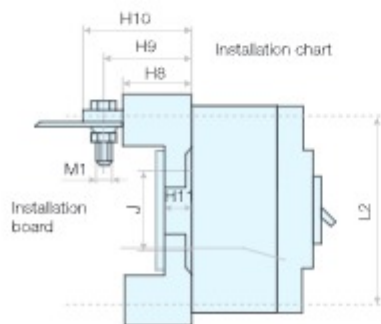
Rear connection stiletto chart



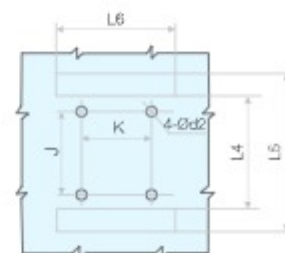
3SM8E-400, 630, 800 (Rear connection)



Insert style



Installation board stiletto chart



## Outline and installation dimensions

	3SM8E-125	3SM8E-250	3SM8E-400	3SM8E-630	3SM8E-800
A	30	35	44	70	70
Ød	Ø4,5	Ø4,5	Ø6,5	Ø7	Ø7
Ød1	-	-	Ø12,5	Ø16,5	Ø16,5
Ød2	Ø6,5	Ø6,5	Ø8,5	Ø11,5	Ø11,5
ØD	Ø25	Ø25	Ø32	Ø48	Ø48
ØD1	Ø25	Ø25	Ø32	Ø48	Ø48
H6	53	58	63,5	84	84
H7	88	89	104,5	84	84
H8	50	50	60	88	88
H9	64	65,5	80	-	-
H10	82	85	102	105	105
H11	17,5	16	21	30	30
L2	132	144	224	243	243
L3	107	126	194	243	243
L4	90	88	166	175	175
L5	172	190	282	305	305
L6	94	110	152	213	213
M	M8	M8	-	-	-
K	60	70	60	90	90
J	56	54	129	123	123
M1	M8	M8	M12	M14	M14
W1	30	35	48	70	70



# Moulded Case Circuit Breakers with Earth Leakage Protection Series 3SM8L

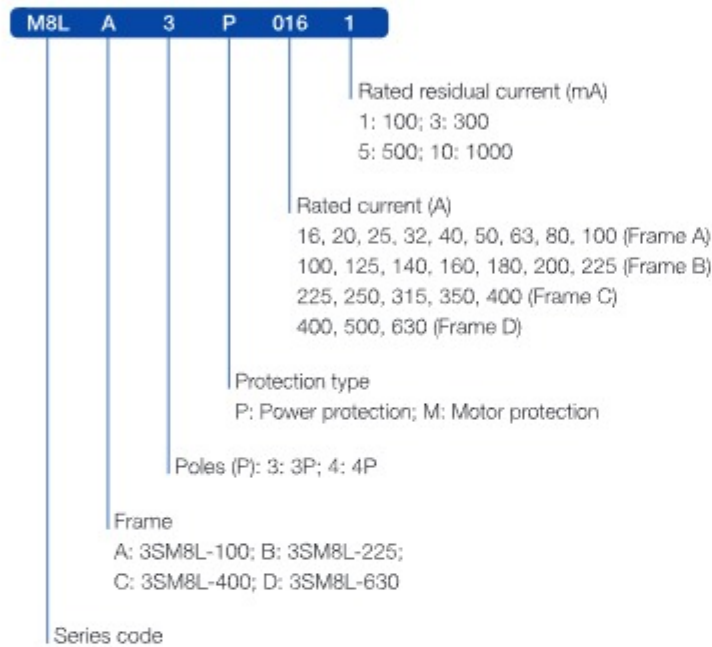
1

## Applications and functions

- Protection of plant and equipment against overload or damage by ground faults (ground-fault protection)
- Protection against fire hazard caused by insulation faults
- Switching and protection devices for motors, transformers and capacitors
- Disconnecter units with features for stopping and switching off in an emergency in conjunction with lockable rotary operating mechanisms and terminal covers.



## Instruction of type code



- Here is code of N-pole type for 4 pole circuit breaker:
  - A: N-pole fixed without over-current release unit, it has been connected all along, and does not act with other three poles to turn on or off.
  - B: N-pole fixed without over-current release unit, it acts with other three poles.

## Technical specifications

	A	B	C	D
Frame type	A	B	C	D
Standards	IEC 60947-2	IEC 60947-2	IEC 60947-2	IEC 60947-2
Number of poles	P 3, 4	3, 4	3, 4	3, 4
Frame current I <sub>nm</sub>	A 100	225	400	630
Rated current I <sub>n</sub>	A 16, 20, 25, 32, 40 50, 63, 80, 100	100, 125, 140, 160 180, 200, 225	225, 250, 315 350, 400	400, 500, 630
Rated residual currents I <sub>Δn</sub>	mA 100, 300, 500, 1000	100, 300, 500, 1000	100, 300, 500	100, 300, 500, 1000
Rated insulating voltage U <sub>i</sub>	V 800	800	800	800
Rated operating voltage, U <sub>e</sub>	V 400	400	400	400
Rated frequency	Hz 50/60	50/60	50/60	50/60
Rated impulsive withstand voltage, U <sub>imp</sub>	kV 8	8	8	8
Rated ultimate short-circuit breaking capacity, I <sub>cu</sub> (AC) 50-60 Hz 400 V O-CO	kA 50	50	65	65
Rated operating short-circuit breaking capacity, I <sub>cs</sub> (AC) 50-60 Hz 400 V O-CO-CO	kA 35	35	42	42
Mechanical life	times 8500	7000	4000	4000
Electrical life	times 1500	1000	1000	1000
Flashover distance	mm ≤50	≤50	≤100	≤100
Utilization category (IEC60947-2)	A	A	A	A
Ambient temperature	-5 to +40 °C, max. 95% humidity			
Storage temperature	-40 to +75 °C			
Altitude	Max 2000 m			

### Tripping characteristic

- For power distribution

Test No.	Test current	$I_n$	Conventional time	Start status	Ambient temperature
1	Conventional non-action time	1.05	1 h ( $I_n \leq 63$ A) 2 h ( $I_n > 63$ A)	Cold status	+40 °C
2	Conventional action time	1.30	1 h ( $I_n \leq 63$ A) 2 h ( $I_n > 63$ A)	Right after test No.1	+40 °C

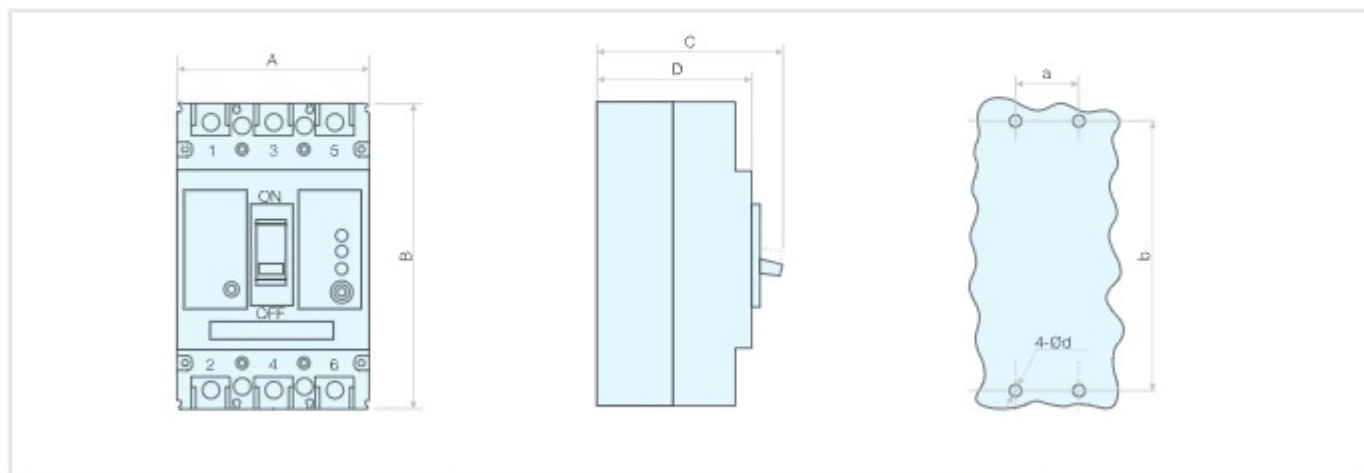
- For motor protection

Test No.	Setting current	Conventional time	Start status	Ambient temperature
1	1.05 $I_n$	$I_{nm} = 100$ A > 2 h no action $I_{nm} = 225$ A/400 A > 2 h no action $I_{nm} = 630$ A > 2 h no action	Cold status	+40 °C
2	1.2 $I_n$	$I_{nm} = 100$ A $\leq 2$ h action $I_{nm} = 225$ A/400 A $\leq 2$ h action $I_{nm} = 630$ A $\leq 2$ h action	Right after test No.1	+40 °C
3	1.5 $I_n$	$I_{nm} = 100$ A $\leq 4$ min action $I_{nm} = 225$ A $\leq 4$ min action $I_{nm} = 400/630$ A $\leq 8$ min action	Heat status	+40 °C
4	7.2 $I_n$	$I_{nm} = 100$ A $\geq 1$ s action $I_{nm} = 225$ A $4$ s < T $\leq 10$ s action $I_{nm} = 400/630$ A $6$ s < T $\leq 20$ s action	Cold status	+40 °C

### Action time of residual current protection

Residual current		1 $I_{\Delta n}$	2 $I_{\Delta n}$	5 $I_{\Delta n}$	10 $I_{\Delta n}$
Non time-delay type	Max. breaking time (s)	0.2	0.1	0.04	0.04
Time-delay type	Max. breaking time (s)	0.5/1.15/2.15	0.35/1/2	0.25/0.9/1.9	0.25/0.9/1.9
	Ultimate non-driven time $\Delta t$ (s)	-	0.1/0.5/1	-	-

### Outline and installation dimension



Type	Number of poles	Outline dimensions (mm)				Installation dimensions (mm)		
		A	B	C	D	a	b	d
Frame A	3	92	150	110	92	30	129	4.5
3SM8L-100	4	122	150	110	92	60	129	4.5
Frame B	3	107	165	110	90	35	126	4.5
3SM8L-225	4	142	165	110	90	70	126	4.5
Frame C	3	150	257	146.5	106.5	44	194	7
3SM8L-400	4	198	257	146.5	106.5	88	194	7
Frame D	3	210	280	155	115.5	70	243	7
3SM8L-630	4	280	280	155	115.5	70	243	7

# Moulded Case Circuit Breakers with Earth Leakage Protection

## Series 3SM8L



For power distribution

1

	Rated current In (A)	3-pole		4-pole		
		Type code	Order code	Type code	Order code	
3SM8L-100	<b>30 - 100 - 300 mA adjustable</b>					
	16A	M8LA 3P016/1	25214	M8LA 4BP016/1	10412	
	20A	M8LA 3P020/1	25215	M8LA 4BP020/1	10413	
	25A	M8LA 3P025/1	25216	M8LA 4BP025/1	10414	
	32A	M8LA 3P032/1	25217	M8LA 4BP032/1	10415	
	40A	M8LA 3P040/1	25218	M8LA 4BP040/1	10416	
	50A	M8LA 3P050/1	25219	M8LA 4BP050/1	10417	
	63A	M8LA 3P063/1	25220	M8LA 4BP063/1	10418	
	80A	M8LA 3P080/1	25221	M8LA 4BP080/1	10419	
	100A	M8LA 3P100/1	25222	M8LA 4BP100/1	10420	
	<b>100 - 300 - 500 mA adjustable</b>					
	16A	M8LA 3P016/3	25223	M8LA 4BP016/3	10421	
	20A	M8LA 3P020/3	25224	M8LA 4BP020/3	10422	
	25A	M8LA 3P025/3	25225	M8LA 4BP025/3	10423	
	32A	M8LA 3P032/3	25226	M8LA 4BP032/3	10424	
	40A	M8LA 3P040/3	25227	M8LA 4BP040/3	10425	
	50A	M8LA 3P050/3	25228	M8LA 4BP050/3	10426	
	63A	M8LA 3P063/3	25229	M8LA 4BP063/3	10427	
	80A	M8LA 3P080/3	25230	M8LA 4BP080/3	10428	
	100A	M8LA 3P100/3	25231	M8LA 4BP100/3	10429	
	3SM8L-225	<b>30 - 100 - 300 mA adjustable</b>				
		100A	M8LB 3P100/1	25232	M8LB 4BP100/1	10430
		125A	M8LB 3P125/1	25233	M8LB 4BP125/1	10431
		140A	M8LB 3P140/1	25234	M8LB 4BP140/1	10432
		160A	M8LB 3P160/1	25235	M8LB 4BP160/1	10433
		180A	M8LB 3P180/1	25236	M8LB 4BP180/1	10434
200A		M8LB 3P200/1	25237	M8LB 4BP200/1	10435	
225A		M8LB 3P225/1	25238	M8LB 4BP225/1	10436	
<b>100 - 300 - 500 mA adjustable</b>						
100A		M8LB 3P100/3	25239	M8LB 4BP100/3	10437	
125A		M8LB 3P125/3	25240	M8LB 4BP125/3	10438	
140A		M8LB 3P140/3	25241	M8LB 4BP140/3	10439	
160A		M8LB 3P160/3	25242	M8LB 4BP160/3	10440	
180A		M8LB 3P180/3	25243	M8LB 4BP180/3	10441	
200A		M8LB 3P200/3	25244	M8LB 4BP200/3	10442	
225A		M8LB 3P225/3	25245	M8LB 4BP225/3	10443	
3SM8L-400		<b>100 - 300 - 500 mA adjustable</b>				
		200A	M8LC 3P200/3	25246	M8LC 4BP200/3	10444
		225A	M8LC 3P225/3	25247	M8LC 4BP225/3	10445
		250A	M8LC 3P250/3	25248	M8LC 4BP250/3	10446
	315A	M8LC 3P315/3	25249	M8LC 4BP315/3	10447	
	350A	M8LC 3P350/3	25250	M8LC 4BP350/3	10448	
	400A	M8LC 3P400/3	25251	M8LC 4BP400/3	10449	
	<b>300 - 500 - 1000 mA adjustable</b>					
	200A	M8LC 3P200/5	25252	M8LC 4BP200/5	10450	
	225A	M8LC 3P225/5	25253	M8LC 4BP225/5	10451	
	250A	M8LC 3P250/5	25254	M8LC 4BP250/5	10452	
	315A	M8LC 3P315/5	25255	M8LC 4BP315/5	10453	
	350A	M8LC 3P350/5	25256	M8LC 4BP350/5	10454	
	400A	M8LC 3P400/5	25257	M8LC 4BP400/5	10455	
	3SM8L-630	<b>100 - 300 - 500 mA adjustable</b>				
		400A	M8LD 3P400/3	25258	M8LD 4BP400/3	10456
500A		M8LD 3P500/3	25259	M8LD 4BP500/3	10457	
630A		M8LD 3P630/3	25260	M8LD 4BP630/3	10458	
<b>300 - 500 - 1000 mA adjustable</b>						
400A		M8LD 3P400/5	25261	M8LD 4BP400/5	10459	
500A		M8LD 3P500/5	25262	M8LD 4BP500/5	10460	
630A	M8LD 3P630/5	25263	M8LD 4BP630/5	10461		

For motor protection

	Rated current In (A)	3-pole		4-pole		
		Type code	Order code	Type code	Order code	
3SM8L-100	<b>30 - 100 - 300 mA adjustable</b>					
	16A	M8LA 3M016/1	25264	M8LA 4BM016/1	10462	
	20A	M8LA 3M020/1	25265	M8LA 4BM020/1	10463	
	25A	M8LA 3M025/1	25266	M8LA 4BM025/1	10464	
	32A	M8LA 3M032/1	25267	M8LA 4BM032/1	10465	
	40A	M8LA 3M040/1	25268	M8LA 4BM040/1	31386	
	50A	M8LA 3M050/1	25269	M8LA 4BM050/1	31387	
	63A	M8LA 3M063/1	25270	M8LA 4BM063/1	31388	
	80A	M8LA 3M080/1	25271	M8LA 4BM080/1	31389	
	100A	M8LA 3M100/1	25272	M8LA 4BM100/1	31390	
	<b>100 - 300 - 500 mA adjustable</b>					
	16A	M8LA 3M016/3	25273	M8LA 4BM016/3	31391	
	20A	M8LA 3M020/3	25274	M8LA 4BM020/3	31392	
	25A	M8LA 3M025/3	25275	M8LA 4BM025/3	31393	
	32A	M8LA 3M032/3	25276	M8LA 4BM032/3	31394	
	40A	M8LA 3M040/3	25277	M8LA 4BM040/3	31395	
	50A	M8LA 3M050/3	25278	M8LA 4BM050/3	31396	
	63A	M8LA 3M063/3	25279	M8LA 4BM063/3	31397	
	80A	M8LA 3M080/3	25280	M8LA 4BM080/3	31398	
	100A	M8LA 3M100/3	25281	M8LA 4BM100/3	31399	
	3SM8L-225	<b>30 - 100 - 300 mA adjustable</b>				
		100A	M8LB 3M100/1	25282	M8LB 4BM100/1	31400
		125A	M8LB 3M125/1	25283	M8LB 4BM125/1	31401
		140A	M8LB 3M140/1	25284	M8LB 4BM140/1	31402
		160A	M8LB 3M160/1	25285	M8LB 4BM160/1	31403
		180A	M8LB 3M180/1	21538	M8LB 4BM180/1	31404
		200A	M8LB 3M200/1	21539	M8LB 4BM200/1	31405
		225A	M8LB 3M225/1	21540	M8LB 4BM225/1	31406
<b>100 - 300 - 500 mA adjustable</b>						
100A		M8LB 3M100/3	21541	M8LB 4BM100/3	31407	
125A		M8LB 3M125/3	21542	M8LB 4BM125/3	31408	
140A		M8LB 3M140/3	21543	M8LB 4BM140/3	31409	
160A		M8LB 3M160/3	21544	M8LB 4BM160/3	31410	
180A		M8LB 3M180/3	21545	M8LB 4BM180/3	31411	
200A		M8LB 3M200/3	21546	M8LB 4BM200/3	31412	
225A		M8LB 3M225/3	21547	M8LB 4BM225/3	31413	
3SM8L-400	<b>100 - 300 - 500 mA adjustable</b>					
	200A	M8LC 3M200/3	21548	M8LC 4BM200/3	31414	
	225A	M8LC 3M225/3	21549	M8LC 4BM225/3	31415	
	250A	M8LC 3M250/3	10396	M8LC 4BM250/3	31416	
	315A	M8LC 3M315/3	10397	M8LC 4BM315/3	31417	
	350A	M8LC 3M350/3	10398	M8LC 4BM350/3	31418	
	400A	M8LC 3M400/3	10399	M8LC 4BM400/3	31419	
	<b>300 - 500 - 1000 mA adjustable</b>					
	200A	M8LC 3M200/5	10400	M8LC 4BM200/5	31420	
	225A	M8LC 3M225/5	10401	M8LC 4BM225/5	31421	
	250A	M8LC 3M250/5	10402	M8LC 4BM250/5	31422	
	315A	M8LC 3M315/5	10403	M8LC 4BM315/5	10387	
	350A	M8LC 3M350/5	10404	M8LC 4BM350/5	10388	
	400A	M8LC 3M400/5	10405	M8LC 4BM400/5	10389	
	3SM8L-630	<b>100 - 300 - 500 mA adjustable</b>				
		400A	M8LD 3M400/3	10406	M8LD 4BM400/3	10390
500A		M8LD 3M500/3	10407	M8LD 4BM500/3	10391	
630A		M8LD 3M630/3	10408	M8LD 4BM630/3	10392	
<b>300 - 500 - 1000 mA adjustable</b>						
400A		M8LD 3M400/5	10409	M8LD 4BM400/5	10393	
500A		M8LD 3M500/5	10410	M8LD 4BM500/5	10394	
630A		M8LD 3M630/5	10411	M8LD 4BM630/5	10395	

## General introduction

### Continuous and reliable power distribution

- With the diversification of industrial process and IT applications, a secure and reliable electricity supply has become an important asset which is playing an important role in reducing production and maintenance costs. In emergency situations, it can become complex with mechanical devices looking after connecting, breaking, conducting and isolating power. In addition, when electricity use is restricted or the power supply is overloaded, the load may need to be transferred from one supply to another. With superior performance, SASSIN dual power automatic transfer switches meet all the above requirements to ensure continuity and security of power supply.

### Reliability assurance of the device

- Automatic transfer switching equipment controller can maximize the affordability of various types of electromagnetic interference in industrial environments, and can as well as ensure the operation reliability of automatic switch by the motor drive conversion mechanism via reliability test.

### Reliability assurance of electricity supply system

- When the major power supply encounters power failure, phase failure and undervoltage fault, the automatic switching equipment under the control of the controller will automatically switch to the backup power supply to ensure power system reliability.

### Security assurance of electricity supply system

- Specially designed automatic transfer switch controller can automatically identify the over-current faults, the implementation original welding and mechanical failure in power supply system and place the implementation original in a safe location to ensure the security of power supply system.

### Communication and signal system

- Power conversion under the conditions of non-fire special hazard should be considered in the design;
- Public power grid can be used as backup power;
- Need to use CB automatic switch device with over-current protection;
- C curve protection products in line with IEC 60896 are suggested to be used as the end conversion electrical appliances;
- Power conversion time should be less than 5 s. For critical load, please install uninterrupted power supply equipment like UPS.

### Air condition and temperature control device

- Power control under the conditions of non-fire special hazard should be considered in design;
- Public power grid can be used as backup power;
- Need to use CB automatic switch device with over-current protection;
- D curve protection products in line with IEC 60898 are suggested to be used as the end lighting electrical appliances;
- Power conversion time should be less than 5 s.

### Fire fighting system

- Fire design includes power supply protection for terminal conditions like fire pumps, exhaust fans and fire elevators in particular disaster conditions;
- Need to use special power source like generators as backup power;
- Need to use products with neutral line of 2-pole or 4-poles involved in the transformation. Need to use PC automatic switch device without over-current protection whose rated current should be 125 % greater than its load current;
- Need to use the switch products with the fire control function
- Power conversion delay time should be set to 0.

### Emergency lighting in general location

- Emergency lighting under the conditions of non-fire special hazard should be considered in the distribution design;
- Another branch of public power grid can be used as backup power supply if the backup power is from same power transformer, neutral line will not participate in conversion;
- Need to use CB automatic switch device with over-current protection;
- C curve protection products in line with IEC 60898 are suggested to be used as the end lighting electrical appliances; Power conversion time should be less than 5 s.

## Features

- Small size with simple structure
- Easy operation, long service life
- 2P, 3P, 4P are available
- Single electric drive, smooth and noise-free, small impact
- With mechanical interlock and electrical interlock, reliable switching, both manual and automatic switching are available
- Switch is wired with connection terminal in the internal for users, reflecting the circuit breaker status (open or closed)
- There are a variety of indicators listed on panel

## Structure and performance

### Structure

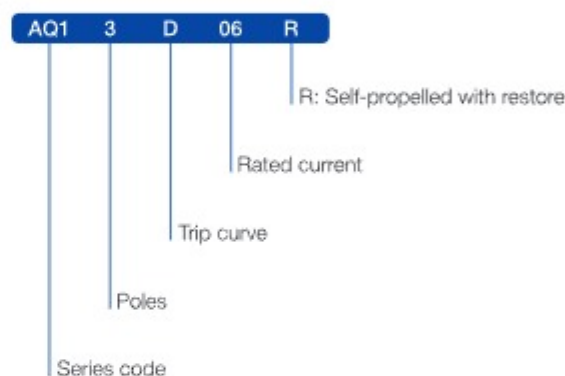
The automatic transfer switch consists of MCB, a single electric motor operating mechanism, mechanical interlocking, auxiliary systems, control circuit and other components and are closed with plastic shell. All components are installed on the same floor. There is a status indicator on the panel that accurately indicates the state of the MCB and the whole set of instructions.

### Performance

- Automatic controllers (only R-type: automatic transfer with automatic restore) detect the voltage of two-way power (commonly used power and backup power) at the same time. Common power will work under the normal state. When the common power supply failure occurs, namely loss of pressure or A phase-off, the controller will automatically make the command switch switch to the backup power supply;
- When common power is restored to normal, the controller will automatically make the command switch switch to the backup power supply, and no delay;
- Simultaneous two-way power anomalies are not allowed;
- When tripping occurs due to a small circuit breaker failure, the device will remain in the trip state and let out a warning signal. Wait for maintenance, and the handle should be reset and re-closed manually after troubleshooting;
- In automatic mode, when there inputs DC 24 V fire signal, the controller will command all the disconnect switch, and then if undo the fire signal, restore the original state.



### Instruction of type code



- There is only R type for 3SAQ1 series ATS at present.
- Automatic transfer with automatic restore:  
If deviation of common power is monitored, ATS will automatically switch the load from the common power to backup power; if the power returns to normal, it will automatically return to common power supply.

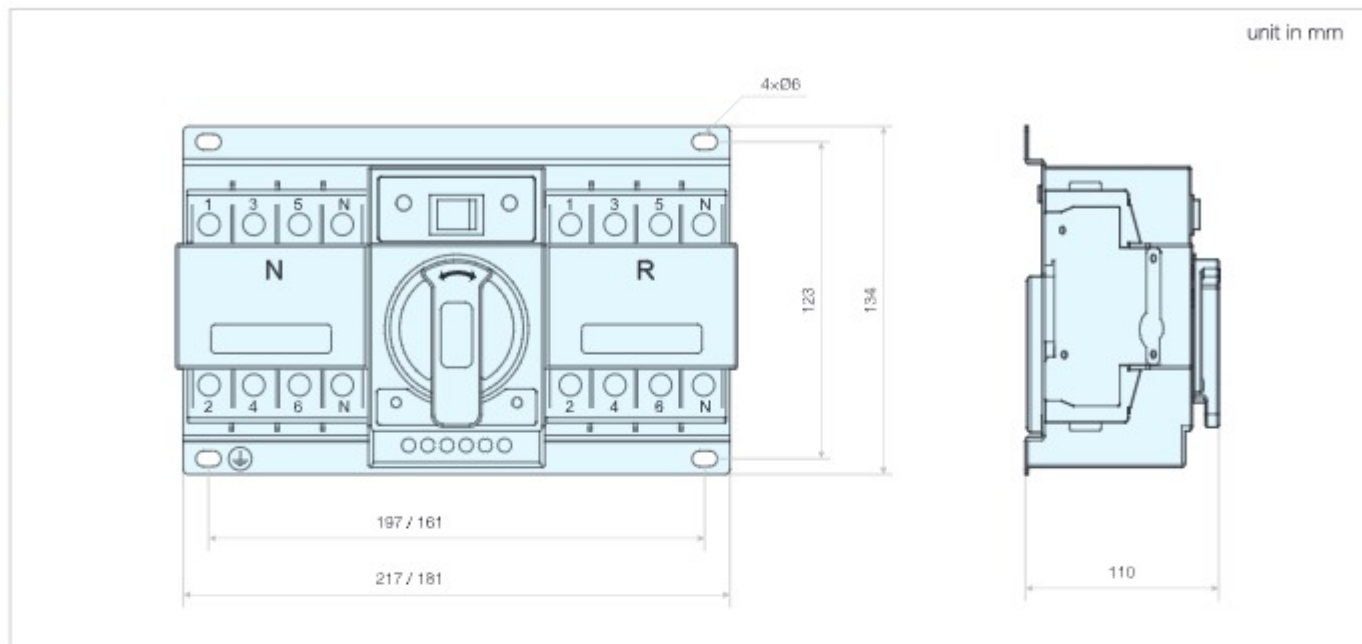
### Technical Specifications

Type	3SAQ1-63
Standard	IEC 60947-6-1
Number of poles (P)	2, 3, 4
Rated operating current (A)	6, 10, 16, 20, 25, 32, 40, 50, 63
Rated operating voltage (V AC)	230/400
Rated control voltage (V AC)	230
Rated insulation voltage (V AC)	500
Rated ultimate short circuit breaking capacity at 400V AC (kA)	6
Rated short circuit making capacity (kA)	9.18
Use category	AC-33B
Mechanical life (times)	10,000
Electrical life (times)	4,000
Ambient temperature	-5 ~ 40 °C, max. 95% humidity
Storage temperature	-40 ~ +75 °C
Altitude (Max.)	2,000

# Automatic Transfer Switches Series 3SAQ1 CB Class

## Outline and installation dimensions

1



## Selection and ordering data

Rated breaking capacity (kA)	Poles (P)	Rated current (A)	Curve C		Curve D		
			Type code	Order code	Type code	Order code	
6	2	6	AQ1 2C06NR	19810	AQ1 2D06NR	19836	
		10	AQ1 2C10NR	19811	AQ1 2D10NR	19837	
		16	AQ1 2C16NR	19812	AQ1 2D16NR	19838	
		20	AQ1 2C20NR	19813	AQ1 2D20NR	19839	
		25	AQ1 2C25NR	19814	AQ1 2D25NR	19840	
		32	AQ1 2C32NR	19815	AQ1 2D32NR	19841	
		40	AQ1 2C40NR	19816	AQ1 2D40NR	19842	
		50	AQ1 2C50NR	19817	AQ1 2D50NR	19843	
		63	AQ1 2C63NR	38637	AQ1 2D63NR	19844	
		3	6	AQ1 3C06NR	19818	AQ1 3D06NR	19827
			10	AQ1 3C10NR	19819	AQ1 3D10NR	19828
			16	AQ1 3C16NR	19820	AQ1 3D16NR	19829
	20		AQ1 3C20NR	19821	AQ1 3D20NR	19830	
	25		AQ1 3C25NR	19822	AQ1 3D25NR	19831	
	32		AQ1 3C32NR	19823	AQ1 3D32NR	19832	
	40		AQ1 3C40NR	19824	AQ1 3D40NR	19833	
	50		AQ1 3C50NR	19825	AQ1 3D50NR	19834	
	63		AQ1 3C63NR	19826	AQ1 3D63NR	19835	
	4		6	AQ1 4C06NR	19845	AQ1 4D06NR	19854
			10	AQ1 4C10NR	19846	AQ1 4D10NR	19855
			16	AQ1 4C16NR	19847	AQ1 4D16NR	19856
		20	AQ1 4C20NR	19848	AQ1 4D20NR	19857	
		25	AQ1 4C25NR	19849	AQ1 4D25NR	19858	
		32	AQ1 4C32NR	19850	AQ1 4D32NR	19859	
40		AQ1 4C40NR	19851	AQ1 4D40NR	19860		
50		AQ1 4C50NR	19852	AQ1 4D50NR	19861		
63		AQ1 4C63NR	19853	AQ1 4D63NR	19862		



## Utilization categories

- AC-33IB: for system loads including cage motor and resistive loads.
- AC-33B: for motor load or mixture load including motors, resistive load and 30% incandescent load.
- Standard: IEC 60947-6-1

## Application

3SAQ2 series automatic transfer switches are made up of two pieces of 3-pole or 4-pole MCCB and accessories (including auxiliary and alarm contacts), mechanical interlocking and electronic trip unit etc. As the terminal automatic switching devices, they are applied for the grid with double power supply of AC 50 Hz or 60 Hz, the rated current up to 800 A of three phase four line (available for one phase one line also). When one power supply fails due to faults of over-voltage, under-voltage or phase loss, one or more circuits will be automatically switched from one power supply to another one, to ensure normal power supply for the circuit.

3SAQ2 series automatic transfer switches are widely used in hospitals, shopping malls, banks, chemical industry, metallurgy, high-rise buildings, military facilities and any other important places that do not allow power off. They are important electric devices to ensure continuous power supply.

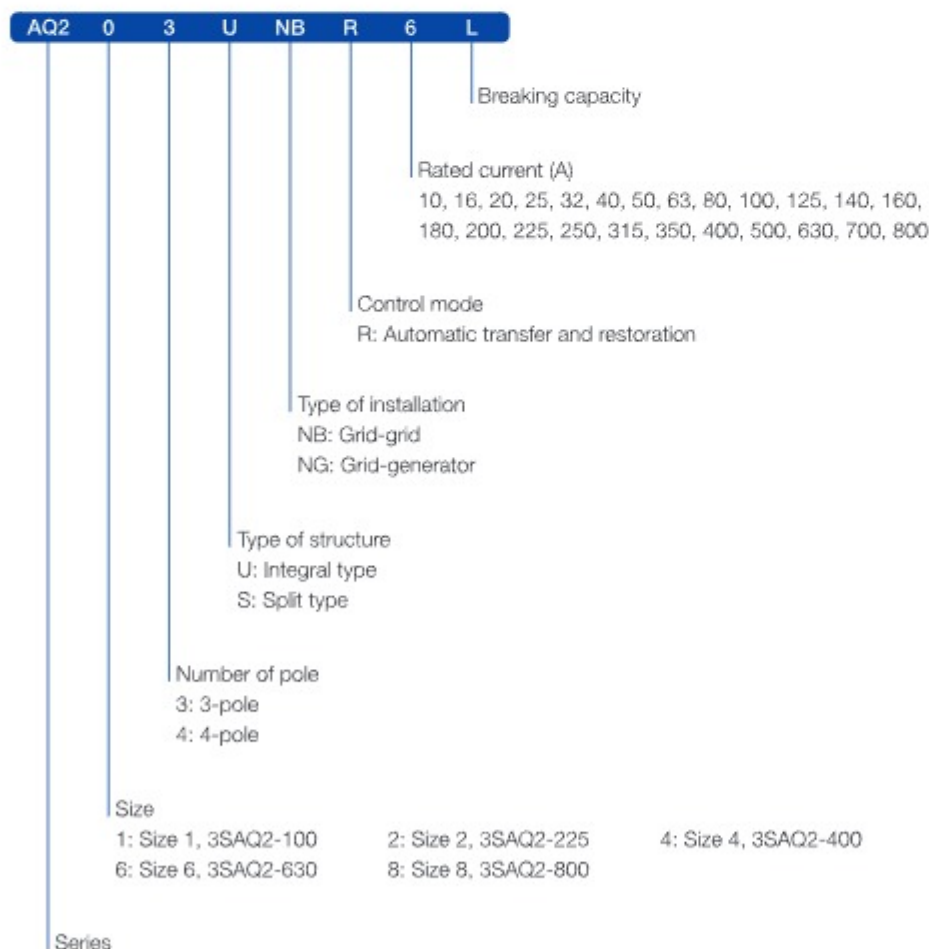
There are two structures available:

Integral type: the controller and the actuator are mounted on the same base. Split type: the controller is mounted on the cabinet panel, the executive mechanism is mounted on the base and installed inside of the cabinet by user. The controller and the executive mechanism are connected by a cable with length about 2 meters.



1

## Instruction of type code





# Automatic Transfer Switches

## Series 3SAQ2 CB Class



### Technical parameter

Size	1	2	4	6	8															
Type	3SAQ2-100	3SAQ2-225	3SAQ2-400	3SAQ2-630	3SAQ2-800															
Standard	IEC 60947-6-1	IEC 60947-6-1	IEC 60947-6-1	IEC 60947-6-1	IEC 60947-6-1															
Execution circuit-breaker	3SM8-100	3SM8-225	3SM8-400	3SM8-630	3SM8-800															
Rated current $I_n$	A	16, 25, 32, 40, 50, 63, 80, 100	100, 125, 160, 180, 200, 225	225, 250, 315, 350, 400	400, 500, 360	630, 700, 800														
Rated operating voltage $U_n$	V AC	400	400	400	400	400														
Rated operating frequency	Hz	50/60	50/60	50/60	50/60	50/60														
Rated insulation voltage	V AC	800	800	800	800	800														
Rated impulse withstand voltage $U_{imp}$	kV	8	8	8	8	8														
Poles	P	3	4	3	4	3	4	3	4	3	4									
Breaking capacity	L	M	H	M	L	M	H	M	L	M	H	M	L	M	H	M	M	H	M	
Rated short-circuit breaking capacity $I_{cs}$	kA	35	50	85	50	35	50	85	50	50	65	100	65	50	65	100	65	75	100	75
Rated short-circuit making capacity $I_{cm}$	kA	73.5	105	187	105	73.5	105	187	105	105	143	220	143	105	143	220	143	165	220	165
Mechanical life	cycle	6000			6000				4000				3000				3000			
Use category		AC-33B																		
Product type		CB class																		
Protection level		IP30 (except terminals of main circuit)																		
Protection																				
Overload protection		√			√				√				√				√			
Short-circuit protection		√			√				√				√				√			

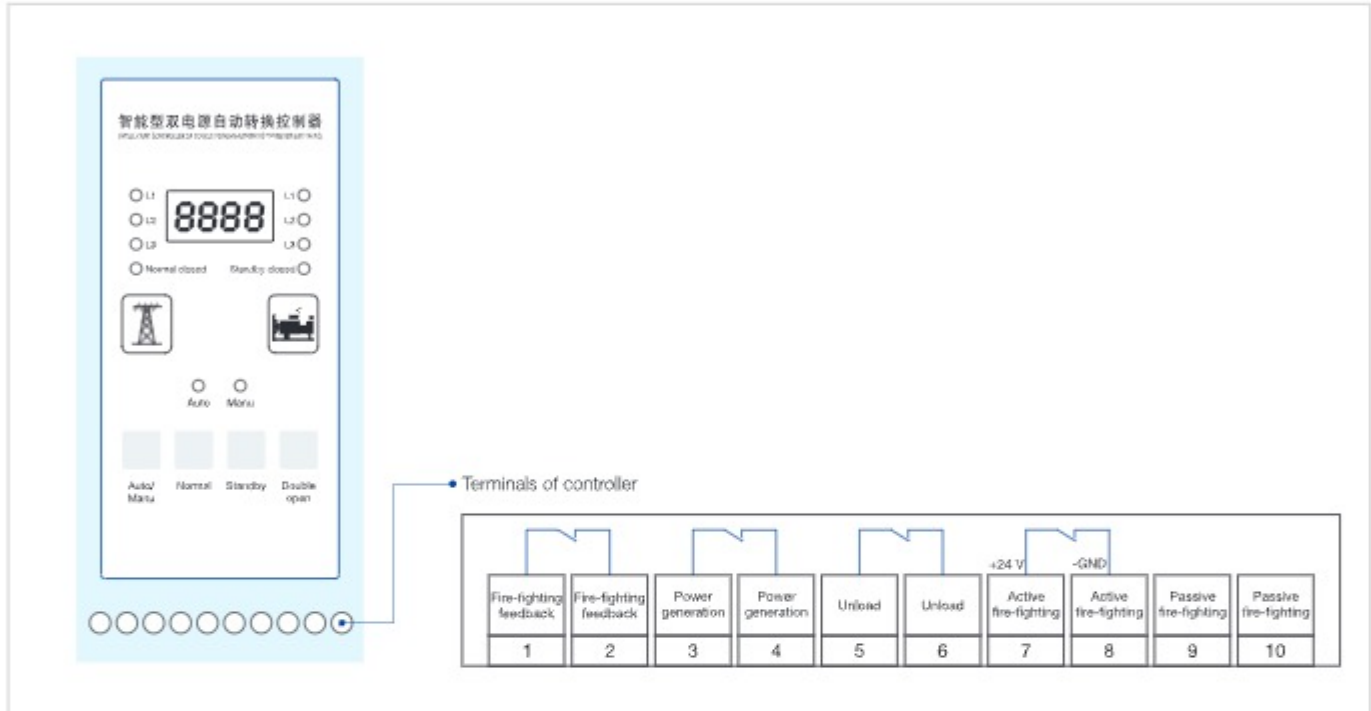
### Controller

#### Function

Manual and automatic transfer mode	√
Working position of main contact (execute circuit breaker)	
Normal power supply closed	√
Standby power supply closed	√
Double open	√
Automatic control	
Monitoring of normal power supply (three phase detection)	√
Monitoring of standby power supply (three phase detection)	√
Automatic transfer and restoration	√
Automatic transfer without restoration	√
Grid-grid	√
Grid-generator	√
Short phase or voltage loss transfer	√
Under voltage transfer	√
Over voltage transfer	√
Adjustable time-delay	√
Time-delayed transfer	0,5-30 s continuous adjustment
Return delay	0,5-30 s continuous adjustment
Generator control	√
Fire linkage	√
Indication	
Indication of closed, open and double open	√
Indication of normal power supply	√
Indication of standby power supply	√
Indication of fault trip	√
External signal terminal of indication	√
Indication of parameter setting	√
Interlock protection	
Electrical interlock	√

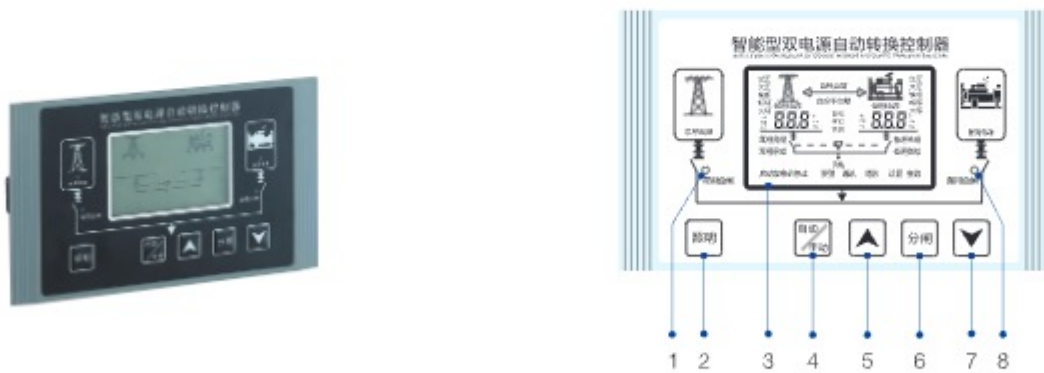
### Controller (integral type)

- Controller is installed together with the switch body, and is controlled by intelligent single-chip program; easy to operate and powerful
- Determine whether to perform power conversion based on whether the working power supply voltage is within the set range and the working mode of the automatic transfer switch.
- Control the start and stop of the standby generator set.
- Convenient push-button manual forced conversion action.
- Fire linkage function.



### Controller (split type)

Synchronize main controller display each parameter, controller switch changeover amend switch parameter data function.

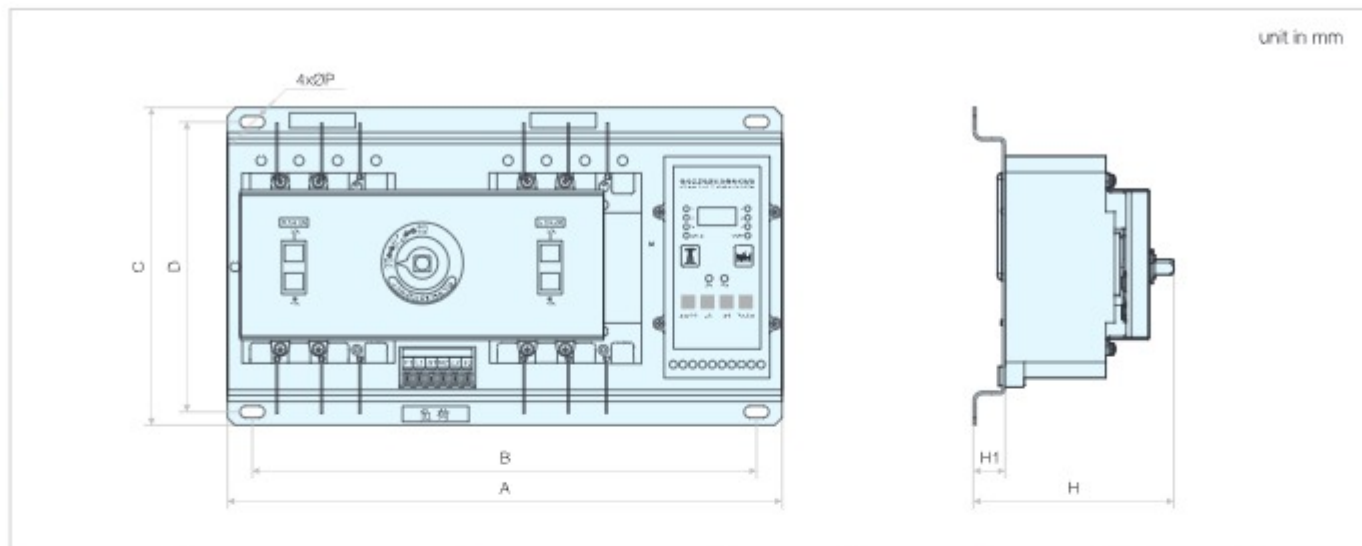


- 1 Main ON indication
- 2 LED button
- 3 LCD display area
- 4 Auto/Manual button
- 5 Main power ON button
- 6 OFF button
- 7 Emergency ON button
- 8 Emergency ON indication

# Automatic Transfer Switches Series 3SAQ2 CB Class

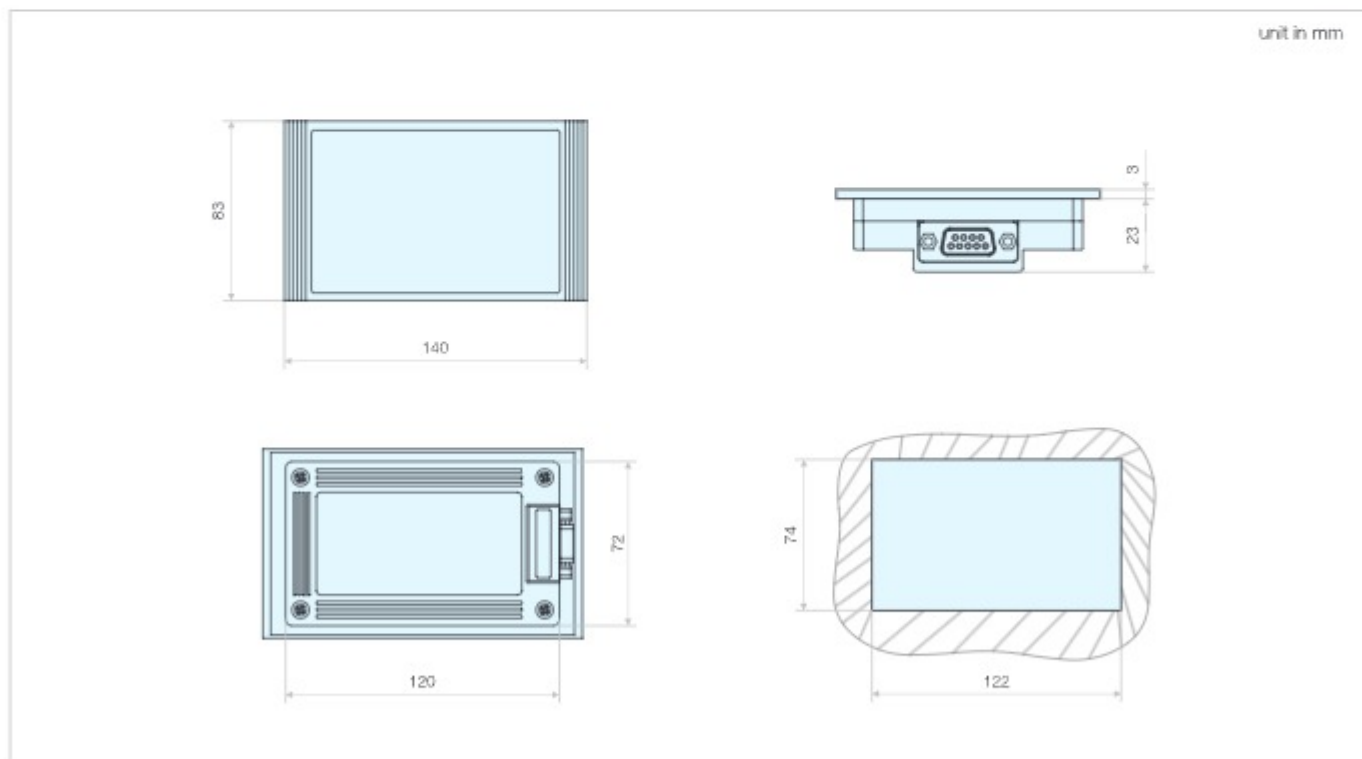
## Outline and installation dimension diagram

1



	A		B		C	D	H	H1	P
	3-pole	4-pole	3-pole	4-pole					
3SAQ2-100	405	435	365	395	250	230	< 170	25	Ø9
3SAQ2-225	150	480	410	440	250	230	< 190	25	Ø9
3SAQ2-400	570	620	510	580	330	300	< 200	25	Ø11
3SAQ2-630	680	740	520	680	330	300	< 250	25	Ø11
3SAQ2-800	750	820	590	760	330	300	< 250	25	Ø11

## Dimensions of controller



## Selection and ordering data

### 3SAQ2-100

#### Automatic transfer and restoration between normal and standby power supply (NBR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
<b>3-pole</b>						
10A	3SM8-100L	35 kA	AQ21 3UNBR10L	13353	AQ21 3SNBR10L	13357
16A			AQ21 3UNBR16L	13361	AQ21 3SNBR16L	13365
20A			AQ21 3UNBR20L	13369	AQ21 3SNBR20L	13373
25A			AQ21 3UNBR25L	13377	AQ21 3SNBR25L	13381
32A			AQ21 3UNBR32L	13385	AQ21 3SNBR32L	13389
40A			AQ21 3UNBR40L	13393	AQ21 3SNBR40L	13397
50A			AQ21 3UNBR50L	13401	AQ21 3SNBR50L	13405
63A			AQ21 3UNBR63L	13409	AQ21 3SNBR63L	13413
80A			AQ21 3UNBR80L	13417	AQ21 3SNBR80L	13421
100A			AQ21 3UNBR100L	13425	AQ21 3SNBR100L	13429
<b>4-pole</b>						
10A	3SM8-100	50 kA	AQ21 4UNBR10	13354	AQ21 4SNBR10	13358
16A			AQ21 4UNBR16	13362	AQ21 4SNBR16	13366
20A			AQ21 4UNBR20	13370	AQ21 4SNBR20	13374
25A			AQ21 4UNBR25	13378	AQ21 4SNBR25	13382
32A			AQ21 4UNBR32	13386	AQ21 4SNBR32	13390
40A			AQ21 4UNBR40	13394	AQ21 4SNBR40	13398
50A			AQ21 4UNBR50	13402	AQ21 4SNBR50	13406
63A			AQ21 4UNBR63	13410	AQ21 4SNBR63	13414
80A			AQ21 4UNBR80	13418	AQ21 4SNBR80	13422
100A			AQ21 4UNBR100	13426	AQ21 4SNBR100	13430



#### Automatic transfer and restoration between normal and generating power supply (NGR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
<b>3-pole</b>						
10A	3SM8-100L	35 kA	AQ21 3UNGR10L	13355	AQ21 3SNGR10L	13359
16A			AQ21 3UNGR16L	13363	AQ21 3SNGR16L	13367
20A			AQ21 3UNGR20L	13371	AQ21 3SNGR20L	13375
25A			AQ21 3UNGR25L	13379	AQ21 3SNGR25L	13383
32A			AQ21 3UNGR32L	13387	AQ21 3SNGR32L	13391
40A			AQ21 3UNGR40L	13395	AQ21 3SNGR40L	13399
50A			AQ21 3UNGR50L	13403	AQ21 3SNGR50L	13407
63A			AQ21 3UNGR63L	13411	AQ21 3SNGR63L	13415
80A			AQ21 3UNGR80L	13419	AQ21 3SNGR80L	13423
100A			AQ21 3UNGR100L	13427	AQ21 3SNGR100L	13431
<b>4-pole</b>						
10A	3SM8-100	50 kA	AQ21 4UNGR10	13356	AQ21 4SNGR10	13360
16A			AQ21 4UNGR16	13364	AQ21 4SNGR16	13368
20A			AQ21 4UNGR20	13372	AQ21 4SNGR20	13376
25A			AQ21 4UNGR25	13380	AQ21 4SNGR25	13384
32A			AQ21 4UNGR32	13388	AQ21 4SNGR32	13392
40A			AQ21 4UNGR40	13396	AQ21 4SNGR40	13400
50A			AQ21 4UNGR50	13404	AQ21 4SNGR50	13408
63A			AQ21 4UNGR63	13412	AQ21 4SNGR63	13416
80A			AQ21 4UNGR80	13420	AQ21 4SNGR80	13424
100A			AQ21 4UNGR100	13428	AQ21 4SNGR100	13432

# Automatic Transfer Switches

## Series 3SAQ2 CB Class



### Selection and ordering data

#### 3SAQ2-225

#### Automatic transfer and restoration between normal and standby power supply (NBR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
<b>3-pole</b>						
100A	3SM8-225L	35 kA	AQ22 3UNBR100L	13433	AQ22 3SNBR100L	13437
125A			AQ22 3UNBR125L	13441	AQ22 3SNBR125L	13445
140A			AQ22 3UNBR140L	13449	AQ22 3SNBR140L	13453
160A			AQ22 3UNBR160L	13457	AQ22 3SNBR160L	13461
180A			AQ22 3UNBR180L	13465	AQ22 3SNBR180L	13469
200A			AQ22 3UNBR200L	13473	AQ22 3SNBR200L	13477
225A			AQ22 3UNBR225L	13481	AQ22 3SNBR225L	13485
<b>4-pole</b>						
100A	3SM8-225	50 kA	AQ22 4UNBR100	13434	AQ22 4SNBR100	13438
125A			AQ22 4UNBR125	13442	AQ22 4SNBR125	13446
140A			AQ22 4UNBR140	13450	AQ22 4SNBR140	13454
160A			AQ22 4UNBR160	13458	AQ22 4SNBR160	13462
180A			AQ22 4UNBR180	13466	AQ22 4SNBR180	13470
200A			AQ22 4UNBR200	13474	AQ22 4SNBR200	13478
225A			AQ22 4UNBR225	13482	AQ22 4SNBR225	13486

#### Automatic transfer and restoration between normal and generating power supply (NGR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
<b>3-pole</b>						
100A	3SM8-225L	35 kA	AQ22 3UNGR100L	13435	AQ22 3SNGR100L	13439
125A			AQ22 3UNGR125L	13443	AQ22 3SNGR125L	13447
140A			AQ22 3UNGR140L	13451	AQ22 3SNGR140L	13455
160A			AQ22 3UNGR160L	13459	AQ22 3SNGR160L	13463
180A			AQ22 3UNGR180L	13467	AQ22 3SNGR180L	13471
200A			AQ22 3UNGR200L	13475	AQ22 3SNGR200L	13479
225A			AQ22 3UNGR225L	13483	AQ22 3SNGR225L	13487
<b>4-pole</b>						
100A	3SM8-225	50 kA	AQ22 4UNGR100	13436	AQ22 4SNGR100	13440
125A			AQ22 4UNGR125	13444	AQ22 4SNGR125	13448
140A			AQ22 4UNGR140	13452	AQ22 4SNGR140	13456
160A			AQ22 4UNGR160	13460	AQ22 4SNGR160	13464
180A			AQ22 4UNGR180	13468	AQ22 4SNGR180	13472
200A			AQ22 4UNGR200	13476	AQ22 4SNGR200	13480
225A			AQ22 4UNGR225	13484	AQ22 4SNGR225	13488

## Selection and ordering data

### 3SAQ2-400

#### Automatic transfer and restoration between normal and standby power supply (NBR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
3-pole						
225A	3SM8-400L	50 kA	AQ24 3UNBR225L	13489	AQ24 3SNBR225L	13493
250A			AQ24 3UNBR250L	13497	AQ24 3SNBR250L	13501
315A			AQ24 3UNBR315L	13505	AQ24 3SNBR315L	13509
350A			AQ24 3UNBR350L	13513	AQ24 3SNBR350L	13517
400A			AQ24 3UNBR400L	13521	AQ24 3SNBR400L	13525
4-pole						
225A	3SM8-400	65 kA	AQ24 4UNBR225	13490	AQ24 4SNBR225	13494
250A			AQ24 4UNBR250	13498	AQ24 4SNBR250	13502
315A			AQ24 4UNBR315	13506	AQ24 4SNBR315	13510
350A			AQ24 4UNBR350	13514	AQ24 4SNBR350	13518
400A			AQ24 4UNBR400	13522	AQ24 4SNBR400	13526

#### Automatic transfer and restoration between normal and generating power supply (NGR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
3-pole						
225A	3SM8-400L	50 kA	AQ24 3UNGR225L	13491	AQ24 3SNGR225L	13495
250A			AQ24 3UNGR250L	13499	AQ24 3SNGR250L	13503
315A			AQ24 3UNGR315L	13507	AQ24 3SNGR315L	13511
350A			AQ24 3UNGR350L	13515	AQ24 3SNGR350L	13519
400A			AQ24 3UNGR400L	13523	AQ24 3SNGR400L	13527
4-pole						
225A	3SM8-400	65 kA	AQ24 4UNGR225	13492	AQ24 4SNGR225	13496
250A			AQ24 4UNGR250	13500	AQ24 4SNGR250	13504
315A			AQ24 4UNGR315	13508	AQ24 4SNGR315	13512
350A			AQ24 4UNGR350	13516	AQ24 4SNGR350	13520
400A			AQ24 4UNGR400	13524	AQ24 4SNGR400	13528

# Automatic Transfer Switches

## Series 3SAQ2 CB Class



### Selection and ordering data

#### 3SAQ2-630

#### Automatic transfer and restoration between normal and standby power supply (NBR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
3-pole						
400A	3SM8-630L	50 kA	AQ26 3UNBR400L	13529	AQ26 3SNBR400L	13533
500A			AQ26 3UNBR500L	13537	AQ26 3SNBR500L	13541
630A			AQ26 3UNBR630L	13545	AQ26 3SNBR630L	13549
4-pole						
400A	3SM8-630	65 kA	AQ26 4UNBR400	13530	AQ26 4SNBR400	13534
500A			AQ26 4UNBR500	13538	AQ26 4SNBR500	13542
630A			AQ26 4UNBR630	13546	AQ26 4SNBR630	13550

#### Automatic transfer and restoration between normal and generating power supply (NGR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
3-pole						
400A	3SM8-630L	50 kA	AQ26 3UNGR400L	13531	AQ26 3SNGR400L	13535
500A			AQ26 3UNGR500L	13539	AQ26 3SNGR500L	13543
630A			AQ26 3UNGR630L	13547	AQ26 3SNGR630L	13551
4-pole						
400A	3SM8-630	65 kA	AQ26 4UNGR400	13532	AQ26 4SNGR400	13536
500A			AQ26 4UNGR500	13540	AQ26 4SNGR500	13544
630A			AQ26 4UNGR630	13548	AQ26 4SNGR630	13552

## Selection and ordering data

### 3SAQ2-800

#### Automatic transfer and restoration between normal and standby power supply (NBR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
3-pole						
630A	3SM8-800M	75 kA	AQ28 3UNBR630M	13553	AQ28 3SNBR630M	13557
700A			AQ28 3UNBR700M	13561	AQ28 3SNBR700M	13565
800A			AQ28 3UNBR800M	13569	AQ28 3SNBR800M	13573
4-pole						
630A	3SM8-800	75 kA	AQ28 4UNBR630	13554	AQ28 4SNBR630	13558
700A			AQ28 4UNBR700	13562	AQ28 4SNBR700	13566
800A			AQ28 4UNBR800	13570	AQ28 4SNBR800	13574

#### Automatic transfer and restoration between normal and generating power supply (NGR)

Rated current (A)	Circuit-breaker of main circuit	Breaking capacity I <sub>cn</sub> at 400 V AC	Unitary type		Split type	
			Type code	Order code	Type code	Order code
3-pole						
630A	3SM8-800M	75 kA	AQ28 3UNGR630M	13555	AQ28 3SNGR630M	13559
700A			AQ28 3UNGR700M	13563	AQ28 3SNGR700M	13567
800A			AQ28 3UNGR800M	13571	AQ28 3SNGR800M	13575
4-pole						
630A	3SM8-800	75 kA	AQ28 4UNGR630	13556	AQ28 4SNGR630	13560
700A			AQ28 4UNGR700	13564	AQ28 4SNGR700	13568
800A			AQ28 4UNGR800	13572	AQ28 4SNGR800	13576



# Automatic Transfer Switches

## Series 3SAQ3 PC Class

### Features

- Small volume, convenient installation
- With the controller, the setting can transfer between the manual and automatic transfer with restoration or automatic transfer without restoration
- Under-voltage, over-voltage, phase-loss protection
- Reliable and safe interlock, operation parameter could be adjusted
- Rated voltage of 400 V, rated current is from 20 A to 5000 A
- Low malfunction, easy maintenance



### Versions

There are two available versions:

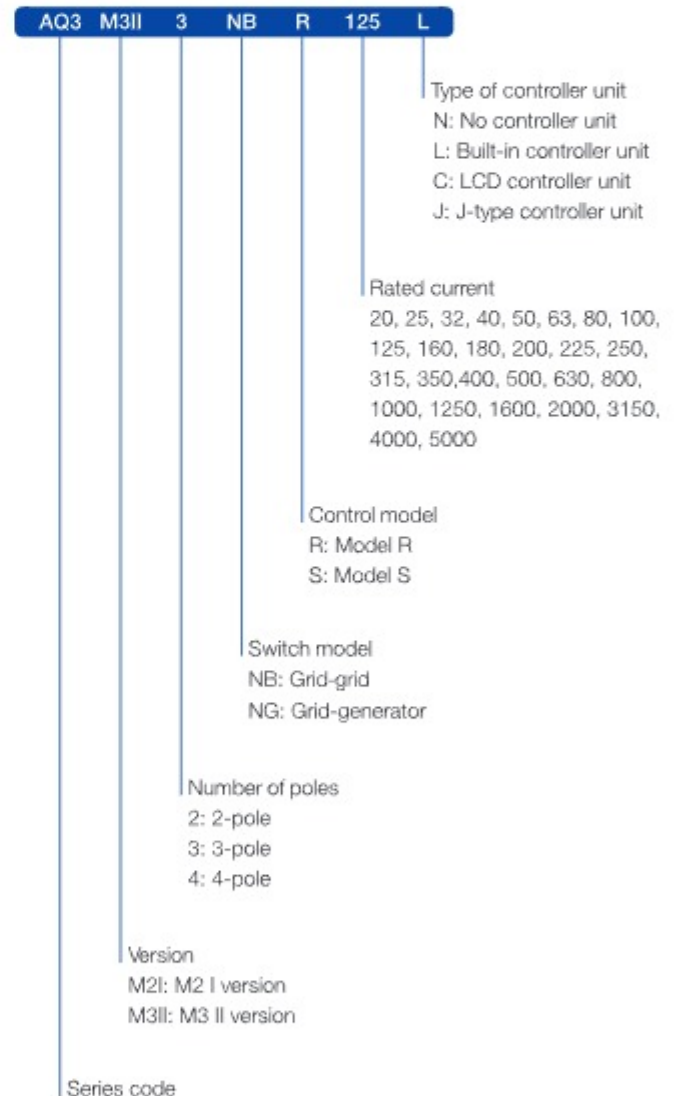
- M2 I: 2-stage, Power supply A  $\leftarrow \rightarrow$  Power supply B; M2 I automatic transfer switch is instantaneously switch type (without internal or external controller unit). If the switches are under maintenance or damaged condition where continuous power supply is required, it is possible to operate the handle by manual and identify the failure point by observing the switching actions.
- M3 II: 3-stage, Power supply A  $\leftarrow \rightarrow$  Middle position  $\leftarrow \rightarrow$  Power supply B; M3 II automatic transfer switch has following functions:
  - Interchange of automatic between manual operation;
  - Voltage detection for three-phase four-line of power supply A and B;
  - Over-voltage, under-voltage and phase-loss protection;
  - Automatic switching between power supply A and B;
  - Automatic fault handling;
  - Remote start/stop generator;
  - Over-current protection after connect; to an over-current relay via additional expansion interface

For both versions, if the automatic transfer switches are under maintenance or damaged condition while the continuous power supply is required, it is possible to operate the handle slowly by manual to identify the failure point by carefully observing the switching actions.

Version	M2 I	M3 II
Rated operation current	20 ... 500 A	20 ... 5000 A
Rated limit short-circuit current (depending on the current)	12.5 ... 30 kA	12.5 ... 25 kA
Short-time withstand (current depending on the current)	5 ... 12 kA	5 ... 50 kA
Transfer time (exclude the delay time)	20 - 90 ms	20 - 230 ms
Available controller unit		
Configured inside	-	■
External LCD controller unit	-	■
External J-type controller unit	■	■
Start the generator automatically	-	■
Control model		
Model R:	■	■
Automatic transfer with restoration		
Model S:	■	-
Automatic transfer without restoration		
Connection type		
Front connection	■	■ ( $\leq$ 500 A)
Rear connection	-	■ ( $>$ 500 A)

- Available
- Not available

### Instruction of type code



## Technical specifications

Version M2 I



3SAQ3-125 M2 I



External LCD controller unit



External J-type controller unit

Version	M2 I										
Standard	IEC 60947-6-1										
Rated frame current (A)	125			250			500				
Rated operating current (A)	20, 25, 32, 40, 50, 63, 80, 100, 125			160, 180, 200, 225, 250			315, 350, 400, 500				
Number of poles (P)	2	3	4	2	3	4	3	4			
Operating current at AC 230 V (A)	1.5	1.5	1.5	1.5	2	2.5	2.5	3.5			
Rated operating voltage (V AC)	400			400			400				
Rated control voltage (V AC)	230			230			230				
Rated frequency (Hz)	50/60			50/60			50/60				
Rated limit short-circuit current (kA)	35			25			30				
Short-time withstand current (kA)	22			10			12				
Transfer time at side of power supply A	Connect (ms)	55			55			60			
	Disconnect (ms)	20			20			25			
Transfer time at side of power supply B	Connect (ms)	80			80			90			
	Disconnect (ms)	20			20			25			
Available controller unit	Built-in	-			-			-			
	LCD	-			-			-			
	J-type	■			■			■			
Control mode	Model R	■			■			■			
	Model S	■			■			■			
Making and breaking capacity	10 I <sub>e</sub> making, 8 I <sub>e</sub> breaking, cosφ=0.35										
Application category				AC-33B							
Mechanical life (Cycles)	10000			10000			3000				
Electrical life (Cycles)	2500			2500			1000				
Allowable operation cycles per hour (Cycles)	120			120			120				
Connection	Front connection			Front connection			Front connection				
Capacity of auxiliary switch at AC 230 V (A)	250			250			250				
Weight (kg)	5	5.5	5.5	6	8	10	14	18			
Ambient temperature (°C)	-5 to + 40, max. 95% humidity										
Storage temperature (°C)	-40 to + 75										
Altitude (Max.) (m)	2000										

■ Available

- Not available

# Automatic Transfer Switches Series 3SAQ3 PC Class

## Technical specifications

Version M3 II

1



3SAQ3-125 M3 II



External LCD controller unit



External J-type controller unit

Version	M3 II								
Standard	IEC 60947-6-1								
Rated frame current (A)	125			250			500		
Rated operating current (A)	20, 25, 32, 40, 50, 63, 80, 100, 125			160, 180, 200, 225, 250			315, 350, 400, 500		
Number of poles (P)	2	3	4	2	3	4	3	4	
Operating current at AC 230 V (A)	1.5	1.5	1.5	1.5	2	2.5	2.5	3.5	
Trip current at AC 230 V	0.5			0.5			0.7		
Rated operating voltage (V AC)	400			400			400		
Rated control voltage (V AC)	230			230			230		
Rated frequency (Hz)	50/60			50/60			50/60		
Rated limit short-circuit current (kA)	35			25			30		
Short-time withstand current (kA)	22			10			12		
Transfer time at side of power supply A	Connect (ms)	55		55			60		
	Disconnect (ms)	20		20			25		
Transfer time at side of power supply B	Connect (ms)	80		80			90		
	Disconnect (ms)	20		20			25		
Available controller unit	Built-in	■		■			■		
	LCD	■		■			■		
	J-type	■		■			■		
Control mode	Model R	■		■			■		
	Model S	■		■			■		
Making and breaking capacity	10 I <sub>e</sub> making, 8 I <sub>e</sub> breaking, cosφ = 0.35								
Application category	AC-33B								
Mechanical life (Cycles)	10000			10000			3000		
Electrical life (Cycles)	2500			2500			1000		
Allowable operation cycles per hour (Cycles)	60			60			60		
Connection	Front connection			Front connection			Front connection		
Capacity of auxiliary switch at AC 230 V (A)	250			250			250		
Weight (kg)	5	5.5	5.5	6	8	10	14	18	
Ambient temperature (°C)	-5 to + 40, max.95% humidity								
Storage temperature (°C)	-40 to + 75								
Altitude (Max.) (m)	2000								

■ Available  
- Not available

## Technical specifications

Version M3 II



3SAQ3-125 M3 II



External LCD controller unit



External J-type controller unit

Version	M3 II																
Standard	IEC 60947-6-1																
Rated frame current (A)	800		1000		1250		1600		2000		3150		4000		5000		
Rated operating current (A)	630, 800		1000		1250		1600		2000		3150		4000		5000		
Number of poles (P)	3	4	3	4	3	4	3	3	3	4	3	4	3	4	3	3	
Operating current at AC 230 V (A)	3	3	3	3	3	4	4	4	5	6	7	8	8	8	8	9	
Trip current at AC 230 V	1		1		1		1		1		1		1		1		
Rated operating voltage (V AC)	400		400		400		400		400		400		400		400		
Rated control voltage (V AC)	230		230		230		230		230		230		230		230		
Rated frequency (Hz)	50/60		50/60		50/60		50/60		50/60		50/60		50/60		50/60		
Rated limit short-circuit current (kA)	37.5		50		50		55		65		80		100		120		
Short-time withstand current (kA)	15		22		22		25		35		50		50		50		
Transfer time at side of power supply A	Connect (ms)	100		115		115		115		140		180		200		200	
	Disconnect (ms)	30		25		25		25		25		30		30		35	
Transfer time at side of power supply B	Connect (ms)	135		145		145		150		190		220		220		230	
	Disconnect (ms)	30		25		25		25		25		30		30		30	
Available controller unit	Built-in	■		■		■		■		■		■		■		■	
	LCD	■		■		■		■		■		■		■		■	
	J-type	■		■		■		■		■		■		■		■	
Control mode	Model R	■		■		■		■		■		■		■		■	
	Model S	■		■		■		■		■		■		■		■	
Making and breaking capacity	10 I <sub>e</sub> making, 8 I <sub>e</sub> breaking, cosφ = 0.35																
Application category	AC-33B																
Mechanical life (Cycles)	3000		2500		2500		2500		1500		1500		1500		1500		
Electrical life (Cycles)	1000		500		500		500		500		500		500		500		
Allowable operation cycles per hour (Cycles)	60		20		20		20		10		10		10		10		
Connection	Rear connection																
Capacity of auxiliary switch at AC 230 V (A)	250		250		250		250		250		250		250		250		
Weight (kg)	33	42	39	49	40	51	47	51	115	135	152	192	207	207	265	265	
Ambient temperature (°C)	-5 to + 40, max.95% humidity																
Storage temperature (°C)	-40 to + 75																
Altitude (Max.) (m)	2000																

■ Available  
- Not available

# Automatic Transfer Switches Series 3SAQ3 PC Class

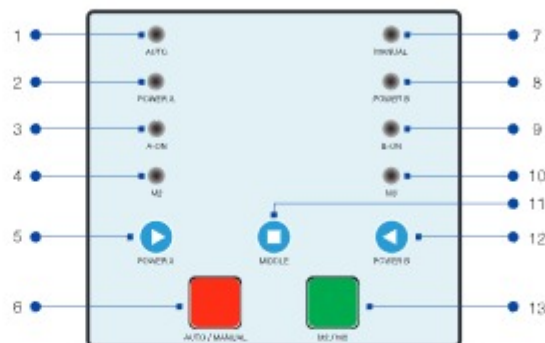
## External controller unit

There are two types available external controller units

1

### • J-type external controller unit

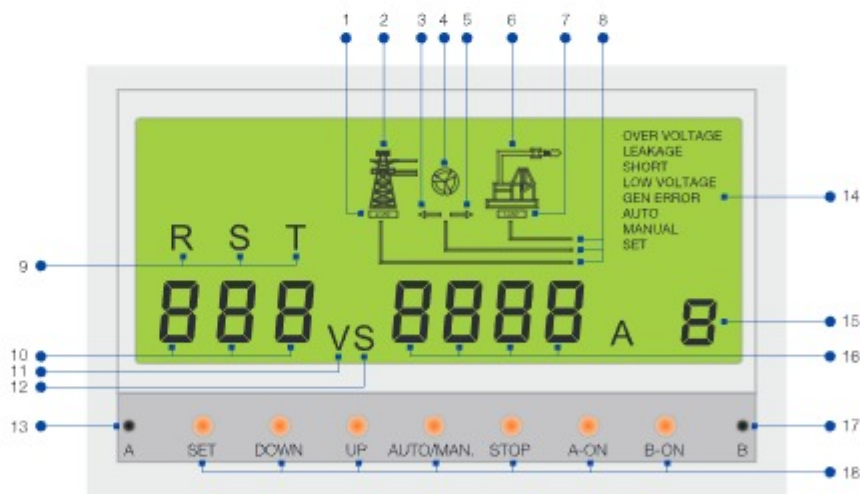
J-type external controller unit is available for both versions of M2 I and M3 II.



1. Automatic operating indicator
2. Power supply A indicator
3. A-ON indicator
4. M2 version indicator
5. Key for power supply A
6. Button of AUTO/MANUAL exchange

7. Manual operating indicator
8. Power supply B indicator
9. B-ON indicator
10. M3 version indicator
11. Key for middle position
12. Key for power supply B
13. Button of M2/M3 exchange

### • External controller unit with LCD display

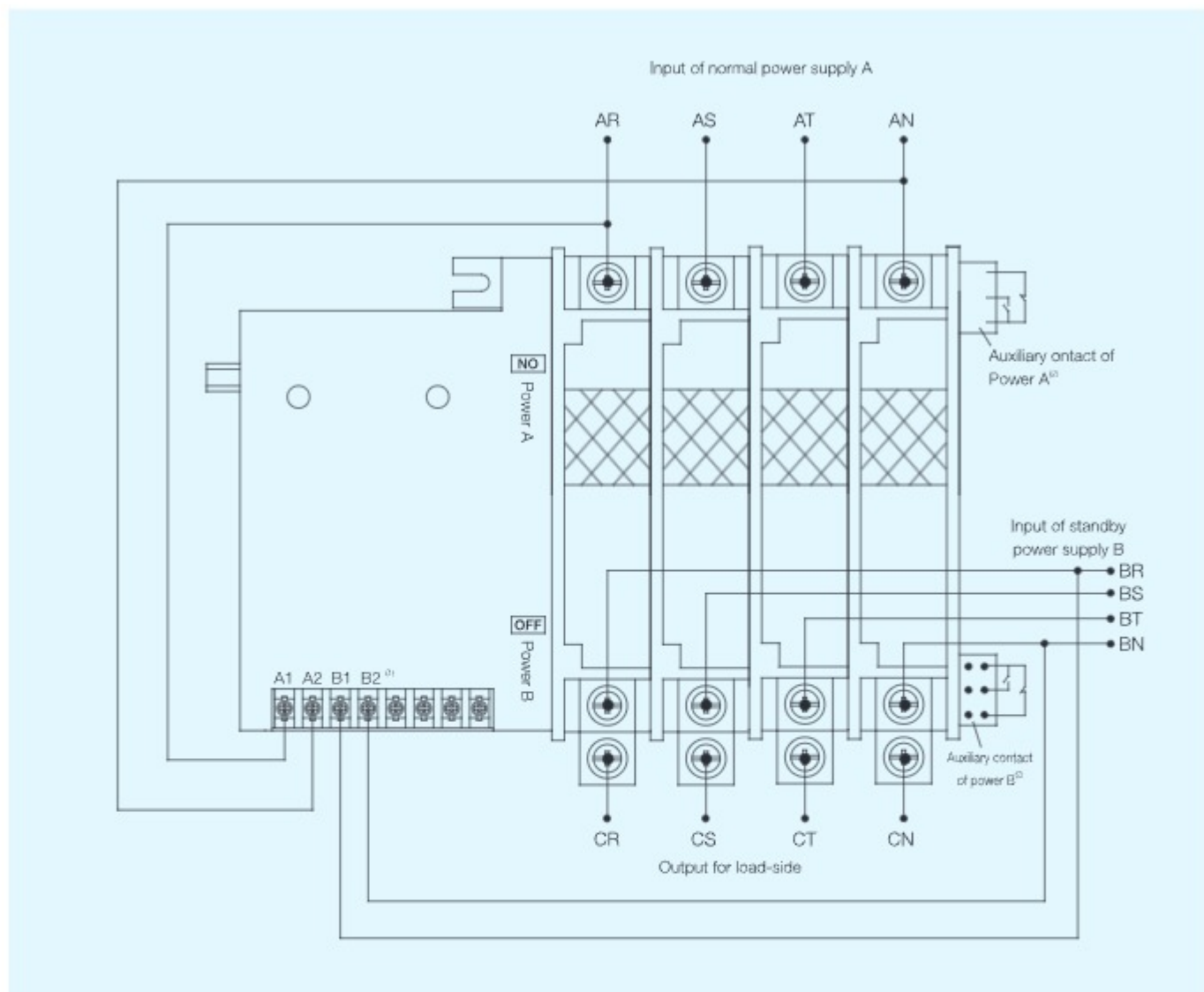


1. Flash when switching to normal power supply
2. Symbol of normal power supply A, light when running
3. Switching to normal power supply A
4. Middle position, rotates when switching
5. Switching to standby power supply B
6. Symbol of standby power supply, light when running
7. Flash when switching to standby power supply
8. Switch is at OFF position
9. R/S/T poles in 3-phase 4-line system

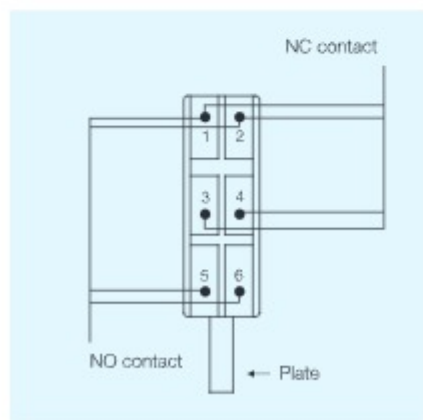
10. Value of voltage or settings
11. Voltage unit
12. Second for delay time
13. Normal indicator of normal power supply A
14. Error info. and tips of settings and auto/man etc.
15. Code position for setting, 0 when normal
16. Error information and 3-D when normal
17. Normal indicator of standby power supply B
18. Setting buttons

## Wiring diagram

- M2 I version without controller unit



## Auxiliary contact



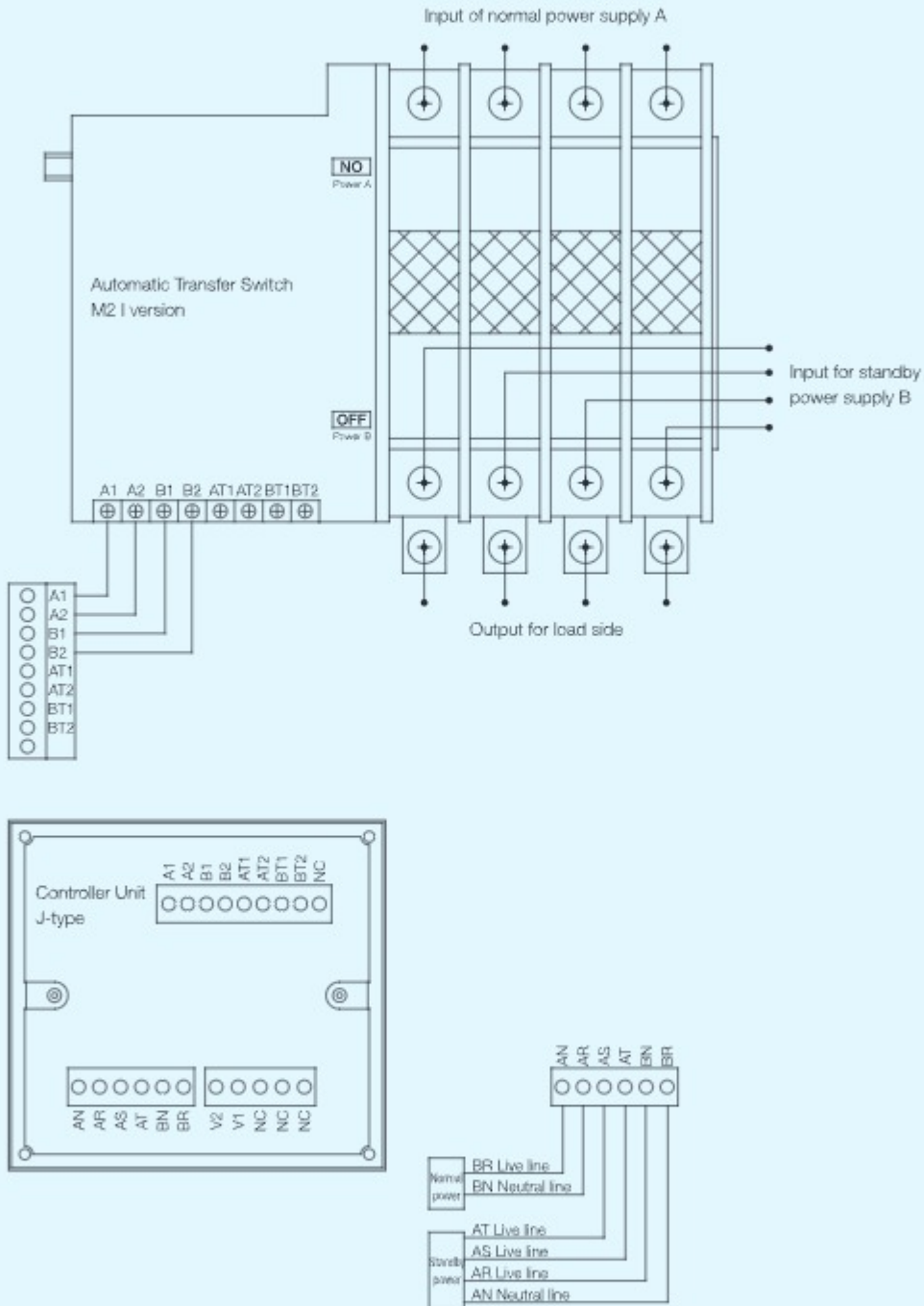
**Note:**

1. A1/A2 is for input signal of power supply A, AC 220 V;  
B1/B2 is for input signal of power supply B, AC 220 V;
2. Auxiliary contacts can be connected to indications, alarm or signals depending on needs.

# Automatic Transfer Switches Series 3SAQ3 PC Class

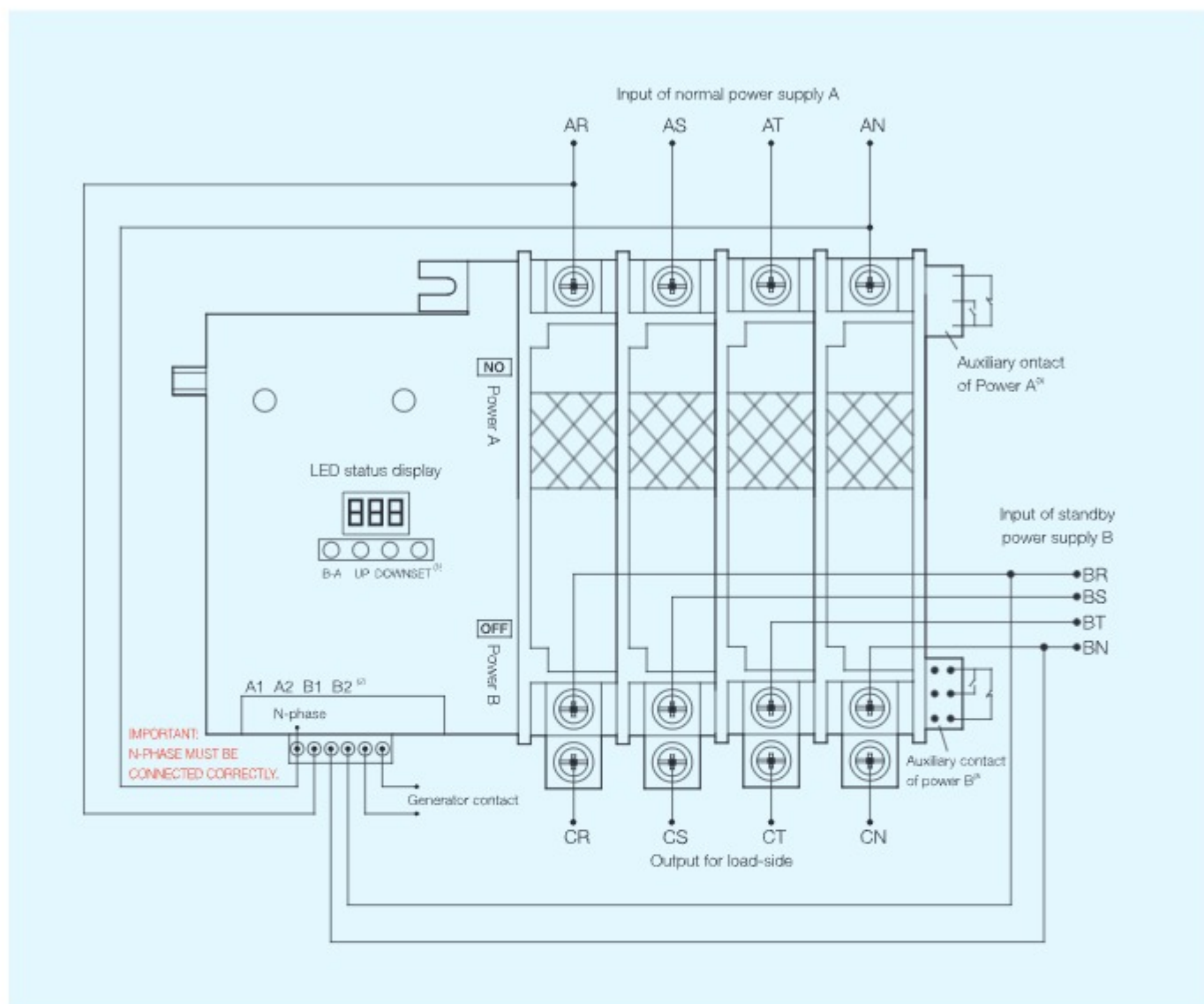
## Wiring diagram

- M2 I version with external J-type controller unit

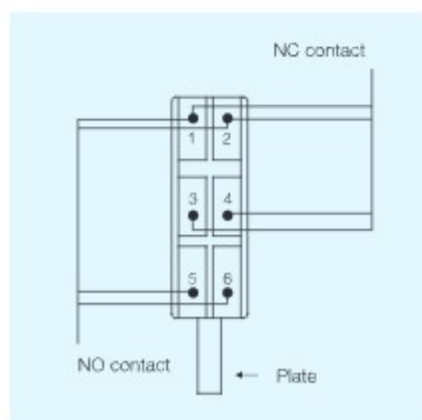


## Wiring diagram

- M3 II version with internal controller unit



## Auxiliary contact



### Note:

- Instruction of function buttons
    - Set: Settings for delay time of A-B, B-A or generator stop;
    - Down: Reduction when setting; Display B-phase voltage when automatical operating; Switching to power supply B when manual operating;
    - UP: Increase when setting; Display A-phase voltage when automatical operating; Switching to power supply A when manual operating;
    - B-A: For exchange between Automatic operation and manual operation by pressing the buttons of SET and B-A at the same time (manual operation is available when LED flashing);
    - Setting the reference voltage of power supply A and B (LED display U-A and U-B)
  - A1/A2 is for input signal of power supply A, AC 220 V;
  - B1/B2 is for input signal of power supply B, AC 220 V;
- Auxiliary contacts can be connected to indications, alarm or signals depending on needs.

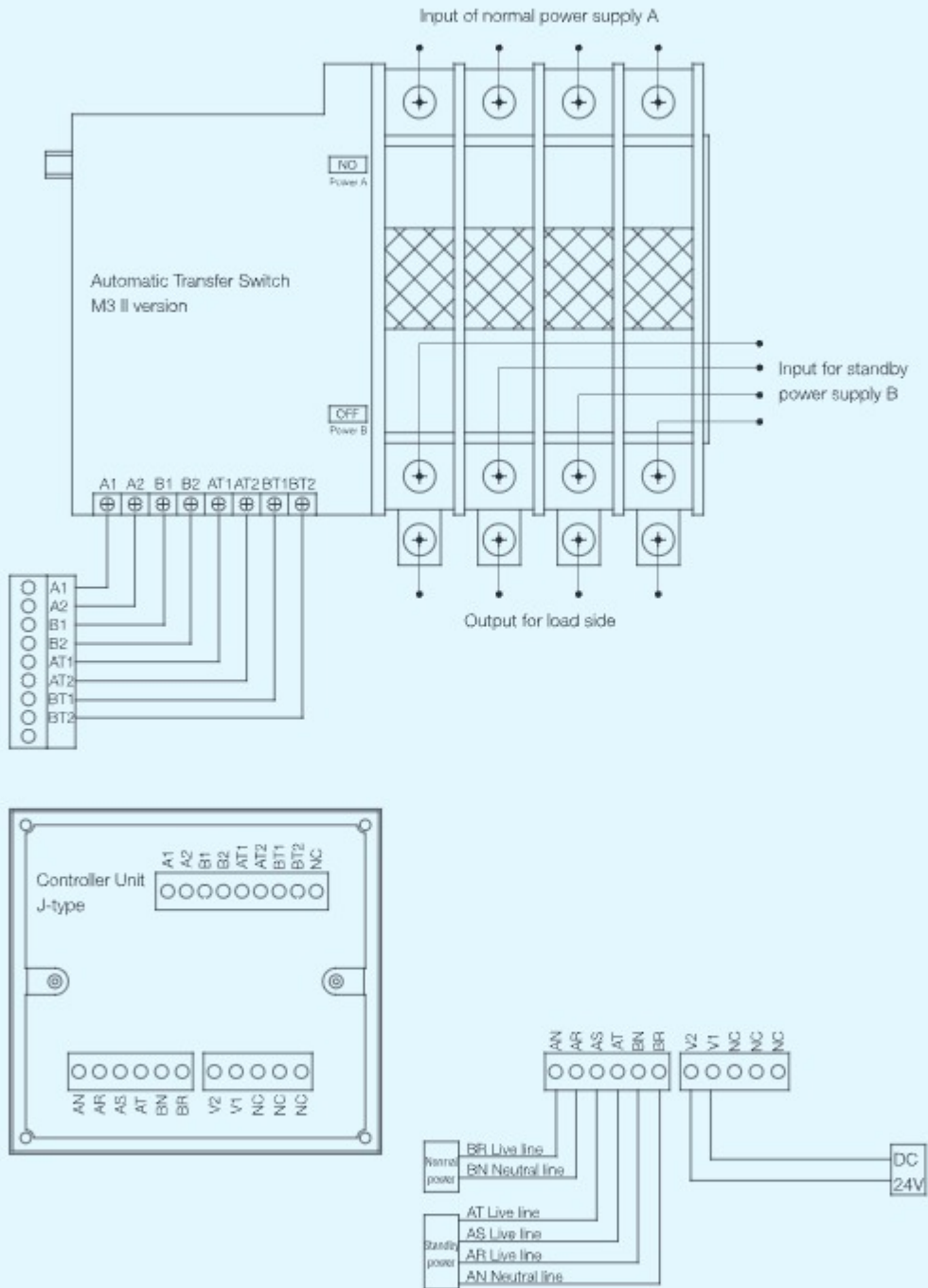


# Automatic Transfer Switches Series 3SAQ3 PC Class

## Wiring diagram

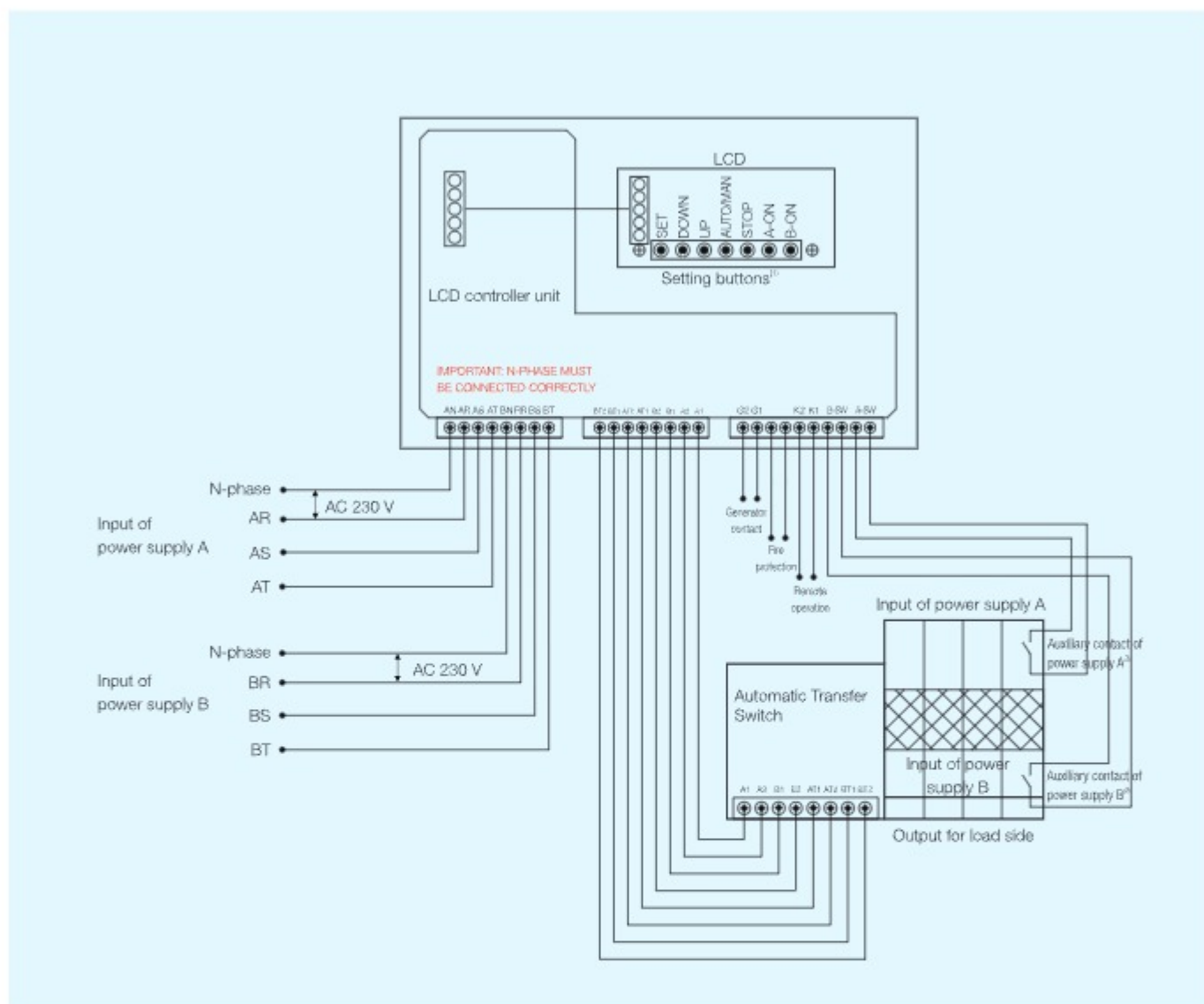
- M3 II version with external J-type controller unit

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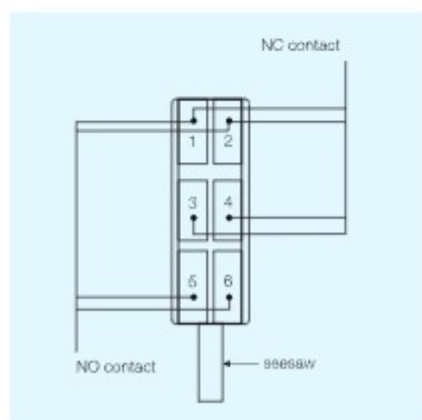


## Wiring diagram

- M3 II version with external controller unit with LCD display



## Auxiliary contact



### Notice:

#### 1. Instruction of function buttons

- SET: Settings for low and high voltage range of power supply A and B, delay time of OFF-A, OFF-B, B-OFF, generator stop, problem of A and B, timing for generator starting; Codes are 1, 2, ..., 9, C and D.
- DOWN / UP: Reduction (or increase) when setting;
- AUTO/MAN: For exchange between Automatic operation and manual operation;  
Setting the reference voltage of phase R/R/T for power supply A and B by pressing it for 3 seconds when manual operation.
- STOP: Cut off from power supply A and B, switch to OFF position and entering standby;
- A-ON: Switch to power supply A at manual mode;  
Display the voltage of phase R/S/T of power supply A at modes of automatic or stop;
- B-ON: Switch to power supply B at manual mode;  
Display the voltage of phase R/S/T of power supply B at modes of automatic or stop;

#### 2. Auxiliary contacts can be connected to indications, alarm or signals depending on needs.

# Automatic Transfer Switches

## Series 3SAQ3 PC Class



### Selection and ordering data

#### M2 I versions without controller unit

Rated current (A)	2P		3P		4P	
	Type code	Order code	Type code	Order code	Type code	Order code
Grid-Grid (NB)						
Model R: Automatic transfer with restoration						
20	AQ3 M2I 2NBR20N	10761	AQ3 M2I 3NBR20N	10815	AQ3 M2I 4NBR20N	10869
25	AQ3 M2I 2NBR25N	10762	AQ3 M2I 3NBR25N	10816	AQ3 M2I 4NBR25N	10870
32	AQ3 M2I 2NBR32N	10763	AQ3 M2I 3NBR32N	10817	AQ3 M2I 4NBR32N	10871
40	AQ3 M2I 2NBR40N	10764	AQ3 M2I 3NBR40N	10818	AQ3 M2I 4NBR40N	10872
50	AQ3 M2I 2NBR50N	10765	AQ3 M2I 3NBR50N	10819	AQ3 M2I 4NBR50N	10873
63	AQ3 M2I 2NBR63N	10766	AQ3 M2I 3NBR63N	10820	AQ3 M2I 4NBR63N	10874
80	AQ3 M2I 2NBR80N	10767	AQ3 M2I 3NBR80N	10821	AQ3 M2I 4NBR80N	10875
100	AQ3 M2I 2NBR100N	10768	AQ3 M2I 3NBR100N	10822	AQ3 M2I 4NBR100N	10876
125	AQ3 M2I 2NBR125N	10769	AQ3 M2I 3NBR125N	10823	AQ3 M2I 4NBR125N	10877
160	AQ3 M2I 2NBR160N	30954	AQ3 M2I 3NBR160N	30984	AQ3 M2I 4NBR160N	31014
180	AQ3 M2I 2NBR180N	30955	AQ3 M2I 3NBR180N	30985	AQ3 M2I 4NBR180N	31015
200	AQ3 M2I 2NBR200N	30956	AQ3 M2I 3NBR200N	30986	AQ3 M2I 4NBR200N	31016
225	AQ3 M2I 2NBR225N	30957	AQ3 M2I 3NBR225N	30987	AQ3 M2I 4NBR225N	31017
250	AQ3 M2I 2NBR250N	30958	AQ3 M2I 3NBR250N	30988	AQ3 M2I 4NBR250N	31018
315	AQ3 M2I 2NBR315N	31134	AQ3 M2I 3NBR315N	31158	AQ3 M2I 4NBR315N	31182
350	AQ3 M2I 2NBR350N	31135	AQ3 M2I 3NBR350N	31159	AQ3 M2I 4NBR350N	31183
400	AQ3 M2I 2NBR400N	31136	AQ3 M2I 3NBR400N	31160	AQ3 M2I 4NBR400N	31184
500	AQ3 M2I 2NBR500N	31137	AQ3 M2I 3NBR500N	31161	AQ3 M2I 4NBR500N	31185



#### Model S: Automatic transfer without restoration

20	AQ3 M2I 2NBS20N	10779	AQ3 M2I 3NBS20N	10833	AQ3 M2I 4NBS20N	10887
25	AQ3 M2I 2NBS25N	10780	AQ3 M2I 3NBS25N	10834	AQ3 M2I 4NBS25N	10888
32	AQ3 M2I 2NBS32N	10781	AQ3 M2I 3NBS32N	10835	AQ3 M2I 4NBS32N	10889
40	AQ3 M2I 2NBS40N	10782	AQ3 M2I 3NBS40N	10836	AQ3 M2I 4NBS40N	10890
50	AQ3 M2I 2NBS50N	10783	AQ3 M2I 3NBS50N	10837	AQ3 M2I 4NBS50N	10891
63	AQ3 M2I 2NBS63N	10784	AQ3 M2I 3NBS63N	10838	AQ3 M2I 4NBS63N	10892
80	AQ3 M2I 2NBS80N	10785	AQ3 M2I 3NBS80N	10839	AQ3 M2I 4NBS80N	10893
100	AQ3 M2I 2NBS100N	10786	AQ3 M2I 3NBS100N	10840	AQ3 M2I 4NBS100N	10894
125	AQ3 M2I 2NBS125N	10787	AQ3 M2I 3NBS125N	10841	AQ3 M2I 4NBS125N	10895
160	AQ3 M2I 2NBS160N	30964	AQ3 M2I 3NBS160N	30994	AQ3 M2I 4NBS160N	31024
180	AQ3 M2I 2NBS180N	30965	AQ3 M2I 3NBS180N	30995	AQ3 M2I 4NBS180N	31025
200	AQ3 M2I 2NBS200N	30966	AQ3 M2I 3NBS200N	30996	AQ3 M2I 4NBS200N	31026
225	AQ3 M2I 2NBS225N	30967	AQ3 M2I 3NBS225N	30997	AQ3 M2I 4NBS225N	31027
250	AQ3 M2I 2NBS250N	30968	AQ3 M2I 3NBS250N	30998	AQ3 M2I 4NBS250N	31028
315	AQ3 M2I 2NBS315N	31142	AQ3 M2I 3NBS315N	31166	AQ3 M2I 4NBS315N	31190
350	AQ3 M2I 2NBS350N	31143	AQ3 M2I 3NBS350N	31167	AQ3 M2I 4NBS350N	31191
400	AQ3 M2I 2NBS400N	31144	AQ3 M2I 3NBS400N	31168	AQ3 M2I 4NBS400N	31192
500	AQ3 M2I 2NBS500N	31145	AQ3 M2I 3NBS500N	31169	AQ3 M2I 4NBS500N	31193

#### Grid-Generator (NG)

##### Model R: Automatic transfer with restoration

20	AQ3 M2I 2NGR20N	10797	AQ3 M2I 3NGR20N	10851	AQ3 M2I 4NGR20N	10905
25	AQ3 M2I 2NGR25N	10798	AQ3 M2I 3NGR25N	10852	AQ3 M2I 4NGR25N	10906
32	AQ3 M2I 2NGR32N	10799	AQ3 M2I 3NGR32N	10853	AQ3 M2I 4NGR32N	10907
40	AQ3 M2I 2NGR40N	10800	AQ3 M2I 3NGR40N	10854	AQ3 M2I 4NGR40N	10908
50	AQ3 M2I 2NGR50N	10801	AQ3 M2I 3NGR50N	10855	AQ3 M2I 4NGR50N	10909
63	AQ3 M2I 2NGR63N	10802	AQ3 M2I 3NGR63N	10856	AQ3 M2I 4NGR63N	10910
80	AQ3 M2I 2NGR80N	10803	AQ3 M2I 3NGR80N	10857	AQ3 M2I 4NGR80N	10911
100	AQ3 M2I 2NGR100N	10804	AQ3 M2I 3NGR100N	10858	AQ3 M2I 4NGR100N	10912
125	AQ3 M2I 2NGR125N	10805	AQ3 M2I 3NGR125N	10859	AQ3 M2I 4NGR125N	10913
160	AQ3 M2I 2NGR160N	30974	AQ3 M2I 3NGR160N	31004	AQ3 M2I 4NGR160N	31034
180	AQ3 M2I 2NGR180N	30975	AQ3 M2I 3NGR180N	31005	AQ3 M2I 4NGR180N	31035
200	AQ3 M2I 2NGR200N	30976	AQ3 M2I 3NGR200N	31006	AQ3 M2I 4NGR200N	31036
225	AQ3 M2I 2NGR225N	30977	AQ3 M2I 3NGR225N	31007	AQ3 M2I 4NGR225N	31037
250	AQ3 M2I 2NGR250N	30978	AQ3 M2I 3NGR250N	31008	AQ3 M2I 4NGR250N	31038
315	AQ3 M2I 2NGR315N	31150	AQ3 M2I 3NGR315N	31174	AQ3 M2I 4NGR315N	31198
350	AQ3 M2I 2NGR350N	31151	AQ3 M2I 3NGR350N	31175	AQ3 M2I 4NGR350N	31199
400	AQ3 M2I 2NGR400N	31152	AQ3 M2I 3NGR400N	31176	AQ3 M2I 4NGR400N	31200
500	AQ3 M2I 2NGR500N	31153	AQ3 M2I 3NGR500N	31177	AQ3 M2I 4NGR500N	31201

## Selection and ordering data

### M2 I versions equipped with external J-type controller unit

Rated current (A)	2P		3P		4P	
	Type code	Order code	Type code	Order code	Type code	Order code
Grid-Grid (NB)						
Model R: Automatic transfer with restoration						
20	AQ3 M2I 2NBR20J	10770	AQ3 M2I 3NBR20J	10824	AQ3 M2I 4NBR20J	10878
25	AQ3 M2I 2NBR25J	10771	AQ3 M2I 3NBR25J	10825	AQ3 M2I 4NBR25J	10879
32	AQ3 M2I 2NBR32J	10772	AQ3 M2I 3NBR32J	10826	AQ3 M2I 4NBR32J	10880
40	AQ3 M2I 2NBR40J	10773	AQ3 M2I 3NBR40J	10827	AQ3 M2I 4NBR40J	10881
50	AQ3 M2I 2NBR50J	10774	AQ3 M2I 3NBR50J	10828	AQ3 M2I 4NBR50J	10882
63	AQ3 M2I 2NBR63J	10775	AQ3 M2I 3NBR63J	10829	AQ3 M2I 4NBR63J	10883
80	AQ3 M2I 2NBR80J	10776	AQ3 M2I 3NBR80J	10830	AQ3 M2I 4NBR80J	10884
100	AQ3 M2I 2NBR100J	10777	AQ3 M2I 3NBR100J	10831	AQ3 M2I 4NBR100J	10885
125	AQ3 M2I 2NBR125J	10778	AQ3 M2I 3NBR125J	10832	AQ3 M2I 4NBR125J	10886
160	AQ3 M2I 2NBR160J	30959	AQ3 M2I 3NBR160J	30989	AQ3 M2I 4NBR160J	31019
180	AQ3 M2I 2NBR180J	30960	AQ3 M2I 3NBR180J	30990	AQ3 M2I 4NBR180J	31020
200	AQ3 M2I 2NBR200J	30961	AQ3 M2I 3NBR200J	30991	AQ3 M2I 4NBR200J	31021
225	AQ3 M2I 2NBR225J	30962	AQ3 M2I 3NBR225J	30992	AQ3 M2I 4NBR225J	31022
250	AQ3 M2I 2NBR250J	30963	AQ3 M2I 3NBR250J	30993	AQ3 M2I 4NBR250J	31023
315	AQ3 M2I 2NBR315J	31138	AQ3 M2I 3NBR315J	31162	AQ3 M2I 4NBR315J	31186
350	AQ3 M2I 2NBR350J	31139	AQ3 M2I 3NBR350J	31163	AQ3 M2I 4NBR350J	31187
400	AQ3 M2I 2NBR400J	31140	AQ3 M2I 3NBR400J	31164	AQ3 M2I 4NBR400J	31188
500	AQ3 M2I 2NBR500J	31141	AQ3 M2I 3NBR500J	31165	AQ3 M2I 4NBR500J	31189
Model S: Automatic transfer without restoration						
20	AQ3 M2I 2NBS20J	10788	AQ3 M2I 3NBS20J	10842	AQ3 M2I 4NBS20J	10896
25	AQ3 M2I 2NBS25J	10789	AQ3 M2I 3NBS25J	10843	AQ3 M2I 4NBS25J	10897
32	AQ3 M2I 2NBS32J	10790	AQ3 M2I 3NBS32J	10844	AQ3 M2I 4NBS32J	10898
40	AQ3 M2I 2NBS40J	10791	AQ3 M2I 3NBS40J	10845	AQ3 M2I 4NBS40J	10899
50	AQ3 M2I 2NBS50J	10792	AQ3 M2I 3NBS50J	10846	AQ3 M2I 4NBS50J	10900
63	AQ3 M2I 2NBS63J	10793	AQ3 M2I 3NBS63J	10847	AQ3 M2I 4NBS63J	10901
80	AQ3 M2I 2NBS80J	10794	AQ3 M2I 3NBS80J	10848	AQ3 M2I 4NBS80J	10902
100	AQ3 M2I 2NBS100J	10795	AQ3 M2I 3NBS100J	10849	AQ3 M2I 4NBS100J	10903
125	AQ3 M2I 2NBS125J	10796	AQ3 M2I 3NBS125J	10850	AQ3 M2I 4NBS125J	10904
160	AQ3 M2I 2NBS160J	30969	AQ3 M2I 3NBS160J	30999	AQ3 M2I 4NBS160J	31029
180	AQ3 M2I 2NBS180J	30970	AQ3 M2I 3NBS180J	31000	AQ3 M2I 4NBS180J	31030
200	AQ3 M2I 2NBS200J	30971	AQ3 M2I 3NBS200J	31001	AQ3 M2I 4NBS200J	31031
225	AQ3 M2I 2NBS225J	30972	AQ3 M2I 3NBS225J	31002	AQ3 M2I 4NBS225J	31032
250	AQ3 M2I 2NBS250J	30973	AQ3 M2I 3NBS250J	31003	AQ3 M2I 4NBS250J	31033
315	AQ3 M2I 2NBS315J	31146	AQ3 M2I 3NBS315J	31170	AQ3 M2I 4NBS315J	31194
350	AQ3 M2I 2NBS350J	31147	AQ3 M2I 3NBS350J	31171	AQ3 M2I 4NBS350J	31195
400	AQ3 M2I 2NBS400J	31148	AQ3 M2I 3NBS400J	31172	AQ3 M2I 4NBS400J	31196
500	AQ3 M2I 2NBS500J	31149	AQ3 M2I 3NBS500J	31173	AQ3 M2I 4NBS500J	31197
Grid-Generator (NG)						
Model R: Automatic transfer with restoration						
20	AQ3 M2I 2NGR20J	10806	AQ3 M2I 3NGR20J	10860	AQ3 M2I 4NGR20J	10914
25	AQ3 M2I 2NGR25J	10807	AQ3 M2I 3NGR25J	10861	AQ3 M2I 4NGR25J	10915
32	AQ3 M2I 2NGR32J	10808	AQ3 M2I 3NGR32J	10862	AQ3 M2I 4NGR32J	10916
40	AQ3 M2I 2NGR40J	10809	AQ3 M2I 3NGR40J	10863	AQ3 M2I 4NGR40J	10917
50	AQ3 M2I 2NGR50J	10810	AQ3 M2I 3NGR50J	10864	AQ3 M2I 4NGR50J	10918
63	AQ3 M2I 2NGR63J	10811	AQ3 M2I 3NGR63J	10865	AQ3 M2I 4NGR63J	30788
80	AQ3 M2I 2NGR80J	10812	AQ3 M2I 3NGR80J	10866	AQ3 M2I 4NGR80J	30789
100	AQ3 M2I 2NGR100J	10813	AQ3 M2I 3NGR100J	10867	AQ3 M2I 4NGR100J	30790
125	AQ3 M2I 2NGR125J	10814	AQ3 M2I 3NGR125J	10868	AQ3 M2I 4NGR125J	30791
160	AQ3 M2I 2NGR160J	30979	AQ3 M2I 3NGR160J	31009	AQ3 M2I 4NGR160J	31039
180	AQ3 M2I 2NGR180J	30980	AQ3 M2I 3NGR180J	31010	AQ3 M2I 4NGR180J	31040
200	AQ3 M2I 2NGR200J	30981	AQ3 M2I 3NGR200J	31011	AQ3 M2I 4NGR200J	31041
225	AQ3 M2I 2NGR225J	30982	AQ3 M2I 3NGR225J	31012	AQ3 M2I 4NGR225J	31042
250	AQ3 M2I 2NGR250J	30983	AQ3 M2I 3NGR250J	31013	AQ3 M2I 4NGR250J	31043
315	AQ3 M2I 2NGR315J	31154	AQ3 M2I 3NGR315J	31178	AQ3 M2I 4NGR315J	31202
350	AQ3 M2I 2NGR350J	31155	AQ3 M2I 3NGR350J	31179	AQ3 M2I 4NGR350J	31203
400	AQ3 M2I 2NGR400J	31156	AQ3 M2I 3NGR400J	31180	AQ3 M2I 4NGR400J	31204
500	AQ3 M2I 2NGR500J	31157	AQ3 M2I 3NGR500J	31181	AQ3 M2I 4NGR500J	31205



# Automatic Transfer Switches Series 3SAQ3 PC Class



## Selection and ordering data

### M3 II versions equipped with internal controller unit

1

Rated current (A)	2P		3P		4P	
	Type code	Order code	Type code	Order code	Type code	Order code
Grid-Grid (NB)						
Model R: Automatic transfer with restoration						
20	AQ3 M3II 2NBR20L	30792	AQ3 M3II 3NBR20L	30846	AQ3 M3II 4NBR20L	30900
25	AQ3 M3II 2NBR25L	30793	AQ3 M3II 3NBR25L	30847	AQ3 M3II 4NBR25L	30901
32	AQ3 M3II 2NBR32L	30794	AQ3 M3II 3NBR32L	30848	AQ3 M3II 4NBR32L	30902
40	AQ3 M3II 2NBR40L	30795	AQ3 M3II 3NBR40L	30849	AQ3 M3II 4NBR40L	30903
50	AQ3 M3II 2NBR50L	30796	AQ3 M3II 3NBR50L	30850	AQ3 M3II 4NBR50L	30904
63	AQ3 M3II 2NBR63L	30797	AQ3 M3II 3NBR63L	30851	AQ3 M3II 4NBR63L	30905
80	AQ3 M3II 2NBR80L	30798	AQ3 M3II 3NBR80L	30852	AQ3 M3II 4NBR80L	30906
100	AQ3 M3II 2NBR100L	30799	AQ3 M3II 3NBR100L	30853	AQ3 M3II 4NBR100L	30907
125	AQ3 M3II 2NBR125L	30800	AQ3 M3II 3NBR125L	30854	AQ3 M3II 4NBR125L	30908
160	AQ3 M3II 2NBR160L	31044	AQ3 M3II 3NBR160L	31074	AQ3 M3II 4NBR160L	31104
180	AQ3 M3II 2NBR180L	31045	AQ3 M3II 3NBR180L	31075	AQ3 M3II 4NBR180L	31105
200	AQ3 M3II 2NBR200L	31046	AQ3 M3II 3NBR200L	31076	AQ3 M3II 4NBR200L	31106
225	AQ3 M3II 2NBR225L	31047	AQ3 M3II 3NBR225L	31077	AQ3 M3II 4NBR225L	31107
250	AQ3 M3II 2NBR250L	31048	AQ3 M3II 3NBR250L	31078	AQ3 M3II 4NBR250L	31108
315	AQ3 M3II 2NBR315L	31206	AQ3 M3II 3NBR315L	31230	AQ3 M3II 4NBR315L	31254
350	AQ3 M3II 2NBR350L	31207	AQ3 M3II 3NBR350L	31231	AQ3 M3II 4NBR350L	31255
400	AQ3 M3II 2NBR400L	31208	AQ3 M3II 3NBR400L	31232	AQ3 M3II 4NBR400L	31256
500	AQ3 M3II 2NBR500L	31209	AQ3 M3II 3NBR500L	31233	AQ3 M3II 4NBR500L	31257
630	-	-	AQ3 M3II 3NBR630L	31278	AQ3 M3II 4NBR630L	31290
800	-	-	AQ3 M3II 3NBR800L	31279	AQ3 M3II 4NBR800L	31291
1000	-	-	AQ3 M3II 3NBR1000L	31302	AQ3 M3II 4NBR1000L	31344
1250	-	-	AQ3 M3II 3NBR1250L	31303	AQ3 M3II 4NBR1250L	31345
1600	-	-	AQ3 M3II 3NBR1600L	31304	AQ3 M3II 4NBR1600L	31346
2000	-	-	AQ3 M3II 3NBR2000L	31305	AQ3 M3II 4NBR2000L	31347
3150	-	-	AQ3 M3II 3NBR3150L	31306	AQ3 M3II 4NBR3150L	31348
4000	-	-	AQ3 M3II 3NBR4000L	31307	AQ3 M3II 4NBR4000L	31349
5000	-	-	AQ3 M3II 3NBR5000L	31308	AQ3 M3II 4NBR5000L	31350



### Grid-Generator (NG)

#### Model R: Automatic transfer with restoration

20	AQ3 M3II 2NGR20L	30819	AQ3 M3II 3NGR20L	30873	AQ3 M3II 4NGR20L	30927
25	AQ3 M3II 2NGR25L	30820	AQ3 M3II 3NGR25L	30874	AQ3 M3II 4NGR25L	30928
32	AQ3 M3II 2NGR32L	30821	AQ3 M3II 3NGR32L	30875	AQ3 M3II 4NGR32L	30929
40	AQ3 M3II 2NGR40L	30822	AQ3 M3II 3NGR40L	30876	AQ3 M3II 4NGR40L	30930
50	AQ3 M3II 2NGR50L	30823	AQ3 M3II 3NGR50L	30877	AQ3 M3II 4NGR50L	30931
63	AQ3 M3II 2NGR63L	30824	AQ3 M3II 3NGR63L	30878	AQ3 M3II 4NGR63L	30932
80	AQ3 M3II 2NGR80L	30825	AQ3 M3II 3NGR80L	30879	AQ3 M3II 4NGR80L	30933
100	AQ3 M3II 2NGR100L	30826	AQ3 M3II 3NGR100L	30880	AQ3 M3II 4NGR100L	30934
125	AQ3 M3II 2NGR125L	30827	AQ3 M3II 3NGR125L	30881	AQ3 M3II 4NGR125L	30935
160	AQ3 M3II 2NGR160L	31059	AQ3 M3II 3NGR160L	31089	AQ3 M3II 4NGR160L	31119
180	AQ3 M3II 2NGR180L	31060	AQ3 M3II 3NGR180L	31090	AQ3 M3II 4NGR180L	31120
200	AQ3 M3II 2NGR200L	31061	AQ3 M3II 3NGR200L	31091	AQ3 M3II 4NGR200L	31121
225	AQ3 M3II 2NGR225L	31062	AQ3 M3II 3NGR225L	31092	AQ3 M3II 4NGR225L	31122
250	AQ3 M3II 2NGR250L	31063	AQ3 M3II 3NGR250L	31093	AQ3 M3II 4NGR250L	31123
315	AQ3 M3II 2NGR315L	31218	AQ3 M3II 3NGR315L	31242	AQ3 M3II 4NGR315L	31266
350	AQ3 M3II 2NGR350L	31219	AQ3 M3II 3NGR350L	31243	AQ3 M3II 4NGR350L	31267
400	AQ3 M3II 2NGR400L	31220	AQ3 M3II 3NGR400L	31244	AQ3 M3II 4NGR400L	31268
500	AQ3 M3II 2NGR500L	31221	AQ3 M3II 3NGR500L	31245	AQ3 M3II 4NGR500L	31269
630	-	-	AQ3 M3II 3NGR630L	31284	AQ3 M3II 4NGR630L	31296
800	-	-	AQ3 M3II 3NGR800L	31285	AQ3 M3II 4NGR800L	31297
1000	-	-	AQ3 M3II 3NGR1000L	31323	AQ3 M3II 4NGR1000L	31365
1250	-	-	AQ3 M3II 3NGR1250L	31324	AQ3 M3II 4NGR1250L	31366
1600	-	-	AQ3 M3II 3NGR1600L	31325	AQ3 M3II 4NGR1600L	31367
2000	-	-	AQ3 M3II 3NGR2000L	31326	AQ3 M3II 4NGR2000L	31368
3150	-	-	AQ3 M3II 3NGR3150L	31327	AQ3 M3II 4NGR3150L	31369
4000	-	-	AQ3 M3II 3NGR4000L	31328	AQ3 M3II 4NGR4000L	31370
5000	-	-	AQ3 M3II 3NGR5000L	31329	AQ3 M3II 4NGR5000L	31371

- Not available

## Selection and ordering data

### M3 II versions equipped with external J-type controller unit

Rated current (A)	2P		3P		4P	
	Type code	Order code	Type code	Order code	Type code	Order code
Grid-Grid (NB)						
Model R: Automatic transfer with restoration						
20	AQ3 M3II 2NBR20J	30801	AQ3 M3II 3NBR20J	30855	AQ3 M3II 4NBR20J	30909
25	AQ3 M3II 2NBR25J	30802	AQ3 M3II 3NBR25J	30856	AQ3 M3II 4NBR25J	30910
32	AQ3 M3II 2NBR32J	30803	AQ3 M3II 3NBR32J	30857	AQ3 M3II 4NBR32J	30911
40	AQ3 M3II 2NBR40J	30804	AQ3 M3II 3NBR40J	30858	AQ3 M3II 4NBR40J	30912
50	AQ3 M3II 2NBR50J	30805	AQ3 M3II 3NBR50J	30859	AQ3 M3II 4NBR50J	30913
63	AQ3 M3II 2NBR63J	30806	AQ3 M3II 3NBR63J	30860	AQ3 M3II 4NBR63J	30914
80	AQ3 M3II 2NBR80J	30807	AQ3 M3II 3NBR80J	30861	AQ3 M3II 4NBR80J	30915
100	AQ3 M3II 2NBR100J	30808	AQ3 M3II 3NBR100J	30862	AQ3 M3II 4NBR100J	30916
125	AQ3 M3II 2NBR125J	30809	AQ3 M3II 3NBR125J	30863	AQ3 M3II 4NBR125J	30917
160	AQ3 M3II 2NBR160J	31049	AQ3 M3II 3NBR160J	31079	AQ3 M3II 4NBR160J	31109
180	AQ3 M3II 2NBR180J	31050	AQ3 M3II 3NBR180J	31080	AQ3 M3II 4NBR180J	31110
200	AQ3 M3II 2NBR200J	31051	AQ3 M3II 3NBR200J	31081	AQ3 M3II 4NBR200J	31111
225	AQ3 M3II 2NBR225J	31052	AQ3 M3II 3NBR225J	31082	AQ3 M3II 4NBR225J	31112
250	AQ3 M3II 2NBR250J	31053	AQ3 M3II 3NBR250J	31083	AQ3 M3II 4NBR250J	31113
315	AQ3 M3II 2NBR315J	31210	AQ3 M3II 3NBR315J	31234	AQ3 M3II 4NBR315J	31258
350	AQ3 M3II 2NBR350J	31211	AQ3 M3II 3NBR350J	31235	AQ3 M3II 4NBR350J	31259
400	AQ3 M3II 2NBR400J	31212	AQ3 M3II 3NBR400J	31236	AQ3 M3II 4NBR400J	31260
500	AQ3 M3II 2NBR500J	31213	AQ3 M3II 3NBR500J	31237	AQ3 M3II 4NBR500J	31261
630	-	-	AQ3 M3II 3NBR630J	31280	AQ3 M3II 4NBR630J	31292
800	-	-	AQ3 M3II 3NBR800J	31281	AQ3 M3II 4NBR800J	31293
1000	-	-	AQ3 M3II 3NBR1000J	31309	AQ3 M3II 4NBR1000J	31351
1250	-	-	AQ3 M3II 3NBR1250J	31310	AQ3 M3II 4NBR1250J	31352
1600	-	-	AQ3 M3II 3NBR1600J	31311	AQ3 M3II 4NBR1600J	31353
2000	-	-	AQ3 M3II 3NBR2000J	31312	AQ3 M3II 4NBR2000J	31354
3150	-	-	AQ3 M3II 3NBR3150J	31313	AQ3 M3II 4NBR3150J	31355
4000	-	-	AQ3 M3II 3NBR4000J	31314	AQ3 M3II 4NBR4000J	31356
5000	-	-	AQ3 M3II 3NBR5000J	31315	AQ3 M3II 4NBR5000J	31357
Grid-Generator (NG)						
Model R: Automatic transfer with restoration						
20	AQ3 M3II 2NGR20J	30828	AQ3 M3II 3NGR20J	30882	AQ3 M3II 4NGR20J	30936
25	AQ3 M3II 2NGR25J	30829	AQ3 M3II 3NGR25J	30883	AQ3 M3II 4NGR25J	30937
32	AQ3 M3II 2NGR32J	30830	AQ3 M3II 3NGR32J	30884	AQ3 M3II 4NGR32J	30938
40	AQ3 M3II 2NGR40J	30831	AQ3 M3II 3NGR40J	30885	AQ3 M3II 4NGR40J	30939
50	AQ3 M3II 2NGR50J	30832	AQ3 M3II 3NGR50J	30886	AQ3 M3II 4NGR50J	30940
63	AQ3 M3II 2NGR63J	30833	AQ3 M3II 3NGR63J	30887	AQ3 M3II 4NGR63J	30941
80	AQ3 M3II 2NGR80J	30834	AQ3 M3II 3NGR80J	30888	AQ3 M3II 4NGR80J	30942
100	AQ3 M3II 2NGR100J	30835	AQ3 M3II 3NGR100J	30889	AQ3 M3II 4NGR100J	30943
125	AQ3 M3II 2NGR125J	30836	AQ3 M3II 3NGR125J	30890	AQ3 M3II 4NGR125J	30944
160	AQ3 M3II 2NGR160J	31064	AQ3 M3II 3NGR160J	31094	AQ3 M3II 4NGR160J	31124
180	AQ3 M3II 2NGR180J	31065	AQ3 M3II 3NGR180J	31095	AQ3 M3II 4NGR180J	31125
200	AQ3 M3II 2NGR200J	31066	AQ3 M3II 3NGR200J	31096	AQ3 M3II 4NGR200J	31126
225	AQ3 M3II 2NGR225J	31067	AQ3 M3II 3NGR225J	31097	AQ3 M3II 4NGR225J	31127
250	AQ3 M3II 2NGR250J	31068	AQ3 M3II 3NGR250J	31098	AQ3 M3II 4NGR250J	31128
315	AQ3 M3II 2NGR315J	31222	AQ3 M3II 3NGR315J	31246	AQ3 M3II 4NGR315J	31270
350	AQ3 M3II 2NGR350J	31223	AQ3 M3II 3NGR350J	31247	AQ3 M3II 4NGR350J	31271
400	AQ3 M3II 2NGR400J	31224	AQ3 M3II 3NGR400J	31248	AQ3 M3II 4NGR400J	31272
500	AQ3 M3II 2NGR500J	31225	AQ3 M3II 3NGR500J	31249	AQ3 M3II 4NGR500J	31273
630	-	-	AQ3 M3II 3NGR630J	31286	AQ3 M3II 4NGR630J	31298
800	-	-	AQ3 M3II 3NGR800J	31287	AQ3 M3II 4NGR800J	31299
1000	-	-	AQ3 M3II 3NGR1000J	31330	AQ3 M3II 4NGR1000J	31372
1250	-	-	AQ3 M3II 3NGR1250J	31331	AQ3 M3II 4NGR1250J	31373
1600	-	-	AQ3 M3II 3NGR1600J	31332	AQ3 M3II 4NGR1600J	31374
2000	-	-	AQ3 M3II 3NGR2000J	31333	AQ3 M3II 4NGR2000J	31375
3150	-	-	AQ3 M3II 3NGR3150J	31334	AQ3 M3II 4NGR3150J	31376
4000	-	-	AQ3 M3II 3NGR4000J	31335	AQ3 M3II 4NGR4000J	31377
5000	-	-	AQ3 M3II 3NGR5000J	31336	AQ3 M3II 4NGR5000J	31378

- Not available

# Automatic Transfer Switches

## Series 3SAQ3 PC Class



### Selection and ordering data

#### M3 II versions equipped with external LCD display controller unit

1

Rated current (A)	2P		3P		4P	
	Type code	Order code	Type code	Order code	Type code	Order code
Grid-Grid (NB)						
Model R: Automatic transfer with restoration						
20	AQ3 M3II 2NBR20C	30810	AQ3 M3II 3NBR20C	30864	AQ3 M3II 4NBR20C	30918
25	AQ3 M3II 2NBR25C	30811	AQ3 M3II 3NBR25C	30865	AQ3 M3II 4NBR25C	30919
32	AQ3 M3II 2NBR32C	30812	AQ3 M3II 3NBR32C	30866	AQ3 M3II 4NBR32C	30920
40	AQ3 M3II 2NBR40C	30813	AQ3 M3II 3NBR40C	30867	AQ3 M3II 4NBR40C	30921
50	AQ3 M3II 2NBR50C	30814	AQ3 M3II 3NBR50C	30868	AQ3 M3II 4NBR50C	30922
63	AQ3 M3II 2NBR63C	30815	AQ3 M3II 3NBR63C	30869	AQ3 M3II 4NBR63C	30923
80	AQ3 M3II 2NBR80C	30816	AQ3 M3II 3NBR80C	30870	AQ3 M3II 4NBR80C	30924
100	AQ3 M3II 2NBR100C	30817	AQ3 M3II 3NBR100C	30871	AQ3 M3II 4NBR100C	30925
125	AQ3 M3II 2NBR125C	30818	AQ3 M3II 3NBR125C	30872	AQ3 M3II 4NBR125C	30926
160	AQ3 M3II 2NBR160C	31054	AQ3 M3II 3NBR160C	31084	AQ3 M3II 4NBR160C	31114
180	AQ3 M3II 2NBR180C	31055	AQ3 M3II 3NBR180C	31085	AQ3 M3II 4NBR180C	31115
200	AQ3 M3II 2NBR200C	31056	AQ3 M3II 3NBR200C	31086	AQ3 M3II 4NBR200C	31116
225	AQ3 M3II 2NBR225C	31057	AQ3 M3II 3NBR225C	31087	AQ3 M3II 4NBR225C	31117
250	AQ3 M3II 2NBR250C	31058	AQ3 M3II 3NBR250C	31088	AQ3 M3II 4NBR250C	31118
315	AQ3 M3II 2NBR315C	31214	AQ3 M3II 3NBR315C	31238	AQ3 M3II 4NBR315C	31262
350	AQ3 M3II 2NBR350C	31215	AQ3 M3II 3NBR350C	31239	AQ3 M3II 4NBR350C	31263
400	AQ3 M3II 2NBR400C	31216	AQ3 M3II 3NBR400C	31240	AQ3 M3II 4NBR400C	31264
500	AQ3 M3II 2NBR500C	31217	AQ3 M3II 3NBR500C	31241	AQ3 M3II 4NBR500C	31265
630	-	-	AQ3 M3II 3NBR630C	31282	AQ3 M3II 4NBR630C	31294
800	-	-	AQ3 M3II 3NBR800C	31283	AQ3 M3II 4NBR800C	31295
1000	-	-	AQ3 M3II 3NBR1000C	31316	AQ3 M3II 4NBR1000C	31358
1250	-	-	AQ3 M3II 3NBR1250C	31317	AQ3 M3II 4NBR1250C	31359
1600	-	-	AQ3 M3II 3NBR1600C	31318	AQ3 M3II 4NBR1600C	31360
2000	-	-	AQ3 M3II 3NBR2000C	31319	AQ3 M3II 4NBR2000C	31361
3150	-	-	AQ3 M3II 3NBR3150C	31320	AQ3 M3II 4NBR3150C	31362
4000	-	-	AQ3 M3II 3NBR4000C	31321	AQ3 M3II 4NBR4000C	31363
5000	-	-	AQ3 M3II 3NBR5000C	31322	AQ3 M3II 4NBR5000C	31364

#### Grid-Generator (NG)

#### Model R: Automatic transfer with restoration

20	AQ3 M3II 2NGR20C	30837	AQ3 M3II 3NGR20C	30891	AQ3 M3II 4NGR20C	30945
25	AQ3 M3II 2NGR25C	30838	AQ3 M3II 3NGR25C	30892	AQ3 M3II 4NGR25C	30946
32	AQ3 M3II 2NGR32C	30839	AQ3 M3II 3NGR32C	30893	AQ3 M3II 4NGR32C	30947
40	AQ3 M3II 2NGR40C	30840	AQ3 M3II 3NGR40C	30894	AQ3 M3II 4NGR40C	30948
50	AQ3 M3II 2NGR50C	30841	AQ3 M3II 3NGR50C	30895	AQ3 M3II 4NGR50C	30949
63	AQ3 M3II 2NGR63C	30842	AQ3 M3II 3NGR63C	30896	AQ3 M3II 4NGR63C	30950
80	AQ3 M3II 2NGR80C	30843	AQ3 M3II 3NGR80C	30897	AQ3 M3II 4NGR80C	30951
100	AQ3 M3II 2NGR100C	30844	AQ3 M3II 3NGR100C	30898	AQ3 M3II 4NGR100C	30952
125	AQ3 M3II 2NGR125C	30845	AQ3 M3II 3NGR125C	30899	AQ3 M3II 4NGR125C	30953
160	AQ3 M3II 2NGR160C	31069	AQ3 M3II 3NGR160C	31099	AQ3 M3II 4NGR160C	31129
180	AQ3 M3II 2NGR180C	31070	AQ3 M3II 3NGR180C	31100	AQ3 M3II 4NGR180C	31130
200	AQ3 M3II 2NGR200C	31071	AQ3 M3II 3NGR200C	31101	AQ3 M3II 4NGR200C	31131
225	AQ3 M3II 2NGR225C	31072	AQ3 M3II 3NGR225C	31102	AQ3 M3II 4NGR225C	31132
250	AQ3 M3II 2NGR250C	31073	AQ3 M3II 3NGR250C	31103	AQ3 M3II 4NGR250C	31133
315	AQ3 M3II 2NGR315C	31226	AQ3 M3II 3NGR315C	31250	AQ3 M3II 4NGR315C	31274
350	AQ3 M3II 2NGR350C	31227	AQ3 M3II 3NGR350C	31251	AQ3 M3II 4NGR350C	31275
400	AQ3 M3II 2NGR400C	31228	AQ3 M3II 3NGR400C	31252	AQ3 M3II 4NGR400C	31276
500	AQ3 M3II 2NGR500C	31229	AQ3 M3II 3NGR500C	31253	AQ3 M3II 4NGR500C	31277
630	-	-	AQ3 M3II 3NGR630C	31288	AQ3 M3II 4NGR630C	31300
800	-	-	AQ3 M3II 3NGR800C	31289	AQ3 M3II 4NGR800C	31301
1000	-	-	AQ3 M3II 3NGR1000C	31337	AQ3 M3II 4NGR1000C	31379
1250	-	-	AQ3 M3II 3NGR1250C	31338	AQ3 M3II 4NGR1250C	31380
1600	-	-	AQ3 M3II 3NGR1600C	31339	AQ3 M3II 4NGR1600C	31381
2000	-	-	AQ3 M3II 3NGR2000C	31340	AQ3 M3II 4NGR2000C	31382
3150	-	-	AQ3 M3II 3NGR3150C	31341	AQ3 M3II 4NGR3150C	31383
4000	-	-	AQ3 M3II 3NGR4000C	31342	AQ3 M3II 4NGR4000C	31384
5000	-	-	AQ3 M3II 3NGR5000C	31343	AQ3 M3II 4NGR5000C	31385

- Not available



## Features

- Easily meet the power needs of various household appliances and industrial equipment
- Used in city power and generator system and PV and city power system
- Easy wiring and easy installation

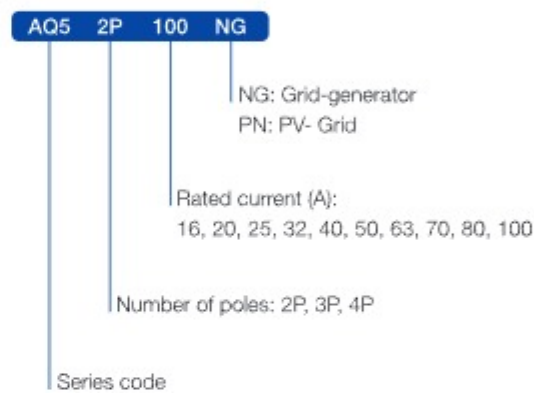
## Technical specifications

- Standard: IEC 60947-3, IEC 60947-6-1
- Current frame (A): 100 A
- Rated operating current (A): 16, 20, 25, 32, 40, 50, 63, 70, 80, 100
- Number of poles (P): 2, 3, 4
- Rated insulation voltage  $U_i$  (V AC): 690
- Rated voltage  $U_e$  (V AC): 400
- Use category: AC-33iB
- Rated conditional short-circuit current  $I_q$  (kA): 50
- SCPD (fuse): RT16-00-100A
- Rated impulse withstand voltage (kA): 8
- Rated control voltage  $U_s$ : AC 220V, 50/60 Hz
- Correct working condition 85%  $U_s$  ~ 110%  $U_s$
- Auxiliary circuit: AC 220V/AC 110V 50/60 Hz
- Contact transfer time (ms): < 50
- Operating transfer time (ms): < 50
- Return transfer time (ms): < 50
- Off time (ms): < 50
- Electrical life (times): 2000
- Mechanical life (times): 5000
- Degree of protection: IP20
- Ambient temperature: -5 ~ 40 °C, max. 95% humidity
- Altitude (Max.): 2000 m



1

## Instruction of type code





# Automatic Transfer Switches Series 3SAQ5

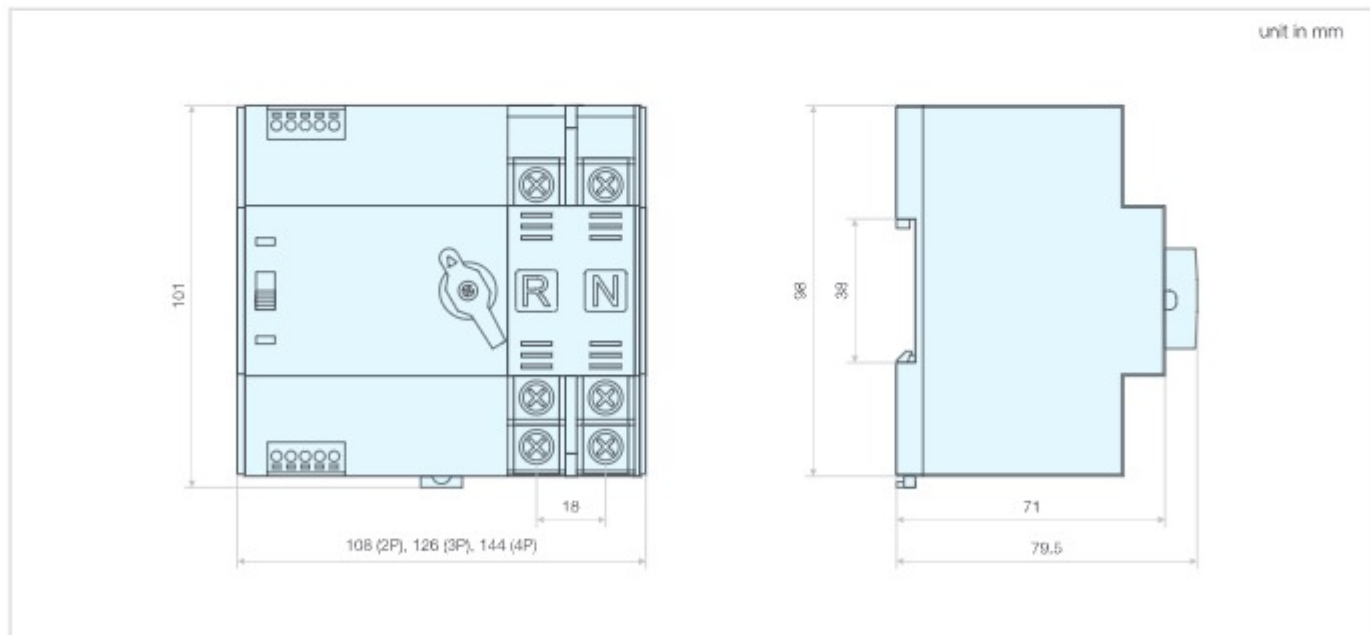
## Selection and ordering data

1



Poles (P)	Rated current (A)	NG		PN	
		Type code	Order code	Type code	Order code
2	16	AQ5 2P16NG	-	AQ5 2P16PN	-
	20	AQ5 2P20NG	-	AQ5 2P20PN	-
	25	AQ5 2P25NG	-	AQ5 2P25PN	-
	32	AQ5 2P32NG	-	AQ5 2P32PN	-
	40	AQ5 2P40NG	-	AQ5 2P40PN	-
	50	AQ5 2P50NG	-	AQ5 2P50PN	-
	63	AQ5 2P63NG	-	AQ5 2P63PN	-
	70	AQ5 2P70NG	-	AQ5 2P70PN	-
	80	AQ5 2P80NG	-	AQ5 2P80PN	-
	100	AQ5 2P100NG	-	AQ5 2P100PN	-
3	16	AQ5 3P16NG	-	AQ5 3P16PN	-
	20	AQ5 3P20NG	-	AQ5 3P20PN	-
	25	AQ5 3P25NG	-	AQ5 3P25PN	-
	32	AQ5 3P32NG	-	AQ5 3P32PN	-
	40	AQ5 3P40NG	-	AQ5 3P40PN	-
	50	AQ5 3P50NG	-	AQ5 3P50PN	-
	63	AQ5 3P63NG	-	AQ5 3P63PN	-
	70	AQ5 3P70NG	-	AQ5 3P70PN	-
	80	AQ5 3P80NG	-	AQ5 3P80PN	-
	100	AQ5 3P100NG	-	AQ5 3P100PN	-
4	16	AQ5 4P16NG	-	AQ5 4P16PN	-
	20	AQ5 4P20NG	-	AQ5 4P20PN	-
	25	AQ5 4P25NG	-	AQ5 4P25PN	-
	32	AQ5 4P32NG	-	AQ5 4P32PN	-
	40	AQ5 4P40NG	-	AQ5 4P40PN	-
	50	AQ5 4P50NG	-	AQ5 4P50PN	-
	63	AQ5 4P63NG	-	AQ5 4P63PN	-
	70	AQ5 4P70NG	-	AQ5 4P70PN	-
	80	AQ5 4P80NG	-	AQ5 4P80PN	-
	100	AQ5 4P100NG	-	AQ5 4P100PN	-

## Outline and installation dimensions



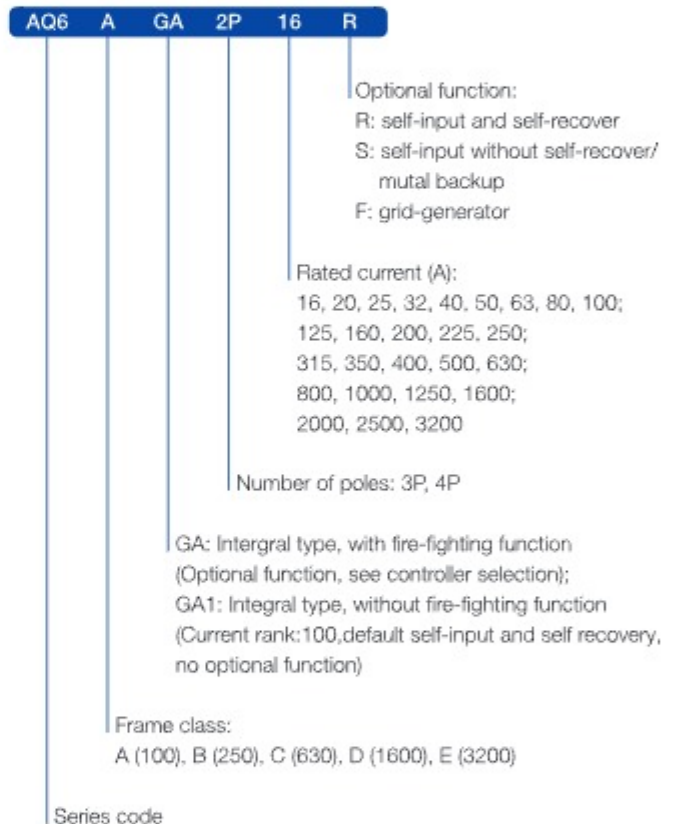
## Features

- Suitable for AC 50/60 Hz, rated voltage 400 V, rated current to 3200 A in two power supply systems, when the power supply fails (overvoltage, under pressure, or disconnect), the load can be converted to another The power supply all the way to ensure the normal power supply of the load circuit to meet the requirements of users with higher power reliability.
- With small volume, simple structure, convenient operation, long service life The intelligent controller uses a single-chip machine as the control core, simple hardware, powerful function, convenient expansion, high reliability; With overvoltage, underwriting, automatic detection and switching function; The switching driver is driven by electromagnetic coil, mechanical chain and electrical chain, and the switch is reliable; The power supply of the conversion controller adopts the AC 220 V of commonly used, spare power supply as the working voltage; This device has a fire interface circuit, which can realize the disconnection function of fire linkage and passive signals.



1

## Instruction of type code



## Technical parameter

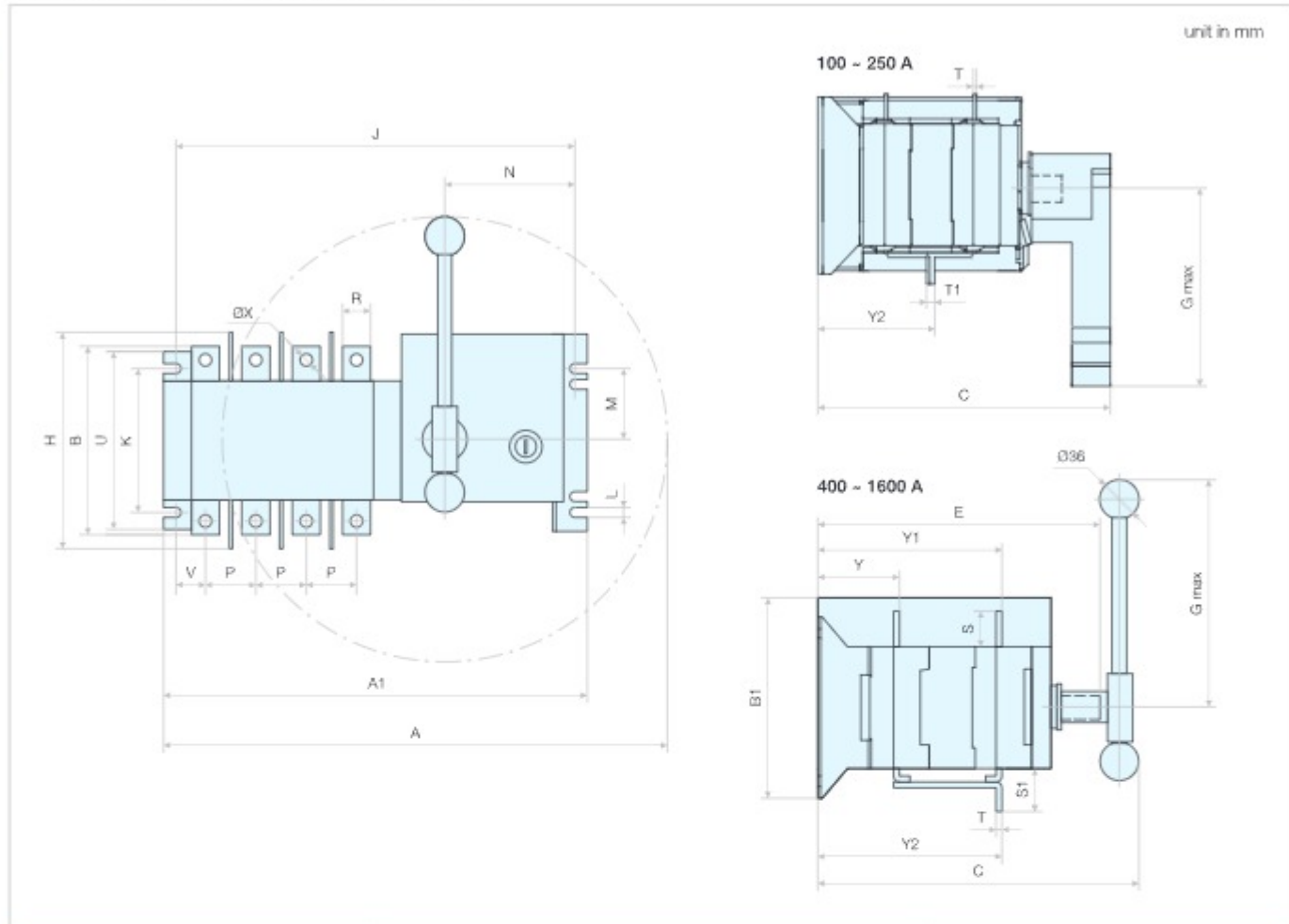
	3SAQ6-100	3SAQ6-250	3SAQ6-630	3SAQ6-1600	3SAQ6-3200
Frame class	100	250	630	1600	3200
Rated current In	A 16, 20, 25, 32, 40, 50, 63, 80, 100	125, 160, 200, 225, 250	315, 350, 400, 500, 630	800, 1000, 1600, 1250	2000, 2500, 3200
Number of poles	3P, 4P				
Rated insulation voltage Ui	V 690				
Rated concussion withstand voltage Uimp	kV 8				
Rated working voltage Ue	AC 400 V				
Rated short-circuit connection capacity	kA 8	17	26	67.5	67.5
Rated short-time withstand current Icw	kA/ms 5/30	10/60	12.6/60	32/60	32/60
Use category	AC-33B				
Transfer time I-II or II-I	s 2.5	0.6	0.6	1.2, 1.8	1.8, 2.4
Control voltage	DC 24V, DC 48V, DC 110V, AC 220V				
Rated frequency	Start	W 20	325	355	400, 440, 600
	Normal	W	62	74	90, 98, 120

# Automatic Transfer Switches Series 3SAQ6

## Outline and installation dimensions

16 – 1600 A installation dimensions (2 input 1 output).

1

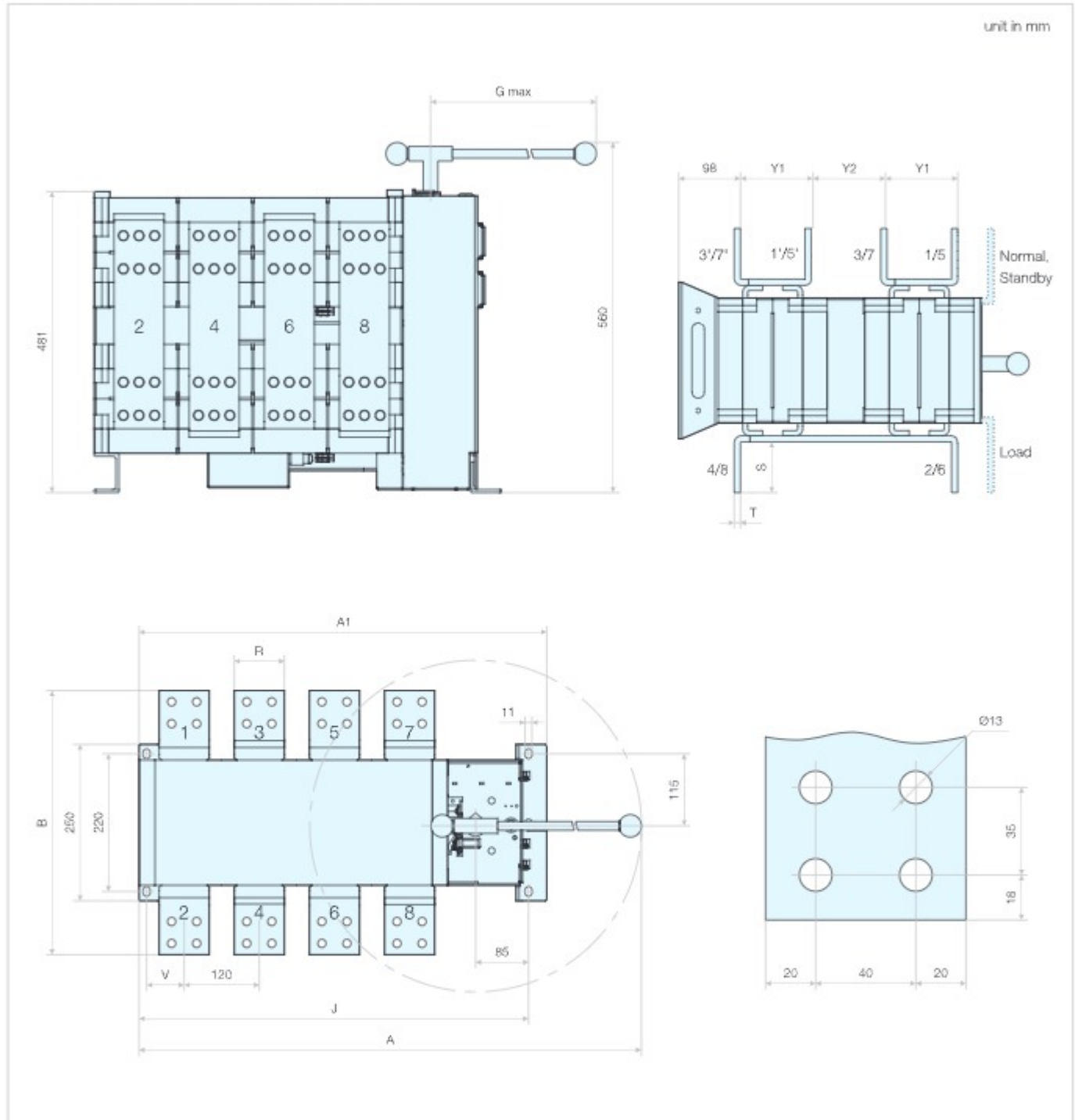


Specification		Total dimension								Switch installation					
		A	A1	B	B1	C	E	G max	H	J	K	L	M	N	
3SAQ6-100	16-100A	270	245	110	103	170	142	115	146	226	84	7	44	81	
	125, 160A	348	305	147	142	224	190	144	185	284	102	7	49	91	
3SAQ6-250	250A	411	368	170	142	224	190	144	200	352	102	7	49	91	
	400A/3P	525	374	249	222	305	268	250	290	354	179	9	96	91	
3SAQ6-630	400A/4P	585	435	249	222	305	268	250	290	415	179	9	96	91	
	630A/3P	525	374	365	222	305	268	250	290	354	179	9	96	91	
	630A/4P	585	435	365	222	305	268	250	290	415	179	9	96	91	
	800, 1000A/3P	785	520	352	250	390	326	360	-	496	220	11	115	84	
3SAQ6-1600	800, 1000A/4P	1080	635	352	250	390	326	540	-	610	220	11	115	84	
	1250A/3P	785	520	368	250	390	326	360	-	496	220	11	115	84	
	1250A/4P	1080	635	368	250	390	326	540	-	610	220	11	115	84	
	1600A/3P	785	520	376	250	390	326	360	-	496	220	11	115	84	
	1600A/4P	1080	635	376	250	390	326	540	-	610	220	11	115	84	

Specification		Switch installation							Connection terminal					
		P	R	S	S1	T	T1	U	V	ØX	Y	Y1	Y2	
3SAQ6-100	16-100A	30	14	18	23	2.5	5	103	12	6	40.5	92	67.5	
	125, 160A	36	20	26	37	3.5	-	127.5	19	9	56	127.5	127.5	
3SAQ6-250	250A	50	25	29	40	3.5	-	141.5	28	11	56	130	130	
	400A/3P	65	32	37	52	5	-	222	38	11	83	193	193	
3SAQ6-630	400A/4P	65	32	37	52	5	-	222	38	11	83	193	193	
	630A/3P	65	40	45	61	6	-	222	38	12	83.5	193.5	196	
	630A/4P	65	40	45	61	6	-	222	38	12	83.5	193.5	196	
	800, 1000A/3P	120	60	64	88	8	-	250	56.5	13	109	254	254	
3SAQ6-1600	800, 1000A/4P	120	60	64	88	8	-	250	60.5	13	109	254	254	
	1250A/3P	120	80	68	100	8	-	250	56.5	13	109	254	254	
	1250A/4P	120	80	68	100	8	-	250	60.5	13	109	254	254	
	1600A/3P	120	80	68	108	10	-	250	56.5	13	110	255	255	
	1600A/4P	120	80	68	108	10	-	250	60.5	13	110	255	255	

## Outline and installation dimensions

2000 – 3200 A installation dimensions (2 input 1 output).



Specification		A	A1	B	G max	J	R	S	T	V	Y1	Y2
3SAQ6-3200	2000A/3P	785	537	423	360	496	80	81	10	56	113	121
	2000A/4P	1080	651	423	540	610	80	81	10	60	113	121
	2500A/3P	785	537	433	360	496	80	81	15	56	118	116
	2500A/4P	1080	651	433	540	610	80	81	15	60	118	116
	3200A/3P	785	537	443	360	496	80	81	20	56	123	111
	3200A/4P	1080	651	443	540	610	80	81	20	60	123	111

# Automatic Transfer Switches Series 3SAQ6

## Selection and ordering data

GA

1



	Type	Rated current (A)	3P		4P			
			Type code	Order code	Type code	Order code		
3SAQ6-100	R	16	AQ6AGA3P16R	-	AQ6AGA4P16R	-		
		20	AQ6AGA3P20R	-	AQ6AGA4P20R	-		
		25	AQ6AGA3P25R	-	AQ6AGA4P25R	-		
		32	AQ6AGA3P32R	-	AQ6AGA4P32R	-		
		40	AQ6AGA3P40R	-	AQ6AGA4P40R	-		
		50	AQ6AGA3P50R	-	AQ6AGA4P50R	-		
		63	AQ6AGA3P63R	-	AQ6AGA4P63R	-		
		80	AQ6AGA3P80R	-	AQ6AGA4P80R	-		
		100	AQ6AGA3P100R	-	AQ6AGA4P100R	-		
		S	16	AQ6AGA3P16S	-	AQ6AGA4P16S	-	
			20	AQ6AGA3P20S	-	AQ6AGA4P20S	-	
			25	AQ6AGA3P25S	-	AQ6AGA4P25S	-	
	32		AQ6AGA3P32S	-	AQ6AGA4P32S	-		
	40		AQ6AGA3P40S	-	AQ6AGA4P40S	-		
	50		AQ6AGA3P50S	-	AQ6AGA4P50S	-		
	63		AQ6AGA3P63S	-	AQ6AGA4P63S	-		
	80		AQ6AGA3P80S	-	AQ6AGA4P80S	-		
	100		AQ6AGA3P100S	-	AQ6AGA4P100S	-		
	F		16	AQ6AGA3P16F	-	AQ6AGA4P16F	-	
			20	AQ6AGA3P20F	-	AQ6AGA4P20F	-	
			25	AQ6AGA3P25F	-	AQ6AGA4P25F	-	
		32	AQ6AGA3P32F	-	AQ6AGA4P32F	-		
		40	AQ6AGA3P40F	-	AQ6AGA4P40F	-		
		50	AQ6AGA3P50F	-	AQ6AGA4P50F	-		
		63	AQ6AGA3P63F	-	AQ6AGA4P63F	-		
		80	AQ6AGA3P80F	-	AQ6AGA4P80F	-		
		100	AQ6AGA3P100F	-	AQ6AGA4P100F	-		
		3SAQ6-250	R	125	AQ6BGA3P125R	-	AQ6BGA4P125R	-
				160	AQ6BGA3P160R	-	AQ6BGA4P160R	-
				200	AQ6BGA3P200R	-	AQ6BGA4P200R	-
225	AQ6BGA3P225R			-	AQ6BGA4P225R	-		
250	AQ6BGA3P250R			-	AQ6BGA4P250R	-		
S	125			AQ6BGA3P125S	-	AQ6BGA4P125S	-	
	160		AQ6BGA3P160S	-	AQ6BGA4P160S	-		
	200		AQ6BGA3P200S	-	AQ6BGA4P200S	-		
	225		AQ6BGA3P225S	-	AQ6BGA4P225S	-		
	250		AQ6BGA3P250S	-	AQ6BGA4P250S	-		
	F		125	AQ6BGA3P125F	-	AQ6BGA4P125F	-	
160			AQ6BGA3P160F	-	AQ6BGA4P160F	-		
200			AQ6BGA3P200F	-	AQ6BGA4P200F	-		
225			AQ6BGA3P225F	-	AQ6BGA4P225F	-		
250			AQ6BGA3P250F	-	AQ6BGA4P250F	-		

## Selection and ordering data

GA

	Type	Rated current (A)	3P		4P	
			Type code	Order code	Type code	Order code
3SAQ6-630	R	315	AQ6CGA3P315R	-	AQ6CGA4P315R	-
		350	AQ6CGA3P350R	-	AQ6CGA4P350R	-
		400	AQ6CGA3P400R	-	AQ6CGA4P400R	-
		500	AQ6CGA3P500R	-	AQ6CGA4P500R	-
		630	AQ6CGA3P630R	-	AQ6CGA4P630R	-
	S	315	AQ6CGA3P315S	-	AQ6CGA4P315S	-
		350	AQ6CGA3P350S	-	AQ6CGA4P350S	-
		400	AQ6CGA3P400S	-	AQ6CGA4P400S	-
		500	AQ6CGA3P500S	-	AQ6CGA4P500S	-
		630	AQ6CGA3P630S	-	AQ6CGA4P630S	-
	F	315	AQ6CGA3P315F	-	AQ6CGA4P315F	-
		350	AQ6CGA3P350F	-	AQ6CGA4P350F	-
		400	AQ6CGA3P400F	-	AQ6CGA4P400F	-
		500	AQ6CGA3P500F	-	AQ6CGA4P500F	-
		630	AQ6CGA3P630F	-	AQ6CGA4P630F	-
3SAQ6-1600	R	800	AQ6DGA3P800R	-	AQ6DGA4P800R	-
		1000	AQ6DGA3P1000R	-	AQ6DGA4P1000R	-
		1250	AQ6DGA3P1250R	-	AQ6DGA4P1250R	-
		1600	AQ6DGA3P1600R	-	AQ6DGA4P1600R	-
	S	800	AQ6DGA3P800S	-	AQ6DGA4P800S	-
		1000	AQ6DGA3P1000S	-	AQ6DGA4P1000S	-
		1250	AQ6DGA3P1250S	-	AQ6DGA4P1250S	-
		1600	AQ6DGA3P1600S	-	AQ6DGA4P1600S	-
	F	800	AQ6DGA3P800F	-	AQ6DGA4P800F	-
		1000	AQ6DGA3P1000F	-	AQ6DGA4P1000F	-
		1250	AQ6DGA3P1250F	-	AQ6DGA4P1250F	-
		1600	AQ6DGA3P1600F	-	AQ6DGA4P1600F	-
3SAQ6-3200	R	2000	AQ6EGA3P2000R	-	AQ6EGA4P2000R	-
		2500	AQ6EGA3P2500R	-	AQ6EGA4P2500R	-
		3200	AQ6EGA3P3200R	-	AQ6EGA4P3200R	-
	S	2000	AQ6EGA3P2000S	-	AQ6EGA4P2000S	-
		2500	AQ6EGA3P2500S	-	AQ6EGA4P2500S	-
		3200	AQ6EGA3P3200S	-	AQ6EGA4P3200S	-
	F	2000	AQ6EGA3P2000F	-	AQ6EGA4P2000F	-
		2500	AQ6EGA3P2500F	-	AQ6EGA4P2500F	-
		3200	AQ6EGA3P3200F	-	AQ6EGA4P3200F	-

# Automatic Transfer Switches Series 3SAQ6



## Selection and ordering data

GA1

1

	Type	Rated current (A)	3P		4P		
			Type code	Order code	Type code	Order code	
3SAQ6-100	R	16	AQ6AGA13P16R	-	AQ6AGA14P16R	-	
		20	AQ6AGA13P20R	-	AQ6AGA14P20R	-	
		25	AQ6AGA13P25R	-	AQ6AGA14P25R	-	
		32	AQ6AGA13P32R	-	AQ6AGA14P32R	-	
		40	AQ6AGA13P40R	-	AQ6AGA14P40R	-	
		50	AQ6AGA13P50R	-	AQ6AGA14P50R	-	
		63	AQ6AGA13P63R	-	AQ6AGA14P63R	-	
		80	AQ6AGA13P80R	-	AQ6AGA14P80R	-	
		100	AQ6AGA13P100R	-	AQ6AGA14P100R	-	
		S	16	AQ6AGA13P16S	-	AQ6AGA14P16S	-
	20		AQ6AGA13P20S	-	AQ6AGA14P20S	-	
	25		AQ6AGA13P25S	-	AQ6AGA14P25S	-	
	32		AQ6AGA13P32S	-	AQ6AGA14P32S	-	
	40		AQ6AGA13P40S	-	AQ6AGA14P40S	-	
	50		AQ6AGA13P50S	-	AQ6AGA14P50S	-	
	63		AQ6AGA13P63S	-	AQ6AGA14P63S	-	
	80		AQ6AGA13P80S	-	AQ6AGA14P80S	-	
	100		AQ6AGA13P100S	-	AQ6AGA14P100S	-	
	F		16	AQ6AGA13P16F	-	AQ6AGA14P16F	-
		20	AQ6AGA13P20F	-	AQ6AGA14P20F	-	
		25	AQ6AGA13P25F	-	AQ6AGA14P25F	-	
		32	AQ6AGA13P32F	-	AQ6AGA14P32F	-	
		40	AQ6AGA13P40F	-	AQ6AGA14P40F	-	
		50	AQ6AGA13P50F	-	AQ6AGA14P50F	-	
		63	AQ6AGA13P63F	-	AQ6AGA14P63F	-	
		80	AQ6AGA13P80F	-	AQ6AGA14P80F	-	
		100	AQ6AGA13P100F	-	AQ6AGA14P100F	-	
		3SAQ6-250	R	125	AQ6BGA13P125R	-	AQ6BGA14P125R
	160			AQ6BGA13P160R	-	AQ6BGA14P160R	-
	200			AQ6BGA13P200R	-	AQ6BGA14P200R	-
225	AQ6BGA13P225R			-	AQ6BGA14P225R	-	
250	AQ6BGA13P250R			-	AQ6BGA14P250R	-	
S	125		AQ6BGA13P125S	-	AQ6BGA14P125S	-	
	160		AQ6BGA13P160S	-	AQ6BGA14P160S	-	
	200		AQ6BGA13P200S	-	AQ6BGA14P200S	-	
	225		AQ6BGA13P225S	-	AQ6BGA14P225S	-	
	250		AQ6BGA13P250S	-	AQ6BGA14P250S	-	
F	125		AQ6BGA13P125F	-	AQ6BGA14P125F	-	
	160		AQ6BGA13P160F	-	AQ6BGA14P160F	-	
	200		AQ6BGA13P200F	-	AQ6BGA14P200F	-	
	225		AQ6BGA13P225F	-	AQ6BGA14P225F	-	
	250		AQ6BGA13P250F	-	AQ6BGA14P250F	-	



## Selection and ordering data

### GA1

	Type	Rated current (A)	3P		4P	
			Type code	Order code	Type code	Order code
3SAQ6-630	R	315	AQ6CGA13P315R	-	AQ6CGA14P315R	-
		350	AQ6CGA13P350R	-	AQ6CGA14P350R	-
		400	AQ6CGA13P400R	-	AQ6CGA14P400R	-
		500	AQ6CGA13P500R	-	AQ6CGA14P500R	-
		630	AQ6CGA13P630R	-	AQ6CGA14P630R	-
	S	315	AQ6CGA13P315S	-	AQ6CGA14P315S	-
		350	AQ6CGA13P350S	-	AQ6CGA14P350S	-
		400	AQ6CGA13P400S	-	AQ6CGA14P400S	-
		500	AQ6CGA13P500S	-	AQ6CGA14P500S	-
		630	AQ6CGA13P630S	-	AQ6CGA14P630S	-
	F	315	AQ6CGA13P315F	-	AQ6CGA14P315F	-
		350	AQ6CGA13P350F	-	AQ6CGA14P350F	-
		400	AQ6CGA13P400F	-	AQ6CGA14P400F	-
		500	AQ6CGA13P500F	-	AQ6CGA14P500F	-
		630	AQ6CGA13P630F	-	AQ6CGA14P630F	-
3SAQ6-1600	R	800	AQ6DGA13P800R	-	AQ6DGA14P800R	-
		1000	AQ6DGA13P1000R	-	AQ6DGA14P1000R	-
		1250	AQ6DGA13P1250R	-	AQ6DGA14P1250R	-
		1600	AQ6DGA13P1600R	-	AQ6DGA14P1600R	-
	S	800	AQ6DGA13P800S	-	AQ6DGA14P800S	-
		1000	AQ6DGA13P1000S	-	AQ6DGA14P1000S	-
		1250	AQ6DGA13P1250S	-	AQ6DGA14P1250S	-
		1600	AQ6DGA13P1600S	-	AQ6DGA14P1600S	-
	F	800	AQ6DGA13P800F	-	AQ6DGA14P800F	-
		1000	AQ6DGA13P1000F	-	AQ6DGA14P1000F	-
		1250	AQ6DGA13P1250F	-	AQ6DGA14P1250F	-
		1600	AQ6DGA13P1600F	-	AQ6DGA14P1600F	-
3SAQ6-3200	R	2000	AQ6EGA13P2000R	-	AQ6EGA14P2000R	-
		2500	AQ6EGA13P2500R	-	AQ6EGA14P2500R	-
		3200	AQ6EGA13P3200R	-	AQ6EGA14P3200R	-
	S	2000	AQ6EGA13P2000S	-	AQ6EGA14P2000S	-
		2500	AQ6EGA13P2500S	-	AQ6EGA14P2500S	-
		3200	AQ6EGA13P3200S	-	AQ6EGA14P3200S	-
	F	2000	AQ6EGA13P2000F	-	AQ6EGA14P2000F	-
		2500	AQ6EGA13P2500F	-	AQ6EGA14P2500F	-
		3200	AQ6EGA13P3200F	-	AQ6EGA14P3200F	-

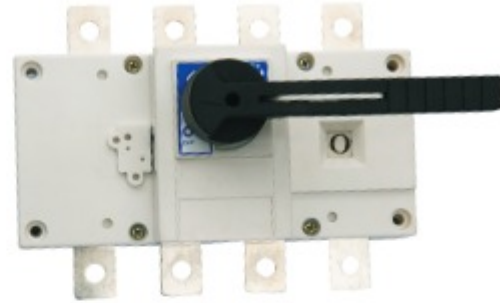


# Load Break Switches

## Series 3SGL

### Applications and functions

- Making, breaking and disconnecting under load conditions
- Providing safety isolation for any low voltage circuit




### Instruction of type code

GL	125	A	I	F	3
Series code	Conventional thermal current	Operating voltage type	Handle type	Operation type	Poles: 3: 3P; 4: 4P
	125 160 250 400 630	A: AC voltage	I: Internal handle E: External handle	F: Front operation	

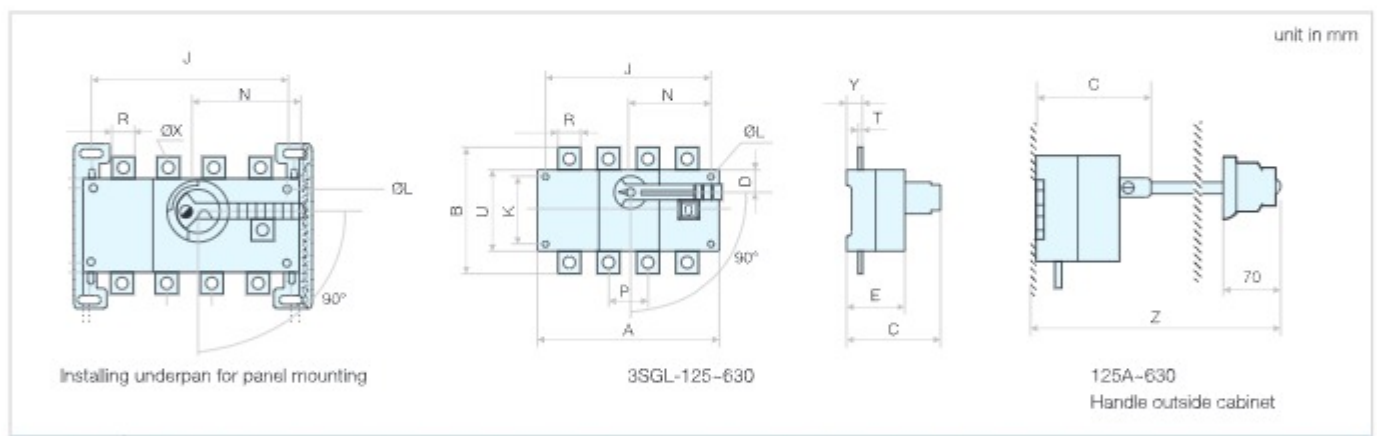
### Technical specifications

Type	3SGL-125	3SGL-160	3SGL-250	3SGL-400	3SGL-630
Standard	IEC 60947-3				
Conventional thermal current I <sub>th</sub> (A)	125	160	250	400	630
Rated voltage (V)	400				
Rated insulation voltage (V)	800				
Number of poles	3, 4	3, 4	3, 4	3, 4	3, 4
Rated frequency (Hz)	50/60				
400 V, AC 22 B	125	160	250	400	630
690 V, AC 21 B	125	160	250	315	500
400 V, DC 22	125	160	250	400	630
690 V, DC 21	125	160	200	315	500
Rated short-time with stand current I <sub>cw</sub> (kA) for 1 s	10	10	12	20	25
Rated making capability I <sub>m</sub> in AC 230/400 V (A)	1250	1250	2000	4000	4000
Rated breaking capability I <sub>cn</sub> in AC 230/400 V (A)	1000	1000	1600	2500	3200
Mechanical life (times)	10000	10000	8000	5500	5500
Degree of protection (operator side)	IP20				
Operation torque (N-m)	6.5	6.5	10	14.5	14.5
Ambient temperature	-5 ... +40 °C, max. 95% humidity				
Storage temperature	-40 ... +75 °C				
Altitude Max (meters)	2000				

## Selection and ordering data

	Number of poles	Rated current		Type Code	Order Code	
		In (A)				
	Handle in cabinet	3	125	GL125AIF3	31428	
			160	GL160AIF3	10919	
			250	GL250AIF3	10920	
			400	GL400AIF3	10921	
			630	GL630AIF3	10922	
			4	125	GL125AIF4	31429
	160	GL160AIF4		10928		
	250	GL250AIF4		10929		
	400	GL400AIF4		10930		
	630	GL630AIF4		10931		
	Handle outside cabinet	3		3	125	GL125AEF3
			160		GL160AEF3	10937
250			GL250AEF3		10938	
400			GL400AEF3		10939	
630			GL630AEF3		10940	
4			4		125	GL125AEF4
		160		GL160AEF4	10946	
		250		GL250AEF4	10947	
		400		GL400AEF4	10948	
		630		GL630AEF4	10949	

## Outline and installation dimensions



Current	Poles	A	B	C	D	E	ØL	J	K	N	P	R	T	U	ØX	Y	Z
125-160 A	3P	140	135	125	27	73	5.5	120	65	85	36	20	3.5	85	9	25	226
	4P	170	135	125	27	73	5.5	150	65	85	36	20	3.5	85	9	25	226
250 A	3P	180	170	138	35	86	5.5	160	90	115	50	25	5	110	11	25	236
	4P	230	170	138	35	86	5.5	210	90	115	50	25	6	110	11	25	236
400 A	3P	230	240	169	50	113	7	210	140	145	65	32	8	160	11	37	276
	4P	290	240	169	50	113	7	210	140	145	65	32	8	160	11	37	276
630 A	3P	230	260	169	50	113	7	270	140	145	65	40	8	160	11	37	276
	4P	290	260	169	50	113	7	270	140	145	65	40	10	160	13	37	276

# Fuse Combination Switches

## Series 3SGLR

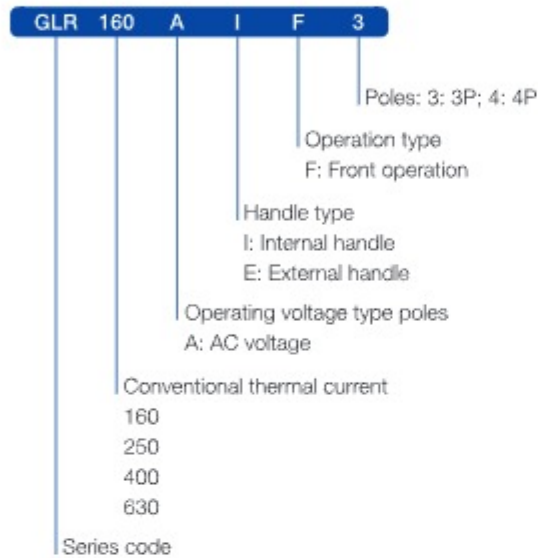
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### Applications and functions

- Breaking or switching off on load
- Safety isolation and protection against over current for any low voltage electrical circuit
- Providing a guarantee of reliable breaking and protection from power distribution to motor protection




### Instruction of type code



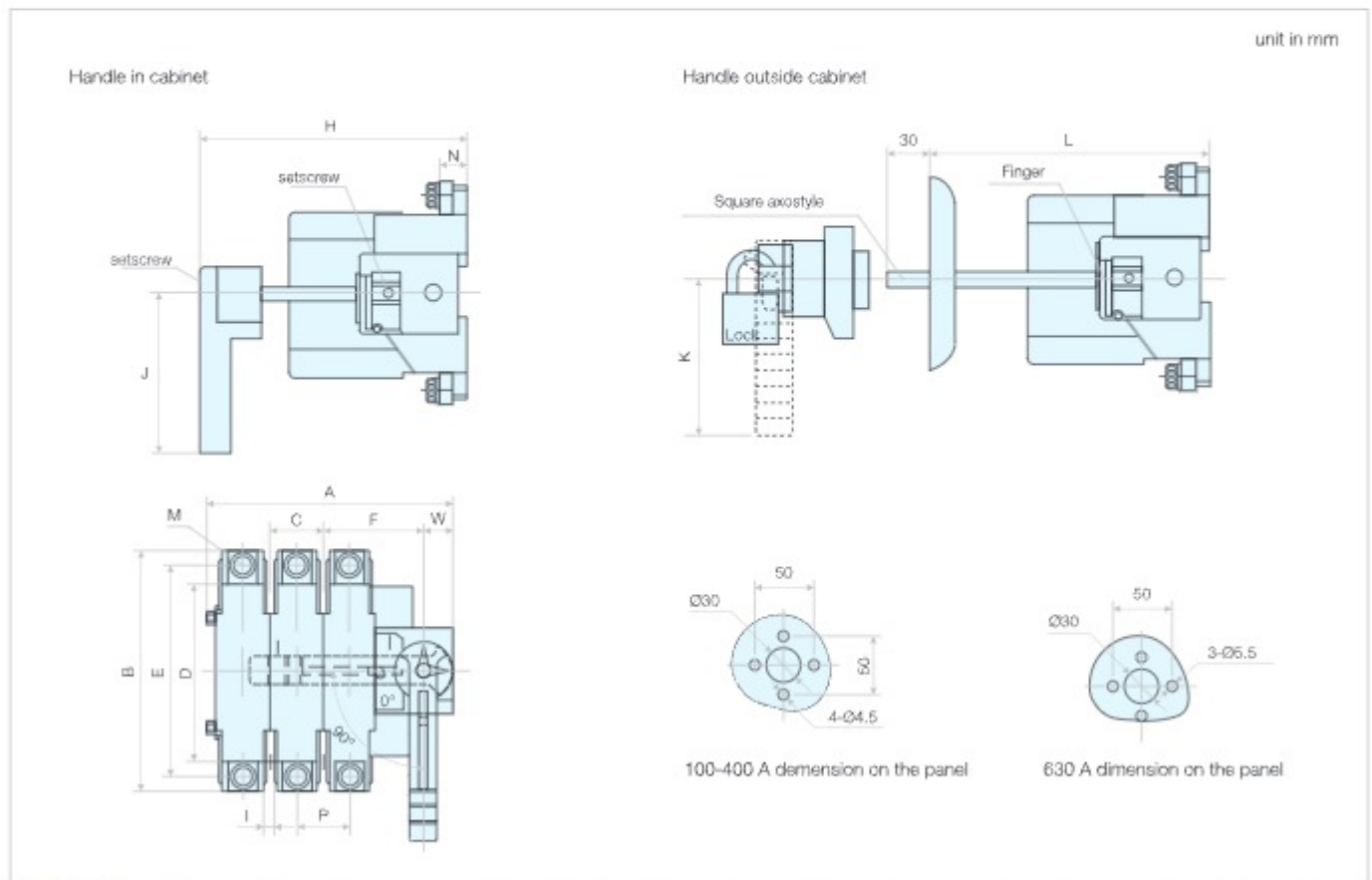
### Technical specifications

Type	3SGLR-160	3SGLR-250	3SGLR-400	3SGLR-630
Standard	IEC 60947-3			
Conventional thermal current Ith (A)	160	250	400	630
Rated voltage (V)	400			
Rated insulation voltage (V)	690		800	
Number of poles	3, 4	3, 4	3, 4	3, 4
Rated frequency (Hz)	50/60	50/60	50/60	50/60
Associated fuse (size)	00	1	12	13
Associated current (A)				
400 V, AC 21B (A)	160	250	400	630
400 V, AC 22B (A)	160	250	400	630
690 V, AC 22B (A)	100	250	315	425
690 V, AC 22B (A)	100	250	315	425
230 V, DC 21 (A)	160	250	400	630
230 V, DC 22 (A)	160	250	400	630
440 V, DC 21 (A)	100	250	315	425
440 V, DC 22 (A)	100	250	315	425
Rated breaking capability Icn in AC 230 410 V (kA)	10	10	20	35
Mechanical life (times)	10000	8000	5500	5500
Degree of protection (operator side)				
Operation torque (N·m)	6,5	10	14,5	14,5
Ambient temperature	-5 ... +40 °C, max. 95% humidity			
Storage temperature	-40 ... +75 °C			
Altitude Max (meters)	2000			

## Selection and ordering data

	Number of poles	Rated current In (A)	LV HRC Fuse links (size)	Type code	Order code
 Handle in cabinet	3	160	00	GLR160AIF3	11010
		250	1	GLR250AIF3	11011
		400	2	GLR400AIF3	11012
	4	630	3	GLR630AIF3	11013
		160	00	GLR160AIF4	11014
		250	1	GLR250AIF4	11015
Handle outside cabinet	3	400	2	GLR400AIF4	11016
		630	3	GLR630AIF4	11017
		160	00	GLR160AEF3	11021
	4	250	1	GLR250AEF3	11022
		400	2	GLR400AEF3	11023
		630	3	GLR630AEF3	11024
4	160	00	GLR160AEF4	11025	
	250	1	GLR250AEF4	11026	
	400	2	GLR400AEF4	11027	
		630	3	GLR630AEF4	11028

## Outline and installation dimensions



Specification	A	B	C	D	E	F	H	ØI	J	L	M	N	W	P	K
3SGLR-160/3	165	162	36	120	142	67.5	190	6	115	205-325	8	19	21	36	126
3SGLR-160/4	202	162	36	120	142	67.5	190	6	115	205-325	8	19	21	36	126
3SGLR-250/3	240	195	60	160	166	91.5	210	6	145	205-325	10	19	21	60	126
3SGLR-250/4	300	195	60	160	166	91.5	210	6	145	205-325	10	19	21	60	126
3SGLR-400/3	280	205	66	170	176	122	210	6	145	205-325	10	25	21	66	126
3SGLR-400/4	346	205	66	170	176	122	210	6	145	205-325	10	25	21	66	126
3SGLR-630/3	346	300	250	250	268	39	350	9	190	330-440	12	72	37	80	190
3SGLR-630/4	426	300	250	250	268	39	350	9	190	330-440	12	72	37	80	190

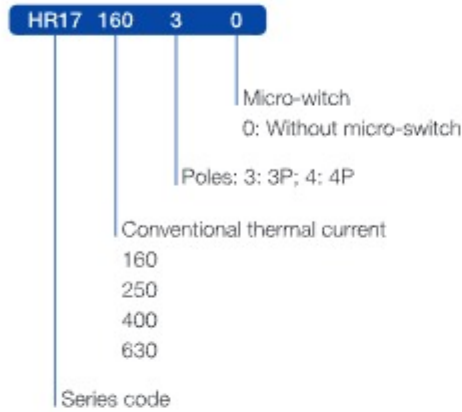
# Fuse Disconnecter Switches Series 3SHR17

## Applications and functions

- Short circuit protection in the distribution and motor circuit
- To be power switch, isolating switch, emergency switch
- Used in the distribution circuit and motor circuit



## Instruction of type code



## Technical specifications

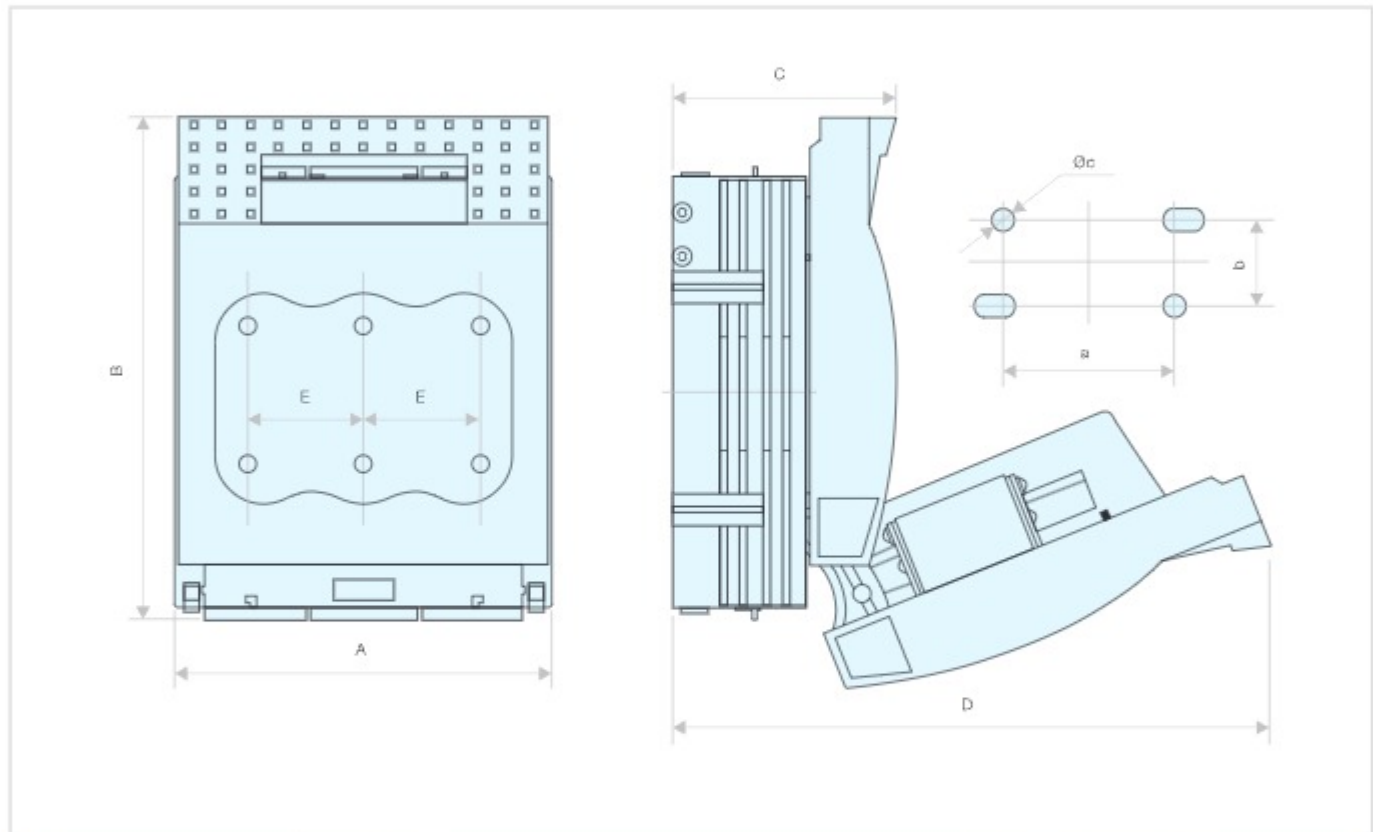
Type	3SHR17-160	3SHR17-250	3SHR17-400	3SHR17-630
Standard	IEC 60947-3			
Conventional thermal current Ith (A)	160	250	400	630
Rated insulation voltage (V)	800	800	800	800
Rated current (A)	160	250	400	630
Associated fuse (size)	0	1	2	3
Number of poles	3, 4	3, 4	3, 4	3, 4
Rated frequency (Hz)	50/60	50/60	50/60	50/60
Rated operational voltage Ue (V AC)	690	690	690	690
Rated insulation voltage Ui (V AC)	800	800	800	800
Rated conditional short-circuit current with fuses (size/A)	00/160	1/250	2/400	3/630
Rated breaking capacity at 500/690 V AC (kA)	50	50	50	50
Utilization category	AC-21B (690 V) AC-22B (500 V) AC-23B (400 V)	AC-21B (690 V) AC-22B (500 V) AC-23B (400 V)	AC-21B (690 V) AC-22B (500 V) AC-23B (400 V)	AC-21B (690 V) AC-22B (500 V) AC-23B (400 V)
Rated making capacity (A)	725 V 240 A 525 V 480 A 420 V 1600 A	725 V 375 A 525 V 750 A 420 V 2500 A	725 V 600 A 525 V 1200 A 420 V 4000 A	725 V 945 A 525 V 1890 A 420 V 6300 A
Rated breaking capacity	725 V 240 A 525 V 480 A 420 V 1280 A	725 V 375 A 525 V 750 A 420 V 2000 A	725 V 600 A 525 V 1200 A 420 V 3200 A	725 V 945 A 525 V 1890 A 420 V 6300 A
Power consumption of fuse (W)	12	24	34	48
Permissible ambient temperature	-5 ... +45 °C for operation, -45 ... +60 °C during storage			
Mechanical endurance, operating cycles	1000	800	800	800
Degree of protection (operator side)	IP20			

## Selection and ordering data



	Number of poles	Rated current I <sub>n</sub> (A)	LV HRC fuse links (Size)	Type code	Order code
	3P	160	00	HR1716030	11037
		250	1	HR1725030	11038
		400	2	HR1740030	11039
		630	3	HR1763030	11040
	4P	160	00	HR1716040	11043
		250	1	HR1725040	11044
		400	2	HR1740040	11045
		630	3	HR1763040	11046

## Mounting dimensions



Type		Overall size (mm)					Mounting dimensions (mm)		
		A	B	C	D	E	a	b	c
3SHR17-160	3P	106	200	83	206	33	66	25	∅ 7
	4P	138	200	83	205	33	100	25	∅ 7
3SHR17-250	3P	185	247	110	295	57	114	50	∅ 11
	4P	242	247	110	295	57	172	50	∅ 11
3SHR17-400	3P	210	290	125	340	65	130	50	∅ 11
	4P	276	290	125	340	65	195	50	∅ 11
3SHR17-630	3P	256	300	145	360	81	162	50	∅ 11
	4P	340	300	145	360	81	243	50	∅ 11

# Low Voltage Fuses Series RT16

## Applications and functions

- Connecting and disconnecting circuits under load
- Protection against overloads and short circuits Used for installation systems in non-residential, commercial and industrial buildings as well as in systems of power supply companies.



## Instruction of type code

**10 RT16 G 00C**

Blade size  
00C, 00, 0, 1, 2, 3, 4

Protection type  
G: Circuit protection

Series code

### Rated current (A)

10, 16, 20, 25, 32, 40, 50, 63, 80, 100 (Size 00C)  
 10, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160 (Size 00)  
 10, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160 (Size 0)  
 63, 80, 100, 125, 160, 200, 225, 250 (Size 1)  
 125, 160, 200, 225, 250, 300, 315, 355, 400 (Size 2)  
 160, 200, 225, 250, 300, 315, 355, 400, 500, 630 (Size 3)  
 800, 1000 (Size 4)








## Technical specifications

Size	00C	00	0	1	2	3	4
Standard	IEC 60269						
Frame current $I_{nm}$ (A)	160	160	160	250	400	630	1000
Rated current (A)	10, 16, 20, 25 32, 40, 50, 63 80, 100	10, 16, 20, 25 32, 40, 50, 63 80, 100, 125	10, 16, 20, 25 32, 40, 50, 63 80, 100, 125, 160	63, 80, 100 125, 160, 200 225, 250	125, 160, 200 225, 250, 300 315, 355, 630	160, 200, 225, 250, 300, 315, 355, 400, 500, 630	800, 100
Rated voltage $U_n$ (V AC)	500/660						
Rated frequency (Hz)	50/60						
Rated breaking capacity (kA)	120	120	120	120	120	120	120
Ambient temperature	-5 to +40 °C, max. 95% humidity						
Storage temperature	-40 to +75 °C						

## Selection and ordering data

LV HRC fuse bases	Size	Matched fuse	Maximum rated voltage (V)	Rated current $I_n$ (A)	Type code	Order code
	RT16G00/00C	Blade Size 00/00C	500	60	RT16-00-B	24679
	RT16G0	Blade Size 0	500	160	RT16-0-B	24680
	RT16G1	Blade Size 1	500	250	RT16-1-B	24681
	RT16G2	Blade Size 2	500	400	RT16-2-B	24682
	RT16G3	Blade Size 3	500	630	RT16-3-B	24683
	RT16G4	Blade Size 4	500	1000	RT16-4-B	24684

## Selection and ordering data

LV HRC fuse core	Fuse type	Matched fuse base	Maximum rated voltage (V)	Rated current						
				In (A)	Type code	Order code				
	Blade Size 00C	RT16-00-B	500/660	10	10RT16G00C	24611				
				16	16RT16G00C	24612				
				20	20RT16G00C	24613				
				25	25RT16G00C	24614				
				32	32RT16G00C	24615				
				40	40RT16G00C	24616				
				50	50RT16G00C	24617				
				63	63RT16G00C	24618				
				80	80RT16G00C	24619				
				100	100RT16G00C	24620				
					Blade Size 00	RT16-00-B	500/660	10	10RT16G00	24623
16	16RT16G00	24624								
20	20RT16G00	24625								
25	25RT16G00	24626								
32	32RT16G00	24627								
40	40RT16G00	24628								
50	50RT16G00	24629								
63	63RT16G00	24630								
80	80RT16G00	24631								
100	100RT16G00	24632								
	Blade Size 0	RT16-0-B	500/660					10	10RT16G0	24635
				16	16RT16G0	24636				
				20	20RT16G0	24637				
				25	25RT16G0	24638				
				32	32RT16G0	24639				
				40	40RT16G0	24640				
				50	50RT16G0	24641				
				63	63RT16G0	24642				
				80	80RT16G0	24643				
				100	100RT16G0	24644				
					Blade Size 1	RT16-1-B	500/660	63	63RT16G1	24647
80	80RT16G1	24648								
100	100RT16G1	24649								
125	125RT16G1	24650								
160	160RT16G1	24651								
200	200RT16G1	24652								
225	225RT16G1	24653								
250	250RT16G1	24654								
	Blade Size 2	RT16-2-B	500/660					125	125RT16G2	24655
								160	160RT16G2	24656
								200	200RT16G2	24657
				225	225RT16G2	24658				
				250	250RT16G2	24659				
				300	300RT16G2	24660				
				315	315RT16G2	24661				
				355	355RT16G2	24662				
	Blade Size 3	RT16-3-B	500/660	400	400RT16G2	24663				
				160	160RT16G3	24664				
				200	200RT16G3	24665				
				225	225RT16G3	24666				
				250	250RT16G3	24667				
				300	300RT16G3	24668				
				315	315RT16G3	24669				
				355	355RT16G3	24670				
	Blade Size 4	RT16-4-B	500/660	400	400RT16G3	24671				
				500	500RT16G3	24672				
				630	630RT16G3	24673				
				800	800RT16G4	24675				
				1000	1000RT16G4	24676				



# Low Voltage Fuses Series RT16

## Outline and installation dimensions

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### Carrier Fuse

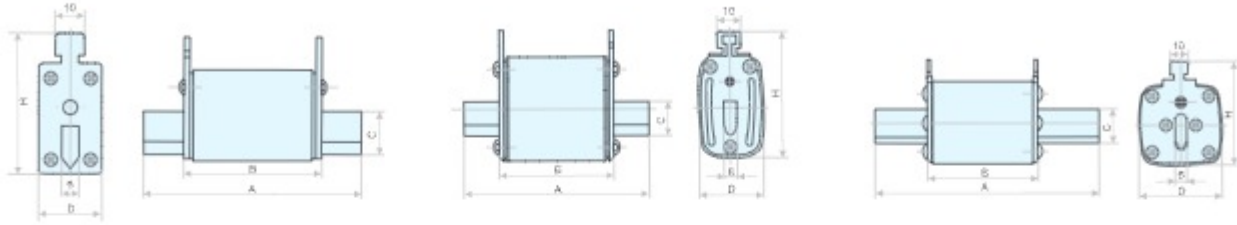


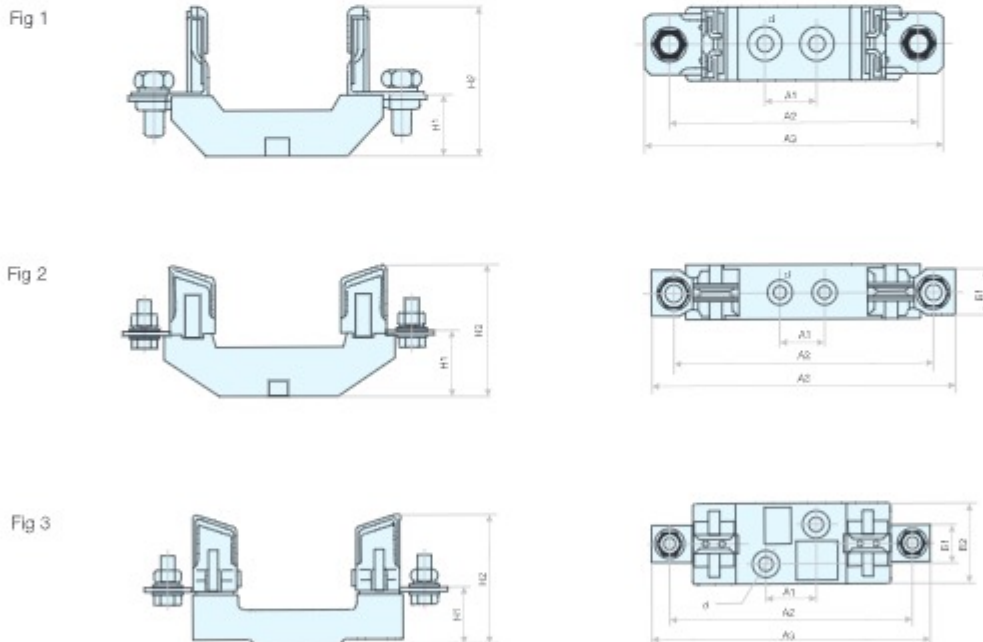
Fig 1

Fig 2

Fig 3

SASSIN	Drawing	Overall Dimension (mm)				
		A	B	C	D	H
RT16-00C	Fig 1	78	49	15	21	52.5
RT16-00	Fig 2	78	49	15	29	56
RT16-0	Fig 2	125	68	15	29	56
RT16-1	Fig 3	135	68	20	48	60
RT16-2	Fig 3	150	68	28	60	70
RT16-3	Fig 3	150	68	32	67	82
RT16-4	Fig 3	200	68	50	90	120

### Base



Products model	Drawing	Overall Dimension (mm)							
		A1	A2	A3	B1	B2	H1	H2	ød
RT16-00-B	Fig 1	25	100	120	-	-	25	60	7.5
RT16-0-B	Fig 2	25	100	120	30	-	25	60	7.5
RT16-1-B	Fig 3	25	175	200	30	58	38	84	10.5
RT16-2-B	Fig 3	25	200	225	30	60	38	84	10.5
RT16-3-B	Fig 3	25	210	250	30	60	40	105	10.5
RT16-4-B	Fig 3	25	264	300	30	88	40	137	9

## Modular DIN Rail Devices

### Miniature Circuit Breakers

- P 1-9 3SB71-63, 16000 A & 10000 A
- P 10-12 3SB71-125, high current, 10 kA
- P 13-19 3SB6 & 3SB6H, 6000 A
- P 20-23 VB510, 6000 A
- P 24-25 3SB1-125, high current, 6 kA
- P 26-27 3SB66, 1P+N in 1 modular width
- P 28-29 VBN515, 1P+N in 1 modular width

### Residual Current Devices

- P 30-31 3SL71, RCCB, up to 100 A
- P 32-36 3SL6, RCCB, up to 100 A
- P 37-40 PRC620, RCCB, up to 100 A
- P 41-44 VRC520, RCCB, up to 100 A
- P 45-47 3SL71N-40, RCBO, 1P+N, up to 40 A
- P 48-49 VRBNC515E, RCBO, compact
- P 50-54 VRB510E, RCBO, up to 80 A
- P 55-56 3SB71L-50, RCBO, integrated with earthing cable
- P 57-60 3SB71LN-40, RCBO, up to 40 A
- P 61-63 3SB71LB, RCD blocks

### Switching Devices

- P 64-66 3SB71G, switch disconnectors
- P 67-69 3SG6, switch disconnectors
- P 68 VG510, switch disconnectors

### Additional Components for MCBs and RCDs

- P 69-70 Additional components for series 3SB71
- P 71-73 Additional components for series 3SB6
  - P 74 Additional components for series VB510
- P 75-76 3SB71P/3SB71D/3SB71PD, pushbuttons and indicators
- P 77-78 P6-E, pushbuttons and indicators
- P 79-82 3SCH8, modular contactors
  - P 83 MS71, modular sockets
  - P 84 Time switches

### Surge Protective Devices

- P 85-87 3SU71, type 2
- P 88-91 3SU1, type 2
- P 92-95 3SU6, type 2
  - P 96 PSC61, compact, type 2

### Distribution Boxes

- P 97-101 3SD5/3SD6, plastic
  - P 102 3SD5T, metal base
- P 103-104 3SHT & 3SHA, metal
  - P 105 VD51MS, metal
  - P 106 3SD6N, modular boxes
- P 107-109 Accessories



## Functions

- Overload protection
- Short circuit protection
- Isolation
- Controlling
- Used in residential building, non-residential building, industry, energy and infrastructure.

## Technical specifications

- Standards: IEC 60898-1, IEC 60947-2
- Rated current  $I_n$  (A) : 0.5, 1, 1.6, 2, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63
- Rated voltage  $U_n$  (V AC): 230/400
- Operational voltage (V AC): Min. 24; Max. 250/440
- Rated frequency (Hz): 50/60
- Rated insulation voltage (V AC): 500
- Number of poles (P): 1, 1P+N, 2, 3, 3P+N, 4

Tripping characteristic	IEC 60898-1	IEC 60947-2
Characteristic B ( $I_n$ )	3-5	4
Characteristic C ( $I_n$ )	5-10	8
Characteristic D ( $I_n$ )	10-20	12

- Thermal operating limit ( $I_n$ ): 1.13 - 1.45
- Rated impulse withstand voltage  $U_{imp}$  (kV): 6
- Rated switching capacity  $I_{cn}$  (kA): 10
- Degree of protection: IP20, with connected conductors
- Electrical life (times): 16,000
- Mechanical life (times): 35,000
- Breaking capacity:

Model	Rated voltage		Acc. to IEC 60898-1		Acc. to IEC 60947-2	
		(V)	$I_{cn}$ (kA)	$I_{cs}$ (kA)	$I_{cu}$ (kA)	$I_{cs}$ (kA)
3SB71-63	1P	230/400	16	12	15	7.5
	2-4P	400	16	12	15	7.5
3SB71-63H	1P	230/400	10	7.5	10	7.5
	2-4P	400	10	7.5	10	7.5

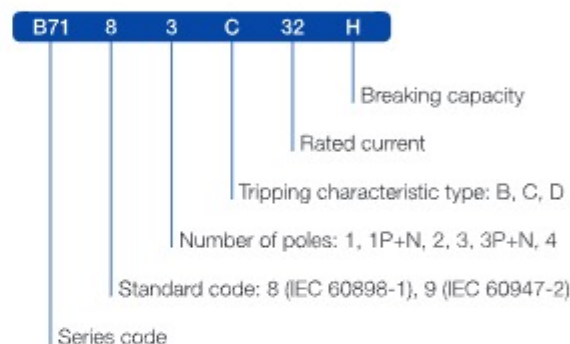
- Mounting position: Any
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 0.75-35
- Finely stranded with end sleeve (mm<sup>2</sup>): 0.75-25
- Terminal tightening torque (N·m): 2.8
- Ambient temperature (°C): -25 ~ +45, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Altitude (meters): Max 2,000

## References

- Additional components: page 69 ~ 70



## Instruction of type code

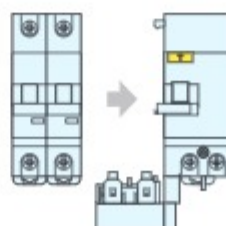


## Features

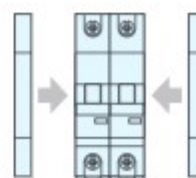
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- The handle provides a clear indication of the contact position
- Adequate printing of all data on the front provides long-term identification
- Energy limiting class: 3
- The emission of ionized gases is limited to the severest restrictions: 45 mm grid distance
- This MCB for household in accordance with: IEC 60898 -1, B, C and D tripping characteristics
- This MCB for industry in accordance with IEC 60947-2, instantaneous tripping characteristics with release B: 4  $I_n$ , release C: 8  $I_n$ , release D: 12  $I_n$
- This MCB may be extended with:
  - A wide range of RCDs
  - Full sets of accessories

## Add-on devices

### Add-on RCD



### Auxiliaries

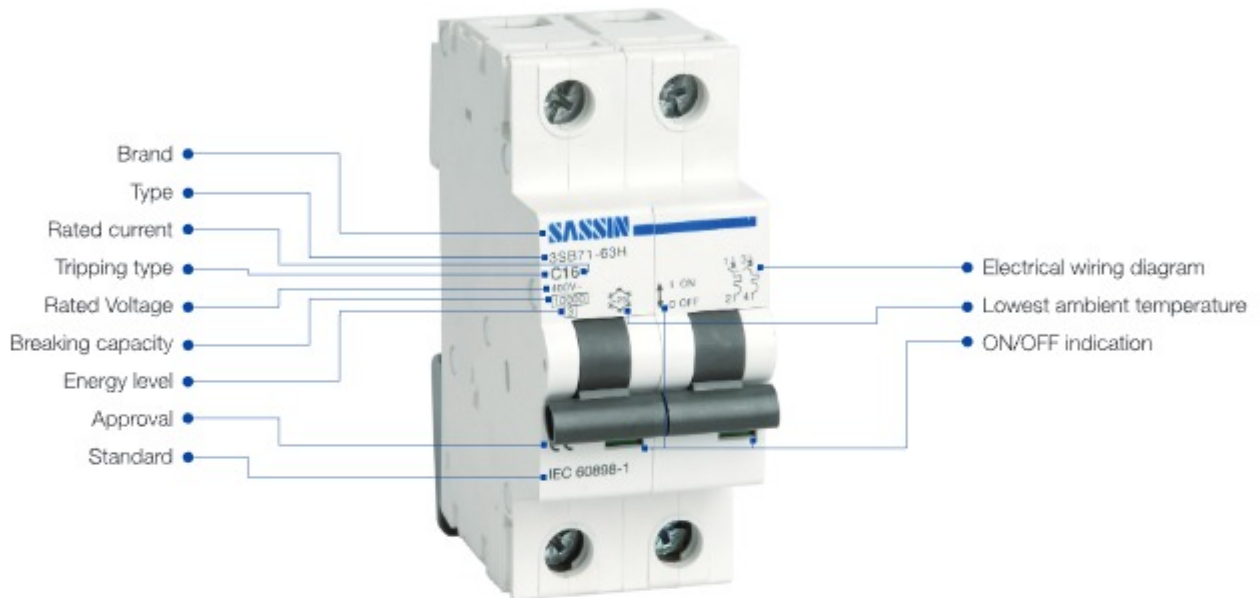


# Miniature Circuit Breakers Series 3SB71-63

## Benefits

- Attractive device design
- Easily recognizable, color-coded switching position
- Indication integrated in the handle.

2



Well matched with RCCB 3SL71



Extended with add-on RCD block 3SB71LB



Added both on the left and right sides of the MCB.



Safety terminal: easy wiring; protection degree IP20.  
Positive and slot screw head.  
Torque up to 2,8 N·m.





MCB's and RCCB's can be connected with PIN type busbar both at the top and bottom terminals, with easy DIN-rail extraction



MCB's and RCCB's can be connected with FORK type busbar both at the top and bottom terminals, with easy DIN-rail extraction

## Selection and ordering data

IEC 60898-1 16 kA  
IEC 60947-2 15 kA

Number of poles	Rated current In (A)	Characteristic B		Characteristic C		Characteristic D		Pack.	
		Type code	Order code	Type code	Order code	Type code	Order code		
	2	B71 1B02	13700	B71 1C02	13711	B71 1D02	13722	12	
	4	B71 1B04	13701	B71 1C04	13712	B71 1D04	13723	12	
	6	B71 1B06	13702	B71 1C06	13713	B71 1D06	13724	12	
	10	B71 1B10	13703	B71 1C10	13714	B71 1D10	13725	12	
	16	B71 1B16	13704	B71 1C16	13715	B71 1D16	13726	12	
	20	B71 1B20	13705	B71 1C20	13716	B71 1D20	13727	12	
	25	B71 1B25	13706	B71 1C25	13717	B71 1D25	13728	12	
	32	B71 1B32	13707	B71 1C32	13718	B71 1D32	13729	12	
	40	B71 1B40	13708	B71 1C40	13719	B71 1D40	13730	12	
	50	B71 1B50	13709	B71 1C50	13720	B71 1D50	13731	12	
	63	B71 1B63	13710	B71 1C63	13721	B71 1D63	13732	12	
		2	B71 2B02	13733	B71 2C02	13744	B71 2D02	13755	6
		4	B71 2B04	13734	B71 2C04	13745	B71 2D04	13756	6
6		B71 2B06	13735	B71 2C06	13746	B71 2D06	13757	6	
10		B71 2B10	13736	B71 2C10	13747	B71 2D10	13758	6	
16		B71 2B16	13737	B71 2C16	13748	B71 2D16	13759	6	
20		B71 2B20	13738	B71 2C20	13749	B71 2D20	13760	6	
25		B71 2B25	13739	B71 2C25	13750	B71 2D25	13761	6	
32		B71 2B32	13740	B71 2C32	13751	B71 2D32	13762	6	
40		B71 2B40	13741	B71 2C40	13752	B71 2D40	13763	6	
50		B71 2B50	13742	B71 2C50	13753	B71 2D50	13764	6	
63		B71 2B63	13743	B71 2C63	13754	B71 2D63	13765	6	

# Miniature Circuit Breakers Series 3SB71-63



## Selection and ordering data

IEC 60898-1 16 kA  
IEC 60947-2 15 kA

2






Number of poles	Rated current I <sub>n</sub> (A)	Characteristic B		Characteristic C		Characteristic D		Pack.
		Type code	Order code	Type code	Order code	Type code	Order code	
3	2	B71 3B02	13766	B71 3C02	13777	B71 3D02	13788	4
	4	B71 3B04	13767	B71 3C04	13778	B71 3D04	13789	4
	6	B71 3B06	13768	B71 3C06	13779	B71 3D06	13790	4
	10	B71 3B10	13769	B71 3C10	13780	B71 3D10	13791	4
	16	B71 3B16	13770	B71 3C16	13781	B71 3D16	13792	4
	20	B71 3B20	13771	B71 3C20	13782	B71 3D20	13793	4
	25	B71 3B25	13772	B71 3C25	13783	B71 3D25	13794	4
	32	B71 3B32	13773	B71 3C32	13784	B71 3D32	13795	4
	40	B71 3B40	13774	B71 3C40	13785	B71 3D40	13796	4
	50	B71 3B50	13775	B71 3C50	13786	B71 3D50	13797	4
	63	B71 3B63	13776	B71 3C63	13787	B71 3D63	13798	4



4	2	B71 4B02	13799	B71 4C02	13810	B71 4D02	13821	3
	4	B71 4B04	13800	B71 4C04	13811	B71 4D04	13822	3
	6	B71 4B06	13801	B71 4C06	13812	B71 4D06	13823	3
	10	B71 4B10	13802	B71 4C10	13813	B71 4D10	13824	3
	16	B71 4B16	13803	B71 4C16	13814	B71 4D16	13825	3
	20	B71 4B20	13804	B71 4C20	13815	B71 4D20	13826	3
	25	B71 4B25	13805	B71 4C25	13816	B71 4D25	13827	3
	32	B71 4B32	13806	B71 4C32	13817	B71 4D32	13828	3
	40	B71 4B40	13807	B71 4C40	13818	B71 4D40	13829	3
	50	B71 4B50	13808	B71 4C50	13819	B71 4D50	13830	3
	63	B71 4B63	13809	B71 4C63	13820	B71 4D63	13831	3

## Selection and ordering data

IEC 60898-1 10 kA  
IEC 60947-2 10 kA

Number of poles	Rated current In (A)	Characteristic B		Characteristic C		Characteristic D		Pack.
		Type code	Order code	Type code	Order code	Type code	Order code	
	0.5	B71 1B0.5H	19893	B71 1C0.5H	19899	B71 1D0.5H	19905	12
	1	B71 1B01H	19250	B71 1C01H	19270	B71 1D01H	19290	12
	1.6	B71 1B1.6H	19911	B71 1C1.6H	19917	B71 1D1.6H	19923	12
	2	B71 1B02H	19251	B71 1C02H	19271	B71 1D02H	19291	12
	4	B71 1B04H	19253	B71 1C04H	19273	B71 1D04H	19293	12
	6	B71 1B06H	20001	B71 1C06H	20046	B71 1D06H	20091	12
	10	B71 1B10H	20002	B71 1C10H	20047	B71 1D10H	20092	12
	13	B71 1B13H	19929	B71 1C13H	19935	B71 1D13H	19941	12
	16	B71 1B16H	20003	B71 1C16H	20048	B71 1D16H	20093	12
	20	B71 1B20H	20004	B71 1C20H	20049	B71 1D20H	20094	12
	25	B71 1B25H	20005	B71 1C25H	20050	B71 1D25H	20095	12
	32	B71 1B32H	20006	B71 1C32H	20051	B71 1D32H	20096	12
	40	B71 1B40H	20007	B71 1C40H	20052	B71 1D40H	20097	12
	50	B71 1B50H	20008	B71 1C50H	20053	B71 1D50H	20098	12
	63	B71 1B63H	20009	B71 1C63H	20054	B71 1D63H	20099	12
	0.5	B71 1NB0.5H	19897	B71 1NC0.5H	19903	B71 1ND0.5H	19909	6
	1	B71 1NB1H	19947	B71 1NC1H	19960	B71 1ND1H	19973	6
	1.6	B71 1NB1.6H	19915	B71 1NC1.6H	19921	B71 1ND1.6H	19927	6
	2	B71 1NB2H	19948	B71 1NC2H	19961	B71 1ND2H	19974	6
	4	B71 1NB4H	19950	B71 1NC4H	19963	B71 1ND4H	19976	6
	6	B71 1NB6H	19951	B71 1NC6H	19964	B71 1ND6H	19977	6
	10	B71 1NB10H	19952	B71 1NC10H	19965	B71 1ND10H	19978	6
	13	B71 1NB13H	19933	B71 1NC13H	19939	B71 1ND13H	19945	6
	16	B71 1NB16H	19953	B71 1NC16H	19966	B71 1ND16H	19979	6
	20	B71 1NB20H	19954	B71 1NC20H	19967	B71 1ND20H	19980	6
	25	B71 1NB25H	19955	B71 1NC25H	19968	B71 1ND25H	19981	6
	32	B71 1NB32H	19956	B71 1NC32H	19969	B71 1ND32H	19982	6
	40	B71 1NB40H	19957	B71 1NC40H	19970	B71 1ND40H	19983	6
	50	B71 1NB50H	19958	B71 1NC50H	19971	B71 1ND50H	19984	6
	63	B71 1NB63H	19959	B71 1NC63H	19972	B71 1ND63H	19985	6
	0.5	B71 2B0.5H	19894	B71 2C0.5H	19900	B71 2D0.5H	19906	6
	1	B71 2B01H	19254	B71 2C01H	19274	B71 2D01H	19294	6
	1.6	B71 2B1.6H	19912	B71 2C1.6H	19918	B71 2D1.6H	19924	6
	2	B71 2B02H	19255	B71 2C02H	19275	B71 2D02H	19295	6
	4	B71 2B04H	19257	B71 2C04H	19277	B71 2D04H	19297	6
	6	B71 2B06H	20010	B71 2C06H	20055	B71 2D06H	20100	6
	10	B71 2B10H	20011	B71 2C10H	20056	B71 2D10H	20101	6
	13	B71 2B13H	19930	B71 2C13H	19936	B71 2D13H	19942	6
	16	B71 2B16H	20012	B71 2C16H	20057	B71 2D16H	20102	6
	20	B71 2B20H	20013	B71 2C20H	20058	B71 2D20H	20103	6
	25	B71 2B25H	20014	B71 2C25H	20059	B71 2D25H	20104	6
	32	B71 2B32H	20015	B71 2C32H	20060	B71 2D32H	20105	6
	40	B71 2B40H	20016	B71 2C40H	20061	B71 2D40H	20106	6
	50	B71 2B50H	20017	B71 2C50H	20062	B71 2D50H	20107	6
	63	B71 2B63H	20018	B71 2C63H	20063	B71 2D63H	20108	6



# Miniature Circuit Breakers Series 3SB71-63H



## Selection and ordering data

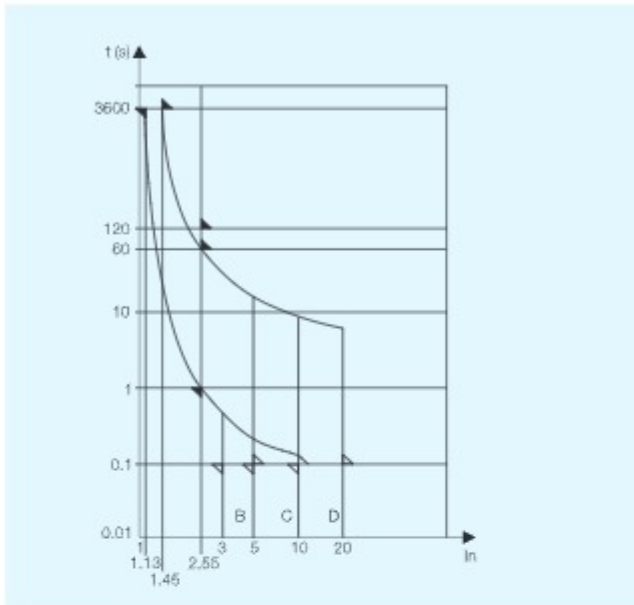
IEC 60898-1 10 kA  
IEC 60947-2 10 kA

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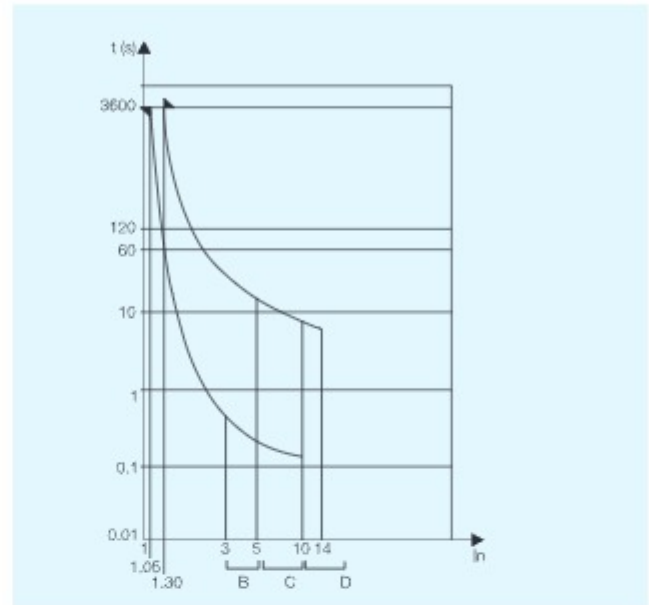
Number of poles	Rated current In (A)	Characteristic B		Characteristic C		Characteristic D		Pack.	
		Type code	Order code	Type code	Order code	Type code	Order code		
 	3	0.5	B71 3B0.5H	19895	B71 3C0.5H	19901	B71 3D0.5H	19907	4
	1	B71 3B01H	19258	B71 3C01H	19278	B71 3D01H	19298	4	
	1.6	B71 3B1.6H	19913	B71 3C1.6H	19919	B71 3D1.6H	19925	4	
	2	B71 3B02H	19259	B71 3C02H	19279	B71 3D02H	19299	4	
	4	B71 3B04H	19261	B71 3C04H	19281	B71 3D04H	19301	4	
	6	B71 3B06H	20019	B71 3C06H	20064	B71 3D06H	20109	4	
	10	B71 3B10H	20020	B71 3C10H	20065	B71 3D10H	20110	4	
	13	B71 3B13H	19931	B71 3C13H	19937	B71 3D13H	19943	4	
	16	B71 3B16H	20021	B71 3C16H	20066	B71 3D16H	20111	4	
	20	B71 3B20H	20022	B71 3C20H	20067	B71 3D20H	20112	4	
	25	B71 3B25H	20023	B71 3C25H	20068	B71 3D25H	20113	4	
	32	B71 3B32H	20024	B71 3C32H	20069	B71 3D32H	20114	4	
	40	B71 3B40H	20025	B71 3C40H	20070	B71 3D40H	20115	4	
	50	B71 3B50H	20026	B71 3C50H	20071	B71 3D50H	20116	4	
63	B71 3B63H	20027	B71 3C63H	20072	B71 3D63H	20117	4		
 	3P+N	0.5	B71 3NB0.5H	19898	B71 3NC0.5H	19904	B71 3ND0.5H	19910	3
	1	B71 3NB01H	19262	B71 3NC01H	19282	B71 3ND01H	19302	3	
	1.6	B71 3NB1.6H	19916	B71 3NC1.6H	19922	B71 3ND1.6H	19928	3	
	2	B71 3NB02H	19263	B71 3NC02H	19283	B71 3ND02H	19303	3	
	4	B71 3NB04H	19265	B71 3NC04H	19285	B71 3ND04H	19305	3	
	6	B71 3NB06H	20028	B71 3NC06H	20073	B71 3ND06H	20118	3	
	10	B71 3NB10H	20029	B71 3NC10H	20074	B71 3ND10H	20119	3	
	13	B71 3NB13H	19934	B71 3NC13H	19940	B71 3ND13H	19946	3	
	16	B71 3NB16H	20030	B71 3NC16H	20075	B71 3ND16H	20120	3	
	20	B71 3NB20H	20031	B71 3NC20H	20076	B71 3ND20H	20121	3	
	25	B71 3NB25H	20032	B71 3NC25H	20077	B71 3ND25H	20122	3	
	32	B71 3NB32H	20033	B71 3NC32H	20078	B71 3ND32H	20123	3	
	40	B71 3NB40H	20034	B71 3NC40H	20079	B71 3ND40H	20124	3	
	50	B71 3NB50H	20035	B71 3NC50H	20080	B71 3ND50H	20125	3	
63	B71 3NB63H	20036	B71 3NC63H	20081	B71 3ND63H	20126	3		
 	4	0.5	B71 4B0.5H	19896	B71 4C0.5H	19902	B71 4D0.5H	19908	3
	1	B71 4B01H	19266	B71 4C01H	19286	B71 4D01H	19306	3	
	1.6	B71 4B1.6H	19914	B71 4C1.6H	19920	B71 4D1.6H	19926	3	
	2	B71 4B02H	19267	B71 4C02H	19287	B71 4D02H	19307	3	
	4	B71 4B04H	19269	B71 4C04H	19289	B71 4D04H	19309	3	
	6	B71 4B06H	20037	B71 4C06H	20082	B71 4D06H	20127	3	
	10	B71 4B10H	20038	B71 4C10H	20083	B71 4D10H	20128	3	
	13	B71 4B13H	19932	B71 4C13H	19938	B71 4D13H	19944	3	
	16	B71 4B16H	20039	B71 4C16H	20084	B71 4D16H	20129	3	
	20	B71 4B20H	20040	B71 4C20H	20085	B71 4D20H	20130	3	
	25	B71 4B25H	20041	B71 4C25H	20086	B71 4D25H	20131	3	
	32	B71 4B32H	20042	B71 4C32H	20087	B71 4D32H	20132	3	
	40	B71 4B40H	20043	B71 4C40H	20088	B71 4D40H	20133	3	
	50	B71 4B50H	20044	B71 4C50H	20089	B71 4D50H	20134	3	
63	B71 4B63H	20045	B71 4C63H	20090	B71 4D63H	20135	3		

**Tripping characteristic curves**

IEC 60898-1 Standard



IEC 60947-2 Standard



**Magnetic release**

An electromagnet with plunger ensures instantaneous tripping in case of short circuit. The IEC 60898-1 distinguishes three different types, following the current for instantaneous release: type B, C, D

Test current	Initial condition	Limits of tripping or non-tripping time	Result to be obtained
B 3 In	Cold	$t \leq 0.1 \text{ s}$	No Tripping
C 5 In			
D 10 In			
B 5 In	Cold	$t < 0.1 \text{ s}$	Tripping
C 10 In			
D 20 In			

**Thermal release**

- The release is initiated by a bimetal strip in case of overload
- The standard defines the range of release for specific overload values
- Reference ambient temperature is 30 °C

Test current	Tripping time
1.13 In	$t \leq 1 \text{ h}$ ( $I_n \leq 63 \text{ A}$ )
1.45 In	$t < 1 \text{ h}$ ( $I_n \leq 63 \text{ A}$ )
2.55 In	$1 \text{ s} < t < 60 \text{ s}$ ( $I_n \leq 32 \text{ A}$ ) $1 \text{ s} < t < 120 \text{ s}$ ( $I_n > 32 \text{ A}$ )

**Magnetic release**

- An electromagnet with plunger ensures instantaneous tripping in case of short circuit.
- The standard leaves the calibration of magnetic release to manufacturer's decision.
- SASSIN MCB series 3SB71-63 offers instantaneous tripping ranges
  - release B: 4 In
  - release C: 8 In
  - release D: 12 In

**Thermal release**

- The release is initiated by a bimetal strip in case of overload.
- The standard defines the range of release for two specific overload values.
- Reference ambient temperature is 30 °C.

Test current	Tripping time
1.05 In	$t \geq 1 \text{ h}$ ( $I_n \leq 63 \text{ A}$ )
1.30 In	$t < 1 \text{ h}$ ( $I_n \leq 63 \text{ A}$ )

### Selectivity

Load side: 3SB71-63, Characteristic B, C	Rated current $I_n$ (A)	Power supply side: RT16-00 (fuse)								
		20	25	36	50	63	80	100	125	160
	$\leq 2$	1.2	4	12	12	12	12	12	12	12
	3	0.7	1.2	3.8	5.3	6	6	6	6	6
	4	0.6	0.9	2.5	3.8	6	6	6	6	6
	6	0.5	0.8	1.9	2.5	4.5	5	6	6	6
	10		0.7	1.4	2.2	3.2	3.6	6	6	6
	16			1.2	1.8	2.6	3	5.6	6	6
	20				1.5	2.2	2.5	4.6	6	6
	25				1.3	2	2.2	4.1	5.5	6
	32					1.7	1.9	3.8	4.5	6
	40						1.7	3	4	5
	50						1.5	2.6	3.5	4.5
	63							2.4	3.3	4.5

Load side: 3SB71-63, Characteristic B, C	Rated current $I_n$ (A)	Power supply side: 3SM29-125								
		16	20	25	32	40	50	63	80	100
	$\leq 10$	0.19	0.019	0.3	0.4	0.5	0.5	0.5	0.63	0.8
	16			0.3	0.4	0.5	0.5	0.5	0.63	0.8
	20					0.5	0.5	0.5	0.63	0.8
	25						0.5	0.5	0.63	0.8
	32						0.5	0.5	0.63	0.8
	40									
	50									
	63									

### Back up protection

Load side: 3SB71-63, Characteristic B, C	Rated current $I_n$ (A)	Power supply side: RT16 series							
		40	50	63	80	100	125	160	
	1-6	40	40	40	40	40	40	40	40
	8-10	40	40	40	40	40	40	40	40
	13	40	40	40	40	35	35	35	35
	16	40	40	40	40	30	30	30	30
	20	40	40	40	40	30	30	30	30
	25	40	40	40	40	30	30	30	30
	32	40	40	40	40	30	30	30	30
	40	40	40	40	40	30	30	30	30
	50	30	30	30	30	30	30	30	30
	63	20	20	20	20	15	15	15	15

Load side: 3SB71-63, Characteristic B, C	Rated current $I_n$ (A)	Power supply side: 3SM29					
		3SM29-125S	3SM29-125H	3SM29-125R	3SM29-250S	3SM29-250H	3SM29-250R
	1-6	15	18	18	15	15	15
	10-20	12	15	15	12	12	12
	32-40	12	15	15	12	12	12
	50-60	12	15	15	12	12	12

## Temperature derating

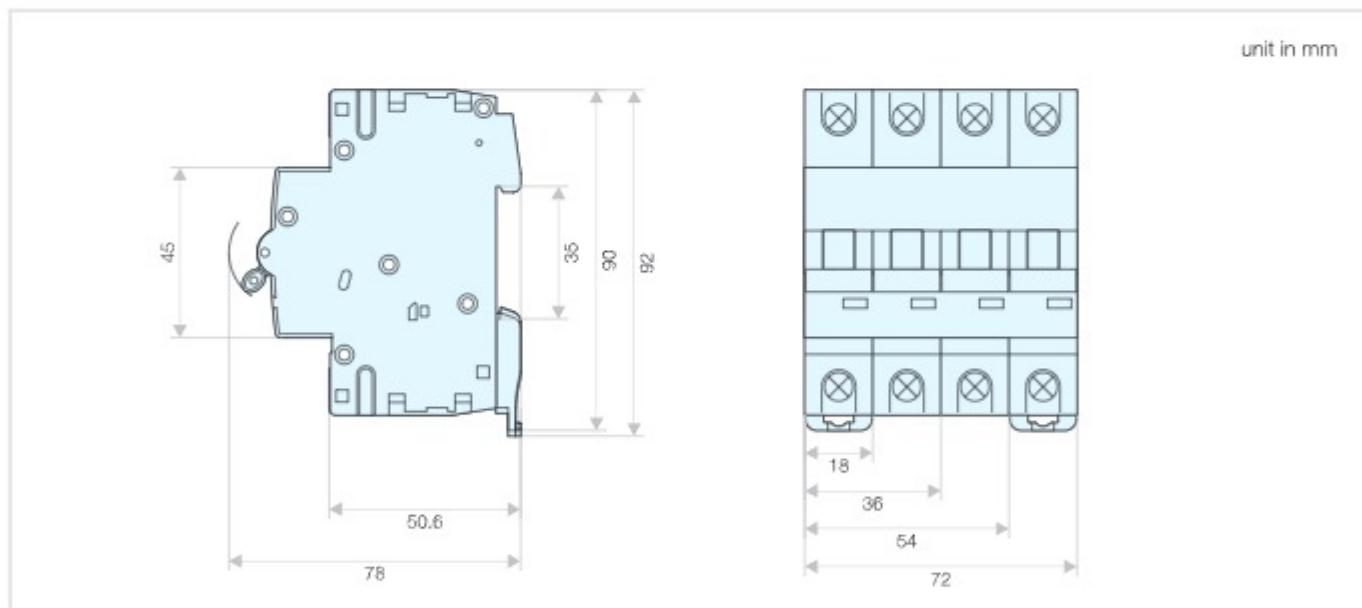
The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

**The reference temperature is 30 °C**

Ambient temperature Rated current (A)	-35 °C	-30 °C	-20 °C	-10 °C	0 °C	10 °C	20 °C	30 °C	40 °C	50 °C	60 °C
0.5	0.66	0.64	0.63	0.60	0.58	0.55	0.53	0.50	0.47	0.44	0.40
1	1.32	1.27	1.25	1.20	1.15	1.10	1.06	1.00	0.93	0.87	0.81
1.6	2.10	2.04	2.00	1.92	1.84	1.84	1.70	1.60	1.49	1.39	1.20
2	2.60	2.52	2.46	2.38	2.28	2.20	2.08	2.00	1.92	1.86	1.76
4	5.20	5.04	4.92	4.76	4.56	4.40	4.16	4.00	3.84	3.76	3.52
6	7.80	7.56	7.38	7.14	6.84	6.60	6.24	6.00	5.76	5.64	5.28
10	13.20	12.70	12.50	12.00	11.50	11.10	10.60	10.00	9.60	9.30	8.90
13	17.20	16.50	16.30	15.60	14.95	14.30	13.80	13.00	12.09	11.30	9.75
16	21.12	20.48	20.00	19.20	18.40	17.76	16.96	16.00	15.36	14.88	14.24
20	26.40	25.60	25.00	24.00	23.00	22.20	21.20	20.00	19.20	18.60	17.80
25	33.00	32.00	31.25	30.00	28.75	27.75	26.50	25.00	24.00	23.25	22.25
32	42.56	41.28	40.00	38.72	37.12	35.52	33.92	32.00	30.72	29.76	28.16
40	53.20	51.20	50.00	48.00	46.40	44.80	42.40	40.00	38.40	37.20	35.60
50	67.00	65.50	63.00	60.50	58.00	56.00	53.00	50.00	48.00	46.50	44.00
63	83.79	81.90	80.01	76.86	73.71	70.56	66.78	63.00	60.48	58.90	55.44

When several simultaneously operating circuit breakers are mounted side by side in a small enclosure, the temperature rise inside the enclosure causes a reduction in current rating. you must then assign the rating (already derated if necessary according to ambient temperature) a downrating factor of 0.8.

## Outline and installation dimensions



# Miniature Circuit Breakers

## Series 3SB71-125

### Functions

- Overload protection
- Short circuit protection
- Isolation
- Controlling
- Used in residential building, non-residential building, industry, energy and infrastructure.

### Technical specifications

- Standard: IEC 60947-2
- Rated current  $I_n$  (A): 80, 100, 125
- Rated voltage  $U_n$  (V AC): 230/400
- Operational voltage (V AC): Min: 24; Max: 250/440
- Number of poles (P): 1, 2, 3, 4
- Rated impulse withstand voltage  $U_{imp}$  (kV): 6
- Trip characteristic: C, D
- Characteristic C ( $I_n$ ): 8
- Characteristic D ( $I_n$ ): 12
- Thermal operating limit ( $I_n$ ): 1.05-1.3
- Degree of protection: IP20, with connected conductors
- Electrical life (times): 6,000
- Mechanical life (times): 20,000
- Breaking capacity:

Model	Rated voltage		Acc. to IEC 60947-2	
	(V)		$I_{cu}$ (kA)	$I_{cs}$ (kA)
3SB71-125	1P	230/400	10	7.5
	2-4P	400	10	7.5

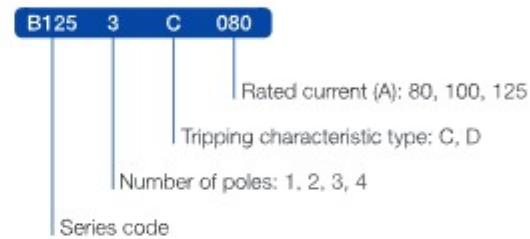
- Mounting position: Any
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 1-50
- Finely stranded with end sleeve (mm<sup>2</sup>): 1-35
- Terminal tightening torque (N·m): 2.8
- Ambient temperature (°C): -25 ~ +45, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Altitude (meters): Max 2,000

### References

- Additional components: page 69 ~ 70



### Instruction of type code

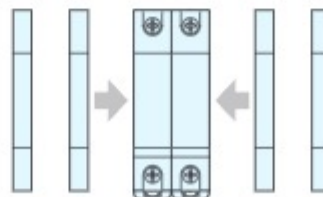


### Features

- Rated current up to 125 A
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- The handle provides a clear indication of the contact position
- Adequate printing of all data on the front provides long-term identification
- Energy limiting class: 3
- The emission of ionized gases is limited to the severest restrictions: 45 mm grid distance
- This MCB for industry in accordance with IEC 60947-2, instantaneous tripping characteristic release B 4  $I_n$ , release C 8  $I_n$ , release D 12  $I_n$ .
- This MCB may be extended with:
  - A wide range of RCDs and RCBO
  - Full sets of additional components
  - Full sets of accessories




### Add-on devices

#### Auxiliaries



## Selection and ordering data

IEC 60947-2 10 kA

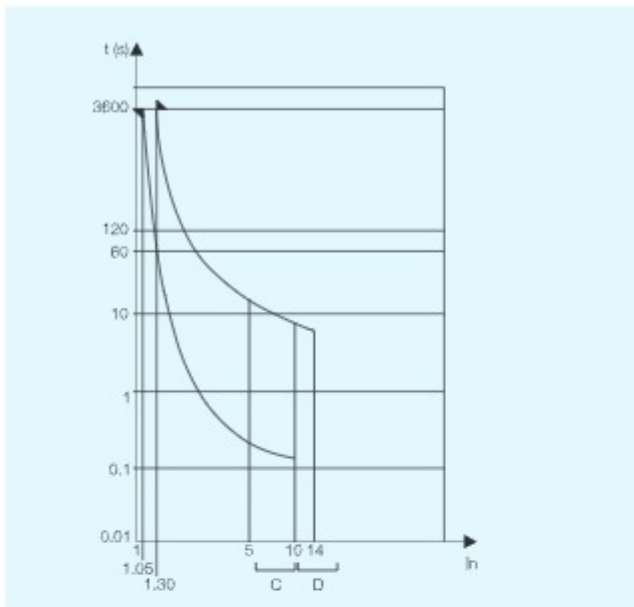
	Number of poles	Rated current In (A)	Characteristic C		Characteristic D		Pack.
			Type code	Order code	Type code	Order code	
	1	80	D125 1C080	<b>16161</b>	D125 1D080	<b>16173</b>	12
		100	D125 1C100	<b>16162</b>	D125 1D100	<b>16174</b>	12
		125	D125 1C125	<b>16163</b>	D125 1D125	<b>16175</b>	12
	2	80	D125 2C080	<b>16164</b>	D125 2D080	<b>16176</b>	6
		100	D125 2C100	<b>16165</b>	D125 2D100	<b>16177</b>	6
		125	D125 2C125	<b>16166</b>	D125 2D125	<b>16178</b>	6
	3	80	D125 3C080	<b>16167</b>	D125 3D080	<b>16179</b>	4
		100	D125 3C100	<b>16168</b>	D125 3D100	<b>16180</b>	4
		125	D125 3C125	<b>16169</b>	D125 3D125	<b>16181</b>	4
	4	80	D125 4C080	<b>16170</b>	D125 4D080	<b>16182</b>	3
		100	D125 4C100	<b>16171</b>	D125 4D100	<b>16183</b>	3
		125	D125 4C125	<b>16172</b>	D125 4D125	<b>16184</b>	3

# Miniature Circuit Breakers Series 3SB71-125

2

## Tripping characteristic curves

IEC 60947-2 Standard



## Magnetic release

- An electromagnet with plunger ensures instantaneous tripping in case of short circuit.
- The standard leaves the calibration of magnetic release to manufacturer's decision.
- Sassin MCB series 3SB71-125 offers instantaneous tripping ranges
  - release C: 8  $I_n$
  - release D: 12  $I_n$

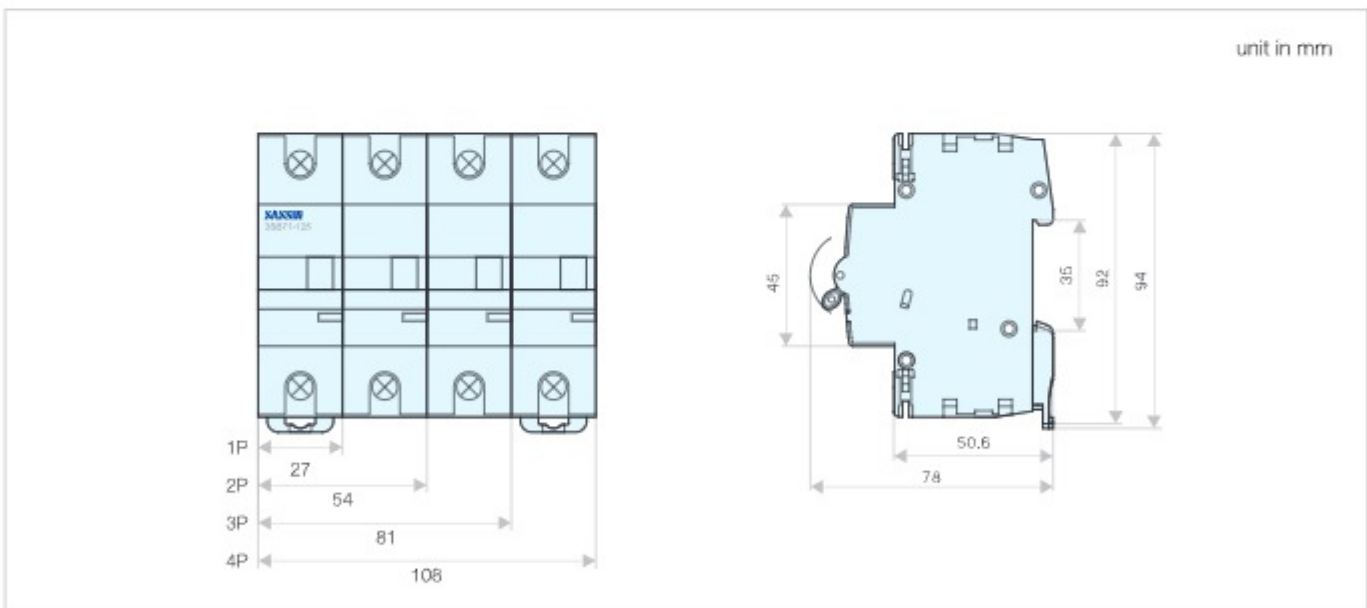
## Thermal release

- The release is initiated by a bimetal strip in case of overload.
- The standard defines the range of release for two specific overload values.
- Reference ambient temperature is 30 °C.

Test current	Tripping time
1.05 $I_n$	$t \geq 2 \text{ h } (I_n > 63 \text{ A})$
1.30 $I_n$	$t < 2 \text{ h } (I_n > 63 \text{ A})$

## Outline and installation dimensions

3SB71-125 is installed on DIN rail



## Functions

- Overload protection
- Short circuit protection
- Isolation
- Controlling
- Used in residential building, non-residential building, industry, energy and infrastructure.

## Features

- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- The handle provides a clear indication of the contact position
- Adequate printing of all data on the front provides long-term identification
- Energy limiting class: 3
- The emission of ionized gases is limited to the severest restrictions: 45 mm grid distance
- This MCB for household in accordance with: IEC 60898-1, B, C and D tripping characteristics



## Technical specifications

			3SB6	3SB6H
Standards			IEC/EN 60898-1	IEC/EN 60898-1, IEC/EN 60947-2
Number of poles			1P, 1P+N, 2P, 3P, 3P+N, 4P	1P, 1P+N, 2P, 3P, 3P+N, 4P
Tripping characteristics			B, C, D	B, C, D
Rated current I <sub>n</sub>			A 1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63	1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63
Rated operational voltage U <sub>e</sub>				70, 80, 100
Rated operational voltage U <sub>e</sub>	1P	V AC	230/400	230/400
	1P+N	V AC	230	230
	2P, 3P, 3P+N, 4P	V AC	400	400
Minimum operating voltage			V AC 24	24
Rated frequency f <sub>n</sub>			Hz 50/60	50/60
Breaking capacity	Acc. to IEC/EN 60898-1	I <sub>cn</sub>	kA 6	10
		I <sub>cs</sub>	kA 6	7.5
	Acc. to IEC/EN 60947-2	I <sub>cu</sub>	kA 6	10
		I <sub>cs</sub>	kA 6	7.5
Energy limiting class (B, C)			3	3
Rated insulation voltage U <sub>i</sub>	Phase to ground	V	250	250
	Phase to phase	V	500	500
Rated impulse withstand voltage U <sub>imp</sub>			kV 6	6
Endurance	Electrical	ops.	10000	6000
	Mechanical	ops.	20000	20000
Protection degree			IP20	IP20
Pollution degree			2	2
Overvoltage category			II/III	II/III
Isolating function			Yes	Yes
Mounting			DIN Rail 35 mm	DIN Rail 35 mm
Mounting position			Any	Any
Cross-section of conductor (Min/Max)	Solid and stranded	mm <sup>2</sup>	1-25	1-50
	Finely stranded with end sleeve	mm <sup>2</sup>	1-16	1-35
Type of busbar			Pin type	Pin type
Tighting torque			N·m 2.5	2.5
Ambient temperature			°C -5 ~ +40, max 95% humidity	-5 ~ +40, max 95% humidity
Altitude (max.)			meter 2000	2000



# Miniature Circuit Breakers Series 3SB6



## Selection and ordering data




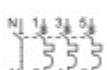

IEC 60898-1 Icn=Ics=6kA

2

Number of poles	Rated current In (A)	Characteristic B		Characteristic C		Characteristic D		Pack.
		Type code	Orde code	Type code	Orde code	Type code	Orde code	
1	1	B6 1B01N	29855	B6 1C01N	29907	B6 1D01N	29959	12
	2	B6 1B02N	29856	B6 1C02N	29908	B6 1D02N	29960	12
	3	B6 1B03N	29857	B6 1C03N	29909	B6 1D03N	29961	12
	4	B6 1B04N	29858	B6 1C04N	29910	B6 1D04N	29962	12
	6	B6 1B06N	29859	B6 1C06N	29911	B6 1D06N	29963	12
	10	B6 1B10N	29860	B6 1C10N	29912	B6 1D10N	29964	12
	16	B6 1B16N	29861	B6 1C16N	29913	B6 1D16N	29965	12
	20	B6 1B20N	29862	B6 1C20N	29914	B6 1D20N	29966	12
	25	B6 1B25N	29863	B6 1C25N	29915	B6 1D25N	29967	12
	32	B6 1B32N	29864	B6 1C32N	29916	B6 1D32N	29968	12
	40	B6 1B40N	29865	B6 1C40N	29917	B6 1D40N	29969	12
	50	B6 1B50N	29866	B6 1C50N	29918	B6 1D50N	29970	12
	63	B6 1B63N	29867	B6 1C63N	29919	B6 1D63N	29971	12
1+N	1	B6 1NB01N	15392	B6 1NC01N	15405	B6 1ND01N	15418	6
	2	B6 1NB02N	15393	B6 1NC02N	15406	B6 1ND02N	15419	6
	3	B6 1NB03N	15394	B6 1NC03N	15407	B6 1ND03N	15420	6
	4	B6 1NB04N	15395	B6 1NC04N	15408	B6 1ND04N	15421	6
	6	B6 1NB06N	15396	B6 1NC06N	15409	B6 1ND06N	15422	6
	10	B6 1NB10N	15397	B6 1NC10N	15410	B6 1ND10N	15423	6
	16	B6 1NB16N	15398	B6 1NC16N	15411	B6 1ND16N	15424	6
	20	B6 1NB20N	15399	B6 1NC20N	15412	B6 1ND20N	15425	6
	25	B6 1NB25N	15400	B6 1NC25N	15413	B6 1ND25N	15426	6
	32	B6 1NB32N	15401	B6 1NC32N	15414	B6 1ND32N	15427	6
	40	B6 1NB40N	15402	B6 1NC40N	15415	B6 1ND40N	15428	6
	50	B6 1NB50N	15403	B6 1NC50N	15416	B6 1ND50N	15429	6
	63	B6 1NB63N	15404	B6 1NC63N	15417	B6 1ND63N	15430	6
2	1	B6 2B01N	29868	B6 2C01N	29920	B6 2D01N	29972	6
	2	B6 2B02N	29869	B6 2C02N	29921	B6 2D02N	29973	6
	3	B6 2B03N	29870	B6 2C03N	29922	B6 2D03N	29974	6
	4	B6 2B04N	29871	B6 2C04N	29923	B6 2D04N	29975	6
	6	B6 2B06N	29872	B6 2C06N	29924	B6 2D06N	29976	6
	10	B6 2B10N	29873	B6 2C10N	29925	B6 2D10N	29977	6
	16	B6 2B16N	29874	B6 2C16N	29926	B6 2D16N	29978	6
	20	B6 2B20N	29875	B6 2C20N	29927	B6 2D20N	29979	6
	25	B6 2B25N	29876	B6 2C25N	29928	B6 2D25N	29980	6
	32	B6 2B32N	29877	B6 2C32N	29929	B6 2D32N	29981	6
	40	B6 2B40N	29878	B6 2C40N	29930	B6 2D40N	29982	6
	50	B6 2B50N	29879	B6 2C50N	29931	B6 2D50N	29983	6
	63	B6 2B63N	29880	B6 2C63N	29932	B6 2D63N	29984	6

## Selection and ordering data

IEC 60898-1 Icn=Ics=6kA

Number of poles	Rated current In (A)	Characteristic B		Characteristic C		Characteristic D		Pack.
		Type code	Orde code	Type code	Orde code	Type code	Orde code	
 	1	B6 3B01N	29881	B6 3C01N	29933	B6 3D01N	29985	4
	2	B6 3B02N	29882	B6 3C02N	29934	B6 3D02N	29986	4
	3	B6 3B03N	29883	B6 3C03N	29935	B6 3D03N	29987	4
	4	B6 3B04N	29884	B6 3C04N	29936	B6 3D04N	29988	4
	6	B6 3B06N	29885	B6 3C06N	29937	B6 3D06N	29989	4
	10	B6 3B10N	29886	B6 3C10N	29938	B6 3D10N	29990	4
	16	B6 3B16N	29887	B6 3C16N	29939	B6 3D16N	29991	4
	20	B6 3B20N	29888	B6 3C20N	29940	B6 3D20N	29992	4
	25	B6 3B25N	29889	B6 3C25N	29941	B6 3D25N	29993	4
	32	B6 3B32N	29890	B6 3C32N	29942	B6 3D32N	29994	4
	40	B6 3B40N	29891	B6 3C40N	29943	B6 3D40N	29995	4
	50	B6 3B50N	29892	B6 3C50N	29944	B6 3D50N	29996	4
	63	B6 3B63N	29893	B6 3C63N	29945	B6 3D63N	29997	4
 	1	B6 3NB01N	15431	B6 3NC01N	15444	B6 3ND01N	15457	3
	2	B6 3NB02N	15432	B6 3NC02N	15445	B6 3ND02N	15458	3
	3	B6 3NB03N	15433	B6 3NC03N	15446	B6 3ND03N	15459	3
	4	B6 3NB04N	15434	B6 3NC04N	15447	B6 3ND04N	15460	3
	6	B6 3NB06N	15435	B6 3NC06N	15448	B6 3ND06N	15461	3
	10	B6 3NB10N	15436	B6 3NC10N	15449	B6 3ND10N	15462	3
	16	B6 3NB16N	15437	B6 3NC16N	15450	B6 3ND16N	15463	3
	20	B6 3NB20N	15438	B6 3NC20N	15451	B6 3ND20N	15464	3
	25	B6 3NB25N	15439	B6 3NC25N	15452	B6 3ND25N	15465	3
	32	B6 3NB32N	15440	B6 3NC32N	15453	B6 3ND32N	15466	3
	40	B6 3NB40N	15441	B6 3NC40N	15454	B6 3ND40N	15467	3
	50	B6 3NB50N	15442	B6 3NC50N	15455	B6 3ND50N	15468	3
	63	B6 3NB63N	15443	B6 3NC63N	15456	B6 3ND63N	15469	3
 	1	B6 4B01N	29894	B6 4C01N	29946	B6 4D01N	29998	3
	2	B6 4B02N	29895	B6 4C02N	29947	B6 4D02N	29999	3
	3	B6 4B03N	29896	B6 4C03N	29948	B6 4D03N	10001	3
	4	B6 4B04N	29897	B6 4C04N	29949	B6 4D04N	10002	3
	6	B6 4B06N	29898	B6 4C06N	29950	B6 4D06N	10003	3
	10	B6 4B10N	29899	B6 4C10N	29951	B6 4D10N	10004	3
	16	B6 4B16N	29900	B6 4C16N	29952	B6 4D16N	10005	3
	20	B6 4B20N	29901	B6 4C20N	29953	B6 4D20N	10006	3
	25	B6 4B25N	29902	B6 4C25N	29954	B6 4D25N	10007	3
	32	B6 4B32N	29903	B6 4C32N	29955	B6 4D32N	10008	3
	40	B6 4B40N	29904	B6 4C40N	29956	B6 4D40N	10009	3
	50	B6 4B50N	29905	B6 4C50N	29957	B6 4D50N	10010	3
	63	B6 4B63N	29906	B6 4C63N	29958	B6 4D63N	10011	3

# Miniature Circuit Breakers Series 3SB6H



## Selection and ordering data

6-63A: IEC 60898-1 I<sub>cn</sub>=10kA I<sub>cs</sub>=7.5kA  
 70-100A: IEC 60898-1 I<sub>cn</sub>=I<sub>cs</sub>=6kA  
 6-100A: IEC 60947-2 I<sub>cu</sub>=10kA I<sub>cs</sub>=7.5kA



2



Number of poles	Rated current I <sub>n</sub> (A)	Characteristic B		Characteristic C		Characteristic D		Pack.
		Type code	Order code	Type code	Order code	Type code	Order code	
1	1	B6 1B1H	14035	B6 1C1H	13646	B6 1D1H	24598	12
	2	B6 1B2H	14036	B6 1C2H	13647	B6 1D2H	24599	12
	3	B6 1B3H	14037	B6 1C3H	13648	B6 1D3H	24600	12
	4	B6 1B4H	14038	B6 1C4H	13649	B6 1D4H	24601	12
	6	B6 1B6H	30505	B6 1C6H	30559	B6 1D6H	30613	12
	10	B6 1B10H	30506	B6 1C10H	30560	B6 1D10H	30614	12
	16	B6 1B16H	30507	B6 1C16H	30561	B6 1D16H	30615	12
	20	B6 1B20H	30508	B6 1C20H	30562	B6 1D20H	30616	12
	25	B6 1B25H	30509	B6 1C25H	30563	B6 1D25H	30617	12
	32	B6 1B32H	30510	B6 1C32H	30564	B6 1D32H	30618	12
	40	B6 1B40H	30511	B6 1C40H	30565	B6 1D40H	30619	12
	50	B6 1B50H	30512	B6 1C50H	30566	B6 1D50H	30620	12
	63	B6 1B63H	30513	B6 1C63H	30567	B6 1D63H	30621	12
	70	B6 1B70H	19390	B6 1C70H	19408	B6 1D70H	19426	12
	80	B6 1B80H	19391	B6 1C80H	19409	B6 1D80H	19427	12
	100	B6 1B100H	19392	B6 1C100H	19410	B6 1D100H	19428	12
1+N	1	B6 1NB1H	14051	B6 1NC1H	13662	B6 1ND1H	25194	6
	2	B6 1NB2H	14052	B6 1NC2H	13663	B6 1ND2H	25195	6
	3	B6 1NB3H	14053	B6 1NC3H	13664	B6 1ND3H	14636	6
	4	B6 1NB4H	14054	B6 1NC4H	13665	B6 1ND4H	14637	6
	6	B6 1NB6H	30541	B6 1NC6H	30595	B6 1ND6H	30649	6
	10	B6 1NB10H	30542	B6 1NC10H	30596	B6 1ND10H	30650	6
	16	B6 1NB16H	30543	B6 1NC16H	30597	B6 1ND16H	30651	6
	20	B6 1NB20H	30544	B6 1NC20H	30598	B6 1ND20H	30652	6
	25	B6 1NB25H	30545	B6 1NC25H	30599	B6 1ND25H	30653	6
	32	B6 1NB32H	30546	B6 1NC32H	30600	B6 1ND32H	30654	6
	40	B6 1NB40H	30547	B6 1NC40H	30601	B6 1ND40H	19444	6
	50	B6 1NB50H	30548	B6 1NC50H	30602	B6 1ND50H	19445	6
	63	B6 1NB63H	30549	B6 1NC63H	30603	B6 1ND63H	19446	6
	70	B6 1NB70H	19402	B6 1NC70H	19420	B6 1ND70H	19438	6
	80	B6 1NB80H	19403	B6 1NC80H	19421	B6 1ND80H	19439	6
	100	B6 1NB100H	19404	B6 1NC100H	19422	B6 1ND100H	19440	6
2	1	B6 2B1H	14039	B6 2C1H	13650	B6 2D1H	24602	6
	2	B6 2B2H	14040	B6 2C2H	13651	B6 2D2H	24603	6
	3	B6 2B3H	14041	B6 2C3H	13652	B6 2D3H	25178	6
	4	B6 2B4H	14042	B6 2C4H	13653	B6 2D4H	25179	6
	6	B6 2B6H	30514	B6 2C6H	30568	B6 2D6H	30622	6
	10	B6 2B10H	30515	B6 2C10H	30569	B6 2D10H	30623	6
	16	B6 2B16H	30516	B6 2C16H	30570	B6 2D16H	30624	6
	20	B6 2B20H	30517	B6 2C20H	30571	B6 2D20H	30625	6
	25	B6 2B25H	30518	B6 2C25H	30572	B6 2D25H	30626	6
	32	B6 2B32H	30519	B6 2C32H	30573	B6 2D32H	30627	6
	40	B6 2B40H	30520	B6 2C40H	30574	B6 2D40H	30628	6
	50	B6 2B50H	30521	B6 2C50H	30575	B6 2D50H	30629	6
	63	B6 2B63H	30522	B6 2C63H	30576	B6 2D63H	30630	6
	70	B6 2B70H	19393	B6 2C70H	19411	B6 2D70H	19429	6
	80	B6 2B80H	19394	B6 2C80H	19412	B6 2D80H	19430	6
	100	B6 2B100H	19395	B6 2C100H	19413	B6 2D100H	19431	6


## Selection and ordering data

6-63A: IEC 60898-1  $I_{cn}=10kA$   $I_{cs}=7.5kA$   
 70-100A: IEC 60898-1  $I_{cn}=I_{cs}=6kA$   
 6-100A: IEC 60947-2  $I_{cu}=10kA$   $I_{cs}=7.5kA$

2

Number of poles	Rated current In (A)	Characteristic B		Characteristic C		Characteristic D		Pack.
		Type code	Order code	Type code	Order code	Type code	Order code	
 	1	B6 3B1H	14043	B6 3C1H	13654	B6 3D1H	25180	4
	2	B6 3B2H	14044	B6 3C2H	13655	B6 3D2H	25181	4
	3	B6 3B3H	14045	B6 3C3H	13656	B6 3D3H	25182	4
	4	B6 3B4H	14046	B6 3C4H	13657	B6 3D4H	25183	4
	6	B6 3B6H	30523	B6 3C6H	30577	B6 3D6H	30631	4
	10	B6 3B10H	30524	B6 3C10H	30578	B6 3D10H	30632	4
	16	B6 3B16H	30525	B6 3C16H	30579	B6 3D16H	30633	4
	20	B6 3B20H	30526	B6 3C20H	30580	B6 3D20H	30634	4
	25	B6 3B25H	30527	B6 3C25H	30581	B6 3D25H	30635	4
	32	B6 3B32H	30528	B6 3C32H	30582	B6 3D32H	30636	4
	40	B6 3B40H	30529	B6 3C40H	30583	B6 3D40H	30637	4
	50	B6 3B50H	30530	B6 3C50H	30584	B6 3D50H	30638	4
	63	B6 3B63H	30531	B6 3C63H	30585	B6 3D63H	30639	4
	70	B6 3B70H	19396	B6 3C70H	19414	B6 3D70H	19432	4
80	B6 3B80H	19397	B6 3C80H	19415	B6 3D80H	19433	4	
100	B6 3B100H	19398	B6 3C100H	19416	B6 3D100H	19434	4	

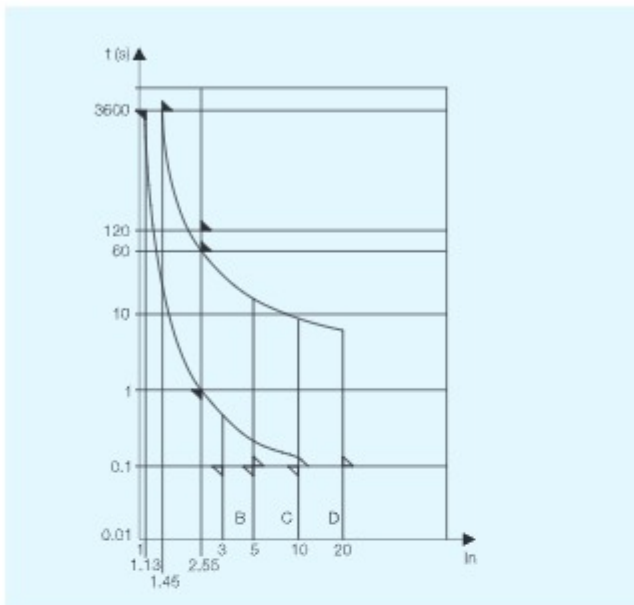
 	1	B6 3NB1H	14055	B6 3NC1H	13666	B6 3ND1H	14638	3
	2	B6 3NB2H	14056	B6 3NC2H	13667	B6 3ND2H	14639	3
	3	B6 3NB3H	14057	B6 3NC3H	13668	B6 3ND3H	14640	3
	4	B6 3NB4H	14058	B6 3NC4H	13669	B6 3ND4H	14641	3
	6	B6 3NB6H	30550	B6 3NC6H	30604	B6 3ND6H	19447	3
	10	B6 3NB10H	30551	B6 3NC10H	30605	B6 3ND10H	19448	3
	16	B6 3NB16H	30552	B6 3NC16H	30606	B6 3ND16H	19449	3
	20	B6 3NB20H	30553	B6 3NC20H	30607	B6 3ND20H	19450	3
	25	B6 3NB25H	30554	B6 3NC25H	30608	B6 3ND25H	19451	3
	32	B6 3NB32H	30555	B6 3NC32H	30609	B6 3ND32H	19452	3
	40	B6 3NB40H	30556	B6 3NC40H	30610	B6 3ND40H	19453	3
	50	B6 3NB50H	30557	B6 3NC50H	30611	B6 3ND50H	19454	3
	63	B6 3NB63H	30558	B6 3NC63H	30612	B6 3ND63H	19455	3
	70	B6 3NB70H	19405	B6 3NC70H	19423	B6 3ND70H	19441	3
80	B6 3NB80H	19406	B6 3NC80H	19424	B6 3ND80H	19442	3	
100	B6 3NB100H	19407	B6 3NC100H	19425	B6 3ND100H	19443	3	

 	1	B6 4B1H	14047	B6 4C1H	13658	B6 4D1H	25190	3
	2	B6 4B2H	14048	B6 4C2H	13659	B6 4D2H	25191	3
	3	B6 4B3H	14049	B6 4C3H	13660	B6 4D3H	25192	3
	4	B6 4B4H	14050	B6 4C4H	13661	B6 4D4H	25193	3
	6	B6 4B6H	30532	B6 4C6H	30586	B6 4D6H	30640	3
	10	B6 4B10H	30533	B6 4C10H	30587	B6 4D10H	30641	3
	16	B6 4B16H	30534	B6 4C16H	30588	B6 4D16H	30642	3
	20	B6 4B20H	30535	B6 4C20H	30589	B6 4D20H	30643	3
	25	B6 4B25H	30536	B6 4C25H	30590	B6 4D25H	30644	3
	32	B6 4B32H	30537	B6 4C32H	30591	B6 4D32H	30645	3
	40	B6 4B40H	30538	B6 4C40H	30592	B6 4D40H	30646	3
	50	B6 4B50H	30539	B6 4C50H	30593	B6 4D50H	30647	3
	63	B6 4B63H	30540	B6 4C63H	30594	B6 4D63H	30648	3
	70	B6 4B70H	19399	B6 4C70H	19417	B6 4D70H	19435	3
80	B6 4B80H	19400	B6 4C80H	19418	B6 4D80H	19436	3	
100	B6 4B100H	19401	B6 4C100H	19419	B6 4D100H	19437	3	

## Tripping characteristic curves

IEC 60898-1 Standard

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### Magnetic release

An electromagnet with plunger ensures instantaneous tripping in case of any short circuit. The IEC 60898-1 distinguishes three different types, following the current for instantaneous release: type B, C, D

	Test current	Initial condition	Limits of tripping or non-tripping time	Result to be obtained
B	3 I <sub>n</sub>	Cold	t ≤ 0.1 s	No Tripping
C	5 I <sub>n</sub>			
D	10 I <sub>n</sub>			
B	5 I <sub>n</sub>	Cold	t < 0.1 s	Tripping
C	10 I <sub>n</sub>			
D	20 I <sub>n</sub>			

### Thermal release

- The release is initiated by a bimetal strip in case of overload
- The standard defines the range of release for specific overload values
- Reference ambient temperature is 30 °C

Test current	Tripping time
1.13 I <sub>n</sub>	t ≤ 1 h (I <sub>n</sub> ≤ 63 A)
1.45 I <sub>n</sub>	t < 1 h (I <sub>n</sub> ≤ 63 A)
2.55 I <sub>n</sub>	1 s < t < 60 s (I <sub>n</sub> ≤ 32 A) 1 s < t < 120 s (I <sub>n</sub> > 32 A)

### Temperature derating

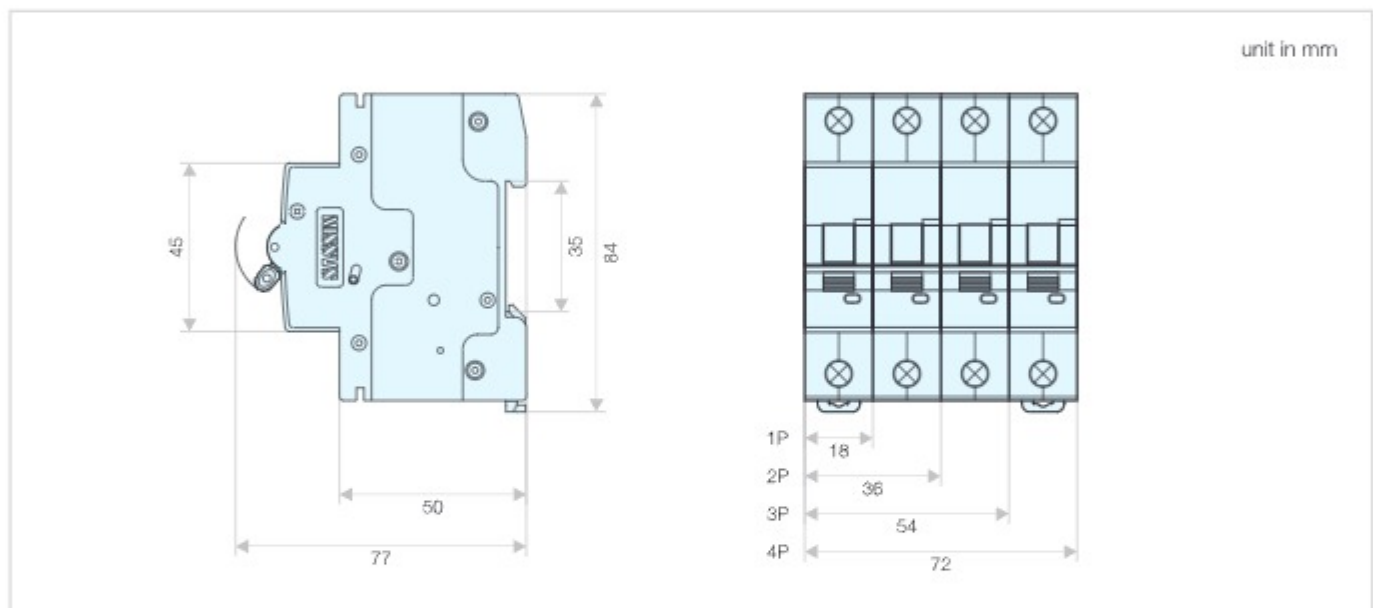
The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

**The reference temperature is 30 °C**

Rated current In (A)	Temperature compensation coefficient under various operational temperature									
	-10 °C	0 °C	10 °C	20 °C	30 °C	40 °C	50 °C	55 °C	60 °C	
1-6	1.20	1.14	1.09	1.05	1.00	0.96	0.80	0.75	0.70	
10-32	1.18	1.12	1.08	1.04	1.00	0.96	0.92	0.88	0.84	
40-63	1.16	1.12	1.07	1.03	1.00	0.97	0.87	0.83	0.80	
70-100	1.15	1.11	1.07	1.03	1.00	0.95	0.86	0.80	0.75	

When several simultaneously operating circuit breakers are mounted side by side in a small enclosure, the temperature rise inside the enclosure causes a reduction in current rating. Then you must then assign the rating (already derated if necessary according to ambient temperature) a downrating factor of 0.8.

### Outline and installation dimensions



# Miniature Circuit Breakers VB510

## Functions

- Overload protection
- Short circuit protection
- Isolation
- Controlling
- Used in residential building, non-residential building, industry, energy and infrastructure.



## Features

- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- Clear indication of the contact position
- The emission of ionized gases is limited to the severest restrictions: 45 mm grid distance
- Suitable for household or similar applications in accordance with: IEC 60898-1 & IEC 60947-2, tripping characteristics B, C and D.

## Technical specifications

			VB510	VB510H
Standards			IEC 60898-1	IEC 60947-2
Number of poles			1P, 1P+N, 2P, 3P, 3P+N, 4P	1P, 1P+N, 2P, 3P, 3P+N, 4P
Rated current I <sub>n</sub>			A 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	70, 80, 100
Rated operational voltage U <sub>e</sub>	1P	V AC	230/400	230/400
	2P - 4P	V AC	400	400
Operational voltage			V AC Min. : 24; Max. : 250/440	Min. : 24; Max. : 250/440
Rated frequency f <sub>n</sub>			Hz 50/60	50/60
Breaking capacity	Acc. to IEC/EN 60898-1	I <sub>cn</sub> kA	6	-
		I <sub>cs</sub> kA	6	-
	Acc. to IEC/EN 60947-2	I <sub>cu</sub> kA	-	6
		I <sub>cs</sub> kA	-	6
Tripping characteristics	Characteristic B	I <sub>n</sub>	3-5	3-5
	Characteristic C	I <sub>n</sub>	5-10	5-10
	Characteristic D	I <sub>n</sub>	10-20	10-20
Thermal operating limit			I <sub>n</sub> 1,13 - 1,45	1,05-1,3
Rated insulation voltage U <sub>i</sub>	Phase to ground	V	250	250
	Phase to phase	V	500	500
Degree of protection			IP20, with connected conductors	IP20, with connected conductors
Endurance	Electrical	ops.	10,000	6,000
	Mechanical	ops.	20,000	20,000
Fire resistance according to IEC 60695			960 °C	960 °C
Mounting position			Any	Any
Cross-section of conductor (Min/Max)	Solid and stranded	mm <sup>2</sup>	1-35	1-50
	Finely stranded with end sleeve	mm <sup>2</sup>	1-16	1-35
Type of busbar			Pin type	Pin type
Tighting torque			N·m 2.5	2.5
Ambient temperature			°C -5 ~ +40, max. 95 % humidity	-5 ~ +40, max. 95 % humidity
Altitude (max.)			meter 2000	2000

## Selection and ordering data

IEC 60898-1 Icn=Ics=6kA



Number of poles	Rated current In (A)	Characteristic B	Characteristic C	Characteristic D
		Type code	Type code	Type code
1P	1	VB511-B1	VB511-C1	VB511-D1
	2	VB511-B2	VB511-C2	VB511-D2
	3	VB511-B3	VB511-C3	VB511-D3
	4	VB511-B4	VB511-C4	VB511-D4
	5	VB511-B5	VB511-C5	VB511-D5
	6	VB511-B6	VB511-C6	VB511-D6
	10	VB511-B10	VB511-C10	VB511-D10
	16	VB511-B16	VB511-C16	VB511-D16
	20	VB511-B20	VB511-C20	VB511-D20
	25	VB511-B25	VB511-C25	VB511-D25
	32	VB511-B32	VB511-C32	VB511-D32
	40	VB511-B40	VB511-C40	VB511-D40
	50	VB511-B50	VB511-C50	VB511-D50
	63	VB511-B63	VB511-C63	VB511-D63



1P+N	1	VB515-B1	VB515-C1	VB515-D1
	2	VB515-B2	VB515-C2	VB515-D2
	3	VB515-B3	VB515-C3	VB515-D3
	4	VB515-B4	VB515-C4	VB515-D4
	5	VB515-B5	VB515-C5	VB515-D5
	6	VB515-B6	VB515-C6	VB515-D6
	10	VB515-B10	VB515-C10	VB515-D10
	16	VB515-B16	VB515-C16	VB515-D16
	20	VB515-B20	VB515-C20	VB515-D20
	25	VB515-B25	VB515-C25	VB515-D25
	32	VB515-B32	VB515-C32	VB515-D32
	40	VB515-B40	VB515-C40	VB515-D40
	50	VB515-B50	VB515-C50	VB515-D50
	63	VB515-B63	VB515-C63	VB515-D63



2P	1	VB512-B1	VB512-C1	VB512-D1
	2	VB512-B2	VB512-C2	VB512-D2
	3	VB512-B3	VB512-C3	VB512-D3
	4	VB512-B4	VB512-C4	VB512-D4
	5	VB512-B5	VB512-C5	VB512-D5
	6	VB512-B6	VB512-C6	VB512-D6
	10	VB512-B10	VB512-C10	VB512-D10
	16	VB512-B16	VB512-C16	VB512-D16
	20	VB512-B20	VB512-C20	VB512-D20
	25	VB512-B25	VB512-C25	VB512-D25
	32	VB512-B32	VB512-C32	VB512-D32
	40	VB512-B40	VB512-C40	VB512-D40
	50	VB512-B50	VB512-C50	VB512-D50
	63	VB512-B63	VB512-C63	VB512-D63





# Miniature Circuit Breakers VB510

## Selection and ordering data

IEC 60898-1 I<sub>cn</sub>=I<sub>cs</sub>=6kA

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Number of poles	Rated current I <sub>n</sub> (A)	Characteristic B	Characteristic C	Characteristic D
		Type code	Type code	Type code
3P	1	VB513-B1	VB513-C1	VB513-D1
	2	VB513-B2	VB513-C2	VB513-D2
	3	VB513-B3	VB513-C3	VB513-D3
	4	VB513-B4	VB513-C4	VB513-D4
	5	VB513-B5	VB513-C5	VB513-D5
	6	VB513-B6	VB513-C6	VB513-D6
	10	VB513-B10	VB513-C10	VB513-D10
	16	VB513-B16	VB513-C16	VB513-D16
	20	VB513-B20	VB513-C20	VB513-D20
	25	VB513-B25	VB513-C25	VB513-D25
	32	VB513-B32	VB513-C32	VB513-D32
	40	VB513-B40	VB513-C40	VB513-D40
	50	VB513-B50	VB513-C50	VB513-D50
63	VB513-B63	VB513-C63	VB513-D63	







3P+N	1	VB516-B1	VB516-C1	VB516-D1
	2	VB516-B2	VB516-C2	VB516-D2
	3	VB516-B3	VB516-C3	VB516-D3
	4	VB516-B4	VB516-C4	VB516-D4
	5	VB516-B5	VB516-C5	VB516-D5
	6	VB516-B6	VB516-C6	VB516-D6
	10	VB516-B10	VB516-C10	VB516-D10
	16	VB516-B16	VB516-C16	VB516-D16
	20	VB516-B20	VB516-C20	VB516-D20
	25	VB516-B25	VB516-C25	VB516-D25
	32	VB516-B32	VB516-C32	VB516-D32
	40	VB516-B40	VB516-C40	VB516-D40
	50	VB516-B50	VB516-C50	VB516-D50
63	VB516-B63	VB516-C63	VB516-D63	



4P	1	VB514-B1	VB514-C1	VB514-D1
	2	VB514-B2	VB514-C2	VB514-D2
	3	VB514-B3	VB514-C3	VB514-D3
	4	VB514-B4	VB514-C4	VB514-D4
	5	VB514-B5	VB514-C5	VB514-D5
	6	VB514-B6	VB514-C6	VB514-D6
	10	VB514-B10	VB514-C10	VB514-D10
	16	VB514-B16	VB514-C16	VB514-D16
	20	VB514-B20	VB514-C20	VB514-D20
	25	VB514-B25	VB514-C25	VB514-D25
	32	VB514-B32	VB514-C32	VB514-D32
	40	VB514-B40	VB514-C40	VB514-D40
	50	VB514-B50	VB514-C50	VB514-D50
63	VB514-B63	VB514-C63	VB514-D63	

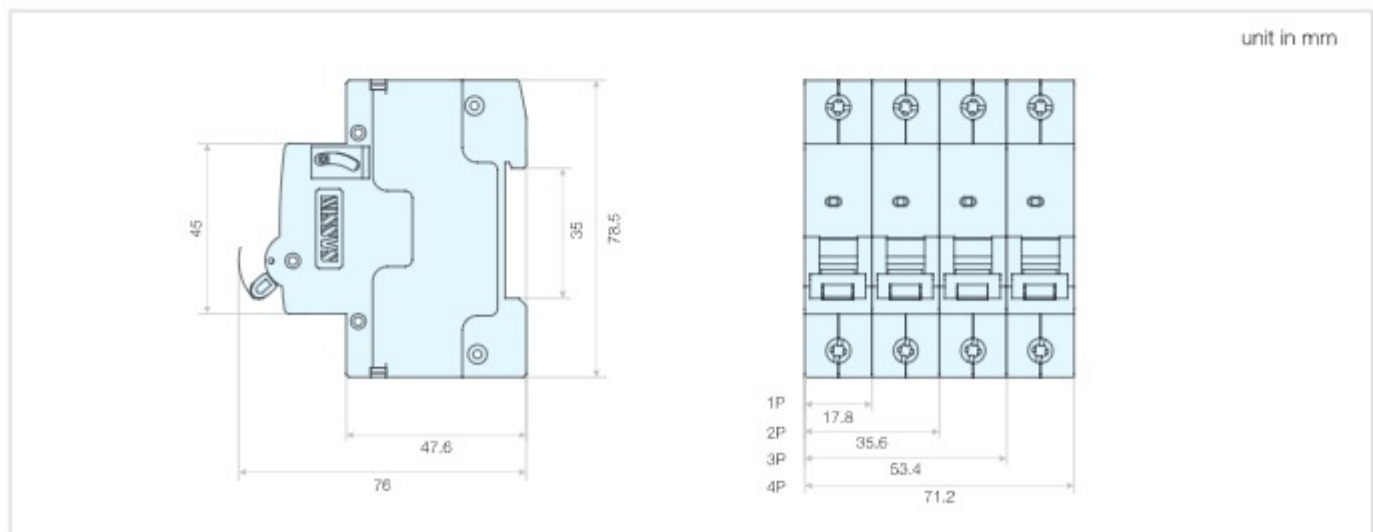
## Selection and ordering data

IEC 60947-2 I<sub>cu</sub>=I<sub>cs</sub>=6kA

Number of poles	Rated current I <sub>n</sub> (A)	Characteristic B	Characteristic C	Characteristic D
		Type code	Type code	Type code
1P 	70	VB511H-B70	VB511H-C70	VB511H-D70
	80	VB511H-B80	VB511H-C80	VB511H-D80
	100	VB511H-B100	VB511H-C100	VB511H-D100
1P+N 	70	VB515H-B70	VB515H-C70	VB515H-D70
	80	VB515H-B80	VB515H-C80	VB515H-D80
	100	VB515H-B100	VB515H-C100	VB515H-D100
2P 	70	VB512H-B70	VB512H-C70	VB512H-D70
	80	VB512H-B80	VB512H-C80	VB512H-D80
	100	VB512H-B100	VB512H-C100	VB512H-D100
3P 	70	VB513H-B70	VB513H-C70	VB513H-D70
	80	VB513H-B80	VB513H-C80	VB513H-D80
	100	VB513H-B100	VB513H-C100	VB513H-D100
3P+N 	70	VB516H-B70	VB516H-C70	VB516H-D70
	80	VB516H-B80	VB516H-C80	VB516H-D80
	100	VB516H-B100	VB516H-C100	VB516H-D100
4P 	70	VB514H-B70	VB514H-C70	VB514H-D70
	80	VB514H-B80	VB514H-C80	VB514H-D80
	100	VB514H-B100	VB514H-C100	VB514H-D100



## Outline and installation dimensions



# Miniature Circuit Breakers Series 3SB1-125

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## Functions

- Overload protection
- Short circuit protection
- Isolation
- Used in residential building, non-residential building, energy sources, industry and infrastructure.

## Technical specifications

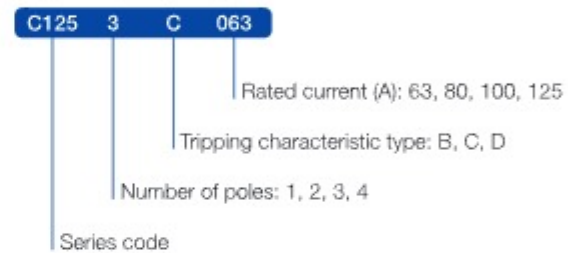
- Standard: IEC 60947-2
- Rated current  $I_n$  (A): 63, 80, 100, 125
- Rated voltage  $U_n$  (V AC): 230/400
- Operational voltage (V AC):
  - Min.: 24
  - Max.: 250/440
- Rated insulation voltage (V AC): 500
- Number of poles: 1, 2, 3, 4
- Tripping characteristics: B, C, D
  - release B ( $I_n$ ): 4
  - release C ( $I_n$ ): 8
  - release D ( $I_n$ ): 12
- Thermal operating limit ( $I_n$ ): 1.05 - 1.30
- Electrical life (times): 6,000
- Mechanical life (times): 20,000
- Breaking capacity:

Model	Rated voltage		Acc. to IEC 60947-2	
	(V)		$I_{cn}$ (kA)	$I_{cs}$ (kA)
3SB1-125	1P	230/400	6	6
	2-4P	400	6	6

- Degree of protection: IP20, with connected conductors
- Mounting position: Any
- Conductor cross-sections
  - Solid and stranded ( $mm^2$ ): 1-50
  - Finely stranded with end sleeve ( $mm^2$ ): 1-35
- Terminal tightening torque (N-m): 3.5
- Ambient temperature ( $^{\circ}C$ ): -5 ~ +45, max. 95 % humidity
- Storage temperature ( $^{\circ}C$ ): -40 ~ +75
- Altitude (meters): Max 2,000
- Connection capacity ( $mm^2$ ): 1-35



## Instruction of type code

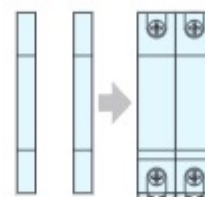


## Features

- Rated current up to 125 A
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- Adequate printing of all data on the front provides long-term identification
- This MCB for industry in accordance with: IEC 60947-2 instantaneous tripping release ranges B: 4  $I_n$ , release C: 8  $I_n$ , release D: 12  $I_n$
- This MCB may be extended with:
  - Full sets of additional components
  - Full sets of accessories





## Add-on devices

### Auxiliaries



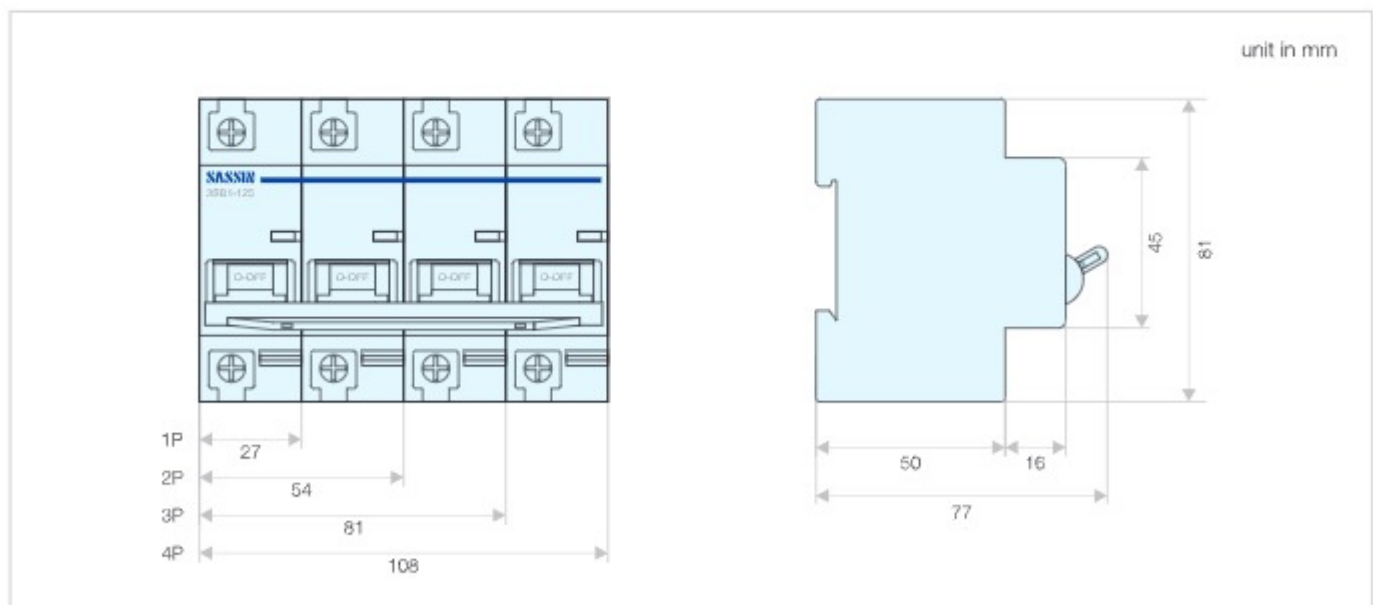
## Selection and ordering data

IEC 60947-2 6 kA

	Number of poles	Rated current I <sub>n</sub> (A)	Curve B		Curve C		Curve D	
			Type code	Order code	Type code	Order code	Type code	Order code
	1	63	C125 1B063	21140	C125 1C063	21152	C125 1D063	21164
		80	C125 1B080	21141	C125 1C080	21153	C125 1D080	21165
		100	C125 1B100	21142	C125 1C100	21154	C125 1D100	21166
		125	C125 1B125	23577	C125 1C125	23581	C125 1D125	23585
	2	63	C125 2B063	21143	C125 2C063	21155	C125 2D063	21167
		80	C125 2B080	21144	C125 2C080	21156	C125 2D080	21168
		100	C125 2B100	21145	C125 2C100	21157	C125 2D100	21169
		125	C125 2B125	23578	C125 2C125	23582	C125 2D125	23586
	3	63	C125 3B063	21146	C125 3C063	21158	C125 3D063	21170
		80	C125 3B080	21147	C125 3C080	21159	C125 3D080	21171
		100	C125 3B100	21148	C125 3C100	21160	C125 3D100	21172
		125	C125 3B125	23579	C125 3C125	23583	C125 3D125	23587
	4	63	C125 4B063	21149	C125 4C063	21161	C125 4D063	21173
		80	C125 4B080	21150	C125 4C080	21162	C125 4D080	21174
		100	C125 4B100	21151	C125 4C100	21163	C125 4D100	21175
		125	C125 4B125	23580	C125 4C125	23584	C125 4D125	23588

2

## Outline and installation dimensions



# DPN Miniature Circuit Breakers Series 3SB66



2

## Functions

- Overload protection
- Short circuit protection
- Isolation both for phase and neutral line
- Controlling
- Used for the protection of plants with switched neutral
- Used in residential building

## Technical specifications

- Standard: IEC 60898-1
- Rated current  $I_n$  (A): 3, 6, 10, 16, 20, 25, 32, 40
- Rated voltage  $U_n$  (V AC): 230
- Rated frequency (Hz): 50/60
- Operational voltage Min / Max (V AC): 24 / 250
- Number of pole: 1P+N (1 modular width)
- Rated impulse withstand voltage  $U_{imp}$  (kV): 6
- Tripping characteristic: B, C
- Characteristic B ( $I_n$ ): 3-5
- Characteristic C ( $I_n$ ): 5-10
- Thermal operating limit : 1.13-1.45  $I_n$
- Rated switching capacity  $I_{cn}$  (kA): 6
- Degree of protection: IP20, with connected conductors
- Electrical life(times): 10,000
- Mechanical life (times): 20,000
- Breaking capacity:

Model	Rated voltage		Acc. to IEC 60898-1	
	(V)		$I_{cu}$ (kA)	$I_{cs}$ (kA)
3SB66	1P+N	230	6	6

- Mounting position: Any
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 0.75-16
- Finely stranded with end sleeve (mm<sup>2</sup>): 0.75-16
- Terminal tightening torque (N-m): 2.0
- Ambient temperature (°C): -25 ~ +45, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Altitude (meters): Max. 2,000
- Connection capacity (mm<sup>2</sup>): 1-16

## References

- Additional components: page 69 ~ 70

## Selection and ordering data

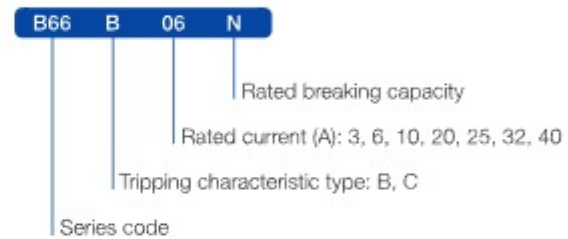
IEC 60898-1 6 kA



Number of poles	Rated current $I_n$ (A)	Characteristic B		Characteristic C		Pack.
		Type code	Order code	Type code	Order code	
		1P+N	3	B66 B03N	0	
	6	B66 B06N	21284	B66 C06N	21291	12
	10	B66 B10N	21285	B66 C10N	21292	12
	16	B66 B16N	21286	B66 C16N	21293	12
	20	B66 B20N	21287	B66 C20N	21294	12
	25	B66 B25N	21288	B66 C25N	21295	12
	32	B66 B32N	21289	B66 C32N	21296	12
	40	B66 B40N	21290	B66 C40N	21297	12



## Instruction of type code

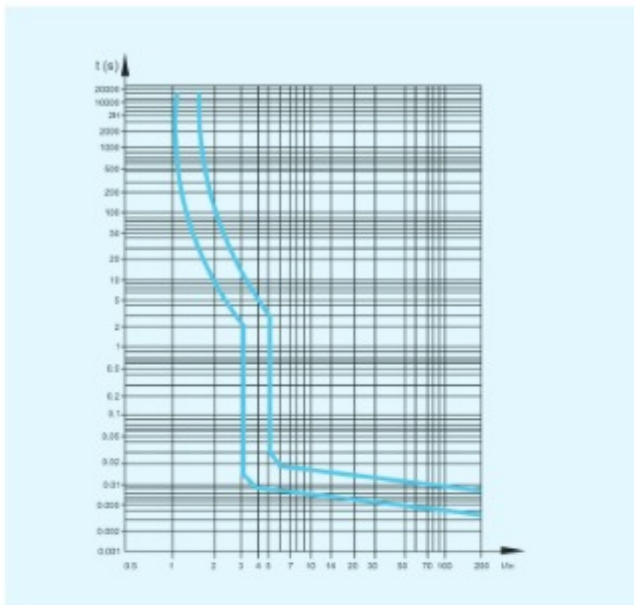


## Features

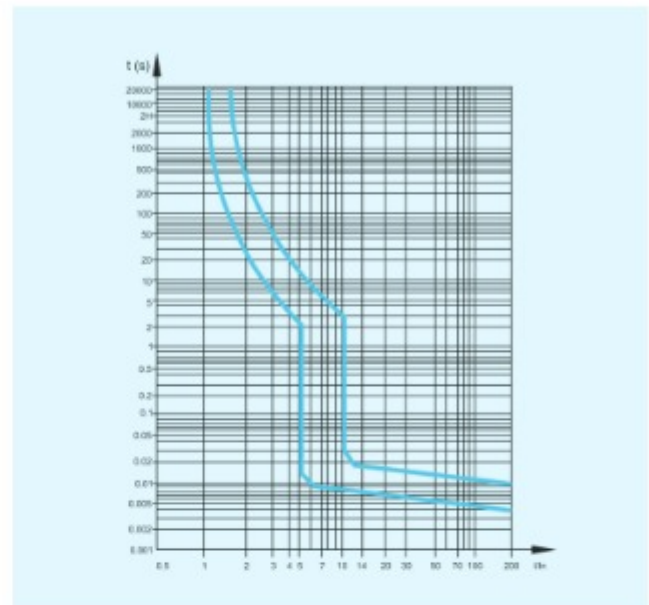
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON/OFF)
- The handle provides a clear indication of the contact position
- Adequate printing of all data on the front provides long-term identification
- Energy limiting class: 3
- The emission of ionized gases is limited to the severest restrictions: 45 mm grid distance
- This MCB for household in accordance with: IEC 60898-1, B, C tripping characteristics
- Full sets of accessories

## Tripping characteristic curves

Characteristic B



Characteristic C



## Magnetic release

An electromagnet with plunger ensures instantaneous tripping in case of short circuit. The IEC 60898-1 distinguishes three different types, following the current for instantaneous release: type B, C

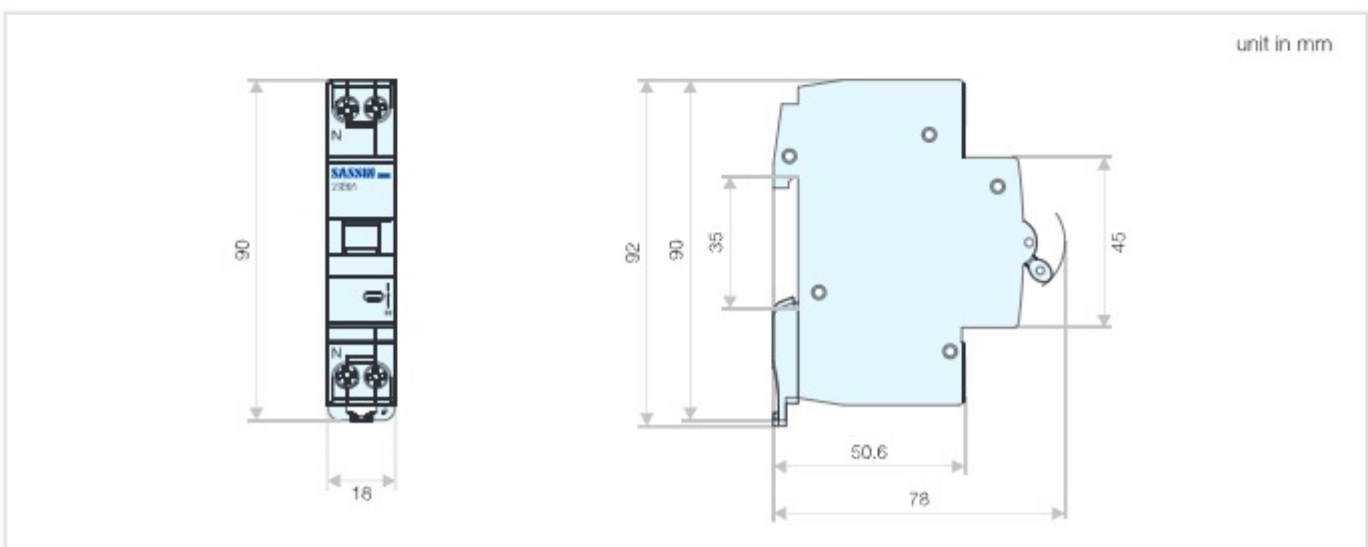
Test current	Initial condition	Limits of tripping or non-tripping time	Result to be obtained
B 3 In	Cold	$t \leq 0.1 \text{ s}$	No Tripping
C 5 In			
B 5 In			Tripping
C 10 In			

## Thermal release

- The release is initiated by a bimetal strip in case of overload
- The standard defines the range of release for specific overload values
- Reference ambient temperature is 30 °C

Test current	Tripping time
1.13 In	$t \leq 1 \text{ h}$ ( $I_n \leq 63 \text{ A}$ )
1.45 In	$t < 1 \text{ h}$ ( $I_n \leq 63 \text{ A}$ )
2.55 In	$1 \text{ s} < t < 60 \text{ s}$ ( $I_n \leq 32 \text{ A}$ ) $1 \text{ s} < t < 120 \text{ s}$ ( $I_n > 32 \text{ A}$ )

## Outline and installation dimensions



# DPN Miniature Circuit Breakers Series VBN515



## Functions

- Overload protection
- Short circuit protection
- Isolation both for phase and neutral line
- Controlling
- Used for the protection of plants with switched neutral
- Used in residential buildings

2

## Technical specifications

- Standard: IEC 60898-1
- Rated current  $I_n$  (A): 3, 6, 10, 16, 20, 25, 32, 40
- Rated voltage  $U_n$  (V AC): 230
- Rated frequency (Hz): 50/60
- Operational voltage Min/Max (V AC): 24/250
- Number of pole: 1P+N (1 modular width)
- Rated impulse withstand voltage  $U_{imp}$  (kV): 6
- Tripping characteristic: B, C
- Characteristic B ( $I_n$ ): 3-5
- Characteristic C ( $I_n$ ): 5-10
- Thermal operating limit: 1.13-1.45  $I_n$
- Rated switching capacity  $I_{cn}$  (kA): 6
- Degree of protection: IP40, housing: IP20, terminals
- Electrical life (times): 10,000
- Mechanical life (times): 20,000
- Mounting position: No significant vibration and shock
- Connection capacity (mm<sup>2</sup>): 1-10
- Terminal tightening torque (N-m): 2.0
- Ambient temperature (°C): +20, max. 95 % humidity;  
+40, max. 50 % humidity
- Storage temperature (°C): -30 – +70
- Altitude (meters): Max 2,000





## Features

- 1P+N with switched neutral line in 1 module of 18 mm width, up to 40 A, rated breaking capacity 6 kA
- Current-limiting contact system and magnetic blow-out arc extinguishing device, avoiding products and equipment to bear large short-circuit current, improving the arc extinguishing ability of the product, and ensuring the breaking capacity
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON/OFF)
- This MCB for household in accordance with: IEC 60898-1, B, C tripping characteristics
- Full sets of accessories

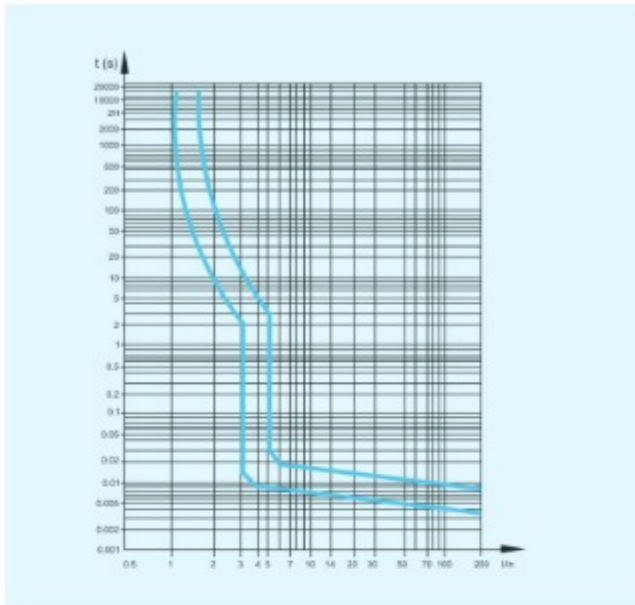
## Selection and ordering data

IEC 60898-1 6 kA

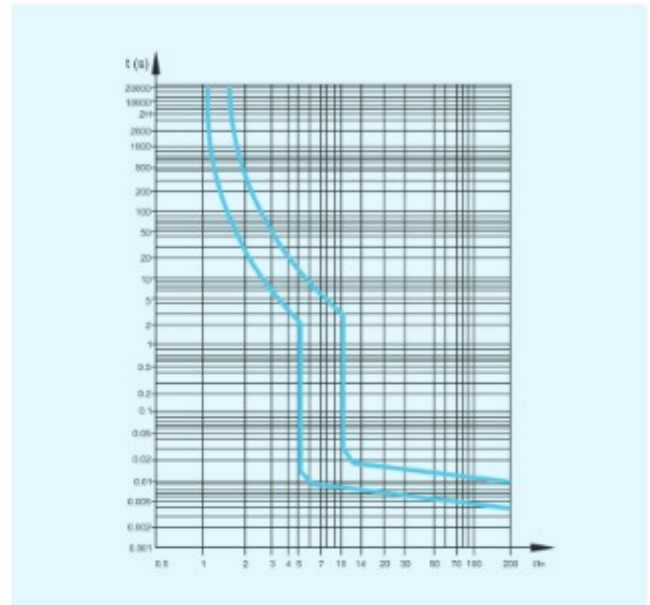
	Number of poles	Rated current $I_n$ (A)	Characteristic B		Characteristic C	
			Type code	Order code	Type code	Order code
 	1P+N	3	VBN515-B3	0	VBN515-C3	0
		6	VBN515-B6	38623	VBN515-C6	38630
		10	VBN515-B10	38624	VBN515-C10	38631
		16	VBN515-B16	38625	VBN515-C16	38632
		20	VBN515-B20	38626	VBN515-C20	38633
		25	VBN515-B25	38627	VBN515-C25	38634
		32	VBN515-B32	38628	VBN515-C32	38635
		40	VBN515-B40	38629	VBN515-C40	38636

Tripping characteristic curves

Characteristic B



Characteristic C



Magnetic release

An electromagnet with plunger ensures instantaneous tripping in case of short circuit. The IEC 60898-1 distinguishes three different types, following the current for instantaneous release: type B, C

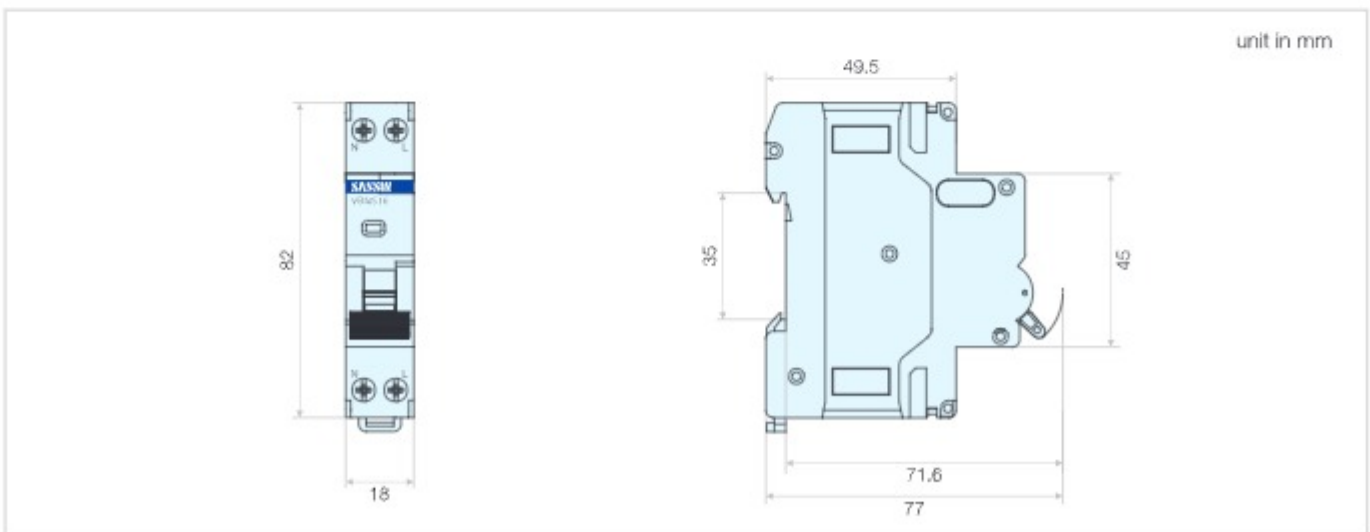
Test current	Initial condition	Limits of tripping or non-tripping time	Result to be obtained
B 3 In	Cold	$t \leq 0.1 \text{ s}$	No Tripping
C 5 In			
B 5 In			Tripping
C 10 In			

Thermal release

- The release is initiated by a bimetal strip in case of overload
- The standard defines the range of release for specific overload values
- Reference ambient temperature is 30 °C

Test current	Tripping time
1.13 In	$t \leq 1 \text{ h}$ ( $I_n \leq 63 \text{ A}$ )
1.45 In	$t < 1 \text{ h}$ ( $I_n \leq 63 \text{ A}$ )
2.55 In	$1 \text{ s} < t < 60 \text{ s}$ ( $I_n \leq 32 \text{ A}$ ) $1 \text{ s} < t < 120 \text{ s}$ ( $I_n > 32 \text{ A}$ )

Outline and installation dimensions





# Residual Current Circuit Breakers Series 3SL71

2

## Functions

- Switching and isolation function
- Controlling
- Protection against the effects of sinusoidal alternating earth fault currents
- Protection against indirect contacts and additional protection against direct contacts.
- Protection against fire hazard caused by insulation faults
- Used in residential building , non-residential building, energy sources, industry and infrastructure.
- Combination with auxiliary elements: auxiliary contact, signal contact, shunt trip, undervoltage release



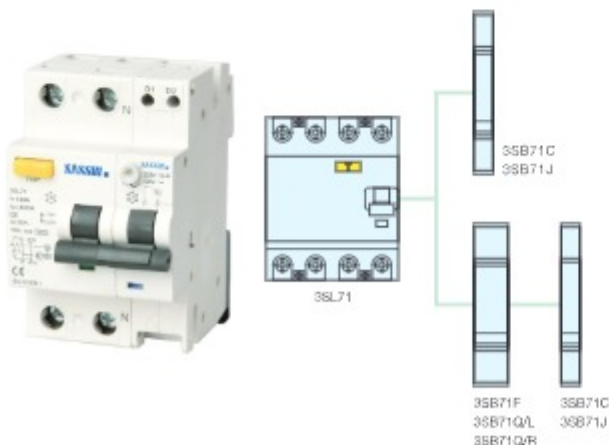
## Technical specifications

- Standard: IEC 61008-1
- Type (wave form of the earth leakage sensed): AC, A
- Trip time type: instantaneous, selectivity S
- Number of poles: 1P+N, 3P+N
- Rated current  $I_n$  (A): 16, 25, 40, 63, 80, 100
- Rated voltage  $U_e$  (V AC): 230/400
- Rated insulation voltage  $U_i$  (V AC): 500
- Rated impulse withstand voltage  $U_{imp}$  (kV): 4
- Rated frequency  $f_n$  (Hz): 50/60
- Rated residual currents  $I_{\Delta n}$  (mA): 10 (2P 16 A), 30, 100, 300
- Rated conditional short-circuit current:
- $I_{nc} = I_{\Delta c} = 6000$  A SCPD fuse 100A Gg
- Making and breaking capacity  $I_m$  (A): 1000
- Rated residual breaking capacity  $I_{\Delta m}$  (A): 1000
- Degree of protection: IP20, with connected conductors
- Terminal tightening torque (N·m): 3
- Ambient temperature (°C): -25 – +45, max. 95 % humidity

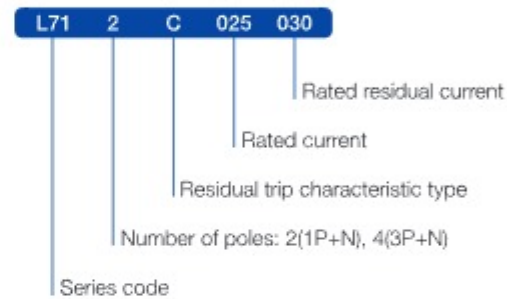
## References

- Additional components: page 69 – 70

## Combination of auxiliary elements with 3SL71



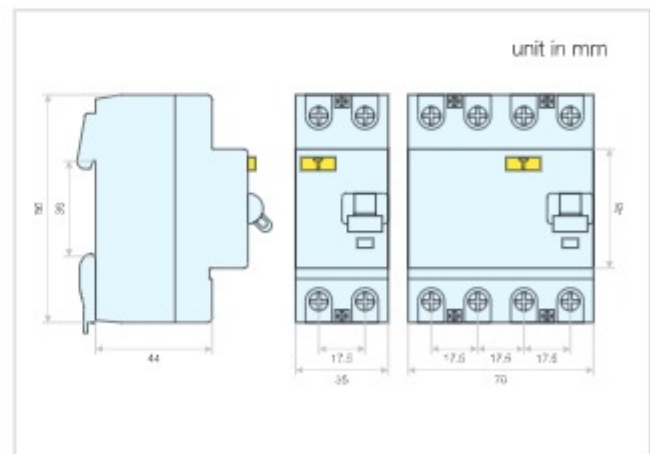
## Instruction of type code



## Features

- Electromagnetic type, voltage independent.
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- The handle provides a clear indication of the contact position
- Adequate printing of all data on the front provides long-term identification

## Outline and installation dimensions



## Selection and ordering data

Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Type AC		Type A		Type S+AC		Type S+A		
			Type code	Order code	Type code	Order code	Type code	Order code	Type code	Order code	
	10	16	L71 2C016/010	36067	L71 2A016/010	36104	-	-	-	-	
		30	16	L71 2C016/030	36068	L71 2A016/030	36105	-	-	-	-
			25	L71 2C025/030	36069	L71 2A025/030	36106	-	-	-	-
			40	L71 2C040/030	36070	L71 2A040/030	36107	-	-	-	-
			63	L71 2C063/030	36071	L71 2A063/030	36108	-	-	-	-
			80	L71 2C080/030	36072	L71 2A080/030	36109	-	-	-	-
	100	L71 2C100/030	36073	L71 2A100/030	36110	-	-	-	-		
	100	16	L71 2C016/100	36074	L71 2A016/100	36111	L71 2SC016/100	36141	L71 2SA016/100	36165	
		25	L71 2C025/100	36075	L71 2A025/100	36112	L71 2SC025/100	36142	L71 2SA025/100	36166	
		40	L71 2C040/100	36076	L71 2A040/100	36113	L71 2SC040/100	36143	L71 2SA040/100	36167	
		63	L71 2C063/100	36077	L71 2A063/100	36114	L71 2SC063/100	36144	L71 2SA063/100	36168	
		80	L71 2C080/100	36078	L71 2A080/100	36115	L71 2SC080/100	36145	L71 2SA080/100	36169	
		100	L71 2C100/100	36079	L71 2A100/100	36116	L71 2SC100/100	36146	L71 2SA100/100	36170	
		300	16	L71 2C016/300	36080	L71 2A016/300	36117	L71 2SC016/300	36147	L71 2SA016/300	36171
			25	L71 2C025/300	36081	L71 2A025/300	36118	L71 2SC025/300	36148	L71 2SA025/300	36172
40			L71 2C040/300	36082	L71 2A040/300	36119	L71 2SC040/300	36149	L71 2SA040/300	36173	
63	L71 2C063/300		36083	L71 2A063/300	36120	L71 2SC063/300	36150	L71 2SA063/300	36174		
80	L71 2C080/300		36084	L71 2A080/300	36121	L71 2SC080/300	36151	L71 2SA080/300	36175		
100	L71 2C100/300		36085	L71 2A100/300	36122	L71 2SC100/300	36152	L71 2SA100/300	36176		
	30	16	L71 4C016/030	36086	L71 4A016/030	36123	-	-	-		
		25	L71 4C025/030	36087	L71 4A025/030	36124	-	-	-		
		40	L71 4C040/030	36088	L71 4A040/030	36125	-	-	-		
		63	L71 4C063/030	36089	L71 4A063/030	36126	-	-	-		
		80	L71 4C080/030	36090	L71 4A080/030	36127	-	-	-		
		100	L71 4C100/030	36091	L71 4A100/030	36128	-	-	-		
	100	16	L71 4C016/100	36092	L71 4A016/100	36129	L71 4SC016/100	36153	L71 4SA016/100	36177	
		25	L71 4C025/100	36093	L71 4A025/100	36130	L71 4SC025/100	36154	L71 4SA025/100	36178	
		40	L71 4C040/100	36094	L71 4A040/100	36131	L71 4SC040/100	36155	L71 4SA040/100	36179	
		63	L71 4C063/100	36095	L71 4A063/100	36132	L71 4SC063/100	36156	L71 4SA063/100	36180	
		80	L71 4C080/100	36096	L71 4A080/100	36133	L71 4SC080/100	36157	L71 4SA080/100	36181	
		100	L71 4C100/100	36097	L71 4A100/100	36134	L71 4SC100/100	36158	L71 4SA100/100	36182	
		300	16	L71 4C016/300	36098	L71 4A016/300	36135	L71 4SC016/300	36159	L71 4SA016/300	36183
			25	L71 4C025/300	36099	L71 4A025/300	36136	L71 4SC025/300	36160	L71 4SA025/300	36184
			40	L71 4C040/300	36100	L71 4A040/300	36137	L71 4SC040/300	36161	L71 4SA040/300	36185
63	L71 4C063/300		36101	L71 4A063/300	36138	L71 4SC063/300	36162	L71 4SA063/300	36186		
80	L71 4C080/300		36102	L71 4A080/300	36139	L71 4SC080/300	36163	L71 4SA080/300	36187		
100	L71 4C100/300		36103	L71 4A100/300	36140	L71 4SC100/300	36164	L71 4SA100/300	36188		

# Residual Current Circuit Breakers Series 3SL6

2

## Functions

- Switching and isolation function
- Controlling
- Protection against the effects of sinusoidal alternating earth fault currents
- Protection against indirect contacts and additional protection against direct contacts.
- Protection against fire hazard caused by insulation faults
- Used in residential building, non-residential building, energy sources, industry and infrastructure.
- Anti false wiring design to ensure safe wiring

## Technical specifications

- Standard: IEC 61008-1 (AC type / A type), IEC 62423 (B type)
- Type (wave form of the earth leakage sensed): AC, A, B
- Tripping time type: instantaneous, selectivity S
- Number of poles (P): 1P+N, 3P+N
- Rated current  $I_n$  (A): 10, 16, 25, 40, 63, 80, 100
- Rated voltage  $U_e$  (V AC): 1P+N: 230; 3P+N: 380
- Rated insulation voltage  $U_i$  (V AC): 500
- Rated impulse withstand voltage  $U_{imp}$  (kV): 4
- Rated frequency  $F_n$  (Hz): 50/60
- Rated residual currents  $I_{\Delta n}$  (mA): 10, 30, 100, 300
- Rated conditional short-circuit current:  
 $I_{nc} = I_{\Delta c} = 6000$  A SCPD fuse 100 A Gg
- Making and breaking capacity for 3SL6-63  $I_m$  (A): 630
- Making and breaking capacity for 3SL6-100  $I_m$  (A): 1000
- Rated residual breaking capacity  $I_{\Delta m}$  (A): 1000
- Degree of protection: IP20, with connected conductors
- Conductor cross-section
  - Solid and stranded (mm<sup>2</sup>): 1-35
  - Finely stranded with end sleeve (mm<sup>2</sup>): 1-25
- Electrical endurance (Cycles): 10,000
- Mechanical endurance (Cycles): 20,000
- Fire resistance according to IEC 60695: 960 °C
- Mounting position: Any
- Busbar connection: Pin type
- Terminal tightening torque (N·m): 2.5
- Ambient temperature (°C): -5 – +40, max. 95 % humidity






## Features

- Electromagnetic type, voltage independent.
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- Adequate printing of all data on the front provides long-term identification



## Selection and ordering data

AC type

	Number of poles	Rated residual current $I_{\Delta n}$ (mA)	Rated current $I_n$ (A)	Left neutral	Right neutral		
				Type code	Type code		
<b>General type, instantaneous</b>							
 	1P+N 230 V AC	10	10	L6 2C10/010L	L6 2C10/010		
			16	L6 2C16/010L	L6 2C16/010		
		30	25	L6 2C25/030L	L6 2C25/030		
			40	L6 2C40/030L	L6 2C40/030		
			63	L6 2C63/030L	L6 2C63/030		
			80	L6 2C80/030L	L6 2C80/030		
	100	100	L6 2C100/030L	L6 2C100/030			
		25	L6 2C25/100L	L6 2C25/100			
		40	L6 2C40/100L	L6 2C40/100			
		63	L6 2C63/100L	L6 2C63/100			
	300	80	80	L6 2C80/100L	L6 2C80/100		
			100	L6 2C100/100L	L6 2C100/100		
		25	25	L6 2C25/300L	L6 2C25/300		
			40	L6 2C40/300L	L6 2C40/300		
			63	L6 2C63/300L	L6 2C63/300		
			80	L6 2C80/300L	L6 2C80/300		
	100	L6 2C100/300L	L6 2C100/300				
	 	3P+N 380 V AC	10	10	L6 4C10/010L	L6 4C10/010	
16				L6 4C16/010L	L6 4C16/010		
30			25	L6 4C25/030L	L6 4C25/030		
			40	L6 4C40/030L	L6 4C40/030		
			63	L6 4C63/030L	L6 4C63/030		
			80	L6 4C80/030L	L6 4C80/030		
100		100	L6 4C100/030L	L6 4C100/030			
		25	L6 4C25/100L	L6 4C25/100			
		40	L6 4C40/100L	L6 4C40/100			
		63	L6 4C63/100L	L6 4C63/100			
300		80	80	L6 4C80/100L	L6 4C80/100		
			100	L6 4C100/100L	L6 4C100/100		
		25	25	L6 4C25/300L	L6 4C25/300		
			40	L6 4C40/300L	L6 4C40/300		
			63	L6 4C63/300L	L6 4C63/300		
			80	L6 4C80/300L	L6 4C80/300		
100		L6 4C100/300L	L6 4C100/300				
<b>S type, selective</b>							
 	1P+N 230 V AC	100	25	L6 2SC25/100L	L6 2SC25/100		
			40	L6 2SC40/100L	L6 2SC40/100		
			63	L6 2SC63/100L	L6 2SC63/100		
			80	L6 2SC80/100L	L6 2SC80/100		
			100	L6 2SC100/100L	L6 2SC100/100		
			25	L6 2SC25/300L	L6 2SC25/300		
	300	40	40	L6 2SC40/300L	L6 2SC40/300		
			63	L6 2SC63/300L	L6 2SC63/300		
		80	80	L6 2SC80/300L	L6 2SC80/300		
			100	L6 2SC100/300L	L6 2SC100/300		
			3P+N 380 V AC	100	25	L6 4SC25/100L	L6 4SC25/100
					40	L6 4SC40/100L	L6 4SC40/100
	63	L6 4SC63/100L			L6 4SC63/100		
	80	L6 4SC80/100L			L6 4SC80/100		
	100	L6 4SC100/100L			L6 4SC100/100		
	25	L6 4SC25/300L			L6 4SC25/300		
	300	40	40	L6 4SC40/300L	L6 4SC40/300		
			63	L6 4SC63/300L	L6 4SC63/300		
80		80	L6 4SC80/300L	L6 4SC80/300			
		100	L6 4SC100/300L	L6 4SC100/300			

# Residual Current Circuit Breakers Series 3SL6

## Selection and ordering data

A type

2

	Number of poles	Rated residual current $I_{\Delta n}$ (mA)	Rated current $I_n$ (A)	Left neutral	Right neutral	
				Type code	Type code	
<b>General type, instantaneous</b>						
	1P+N 230 V AC	10	10	L6 2A10/010L	L6 2A10/010	
			16	L6 2A16/010L	L6 2A16/010	
			30	25	L6 2A25/030L	L6 2A25/030
				40	L6 2A40/030L	L6 2A40/030
				63	L6 2A63/030L	L6 2A63/030
				80	L6 2A80/030L	L6 2A80/030
	100	100	L6 2A100/030L	L6 2A100/030		
		25	L6 2A25/100L	L6 2A25/100		
		40	L6 2A40/100L	L6 2A40/100		
		63	L6 2A63/100L	L6 2A63/100		
		80	L6 2A80/100L	L6 2A80/100		
		100	L6 2A100/100L	L6 2A100/100		
	300	25	L6 2A25/300L	L6 2A25/300		
		40	L6 2A40/300L	L6 2A40/300		
		63	L6 2A63/300L	L6 2A63/300		
		80	L6 2A80/300L	L6 2A80/300		
		100	L6 2A100/300L	L6 2A100/300		
	3P+N 380 V AC	10	10	L6 4A10/010L	L6 4A10/010	
			16	L6 4A16/010L	L6 4A16/010	
			30	25	L6 4A25/030L	L6 4A25/030
				40	L6 4A40/030L	L6 4A40/030
				63	L6 4A63/030L	L6 4A63/030
				80	L6 4A80/030L	L6 4A80/030
	100	100	L6 4A100/030L	L6 4A100/030		
		25	L6 4A25/100L	L6 4A25/100		
		40	L6 4A40/100L	L6 4A40/100		
		63	L6 4A63/100L	L6 4A63/100		
		80	L6 4A80/100L	L6 4A80/100		
		100	L6 4A100/100L	L6 4A100/100		
	300	25	L6 4A25/300L	L6 4A25/300		
		40	L6 4A40/300L	L6 4A40/300		
		63	L6 4A63/300L	L6 4A63/300		
		80	L6 4A80/300L	L6 4A80/300		
		100	L6 4A100/300L	L6 4A100/300		
<b>AD type, anti-disturbance</b>						
	1P+N 230 V AC	30	25	L6AD 2A25/30L	L6AD 2A25/30	
			40	L6AD 2A40/30L	L6AD 2A40/30	
			63	L6AD 2A63/30L	L6AD 2A63/30	
			80	L6AD 2A80/30L	L6AD 2A80/30	
			100	L6AD 2A100/30L	L6AD 2A100/30	
	3P+N 380 V AC	30	25	L6AD 4A25/30L	L6AD 4A25/30	
			40	L6AD 4A40/30L	L6AD 4A40/30	
			63	L6AD 4A63/30L	L6AD 4A63/30	
			80	L6AD 4A80/30L	L6AD 4A80/30	
			100	L6AD 4A100/30L	L6AD 4A100/30	

## Selection and ordering data

A type

	Number of poles	Rated residual current $I_{\Delta n}$ (mA)	Rated current $I_n$ (A)	Left neutral	Right neutral	
				Type code	Type code	
<b>S type, selective</b>						
	1P+N 230 V AC	100	25	L6 2SA25/100L	L6 2SA25/100	
			40	L6 2SA40/100L	L6 2SA40/100	
			63	L6 2SA63/100L	L6 2SA63/100	
			80	L6 2SA80/100L	L6 2SA80/100	
			100	L6 2SA100/100L	L6 2SA100/100	
			300	L6 2SA25/300L	L6 2SA25/300	
		3P+N 380 V AC	100	25	L6 4SA25/100L	L6 4SA25/100
				40	L6 4SA40/100L	L6 4SA40/100
				63	L6 4SA63/100L	L6 4SA63/100
				80	L6 4SA80/100L	L6 4SA80/100
				100	L6 4SA100/100L	L6 4SA100/100
				300	L6 4SA25/300L	L6 4SA25/300
			40	L6 4SA40/300L	L6 4SA40/300	
			63	L6 4SA63/300L	L6 4SA63/300	
			80	L6 4SA80/300L	L6 4SA80/300	
			100	L6 4SA100/300L	L6 4SA100/300	
			25	L6 4SA25/300L	L6 4SA25/300	
			40	L6 4SA40/300L	L6 4SA40/300	
				63	L6 4SA63/300L	L6 4SA63/300
				80	L6 4SA80/300L	L6 4SA80/300
				100	L6 4SA100/300L	L6 4SA100/300

B type

	Number of poles	Rated residual current $I_{\Delta n}$ (mA)	Rated current $I_n$ (A)	Left neutral	Right neutral	
				Type code	Type code	
<b>General type, instantaneous</b>						
	1P+N 230 V AC	30	16	L6 2B16/010L	L6 2B16/010	
			25	L6 2B25/030L	L6 2B25/030	
			40	L6 2B40/030L	L6 2B40/030	
			63	L6 2B63/030L	L6 2B63/030	
			80	L6 2B80/030L	L6 2B80/030	
			100	L6 2B100/030L	L6 2B100/030	
			100	L6 2B16/100L	L6 2B16/100	
			25	L6 2B25/100L	L6 2B25/100	
			40	L6 2B40/100L	L6 2B40/100	
		3P+N 380 V AC	30	25	L6 4B25/030L	L6 4B25/030
				40	L6 4B40/030L	L6 4B40/030
				63	L6 4B63/030L	L6 4B63/030
				80	L6 4B80/030L	L6 4B80/030
				100	L6 4B100/030L	L6 4B100/030
				100	L6 4B25/100L	L6 4B25/100
				40	L6 4B40/100L	L6 4B40/100
				63	L6 4B63/100L	L6 4B63/100
				80	L6 4B80/100L	L6 4B80/100
			100	L6 4B100/100L	L6 4B100/100	
			25	L6 4B25/300L	L6 4B25/300	
			40	L6 4B40/300L	L6 4B40/300	
			63	L6 4B63/300L	L6 4B63/300	
			80	L6 4B80/300L	L6 4B80/300	
			100	L6 4B100/300L	L6 4B100/300	

## Types

Both RCCBs and RCBOs are further divided into types depending on the operating function:

### Type AC

For which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising.

### Type A

For which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising.

### Type B

Type B RCDs are not only sensitive to alternating and pulsating earth fault currents with DC components at a frequency of 50/60 Hz (type A), but they are also sensitive to:

- Alternating currents up to a frequency of 1000 Hz;
- Alternating and/or pulsating currents with DC components overlapping with a direct current;
- Earth fault currents generated by a rectifier with two or more phases;
- Direct earth fault currents without residual ripple

...independently of the polarity or whether the earth fault current appears suddenly or increases gradually.

According to their trip time, RCDs can be classed as two types:

### General type

Instantaneous trip without time-delay, used for general purpose.

### Selective type

Type S, trip with time-delay, used for selectivity and limit the power out only to part of the system affected by a current leakage fault.

## AD range (high immunity)

Leakage currents due to actual faults and temporary residual currents caused by disturbances on the mains cannot be distinguished. The reaction to both is the same, it means the RCDs normally present in the system are tripped to break the circuit, even in the event of disturbance occurs, but not a true earth fault.

Disturbances of this kind are most often caused by:

- Operation over-voltages caused by inserting or removing loads (opening or closing protection of control devices, starting and stopping motors, switching fluorescent lighting systems on and off, etc.)
- Over-voltages of atmospheric origin, caused by direct or indirect discharges on the electrical line.

Under these circumstances, such RCD tripping is unwanted, it is neither necessary nor desirable to disconnect the load from the supply. On the contrary, the sudden and unjustified interruption of the power supply may result in very serious problems.

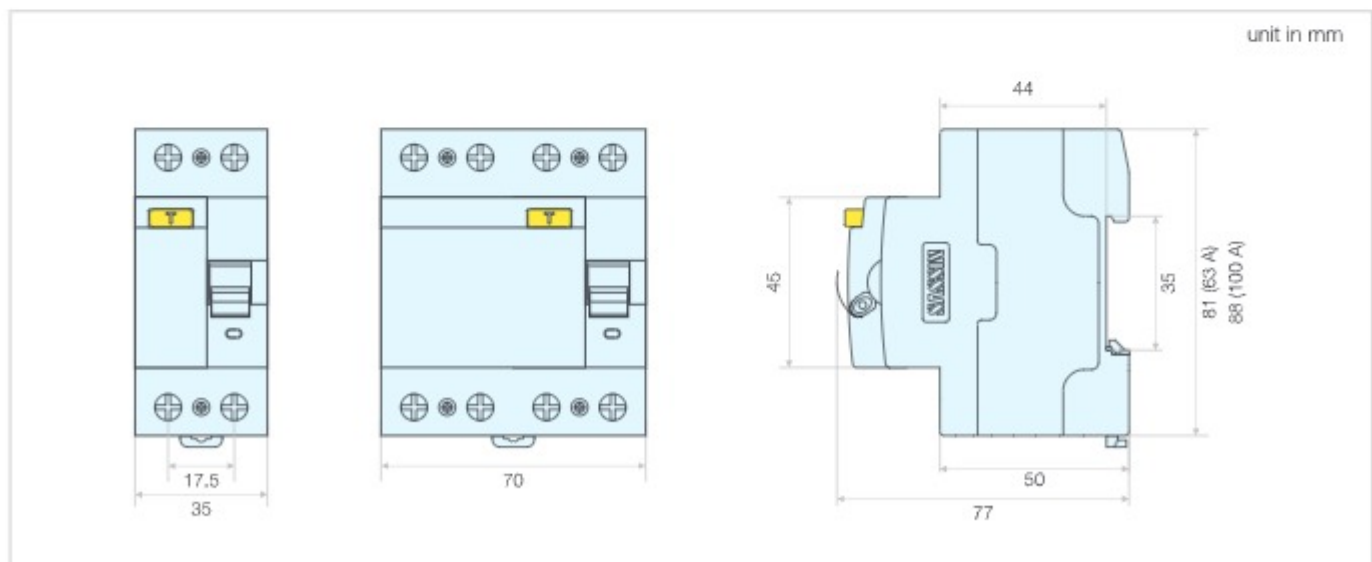
In order to avoid this disturbance, the use of AD range high immunity (anti-disturbance) RCDs is recommended. This device was designed to trip with a slight time delay, but this does not compromise the safety limits set by the standards in force.

For this range of devices, the limit values for the break times are defined. In accordance with the general type, the AD range high immunity RCDs are instantaneous versions.

## Tripping sensitivity data

- RCD with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact.
- RCD with a rated residual current of maximum 300 mA are used as preventative fire protection in case of insulation faults.
- RCD with a rated residual current of 100 mA co-ordinated with the earth system according to the formula  $I\Delta n < 50/R$ , to provide protection against indirect contacts.

## Outline and installation dimensions



## Functions

- Switching and isolation function
- Controlling
- Protection against the effects of sinusoidal alternating earth fault currents
- Protection against indirect contacts and additional protection against direct contacts.
- Protection against fire hazard caused by insulation faults
- Used in residential building, non-residential building, energy sources, industry and infrastructure.
- Anti false wiring design to ensure safe wiring

## Technical specifications

- Standard: IEC 61008-1 (AC type / A type)
- Type (wave form of the earth leakage sensed): AC, A
- Tripping time type: instantaneous, selectivity S
- Number of poles: 1P+N, 3P+N
- Rated current  $I_n$  (A): 10, 16, 25, 40, 63, 80, 100
- Rated voltage  $U_e$  (V AC): 1P+N: 230; 3P+N: 380
- Rated insulation voltage  $U_i$  (V AC): 500
- Rated frequency  $F_n$  (Hz): 50/60
- Rated residual currents  $I_{\Delta n}$  (mA): 30, 100, 300
- Rated conditional short-circuit current:  
 $I_{nc} = I_{\Delta c} = 10000$  A SCPD fuse 100 A Gg
- Making and breaking capacity for PRC620  $I_m$  (A): 630
- Making and breaking capacity for PRC620  $I_m$  (A): 1000
- Rated residual breaking capacity  $I_{\Delta m}$  (A): 1000
- Degree of protection: IP20, with connected conductors
- Conductor cross-section
  - Solid and stranded (mm<sup>2</sup>): 1-35
  - Finely stranded with end sleeve (mm<sup>2</sup>): 1-35
- Electrical endurance (Cycles): 10,000
- Mechanical endurance (Cycles): 20,000
- Fire resistance according to IEC 60695: 960 °C
- Mounting position: Any
- Busbar connection: Pin type
- Terminal tightening torque (N·m): 2.5
- Ambient temperature (°C): -5 – +40, max. 95 % humidity



## Features

- Electromagnetic type, voltage independent.
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- Adequate printing of all data on the front provides long-term identification



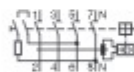
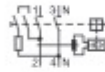
# Residual Current Circuit Breakers Series PRC620



## Selection and ordering data

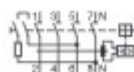
AC type

2



General type, instantaneous	Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Left neutral	Right neutral
				Type code	Type code
230 V AC	1P+N	30	16	PRC62 2C16/030L	PRC62 2C10/030
			25	PRC62 2C25/030L	PRC62 2C16/030
			40	PRC62 2C40/030L	PRC62 2C25/030
			63	PRC62 2C63/030L	PRC62 2C40/030
			80	PRC62 2C80/030L	PRC62 2C63/030
			100	PRC62 2C100/030L	PRC62 2C80/030
		100	16	PRC62 2C16/100L	PRC62 2C16/100
			25	PRC62 2C25/100L	PRC62 2C25/100
			40	PRC62 2C40/100L	PRC62 2C40/100
			63	PRC62 2C63/100L	PRC62 2C63/100
			80	PRC62 2C80/100L	PRC62 2C80/100
			100	PRC62 2C100/100L	PRC62 2C100/100
	380 V AC	30	16	PRC62 2C16/300L	PRC62 2C16/300
			25	PRC62 2C25/300L	PRC62 2C25/300
			40	PRC62 2C40/300L	PRC62 2C40/300
			63	PRC62 2C63/300L	PRC62 2C63/300
			80	PRC62 2C80/300L	PRC62 2C80/300
			100	PRC62 2C100/300L	PRC62 2C100/300
		100	16	PRC62 4C16/010L	PRC62 4C16/030
			25	PRC62 4C25/030L	PRC62 4C25/030
			40	PRC62 4C40/030L	PRC62 4C40/030
			63	PRC62 4C63/030L	PRC62 4C63/030
			80	PRC62 4C80/030L	PRC62 4C80/030
			100	PRC62 4C100/030L	PRC62 4C100/030
380 V AC	30	16	PRC62 4C16/300L	PRC62 4C16/300	
		25	PRC62 4C25/300L	PRC62 4C25/300	
		40	PRC62 4C40/300L	PRC62 4C40/300	
		63	PRC62 4C63/300L	PRC62 4C63/300	
		80	PRC62 4C80/300L	PRC62 4C80/300	
		100	PRC62 4C100/300L	PRC62 4C100/300	

S type, selective



230 V AC	1P+N	100	16	PRC62 2SC16/100L	PRC62 2SC16/100
			25	PRC62 2SC25/100L	PRC62 2SC25/100
			40	PRC62 2SC40/100L	PRC62 2SC40/100
			63	PRC62 2SC63/100L	PRC62 2SC63/100
			80	PRC62 2SC80/100L	PRC62 2SC80/100
			100	PRC62 2SC100/100L	PRC62 2SC100/100
		300	16	PRC62 2SC16/300L	PRC62 2SC16/300
			25	PRC62 2SC25/300L	PRC62 2SC25/300
			40	PRC62 2SC40/300L	PRC62 2SC40/300
			63	PRC62 2SC63/300L	PRC62 2SC63/300
			80	PRC62 2SC80/300L	PRC62 2SC80/300
			100	PRC62 2SC100/300L	PRC62 2SC100/300
	380 V AC	100	16	PRC62 4SC16/100L	PRC62 4SC16/100
			25	PRC62 4SC25/100L	PRC62 4SC25/100
			40	PRC62 4SC40/100L	PRC62 4SC40/100
			63	PRC62 4SC63/100L	PRC62 4SC63/100
			80	PRC62 4SC80/100L	PRC62 4SC80/100
			100	PRC62 4SC100/100L	PRC62 4SC100/100
		300	16	PRC62 4SC16/300L	PRC62 4SC16/300
			25	PRC62 4SC25/300L	PRC62 4SC25/300
			40	PRC62 4SC40/300L	PRC62 4SC40/300
			63	PRC62 4SC63/300L	PRC62 4SC63/300
			80	PRC62 4SC80/300L	PRC62 4SC80/300
			100	PRC62 4SC100/300L	PRC62 4SC100/300

## Selection and ordering data

AC type

	Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Left neutral	Right neutral
				Type code	Type code
<b>General type, instantaneous</b>					
 	1P+N 230 V AC	30	16	PRC62 2A16/030L	PRC62 2A16/030
			25	PRC62 2A25/030L	PRC62 2A25/030
			40	PRC62 2A40/030L	PRC62 2A40/030
			63	PRC62 2A63/030L	PRC62 2A63/030
			80	PRC62 2A80/030L	PRC62 2A80/030
			100	PRC62 2A100/030L	PRC62 2A100/030
		100	16	PRC62 2A16/100L	PRC62 2A16/100
			25	PRC62 2A25/100L	PRC62 2A25/100
			40	PRC62 2A40/100L	PRC62 2A40/100
			63	PRC62 2A63/100L	PRC62 2A63/100
			80	PRC62 2A80/100L	PRC62 2A80/100
			100	PRC62 2A100/100L	PRC62 2A100/100
	3P+N 380 V AC	30	16	PRC62 2A16/300L	PRC62 2A16/300
			25	PRC62 2A25/300L	PRC62 2A25/300
			40	PRC62 2A40/300L	PRC62 2A40/300
			63	PRC62 2A63/300L	PRC62 2A63/300
			80	PRC62 2A80/300L	PRC62 2A80/300
			100	PRC62 2A100/300L	PRC62 4A100/300
		100	16	PRC62 4A16/100L	PRC62 4A16/100
			25	PRC62 4A25/100L	PRC62 4A25/100
			40	PRC62 4A40/100L	PRC62 4A40/100
			63	PRC62 4A63/100L	PRC62 4A63/100
			80	PRC62 4A80/100L	PRC62 4A80/100
			100	PRC62 4A100/300L	PRC62 4A100/300
3P+N 380 V AC	30	16	PRC62 4A16/300L	PRC62 4A16/300	
		25	PRC62 4A25/300L	PRC62 4A25/300	
		40	PRC62 4A40/300L	PRC62 4A40/300	
		63	PRC62 4A63/300L	PRC62 4A63/300	
		80	PRC62 4A80/300L	PRC62 4A80/300	
		100	PRC62 4A100/300L	PRC62 4A100/300	
	100	16	PRC62 4A16/100L	PRC62 4A16/100	
		25	PRC62 4A25/100L	PRC62 4A25/100	
		40	PRC62 4A40/100L	PRC62 4A40/100	
		63	PRC62 4A63/100L	PRC62 4A63/100	
		80	PRC62 4A80/100L	PRC62 4A80/100	
		100	PRC62 4A100/300L	PRC62 4A100/300	
<b>S type, selective</b>					
 	1P+N 230 V AC	100	16	PRC62 2SA16/100L	PRC62 2SA16/100
			25	PRC62 2SA25/100L	PRC62 2SA25/100
			40	PRC62 2SA40/100L	PRC62 2SA40/100
			63	PRC62 2SA63/100L	PRC62 2SA63/100
			80	PRC62 2SA80/100L	PRC62 2SA80/100
			100	PRC62 2SA100/300L	PRC62 2SA100/300
		300	16	PRC62 2SA16/300L	PRC62 2SA16/300
			25	PRC62 2SA25/300L	PRC62 2SA25/300
			40	PRC62 2SA40/300L	PRC62 2SA40/300
			63	PRC62 2SA63/300L	PRC62 2SA63/300
			80	PRC62 2SA80/300L	PRC62 2SA80/300
			100	PRC62 2SA100/300L	PRC62 2SA100/300
	3P+N 380 V AC	100	16	PRC62 4SA16/100L	PRC62 4SA16/100
			25	PRC62 4SA25/100L	PRC62 4SA25/100
			40	PRC62 4SA40/100L	PRC62 4SA40/100
			63	PRC62 4SA63/300L	PRC62 4SA63/100
			80	PRC62 4SA80/300L	PRC62 4SA80/100
			100	PRC62 4SA100/300L	PRC62 4SA100/300
		300	16	PRC62 4SA16/300L	PRC62 4SA16/300
			25	PRC62 4SA25/300L	PRC62 4SA25/300
			40	PRC62 4SA40/300L	PRC62 4SA40/300
			63	PRC62 4SA63/300L	PRC62 4SA63/300
			80	PRC62 4SA80/300L	PRC62 4SA80/300
			100	PRC62 4SA100/300L	PRC62 4SA100/300

# Residual Current Circuit Breakers

## Series PRC620

2

### Types

Both RCCBs and RCBOs are further divided into types depending on the operating function:

#### Type AC

For which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising.

#### Type A

For which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising.

According to their trip time, RCDs can be classed as two types:

#### General type

Instantaneous trip without time-delay, used for general purpose.

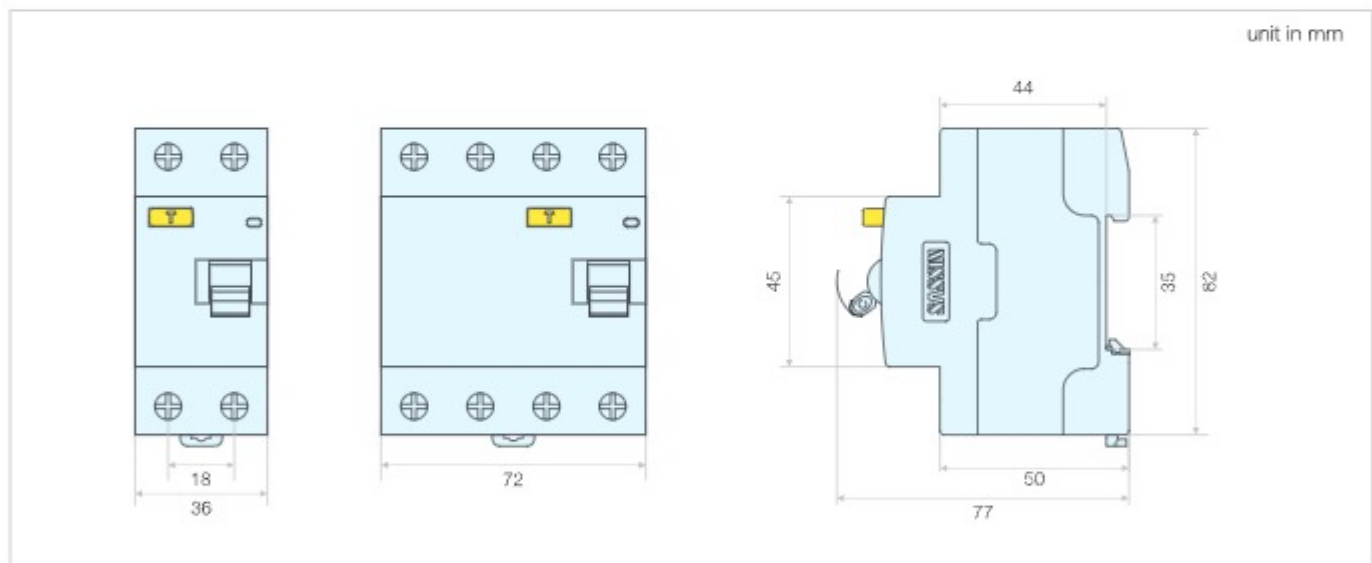
#### Selective type

Type S, trip with time-delay, used for selectivity and limit the power out only to part of the system affected by a current leakage fault.

### Tripping sensitivity data

- RCD with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact.
- RCD with a rated residual current of maximum 300 mA are used as preventative fire protection in case of insulation faults.
- RCD with a rated residual current of 100 mA co-ordinated with the earth system according to the formula  $I\Delta n < 50/R$ , to provide protection against indirect contacts.

### Outline and installation dimensions



## Functions

- Switching and isolation function
- Controlling
- Protection against the effects of sinusoidal alternating earth fault currents
- Protection against indirect contacts and additional protection against direct contacts.
- Protection against fire hazard caused by insulation faults
- Used in residential building, non-residential building, energy sources, industry and infrastructure.
- Anti false wiring design to ensure safe wiring

## Technical specifications

- Standard: IEC 61008-1 (AC type / A type)
- Type (wave form of the earth leakage sensed): AC, A
- Trip time type: instantaneous, selectivity S
- Number of poles (P): 1P+N, 3P+N
- Rated current  $I_n$  (A): 16, 25, 40, 63, 80, 100
- Rated voltage  $U_e$  (V AC): 1P+N: 230; 3P+N: 380
- Rated insulation voltage  $U_i$  (V AC): 500
- Rated impulse withstand voltage  $U_{imp}$  (kV): 4
- Rated frequency  $F_n$  (Hz): 50/60
- Rated residual currents  $I_{\Delta n}$  (mA): 30, 100, 300
- Rated conditional short-circuit current:  
 $I_{nc} = I_{\Delta c} = 6000$  A SCPD fuse 100 A Gg
- Making and breaking capacity for VRC5-63 Im (A): 630
- Making and breaking capacity for VRC5-100 Im (A): 1000
- Rated residual breaking capacity  $I_{\Delta m}$  (A): 1000
- Degree of protection: IP20, with connected conductors
- Conductor cross-section
  - Solid and stranded (mm<sup>2</sup>): 1-35
  - Finely stranded with end sleeve (mm<sup>2</sup>): 1-25
- Electrical endurance (Cycles): 10,000
- Mechanical endurance (Cycles): 20,000
- Fire resistance according to IEC 60695: 960 °C
- Mounting position: Any
- Busbar connection: Pin type
- Terminal tightening torque (N·m): 2.5
- Ambient temperature (°C): -5 – +40, max. 95 % humidity

## Features

- Electromagnetic type, voltage independent.
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- Adequate printing of all data on the front provides long-term identification



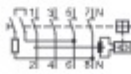
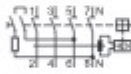
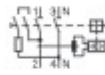
# Residual Current Circuit Breakers Series VRC520



## Selection and ordering data

AC type


2



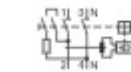
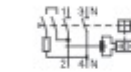
General type, instantaneous	Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Left neutral	Right neutral	
				Type code	Type code	
General type, instantaneous	1P+N 230 V AC	30	16	VRC52 2C16/030L	VRC52 2C16/030	
			25	VRC52 2C25/030L	VRC52 2C25/030	
			40	VRC52 2C40/030L	VRC52 2C40/030	
			63	VRC52 2C63/030L	VRC52 2C63/030	
			80	VRC52 2C80/030L	VRC52 2C80/030	
			100	VRC52 2C100/030L	VRC52 2C100/030	
		100	16	VRC52 2C16/100L	VRC52 2C16/100	
			25	VRC52 2C25/100L	VRC52 2C25/100	
			40	VRC52 2C40/100L	VRC52 2C40/100	
			63	VRC52 2C63/100L	VRC52 2C63/100	
			80	VRC52 2C80/100L	VRC52 2C80/100	
			100	VRC52 2C100/100L	VRC52 2C100/100	
	3P+N 380 V AC	30	16	VRC52 4C16/030L	VRC52 4C16/030	
			25	VRC52 4C25/030L	VRC52 4C25/030	
			40	VRC52 4C40/030L	VRC52 4C40/030	
			63	VRC52 4C63/030L	VRC52 4C63/030	
			80	VRC52 4C80/030L	VRC52 4C80/030	
			100	VRC52 4C100/030L	VRC52 4C100/030	
		100	16	VRC52 4C16/100L	VRC52 4C16/100	
			25	VRC52 4C25/100L	VRC52 4C25/100	
			40	VRC52 4C40/100L	VRC52 4C40/100	
			63	VRC52 4C63/100L	VRC52 4C63/100	
			80	VRC52 4C80/100L	VRC52 4C80/100	
			100	VRC52 4C100/100L	VRC52 4C100/100	
3P+N 380 V AC	300	16	VRC52 4C16/300L	VRC52 4C16/300		
		25	VRC52 4C25/300L	VRC52 4C25/300		
		40	VRC52 4C40/300L	VRC52 4C40/300		
		63	VRC52 4C63/300L	VRC52 4C63/300		
		80	VRC52 4C80/300L	VRC52 4C80/300		
		100	VRC52 4C100/300L	VRC52 4C100/300		
	S type, selective	1P+N 230 V AC	100	16	VRC52 2CS16/100L	VRC52 2CS16/100
				25	VRC52 2CS25/100L	VRC52 2CS25/100
				40	VRC52 2CS40/100L	VRC52 2CS40/100
				63	VRC52 2CS63/100L	VRC52 2CS63/100
				80	VRC52 2CS80/100L	VRC52 2CS80/100
				100	VRC52 2CS100/100L	VRC52 2CS100/100
300			16	VRC52 2CS16/300L	VRC52 2CS16/300	
			25	VRC52 2CS25/300L	VRC52 2CS25/300	
			40	VRC52 2CS40/300L	VRC52 2CS40/300	
			63	VRC52 2CS63/300L	VRC52 2CS63/300	
			80	VRC52 2CS80/300L	VRC52 2CS80/300	
			100	VRC52 2CS100/300L	VRC52 2CS100/300	
3P+N 380 V AC		100	16	VRC52 4CS16/100L	VRC52 4CS16/100	
			25	VRC52 4CS25/100L	VRC52 4CS25/100	
			40	VRC52 4CS40/100L	VRC52 4CS40/100	
			63	VRC52 4CS63/100L	VRC52 4CS63/100	
			80	VRC52 4CS80/100L	VRC52 4CS80/100	
			100	VRC52 4CS100/100L	VRC52 4CS100/100	
		300	16	VRC52 4CS16/300L	VRC52 4CS16/300	
			25	VRC52 4CS25/300L	VRC52 4CS25/300	
			40	VRC52 4CS40/300L	VRC52 4CS40/300	
			63	VRC52 4CS63/300L	VRC52 4CS63/300	
			80	VRC52 4CS80/300L	VRC52 4CS80/300	
			100	VRC52 4CS100/300L	VRC52 4CS100/300	

## Selection and ordering data

A type

	Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Left neutral	Right neutral
				Type code	Type code
<b>General type, instantaneous</b>					
	1P+N 230 V AC	30	16	VRC52 2A16/030L	VRC52 2A16/030
			25	VRC52 2A25/030L	VRC52 2A25/030
			40	VRC52 2A40/030L	VRC52 2A40/030
			63	VRC52 2A63/030L	VRC52 2A63/030
			80	VRC52 2A80/030L	VRC52 2A80/030
			100	VRC52 2A100/030L	VRC52 2A100/030
		100	16	VRC52 2A16/100L	VRC52 2A16/100
			25	VRC52 2A25/100L	VRC52 2A25/100
			40	VRC52 2A40/100L	VRC52 2A40/100
			63	VRC52 2A63/100L	VRC52 2A63/100
			80	VRC52 2A80/100L	VRC52 2A80/100
			100	VRC52 2A100/100L	VRC52 2A100/100
	300	30	16	VRC52 2A16/300L	VRC52 2A16/300
			25	VRC52 2A25/300L	VRC52 2A25/300
			40	VRC52 2A40/300L	VRC52 2A40/300
			63	VRC52 2A63/300L	VRC52 2A63/300
			80	VRC52 2A80/300L	VRC52 2A80/300
			100	VRC52 2A100/300L	VRC52 2A100/300
		100	16	VRC52 4A16/030L	VRC52 4A16/030
			25	VRC52 4A25/030L	VRC52 4A25/030
			40	VRC52 4A40/030L	VRC52 4A40/030
			63	VRC52 4A63/030L	VRC52 4A63/030
			80	VRC52 4A80/030L	VRC52 4A80/030
			100	VRC52 4A100/030L	VRC52 4A100/030
380 V AC	30	16	VRC52 4A16/100L	VRC52 4A16/100	
		25	VRC52 4A25/100L	VRC52 4A25/100	
		40	VRC52 4A40/100L	VRC52 4A40/100	
		63	VRC52 4A63/100L	VRC52 4A63/100	
		80	VRC52 4A80/100L	VRC52 4A80/100	
		100	VRC52 4A100/100L	VRC52 4A100/100	
	100	16	VRC52 4A16/300L	VRC52 4A16/300	
		25	VRC52 4A25/300L	VRC52 4A25/300	
		40	VRC52 4A40/300L	VRC52 4A40/300	
		63	VRC52 4A63/300L	VRC52 4A63/300	
		80	VRC52 4A80/300L	VRC52 4A80/300	
		100	VRC52 4A100/300L	VRC52 4A100/300	

S type



## Types

Both RCCBs and RCBOs are further divided into types depending on the operating function:

### Type AC

For which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising.

### Type A

For which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising.

According to their trip time, RCDs can be classed as two types:

### General type

Instantaneous trip without time-delay, used for general purpose.

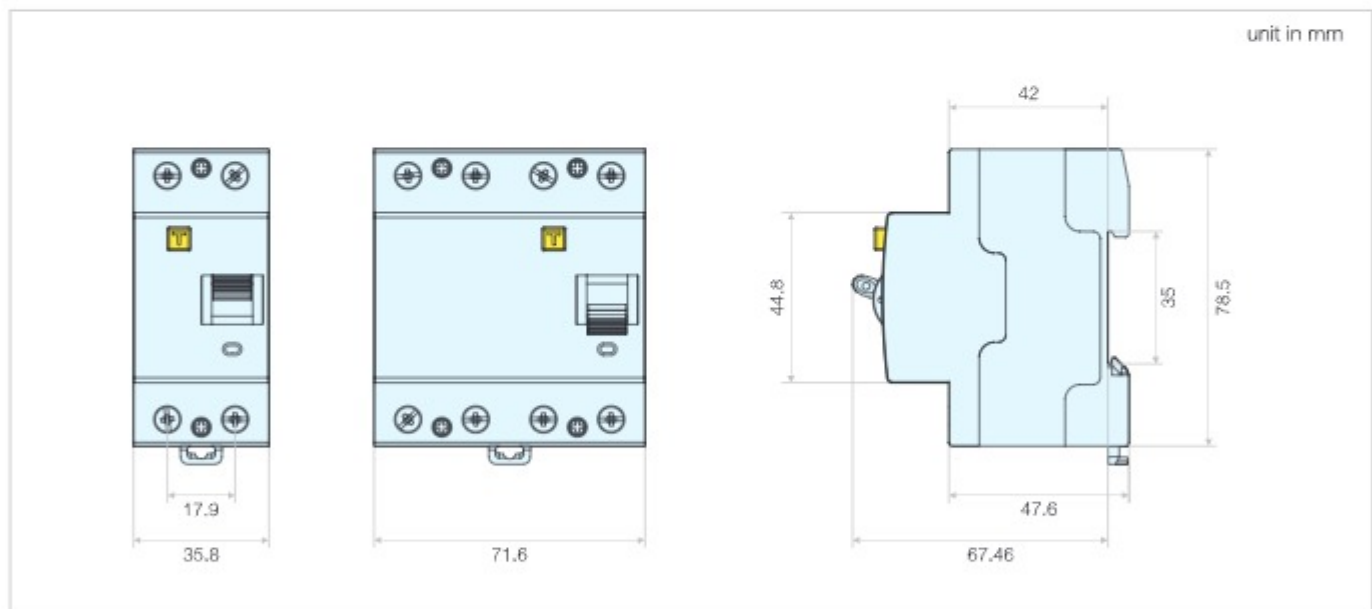
### Selective type

Type S, trip with time-delay, used for selectivity and limit the power out only to part of the system affected by a current leakage fault.

## Tripping sensitivity data

- RCD with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact.
- RCD with a rated residual current of maximum 300 mA are used as preventative fire protection in case of insulation faults.
- RCD with a rated residual current of 100 mA co-ordinated with the earth system according to the formula  $I\Delta n < 50/R$ , to provide protection against indirect contacts.

## Outline and installation dimensions



### Functions

- Switching and isolation function
- Protection against overload and short-circuit currents
- Protection against the effects of sinusoidal alternating earth fault currents
- Protection against indirect contacts and additional protection against direct contacts.
- Protection against fire hazard caused by insulation faults
- Used in residential building

### Technical specifications

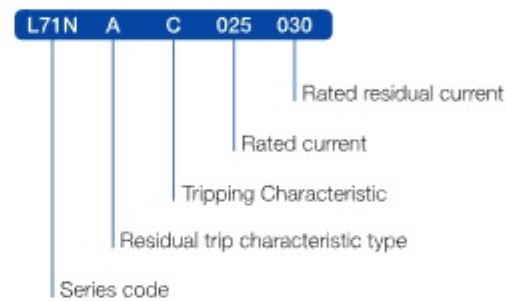
- Standard: IEC 61009-1
- Type (wave form of the earth leakage sensed): AC, A
- Number of pole: 1P+N
- Rated current  $I_n$  (A): 6, 10, 16, 20, 25, 32, 40
- Rated voltage  $U_e$  (V AC): 230
- Rated insulation voltage  $U_i$  (V AC): 500
- Rated frequency  $F_n$  (Hz): 50/60
- Rated residual currents  $I_{\Delta n}$  (mA): 30, 100, 300
- Rated breaking capacity acc. to IEC 61009-1 ultimate  $I_{cn}$  (kA): 6
- Rated residual breaking capacity  $I_{\Delta m}$  (kA): 6
- Rated impulse withstand voltage (1.2/50)  $U_{imp}$  (kV): 4
- Dielectric test voltage at ind. freq. for 1 min. (kV): 2.5
- Surge current resistance (wave 8/20) (A): 3000
- Tripping characteristic: B, C
- Characteristic B ( $I_n$ ): 3-5
- Characteristic C ( $I_n$ ): 5-10
- Electrical life (times): 10,000
- Mechanical life (times): 20,000
- Degree of protection: IP20, with connected conductors
- Mounting position: Any
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 0.75-35
- Finely stranded with end sleeve (mm<sup>2</sup>): 0.75-25
- Terminals
- Terminal tightening torque (N-m): 2.8
- Ambient temperature (°C): -25 – +45, max. 95 % humidity
- Storage temperature (°C): -40 – +75
- Altitude (meters): Max 2,000

### References

- Additional components: page 69 ~ 70



### Instruction of type code



### Features

- The combination of an RCCB and a miniature circuit breaker in a compact design for personnel, fire and line protection.
- Electromagnetic type, voltage independent.
- The MCB part protects lines against overload and short circuits and is available in characteristics B and C.
- The handle provides a clear indication of the contact position.
- The earth reference cable ensures protection against earth leakage in case of loss of supply neutral.

### Add-on devices

#### Auxiliaries





# Residual Current Circuit Breakers with Overcurrent Protection Series 3SL71N-40



## Selection and ordering data

### Type AC

Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Characteristic B		Characteristic C	
			Type code	Order code	Type code	Order code
1P+N	30	6	L71NC B06/030	20276	L71NC C06/030	20283
		10	L71NC B10/030	20277	L71NC C10/030	20284
		16	L71NC B16/030	20278	L71NC C16/030	20285
		20	L71NC B20/030	20279	L71NC C20/030	20286
		25	L71NC B25/030	20280	L71NC C25/030	20287
		32	L71NC B32/030	20281	L71NC C32/030	20288
		40	L71NC B40/030	20282	L71NC C40/030	20289
		100	6	L71NC B06/100	20304	L71NC C06/100
	10		L71NC B10/100	20305	L71NC C10/100	20312
	16		L71NC B16/100	20306	L71NC C16/100	20313
	20		L71NC B20/100	20307	L71NC C20/100	20314
	25		L71NC B25/100	20308	L71NC C25/100	20315
	32		L71NC B32/100	20309	L71NC C32/100	20316
	40		L71NC B40/100	20310	L71NC C40/100	20317
	300		6	L71NC B06/300	20332	L71NC C06/300
		10	L71NC B10/300	20333	L71NC C10/300	20340
		16	L71NC B16/300	20334	L71NC C16/300	20341
		20	L71NC B20/300	20335	L71NC C20/300	20342
		25	L71NC B25/300	20336	L71NC C25/300	20343
		32	L71NC B32/300	20337	L71NC C32/300	20344
		40	L71NC B40/300	20338	L71NC C40/300	20345



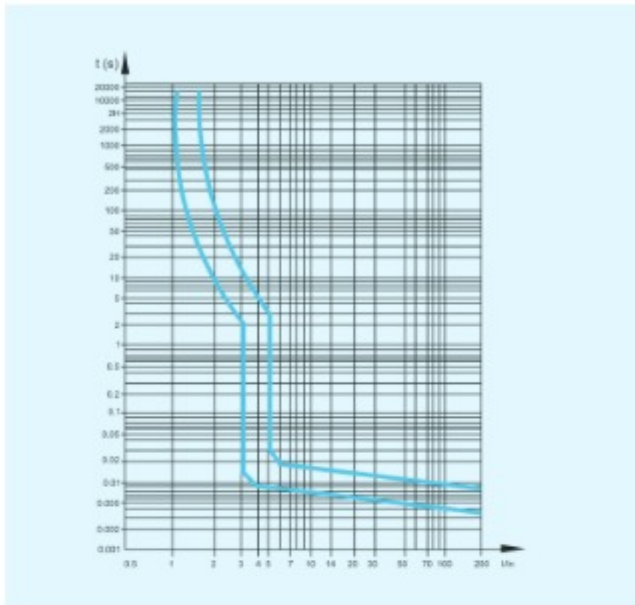
### Type A

Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Characteristic B		Characteristic C	
			Type code	Order code	Type code	Order code
1P+N	30	6	L71NA B06/030	20290	L71NA C06/030	20297
		10	L71NA B10/030	20291	L71NA C10/030	20298
		16	L71NA B16/030	20292	L71NA C16/030	20299
		20	L71NA B20/030	20293	L71NA C20/030	20300
		25	L71NA B25/030	20294	L71NA C25/030	20301
		32	L71NA B32/030	20295	L71NA C32/030	20302
		40	L71NA B40/030	20296	L71NA C40/030	20303
		100	6	L71NA B06/100	20318	L71NA C06/100
	10		L71NA B10/100	20319	L71NA C10/100	20326
	16		L71NA B16/100	20320	L71NA C16/100	20327
	20		L71NA B20/100	20321	L71NA C20/100	20328
	25		L71NA B25/100	20322	L71NA C25/100	20329
	32		L71NA B32/100	20323	L71NA C32/100	20330
	40		L71NA B40/100	20324	L71NA C40/100	20331
	300		6	L71NA B06/300	20346	L71NA C06/300
		10	L71NA B10/300	20347	L71NA C10/300	20354
		16	L71NA B16/300	20348	L71NA C16/300	20355
		20	L71NA B20/300	20349	L71NA C20/300	20356
		25	L71NA B25/300	20350	L71NA C25/300	20357
		32	L71NA B32/300	20351	L71NA C32/300	20358
		40	L71NA B40/300	20352	L71NA C40/300	20359

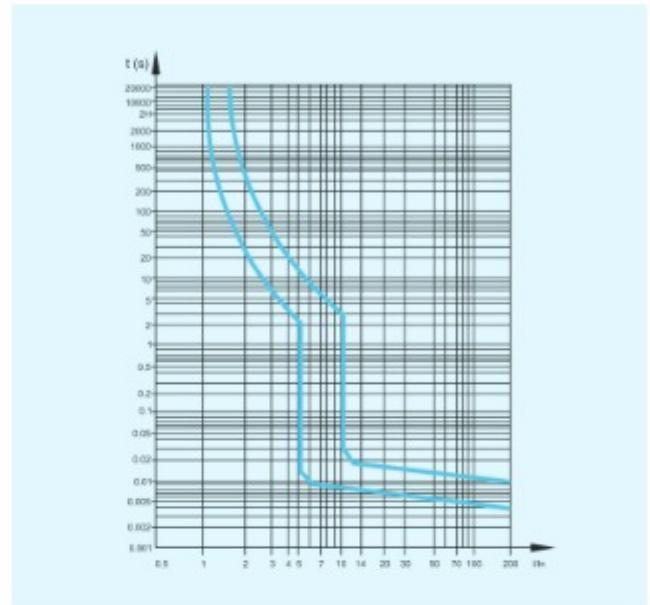


Tripping characteristic curves

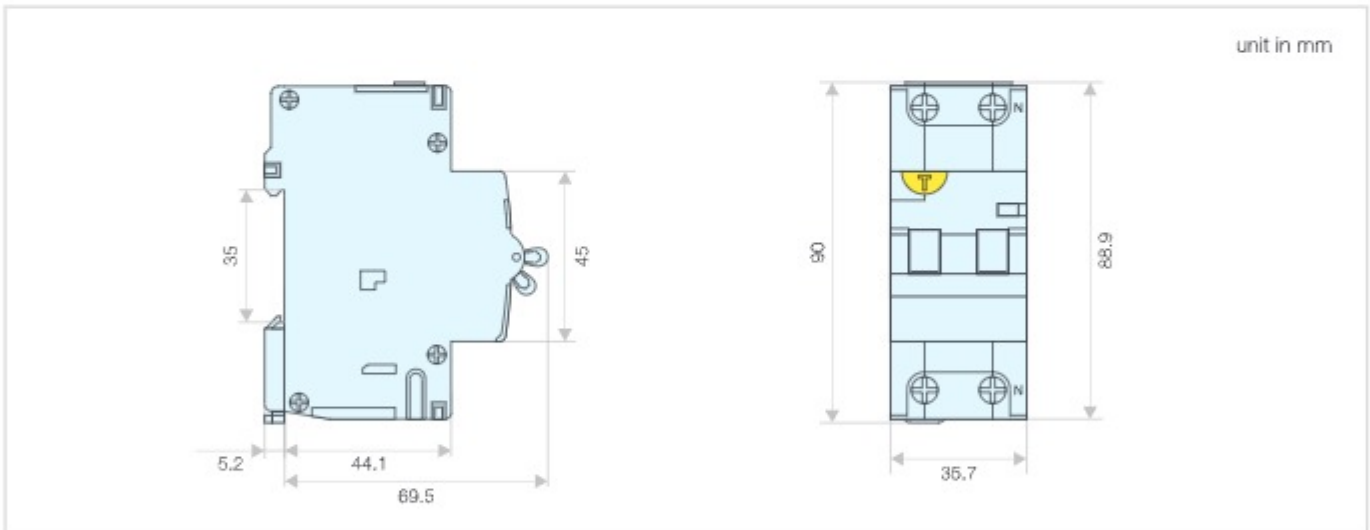
Characteristic B



Characteristic C



Outline and installation dimensions



# Compact RCBOs

## Series VRBNC515E

2

### Functions

The VRBNC515E electronic RCBO is designed to fulfill the requirements of circuit protection by providing the technology residual current protection combined with over-current circuit protection in a compact design.

- Equipment control and protection against short-circuits and overloads
- Isolation of electrical circuits
- Protecting people from direct and indirect contact
- Protecting installations from insulation faults to prevent electrically ignited fires

### Technical specifications

- Standards: IEC 61009-1
- Number of poles: 1P+N
- Neutral can be switched off: yes

#### Electrical features

- Residual current-detection principle: Electronic (voltage dependent)
- Rated operational voltage  $U_e$  (V AC): 230
- Rated current  $I_n$  (A): 6, 10, 16, 20, 25, 32, 40, 45
- Rated residual operating current  $I_{\Delta n}$  (mA): 30, 100, 300
- Type (wave form of residual current): AC, A
- Rated insulation voltage  $U_i$  (V): 500
- Rated impulse withstand voltage  $U_{imp}$  (kV): 4
- Rated ultimate breaking capacity (kA): 6
- Rated service breaking capacity (kA): 6
- Instantaneous tripping characteristic: B, C
- Thermal-magnetic release characteristic:
  - B:  $3 I_n \leq I_n \leq 5 I_n$
  - C:  $5 I_n \leq I_n \leq 10 I_n$

#### Mechanical features

- Endurance
  - Electrical life (times): 10000
  - Mechanical life (times): 20000
- Protection degree: Housing IP40; terminals IP20
- Pollution degree: 3
- Ambient temperature (°C): -25 ... +45
- Storage temperature (°C): -40 ... +70
- Environmental conditions (°C/RH): 28 cycles with +20 °C/95% and +40 °C/50%

#### Installation and connection

- Overvoltage category: III
- Connection capacity (mm<sup>2</sup>): 1 ... 10
- Supply from: Top terminals
- Terminal tightening torque (N-m): 2.5
- Altitude (meters): Max. 2000



### Applications

- Ideal for installations that require the added benefit of RCBOs with switched neutral line.
- The compact design makes it suited for new builds as well as the retrofit market, to enhance the protection level in electrical circuits by additional personal safety.
- In new buildings, the 50 % space saving compared to the 2 modular width version allows implementation of more compact and cheaper distribution boards.
- Especially in projects where many circuits have to be equipped with individual residual current protection, smaller distribution boards can be installed, which saves significant costs.
- In old buildings, it is very easy to replace the existing 1-pole MCBs with a compact RCBO in only 1 modular width, this means no additional space is required in the distribution board.

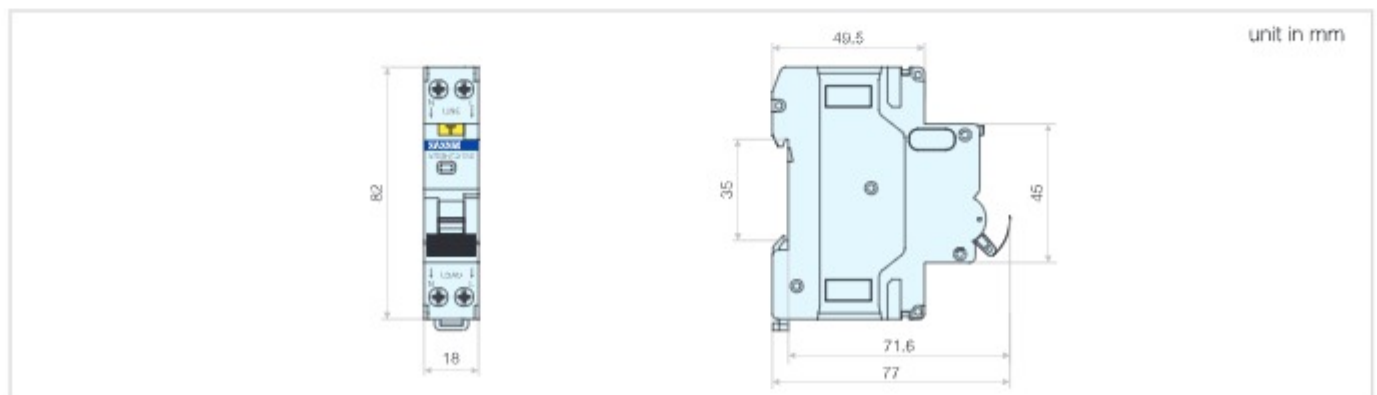
### Features

- Thanks to the built in switched neutral line on the left, a faulty or damaged circuit can be fully isolate by disconnecting live and neutral conductors, and testing of outgoing circuits is easier as an electrician does not have to disconnect terminals before testing.
- Compact size only 18 mm in width saves 50 % space compared to the version 2 modular width RCBOs.
- Rated current is up to 45 A with high breaking capacity 6 kA.
- Real contact position indicator for easier identification, independently on the toggle position.
- Cage terminals with fail safe feature to avoid improper installation.
- Additional components are available, such as: auxiliary contact, fault signal contact, under-voltage release and shunt release.

## Selection and ordering data

	Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Characteristic B		Characteristic C					
				Type code	Order code	Type code	Order code				
<b>AC type</b>    	1P+N 230 V AC	30	6	VRBNC515E-B6-AC-0.03	39139	VRBNC515E-C6-AC-0.03	19571				
			10	VRBNC515E-B10-AC-0.03	39140	VRBNC515E-C10-AC-0.03	19572				
			16	VRBNC515E-B16-AC-0.03	39141	VRBNC515E-C16-AC-0.03	19573				
			20	VRBNC515E-B20-AC-0.03	39142	VRBNC515E-C20-AC-0.03	19574				
			25	VRBNC515E-B25-AC-0.03	39143	VRBNC515E-C25-AC-0.03	19575				
			32	VRBNC515E-B32-AC-0.03	39144	VRBNC515E-C32-AC-0.03	19576				
			40	VRBNC515E-B40-AC-0.03	39145	VRBNC515E-C40-AC-0.03	19577				
			45	VRBNC515E-B45-AC-0.03	39146	VRBNC515E-C45-AC-0.03	19578				
			100	6	VRBNC515E-B6-AC-0.1	39147	VRBNC515E-C6-AC-0.1	19579			
			10	VRBNC515E-B10-AC-0.1	39148	VRBNC515E-C10-AC-0.1	19580				
			16	VRBNC515E-B16-AC-0.1	39149	VRBNC515E-C16-AC-0.1	19581				
			20	VRBNC515E-B20-AC-0.1	39150	VRBNC515E-C20-AC-0.1	19582				
			25	VRBNC515E-B25-AC-0.1	39151	VRBNC515E-C25-AC-0.1	19583				
			32	VRBNC515E-B32-AC-0.1	39152	VRBNC515E-C32-AC-0.1	19584				
			40	VRBNC515E-B40-AC-0.1	39153	VRBNC515E-C40-AC-0.1	19585				
			45	VRBNC515E-B45-AC-0.1	39154	VRBNC515E-C45-AC-0.1	19586				
			300	6	VRBNC515E-B6-AC-0.3	39155	VRBNC515E-C6-AC-0.3	19587			
			10	VRBNC515E-B10-AC-0.3	39156	VRBNC515E-C10-AC-0.3	19588				
			16	VRBNC515E-B16-AC-0.3	39157	VRBNC515E-C16-AC-0.3	19589				
			20	VRBNC515E-B20-AC-0.3	39158	VRBNC515E-C20-AC-0.3	19590				
			25	VRBNC515E-B25-AC-0.3	39159	VRBNC515E-C25-AC-0.3	19591				
			32	VRBNC515E-B32-AC-0.3	39160	VRBNC515E-C32-AC-0.3	19592				
			40	VRBNC515E-B40-AC-0.3	39161	VRBNC515E-C40-AC-0.3	19593				
			45	VRBNC515E-B45-AC-0.3	39162	VRBNC515E-C45-AC-0.3	19594				
			<b>A type</b>    	1P+N 230 V AC	30	6	VRBNC515E-B6-A-0.03	39163	VRBNC515E-C6-A-0.03	19595	
						10	VRBNC515E-B10-A-0.03	39164	VRBNC515E-C10-A-0.03	19596	
						16	VRBNC515E-B16-A-0.03	39165	VRBNC515E-C16-A-0.03	19597	
						20	VRBNC515E-B20-A-0.03	39166	VRBNC515E-C20-A-0.03	19598	
						25	VRBNC515E-B25-A-0.03	39167	VRBNC515E-C25-A-0.03	19599	
						32	VRBNC515E-B32-A-0.03	39168	VRBNC515E-C32-A-0.03	19600	
						40	VRBNC515E-B40-A-0.03	39169	VRBNC515E-C40-A-0.03	19601	
						45	VRBNC515E-B45-A-0.03	39170	VRBNC515E-C45-A-0.03	19602	
						100	6	VRBNC515E-B6-A-0.1	39171	VRBNC515E-C6-A-0.1	19603
						10	VRBNC515E-B10-A-0.1	39172	VRBNC515E-C10-A-0.1	19604	
						16	VRBNC515E-B16-A-0.1	39173	VRBNC515E-C16-A-0.1	19605	
						20	VRBNC515E-B20-A-0.1	39174	VRBNC515E-C20-A-0.1	19606	
25	VRBNC515E-B25-A-0.1	19559				VRBNC515E-C25-A-0.1	19607				
32	VRBNC515E-B32-A-0.1	19560				VRBNC515E-C32-A-0.1	19608				
40	VRBNC515E-B40-A-0.1	19561				VRBNC515E-C40-A-0.1	19609				
45	VRBNC515E-B45-A-0.1	19562				VRBNC515E-C45-A-0.1	19610				
300	6	VRBNC515E-B6-A-0.3				19563	VRBNC515E-C6-A-0.3	19611			
10	VRBNC515E-B10-A-0.3	19564				VRBNC515E-C10-A-0.3	19612				
16	VRBNC515E-B16-A-0.3	19565				VRBNC515E-C16-A-0.3	19613				
20	VRBNC515E-B20-A-0.3	19566				VRBNC515E-C20-A-0.3	19614				
25	VRBNC515E-B25-A-0.3	19567				VRBNC515E-C25-A-0.3	19615				
32	VRBNC515E-B32-A-0.3	19568				VRBNC515E-C32-A-0.3	19616				
40	VRBNC515E-B40-A-0.3	19569				VRBNC515E-C40-A-0.3	19617				
45	VRBNC515E-B45-A-0.3	19570				VRBNC515E-C45-A-0.3	19618				

## Outline and installation dimensions



# Residual Current Circuit Breakers with Overcurrent Protection

## Series VRB510E

The VRB510E electronic RCBO is designed to fulfill the requirements of circuit protection by providing the technology residual current protection combined with over-current circuit protection.

- Equipment control and protection against short-circuits and overloads
- Isolation of electrical circuits
- Protecting people from direct and indirect contact
- Protecting installations from insulation faults to prevent electrically ignited fires



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### Features

- Rated current up to 80 A.
- Breaking capacity 6 kA.
- Overload protection is available for both live line and neutral line.
- Adjustable rated residual current make it suitable for different protection requirements.
- Real contact position indicator for easier identification, independently on the toggle position.
- Cage terminals with fail safe feature to avoid improper installation.
- Additional components are available, such as: auxiliary contact, fault signal contact, under-voltage release and shunt release.

### Technical specifications

	VRB515E	VRB516E	
Standards	IEC 61009-1		
Number of poles	1P+N	3P+N	
<b>Electrical features</b>			
Residual current-detection principle	Electronic (voltage dependent)		
Rated operational voltage U <sub>e</sub>	V AC	230	
Rated current I <sub>n</sub>	A	6, 10, 16, 20, 25, 32, 40, 50, 63, 80	
Rated residual operating current I <sub>Δn</sub>	mA	30, 100, 300	
Adjustable rated residual current	-	yes	
Type (wave form of residual current)	AC, A		
Rated insulation voltage U <sub>i</sub>	V	500	
Rated impulse withstand voltage U <sub>imp</sub>	kV	4	
Rated ultimate breaking capacity	kA	6	
Rated service breaking capacity	kA	6	
Instantaneous tripping characteristic	B, C, D		
Thermal-magnetic release characteristic	B: 3 I <sub>n</sub> ≤ I <sub>n</sub> ≤ 5 I <sub>n</sub> C: 5 I <sub>n</sub> ≤ I <sub>n</sub> ≤ 10 I <sub>n</sub> D: 10 I <sub>n</sub> ≤ I <sub>n</sub> ≤ 20 I <sub>n</sub>		
<b>Mechanical features</b>			
Endurance	Electrical	cycles	10000
	Mechanical	cycles	20000
Protection degree	Housing		IP40
	Terminals		IP20
Pollution degree	3		
Ambient temperature	°C	-25 ... +45	
Storage temperature	°C	-40 ... +70	
Environmental conditions	°C/RH	28 cycles with +20 °C/95% and +40 °C/50%	
Altitude	Meter	≤ 2000	
<b>Installation and connection</b>			
Overvoltage category	III		
Connection capacity	mm <sup>2</sup>	1 ... 35	
Supply from	Top terminals		
Tightening torque	N·m	2.5	
Dimensions (W × H × D)	mm	35.2 × 82 × 72.6	72 × 99 × 72.6
Weight	g	210.5	462.5

### Selection and ordering data

I<sub>cn</sub> = 6 kA

Characteristic B

General type, instantaneous

Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Type AC		Type A			
			Type code	Order code	Type code	Order code		
1P+N 230 V AC	30	6	VRB515E-B6-AC-0.03-N	19619	VRB515E-B6-A-0.03-N	39188		
		10	VRB515E-B10-AC-0.03-N	19620	VRB515E-B10-A-0.03-N	39189		
		16	VRB515E-B16-AC-0.03-N	19621	VRB515E-B16-A-0.03-N	39190		
		20	VRB515E-B20-AC-0.03-N	19622	VRB515E-B20-A-0.03-N	39191		
		25	VRB515E-B25-AC-0.03-N	19623	VRB515E-B25-A-0.03-N	39192		
		32	VRB515E-B32-AC-0.03-N	19624	VRB515E-B32-A-0.03-N	39193		
		40	VRB515E-B40-AC-0.03-N	19625	VRB515E-B40-A-0.03-N	39194		
		50	VRB515E-B50-AC-0.03-N	19626	VRB515E-B50-A-0.03-N	37201		
		63	VRB515E-B63-AC-0.03-N	19627	VRB515E-B63-A-0.03-N	37202		
		80	VRB515E-B80-AC-0.03-N	19628	VRB515E-B80-A-0.03-N	37203		
		100	6	VRB515E-B6-AC-0.1-N	19629	VRB515E-B6-A-0.1-N	37204	
			10	VRB515E-B10-AC-0.1-N	19630	VRB515E-B10-A-0.1-N	37205	
			16	VRB515E-B16-AC-0.1-N	19631	VRB515E-B16-A-0.1-N	37206	
			20	VRB515E-B20-AC-0.1-N	19632	VRB515E-B20-A-0.1-N	37207	
			25	VRB515E-B25-AC-0.1-N	19633	VRB515E-B25-A-0.1-N	37208	
			32	VRB515E-B32-AC-0.1-N	19634	VRB515E-B32-A-0.1-N	37209	
			40	VRB515E-B40-AC-0.1-N	19635	VRB515E-B40-A-0.1-N	37210	
			50	VRB515E-B50-AC-0.1-N	19636	VRB515E-B50-A-0.1-N	37211	
	63		VRB515E-B63-AC-0.1-N	19637	VRB515E-B63-A-0.1-N	37212		
	80		VRB515E-B80-AC-0.1-N	19638	VRB515E-B80-A-0.1-N	37213		
	300		6	VRB515E-B6-AC-0.3-N	19639	VRB515E-B6-A-0.3-N	37214	
			10	VRB515E-B10-AC-0.3-N	19640	VRB515E-B10-A-0.3-N	37215	
			16	VRB515E-B16-AC-0.3-N	19641	VRB515E-B16-A-0.3-N	37216	
			20	VRB515E-B20-AC-0.3-N	19642	VRB515E-B20-A-0.3-N	37217	
			25	VRB515E-B25-AC-0.3-N	19643	VRB515E-B25-A-0.3-N	37218	
			32	VRB515E-B32-AC-0.3-N	19644	VRB515E-B32-A-0.3-N	37219	
			40	VRB515E-B40-AC-0.3-N	19645	VRB515E-B40-A-0.3-N	37220	
			50	VRB515E-B50-AC-0.3-N	19646	VRB515E-B50-A-0.3-N	37221	
		63	VRB515E-B63-AC-0.3-N	19647	VRB515E-B63-A-0.3-N	37222		
		80	VRB515E-B80-AC-0.3-N	19648	VRB515E-B80-A-0.3-N	37223		
		3P+N 400 V AC	30	6	VRB516E-B6-AC-0.03-N	19649	VRB516E-B6-A-0.03-N	37224
				10	VRB516E-B10-AC-0.03-N	19650	VRB516E-B10-A-0.03-N	37225
				16	VRB516E-B16-AC-0.03-N	19651	VRB516E-B16-A-0.03-N	37226
				20	VRB516E-B20-AC-0.03-N	19652	VRB516E-B20-A-0.03-N	37227
				25	VRB516E-B25-AC-0.03-N	19653	VRB516E-B25-A-0.03-N	37228
				32	VRB516E-B32-AC-0.03-N	19654	VRB516E-B32-A-0.03-N	37229
40				VRB516E-B40-AC-0.03-N	19655	VRB516E-B40-A-0.03-N	37230	
50				VRB516E-B50-AC-0.03-N	19656	VRB516E-B50-A-0.03-N	37231	
63	VRB516E-B63-AC-0.03-N			19657	VRB516E-B63-A-0.03-N	37232		
80	VRB516E-B80-AC-0.03-N			19658	VRB516E-B80-A-0.03-N	37233		
100	6			VRB516E-B6-AC-0.1-N	19659	VRB516E-B6-A-0.1-N	37234	
	10			VRB516E-B10-AC-0.1-N	19660	VRB516E-B10-A-0.1-N	37235	
	16			VRB516E-B16-AC-0.1-N	19661	VRB516E-B16-A-0.1-N	37236	
	20			VRB516E-B20-AC-0.1-N	19662	VRB516E-B20-A-0.1-N	37237	
	25			VRB516E-B25-AC-0.1-N	19663	VRB516E-B25-A-0.1-N	37238	
	32			VRB516E-B32-AC-0.1-N	19664	VRB516E-B32-A-0.1-N	37239	
	40			VRB516E-B40-AC-0.1-N	19665	VRB516E-B40-A-0.1-N	37240	
	50			VRB516E-B50-AC-0.1-N	39175	VRB516E-B50-A-0.1-N	37241	
	63		VRB516E-B63-AC-0.1-N	39176	VRB516E-B63-A-0.1-N	37242		
	80		VRB516E-B80-AC-0.1-N	39177	VRB516E-B80-A-0.1-N	37243		
	300		6	VRB516E-B6-AC-0.3-N	39178	VRB516E-B6-A-0.3-N	37244	
			10	VRB516E-B10-AC-0.3-N	39179	VRB516E-B10-A-0.3-N	37245	
			16	VRB516E-B16-AC-0.3-N	39180	VRB516E-B16-A-0.3-N	37246	
			20	VRB516E-B20-AC-0.3-N	39181	VRB516E-B20-A-0.3-N	37247	
			25	VRB516E-B25-AC-0.3-N	39182	VRB516E-B25-A-0.3-N	37248	
			32	VRB516E-B32-AC-0.3-N	39183	VRB516E-B32-A-0.3-N	37249	
			40	VRB516E-B40-AC-0.3-N	39184	VRB516E-B40-A-0.3-N	37250	
			50	VRB516E-B50-AC-0.3-N	39185	VRB516E-B50-A-0.3-N	37251	
63			VRB516E-B63-AC-0.3-N	39186	VRB516E-B63-A-0.3-N	37252		
80			VRB516E-B80-AC-0.3-N	39187	VRB516E-B80-A-0.3-N	37253		
50-100-300			6	VRB516E-B6-AC-0.05-0.1-0.3-N	36495	VRB516E-B6-A-0.05-0.1-0.3-N	15764	
			10	VRB516E-B10-AC-0.05-0.1-0.3-N	36496	VRB516E-B10-A-0.05-0.1-0.3-N	15765	
			16	VRB516E-B16-AC-0.05-0.1-0.3-N	36497	VRB516E-B16-A-0.05-0.1-0.3-N	15766	
			20	VRB516E-B20-AC-0.05-0.1-0.3-N	36498	VRB516E-B20-A-0.05-0.1-0.3-N	15767	
			25	VRB516E-B25-AC-0.05-0.1-0.3-N	15758	VRB516E-B25-A-0.05-0.1-0.3-N	15768	
			32	VRB516E-B32-AC-0.05-0.1-0.3-N	15759	VRB516E-B32-A-0.05-0.1-0.3-N	15769	
		40	VRB516E-B40-AC-0.05-0.1-0.3-N	15760	VRB516E-B40-A-0.05-0.1-0.3-N	15770		
		50	VRB516E-B50-AC-0.05-0.1-0.3-N	15761	VRB516E-B50-A-0.05-0.1-0.3-N	15771		
	63	VRB516E-B63-AC-0.05-0.1-0.3-N	15762	VRB516E-B63-A-0.05-0.1-0.3-N	15772			
	80	VRB516E-B80-AC-0.05-0.1-0.3-N	15763	VRB516E-B80-A-0.05-0.1-0.3-N	15773			



# Residual Current Circuit Breakers with Overcurrent Protection Series VRB510E



## Selection and ordering data

I<sub>cn</sub> = 6 kA

Characteristic C

General type, instantaneous

2



Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Type AC		Type A					
			Type code	Order code	Type code	Order code				
1P+N 230 V AC	30	6	VRB515E-C6-AC-0.03-N	37254	VRB515E-C6-A-0.03-N	14163				
		10	VRB515E-C10-AC-0.03-N	37255	VRB515E-C10-A-0.03-N	14164				
		16	VRB515E-C16-AC-0.03-N	37256	VRB515E-C16-A-0.03-N	14165				
		20	VRB515E-C20-AC-0.03-N	37257	VRB515E-C20-A-0.03-N	14166				
		25	VRB515E-C25-AC-0.03-N	37258	VRB515E-C25-A-0.03-N	14167				
		32	VRB515E-C32-AC-0.03-N	37259	VRB515E-C32-A-0.03-N	14168				
		40	VRB515E-C40-AC-0.03-N	37260	VRB515E-C40-A-0.03-N	14169				
		50	VRB515E-C50-AC-0.03-N	37261	VRB515E-C50-A-0.03-N	14170				
		63	VRB515E-C63-AC-0.03-N	37262	VRB515E-C63-A-0.03-N	14171				
		80	VRB515E-C80-AC-0.03-N	37263	VRB515E-C80-A-0.03-N	14172				
		100	30	6	VRB515E-C6-AC-0.1-N	37264	VRB515E-C6-A-0.1-N	14173		
				10	VRB515E-C10-AC-0.1-N	37192	VRB515E-C10-A-0.1-N	14174		
				16	VRB515E-C16-AC-0.1-N	37193	VRB515E-C16-A-0.1-N	14175		
				20	VRB515E-C20-AC-0.1-N	37194	VRB515E-C20-A-0.1-N	14176		
				25	VRB515E-C25-AC-0.1-N	37195	VRB515E-C25-A-0.1-N	14177		
				32	VRB515E-C32-AC-0.1-N	37196	VRB515E-C32-A-0.1-N	14178		
				40	VRB515E-C40-AC-0.1-N	37197	VRB515E-C40-A-0.1-N	14179		
				50	VRB515E-C50-AC-0.1-N	37198	VRB515E-C50-A-0.1-N	14180		
				63	VRB515E-C63-AC-0.1-N	37199	VRB515E-C63-A-0.1-N	14181		
				80	VRB515E-C80-AC-0.1-N	37200	VRB515E-C80-A-0.1-N	14182		
				300	30	6	VRB515E-C6-AC-0.3-N	37265	VRB515E-C6-A-0.3-N	14183
						10	VRB515E-C10-AC-0.3-N	37266	VRB515E-C10-A-0.3-N	14184
		16	VRB515E-C16-AC-0.3-N			37267	VRB515E-C16-A-0.3-N	14185		
		20	VRB515E-C20-AC-0.3-N			37268	VRB515E-C20-A-0.3-N	14186		
25	VRB515E-C25-AC-0.3-N	37269	VRB515E-C25-A-0.3-N			14187				
32	VRB515E-C32-AC-0.3-N	37270	VRB515E-C32-A-0.3-N			14188				
40	VRB515E-C40-AC-0.3-N	37271	VRB515E-C40-A-0.3-N			14189				
50	VRB515E-C50-AC-0.3-N	37272	VRB515E-C50-A-0.3-N			14190				
63	VRB515E-C63-AC-0.3-N	37273	VRB515E-C63-A-0.3-N			14191				
80	VRB515E-C80-AC-0.3-N	37185	VRB515E-C80-A-0.3-N			14192				
3P+N 400 V AC	30	6	VRB516E-C6-AC-0.03-N			37186	VRB516E-C6-A-0.03-N	14193		
		10	VRB516E-C10-AC-0.03-N			37187	VRB516E-C10-A-0.03-N	14194		
		16	VRB516E-C16-AC-0.03-N	37188	VRB516E-C16-A-0.03-N	14195				
		20	VRB516E-C20-AC-0.03-N	37189	VRB516E-C20-A-0.03-N	14196				
		25	VRB516E-C25-AC-0.03-N	37190	VRB516E-C25-A-0.03-N	14197				
		32	VRB516E-C32-AC-0.03-N	37191	VRB516E-C32-A-0.03-N	14198				
		40	VRB516E-C40-AC-0.03-N	14139	VRB516E-C40-A-0.03-N	14199				
		50	VRB516E-C50-AC-0.03-N	14140	VRB516E-C50-A-0.03-N	14200				
		63	VRB516E-C63-AC-0.03-N	14141	VRB516E-C63-A-0.03-N	14201				
		80	VRB516E-C80-AC-0.03-N	14142	VRB516E-C80-A-0.03-N	14202				
		100	30	6	VRB516E-C6-AC-0.1-N	14143	VRB516E-C6-A-0.1-N	14203		
				10	VRB516E-C10-AC-0.1-N	14144	VRB516E-C10-A-0.1-N	14204		
				16	VRB516E-C16-AC-0.1-N	14145	VRB516E-C16-A-0.1-N	14205		
				20	VRB516E-C20-AC-0.1-N	14146	VRB516E-C20-A-0.1-N	14206		
				25	VRB516E-C25-AC-0.1-N	14147	VRB516E-C25-A-0.1-N	14207		
				32	VRB516E-C32-AC-0.1-N	14148	VRB516E-C32-A-0.1-N	14208		
				40	VRB516E-C40-AC-0.1-N	14149	VRB516E-C40-A-0.1-N	14209		
				50	VRB516E-C50-AC-0.1-N	14150	VRB516E-C50-A-0.1-N	14210		
				63	VRB516E-C63-AC-0.1-N	14151	VRB516E-C63-A-0.1-N	19245		
				80	VRB516E-C80-AC-0.1-N	14152	VRB516E-C80-A-0.1-N	19246		
				300	30	6	VRB516E-C6-AC-0.3-N	14153	VRB516E-C6-A-0.3-N	19247
						10	VRB516E-C10-AC-0.3-N	14154	VRB516E-C10-A-0.3-N	19248
		16	VRB516E-C16-AC-0.3-N			14155	VRB516E-C16-A-0.3-N	19249		
		20	VRB516E-C20-AC-0.3-N			14156	VRB516E-C20-A-0.3-N	19489		
25	VRB516E-C25-AC-0.3-N	14157	VRB516E-C25-A-0.3-N			38335				
32	VRB516E-C32-AC-0.3-N	14158	VRB516E-C32-A-0.3-N			38336				
40	VRB516E-C40-AC-0.3-N	14159	VRB516E-C40-A-0.3-N			38337				
50	VRB516E-C50-AC-0.3-N	14160	VRB516E-C50-A-0.3-N			38338				
63	VRB516E-C63-AC-0.3-N	14161	VRB516E-C63-A-0.3-N			38339				
80	VRB516E-C80-AC-0.3-N	14162	VRB516E-C80-A-0.3-N			38340				
50-100-300	30	6	VRB516E-C6-AC-0.05-0.1-0.3-N			35256	VRB516E-C6-A-0.05-0.1-0.3-N	35266		
		10	VRB516E-C10-AC-0.05-0.1-0.3-N			35257	VRB516E-C10-A-0.05-0.1-0.3-N	35267		
		16	VRB516E-C16-AC-0.05-0.1-0.3-N	35258	VRB516E-C16-A-0.05-0.1-0.3-N	35268				
		20	VRB516E-C20-AC-0.05-0.1-0.3-N	35259	VRB516E-C20-A-0.05-0.1-0.3-N	35269				
		25	VRB516E-C25-AC-0.05-0.1-0.3-N	35260	VRB516E-C25-A-0.05-0.1-0.3-N	35270				
		32	VRB516E-C32-AC-0.05-0.1-0.3-N	35261	VRB516E-C32-A-0.05-0.1-0.3-N	35271				
		40	VRB516E-C40-AC-0.05-0.1-0.3-N	35262	VRB516E-C40-A-0.05-0.1-0.3-N	35272				
		50	VRB516E-C50-AC-0.05-0.1-0.3-N	35263	VRB516E-C50-A-0.05-0.1-0.3-N	35273				
		63	VRB516E-C63-AC-0.05-0.1-0.3-N	35264	VRB516E-C63-A-0.05-0.1-0.3-N	35274				
		80	VRB516E-C80-AC-0.05-0.1-0.3-N	35265	VRB516E-C80-A-0.05-0.1-0.3-N	35275				

### Selection and ordering data

I<sub>cn</sub> = 6 kA

Characteristic D

General type, instantaneous

Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Type AC		Type A					
			Type code	Order code	Type code	Order code				
1P+N 230 V AC	30	6	VRB515E-D6-AC-0.03-N	38341	VRB515E-D6-A-0.03-N	38401				
		10	VRB515E-D10-AC-0.03-N	38342	VRB515E-D10-A-0.03-N	38402				
		16	VRB515E-D16-AC-0.03-N	38343	VRB515E-D16-A-0.03-N	38403				
		20	VRB515E-D20-AC-0.03-N	38344	VRB515E-D20-A-0.03-N	38404				
		25	VRB515E-D25-AC-0.03-N	38345	VRB515E-D25-A-0.03-N	38405				
		32	VRB515E-D32-AC-0.03-N	38346	VRB515E-D32-A-0.03-N	38406				
		40	VRB515E-D40-AC-0.03-N	38347	VRB515E-D40-A-0.03-N	38407				
		50	VRB515E-D50-AC-0.03-N	38348	VRB515E-D50-A-0.03-N	38408				
		63	VRB515E-D63-AC-0.03-N	38349	VRB515E-D63-A-0.03-N	38409				
		80	VRB515E-D80-AC-0.03-N	38350	VRB515E-D80-A-0.03-N	38410				
		100	30	6	VRB515E-D6-AC-0.1-N	38351	VRB515E-D6-A-0.1-N	38411		
				10	VRB515E-D10-AC-0.1-N	38352	VRB515E-D10-A-0.1-N	38412		
				16	VRB515E-D16-AC-0.1-N	38353	VRB515E-D16-A-0.1-N	38413		
				20	VRB515E-D20-AC-0.1-N	38354	VRB515E-D20-A-0.1-N	38414		
				25	VRB515E-D25-AC-0.1-N	38355	VRB515E-D25-A-0.1-N	38415		
				32	VRB515E-D32-AC-0.1-N	38356	VRB515E-D32-A-0.1-N	38416		
				40	VRB515E-D40-AC-0.1-N	38357	VRB515E-D40-A-0.1-N	38417		
				50	VRB515E-D50-AC-0.1-N	38358	VRB515E-D50-A-0.1-N	38418		
				63	VRB515E-D63-AC-0.1-N	38359	VRB515E-D63-A-0.1-N	38419		
				80	VRB515E-D80-AC-0.1-N	38360	VRB515E-D80-A-0.1-N	38420		
				300	30	6	VRB515E-D6-AC-0.3-N	38361	VRB515E-D6-A-0.3-N	38421
						10	VRB515E-D10-AC-0.3-N	38362	VRB515E-D10-A-0.3-N	38422
		16	VRB515E-D16-AC-0.3-N			38363	VRB515E-D16-A-0.3-N	38423		
		20	VRB515E-D20-AC-0.3-N			38364	VRB515E-D20-A-0.3-N	38424		
25	VRB515E-D25-AC-0.3-N	38365	VRB515E-D25-A-0.3-N			38425				
32	VRB515E-D32-AC-0.3-N	38366	VRB515E-D32-A-0.3-N			38426				
40	VRB515E-D40-AC-0.3-N	38367	VRB515E-D40-A-0.3-N			38427				
50	VRB515E-D50-AC-0.3-N	38368	VRB515E-D50-A-0.3-N			38428				
63	VRB515E-D63-AC-0.3-N	38369	VRB515E-D63-A-0.3-N			38429				
80	VRB515E-D80-AC-0.3-N	38370	VRB515E-D80-A-0.3-N			38430				
3P+N 400 V AC	30	6	VRB516E-D6-AC-0.03-N			38371	VRB516E-D6-A-0.03-N	38431		
		10	VRB516E-D10-AC-0.03-N			38372	VRB516E-D10-A-0.03-N	38432		
		16	VRB516E-D16-AC-0.03-N	38373	VRB516E-D16-A-0.03-N	38433				
		20	VRB516E-D20-AC-0.03-N	38374	VRB516E-D20-A-0.03-N	38434				
		25	VRB516E-D25-AC-0.03-N	38375	VRB516E-D25-A-0.03-N	38435				
		32	VRB516E-D32-AC-0.03-N	38376	VRB516E-D32-A-0.03-N	38436				
		40	VRB516E-D40-AC-0.03-N	38377	VRB516E-D40-A-0.03-N	38437				
		50	VRB516E-D50-AC-0.03-N	38378	VRB516E-D50-A-0.03-N	38438				
		63	VRB516E-D63-AC-0.03-N	38379	VRB516E-D63-A-0.03-N	38439				
		80	VRB516E-D80-AC-0.03-N	38380	VRB516E-D80-A-0.03-N	38440				
		100	30	6	VRB516E-D6-AC-0.1-N	38381	VRB516E-D6-A-0.1-N	38441		
				10	VRB516E-D10-AC-0.1-N	38382	VRB516E-D10-A-0.1-N	38442		
				16	VRB516E-D16-AC-0.1-N	38383	VRB516E-D16-A-0.1-N	38443		
				20	VRB516E-D20-AC-0.1-N	38384	VRB516E-D20-A-0.1-N	38444		
				25	VRB516E-D25-AC-0.1-N	38385	VRB516E-D25-A-0.1-N	38445		
				32	VRB516E-D32-AC-0.1-N	38386	VRB516E-D32-A-0.1-N	38446		
				40	VRB516E-D40-AC-0.1-N	38387	VRB516E-D40-A-0.1-N	38447		
				50	VRB516E-D50-AC-0.1-N	38388	VRB516E-D50-A-0.1-N	38448		
				63	VRB516E-D63-AC-0.1-N	38389	VRB516E-D63-A-0.1-N	34719		
				80	VRB516E-D80-AC-0.1-N	38390	VRB516E-D80-A-0.1-N	34720		
				300	30	6	VRB516E-D6-AC-0.3-N	38391	VRB516E-D6-A-0.3-N	34721
						10	VRB516E-D10-AC-0.3-N	38392	VRB516E-D10-A-0.3-N	34722
		16	VRB516E-D16-AC-0.3-N			38393	VRB516E-D16-A-0.3-N	34723		
		20	VRB516E-D20-AC-0.3-N			38394	VRB516E-D20-A-0.3-N	34724		
25	VRB516E-D25-AC-0.3-N	38395	VRB516E-D25-A-0.3-N			34725				
32	VRB516E-D32-AC-0.3-N	38396	VRB516E-D32-A-0.3-N			34726				
40	VRB516E-D40-AC-0.3-N	38397	VRB516E-D40-A-0.3-N			38333				
50	VRB516E-D50-AC-0.3-N	38398	VRB516E-D50-A-0.3-N			38334				
63	VRB516E-D63-AC-0.3-N	38399	VRB516E-D63-A-0.3-N			36493				
80	VRB516E-D80-AC-0.3-N	38400	VRB516E-D80-A-0.3-N			36494				
50-100-300	30	6	VRB516E-D6-AC-0.05-0.1-0.3-N			15774	VRB516E-D6-A-0.05-0.1-0.3-N	15784		
		10	VRB516E-D10-AC-0.05-0.1-0.3-N			15775	VRB516E-D10-A-0.05-0.1-0.3-N	15785		
		16	VRB516E-D16-AC-0.05-0.1-0.3-N	15776	VRB516E-D16-A-0.05-0.1-0.3-N	15786				
		20	VRB516E-D20-AC-0.05-0.1-0.3-N	15777	VRB516E-D20-A-0.05-0.1-0.3-N	15787				
		25	VRB516E-D25-AC-0.05-0.1-0.3-N	15778	VRB516E-D25-A-0.05-0.1-0.3-N	15788				
		32	VRB516E-D32-AC-0.05-0.1-0.3-N	15779	VRB516E-D32-A-0.05-0.1-0.3-N	15789				
		40	VRB516E-D40-AC-0.05-0.1-0.3-N	15780	VRB516E-D40-A-0.05-0.1-0.3-N	15790				
		50	VRB516E-D50-AC-0.05-0.1-0.3-N	15781	VRB516E-D50-A-0.05-0.1-0.3-N	15791				
		63	VRB516E-D63-AC-0.05-0.1-0.3-N	15782	VRB516E-D63-A-0.05-0.1-0.3-N	15792				
		80	VRB516E-D80-AC-0.05-0.1-0.3-N	15783	VRB516E-D80-A-0.05-0.1-0.3-N	15793				





# Residual Current Circuit Breakers with Overcurrent Protection Series VRB510E

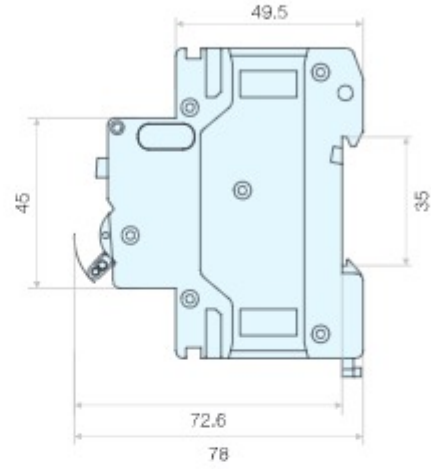
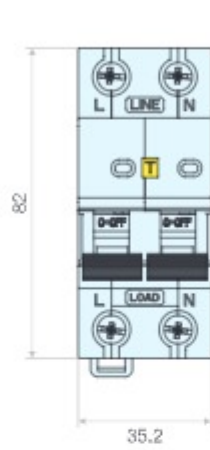


## Outline and installation dimensions

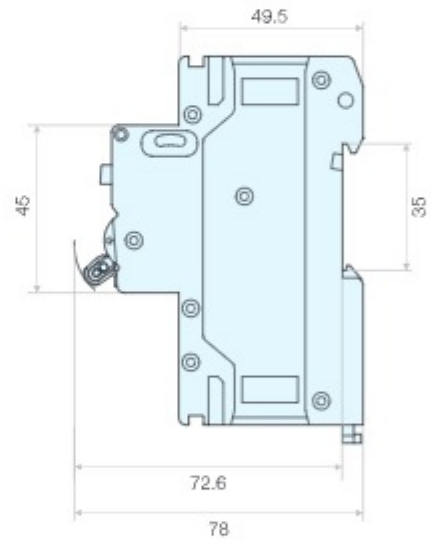
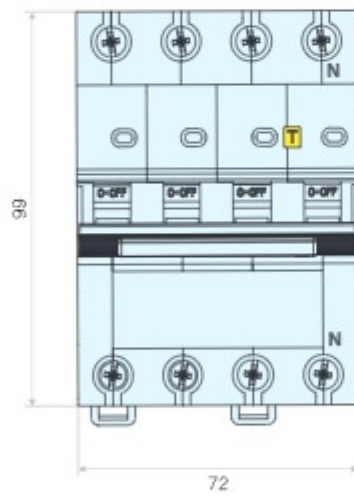
2

unit in mm

VRB515E



VRB516E



### Functions



- Switching and isolation function.
- Protection against overload and short-circuit currents.
- Protection against the effects of sinusoidal alternating earth fault currents.
- Protection against indirect contacts and additional protection against direct contacts.
- Protection against fire hazard caused by insulation faults.
- Used in residential building and distribution boards.

### Technical specifications

- Standard: IEC 61009-1
- Type (wave form of the earth leakage sensed): AC
- Number of pole: 1+N (1 module)
- Rated current  $I_n$  (A): 6, 10, 16, 20, 25, 32, 40, 50
- Rated voltage  $U_e$  (V AC): 230
- Rated insulation voltage  $U_i$  (V AC): 500
- Rated frequency  $F_n$  (Hz): 50/60
- Rated residual currents  $I_{\Delta n}$  (mA): 30
- Rated breaking capacity acc. to IEC 61009-1 ultimate  $I_{cn}$  (kA): 10
- Rated breaking capacity acc. to IEC 60947-2 ultimate  $I_{cu}$  (kA): 10
- Rated residual breaking capacity  $I_{\Delta m}$  (kA): 10
- Rated impulse withstand voltage (1.2/50)  $U_{imp}$  (kV): 4
- Dielectric test voltage at ind. freq. for 1 min. (kV): 2
- Surge current resistance (wave 8/20) (A): 3000
- Tripping characteristic: B, C
- Characteristic B ( $I_n$ ): 3-5
- Characteristic C ( $I_n$ ): 5-10
- Electrical life (times): 10,000
- Mechanical life (times): 20,000
- Degree of protection: IP20, with connected conductors
- Mounting position: Any
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 0.75-35
- Finely stranded with end sleeve (mm<sup>2</sup>): 0.75-25
- Terminals
- Terminal tightening torque (N·m): 2.5
- Ambient temperature (°C): -25 – +45, max. 95 % humidity
- Storage temperature (°C): -40 – +75
- Altitude (meters): Max. 2000

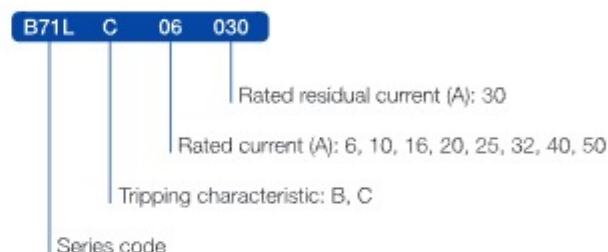
### Selection and ordering data

#### Type AC

	Number of poles	Rated residual current $I_{\Delta n}$ (mA)	Rated current $I_n$ (A)	Characteristic B		Characteristic C	
				Type code	Order code	Type code	Order code
 	1P+N	30	6	B71L B06/030	23589	B71L C06/030	23597
			10	B71L B10/030	23590	B71L C10/030	23598
			16	B71L B16/030	23591	B71L C16/030	23599
			20	B71L B20/030	23592	B71L C20/030	23600
			25	B71L B25/030	23593	B71L C25/030	23601
			32	B71L B32/030	23594	B71L C32/030	23602
			40	B71L B40/030	23595	B71L C40/030	23603
			50	B71L B50/030	23596	B71L C50/030	23604



### Instruction of type code

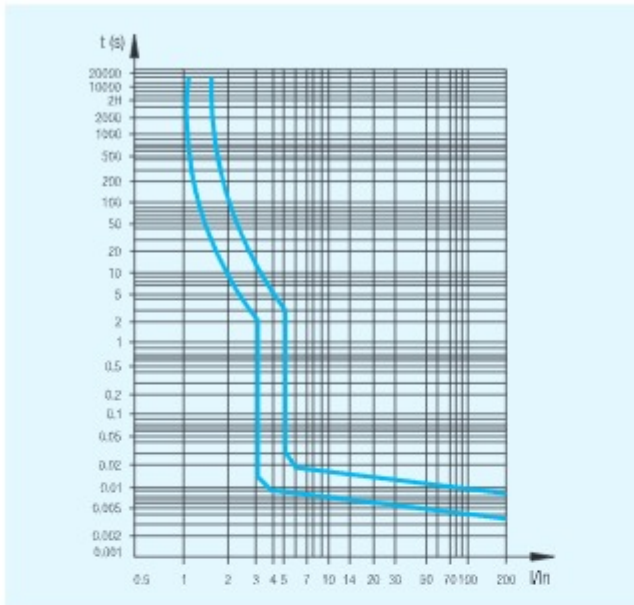


### Features

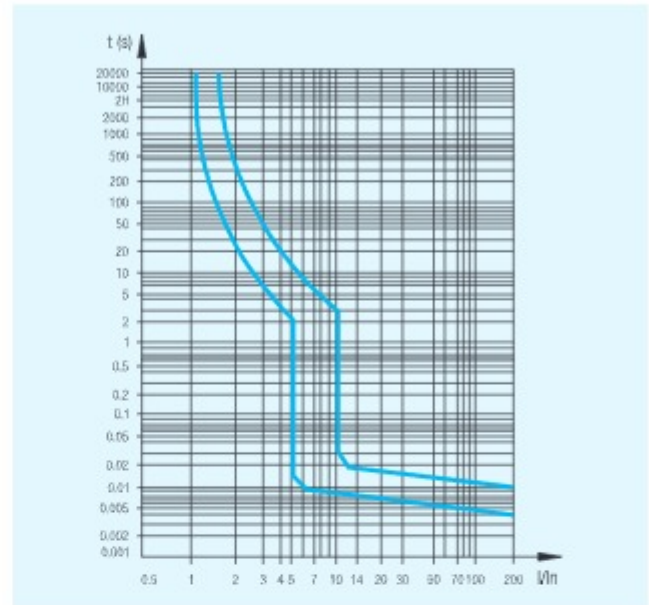
- The combination of an RCCB and a miniature circuit breaker in a compact design.
- The MCB part protects lines against overload and short circuits and is available in characteristics B and C.
- Electronic Type, voltage dependent
- The handle provides a clear indication of the contact position.
- The earth reference cable ensures protection against earth leakage in case of loss of supply neutral.

## Tripping characteristic curves

Characteristic B

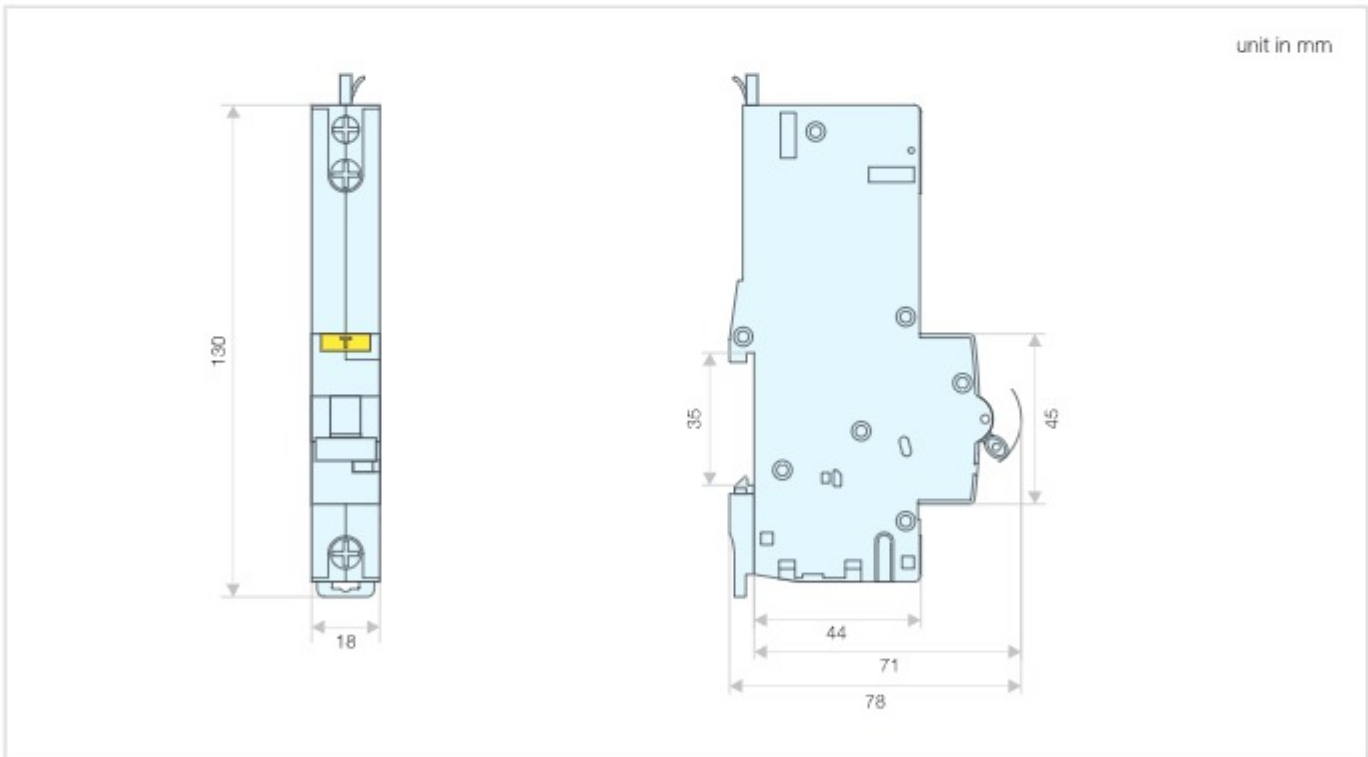


Characteristic C



2

## Outline and installation dimensions



### Functions

- Switching and isolation function
- Protection against overload and short-circuit currents
- Protection against the effects of sinusoidal alternating earth fault currents
- Protection against indirect contacts and additional protection against direct contacts.
- Protection against fire hazard caused by insulation faults
- Used in residential building

### Technical specifications

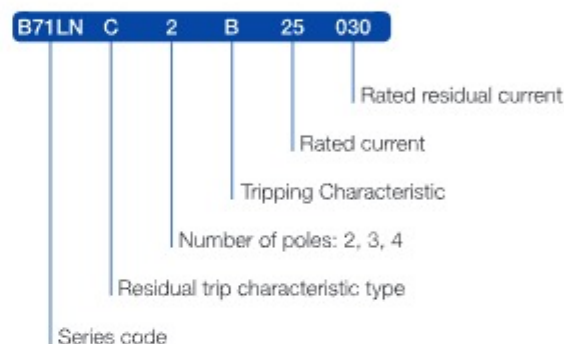
- Standard: IEC 61009-1
- Type (wave form of the earth leakage sensed): AC, A
- Number of poles (P): 2, 3, 4
- Rated current  $I_n$  (A): 6, 10, 16, 20, 25, 32, 40
- Rated voltage  $U_e$  (V AC): 230/400
- Rated insulation voltage  $U_i$  (V AC): 500
- Rated frequency  $f_n$  (Hz): 50/60
- Rated residual currents  $I_{\Delta n}$  (mA): 30, 100, 300
- Rated breaking capacity acc. to IEC 61009-1 ultimate  $I_{cn}$  (kA): 10
- Rated breaking capacity acc. to IEC 60947-2 ultimate  $I_{cu}$  (kA): 10
- Rated residual breaking capacity  $I_{\Delta m}$  (kA): 6
- Rated impulse withstand voltage (1.2/50)  $U_{imp}$  (kV): 4
- Dielectric test voltage at ind. freq. for 1 min. (kV): 2.5
- Surge current resistance (wave 8/20) (A): 3000
- Tripping characteristic: B, C, D
- Characteristic B ( $I_n$ ): 3-5
- Characteristic C ( $I_n$ ): 5-10
- Characteristic D ( $I_n$ ): 10-14
- Electrical life (times): 10,000
- Mechanical life (times): 20,000
- Degree of protection: IP20, with connected conductors
- Mounting position: Any
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 0.75-35
- Finely stranded with end sleeve (mm<sup>2</sup>): 0.75-25
- Terminals
- Terminal tightening torque (N·m): 2.5
- Ambient temperature (°C): -25 ~ +45, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Altitude (meters): Max 2,000

### References

- Additional components: page 69 – 70



### Instruction of type code

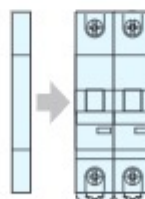


### Features

- The combination of an RCCB and a miniature circuit breaker in a compact design for personnel, fire and line protection.
- Electromagnetic type, voltage independent.
- The MCB part protects lines against overload and short circuits and is available in characteristics B, C and D.
- The handle provides a clear indication of the contact position.

### Add-on devices

#### Auxiliaries






# Residual Current Circuit Breakers with Overcurrent Protection Series 3SB71LN



## Selection and ordering data




Type AC

2

Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Characteristic B		Characteristic C		Characteristic D		
			Type code	Order code	Type code	Order code	Type code	Order code	
	30	6	B71LNC 2B06/030H	16947	B71LNC 2C06/030H	16968	B71LNC 2D06/030H	16989	
		10	B71LNC 2B10/030H	16948	B71LNC 2C10/030H	16969	B71LNC 2D10/030H	16990	
		16	B71LNC 2B16/030H	16949	B71LNC 2C16/030H	16970	B71LNC 2D16/030H	16991	
		20	B71LNC 2B20/030H	16950	B71LNC 2C20/030H	16971	B71LNC 2D20/030H	16992	
		25	B71LNC 2B25/030H	16951	B71LNC 2C25/030H	16972	B71LNC 2D25/030H	16993	
		32	B71LNC 2B32/030H	16952	B71LNC 2C32/030H	16973	B71LNC 2D32/030H	16994	
		40	B71LNC 2B40/030H	16953	B71LNC 2C40/030H	16974	B71LNC 2D40/030H	16995	
		100	6	B71LNC 2B06/100H	17010	B71LNC 2C06/100H	17031	B71LNC 2D06/100H	17052
			10	B71LNC 2B10/100H	17011	B71LNC 2C10/100H	17032	B71LNC 2D10/100H	17053
			16	B71LNC 2B16/100H	17012	B71LNC 2C16/100H	17033	B71LNC 2D16/100H	17054
	20		B71LNC 2B20/100H	17013	B71LNC 2C20/100H	17034	B71LNC 2D20/100H	17055	
	25		B71LNC 2B25/100H	17014	B71LNC 2C25/100H	17035	B71LNC 2D25/100H	17056	
	32		B71LNC 2B32/100H	17015	B71LNC 2C32/100H	17036	B71LNC 2D32/100H	17057	
	40		B71LNC 2B40/100H	17016	B71LNC 2C40/100H	17037	B71LNC 2D40/100H	17058	
	300		6	B71LNC 2B06/300H	17073	B71LNC 2C06/300H	17094	B71LNC 2D06/300H	17115
			10	B71LNC 2B10/300H	17074	B71LNC 2C10/300H	17095	B71LNC 2D10/300H	17116
			16	B71LNC 2B16/300H	17075	B71LNC 2C16/300H	17096	B71LNC 2D16/300H	17117
		20	B71LNC 2B20/300H	17076	B71LNC 2C20/300H	17097	B71LNC 2D20/300H	17118	
		25	B71LNC 2B25/300H	17077	B71LNC 2C25/300H	17098	B71LNC 2D25/300H	17119	
		32	B71LNC 2B32/300H	17078	B71LNC 2C32/300H	17099	B71LNC 2D32/300H	17120	
40		B71LNC 2B40/300H	17079	B71LNC 2C40/300H	17100	B71LNC 2D40/300H	17121		
		30	6	B71LNC 3B06/030H	16954	B71LNC 3C06/030H	16975	B71LNC 3D06/030H	16996
			10	B71LNC 3B10/030H	16955	B71LNC 3C10/030H	16976	B71LNC 3D10/030H	16997
			16	B71LNC 3B16/030H	16956	B71LNC 3C16/030H	16977	B71LNC 3D16/030H	16998
	20		B71LNC 3B20/030H	16957	B71LNC 3C20/030H	16978	B71LNC 3D20/030H	16999	
	25		B71LNC 3B25/030H	16958	B71LNC 3C25/030H	16979	B71LNC 3D25/030H	17000	
	32		B71LNC 3B32/030H	16959	B71LNC 3C32/030H	16980	B71LNC 3D32/030H	17001	
	40		B71LNC 3B40/030H	16960	B71LNC 3C40/030H	16981	B71LNC 3D40/030H	17002	
	100		6	B71LNC 3B06/100H	17017	B71LNC 3C06/100H	17038	B71LNC 3D06/100H	17059
			10	B71LNC 3B10/100H	17018	B71LNC 3C10/100H	17039	B71LNC 3D10/100H	17060
			16	B71LNC 3B16/100H	17019	B71LNC 3C16/100H	17040	B71LNC 3D16/100H	17061
		20	B71LNC 3B20/100H	17020	B71LNC 3C20/100H	17041	B71LNC 3D20/100H	17062	
		25	B71LNC 3B25/100H	17021	B71LNC 3C25/100H	17042	B71LNC 3D25/100H	17063	
		32	B71LNC 3B32/100H	17022	B71LNC 3C32/100H	17043	B71LNC 3D32/100H	17064	
		40	B71LNC 3B40/100H	17023	B71LNC 3C40/100H	17044	B71LNC 3D40/100H	17065	
		300	6	B71LNC 3B06/300H	17080	B71LNC 3C06/300H	17101	B71LNC 3D06/300H	17122
			10	B71LNC 3B10/300H	17081	B71LNC 3C10/300H	17102	B71LNC 3D10/300H	17123
			16	B71LNC 3B16/300H	17082	B71LNC 3C16/300H	17103	B71LNC 3D16/300H	17124
	20		B71LNC 3B20/300H	17083	B71LNC 3C20/300H	17104	B71LNC 3D20/300H	17125	
	25		B71LNC 3B25/300H	17084	B71LNC 3C25/300H	17105	B71LNC 3D25/300H	17126	
	32		B71LNC 3B32/300H	17085	B71LNC 3C32/300H	17106	B71LNC 3D32/300H	17127	
40	B71LNC 3B40/300H		17086	B71LNC 3C40/300H	17107	B71LNC 3D40/300H	17128		
	30		6	B71LNC 4B06/030H	16961	B71LNC 4C06/030H	16982	B71LNC 4D06/030H	17003
			10	B71LNC 4B10/030H	16962	B71LNC 4C10/030H	16983	B71LNC 4D10/030H	17004
			16	B71LNC 4B16/030H	16963	B71LNC 4C16/030H	16984	B71LNC 4D16/030H	17194
		20	B71LNC 4B20/030H	16964	B71LNC 4C20/030H	16985	B71LNC 4D20/030H	17195	
		25	B71LNC 4B25/030H	16965	B71LNC 4C25/030H	16986	B71LNC 4D25/030H	17196	
		32	B71LNC 4B32/030H	16966	B71LNC 4C32/030H	16987	B71LNC 4D32/030H	17197	
		40	B71LNC 4B40/030H	16967	B71LNC 4C40/030H	16988	B71LNC 4D40/030H	17198	
		100	6	B71LNC 4B06/100H	17024	B71LNC 4C06/100H	17045	B71LNC 4D06/100H	17066
			10	B71LNC 4B10/100H	17025	B71LNC 4C10/100H	17046	B71LNC 4D10/100H	17067
			16	B71LNC 4B16/100H	17026	B71LNC 4C16/100H	17047	B71LNC 4D16/100H	17257
	20		B71LNC 4B20/100H	17027	B71LNC 4C20/100H	17048	B71LNC 4D20/100H	17258	
	25		B71LNC 4B25/100H	17028	B71LNC 4C25/100H	17049	B71LNC 4D25/100H	17259	
	32		B71LNC 4B32/100H	17029	B71LNC 4C32/100H	17050	B71LNC 4D32/100H	17260	
	40		B71LNC 4B40/100H	17030	B71LNC 4C40/100H	17051	B71LNC 4D40/100H	17261	
	300		6	B71LNC 4B06/300H	17087	B71LNC 4C06/300H	17108	B71LNC 4D06/300H	17129
			10	B71LNC 4B10/300H	17088	B71LNC 4C10/300H	17109	B71LNC 4D10/300H	17130
			16	B71LNC 4B16/300H	17089	B71LNC 4C16/300H	17110	B71LNC 4D16/300H	17320
		20	B71LNC 4B20/300H	17090	B71LNC 4C20/300H	17111	B71LNC 4D20/300H	17321	
		25	B71LNC 4B25/300H	17091	B71LNC 4C25/300H	17112	B71LNC 4D25/300H	17322	
		32	B71LNC 4B32/300H	17092	B71LNC 4C32/300H	17113	B71LNC 4D32/300H	17323	
40		B71LNC 4B40/300H	17093	B71LNC 4C40/300H	17114	B71LNC 4D40/300H	17324		

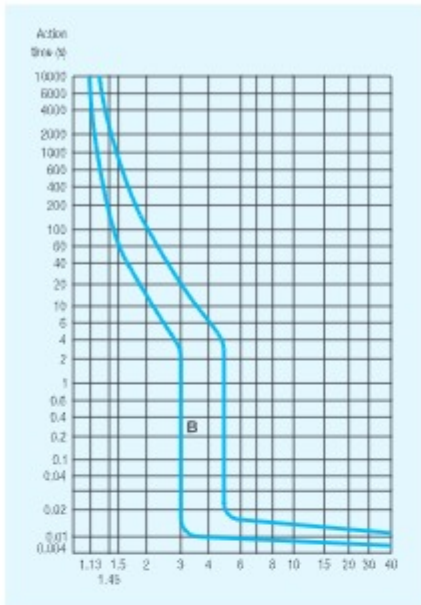
### Selection and ordering data

Type A

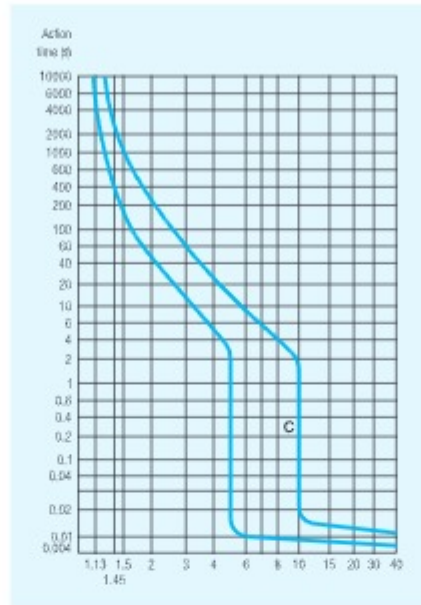
Number of poles	Rated residual current I <sub>Δn</sub> (mA)	Rated current I <sub>n</sub> (A)	Characteristic B		Characteristic C		Characteristic D		
			Type code	Order code	Type code	Order code	Type code	Order code	
	30	6	B71LNA 2B06/030H	17136	B71LNA 2C06/030H	17157	B71LNA 2D06/030H	17178	
			B71LNA 2B10/030H	17137	B71LNA 2C10/030H	17158	B71LNA 2D10/030H	17179	
		10	B71LNA 2B16/030H	17138	B71LNA 2C16/030H	17159	B71LNA 2D16/030H	17180	
			B71LNA 2B20/030H	17139	B71LNA 2C20/030H	17160	B71LNA 2D20/030H	17181	
		25	B71LNA 2B25/030H	17140	B71LNA 2C25/030H	17161	B71LNA 2D25/030H	17182	
			32	B71LNA 2B32/030H	17141	B71LNA 2C32/030H	17162	B71LNA 2D32/030H	17183
		40		B71LNA 2B40/030H	17142	B71LNA 2C40/030H	17163	B71LNA 2D40/030H	17184
			100	6	B71LNA 2B06/100H	17199	B71LNA 2C06/100H	17220	B71LNA 2D06/100H
		B71LNA 2B10/100H			17200	B71LNA 2C10/100H	17221	B71LNA 2D10/100H	17242
		16		B71LNA 2B16/100H	17201	B71LNA 2C16/100H	17222	B71LNA 2D16/100H	17243
	B71LNA 2B20/100H			17202	B71LNA 2C20/100H	17223	B71LNA 2D20/100H	17244	
	25	B71LNA 2B25/100H		17203	B71LNA 2C25/100H	17224	B71LNA 2D25/100H	17245	
		32		B71LNA 2B32/100H	17204	B71LNA 2C32/100H	17225	B71LNA 2D32/100H	17246
	40			B71LNA 2B40/100H	17205	B71LNA 2C40/100H	17226	B71LNA 2D40/100H	17247
		300		6	B71LNA 2B06/300H	17262	B71LNA 2C06/300H	17283	B71LNA 2D06/300H
	B71LNA 2B10/300H				17263	B71LNA 2C10/300H	17284	B71LNA 2D10/300H	17305
	16			B71LNA 2B16/300H	17264	B71LNA 2C16/300H	17285	B71LNA 2D16/300H	17306
			B71LNA 2B20/300H	17265	B71LNA 2C20/300H	17286	B71LNA 2D20/300H	17307	
	25		B71LNA 2B25/300H	17266	B71LNA 2C25/300H	17287	B71LNA 2D25/300H	17308	
			32	B71LNA 2B32/300H	17267	B71LNA 2C32/300H	17288	B71LNA 2D32/300H	17309
40	B71LNA 2B40/300H			17268	B71LNA 2C40/300H	17289	B71LNA 2D40/300H	17310	
			30	6	B71LNA 3B06/030H	17143	B71LNA 3C06/030H	17164	B71LNA 3D06/030H
B71LNA 3B10/030H		17144			B71LNA 3C10/030H	17165	B71LNA 3D10/030H	17186	
16		B71LNA 3B16/030H		17145	B71LNA 3C16/030H	17166	B71LNA 3D16/030H	17187	
		B71LNA 3B20/030H		17146	B71LNA 3C20/030H	17167	B71LNA 3D20/030H	17188	
25		B71LNA 3B25/030H		17147	B71LNA 3C25/030H	17168	B71LNA 3D25/030H	17189	
		32		B71LNA 3B32/030H	17148	B71LNA 3C32/030H	17169	B71LNA 3D32/030H	17190
40				B71LNA 3B40/030H	17149	B71LNA 3C40/030H	17170	B71LNA 3D40/030H	17191
		100		6	B71LNA 3B06/100H	17206	B71LNA 3C06/100H	17227	B71LNA 3D06/100H
B71LNA 3B10/100H					17207	B71LNA 3C10/100H	17228	B71LNA 3D10/100H	17249
16				B71LNA 3B16/100H	17208	B71LNA 3C16/100H	17229	B71LNA 3D16/100H	17250
			B71LNA 3B20/100H	17209	B71LNA 3C20/100H	17230	B71LNA 3D20/100H	17251	
25			B71LNA 3B25/100H	17210	B71LNA 3C25/100H	17231	B71LNA 3D25/100H	17252	
			32	B71LNA 3B32/100H	17211	B71LNA 3C32/100H	17232	B71LNA 3D32/100H	17253
40				B71LNA 3B40/100H	17212	B71LNA 3C40/100H	17233	B71LNA 3D40/100H	17254
			300	6	B71LNA 3B06/300H	17269	B71LNA 3C06/300H	17290	B71LNA 3D06/300H
B71LNA 3B10/300H					17270	B71LNA 3C10/300H	17291	B71LNA 3D10/300H	17312
16				B71LNA 3B16/300H	17271	B71LNA 3C16/300H	17292	B71LNA 3D16/300H	17313
		B71LNA 3B20/300H		17272	B71LNA 3C20/300H	17293	B71LNA 3D20/300H	17314	
25		B71LNA 3B25/300H		17273	B71LNA 3C25/300H	17294	B71LNA 3D25/300H	17315	
		32		B71LNA 3B32/300H	17274	B71LNA 3C32/300H	17295	B71LNA 3D32/300H	17316
40	B71LNA 3B40/300H			17275	B71LNA 3C40/300H	17296	B71LNA 3D40/300H	17317	
		30		6	B71LNA 4B06/030H	17150	B71LNA 4C06/030H	17171	B71LNA 4D06/030H
B71LNA 4B10/030H			17151		B71LNA 4C10/030H	17172	B71LNA 4D10/030H	17193	
16			B71LNA 4B16/030H	17152	B71LNA 4C16/030H	17173	B71LNA 4D16/030H	17194	
			B71LNA 4B20/030H	17153	B71LNA 4C20/030H	17174	B71LNA 4D20/030H	17195	
25			B71LNA 4B25/030H	17154	B71LNA 4C25/030H	17175	B71LNA 4D25/030H	17196	
			32	B71LNA 4B32/030H	17155	B71LNA 4C32/030H	17176	B71LNA 4D32/030H	17197
40				B71LNA 4B40/030H	17156	B71LNA 4C40/030H	17177	B71LNA 4D40/030H	17198
			100	6	B71LNA 4B06/100H	17213	B71LNA 4C06/100H	17234	B71LNA 4D06/100H
B71LNA 4B10/100H					17214	B71LNA 4C10/100H	17235	B71LNA 4D10/100H	17256
16				B71LNA 4B16/100H	17215	B71LNA 4C16/100H	17236	B71LNA 4D16/100H	17257
		B71LNA 4B20/100H		17216	B71LNA 4C20/100H	17237	B71LNA 4D20/100H	17258	
25		B71LNA 4B25/100H		17217	B71LNA 4C25/100H	17238	B71LNA 4D25/100H	17259	
		32		B71LNA 4B32/100H	17218	B71LNA 4C32/100H	17239	B71LNA 4D32/100H	17260
40				B71LNA 4B40/100H	17219	B71LNA 4C40/100H	17240	B71LNA 4D40/100H	17261
		300		6	B71LNA 4B06/300H	17276	B71LNA 4C06/300H	17297	B71LNA 4D06/300H
B71LNA 4B10/300H					17277	B71LNA 4C10/300H	17298	B71LNA 4D10/300H	17319
16				B71LNA 4B16/300H	17278	B71LNA 4C16/300H	17299	B71LNA 4D16/300H	17320
			B71LNA 4B20/300H	17279	B71LNA 4C20/300H	17300	B71LNA 4D20/300H	17321	
25			B71LNA 4B25/300H	17280	B71LNA 4C25/300H	17301	B71LNA 4D25/300H	17322	
			32	B71LNA 4B32/300H	17281	B71LNA 4C32/300H	173023	B71LNA 4D32/300H	17323
40	B71LNA 4B40/300H			17282	B71LNA 4C40/300H	17303	B71LNA 4D40/300H	17324	

## Tripping characteristic curves

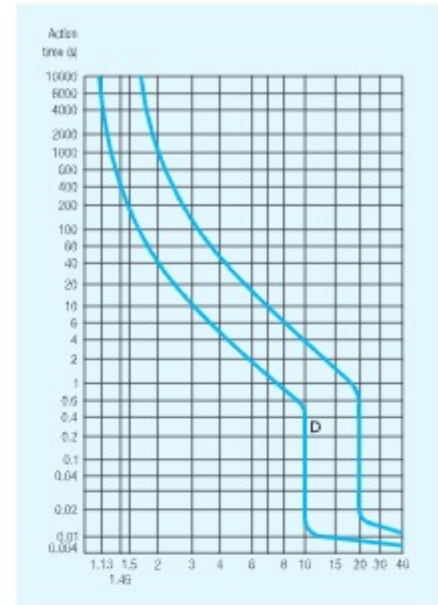
Characteristic B



Characteristic C

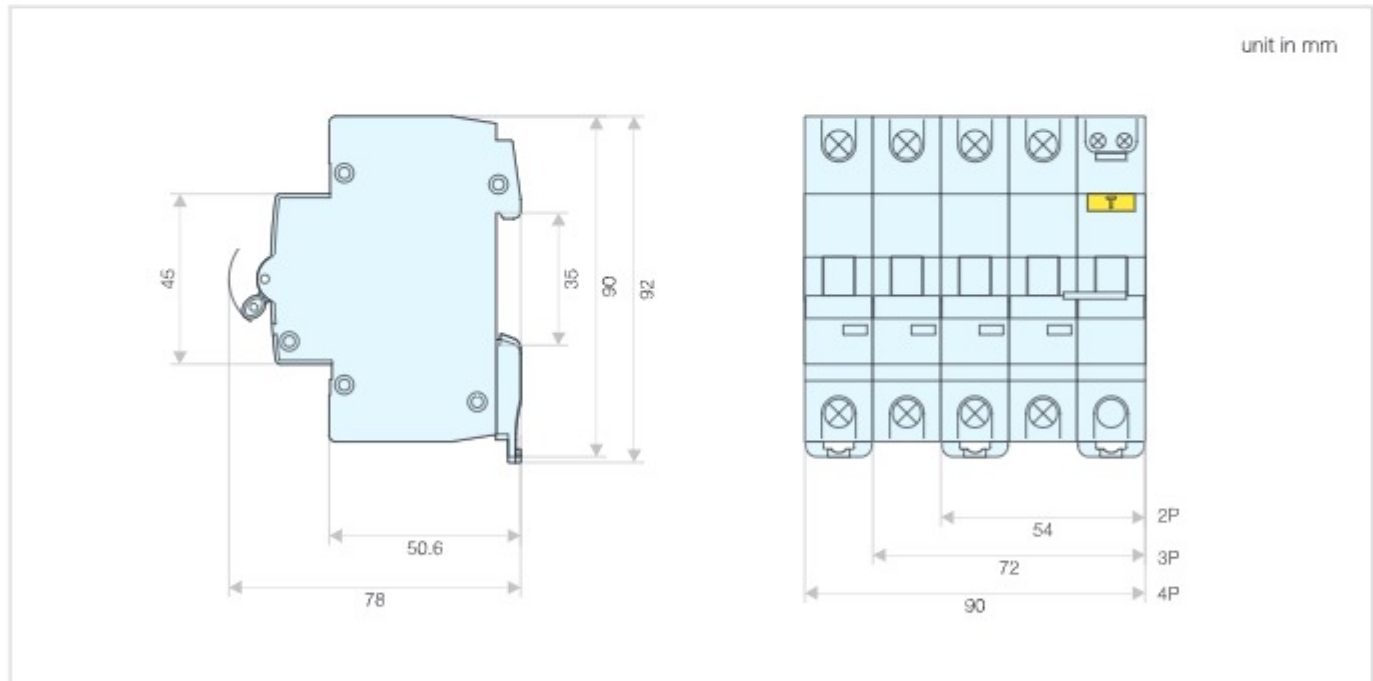


Characteristic D



2

## Outline and installation dimensions



## Functions

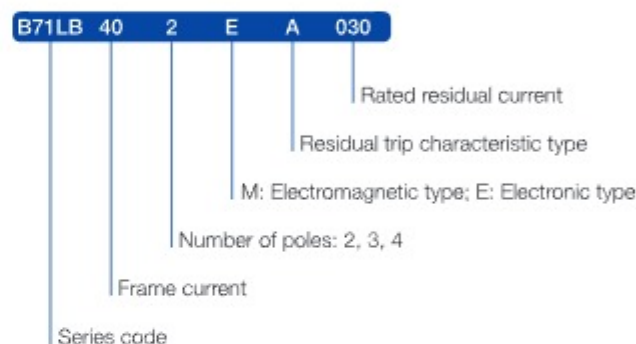
- Assembly on side with MCBs
- Protection against the effects of sinusoidal alternating earth fault currents
- Protection against indirect contacts and additional protection against direct contacts

## Technical specifications

- Standard: IEC 61009-1
- Type (wave form of the earth leakage sensed): AC, A
- Number of poles: 2, 3, 4
- Rated current  $I_n$  (A): 40, 63
- Rated voltage  $U_e$  (V AC): 230/400
- Rated insulation voltage  $U_i$  (V AC): 500
- Rated frequency  $F_n$  (Hz): 50/60
- Rated residual currents  $I_{\Delta n}$  (mA): 30, 100, 300
- Rated breaking capacity ( $I_{cn}$ ) :  $I_{cn}$  of the associated MCB
- Rated residual breaking capacity  $I_m$ :  $I_{cn}$  of the associated MCB
- Electrical life (times): 10,000
- Mechanical life (times): 20,000
- Degree of protection: IP20, with connected conductors
- Mounting position: Any
- Conductor cross-sections
  - Solid and stranded (mm<sup>2</sup>): 0.75-35
  - Finely stranded with end sleeve (mm<sup>2</sup>): 0.75-25
- Terminals
  - Terminal tightening torque (N-m): 2.8
- Ambient temperature (°C): -25 ~ +45, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Altitude (meters): Max 2,000



## Instruction of type code



## Features

- Electronic Type, voltage dependent and Electromagnetic type, voltage independent.
- Assembly on side with MCBs 3SB71 series.






# RCD Blocks Series 3SB71LB






## Selection and ordering data

### Electronic Type

2



	Number of poles	Rated residual current $I_{\Delta n}$ (mA)	Rated current $I_n$ (A)	Type A	
				Type code	Order code
	2	30	40	B71LB40 2EA030	19538
		100	40	B71LB40 2EA100	19539
		300	40	B71LB40 2EA300	19540
		30	63	B71LB63 2EA030	19541
		100	63	B71LB63 2EA100	19542
		300	63	B71LB63 2EA300	19543
	3	30	40	B71LB40 3EA030	19544
		100	40	B71LB40 3EA100	19545
		300	40	B71LB40 3EA300	19546
		30	63	B71LB63 3EA030	19547
		100	63	B71LB63 3EA100	19548
		300	63	B71LB63 3EA300	19549
	4	30	40	B71LB40 4EA030	19550
		100	40	B71LB40 4EA100	19551
		300	40	B71LB40 4EA300	19552
		30	63	B71LB63 4EA030	19553
		100	63	B71LB63 4EA100	19554
		300	63	B71LB63 4EA300	19555

### Electromagnetic type

	Number of poles	Rated residual current $I_{\Delta n}$ (mA)	Rated current $I_n$ (A)	Type AC		Type A	
				Type code	Order code	Type code	Order code
	2	30	40	B71LB40 2MC030	19502	B71LB40 2MA030	19508
		100	40	B71LB40 2MC100	19503	B71LB40 2MA100	19509
		300	40	B71LB40 2MC300	19504	B71LB40 2MA300	19510
		30	63	B71LB63 2MC030	19505	B71LB63 2MA030	19511
		100	63	B71LB63 2MC100	19506	B71LB63 2MA100	19512
		300	63	B71LB63 2MC300	19507	B71LB63 2MA300	19513
	3	30	40	B71LB40 3MC030	19514	B71LB40 3MA030	19520
		100	40	B71LB40 3MC100	19515	B71LB40 3MA100	19521
		300	40	B71LB40 3MC300	19516	B71LB40 3MA300	19522
		30	63	B71LB63 3MC030	19517	B71LB63 3MA030	19523
		100	63	B71LB63 3MC100	19518	B71LB63 3MA100	19524
		300	63	B71LB63 3MC300	19519	B71LB63 3MA300	19525
	4	30	40	B71LB40 4MC030	19526	B71LB40 4MA030	19532
		100	40	B71LB40 4MC100	19527	B71LB40 4MA100	19533
		300	40	B71LB40 4MC300	19528	B71LB40 4MA300	19534
		30	63	B71LB63 4MC030	19529	B71LB63 4MA030	19535
		100	63	B71LB63 4MC100	19530	B71LB63 4MA100	19536
		300	63	B71LB63 4MC300	19531	B71LB63 4MA300	19537

## Types

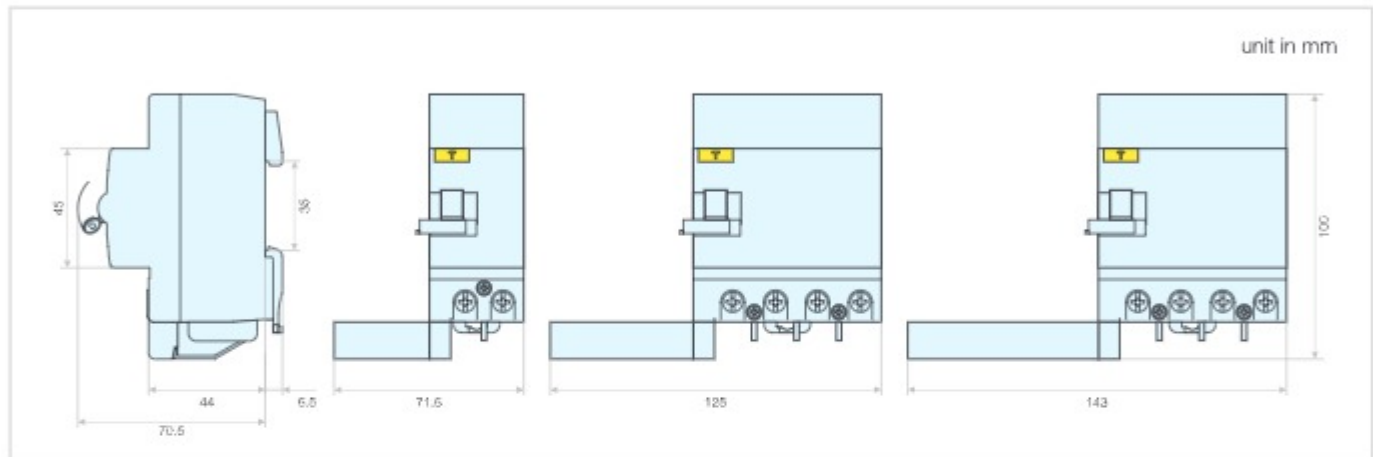
Both RCCBs and RCBOs are further divided into types depending on the operating function:

- Type AC : For which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising.
- Type A : For which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising.

## Tripping sensitivity data

- RCD with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact.
- RCD with a rated residual current of maximum 300 mA are used as preventative fire protection in case of insulation faults.
- RCD with a rated residual current of 100 mA co-ordinated with the earth system according to the formula  $I\Delta n < 50/R$ , to provide protection against indirect contacts.

## Outline and installation dimensions



# Switch Disconnectors

## Series 3SB71G

### Functions

- Making and breaking under load condition
- Providing safety isolation for terminal distribution system
- Used in residential building, non-residential building

## 2

### Features

- The handle provides a clear indication of the contact position
- Adequate printing of all data on the front provides longterm identification
- Based on the technology of MCB series 3SB71, similar design to series 3SB71
- Matched with series 3SB71



### Instruction of type code







### Technical specifications





Type	3SB71G-125	3SB71G-125 DC			
Standard	IEC 60947-3	IEC 60947-3			
Rated current I <sub>n</sub> (A)	32, 63, 100, 125	63, 80, 100, 125			
Number of poles	1P, 2P, 3P, 4P	1P	2P	3P	4P
Rated voltage U <sub>n</sub>	230/400 V AC	230 V DC	400 V DC	750 V DC	1000 V DC
Rated insulation voltage U <sub>i</sub> (V)	500	1000			
Rated short-time withstand current I <sub>cw</sub> (A)	20 I <sub>n</sub>	12 I <sub>n</sub>			
Degree of protection	IP20, with connected conductors	IP20, with connected conductors			
Electrical life (times)	10,000	1500			
Mechanical life (times)	20,000	8500			
Mounting position	Any	Any			
Conductor cross-sections					
Solid and stranded (mm <sup>2</sup> )	0.75-35	0.75-35			
Finely stranded with end sleeve (mm <sup>2</sup> )	0.75-25	0.75-25			
Terminal tightening torque (N·m)	2-2.5	2-2.5			
Ambient temperature (°C)	-25 ~ +45, max. 95% humidity	-25 ~ +45, max. 95% humidity			
Storage temperature (°C)	-40 ~ +75	-40 ~ +70			
Altitude (meters)	Max. 2000	Max. 2000			

## Selection and ordering data

### 3SB71G-125

	Number of poles (P)	Rated current In (A)	Type code		Pack.
			Type code	Order code	
	1	32	B71G 1032	22899	12
		63	B71G 1063	22900	12
		100	B71G 1100	22901	12
		125	B71G 1125	38876	12
	2	32	B71G 2032	22902	6
		63	B71G 2063	22903	6
		100	B71G 2100	22904	6
		125	B71G 2125	38877	6
	3	32	B71G 3032	22905	4
		63	B71G 3063	22906	4
		100	B71G 3100	22907	4
		125	B71G 3125	38878	4
	4	32	B71G 4032	22908	3
		63	B71G 4063	22909	3
		100	B71G 4100	22910	3
		125	B71G 4125	38879	3

### 3SB71G-125 DC

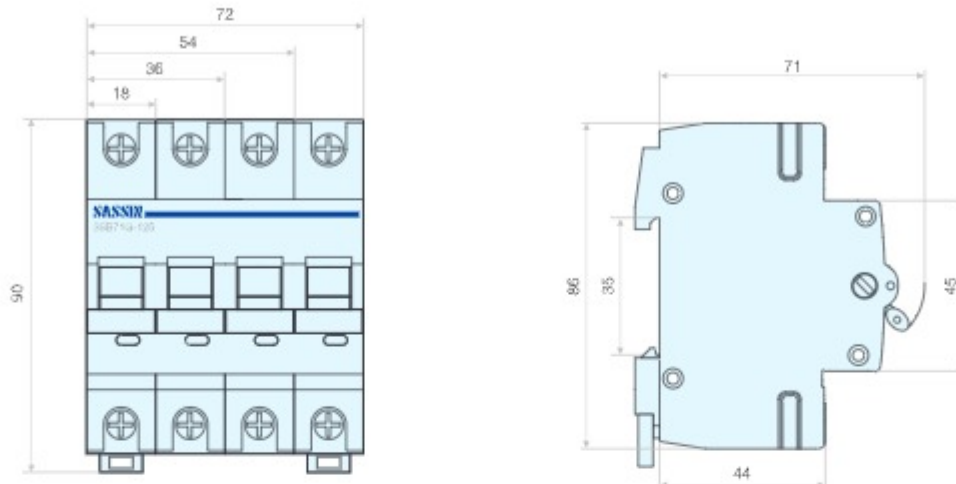
	Number of poles (P)	Rated voltage Un (V)	Rated current In (A)	Type code		Pack.
				Type code	Order code	
	1	230	63	B71G 163D	39195	12
			80	B71G 180D	24361	12
			100	B71G 1100D	24365	12
			125	B71G 1125D	24383	12
	2	400	63	B71G 263D	39196	6
			80	B71G 280D	24362	6
			100	B71G 2100D	24366	6
			125	B71G 2125D	24384	6
	3	750	63	B71G 363D	39197	4
			80	B71G 380D	24363	4
			100	B71G 3100D	24367	4
			125	B71G 3125D	24385	4
	4	1000	63	B71G 463D	39198	3
			80	B71G 480D	24364	3
			100	B71G 4100D	24382	3
			125	B71G 4125D	24386	3

# Switch Disconnectors Series 3SB71G

## Outline and installation dimensions

2

unit in mm



## Functions

- Making and breaking under load condition
- Providing safety isolation for terminal distribution systems
- Used in residential buildings, non-residential buildings

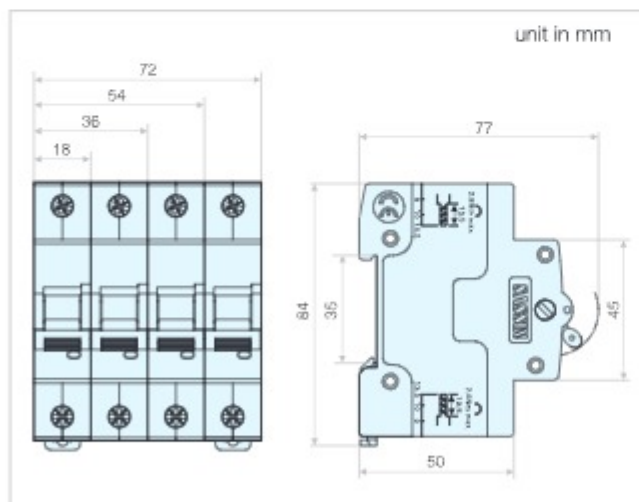
## Technical specifications

- Standard: IEC 60947-3
- Rated current  $I_n$  (A): 25, 40, 63, 80, 100
- Rated voltage  $U_n$  (V AC): 1P: 230/400; 2-4P: 400
- Rated insulation voltage (V AC): 500
- Number of poles (P): 1, 2, 3, 4
- Rated short-time withstand current 20  $I_n$ : 1 s
- Degree of protection: IP20, with connected conductors
- Electrical endurance (Cycles): 10,000
- Mechanical endurance (Cycles): 20,000
- Fire resistance according to IEC 60695: 960 °C
- Mounting position: Any
- Busbar Connection: Pin type
- Conductor cross-sections
  - Solid and stranded (mm<sup>2</sup>): 1-35
  - Finely stranded with end sleeve (mm<sup>2</sup>): 1-25
- Terminal tightening torque (N-m): 2.5
- Ambient temperature (°C): -5 ~ +45, max. 95% humidity
- Altitude (meters): Max 2,000

## Features

- Adequate printing of all data on the front provides long term identification
- Matched with series 3SB6

## Outline and installation dimensions



## Selection and ordering data

Number of poles (P)	Rated current $I_n$ (A)	Type code		Pack.
		Type code	Order code	
1	25	G6 1025	39949	12
	40	G6 1040	39950	12
	63	G6 1063	39951	12
	80	G6 1080	39952	12
	100	G6 1100	39953	12
2	25	G6 2025	39954	6
	40	G6 2040	39955	6
	63	G6 2063	39956	6
	80	G6 2080	39957	6
	100	G6 2100	39958	6
3	25	G6 3025	39959	4
	40	G6 3040	39960	4
	63	G6 3063	39961	4
	80	G6 3080	39962	4
	100	G6 3100	39963	4
4	25	G6 4025	39964	3
	40	G6 4040	39965	3
	63	G6 4063	39966	3
	80	G6 4080	39967	3
	100	G6 4100	39968	3

# Switch Disconnectors Series VG510

## Functions

- Making and breaking under load condition
- Providing safety isolation for terminal distribution system
- Used in residential building, non-residential building

## 2

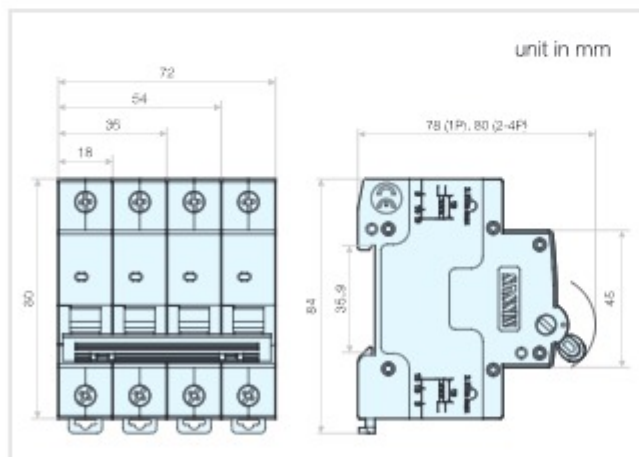
## Technical specifications

- Standard: IEC 60947-3
- Rated current  $I_n$  (A): 32, 40, 63, 80, 100, 125
- Rated voltage  $U_i$  (V AC): 230/400
- Rated insulation voltage  $V_i$  (V AC): 500
- Number of poles: 1, 2, 3, 4
- Degree of protection: IP20, with connected conductors
- Electrical life (times): 10,000
- Mechanical life (times): 20,000
- Rated short-time withstand current 12 le: 1 s
- Mounting position: Any
- Conductor cross-sections
  - Solid and stranded (mm<sup>2</sup>): 0.75-35
  - Finely stranded with end sleeve (mm<sup>2</sup>): 0.75-25
- Terminal tightening torque (N·m): 2.5
- Ambient temperature (°C): -25--+45, max. 95% humidity
- Storage temperature (°C): -40--+75
- Altitude (meters): Max 2,000

## Features

- The handle provides a clear indication of the contact position
- Adequate printing of all data on the front provides long-term identification
- Based the technology of MCB series VB510, similar design to series VB510
- Matched with series MCB VB510
- Full sets of accessories

## Outline and installation dimensions



## Selection and ordering data

Number of poles (P)	Rated current $I_n$ (A)	Type code
1	32	VG511-32
	40	VG511-40
	63	VG511-63
	80	VG511-80
	100	VG511-100
2	125	VG511-125
	32	VG512-32
	40	VG512-40
	63	VG512-63
	80	VG512-80
3	100	VG512-100
	125	VG512-125
	32	VG513-32
	40	VG513-40
	63	VG513-63
4	80	VG513-80
	100	VG513-100
	125	VG513-125
	32	VG514-32
	40	VG514-40
4	63	VG514-63
	80	VG514-80
	100	VG514-100
	125	VG514-125

### Functions

- **3SB71C Auxiliary contact:**  
Indication of the position of MCB and RCD.
- **3SB71J Auxiliary alarm:**  
Signaling of status making or breaking of MCB and RCD through Alarm.
- **3SB71CC/CJ Auxiliary contact & alarm:**  
Combination of auxiliary contact and alarm.
- **3SB71Q Under voltage release:**  
Protection of the load in the event of a voltage drop (between 70% and 35% of its rated value).
- **3SB71F Shunt release:**  
Remote opening of the device when a voltage is applied.
- Suitable for MCB Series: 3SB71-63, 3SB71-125, 3SB71Z, RCBO Series: 3SL71N-40, 3SB71LN.



### Technical specifications

- Standard: IEC 60947-2
- Rated insulation voltage (V AC): 500
- Rated frequency (Hz): 50/60
- Utilization category: AC14
- Mechanical life (times): 4,000
- Conductor cross-sections
  - Solid and stranded (mm<sup>2</sup>): 2.5
- Ambient temperature (°C): -5 ~ +40, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Terminal tightening torque (N·m): 0.5
- Dielectric Strength: 2,000






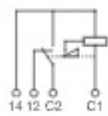


# Additional Components for Series 3SB71

## 3SB71C, 3SB71J, 3SB71CC/CJ, 3SB71Q, 3SB71F


### Selection and ordering data

2

	Rated current (A)	Rated voltage (V)	Installation side			Packing Unit pc
				Type code	Order code	
<b>3SB71CC Auxiliary contact</b>						
	5	AC 230	R	B71CR	20271	1
	5	AC 230	L	B71CL	20272	1
						
<b>3SB71J Auxiliary alarm contact</b>						
	5	AC 230	R	B71JR	20273	1
	5	AC 230	L	B71JL	20274	1
						
<b>3SB71CJ/CC Auxiliary contact &amp; Auxiliary alarm contact</b>						
	5	AC 230	R	B71CJR	10467	1
	5	AC 230	L	B71CJL	10466	1
						
<b>3SB71Q Under voltage release</b>						
	5	12 V	R	B71QR12	16078	1
	5	24 V	R	B71QR24	16079	1
	5	48 V	R	B71QR48	16080	1
	5	127 V	R	B71QRD127	16081	1
	5	230 V AC	R	B71QRA230	16084	1
	5	12 V	L	B71QL12	16085	1
	5	24 V	L	B71QL24	16086	1
	5	48 V	L	B71QL48	16087	1
	5	127 V	L	B71QLD127	16088	1
	5	230 V AC	L	B71QLA230	16091	1
						
<b>3SB71F Shunt release</b>						
	5	AC 24-60 DC 16-48	R	B71FR2	17726	1
	5	AC 110-415 DC 110-125	R	B71FR1	20275	1
	5	AC 24-60 DC 16-48	L	B71FL2	26330	1
	5	AC 110-415 DC 110-125	L	B71FL1	26329	1
						

### Padlock for MCBs and switches

Prevents unauthorized or dangerous operation of the operating lever. An adaptor makes it possible to block the operating lever when switched ON or OFF. The key lock should be provided by user.

	Application		
		Type code	Order code
	3SB71 series MCBs, 3SL71 series RCCBs, 3SL71N-40 series RCBOs, 3SB71LN-40 series RCBOs, 3SB72LE-25 series RCBOs, 3SB71LB series RCD blocks, 3SB71G series switch disconnectors	PL3	32961

### Functions

- **P6-AC Auxiliary contact:**  
Indication of the device contact positions (Open/Closed).
- **P6-FC Fault signal contact:**  
Indication of the device contact positions only after the automatic release due to overcurrent.
- **P6-AF Auxiliary contact and fault signal contact:**  
Two change-over contacts that include both functions of P6-AC and P6-FC.
- **P6-URX Under-voltage release:**  
Protection of the load in the event of a voltage drop (between 75% and 35% of its rated value), and prevent the device closing again until its input voltage is restored.
- **P6-UR Under-voltage release:**  
Protection of the load in the event of the input voltage drop to  $170V \pm 5\%$ .
- **P6-OR Over-voltage release:**  
Protection of the load in the event of the voltage exceed  $280 V \pm 5\%$ .
- **P6-OUR Over-voltage and undervoltage release:**  
Protection of the load as described above for P6-OR and P6-UR.
- Suitable for 3SB6 range MCBs.



### Technical specifications

- Standard: IEC 60947-2
- Rated insulation voltage (V AC): 500
- Rated frequency (Hz): 50/60
- Utilization category: AC 14
- Mechanical life (times): 4,000
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 2,5
- Ambient temperature (°C): -5 ~ +40, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Terminal tightening torque (N·m): 0.5
- Dielectric strength: 2,000

# Additional Components for Series 3SB6

## P6-AC, P6-FC, P6-AF, P6-URX, P6-UR, P6-OR, P6-OUR

### Selection and ordering data

Description	Width (mm)	Mouting	Tripping voltage	Coil voltage	Type code	
Auxiliary contact	9	Left	-	-	P6-AC-L	
		Right	-	-	P6-AC-R	
Fault signal contact	9	Left	-	-	P6-FC-L	
		Right	-	-	P6-FC-R	
Auxiliary contact and fault signal contact	9	Left	-	-	P6-AF-L	
		Right	-	-	P6-AF-R	
Under-voltage release	18	Left	70% - 35% Un	12 V AC/DC	P6-URX-12-L	
				24 V AC/DC	P6-URX-24-L	
				48 V AC/DC	P6-URX-48-L	
				127 V AC/DC	P6-URX-127-L	
				230 V AC	P6-URX-230A-L	
		Right	70% - 35% Un	170 V ± 5%	230 V AC	P6-UR-230
				12 V AC/DC	P6-URX-12-R	
				24 V AC/DC	P6-URX-24-R	
				48 V AC/DC	P6-URX-48-R	
				127 V AC/DC	P6-URX-127-R	
Over-voltage release	18	Left	280 V ± 5%	230 V AC	P6-OR-1-230	
				230 V AC	P6-OR-3-230	
Over-voltage and under-voltage release	18	-	-	230 V AC	P6-OUR-230	
Shunt release	18	Left	-	24-60 V AC	P6-SR-L2	
				24-48 V DC		
				110-415 V AC	P6-SR-L1	
		110-125 V DC				
		Right		24-60 V AC	P6-SR-R2	
				24-48 V DC		
110-415 V AC	P6-SR-R1					
			110-125 V DC			

### Padlock for MCBs and switches

Prevent unauthorized or dangerous operation of the operating lever. An adaptor makes it possible to block the operating lever when switched ON or OFF. The key lock should be provided by user.

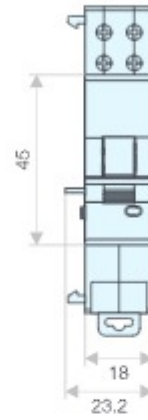
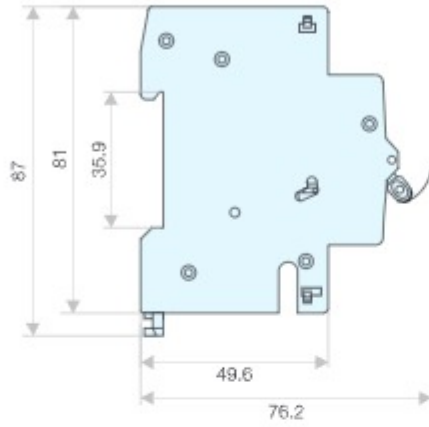
Application	Type code
3SB6 series MCBs, 3SL6 series RCCBs, PRBNE615 series RCBOs, 3SG6 series switch disconnectors	PL3



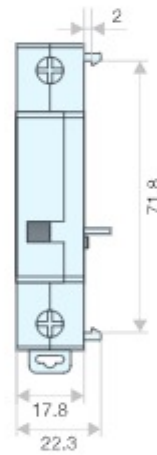
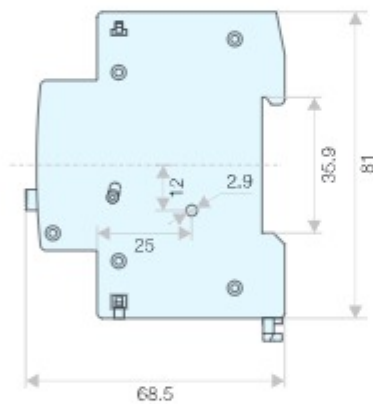
Outline and installation dimensions

unit in mm

P6-SR



P6-OR, P6-UR, P6-OUR



# Additional Components for Series VB510 OF, SD, MX, MV+MN

2

## Functions

- **OF Auxiliary contact:**  
Indication of the position of the device's contacts.
- **SD Auxiliary alarm:**  
Signaling of the position of the device's contacts by alarm only after the automatic release of the MCBs and RCDs due to an overload or a short-circuit.
- **MX Shunt Release:**  
Remote opening of the device when a voltage is applied.
- **MX+MN Under voltage release:**  
Protection of the load in the event of a voltage drop (between 70% and 35% of its rated value).
- Suitable for MCB series VB510.



## Technical specifications

- Standard: IEC 60947-5-1
- Rated insulation voltage (V AC): 500
- Rated frequency (Hz): 50/60
- Rated impulse withstand voltage (kA): 5
- Utilization category: AC14, AC15
- Mechanical life (times): 10,000
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 2-2.5
- Ambient temperature (°C): -5 ~ +40, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75

## Selection and ordering data

	Rated current I <sub>n</sub> (A)	Type code	Order code
OF Auxiliary contact	5	VB5-OF	16072



SD Auxiliary alarm	5	VB5-SD	16073
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	Rated voltage (V)	Type code	Order code
MX Shunt release	230 AC	VB5-MX230A	16074
	400 AC	VB5-MX400A	16075
	24 DC	VB5-MX24D	16076
	48 DC	VB5-MX48D	16077



	Rated voltage (V)	Type code	Order code
MV & MN Under voltage / Over voltage release	2 Phase 230 V	VB5-MV+MN230D	15499
	3 Phase 400 V	VB5-MV+MN400T	15500
	3 Phase 4 line 230 V	VB5-MV+MN230D	15501



## Padlock for MCBs and switches

Prevents unauthorised or dangerous operation of the operating lever. An adaptor makes it possible to block the operating lever when switched ON or OFF

Discription	Application	Type code	Order code
Red	VB510, 3SB5, 3SB52, 3SB1-63N	PL1	32959
	VBH510, 3SB1-125	PL2	32960



## Functions

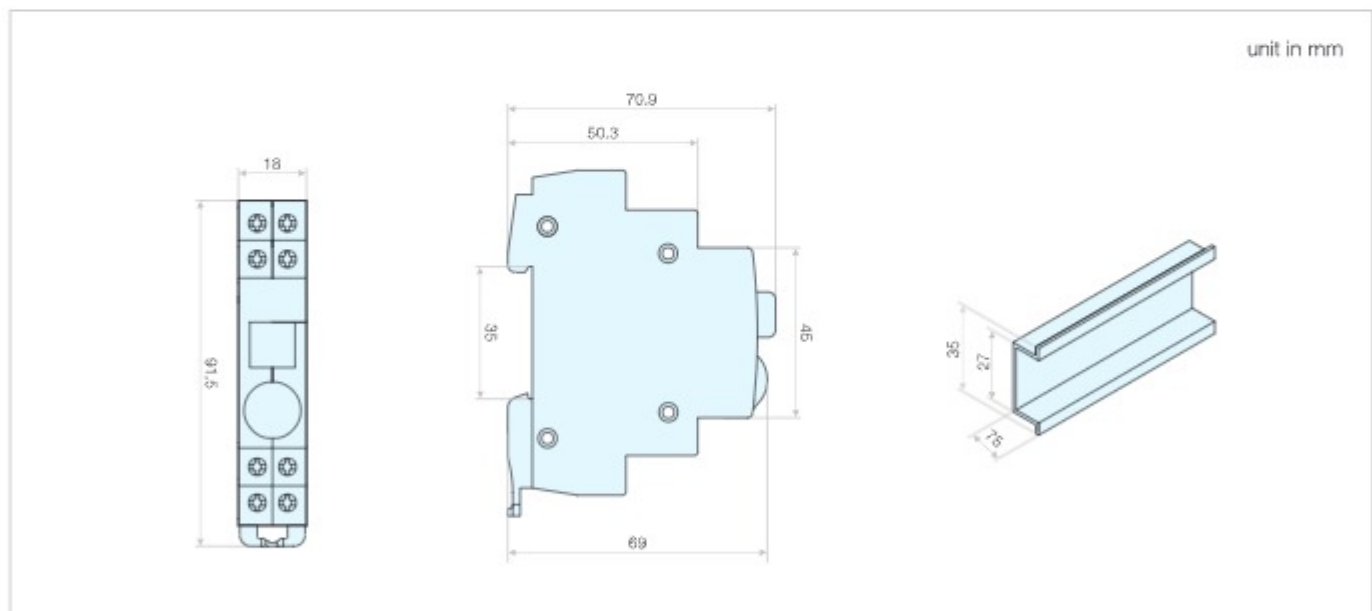
- The pushbuttons are used for remote control in every kind of electric installation.
- The indicator lamps signal any event in every kind of electric installation.
- 3SB71P, 3SB71D, 3SB71PD may match with MCB series 3SB71-63

## Technical specifications

- Standard: IEC 60947-5-1
- Rated voltage  $U_e$  (V): 230
- Rated current  $I_n$  (A): 6
- Conventional glowing current (A): 16
- Frequency (Hz): 50/60
- Modules (18mm): 1
- Utilization category: AC14, DC13
- Degree of protection: IP20, with connected conductors
- Conductor cross-sections
  - Solid and stranded (mm<sup>2</sup>): 1-10
  - Finely stranded with end sleeve (mm<sup>2</sup>): 1-4
- Terminal tightening torque (N·m): 0.5
- Ambient temperature (°C): -5 – +40, max. 95% humidity
- Storage temperature (°C): -40 – +75
- Connection capacity (mm<sup>2</sup>): 1-16



## Outline and installation dimensions



# Modular Pushbuttons and Indicators

## Series 3SB71P / 3SB71D / 3SB71PD

### Selection and ordering data

#### 3SB71P Pushbutton

Color	Pushbutton	Indicator	Voltage AC/DC (V)	1 NO + 2 NC		2 NO + 1 NC		2 NO + 2 NC		3 NO	
				Type code	Order code	Type code	Order code	Type code	Order code	Type code	Order code
Green		-	-	B71P G12	16185	B71P G21	16186	B71P G22	16187	B71P G30	16188
Red		-	-	B71P R12	16189	B71P R21	16190	B71P R22	16191	B71P R30	16192
Black		-	-	B71P H12	16193	B71P H21	16194	B71P H22	16195	B71P H30	16196
Yellow		-	-	B71P Y12	16197	B71P Y21	16198	B71P Y22	16199	B71P Y30	16200
Blue		-	-	B71P B12	16201	B71P B21	16202	B71P B22	16203	B71P B30	16204

#### 3SB71PD Pushbutton + Indicator

Color	Pushbutton	Indicator	Voltage AC/DC (V)	1 NO + 2 NC		2 NO + 1 NC		2 NO + 2 NC		3 NO	
				Type code	Order code	Type code	Order code	Type code	Order code	Type code	Order code
Green			12	B71PD G12V12	16205	B71PD G21V12	16206	-	-	B71PD G30V12	16207
Red			12	B71PD R12V12	16208	B71PD R21V12	16209	-	-	B71PD R30V12	16210
White			12	B71PD W12V12	16211	B71PD W21V12	16212	-	-	B71PD W30V12	16213
Yellow			12	B71PD Y12V12	16214	B71PD Y21V12	16215	-	-	B71PD Y30V12	16216
Blue			12	B71PD B12V12	16217	B71PD B21V12	16218	-	-	B71PD B30V12	16219
Green			24	B71PD G12V24	16220	B71PD G21V24	16221	-	-	B71PD G30V24	16222
Red			24	B71PD R12V24	16223	B71PD R21V24	16224	-	-	B71PD R30V24	16225
White			24	B71PD W12V24	16226	B71PD W21V24	16227	-	-	B71PD W30V24	16228
Yellow			24	B71PD Y12V24	16229	B71PD Y21V24	16230	-	-	B71PD Y30V24	16231
Blue			24	B71PD B12V24	16232	B71PD B21V24	16233	-	-	B71PD B30V24	16234
Green			110	B71PD G12V110	16235	B71PD G21V110	16236	-	-	B71PD G30V110	16237
Red			110	B71PD R12V110	16238	B71PD R21V110	16239	-	-	B71PD R30V110	16240
White			110	B71PD W12V110	16241	B71PD W21V110	16242	-	-	B71PD W30V110	16243
Yellow			110	B71PD Y12V110	16244	B71PD Y21V110	16245	-	-	B71PD Y30V110	16246
Blue			110	B71PD B12V110	16247	B71PD B21V110	16248	-	-	B71PD B30V110	16249
Green			230	B71PD G12V230	16250	B71PD G21V230	16251	-	-	B71PD G30V230	16252
Red			230	B71PD R12V230	16253	B71PD R21V230	16254	-	-	B71PD R30V230	16255
White			230	B71PD W12V230	16256	B71PD W21V230	16257	-	-	B71PD W30V230	16258
Yellow			230	B71PD Y12V230	16259	B71PD Y21V230	16260	-	-	B71PD Y30V230	16261
Blue			230	B71PD B12V230	16262	B71PD B21V230	16263	-	-	B71PD B30V230	16264

#### 3SB71D Indicator

Color	Pushbutton	Indicator	12 V AC/DC		24 V AC/DC		110 V AC/DC		230 V AC/DC	
			Type code	Order code	Type code	Order code	Type code	Order code	Type code	Order code
Green	-		B71D G12	16265	B71D G24	16266	B71D G110	16267	B71D G230	16268
Red	-		B71D R12	16269	B71D R24	16270	B71D R110	16271	B71D R230	16272
White	-		B71D W12	16273	B71D W24	16274	B71D W110	16275	B71D W230	16276
Yellow	-		B71D Y12	16277	B71D Y24	16278	B71D Y110	16279	B71D Y230	16280
Blue	-		B71D B12	16281	B71D B24	16282	B71D B110	16283	B71D B230	16284

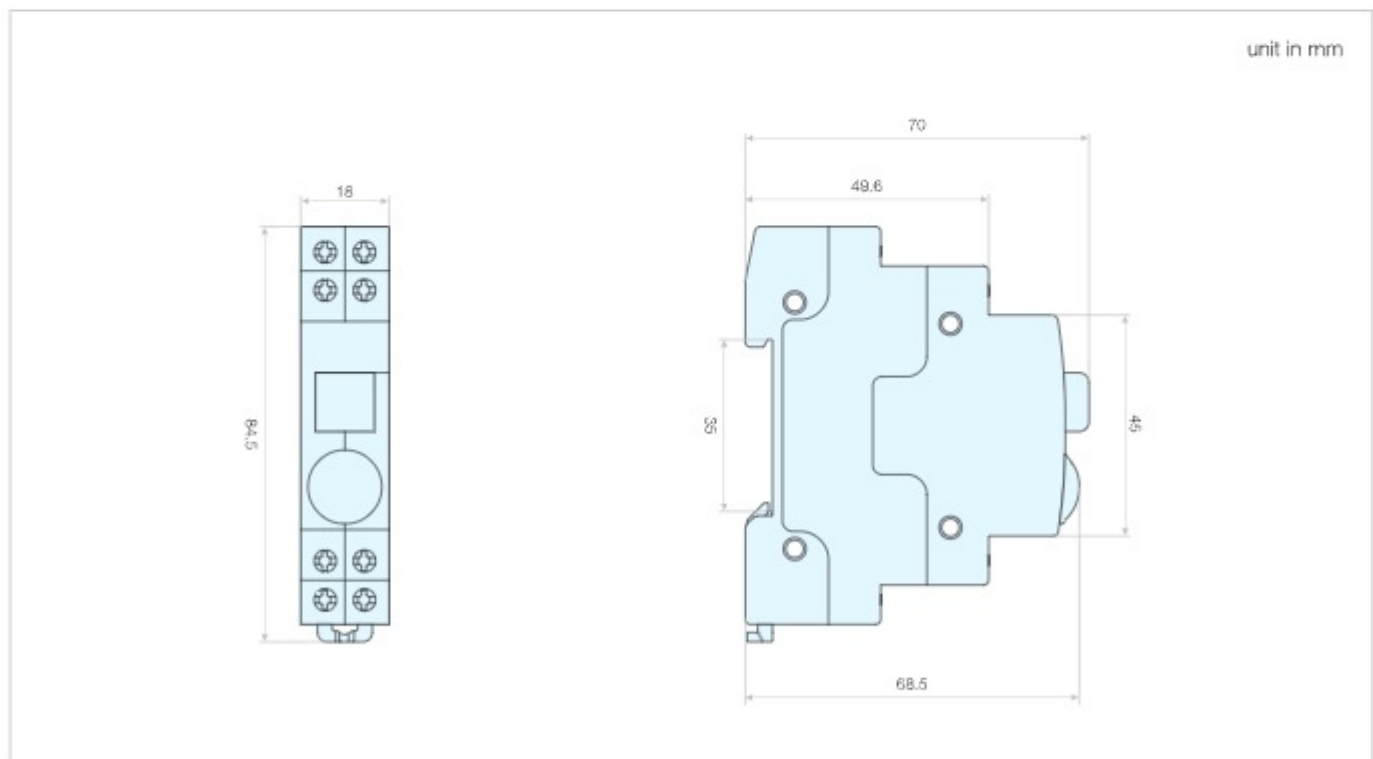
## Functions

- The pushbuttons are used for remote control in every kind of electric installation.
- The indicator lamps signal any event in every kind of electric installation.
- P6-E may match with MCB series 3SB6-63.

## Technical specifications

- Standard: IEC 60947-5-1
- Rated voltage  $U_e$  (V): 230
- Rated current  $I_n$  (A): 6
- Conventional glowing current (A): 16
- Frequency (Hz): 50/60
- Modules (18 mm): 1
- Utilization category: AC14, DC13
- Degree of protection: IP20, with connected conductors
- Conductor cross-sections
  - Solid and stranded (mm<sup>2</sup>): 1-10
  - Finely stranded with end sleeve (mm<sup>2</sup>): 1-4
- Terminal tightening torque (N·m): 0.5
- Ambient temperature (°C): -5 – +40, max. 95% humidity
- Storage temperature (°C): -40 – +75
- Connection Capacity (mm<sup>2</sup>): 1-16

## Outline and installation dimensions





## Selection and ordering data

### Pushbutton

Color	Type of contact	Type code
Green	1NO+2NC	P6-E1-G-12
	2NO+1NC	P6-E1-G-21
	2NO+2NC	P6-E1-G-22
	3NO	P6-E1-G-30
Red	1NO+2NC	P6-E1-R-12
	2NO+1NC	P6-E1-R-21
	2NO+2NC	P6-E1-R-22
	3NO	P6-E1-R-30
Yellow	1NO+2NC	P6-E1-Y-12
	2NO+1NC	P6-E1-Y-21
	2NO+2NC	P6-E1-Y-22
	3NO	P6-E1-Y-30
Blue	1NO+2NC	P6-E1-B-12
	2NO+1NC	P6-E1-B-21
	2NO+2NC	P6-E1-B-22
	3NO	P6-E1-B-30
Black	1NO+2NC	P6-E1-H-12
	2NO+1NC	P6-E1-H-21
	2NO+2NC	P6-E1-H-22
	3NO	P6-E1-H-30

### Indicator

Color	Voltage AC/DC (V)	Type code
Green	12	P6-E21-G-12
	24	P6-E21-G-24
	110	P6-E21-G-110
	230	P6-E21-G-230
Red	12	P6-E21-R-12
	24	P6-E21-R-24
	110	P6-E21-R-110
	230	P6-E21-R-230
White	12	P6-E21-W-12
	24	P6-E21-W-24
	110	P6-E21-W-110
	230	P6-E21-W-230
Yellow	12	P6-E21-Y-12
	24	P6-E21-Y-24
	110	P6-E21-Y-110
	230	P6-E21-Y-230
Blue	12	P6-E21-B-12
	24	P6-E21-B-24
	110	P6-E21-B-110
	230	P6-E21-B-230
Green + Red	12	P6-E22-GR-12
	24	P6-E22-GR-24
	110	P6-E22-GR-110
	230	P6-E22-GR-230

### Pushbutton and indicator

Color	Voltage AC/DC (V)	Type of contact	Type code
Green	12	1NO+2NC	P6-E3-G-11-12
		2NO+1NC	P6-E3-G-22-12
		3NO	P6-E3-G-30-12
	24	1NO+2NC	P6-E3-G-11-24
		2NO+1NC	P6-E3-G-22-24
		3NO	P6-E3-G-30-24
	110	1NO+2NC	P6-E3-G-11-110
		2NO+1NC	P6-E3-G-22-110
		3NO	P6-E3-G-30-110
	230	1NO+2NC	P6-E3-G-11-230
		2NO+1NC	P6-E3-G-22-230
		3NO	P6-E3-G-30-230
Red	12	1NO+2NC	P6-E3-R-11-12
		2NO+1NC	P6-E3-R-22-12
		3NO	P6-E3-R-30-12
	24	1NO+2NC	P6-E3-R-11-24
		2NO+1NC	P6-E3-R-22-24
		3NO	P6-E3-R-30-24
	110	1NO+2NC	P6-E3-R-11-110
		2NO+1NC	P6-E3-R-22-110
		3NO	P6-E3-R-30-110
	230	1NO+2NC	P6-E3-R-11-230
		2NO+1NC	P6-E3-R-22-230
		3NO	P6-E3-R-30-230
White	12	1NO+2NC	P6-E3-W-11-12
		2NO+1NC	P6-E3-W-22-12
		3NO	P6-E3-W-30-12
	24	1NO+2NC	P6-E3-W-11-24
		2NO+1NC	P6-E3-W-22-24
		3NO	P6-E3-W-30-24
	110	1NO+2NC	P6-E3-W-11-110
		2NO+1NC	P6-E3-W-22-110
		3NO	P6-E3-W-30-110
	230	1NO+2NC	P6-E3-W-11-230
		2NO+1NC	P6-E3-W-22-230
		3NO	P6-E3-W-30-230
Yellow	12	1NO+2NC	P6-E3-Y-11-12
		2NO+1NC	P6-E3-Y-22-12
		3NO	P6-E3-Y-30-12
	24	1NO+2NC	P6-E3-Y-11-24
		2NO+1NC	P6-E3-Y-22-24
		3NO	P6-E3-Y-30-24
	110	1NO+2NC	P6-E3-Y-11-110
		2NO+1NC	P6-E3-Y-22-110
		3NO	P6-E3-Y-30-110
	230	1NO+2NC	P6-E3-Y-11-230
		2NO+1NC	P6-E3-Y-22-230
		3NO	P6-E3-Y-30-230
Blue	12	1NO+2NC	P6-E3-B-11-12
		2NO+1NC	P6-E3-B-22-12
		3NO	P6-E3-B-30-12
	24	1NO+2NC	P6-E3-B-11-24
		2NO+1NC	P6-E3-B-22-24
		3NO	P6-E3-B-30-24
	110	1NO+2NC	P6-E3-B-11-110
		2NO+1NC	P6-E3-B-22-110
		3NO	P6-E3-B-30-110
	230	1NO+2NC	P6-E3-B-11-230
		2NO+1NC	P6-E3-B-22-230
		3NO	P6-E3-B-30-230

## Functions

- Remote switching and controlling of power circuits
- Used in building automation, controlling of small pumps, ventilations, heating systems, lighting systems, and so on

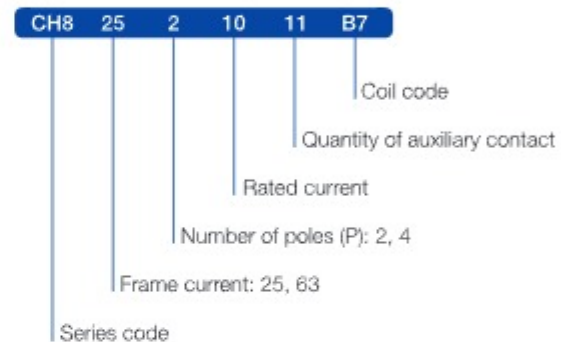
## Technical specifications

Type	3SCH8-25	3SCH8-63
Standard	IEC 6097-4-1	IEC 60947-4-1
Number of poles (P)	2, 4	
Type of current	AC	
Frequency (Hz)	50/60	
Rated voltage Un (V)	230/400	
Rated current In in AC-7a / AC1 (A)	10, 16, 20, 25	25, 32, 40, 63
Rated current In in AC-7b / AC1 (A)	4, 5.5, 7, 8.5	8.5, 12, 16, 25
Rated power in AC3 (Kw)		
230 V	2-5	5-13
400 V	6-13	15-40
Control circuit voltage (V)	24, 230	
Mechanical life (times)	300,000	
Electrical life (times)		
AC-7a / AC1	10,000	80,000
AC-7b / AC1	50,000	40,000
Degree of protection	IP20, with connected conductors	
Conductor cross-sections		
Solid and stranded (mm <sup>2</sup> )	2-25	
Finely stranded with end sleeve (mm <sup>2</sup> )	2-25	
Terminals		
Terminal tightening torque (N-m)	0.8-2.4	
Ambient temperature (°C)	-5 ~ +40, max. 95 % humidity	
Storage temperature (°C)	-40 ~ +75	
Connection capacity (mm <sup>2</sup> )	1-25	



2

## Instruction of type code



# Modular Contactors Series 3SCH8



## Selection and ordering data

2

Number of poles	Width 18 mm mods	Rated current I <sub>n</sub>		Contact position	Control voltage (V AC)	Rated control Power in		Type code	Order code
		AC-7a AC (A)	AC-7b AC (A)			AC-7a /230 V (kW)	AC-7b /230 V (kW)		
2	1	10	4	1NO+1NC	24	2	0.75	CH825 210 11B7	25896
		10	4	2NO	24	2	0.75	CH825 210 20B7	25897
		16	5.5	1NO+1NC	24	3.2	1.0	CH825 216 11B7	25898
		16	5.5	2NO	24	3.2	1.0	CH825 216 20B7	25899
		20	7	1NO+1NC	24	4	1.2	CH825 220 11B7	25900
		20	7	2NO	24	4	1.2	CH825 220 20B7	25901
	1	25	8.5	1NO+1NC	24	5	1.4	CH825 225 11B7	25902
		25	8.5	2NO	24	5	1.4	CH825 225 20B7	25903
		10	4	1NO+1NC	230	2	0.75	CH825 210 11P7	26156
		10	4	2NO	230	2	0.75	CH825 210 20P7	26157
		16	5.5	1NO+1NC	230	3.2	1.0	CH825 216 11P7	26158
		16	5.5	2NO	230	3.2	1.0	CH825 216 20P7	26159
		20	7	1NO+1NC	230	4	1.2	CH825 220 11P7	26160
		20	7	2NO	230	4	1.2	CH825 220 20P7	26161
4	2	10	4	2NO+2NC	24	6.2	2.2	CH825 410 22B7	25904
		10	4	3NO+1NC	24	6.2	2.2	CH825 410 31B7	25905
		10	4	4NO	24	6.2	2.2	CH825 410 40B7	25906
		10	4	4NC	24	6.2	2.2	CH825 410 04B7	25907
		16	5.5	2NO+2NC	24	10	3	CH825 416 22B7	25908
		16	5.5	3NO+1NC	24	10	3	CH825 416 31B7	25909
		16	5.5	4NO	24	10	3	CH825 416 40B7	25910
		16	5.5	4NC	24	10	3	CH825 416 04B7	25911
		20	7	2NO+2NC	24	13	3.5	CH825 420 22B7	25912
		20	7	3NO+1NC	24	13	3.5	CH825 420 31B7	25913
	2	20	7	4NO	24	13	3.5	CH825 420 40B7	25914
		20	7	4NC	24	13	3.5	CH825 420 04B7	25915
		25	8.5	2NO+2NC	24	15	4	CH825 425 22B7	25916
		25	8.5	3NO+1NC	24	15	4	CH825 425 31B7	25917
		25	8.5	4NO	24	15	4	CH825 425 40B7	25918
		25	8.5	4NC	24	15	4	CH825 425 04B7	25919
		10	4	2NO+2NC	230	6.2	2.2	CH825 410 22P7	26164
		10	4	3NO+1NC	230	6.2	2.2	CH825 410 31P7	26165
		10	4	4NO	230	6.2	2.2	CH825 410 40P7	26166
		10	4	4NC	230	6.2	2.2	CH825 410 04P7	26167
		16	5.5	2NO+2NC	230	10	3	CH825 416 22P7	26168
		16	5.5	3NO+1NC	230	10	3	CH825 416 31P7	26169
		16	5.5	4NO	230	10	3	CH825 416 40P7	26170
		16	5.5	4NC	230	10	3	CH825 416 04P7	26171
		2	20	7	2NO+2NC	230	13	3.5	CH825 420 22P7
20	7		3NO+1NC	230	13	3.5	CH825 420 31P7	26173	
20	7		4NO	230	13	3.5	CH825 420 40P7	26174	
20	7		4NC	230	13	3.5	CH825 420 04P7	26175	
25	8.5		2NO+2NC	230	15	4	CH825 425 22P7	26176	
25	8.5		3NO+1NC	230	15	4	CH825 425 31P7	26177	
25	8.5		4NO	230	15	4	CH825 425 40P7	26178	
25	8.5		4NC	230	15	4	CH825 425 04P7	26179	

(1) Please contact us if any other coil voltage required

## Selection and ordering data

Number of poles	Width 18 mm mods	Rated current In		Contact position	Control voltage (V AC)	Rated control Power in		Type code	Order code		
		AC-7a AC (A)	AC-7b AC			AC-7a /230 V (kW)	AC-7b /230 V				
2	2	25	8.5	1NO+1NC	24	5	1.4	CH863 225 11B7	25920		
				2NO	24	5	1.4	CH863 225 20B7	25921		
				2NC	24	5	1.4	CH863 225 02B7	25922		
				1NO+1NC	24	6.5	2	CH863 232 11B7	25923		
				2NO	24	6.5	2	CH863 232 20B7	25924		
				2NC	24	6.5	2	CH863 232 02B7	25925		
		40	15	1NO+1NC	24	8.5	2.5	CH863 240 11B7	25926		
				2NO	24	8.5	2.5	CH863 240 20B7	25927		
				2NC	24	8.5	2.5	CH863 240 02B7	25928		
				1NO+1NC	24	13	4	CH863 263 11B7	25929		
				2NO	24	13	4	CH863 263 20B7	25930		
				2NC	24	13	4	CH863 263 02B7	25931		
	2	2	25	8.5	1NO+1NC	230	5	1.4	CH863 225 11P7	26180	
					2NO	230	5	1.4	CH863 225 20P7	26181	
					2NC	230	5	1.4	CH863 225 02P7	26182	
					1NO+1NC	230	6.5	2	CH863 232 11P7	26183	
					2NO	230	6.5	2	CH863 232 20P7	26184	
					2NC	230	6.5	2	CH863 232 02P7	26185	
			40	15	1NO+1NC	230	8.5	2.5	CH863 240 11P7	26186	
					2NO	230	8.5	2.5	CH863 240 20P7	26187	
					2NC	230	8.5	2.5	CH863 240 02P7	26188	
					1NO+1NC	230	13	4	CH863 263 11P7	26189	
					2NO	230	13	4	CH863 263 20P7	26190	
					2NC	230	13	4	CH863 263 02P7	26191	
4	3	25	8.5	2NO+2NC	24	15	4	CH863 425 22B7	25932		
				3NO+1NC	24	15	4	CH863 425 31B7	25933		
				4NO	24	15	4	CH863 425 40B7	25934		
				4NC	24	15	4	CH863 425 04B7	25935		
				2NO+2NC	24	21	6.5	CH863 432 22B7	25936		
				3NO+1NC	24	21	6.5	CH863 432 31B7	25937		
		32	12	4NO	24	21	6.5	CH863 432 40B7	25938		
				4NC	24	21	6.5	CH863 432 04B7	25939		
				2NO+2NC	24	26	7.5	CH863 440 22B7	25940		
				3NO+1NC	24	26	7.5	CH863 440 31B7	25941		
				4NO	24	26	7.5	CH863 440 40B7	25942		
				4NC	24	26	7.5	CH863 440 04B7	25943		
		63	25	2NO+2NC	24	40	13	CH863 463 22B7	25944		
				3NO+1NC	24	40	13	CH863 463 31B7	25945		
				4NO	24	40	13	CH863 463 40B7	25946		
				4NC	24	40	13	CH863 463 04B7	25947		
				2NO+2NC	230	15	4	CH863 425 22P7	26192		
				3NO+1NC	230	15	4	CH863 425 31P7	26193		
	3	25	8.5	4NO	230	15	4	CH863 425 40P7	26194		
				4NC	230	15	4	CH863 425 04P7	26195		
				2NO+2NC	230	21	6.5	CH863 432 22P7	26196		
				3NO+1NC	230	21	6.5	CH863 432 31P7	26197		
				4NO	230	21	6.5	CH863 432 40P7	26198		
				4NC	230	21	6.5	CH863 432 04P7	26199		
		3	3	40	15	2NO+2NC	230	26	7.5	CH863 440 22P7	26200
						3NO+1NC	230	26	7.5	CH863 440 31P7	26201
						4NO	230	26	7.5	CH863 440 40P7	26202
						4NC	230	26	7.5	CH863 440 04P7	26203
						2NO+2NC	230	40	13	CH863 463 22P7	26204
						3NO+1NC	230	40	13	CH863 463 31P7	26205
				63	25	4NO	230	40	13	CH863 463 40P7	26206
						4NC	230	40	13	CH863 463 04P7	26207

(1) Please contact us if any other coil voltage required

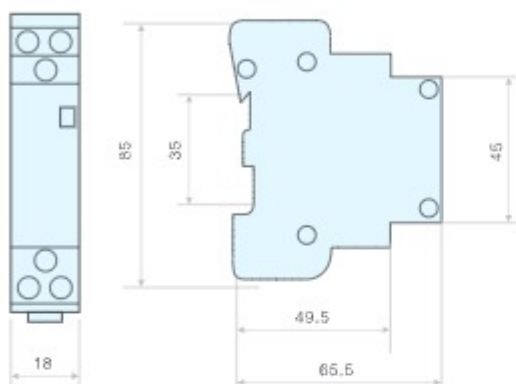
# Modular Contactors Series 3SCH8

## Outline and installation dimensions

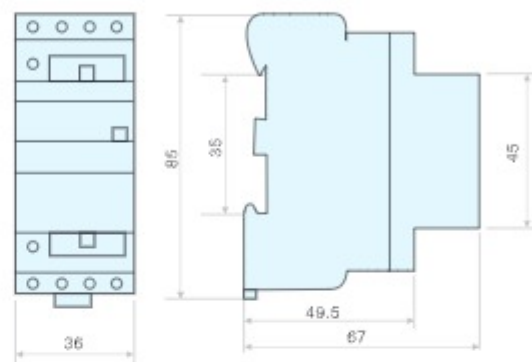
2

unit in mm

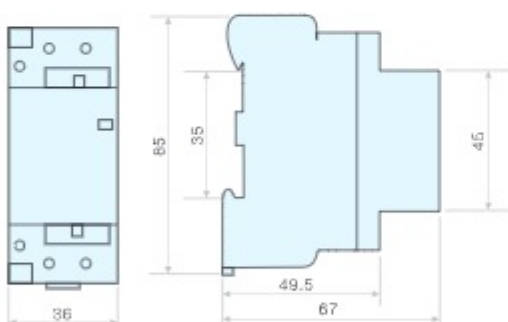
3SCH8-25 2P



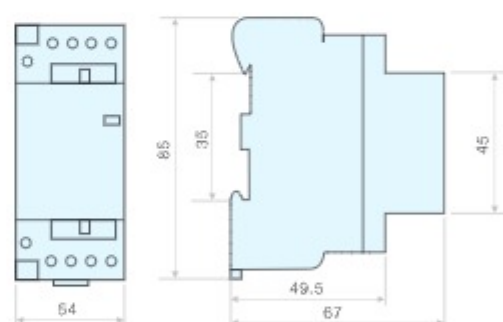
3SCH8-25 4P



3SCH8-63 2P



3SCH8-63 4P




### Functions

- Widely used in terminal distribution system
- Being complete series of terminal distribution system together with series 3SB71

### Technical specifications

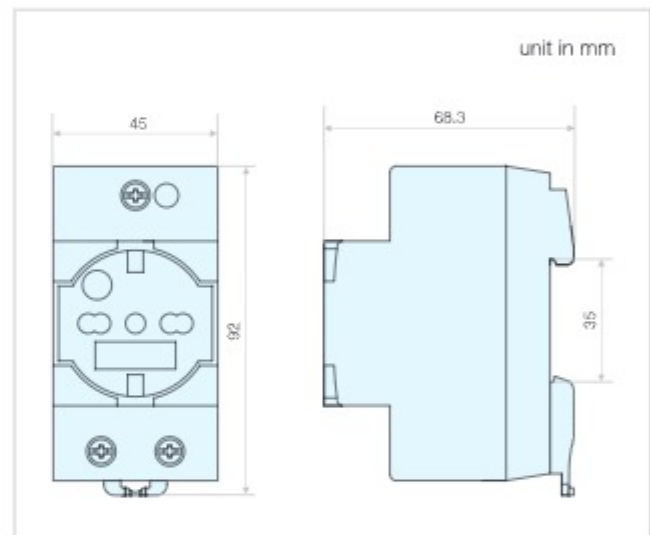
- Standard: IEC 60884-1
- Rated current (A): 16
- Modules: 2.5
- Rated voltage  $U_e$  (V): 230/400
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 0.75-35

### Selection and ordering data

	Number of poles (P)	Rated current I <sub>n</sub> (A)	Type code	Order code
		2+E	16	MS71



### Outline and installation dimensions



# Modular Time Switches

## Series 3SE8, 3SUL181H, 3SRC18, 3SHC18A

### Functions

- Controlling circuit opening and closing according to the scheduled program.
- Can be set on the scheduled program
- Available on hourly, daily and weekly version and equipped with a 16 A contact
- Fitting applications such as shop lighting systems, public buildings, schools, heating and irrigation systems and so forth.



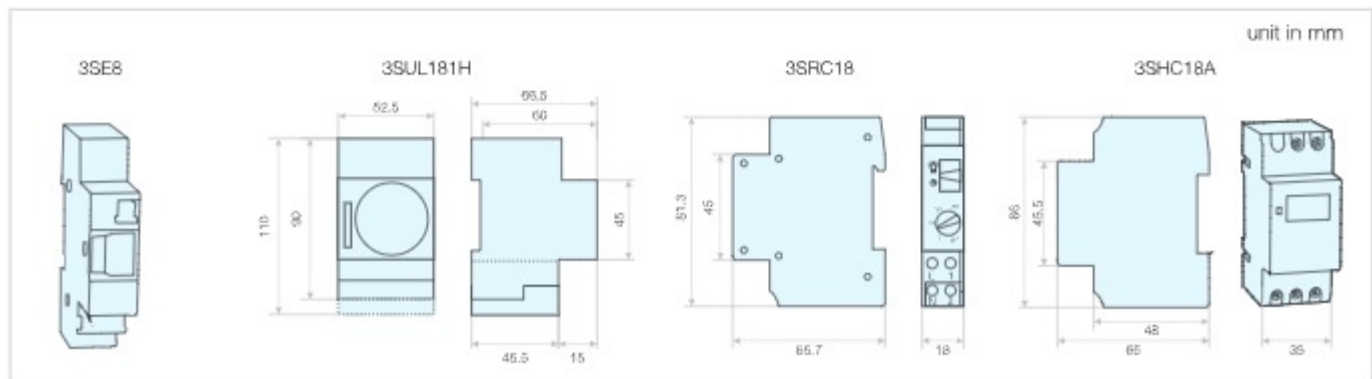
### Technical specifications

Type	3SE8	3SUL181H	3SRC18	3SHC18A
Standard	IEC 60730-1			
Rated supply voltage (V)	AC 220-240			
Contact type	-	-	-	1NC OR 1NO
Switching capacity resistive load (A)	16	16	16	16
inductive load (A)	4			
Rated frequency (Hz)	50/60			
Full time range	7 minutes	24 minutes	20 minutes	24 hours or one week
Minimum setting unit	0.5 minutes	30 minutes	0.5 minutes	-
Electrical life (times)	10 <sup>7</sup> times	10 <sup>7</sup> times	10 <sup>7</sup> times	10 <sup>7</sup> times
Mechanical life (times)	10 <sup>7</sup> times	10 <sup>7</sup> times	10 <sup>7</sup> times	10 <sup>7</sup> times
Modules (18 mm)	1	3	1	2
Operating temperature (°C)	-5 – +40, max. 95 % humidity			
Storage temperature (°C)	-40 – +75			
Mounting	ON DIN RAIL			
Terminal size for cable (mm <sup>2</sup> )	2.5			

### Selection and ordering data

	Rated current in (A)	Full time range	Type code	Order code
3SE8	16	7 minutes	E8	24776
3SUL181H	16	24 hours	SUL181H	13684
3SRC18	16	20 minutes	ALC18	24780
3SHC18A	16	24 hours or one week	HC18A	24777

### Outline and installation dimensions



## Functions

- Types 2 surge arresters
- Handling energy from distant/ indirect lightning strikes or from switching operations
- Feature lower protection level (Up)
- Recommended at the incoming of installation for locations with no exposure to direct lightning impulses

## Technical specifications

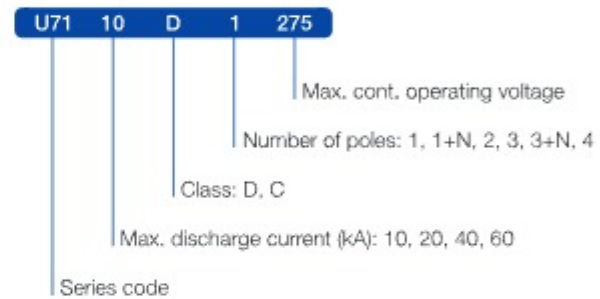
- Standard: IEC 61643-1
- Type / test class: 2 / II
- Number of poles: 1P, 1P+N, 2P, 3P, 3P+N, 4P
- Type of current: AC
- Frequency (Hz): 50/60
- Rated voltage  $U_n$  (V): 230/400
- Max. Cont. operating voltage  $U_c$  (V): 140, 275, 320, 385, 420
- Max. discharge current  $I_{max}$  (8/20) per pole (kA): 10, 20, 40, 60
- Norminal discharge current  $I_n$  (8/20) per pole (kA): 5, 10, 15, 20
- Voltage protection level  $U_p$  (kV): 1.0, 1.2, 1.2, 1.5
- $T_{ov}$  (Temporary overvoltage) withstand  $U_T$  (5 s.) (V): 440
- Continuous operating current  $I_c$  (mA): < 1
- Degree of protection: IP20, with connected conductors
- Pluggable cartridge: Yes
- State indicator: Yes
- Integrated auxiliary contact: Yes
- Conductor cross-sections
  - Solid and stranded (mm<sup>2</sup>): 2-35
  - Finely stranded with end sleeve (mm<sup>2</sup>): 2-25
- Terminals
  - Terminal tightening torque (N·m): 2.8
- Ambient temperature (°C): -5 ~ +40, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Connection Capacity (mm<sup>2</sup>): 1-25

## Technical specification of the integrated remote signal contact

- Contact complement: 1 NO +1 NC
- Min. load: 24 V DC - 10 mA
- Max. load: 240 V AC - 1 A



## Instruction of type code





# Surge Protective Devices Series 3SU71



## Selection and ordering data

2

Test classification	Max. Cont. operating voltage $U_c$ (V)	Remote signal contact	Number of poles	Max. discharge current $I_{max}$ (8/20) per pole (kA)	Nominal discharge current $I_n$ (8/20) per pole (kA)	Type code	Order code
T2	140	with	1P	10	5	U71C T210 1/140	34823
			2P	10	5	U71C T210 2/140	34828
			3P	10	5	U71C T210 3/140	34833
			4P	10	5	U71C T210 4/140	34838
			1P+N	10	5	U71C T210 1N/140	38093
			3P+N	10	5	U71C T210 3N/140	38098
	275	with	1P	10	5	U71C T210 1/275	34824
				20	10	U71C T220 1/275	34843
				40	20	U71C T240 1/275	34859
				60	30	U71C T260 1/275	34875
			1P+N	10	5	U71C T210 1N/275	38094
				20	10	U71C T220 1N/275	38103
				40	20	U71C T240 1N/275	38111
				60	30	U71C T260 1N/275	38119
			2P	10	5	U71C T210 2/275	34829
				20	10	U71C T220 2/275	34847
				40	20	U71C T240 2/275	34863
				60	30	U71C T260 2/275	34879
3P	10	5	U71C T210 3/275	34834			
	20	10	U71C T220 3/275	34851			
	40	20	U71C T240 3/275	34867			
	60	30	U71C T260 3/275	34883			
3P+N	10	5	U71C T210 3N/275	38099			
	20	10	U71C T220 3N/275	38107			
	40	20	U71C T240 3N/275	38115			
	60	30	U71C T260 3N/275	38123			
320	with	1P	10	5	U71C T210 1/320	34825	
			20	10	U71C T220 1/320	34844	
			40	20	U71C T240 1/320	34860	
			60	30	U71C T260 1/320	34876	
		1P+N	10	5	U71C T210 1N/320	38095	
			20	10	U71C T220 1N/320	38104	
			40	20	U71C T240 1N/320	38112	
			60	30	U71C T260 1N/320	38120	
		2P	10	5	U71C T210 2/320	34830	
			20	10	U71C T220 2/320	34848	
			40	20	U71C T240 2/320	34864	
			60	30	U71C T260 2/320	34880	
3P	10	5	U71C T210 3/320	34835			
	20	10	U71C T220 3/320	34852			
	40	20	U71C T240 3/320	34868			
	60	30	U71C T260 3/320	34884			
3P+N	10	5	U71C T210 3N/320	38100			
	20	10	U71C T220 3N/320	38108			
	40	20	U71C T240 3N/320	38116			
	60	30	U71C T260 3N/320	38124			
4P	10	5	U71C T210 4/320	34840			
	20	10	U71C T220 4/320	34856			
	40	20	U71C T240 4/320	34872			
	60	30	U71C T260 4/320	34888			



## Selection and ordering data

Test classification	Max. Cont. operating voltage U <sub>c</sub> (V)	Remote signal contact	Number of poles	Max. discharge current I <sub>max</sub> (8/20) per pole (kA)	Nominal discharge current I <sub>n</sub> (8/20) per pole (kA)	Type code	Order code
T2	385	with	1P	10	5	U71C T210 1/385	34826
				20	10	U71C T220 1/385	34845
				40	20	U71C T240 1/385	34861
				60	30	U71C T260 1/385	34877
			1P+N	10	5	U71C T210 1N/385	38096
				20	10	U71C T220 1N/385	38105
				40	20	U71C T240 1N/385	38113
				60	30	U71C T260 1N/385	38121
			2P	10	5	U71C T210 2/385	34831
				20	10	U71C T220 2/385	34849
				40	20	U71C T240 2/385	34865
				60	30	U71C T260 2/385	34881
			3P	10	5	U71C T210 3/385	34836
				20	10	U71C T220 3/385	34853
				40	20	U71C T240 3/385	34869
				60	30	U71C T260 3/385	34885
			3P+N	10	5	U71C T210 3N/385	38101
				20	10	U71C T220 3N/385	38109
				40	20	U71C T240 3N/385	38117
				60	30	U71C T260 3N/385	38125
			4P	10	5	U71C T210 4/385	34841
				20	10	U71C T220 4/385	34857
				40	20	U71C T240 4/385	34873
				60	30	U71C T260 4/385	34889
420	with	1P	10	5	U71C T210 1/420	34827	
			20	10	U71C T220 1/420	34846	
			40	20	U71C T240 1/420	34862	
			60	30	U71C T260 1/420	34878	
		1P+N	10	5	U71C T210 1N/420	38097	
			20	10	U71C T220 1N/420	38106	
			40	20	U71C T240 1N/420	38114	
			60	30	U71C T260 1N/420	38122	
		2P	10	5	U71C T210 2/420	34832	
			20	10	U71C T220 2/420	34850	
			40	20	U71C T240 2/420	34866	
			60	30	U71C T260 2/420	34882	
		3P	10	5	U71C T210 3/420	34837	
			20	10	U71C T220 3/420	34854	
			40	20	U71C T240 3/420	34870	
			60	30	U71C T260 3/420	34886	
		3P+N	10	5	U71C T210 3N/420	38102	
			20	10	U71C T220 3N/420	38110	
			40	20	U71C T240 3N/420	38118	
			60	30	U71C T260 3N/420	38126	
		4P	10	5	U71C T210 4/420	34842	
			20	10	U71C T220 4/420	34858	
			40	20	U71C T240 4/420	34874	
			60	30	U71C T260 4/420	34890	

## Functions

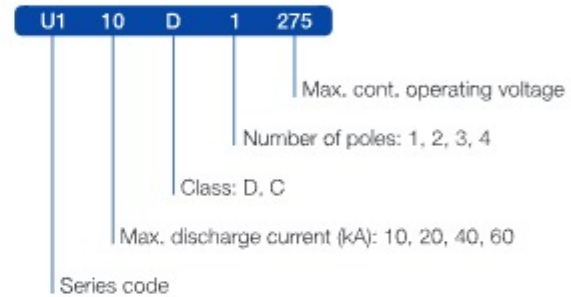
- Types 2 surge arresters
- Handling energy from distant / indirect lightning strikes or from switching operations
- Feature lower protection level (Up)
- Recommended at the incoming of installation for locations with no exposure to direct lightning impulses
- 3SU1 DC provide protection for equipment on photovoltaic connected system, against transient overvoltages that occur on the electrical network



## Technical specifications

- Standard: IEC 61643-1
- Type / test class: 2 / II
- Number of poles: 1P, 1P+N, 2P, 2P+N, 3P, 3P+N, 4P
- Type of current: AC
- Frequency (Hz): 50/60
- Rated voltage  $U_n$  (V): 230/400
- Max. Cont. operating voltage  $U_c$  (V): 400
- Max. discharge current  $I_{max}$  (8/20) per pole (kA): 10, 20, 40, 60
- Nominal discharge current  $I_n$  (8/20) per pole (kA): 5, 10, 15, 20
- Voltage protection level  $U_p$  (kV): 1.0, 1.2, 1.2, 1.5
- $T_{ov}$  (Temporary overvoltage) withstand  $U_T$  (5 s.) (V): 440
- Continuous operating current  $I_c$  (mA): <1
- Degree of protection: P20, with connected conductors
- Pluggable cartridge: Yes
- State indicator: Yes
- Integrated auxiliary contact: Yes
- Conductor cross-sections
- Solid and stranded (mm<sup>2</sup>): 2-35
- Finely stranded with end sleeve (mm<sup>2</sup>): 2-25
- Terminal tightening torque (N · m): 2.8
- Ambient temperature (°C): -5 – +40, max. 95 % humidity
- Storage temperature (°C): -40 – +75
- Connection Capacity (mm<sup>2</sup>): 1-25

## Instruction of type code



## Technical specification of the integrated auxiliary contact

- Contact complement: 1 NO +1 NC
- Min. load: 24 V DC - 10 mA
- Max. load: 240 V AC - 1 A

## Selection and ordering data

	Auxiliary contact	Number of poles	Max. Cont. operating voltage U <sub>c</sub> (V)	Max. discharge current I <sub>max</sub> (8/20) per pole (kA)	Nominal discharge current I <sub>n</sub> (8/20) per pole (kA)	Voltage protection level U <sub>p</sub> (kV)	Type code	Order code
	without	1P	275	10	5	1	U1 10D1/275	29039
				20	10	1.2	U1 20D1/275	29053
				40	20	1.2	U1 40C1/275	29067
				60	30	1.5	U1 60C1/275	29074
	without	1P+N	275	10	5	1	U1 10D1N/275	29043
				20	10	1.2	U1 20D1N/275	29057
				40	20	1.2	U1 40C1N/275	29071
				60	30	1.5	U1 60C1N/275	29078
	with	1P	275	10	5	1	U1C 10D1/275	32683
				20	10	1.2	U1C 20D1/275	32687
				40	20	1.2	U1C 40C1/275	32691
				60	30	1.5	U1C 60C1/275	32695
	without	2P	275	10	5	1	U1 10D2/275	29040
				20	10	1.2	U1 20D2/275	29054
				40	20	1.2	U1 40C2/275	29068
				60	30	1.5	U1 60C2/275	29075
	with	2P	275	10	5	1	U1C 10D2/275	32684
				20	10	1.2	U1C 20D2/275	32688
				40	20	1.2	U1C 40C2/275	32692
				60	30	1.5	U1C 60C2/275	32696
	without	3P	275	10	5	1	U1 10D3/275	29041
				20	10	1.2	U1 20D3/275	29055
				40	20	1.2	U1 40C3/275	29069
				60	30	1.5	U1 60C3/275	29076
	without	3P+N	275	10	5	1	U1 10D3N/275	29045
				20	10	1.2	U1 20D3N/275	29059
				40	20	1.2	U1 40C3N/275	29073
				60	30	1.5	U1 60C3N/275	29080
	with	3P	275	10	5	1	U1C 10D3/275	32685
				20	10	1.2	U1C 20D3/275	32689
				40	20	1.2	U1C 40C3/275	32693
				60	30	1.5	U1C 60C3/275	32697
	without	4P	275	10	5	1	U1 10D4/275	29042
				20	10	1.2	U1 20D4/275	29056
				40	20	1.2	U1 40C4/275	29070
				60	30	1.5	U1 60C4/275	29077
	with	4P	275	10	5	1	U1C 10D4/275	32686
				20	10	1.2	U1C 20D4/275	32690
				40	20	1.2	U1C 40C4/275	32694
				60	30	1.5	U1C 60C4/275	32698

# Surge Protective Devices Series 3SU1



## Selection and ordering data

2

Image	Auxiliary contact	Number of poles	Max. Cont. operating voltage U <sub>c</sub> (V)	Max. discharge current I <sub>max</sub> (8/20) per pole (kA)	Nominal discharge current I <sub>n</sub> (8/20) per pole (kA)	Voltage protection level U <sub>p</sub> (kV)	Type code	Order code
	without	1P	400	10	5	1	U1 10D1/400	29312
				20	10	1.2	U1 20D1/400	29326
				40	20	1.2	U1 40C1/400	29340
				60	30	1.5	U1 60C1/400	29347
	without	1P+N	400	10	5	1	U1 10D1N/400	29316
				20	10	1.2	U1 20D1N/400	29330
				40	20	1.2	U1 40C1N/400	29344
				60	30	1.5	U1 60C1N/400	29351
	with	1P	400	10	5	1	U1C 10D1/400	32699
				20	10	1.2	U1C 20D1/400	32703
				40	20	1.2	U1C 40C1/400	32707
				60	30	1.5	U1C 60C1/400	32711
	without	2P	400	10	5	1	U1 10D2/400	29313
				20	10	1.2	U1 20D2/400	29327
				40	20	1.2	U1 40C2/400	29341
				60	30	1.5	U1 60C2/400	29348
	with	2P	400	10	5	1	U1C 10D2/400	32700
				20	10	1.2	U1C 20D2/400	32704
				40	20	1.2	U1C 40C2/400	32708
				60	30	1.5	U1C 60C2/400	32712
	without	3P	400	10	5	1	U1 10D3/400	29314
				20	10	1.2	U1 20D3/400	29328
				40	20	1.2	U1 40C3/400	29342
				60	30	1.5	U1 60C3/400	29349
	without	3P+N	400	10	5	1	U1 10D3N/400	29318
				20	10	1.2	U1 20D3N/400	29332
				40	20	1.2	U1 40C3N/400	29346
				60	30	1.5	U1 60C3N/400	29353
	with	3P	400	10	5	1	U1C 10D3/400	32701
				20	10	1.2	U1C 20D3/400	32705
				40	20	1.2	U1C 40C3/400	32709
				60	30	1.5	U1C 60C3/400	32713
	without	4P	400	10	5	1	U1 10D4/400	29315
				20	10	1.2	U1 20D4/400	29329
				40	20	1.2	U1 40C4/400	29343
				60	30	1.5	U1 60C4/400	29350
	with	4P	400	10	5	1	U1C 10D4/400	32702
				20	10	1.2	U1C 20D4/400	32706
				40	20	1.2	U1C 40C4/400	32710
				60	30	1.5	U1C 60C4/400	32714

## Selection and ordering data

### Replacement cartridges for surge protective devices type 2

	Number of poles	Max. Cont. operating voltage U <sub>c</sub> (V)	Max. discharge current I <sub>max</sub> (8/20) per pole (kA)	Nominal discharge current I <sub>n</sub> (8/20) per pole (kA)	Voltage protection level U <sub>p</sub> (kV)	Type code	Order code	
 	1P	275	10	5	1	U1RP 27510	32962	
			20	10	1.2	U1RP 27520	32963	
			40	20	1.2	U1RP 27540	32964	
			60	30	1.5	U1RP 27560	32965	
	320			10	5	1	U1RP 32010	32966
				20	10	1.2	U1RP 32020	32967
				40	20	1.2	U1RP 32040	32968
				60	30	1.5	U1RP 32060	32969
	385			10	5	1	U1RP 38510	32970
				20	10	1.2	U1RP 38520	32971
				40	20	1.2	U1RP 38540	32972
				60	30	1.5	U1RP 38560	32973
	400			10	5	1	U1RP 40010	32974
				20	10	1.2	U1RP 40020	32975
				40	20	1.2	U1RP 40040	32976
				60	30	1.5	U1RP 40060	32977
	440			10	5	1	U1RP 44010	32978
				20	10	1.2	U1RP 44020	32979
				40	20	1.2	U1RP 44040	32980
				60	30	1.5	U1RP 44060	32981

# Surge Protective Devices

## Series 3SU6

### Functions

- Types 2 surge arresters
- Handling energy from distant / indirect lightning strikes or from switching operations
- Feature lower protection level (Up)
- Recommended at the incoming of installation for locations with no exposure to direct lightning impulses



### Technical specifications

Type		3SU6-20				3SU6-40				3SU6-60		3SU6-80	
Standard		IEC/EN 61643-11											
Type/Test class		2 / II											
Number of poles		1P, 2P, 3P, 4P, 1P+N, 3P+N											
Type of current		AC											
Frequency	Hz	50/60											
Max. discharge current (8/20 $\mu$ s) I <sub>max</sub>	kA	10	10	10	10	20	20	20	20	30	30	40	40
Nominal discharge current (8/20 $\mu$ s) I <sub>n</sub>	kA	20	20	20	20	40	40	40	40	60	60	80	80
Max. Cont. operating voltage U <sub>c</sub>	V AC	275	320	385	440	275	320	385	440	385	440	385	440
Voltage protection level [L-PE] U <sub>p</sub>	kV	1.3	1.4	1.6	1.8	1.4	1.5	1.8	2.2	2.2	2.5	2.5	3.0
Response time	ns	< 25											
Degree of protection		IP20											
Pluggable cartridge		√											
State indicator		√											
Remote signal contact		√											
Remote communication connection		14 11: NO, 11 12: NC											
Mounting DIN rail		35 mm											
Solid and stranded	mm <sup>2</sup>	2 ... 35											
Finely stranded with end sleeve	mm <sup>2</sup>	2 ... 25											
Terminal tightening torque	N-m	2.8											
Flame retardant grade		V0											
Ambient temperature	°C	-25 - 70, max. 95% humidity											
Storage temperature	°C	-40 - 75											

### Selection and ordering data

Auxiliary contact	Number of poles	Max. Cont. operating voltage U <sub>c</sub> (V)	Max. discharge current I <sub>max</sub> (8/20) per pole (kA)	Nominal discharge current I <sub>n</sub> (8/20) per pole (kA)	Voltage protection level U <sub>p</sub> (kV)	Type code	Order code		
without	1P	275	20	10	1.3	U6 10D1/275			
			40	20	1.4	U6 20D1/275			
		320	20	10	1.4	U6 10D1/320			
			40	20	1.5	U6 20D1/320			
		385	20	10	1.6	U6 10D1/385			
			40	20	1.8	U6 20D1/385			
			60	30	2.2	U6 30C1/385			
			80	40	2.5	U6 40C1/385			
		440	20	10	1.8	U6 10D1/440			
			40	20	2.2	U6 20D1/440			
			60	30	2.5	U6 30C1/440			
			80	40	2.5	U6 40C1/440			
		with	1P	275	20	10	1.3	U6C 10D1/275	
					40	20	1.4	U6C 20D1/275	
				320	20	10	1.4	U6C 10D1/320	
					40	20	1.5	U6C 20D1/320	
385	20			10	1.6	U6C 10D1/385			
	40			20	1.8	U6C 20D1/385			
	60			30	2.2	U6C 30C1/385			
	80			40	2.5	U6C 40C1/385			
440	20			10	1.6	U6C 10D1/440			
	40			20	1.8	U6C 20D1/440			
	60			30	2.2	U6C 30C1/440			
	80			40	3.0	U6C 40C1/440			
without	1+NPE			275	20	10	1.3	U6 10D1N/275	
					40	20	1.4	U6 20D1N/275	
				320	20	10	1.4	U6 10D1N/320	
					40	20	1.5	U6 20D1N/320	
		385	20	10	1.6	U6 10D1N/385			
			40	20	1.8	U6 20D1N/385			
			60	30	2.2	U6 30C1N/385			
			80	40	2.5	U6 40C1N/385			
		440	20	10	1.6	U6 10D1N/440			
			40	20	1.8	U6 20D1N/440			
			60	30	2.2	U6 30C1N/440			
			80	40	3.0	U6 40C1N/440			
		without	2P	275	20	10	1.3	U6 10D2/275	
					40	20	1.4	U6 20D2/275	
				320	20	10	1.4	U6 10D2/320	
					40	20	1.5	U6 20D2/320	
385	20			10	1.6	U6 10D2/385			
	40			20	1.8	U6 20D2/385			
	60			30	2.2	U6 30C2/385			
	80			40	2.5	U6 40C2/385			
440	20			10	1.6	U6 10D2/440			
	40			20	1.8	U6 20D2/440			
	60			30	2.2	U6 30C2/440			
	80			40	3.0	U6 40C2/440			
with	2P			275	20	10	1.3	U6C 10D2/275	
					40	20	1.4	U6C 20D2/275	
				320	20	10	1.4	U6C 10D2/320	
					40	20	1.5	U6C 20D2/320	
		385	20	10	1.6	U6C 10D2/385			
			40	20	1.8	U6C 20D2/385			
			60	30	2.2	U6C 30C2/385			
			80	40	2.5	U6C 40C2/385			
		440	20	10	1.6	U6C 10D2/440			
			40	20	1.8	U6C 20D2/440			
			60	30	2.2	U6C 30C2/440			
			80	40	3.0	U6C 40C2/440			



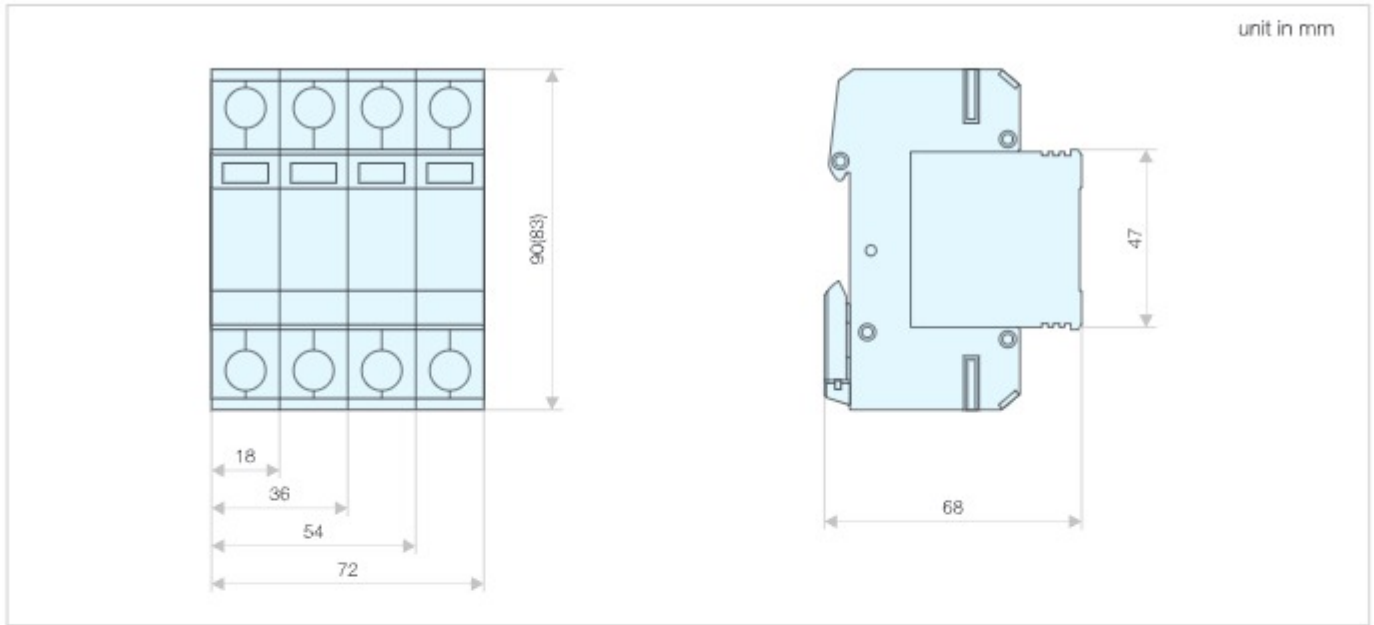
# Surge Protective Devices Series 3SU6

## Selection and ordering data

2

Auxiliary contact	Number of poles	Max. Cont. operating voltage U <sub>c</sub> (V)	Max. discharge current I <sub>max</sub> (8/20) per pole (kA)	Nominal discharge current I <sub>n</sub> (8/20) per pole (kA)	Voltage protection level U <sub>p</sub> (kV)	Type code	Order code			
without	3P	275	20	10	1.3	U6 10D3/275				
			40	20	1.4	U6 20D3/275				
		320	20	10	1.4	U6 10D3/320				
			40	20	1.5	U6 20D3/320				
		385	20	10	1.6	U6 10D3/385				
			40	20	1.8	U6 20D3/385				
			60	30	2.2	U6 30C3/385				
			80	40	2.5	U6 40C3/385				
		440	20	10	1.6	U6 10D3/440				
			40	20	1.8	U6 20D3/440				
			60	30	2.2	U6 30C3/440				
			80	40	3.0	U6 40C3/440				
			with	3P	275	20	10	1.3	U6C 10D3/275	
						40	20	1.4	U6C 20D3/275	
		320			20	10	1.4	U6C 10D3/320		
					40	20	1.5	U6C 20D3/320		
		385			20	10	1.6	U6C 10D3/385		
					40	20	1.8	U6C 20D3/385		
60	30				2.2	U6C 30C3/385				
80	40				2.5	U6C 40C3/385				
440	20	10			1.6	U6C 10D3/440				
	40	20			1.8	U6C 20D3/440				
	60	30			2.2	U6C 30C3/440				
	80	40			3.0	U6C 40C3/440				
	without	3+NPE			275	20	10	1.3	U6 10D3N/275	
						40	20	1.4	U6 20D3N/275	
320					20	10	1.4	U6 10D3N/320		
					40	20	1.5	U6 20D3N/320		
385					20	10	1.6	U6 10D3N/385		
					40	20	1.8	U6 20D3N/385		
			60	30	2.2	U6 30C3N/385				
			80	40	2.5	U6 40C3N/385				
440			20	10	1.6	U6 10D3N/440				
			40	20	1.8	U6 20D3N/440				
			60	30	2.2	U6 30C3N/440				
			80	40	3.0	U6 40C3N/440				
			without	4P	275	20	10	1.3	U6 10D4/275	
						40	20	1.4	U6 20D4/275	
320					20	10	1.4	U6 10D4/320		
					40	20	1.5	U6 20D4/320		
385					20	10	1.6	U6 10D4/385		
					40	20	1.8	U6 20D4/385		
	60	30			2.2	U6 30C4/385				
	80	40			2.5	U6 40C4/385				
440	20	10			1.6	U6 10D4/440				
	40	20			1.8	U6 20D4/440				
	60	30			2.2	U6 30C4/440				
	80	40			3.0	U6 40C4/440				
	with	4P			275	20	10	1.3	U6C 10D4/275	
						40	20	1.4	U6C 20D4/275	
320					20	10	1.4	U6C 10D4/320		
					40	20	1.5	U6C 20D4/320		
385					20	10	1.6	U6C 10D4/385		
					40	20	1.8	U6C 20D4/385		
			60	30	2.2	U6C 30C4/385				
			80	40	2.5	U6C 40C4/385				
440			20	10	1.6	U6C 10D4/440				
			40	20	1.8	U6C 20D4/440				
			60	30	2.2	U6C 30C4/440				
			80	40	3.0	U6C 40C4/440				

## Outline and installation dimensions



# Surge Protective Devices

## Series PSC61, compact, type 2

2

### Functions

- Types 2 surge arresters
- Handling energy from distant / indirect lightning strikes or from switching operations
- Feature lower protection level
- Recommended to be installed at the incoming of installation for locations with no exposure to direct lightning impulses



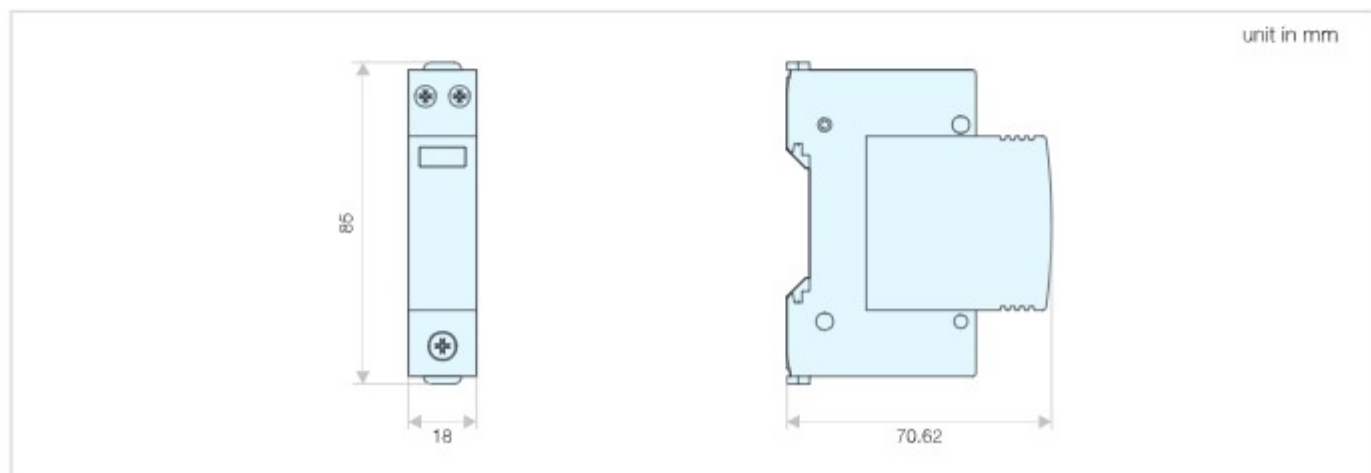
### Technical specifications

- Standard: IEC 61643-1
- Type / test class: 2 / II
- Number of poles: 1P+N
- Type of current: AC
- Frequency (Hz): 50/60
- Rated voltage  $U_n$  (V): 230
- Max. Cont. operating voltage  $U_c$  (V): 275
- Max. discharge current  $I_{max}$  (8/20) per pole (kA): 15, 30, 40
- Nominal discharge current  $I_n$  (8/20) per pole (kA): 5, 15, 20
- Voltage protection level  $U_p$  (kV): 1.3
- Continuous operating current  $I_c$  (mA): < 1
- Degree of protection: IP20, with connected conductors
- Pluggable cartridge: Yes
- State indicator: Yes
- Conductor cross-sections, Solid and stranded and finely stranded with end sleeve (mm<sup>2</sup>): 2-16

### Selection and ordering data

Protected lines	Width (mm)	$I_{max}$ (8/20) (kA)	$I_n$ (8/20) (kA)	$U_p$ at $I_n$ (kV)	$U_n$ (V)	$U_c$ (V)	Type code
Without remote signal contact							
1+1	18	15	5	1.1	230	275	PSC61-T2-15-275
		30	15	1.3	230	275	PSC61-T2-30-275
		40	20	1.3	230	275	PSC61-T2-40-275
With remote signal contact							
1+1	18	15	5	1.1	230	275	PSC61-T2-15-275R
		30	15	1.3	230	275	PSC61-T2-30-275R
		40	20	1.3	230	275	PSC61-T2-40-275R
Replacement pluggable module							
1+1	18	15	5	1.1	230	275	PSC61-T2-15-275P
		30	15	1.3	230	275	PSC61-T2-30-275P
		40	20	1.3	230	275	PSC61-T2-40-275P

### Outline and installation dimensions



### Functions

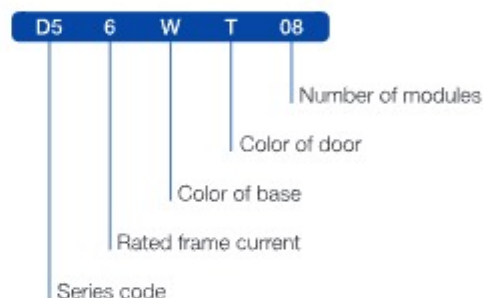
- Equipped with various modular electric for the function of terminal power distribution .
- Suited for the installation of all Sassin individual modular devices. (RCDs, MCBs, RCBO's, switch disconnectors etc).
- Used in residential building, non-residential building, industry.

### Technical specifications

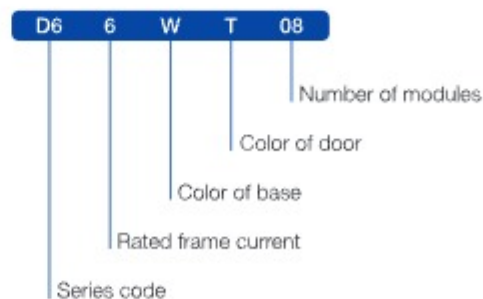
- Standard: IEC 61439-3
- Modules (No.): 4, 6, 8, 12, 18, 24, 36
- Row :
  - Single row for 4, 6, 8, 12, 18 modules
  - 2 rows for 24 modules
  - 3 rows for 36 modules
- Rated frame current In (A): 63, 100
- Color: White RAL 9003 and grey RAL 7035
- The color of door: Transparent, non transparent
- Mounting type: Surface, Flush.
- Degree of protection: IP30
- Material:
  - HIPS for body
  - SAN for door (4-18 modules)
  - PC for door (24 & 36 modules)
- Fire resistance: 650 °C / 30 s
- Ambient temperature (°C): -5 ~ +40, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75



### Instruction of type code



### Instruction of type code



# Distribution Boxes Series 3SD5 & 3SD6



## Selection and ordering data



### Flush mounting 3SD5

2

	Rated current In (A)	Color of base	Color of door	Number of module	Type code	Order code		
    	63	White	White	4	D506WW04	23157		
				6	D506WW06	23163		
				8	D506WW08	23169		
				12	D506WW12	23137		
				18	D506WW18	23143		
				24	D506WW24	23149		
				36	D506WW36	23153		
				Transparent	4	D506WT04	23159	
					6	D506WT06	23165	
			8		D506WT08	23171		
			12		D506WT12	23139		
			18		D506WT18	23145		
			24		D506WT24	23150		
			36		D506WT36	23154		
			Grey		Grey	4	D506GG04	24555
						6	D506GG06	24557
				8		D506GG08	24559	
				12		D506GG12	24563	
	18	D506GG18		24565				
	24	D506GG24		24567				
	36	D506GG36		24569				
	Transparent	4		D506GT04		24556		
		6		D506GT06		24558		
		8		D506GT08	24560			
		12		D506GT12	24564			
		18		D506GT18	24566			
		24		D506GT24	24568			
		36		D506GT36	24570			
		100		White	White	4	D510WW04	30655
						6	D510WW06	30657
	8					D510WW08	30659	
	12					D510WW12	30663	
	18		D510WW18			30665		
	24		D510WW24			30667		
	36		D510WW36			30669		
	Transparent		4			D510WT04	30656	
6			D510WT06			30658		
8			D510WT08		30660			
12			D510WT12		30664			
18			D510WT18		30666			
24			D510WT24		30668			
36			D510WT36		30670			
Grey			Grey		4	D510GG04	30697	
					6	D510GG06	30699	
	8				D510GG08	30701		
	12				D510GG12	30705		
	18			D510GG18	30707			
	24			D510GG24	30709			
	36			D510GG36	30711			
	Transparent			4	D510GT04	30698		
				6	D510GT06	30700		
			8	D510GT08	30702			
			12	D510GT12	30706			
			18	D510GT18	30708			
			24	D510GT24	30710			
			36	D510GT36	30712			

## Selection and ordering data

### Surface mounting 3SD6

	Rated current In (A)	Color of base	Color of door	Number of module	Type code	Order code		
        	63	White	White	4	D606WW04	23161		
				6	D606WW06	23167		
				8	D606WW08	23173		
				12	D606WW12	23141		
				18	D606WW18	23147		
				24	D606WW24	23151		
				36	D606WW36	23155		
				Transparent	4	D606WT04	23162	
					6	D606WT06	23168	
			8		D606WT08	23174		
			12		D606WT12	23142		
			18		D606WT18	23148		
			24		D606WT24	23152		
			36		D606WT36	23156		
			Grey		Grey	4	D606GG04	24571
						6	D606GG06	24573
				8		D606GG08	24575	
				12		D606GG12	24579	
	18	D606GG18		24581				
	24	D606GG24		24583				
	36	D606GG36		24585				
	Transparent	4		D606GT04		24572		
		6		D606GT06		24574		
		8		D606GT08	24576			
		12		D606GT12	24580			
		18		D606GT18	24582			
		24		D606GT24	24584			
		36		D606GT36	24586			
		100		White	White	4	D610WW04	30671
						6	D610WW06	30673
	8					D610WW08	30675	
	12					D610WW12	30679	
	18		D610WW18			30681		
	24		D610WW24			30683		
	36		D610WW36			30685		
	Transparent		4			D610WT04	30672	
6			D610WT06			30674		
8			D610WT08		30676			
12			D610WT12		30680			
18			D610WT18		30682			
24			D610WT24		30684			
36			D610WT36		30686			
Grey			Grey		4	D610GG04	30713	
					6	D610GG06	30715	
	8				D610GG08	30717		
	12				D610GG12	30721		
	18			D610GG18	30723			
	24			D610GG24	30725			
	36			D610GG36	30727			
	Transparent			4	D610GT04	30714		
				6	D610GT06	30716		
			8	D610GT08	30718			
			12	D610GT12	30722			
			18	D610GT18	30724			
			24	D610GT24	30726			
			36	D610GT36	30728			

# Distribution Boxes Series 3SD5 & 3SD6

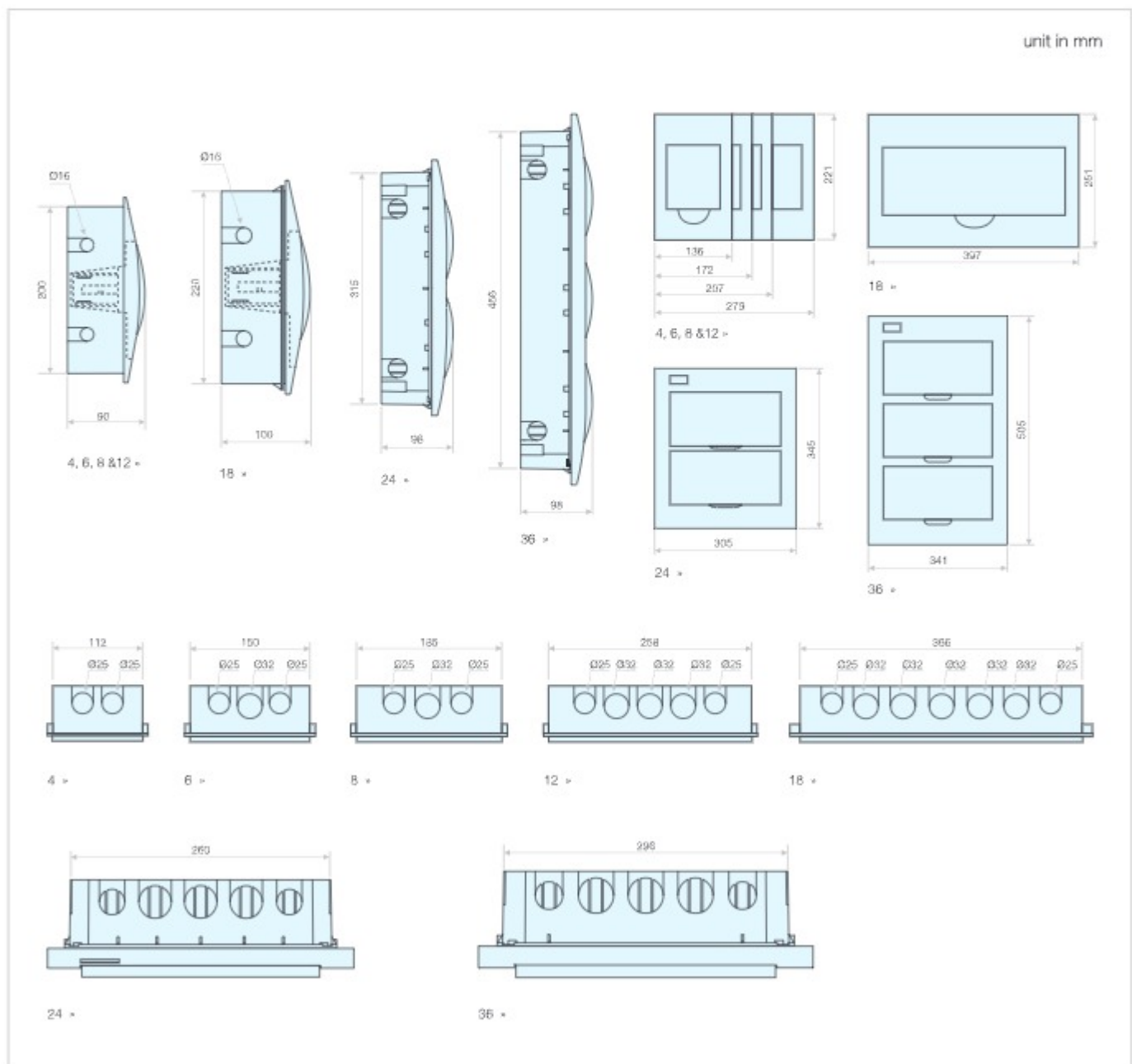
## Fitting inside of the enclosure

Attached with sticky label for marking on wire front panel; ready equipped with zero line and earth terminal bar and attached with zero bar, earth bar marks and alarm mark; users can select to connect with wire or insulating busbar method.

2

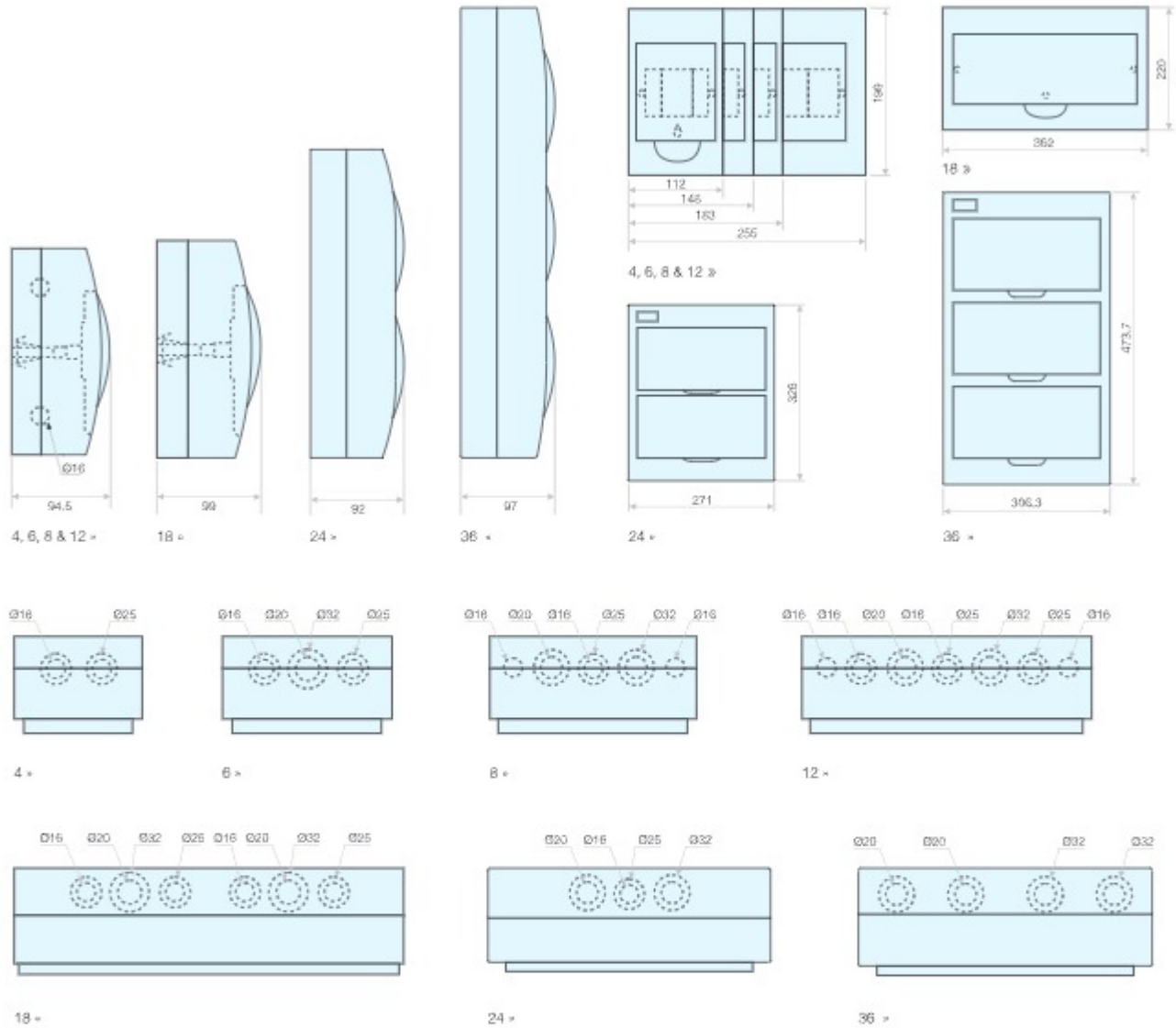
Neutral	Neutral bar length (mm)	Neutral bar holes (piece)	Earth bar length (mm)	Earth bar holes (piece)	Width (mm)	Height (mm)
4	37	4M4x7+M4x7	29,5	3M4x7+M4x7	6	8
6	52	6M4x7+M4x7	29,5	3M4x7+M4x7	6	8
8	67	8M4x7+M4x7	37	4M4x7+M4x7	6	8
12	37+52	10M4x7+2M4x7	52	6M4x7+M4x7	6	8
18	74,5+37	13M4x7+2M4x7	74,5	9M4x7+M4x7	6	8
24	60+60+28+28	20M4x7+4M4x7	28+28	6M4x7+2M4x7	6	8
36	60+60+60+28	24M4x7+4M4x7	60+28	10M4x7+2M4x7	6	8

## Outline and installation dimensions (3SD5)



Outline and installation dimensions (3SD6)

unit in mm





# Distribution Boxes

## Series 3SD5T (Metal Base)

2

### Functions

- Equipped with various modular electric for the function of the terminal power distribution
- Suited for the installation of all the Sassin individual modular device (RCDs, MCBs, RCBOs, switch disconnectors etc.)
- Used in the residential buildings, non-residential buildings and industry
- Lifting installation rail, easy for installation



### Technical specifications

- Standard: IEC 61439-3
- Modules: 4, 6, 8, 12, 18
- Row: Single
- Rated frame current In (A): 63
- Color: White RAL 9003, Grey RAL7035
- The color of the door: Transparent, non transparent
- Mounting type: Flush
- Degree of the protection: IP40
- Material:
  - HIPS for the body
  - SAN for the door
  - Metal for the base
- Fire resistance: 650 °C / 30 s
- Ambient temperature (°C): -5 ~ +40, 50% humidity permitted under max +40 °C
- Storage temperature (°C): -40 ~ +75

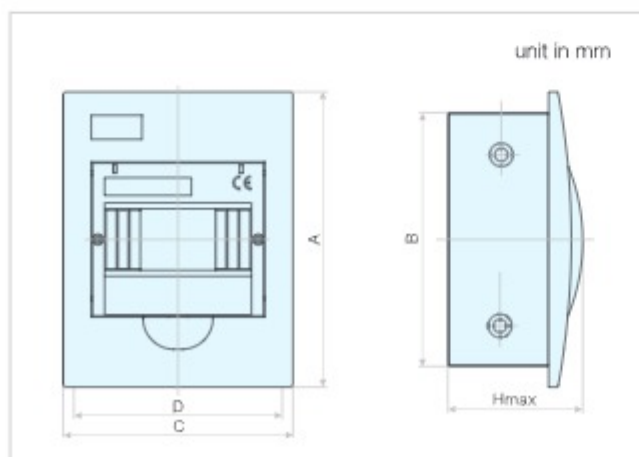
### Selection and ordering data

#### Flush mounting 3SD5T



Rated current In (A)	Color of base	Color of door	Number of module	Type code	Order code
63	Grey	Transparent	4	D5T06GT04	23160
			6	D5T06GT06	23166
			8	D5T06GT08	23172
			12	D5T06GT12	23140
			18	D5T06GT18	23146
	Grey	Grey	4	D5T06GG04	23158
			6	D5T06GG06	23164
			8	D5T06GG08	23170
			12	D5T06GG12	23138
			18	D5T06GG18	23144

### Outline and installation dimensions



Type	A (mm)	B (mm)	C (mm)	D (mm)	H max (mm)
3SD5T-04	221	190.5	136	108.5	102
3SD5T-06	221	190.5	172	142.5	102
3SD5T-08	221	190.5	207	180.5	102
3SD5T-12	221	190.5	279	252.5	102
3SD5T-18	251	223.5	397	360.5	103

### Functions

- Equipped with various modular electric for the function of terminal power distribution.
- Suited for the installation of all Sassin individual modular devices. (RCDs, MCBs, RCBO's, Isolators etc).
- Used in residential building, non-residential building, industry.


### Technical specifications

- Standard: IEC 60439-3
- Number of modules: 5, 8, 12, 15, 18, 24 for 3SHT  
4, 8, 12, 24 for 3SHA
- Row: Single for 5, 8, 12, 15, 18 modules  
Two for 24 modules
- Rated current In (A): 63
- Color: White
- The color of door: Transparent
- Mounting type: Surface
- Degree of protection: IP65
- Material: ABS for body  
PC for door
- Fire resistance: 650 °C / 30 s
- Ambient temperature (°C): -5 – +40, max. 95 % humidity
- Storage temperature (°C): -40 – +75




### Selection and ordering data

#### 3SHT surface mounting

	Rated current In (A)	Color of base	Color of door	Degree of protection	Number of module	Type code	Order code
	63	White	Transparent	IP65	5	HT05	24605
					8	HT08	24606
					12	HT12	24607
					15	HT15	24608
					18	HT18	24609
					24	HT24	24610

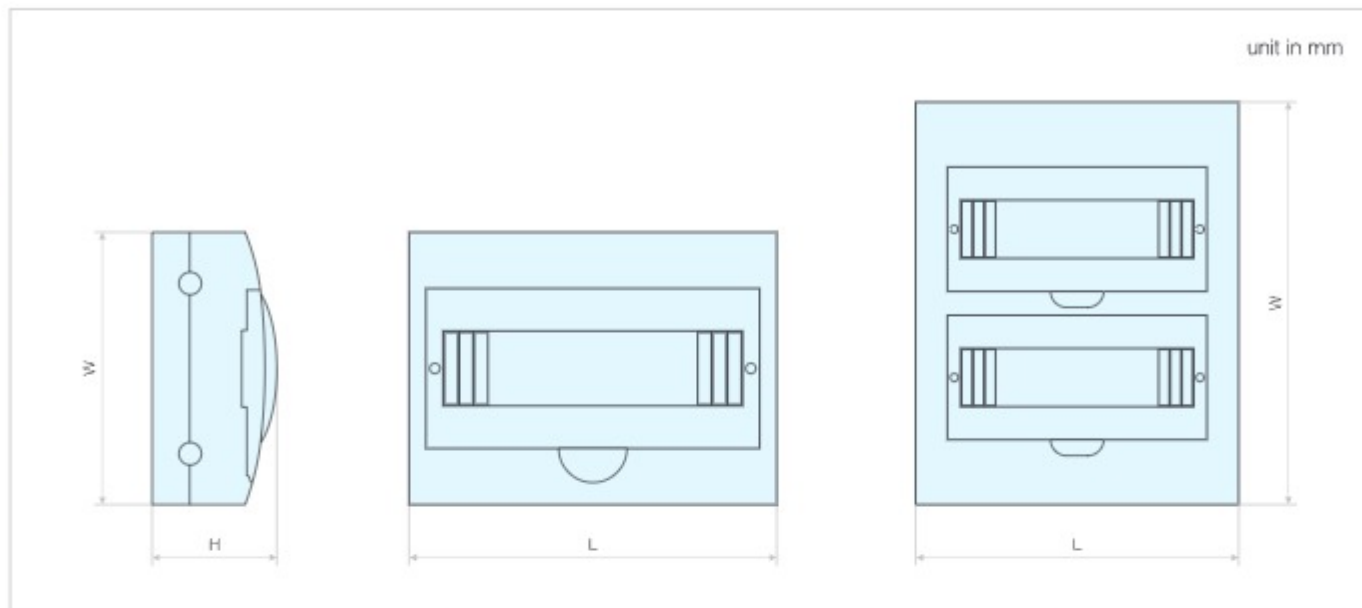
#### 3SHA surface mounting

	Rated current In (A)	Color of base	Color of door	Degree of protection	Number of module	Type code	Order code
	63	White	Transparent	IP65	4	HA04	30729
					8	HA08	30730
					12	HA12	30731
					18	HA18	30732
					24	HA24	30733

# Distribution Boxes Series 3SHT & 3SHA

## Outline and installation dimensions

2



Type	L (mm)	W (mm)	H (mm)	Weight (g)
HT-2	55	120	90	135
HT-3	80	165	95	248.5
HT-5	120	160	95	307.1
HT-8	200	155	95	465
HT-12	255	195	110	783
HT-16	310	200	110	918.5
HT-18	365	200	110	1064.5
HT-24	275	355	110	1373.7

Type	L (mm)	W (mm)	H (mm)	Weight (g)
HA-4	140	210	100	452
HA-8	215	210	100	710.5
HA-12	300	260	140	1215
HA-18	410	280	140	1763.3
HA-24	300	415	140	2014.5

### Functions

VD51MS series distribution boxes are fit for AC 50/60 Hz, rated voltage 400 V, rated current to 100 A in the home and similar field circuit, for the redistribution of electrical energy, offering overload and short-circuit protection through the switch.

### Technical specifications

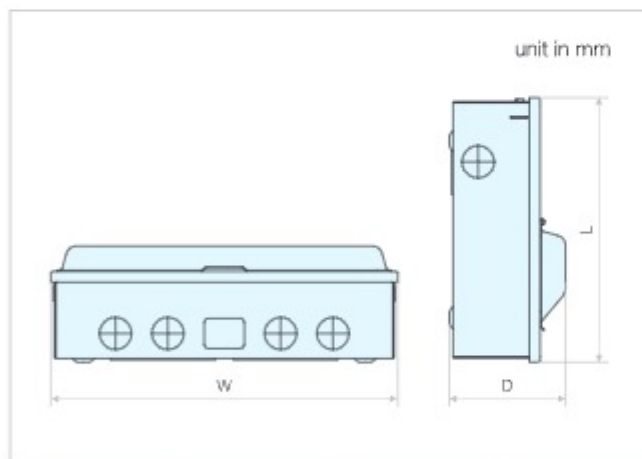
- Standard: IEC/EN 61439-3
- The base, top and buckle cover are made of metal alloy.
- Rated operational voltage  $U_n$  ( $U_e$ ) (V): 220/400
- Rated operational current  $I_n$  ( $I_e$ ) (A): 100, 80, 63 and below
- Rated impulse withstand voltage  $U_{imp}$  (kA): 6
- Mounting type: surface
- Degree of protection: IP 2XC



### Selection and ordering data

Rated current $I_n$ (A)	Color of base	Color of door	Number of module	Type code	Order code
100	Grey	Grey	4	VD51MS04	17586
			8	VD51MS08	17587
			12	VD51MS12	17588
			16	VD51MS16	17589
			18	VD51MS18	17590
			22	VD51MS22	17591

### Outline and installation dimensions



Type	L (mm)	W (mm)	D (mm)
VD51MS04	235	128	105
VD51MS08	264	202	115.3
VD51MS12	264	273	115.3
VD51MS16	264	345	115.3
VD51MS18	264	380	115.3
VD51MS22	264	454	115.3

# Distribution Boxes Series 3SD8N

2

## Functions

Suitable for in door and outdoor electric, communication, fire fighting apparatus, iron and steel smelting, petrochemical industry, electron, power system, railway, building ,air and sea port ,hotel and so on. Protect circuit breakers, with impact resistance, temperature resistance, and chemical corrosion resistance.



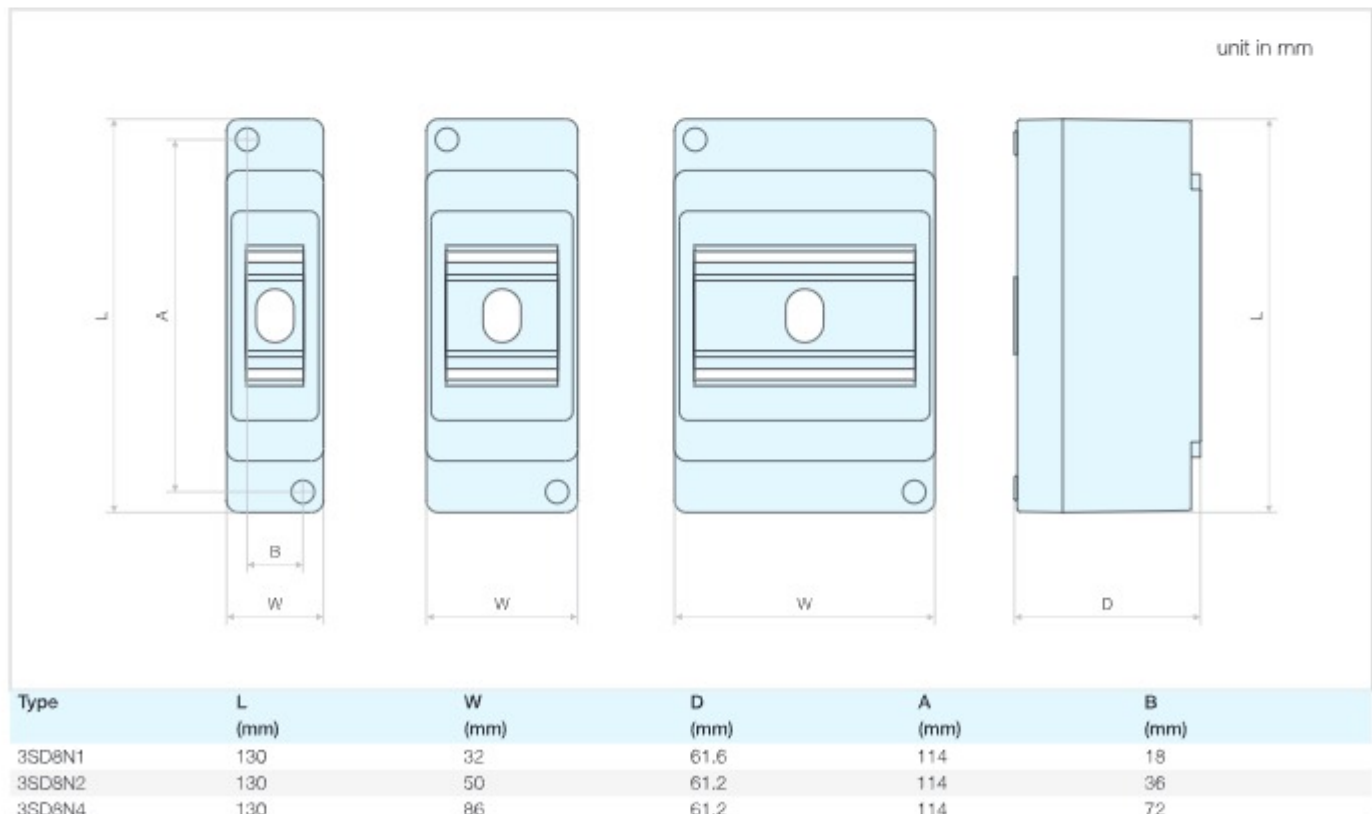
## Technical specifications

- Standard: IEC 60529
- Modules: 1, 2, 4
- Mounting type: Surface
- Color: White
- Degree of protection: IP30
- Material: ABS
- Fire resistance: 650 °C/30s
- Ambient temperature: -5 ~ 40, max 95% humidity
- Storage temperature: -40 ~ 75

## Selection and ordering data

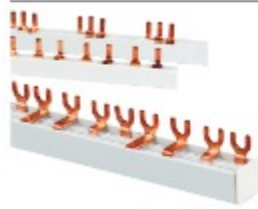
Rated current In (A)	Number of module	Type code	Order code
		63	1
	2	D8N2	
	4	D8N4	

## Outline and installation dimensions



## Selection and ordering data

### Busbar systems Suitable for cutting

	Connection type	Phases	Rated current (A)	Length (cm)	Type code	Order code
	PIN type	1x54	63	100	SA-BB101	24760
		2x27	63	100	SA-BB201	24762
		3x18	63	100	SA-BB301	24764
		4x14	63	100	SA-BB401	24766
	Fork type	1x54	63	100	SA-BB102	24761
		2x27	63	100	SA-BB202	24763
		3x18	63	100	SA-BB302	24765
		4x14	63	100	SA-BB402	24767


### End caps

		For 1P		100	SA-BBEC1	32676
		For 2P		100	SA-BBEC2	32677
		For 3P		100	SA-BBEC3	32678
		For 4P		100	SA-BBEC4	32679


### Shock-protection caps

	Description	Phases	Type code	Order code
	Yellow	5 parts	SA-BBSCY5	32680

### Feeder terminals

	Description	Type code	Order code
	Connection capacity: 6-25 mm <sup>2</sup> Max. electrical load: 63 A Max. tightening torque 2 N-m	FT1B	32929
	Connection capacity: 6-25 mm <sup>2</sup> Max. electrical load: 63 A Max. tightening torque 2 N-m	FT2G	32930

### DIN Rails

	Description	Type code	Order code
	Aluminum, 100 cm	DR1	32931
	Iron plated zinc, 100 cm	DR2	32932

## Selection and ordering data

### Terminal bars with screws

2




Rated current (A)	Cross section of brass (mm)	Way	Screw size	Type code	Order code	
63	6x8	3+1	M4x7	TBS0631	32933	
	6x8	4+1	M4x7	TBS0641	32934	
	6x8	6+1	M4x7	TBS0661	32935	
	6x8	6+2	M4x7	TBS0662	32936	
	6x8	8+1	M4x7	TBS0681	32937	
	6x8	9+1	M4x7	TBS0691	32938	
	6x8	10+2	M4x7	TBS06102	32939	
	6x8	13+2	M4x7	TBS06132	32940	
	6x8	20+4	M4x7	TBS06204	32941	
	100	6x9	3+1	M4x7	TBS1031	32942
		6x9	4+1	M4x7	TBS1041	32943
		6x9	6+1	M4x7	TBS1061	32944
6x9		6+2	M4x7	TBS1062	32945	
6x9		8+1	M4x7	TBS1081	32946	
6x9		9+1	M4x7	TBS1091	32947	
6x9		10+2	M4x7	TBS10102	32948	
6x9		13+2	M4x7	TBS10132	32949	
6x9		20+4	M4x7	TBS10204	32950	

## Selection and ordering data

### Terminal blocks

Terminals with insulation holder for quick fastening onto DIN rails

	Way	Rated current (A)	Installation size (mm)	Dimension (mm)	Screw size	Cross section of brass (mm)	Type code	Order code
	7	100	35x7,5	50x21	M5x8	6x9	TBS1007	32951
	8	100	35x7,5	57x21	M5x8	6x9	TBS1008	32952
	10	100	35x7,5	70x21	M5x8	6x9	TBS1010	32953
	12	100	35x7,5	84x21	M5x8	6x9	TBS1012	32954
	13	100	35x7,5	91x21	M5x8	6x9	TBS1013	32955
	15	100	35x7,5	104x21	M5x8	6x9	TBS1015	32956

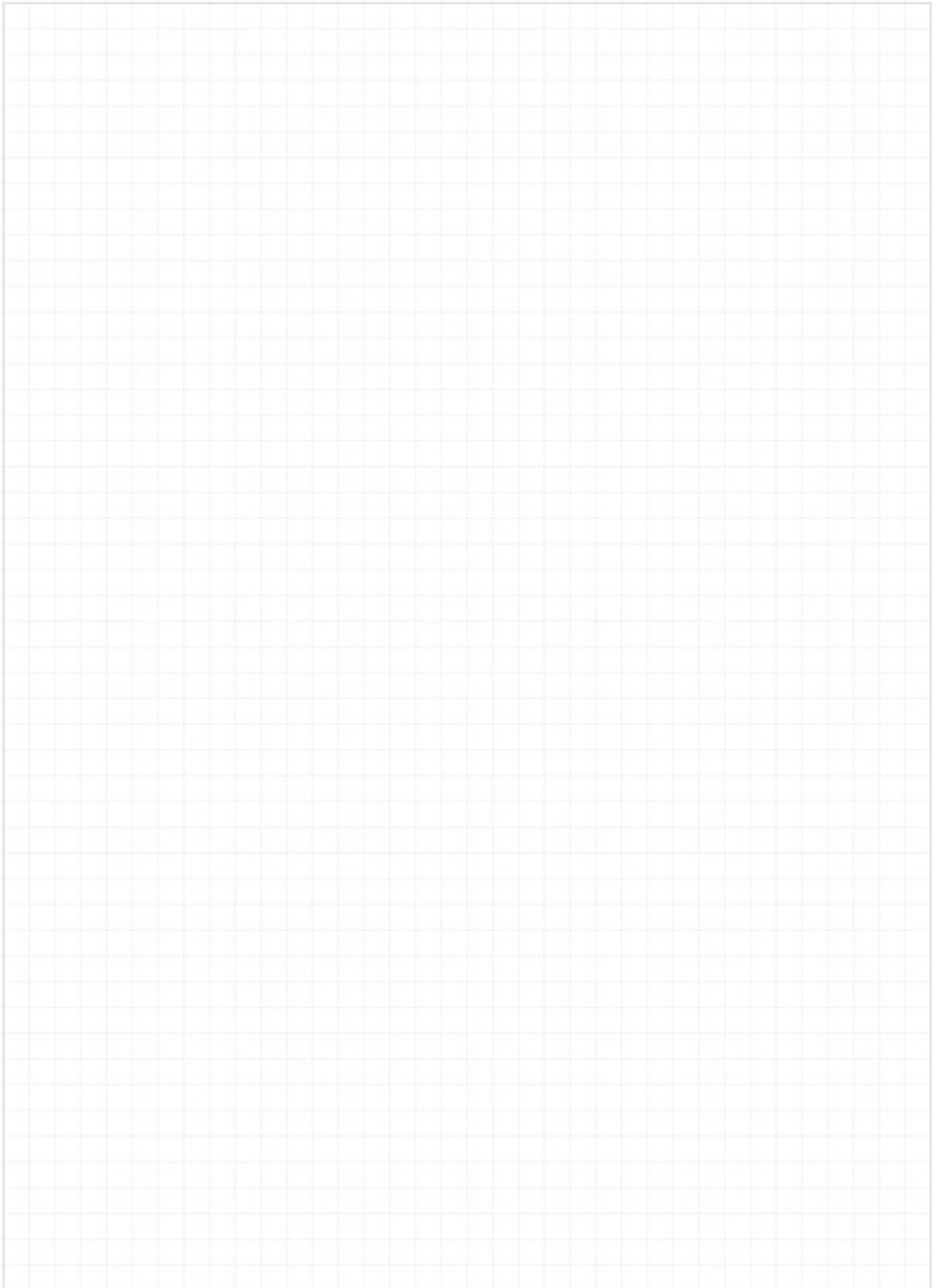
### Blanking plates

Matched with distribution boxes for device covers

	Description	Type code	Order code
	width: 1 module = 17,5 mm, White	MBP1	32957
	width: 0.5 module = 9 mm, White	MBP2	32958



# Note



### Contactors

- P 1-3 3SC8-K, mini contactors, up to 5.5 kW
- P 4-7 3SC8, contactors, up to 45 kW
- P 8-10 VC51, contactors, up to 45 kW
- P 11-14 Additional Components for Contactors
- P 15-19 3SC8-F, contactors, up to 400 kW
- P 20-21 3SC19, contactors for capacitor switching

### Thermal Overload Relays

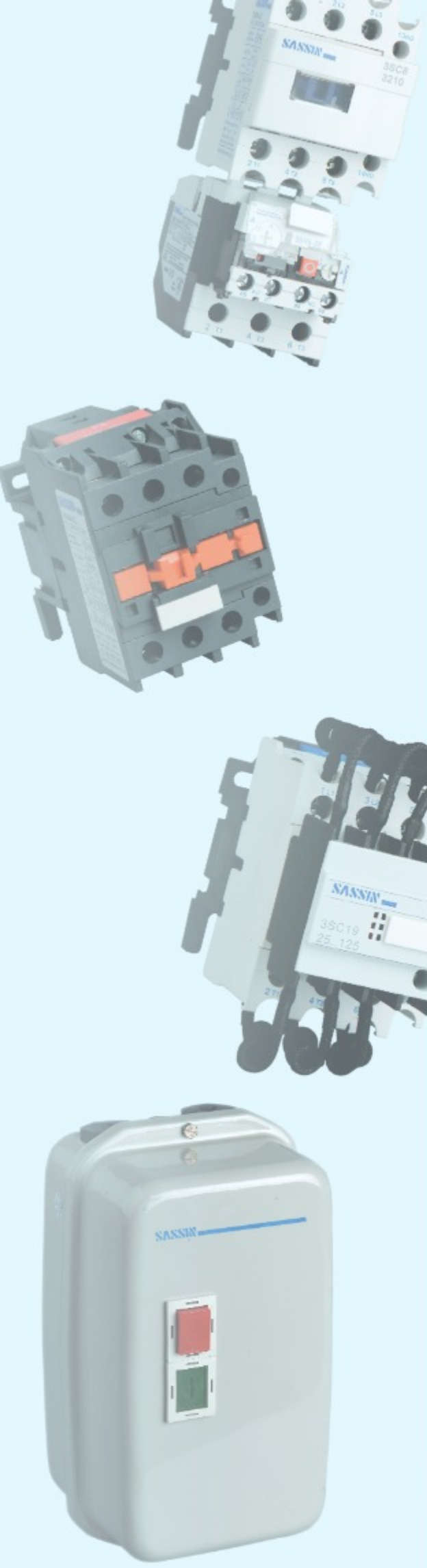
- P 22-23 3SR8-K, from 0.11 to 14 A
- P 24-26 3SR8, from 0.1 to 93 A
- P 27-29 VTR51, from 0.1 to 93 A
- P 30-31 3SR8-F, from 30 to 630 A

### Starters

- P 32-33 3SQ1 & VQ51, direct-on-line (DOL) starters
- P 34-35 3SQ8 & VXQ51, star-delta starters

### Motor Protection Circuit Breakers

- P 36-39 3SM18, from 0.1 to 80 A



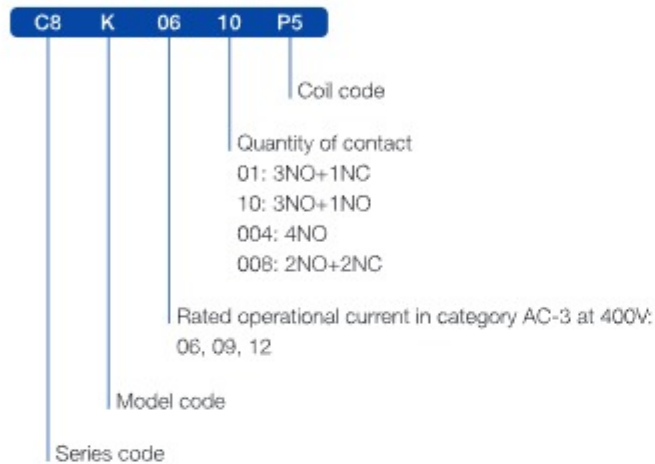


## Applications and functions for AC contactor

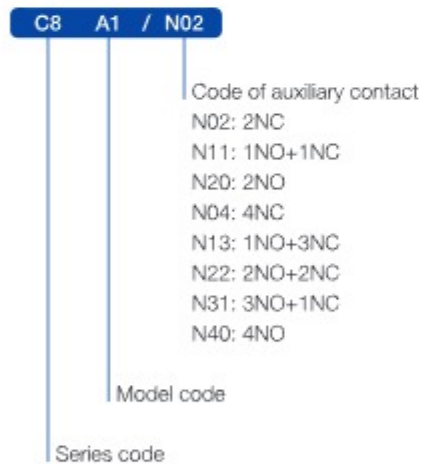
- Used for controlling 3-phase motors and generally for controlling power circuits.
- Used for many other applications such as isolation, capacitor switching and lighting.

## Instruction of type code

- For contactor



- For auxiliary contactor



### Technical specifications for type 3SC8-K

Type		3SC8-K0610, 3SC8-K0601, 3SC8-K06004, 3SC8-K06008	3SC8-K0910, 3SC8-K0901, 3SC8-K09004, 3SC8-K09008	3SC8-K1210, 3SC8-K1201, 3SC8-K12004, 3SC8-K12008
Standard		IEC 60947-4-1		
Number of contacts		3NO+1NO, 3NO+1NC, 4NO, 2NO+2NC		
Rated conventional thermal current Ith (A)	AC-1	20		
Rated operational voltage Ue (V)		690		
Rated insulation voltage Ui (V)		690		
Rated impulse withstand voltage Uimp (kV)		6		
Rated frequency (Hz)		50/60		
Rated operational current (A)	AC-3 380/400 V	6	9	12
	AC-4 380/400 V	2.6	3.5	5
Number of poles		3,4	3,4	3,4
Rated operational power in category AC-3 (KW)	220/230/240 V	1.5	2.2	3
	380/400 V	2.2	4	5.5
	660/690 V	3	4	5.5
Rated making capacity (A)		110	110	114
Rated breaking capacity (A)	380 V	100	100	100
	690 V	70	70	70
Short-circuit protection (A)	gG fuse U ≤ 440 V	25		
Average impedance per pole (mW)		3		
Add-on auxiliary contact blocks	Front	3SC8-A1/KN		
	Side	-		
	Front time delay	-		
	Front dust and clamp protected	-		
Reversing contactor type		3SC8-KN		
Associated thermal overload relays	3 Pins/5 Pins	3SR8-K		
Operation cycles(times/hour)	Electrical AC-3	1200		
	Electrical AC-4	300		
	Mechanical	3600		
Electrical life (x 10 <sup>4</sup> times)	AC-3	100	120	
	AC-4	20		
Mechanical life (x 10 <sup>4</sup> times)		1000		
Matching fuse model		RT16-16	RT16-20	
Tightening torque (N-m)		0.8		
Connection				
Screw clamp terminals	solid conductor (mm <sup>2</sup> )	Max. 1×4+1×2.5		
	Flexible conductor without cable end (mm <sup>2</sup> )	Max. 2×2.5		
	Flexible conductor with cable end (mm <sup>2</sup> )	Max. 1×1.5+1×2.5		
Degree of protection		IP20		
Ambient air temperature (°C)		-5 to +40, max. 95 % humidity		
Storage temperature (°C)		-40 - +75		
Maximum operating altitude (meters)		2000		
Flame resistance	Conforming to UL 94	V1		

### Technical specifications for auxiliary contact incorporated in the contactor type 3SC8-K

- Standard: IEC 60947-5-1
- Number of auxiliary contact: 2, 4
- Mounting type: Front
- Conventional heating current (A): 10
- Rated operational voltage Ue (V): Up to 690
- Rated insulation voltage Ui (V): 690
- Conventional thermal current Ith (A): 10
- Minimum switching capacity Im (mA): 5
- Short circuit protection (A): 10
- Rated making capacity (A): 110

## Coil voltage of contactor 3SC8-K

Coil voltage Us (V)	12	20	24	32	36	42	48	60	100	110	115	120	127	208	220	230	240	265	380	400	415	440	480	500	550	600	550/600 600/660	660/690
50 Hz	J5	-	B5	C5	-	D5	E5	-	-	F5	FE5	G5	FC5	LE5	M5	P5	U5	-	Q5	V5	N5	R5	T5	S5	SC5	X5	-	Y5
60 Hz	-	-	D6	-	-	-	E6	-	-	F6	-	-	-	-	M6	-	U6	-	Q6	-	-	R6	-	-	-	-	-	Y6
50/60 Hz	J7	Z7	B7	C7	CC7	D7	E7	EE7	K7	F7	FE7	-	FC7	-	M7	P7	U7	W7	Q7	V7	N7	R7	-	S7	-	-	X7	Y7

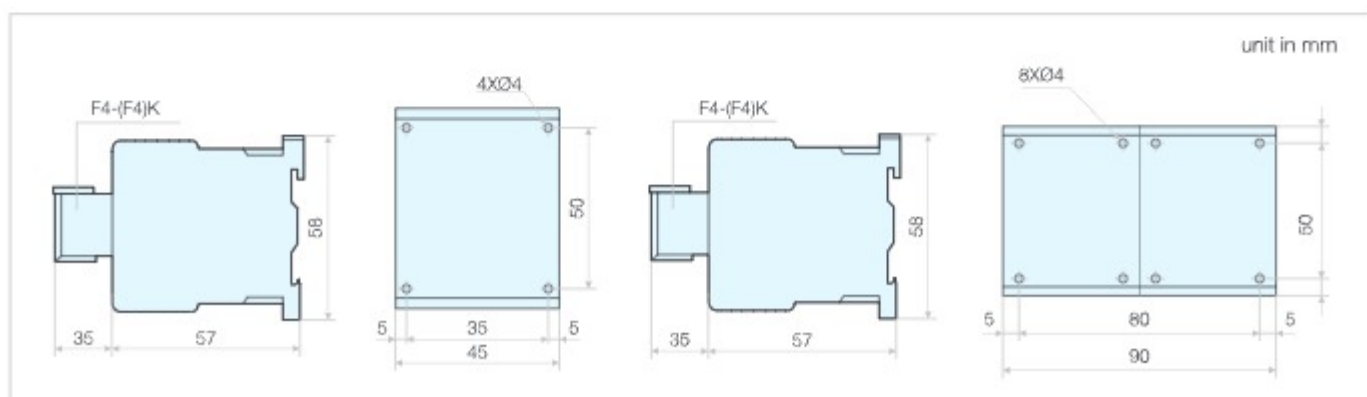
## Selection and ordering data

	Rated operational current in category AC-3 400 V (A)	Number of poles		Instantaneous auxiliary contacts		230 V 50 Hz Please contact us for other coil voltage	
						Type code	Order code
<b>3SC8-K contactor</b> 	6		-	-	1	C8 K0601P5	11373
							1
	9		-	-	1	C8 K0901P5	11377
							1
	12		-	-	1	C8 K1201P5	11381
							1
	6	4	-	-	-	C8 K06004P5	11375
							2
	9	4	-	-	-	C8 K09004P5	11379
							2
12	4	-	-	-	C8 K12004P5	11383	
						2	2
<b>3SC8-KN reversing contactors</b> 	6		-	-	1	C8 KN0601P5	15576
							1
	9		-	-	-	C8 KN09004P5	15703
							3
	12	3	-	-	-	C8 KN1201P5	15578
							1
	4	-	-	-	-	C8 KNC9004P5	15704
							3
	3	-	-	-	-	C8 KN12004P5	15705
							4

## 3SC8-A1/KN

	Auxiliary contacts		Type code	Order code
	0	2	C8K A1/N02	33032
	1	1	C8K A1/N11	33033
	2	0	C8K A1/N20	33034
	0	4	C8K A1/N04	33035
	1	3	C8K A1/N13	33036
	2	2	C8K A1/N22	33037
	3	1	C8K A1/N31	33038
	4	0	C8K A1/N40	33039

## Outline and installation dimensions



# Contactors

## Series 3SC8

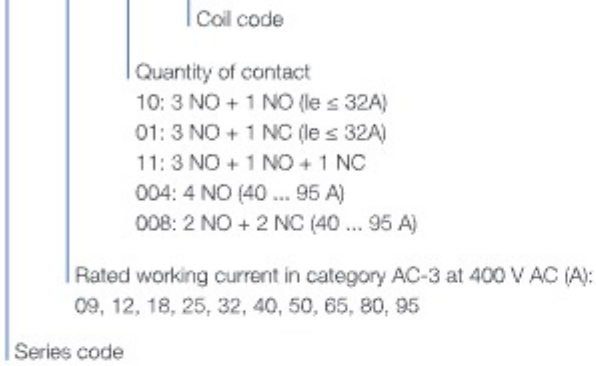
### Applications and functions for AC contactor 3SC8

- Used for controlling 3-phase motors and generally for controlling power circuits.
- Used for many other applications such as isolation, capacitor switching and lighting.

### Instruction of type code

3

C8 09 10 P7



## Technical specifications for type 3SC8

Type		3SC8-09	3SC8-12	3SC8-18	3SC8-25	3SC8-32	3SC8-40	3SC8-50	3SC8-65	3SC8-80	3SC8-95	
Standard		IEC 60947-4-1										
Number of poles		3, 4	3, 4	3	3, 4	3	3, 4	3, 4	3, 4	3, 4	3, 4	
Rated operational current I <sub>e</sub> (A)	380 V	In AC-3	9	12	18	25	32	40	50	65	80	95
		In AC-4	3.5	5	7.7	8.5	12	18.5	24	28	37	44
	660 V	In AC-3	6.6	8.9	12	18	21	34	39	42	49	55
		In AC-4	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3
	440 V	In AC-1	20	25	32	40	50	60	80	80	110	125
Rated operational voltage U <sub>e</sub> (V)	Up to	690										
Frequency limits of the operational current (time/h)		25-400										
Rated conventional thermal current I <sub>th</sub> (A)		25	25	32	40	50	60	80	80	125	125	
Rated insulation voltage U <sub>i</sub> (V)		690										
Rated impulse withstand voltage U <sub>imp</sub> (kV)		8										
Rated frequency (Hz)		50/60										
Rated making capacity (A)	400 V	10 × I <sub>e</sub> AC-3 or 12 × I <sub>e</sub> AC-4										
Rated breaking capacity (A)	400 V	8 × I <sub>e</sub> AC-3 or 10 × I <sub>e</sub> AC-4										
Rated operational power in category AC-3 (kW)	220/230/240 V	2.2	3	4	5.5	7.5	11	15	18.5	22	25	
	380/400 V	4	5.5	7.5	11	15	18.5	22	30	37	45	
	660/690 V	5.5	7.5	10	15	18.5	30	33	37	45	45	
Fuse protection against short-circuit (A)	Without thermal overload relay, Gg fuse Type 1	20	25	32	40	50	63	80	80	125	160	
		Type 2	20	20	25	32	40	50	63	80	150	150
	With thermal overload relay	See specification and ordering data of 3SR8, for aM or gG fuse ratings corresponding to the associated thermal overload relay										
Average impedance per pole (mΩ)		2.5	2.5	2.5	2	2	1.5	1.5	1.5	0.8	0.8	
Add-on auxiliary contact blocks	Front	3SC8-A1 and 3SC8-A1D										
	Side	3SC8-A1C										
	Front time delay	3SC8-A2										
	Front dust and damp protected	■										
Reversing contactor type		3SC8-DN										
Associated thermal overload relays		3SR8-25					3SR8-36	3SR8-93				
Operation cycles (times/hour)	Electrical AC-3	1200	1200	1200	1200	600	600	600	600	600	600	
	Electrical AC-4	300	300	300	300	300	300	300	300	300	300	
	Mechanical	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	
Electrical life (× 10 <sup>3</sup> times)	AC-3	1000	1000	1000	1000	800	800	600	600	600	600	
	AC-4	200	200	200	200	200	150	150	150	100	100	
Mechanical life (× 10 <sup>4</sup> times)		10	10	10	10	8	8	8	8	6	6	
Matching fuse model		RT16-20	RT16-20	RT16-32	RT16-40	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125	
Tightening torque (N · m) Connection		1.2	1.2	1.7	2.0	2.5	5	5	5	9	9	
Cabling cross section (CU)	Flexible cable with cold-pressed 2 socket (mm <sup>2</sup> )	1/2.5	1/2.5	1/4	1/4	1.5/4	2.5/10	2.5/10	2.5/10	4/16	4/16	
	Flexible cable without cold-pressed 2 socket (mm <sup>2</sup> )	1/4	1/4	1.5/6	1.5/6	2.5/10	2.5/16	2.5/16	2.5/16	4/25	4/25	
	Inflexible 2 cable (mm <sup>2</sup> )	1/4	1.5/4	1.5/6	1.5/6	1.5/10	2.5/25	2.5/25	2.5/25	4/50	4/50	
Screw size		M3.5	M3.5	M3.5	M4	M4	M8	M8	M8	M10	M10	
Degree of protection		IP20										
Ambient air temperature (°C)		-5 to +40, max. 95 % humidity										
Storage temperature (°C)		-40 - +75										
Maximum operating altitude (meters)		2000										
Flame resistance	Conforming to UL 94	V1										



# Contactors Series 3SC8



## Selection and ordering data

3

Rated operational power			Rated operational current AC-3 380/400 V (A)	Main contact		Rated control circuit voltage V 50/60 Hz	Auxiliary contact		Type code	Order code
220/230 V (kW)	380/400 V (kW)	660/690 V (kW)		1	2		1	2		
2.2	4	5.5	9	3	0	230	1	0	C8N 0910P7	27432
				3	0		0	1	C8N 0901P7	27431
				3	0		1	1	C8N 0911P7	27433
				4	0		0	0	C8N 09004P7	27451
				2	2		0	0	C8N 09008P7	27452
3	5.5	7.5	12	3	0	230	1	0	C8N 1210P7	27435
				3	0		0	1	C8N 1201P7	27434
				3	0		1	1	C8N 1211P7	27436
				4	0		0	0	C8N 12004P7	27453
				2	2		0	0	C8N 12008P7	27454
4	7.5	10	18	3	0	230	1	0	C8N 1810P7	27438
				3	0		0	1	C8N 1801P7	27437
				3	0		1	1	C8N 1811P7	27439
				4	0		0	0	C8N 18004P7	27455
				2	2		0	0	C8N 18008P7	27456
5.5	11	15	25	3	0	230	1	0	C8N 2510P7	27441
				3	0		0	1	C8N 2501P7	27440
				3	0		1	1	C8N 2511P7	27442
				4	0		0	0	C8N 25004P7	27455
				2	2		0	0	C8N 25008P7	27456
7.5	15	18.5	32	3	0	230	1	0	C8N 3210P7	27444
				3	0		0	1	C8N 3201P7	27443
				3	0		1	1	C8N 3211P7	27445
				4	0		0	0	C8N 32004P7	27457
				2	2		0	0	C8N 32008P7	27458
11	18.5	30	40	3	0	230	1	1	C8N 4011P7	27446
				4	0		0	0	C8N 40004P7	27457
				2	2		0	0	C8N 40008P7	27458
				3	0		1	1	C8N 5011P7	27447
				4	0		0	0	C8N 50004P7	27459
15	22	33	50	2	2	230	0	0	C8N 50008P7	27460
				3	0		1	1	C8N 6511P7	27448
				4	0		0	0	C8N 65004P7	27461
				2	2		0	0	C8N 65008P7	27462
				3	0		1	1	C8N 8011P7	27449
18.5	30	37	65	4	0	230	0	0	C8N 80004P7	27463
				2	2		0	0	C8N 80008P7	27464
				3	0		1	1	C8N 9511P7	27450
				4	0		0	0	C8N 95004P7	27465
				2	2		0	0	C8N 95008P7	27466

Please contact us for other coil voltage and frequency listed in "coil voltage of contactor".

### 3SC8-DN reversing contactors

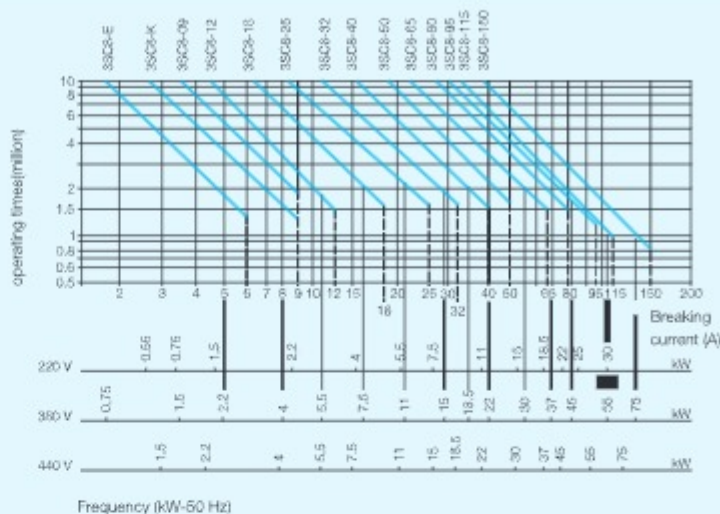
Rated operational power			Rated operational current AC-3 380/400 V (A)	Rated control circuit voltage V 50 Hz	Type code	Order code
220/230 V (kW)	380/400 V (kW)	660/690 V (kW)				
2.2	4	5.5	9	230	C8 DN09P7	38450
3	5.5	7.5	12	230	C8 DN12P7	38451
4	7.5	10	18	230	C8 DN18P7	38452
5.5	11	15	25	230	C8 DN25P7	38453
7.5	15	18.5	32	230	C8 DN32P7	38454
11	18.5	30	40	230	C8 DN40P7	38455
15	22	33	50	230	C8 DN50P7	38456
18.5	30	37	65	230	C8 DN65P7	38457
22	37	45	80	230	C8 DN80P7	38458
25	45	45	95	230	C8 DN95P7	38459

Please contact us for other coil voltage and frequency listed in "coil voltage of contactor".

## Electrical life curve for AC contactor 3SC8

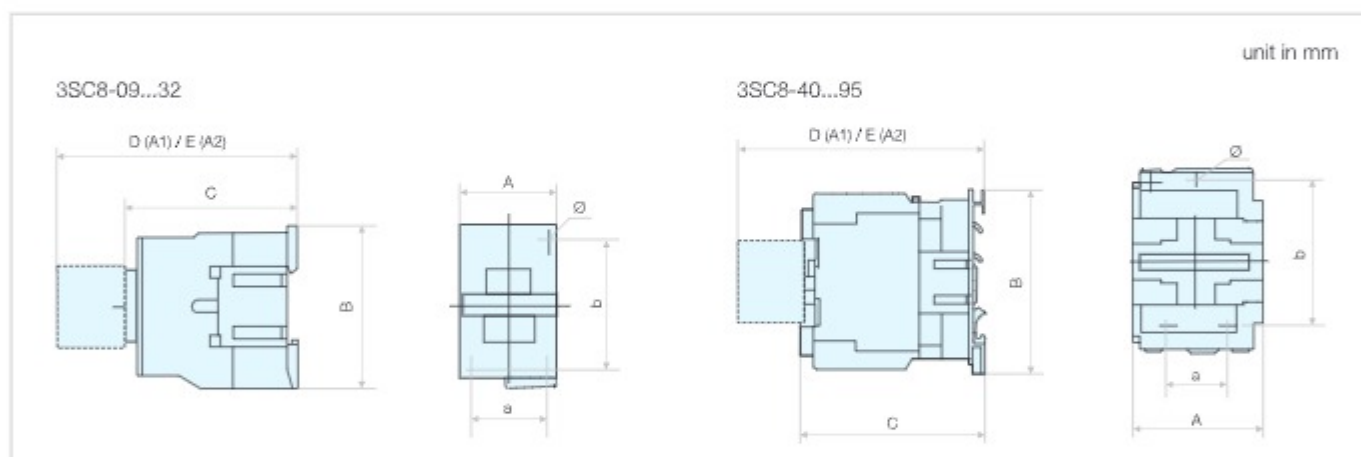
For breaking control when AC-3 type work. ( $U_e \leq 440$  V)  
The breaking current is equal to rated making current.

Notes:  
Asynchronous,  $P = 5.5$  kW,  
 $U_e = 400$  V,  $I_e = 11$  A,  $I_c = I_e = 11$  A  
motor or asynchronous,  $P = 5.5$  kW,  
 $U_e = 415$  V,  $I_e = 11$  A,  $I_c = I_e = 11$  A  
For 30 million electrical life.



3

## Outline and installation dimensions



Type	A max	B max	C max	D max	E max	a	b	Ø
3	3SC8-09...12	47	76	82	113	34/35	50/60	2-Ø4.5
	3SC8-18	47	76	87	118	34/35	50/60	2-Ø4.5
	3SC8-25	57	86	95	126	40	48	2-Ø4.5
	3SC8-32	57	86	100	131	40	48	2-Ø4.5
	3SC8-40...65	77	129	116	145	40	100/110	3-Ø6.5
3SC8-80...95	87	129	127	156	176	40	100/110	3-Ø6.5
4	3SC8-09...12	47	76	82	113	34/35	50/60	2-Ø4.5
	3SC8-25	57	86	95	126	40	48	2-Ø4.5
	3SC8-40...65	86	129	116 (129)	145	40	100/110	3-Ø6.5
	3SC8-80...95	97	129	127 (140)	156	176	100/110	3-Ø6.5

Notes: The dimensions in brackets are for 008 (4P) type

## Applications and functions

- Used for controlling 3-phase motors and generally for controlling power circuits.
- Used for many other applications such as isolating, capacitor switching and lighting.



## Technical specifications for type VC51

Type	VC51-09	VC51-12	VC51-18	VC51-25	VC51-32	VC51-40	VC51-50	VC51-65	VC51-80	VC51-95		
Standard	IEC 60947-4-1											
Number of poles	3, 4	3, 4	3	3, 4	3	3, 4	3, 4	3, 4	3, 4	3, 4		
Rated operational current I <sub>e</sub> (A)	380 V	In AC-3	9	12	18	25	32	40	50	65	80	95
		In AC-4	3.5	5	7.7	8.5	12	18.5	24	28	37	44
	660 V	In AC-3	6.6	8.9	12	18	21	34	39	42	49	55
		In AC-4	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3
440 V	In AC-1	20	25	32	40	50	60	80	80	110	125	
Rated operational voltage U <sub>e</sub> (V)	Up to 690											
Frequency limits of the operational current (times/h)	25-400											
Rated conventional thermal current I <sub>th</sub> (A)	25	25	32	40	50	60	80	80	125	125		
Rated insulation voltage U <sub>i</sub> (V)	690											
Rated impulse withstand voltage U <sub>imp</sub> (kV)	8											
Rated frequency (Hz)	50/60											
Rated making capacity (A)	400 V	10 x I <sub>e</sub> AC-3 or 12 x I <sub>e</sub> AC-4										
Rated breaking capacity (A)	400 V	8 x I <sub>e</sub> AC-3 or 10 x I <sub>e</sub> AC-4										
Rated operational power in category AC-3 (kW)	220/230/240 V	2.2	3	4	5.5	7.5	11	15	18.5	22	25	
	380/400 V	4	5.5	7.5	11	15	18.5	22	30	37	45	
	660/690 V	5.5	7.5	10	15	18.5	30	33	37	45	45	
Fuse protection against short-circuit (A)	Without thermal overload relay, Gg fuse Type 1	20	25	32	40	50	63	80	80	125	160	
		Type 2	20	20	25	32	40	50	63	80	150	150
	With thermal overload relay	See specification and ordering data of VTR51, for aM or gG fuse ratings corresponding to the associated thermal overload relay										
Average impedance per pole (mΩ)	2.5	2.5	2.5	2	2	1.5	1.5	1.5	0.8	0.8		
Add-on auxiliary contact blocks	Front	VC51-A1 and VC51-A1D										
	Side	VC51-A1C										
	Front time delay	VC51-A2, VC51-A3										
	Front dust and damp protected	■										
Reversing contactor type	VC51DN											
Associated thermal overload relays	VTR51-25					VTR51-36 VTR51-93						
Operation cycles (times/hour)	Electrical AC-3	1200	1200	1200	1200	600	600	600	600	600	600	
	Electrical AC-4	300	300	300	300	300	300	300	300	300	300	
	Mechanical	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	
Electrical life (X 10 <sup>5</sup> times)	AC-3	1000	1000	1000	1000	800	800	600	600	600	600	
	AC-4	200	200	200	200	200	150	150	150	100	100	
Mechanical life (X 10 <sup>6</sup> times)	10											
Matching fuse model	RT16-20	RT16-20	RT16-32	RT16-40	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125		
Tightening torque (N · m) Connection	1.2	1.2	1.7	2.0	2.5	5	5	5	9	9		
Cabling cross section (CU)	Flexible cable with cold-pressed 2 socket (mm <sup>2</sup> )	1/2.5	1/2.5	1/4	1/4	1.5/4	2.5/10	2.5/10	2.5/10	4/16	4/16	
	Flexible cable without cold-pressed 2 socket (mm <sup>2</sup> )	1/4	1/4	1.5/6	1.5/6	2.5/10	2.5/16	2.5/16	2.5/16	4/25	4/25	
	Inflexible 2 cable (mm <sup>2</sup> )	1/4	1.5/4	1.5/6	1.5/6	1.5/10	2.5/25	2.5/25	2.5/25	4/50	4/50	
Screw size	M3.5	M3.5	M3.5	M4	M4	M8	M8	M8	M10	M10		
Degree of protection	IP20											
Ambient air temperature (°C)	-5 to +40, max. 95 % humidity											
Storage temperature (°C)	-40 - +75											
Maximum operating altitude (meters)	2000											
Flame resistance	Conforming to UL 94	V1										

## Selection and ordering data

### AC contactors VC51, 2.2 to 45 kW

Rated operational power			Rated operational current AC-3 380/400 V (A)	Main contact		Rated control circuit voltage V 50 Hz	Auxiliary contact		Type code	Order code
220/230 V (kW)	380/400 V (kW)	660/690 V (kW)		1	2		1	2		
2.2	4	5.5	9	3	0	220	1	0	VC51-0910M5	35306
				3	0		0	1	VC51-0901M5	15200
				3	0		1	1	VC51-0911M5	15201
				4	0		0	0	VC51-09004M5	17600
				2	2		0	0	VC51-09008M5	17601
3	5.5	7.5	12	3	0	220	1	0	VC51-1210M5	35308
				3	0		0	1	VC51-1201M5	15202
				3	0		1	1	VC51-1211M5	15203
				4	0		0	0	VC51-12004M5	17602
				2	2		0	0	VC51-12008M5	17603
4	7.5	10	18	3	0	220	1	0	VC51-1810M5	35310
				3	0		0	1	VC51-1801M5	15204
				3	0		1	1	VC51-1811M5	15205
				4	0		0	0	VC51-25004M5	17604
				2	2		0	0	VC51-25008M5	17605
5.5	11	15	25	3	0	220	1	0	VC51-2510M5	15206
				3	0		0	1	VC51-2501M5	38854
				3	0		1	1	VC51-2511M5	38855
				4	0		0	0	VC51-25004M5	17604
				2	2		0	0	VC51-25008M5	17605
7.5	15	18.5	32	3	0	220	1	0	VC51-3210M5	38856
				3	0		0	1	VC51-3201M5	38857
				3	0		1	1	VC51-3211M5	38858
				4	0		0	0	VC51-40004M5	17606
				2	2		0	0	VC51-40008M5	17607
11	18.5	30	40	3	0	220	1	1	VC51-4011M5	38859
				4	0		0	0	VC51-40004M5	17606
				2	2		0	0	VC51-40008M5	17607
				3	0		1	1	VC51-6011M5	38860
				4	0		0	0	VC51-50004M5	17608
15	22	33	50	2	2	220	0	0	VC51-50008M5	17609
				3	0		1	1	VC51-6511M5	38861
				4	0		0	0	VC51-65004M5	17610
				2	2		0	0	VC51-65008M5	17611
				3	0		1	1	VC51-8011M5	38862
18.5	30	37	65	4	0	220	0	0	VC51-80004M5	17612
				2	2		0	0	VC51-80008M5	17613
				3	0		1	1	VC51-9511M5	38863
				4	0		0	0	VC51-95004M5	17614
				2	2		0	0	VC51-95008M5	17615



Please contact us for other coil voltage and frequency listed in "coil voltage of contactor".

### VC51DN reversing contactors

Rated operational power				Rated operational current AC-3 380/400 V (A)	Rated control circuit voltage V 50 Hz	Type code	Order code
220/230 V (kW)	380/400 V (kW)	660/690 V (kW)	380/400 V (A)				
2.2	4	5.5	9	230	VC51DN-09P7	17616	
3	5.5	7.5	12	230	VC51DN-12P7	17616	
4	7.5	10	18	230	VC51DN-18P7	35276	
5.5	11	15	25	230	VC51DN-25P7	35277	
7.5	15	18.5	32	230	VC51DN-32P7	35278	
11	18.5	30	40	230	VC51DN-40P7	35279	
15	22	33	50	230	VC51DN-50P7	15961	
18.5	30	37	65	230	VC51DN-65P7	15962	
22	37	45	80	230	VC51DN-80P7	15963	
25	45	45	95	230	VC51DN-95P7	15964	

Please contact us for other coil voltage and frequency listed in "coil voltage of contactor".

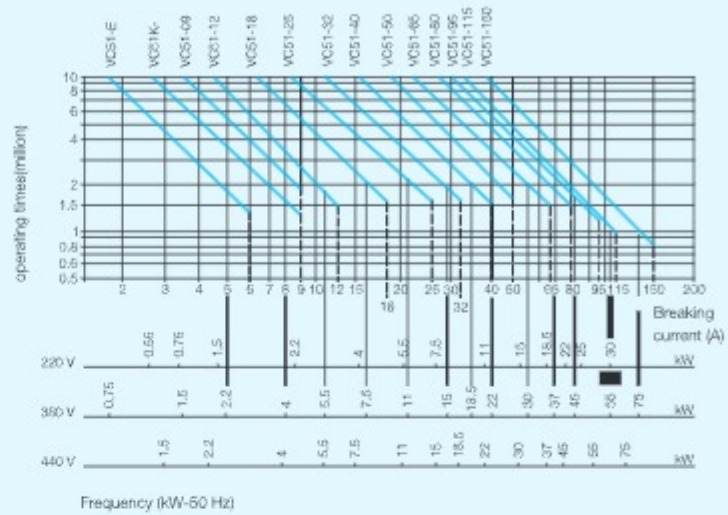
## Electrical life curve for AC contactor VC51

For breaking control when AC-3 type work. ( $U_e \leq 440$  V)  
The breaking current is equal to rated making current.

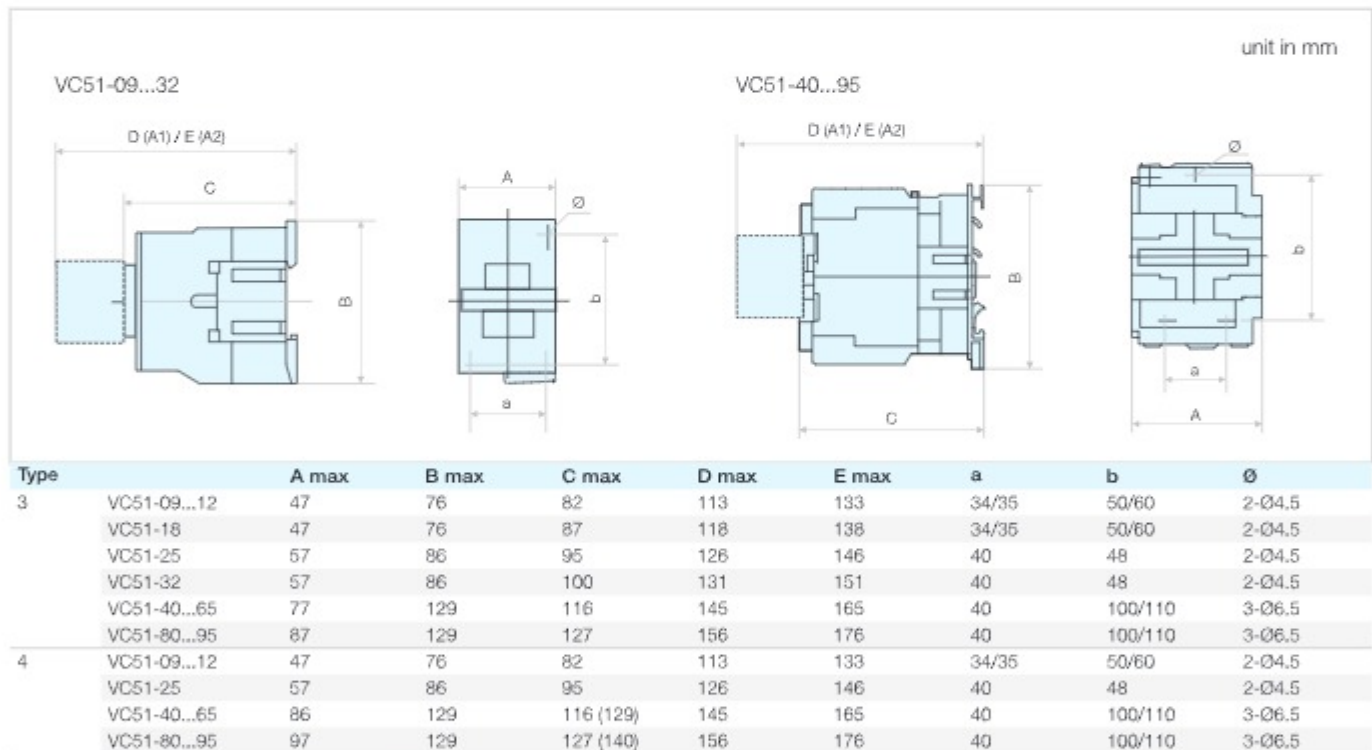
3

### Notes:

Asynchronous,  $P = 5.5$  kW,  
 $U_e = 400$  V,  $I_e = 11$  A,  $I_c = I_e = 11$  A  
motor or asynchronous,  $P = 5.5$  kW,  
 $U_e = 415$  V,  $I_e = 11$  A,  $I_c = I_e = 11$  A  
For 30 million electrical life.



## Outline and installation dimensions



Notes: The dimensions in brackets are for 008 (4P) type

Derivative products of AC contactor

Suitable for 3SC8 & PC61 & VC51



### Technical specifications for auxiliary contacts incorporated in the contactor 3SC8 & PC61 & VC51

- Standard: IEC 60947-5-1
- Number of auxiliary contacts: 2, 4
- Mounting type: Front, side
- Conventional heating current (A): 10
- Rated operational voltage Ue (V): Up to 690
- Rated insulation voltage Ui (V): 690
- Conventional thermal current Ith (A): 10
- Minimum switching capacity Imin (mA): 5
- Short circuit protection (A): gG fuse: 10 A
- Rated making capacity (A): 140

### Technical specifications for time delay contact incorporated in the contactor 3SC8 & PC61 & VC51

- Standard: IEC 60255-5
- Number of contacts: 2
- Mounting type: Front
- Delay time type: making time delay, breaking time delay
- Timing ranges: 0.1-3, 0.1-30, 10-180
- Repeat accuracy: ± 3 % (10 ms minimum)
- Reset time
- During time delay period (ms): 150
- After time delay period (ms): 50
- Conventional heating current (A): 10
- Rated operational voltage Ue (V): Up to 690
- Rated insulation voltage Ui (V): 250
- Conventional thermal current Ith (A): 10

### Coil voltage of contactor 3SC8 & PC61 & VC51




Coil voltage Us (V)	12	20	24	32	36	42	48	60	100	110	115	120	127	208	220	230	240	265	380	400	415	440	480	500	550	600	550/600 600/660	660/690
50 Hz	J5	-	B5	C5	-	D5	E5	-	-	F5	FE5	G5	FC5	LE5	M5	P5	U5	-	Q5	V5	N5	R5	T5	S5	SC5	X5	-	Y5
60 Hz	-	-	B6	-	-	-	E6	-	-	F6	-	-	-	-	M6	-	U6	-	Q6	-	-	R6	-	-	-	-	-	Y6
50/60 Hz	J7	Z7	B7	C7	CC7	D7	E7	EE7	K7	F7	FE7	-	FC7	-	M7	P7	U7	W7	Q7	V7	N7	R7	-	S7	-	-	X7	Y7

### Technical specifications for coil incorporated in contactor 3SC8 & PC61 & VC51

Type		3SC8-09/ PC61-09/ VC51-09	3SC8-12/ PC61-12/ VC51-12	3SC8-18/ PC61-18/ VC51-18	3SC8-25/ PC61-25/ VC51-25	3SC8-32/ PC61-32/ VC51-32	3SC8-40/ PC61-40/ VC51-40	3SC8-50/ PC61-50/ VC51-50	3SC8-65/ PC61-65/ VC51-65	3SC8-80/ PC61-80/ VC51-80	3SC8-95/ PC61-95/ VC51-95
Coil consumption	Pick-up (VA)	70	70	70	100	100	245	245	245	245	245
	Holding (VA)	50 Hz, 60 Hz	9.0	9.0	9.0	10	10	30	30	30	30
		50/60 Hz	10	10	10	11	11	32	32	32	32
	Power (W)	2-3.5	2-3.5	2-3.5	3-4	3-4	6-10	6-10	6-10	6-10	6-10

## Selection and ordering data

### Coil for contactor 3SC8 & PC61

	Standard control circuit voltage (V AC)	Rated frequency (Hz)	Voltage code	Type code			
				Type code	Order code		
<b>3SC8X-D2</b> for AC contactor 3SC8-9...18 	Suitable for contactors with auxiliary contact 1NO or 1NC						
	24	50/60	B7	C8X-D2B7	17359		
	110	50/60	F7	C8X-D2F7	32043		
	230	50/60	P7	C8X-D2P7	32049		
	Suitable for contactors with auxiliary contact 1NO+1NC						
	24	50/60	B7	C8X-D2NB7	14101		
	110	50/60	F7	C8X-D2NF7	14103		
	230	50/60	P7	C8X-D2NP7	14106		
	<b>3SC8X-D4</b> for AC contactor 3SC8-25...32 	Suitable for contactors with auxiliary contact 1NO or 1NC					
		24	50/60	B7	C8X-D4B7	17360	
110		50/60	F7	C8X-D4F7	32044		
230		50/60	P7	C8X-D4P7	32050		
Suitable for contactors with auxiliary contact 1NO+1NC							
24		50/60	B7	C8X-D4NB7	14111		
110		50/60	F7	C8X-D4NF7	14113		
230		50/60	P7	C8X-D4NP7	14116		
<b>3SC8X-D6</b> for AC contactor 3SC8-40...95 		24	50/60	B7	C8X-D6B7	17361	
		110	50/60	F7	C8X-D6F7	32045	
	230	50/60	P7	C8X-D6P7	32051		

Please contact us for other coil voltage and frequency listed in "coil voltage of contactor".

### Coil for contactor VC51

	Standard control circuit voltage (V AC)	Rated frequency (Hz)	Voltage code	Type code			
				Type code	Order code		
<b>VC51-D2</b> for AC contactor VC51-9...18	Suitable for contactors with auxiliary contact 1NO or 1NC						
	24	50/60	B7	VC51-D2-B7	38219		
	110	50/60	F7	VC51-D2-F7	38220		
	230	50/60	P7	VC51-D2-P7	38221		
	Suitable for contactors with auxiliary contact 1NO+1NC						
	24	50/60	B7	VC51-D2N-B7	38222		
	110	50/60	F7	VC51-D2N-F7	38223		
	230	50/60	P7	VC51-D2N-P7	38224		
	<b>VC51-D4</b> for AC contactor VC51-25...32	Suitable for contactors with auxiliary contact 1NO or 1NC					
		24	50/60	B7	VC51-D4-B7	38225	
110		50/60	F7	VC51-D4-F7	38226		
230		50/60	P7	VC51-D4-P7	38227		
Suitable for contactors with auxiliary contact 1NO+1NC							
24		50/60	B7	VC51-D4N-B7	38228		
110		50/60	F7	VC51-D4N-F7	38229		
230		50/60	P7	VC51-D4N-P7	38230		
<b>VC51-D6</b> for AC contactor VC51-40...95		24	50/60	B7	VC51-D6-B7	38231	
		110	50/60	F7	VC51-D6-F7	38232	
	230	50/60	P7	VC51-D6-P7	38233		

Please contact us for other coil voltage and frequency listed in "coil voltage of contactor".



3

## Auxiliary contact

Suitable for 3SC8 & PC61 & VC51

● Instruction of type code

<b>C8</b>	<b>A1</b>	<b>02</b>
Series code	Model code A1: Front type A1C: Side type A1D: Front type	Code of auxiliary contact 02: 2NC 11: 1NO+1NC 20: 2NO 04: 4NC 13: 1NO+3NC 22: 2NO+2NC 31: 3NO+1NC 40: 4NO

## Time-delay auxiliary contact

Suitable for 3SC8 & PC61 & VC51

● Instruction of type code

<b>C8</b>	<b>A2</b>	<b>T0</b>
Series code	Delay type A2: Making time-delay A3: Breaking time-delay	Delay scope T0: 0.1-3 s (A2) T2: 0.1-30 s (A2) T4: 10-180 s (A2) R0: 0.1-3 s (A3) R2: 0.1-30 s (A3) R4: 10-180 s (A3)

## Selection and ordering data

### Auxiliary contact blocks

Mounting type	Auxiliary contacts		Type code	Order code
	1	2		
Front	0	2	C8 A1/02	29578
	1	1	C8 A1/11	29579
	2	0	C8 A1/20	29580



Front	0	4	C8 A1/04	29581
	1	3	C8 A1/13	29582
	2	2	C8 A1/22	29583
	3	1	C8 A1/31	29584
	4	0	C8 A1/40	29585



Front	1	0	C8 A1D/10	29587
	0	1	C8 A1D/01	29588



Side	1	1	C8 A1C	29586
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### Time-delay auxiliary contact

Delay type	Auxiliary contacts		Delay scope	Type code	Order code
	1	2			
making	1	1	0.1-3 s	C8 A2/T0	29589
			0.1-30 s	C8 A2/T2	29590
			10-180 s	C8 A2/T4	29591
breaking			0.1-3 s	C8 A3/R0	29592
			0.1-30 s	C8 A3/R2	29593
			10-180 s	C8 A3/R4	29594



### Mechanical interlock

Matched contactor	Type code	Order code
3SC8-09...32	3SC8-A4X	29595
3SC8-40...95	3SC8-A4D	29596

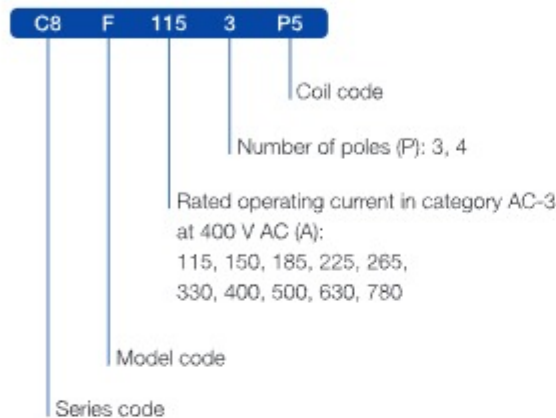


## Applications and functions for AC contactor 3SC8-F

- Used for controlling 3-phase motors and generally for controlling power circuits.
- Used for many other applications such as isolation, capacitor switching and lighting.



## Instruction of type code



## Technical specifications for contactor 3SC8-F

Model		3SC8-F115	3SC8-F150	3SC8-F185	3SC8-F225	3SC8-F265	3SC8-F330	3SC8-F400	3SC8-F500	3SC8-F630	3SC8-F780	
Standard		IEC 60947-4-1										
Number of poles		3, 4	3, 4	3, 4	3, 4	3	3	3, 4	3, 4	3, 4	3, 4	
Rated operational current I <sub>e</sub> (A)	In AC-3	115	150	185	225	265	330	400	500	630	780	
	In AC-1	200	250	275	315	350	400	500	700	1000	1600	
Rated operational voltage U <sub>e</sub> (V)	Up to	1000										
Frequency limits of the operational current (times/h)		16-200										
Rated conventional thermal current I <sub>th</sub> (A)		200	250	275	315	350	400	500	700	1000	1600	
Rated insulation voltage U <sub>i</sub> (V)		1000										
Rated impulse withstand voltage U <sub>imp</sub> (kV)		8										
Rated frequency (Hz)		50/60										
Rated making capacity (A)		10 × I <sub>n</sub> AC-3 or 12 × I <sub>n</sub> AC-4										
Rated breaking capacity (A)	400 V	8 × I <sub>n</sub> AC-3 or 10 × I <sub>n</sub> AC-4										
Rated operational power in category AC-3 (kW)	220/230/240 V	30	40	55	68	75	100	129	147	200	220	
	380/400 V	55	75	90	100	132	160	200	250	335	400	
	660/690 V	80	100	120	129	180	220	280	355	450	475	
Short-circuit protection by fuse (A)	Motor circuit (type aM)	125	160	200	250	315	400	400	500	630	-	
	With thermal overload relay (type gG)	200	200	315	315	500	500	630	800	800	-	
	gG fuses	200	250	315	315	400	500	500	800	1000	-	
Average impedance per pole (mW)	Front	0.37	0.35	0.33	0.32	0.3	0.28	0.26	0.18	0.12	0.1	
Add-on auxiliary contact blocks	Front	identical to those used on 3SC8 contactors										
	Side	-										
	Front time delay	identical to those used on 3SC8 contactors										
	Front dust and damp protected	-										
Reversing contactor type		3SC8-FN										
Associated thermal overload relays		3SR8-F53						3SR8-F73				
Operation cycles (times/hour)	In AC-3	1200	1200	600	600	600	600	600	600	600	600	
Electrical life (× 10 <sup>6</sup> times)		1.2	1.2	1	1	0.8	0.8	0.8	0.8	0.8	0.8	
Mechanical life (× 10 <sup>6</sup> times)		10	10	6	6	6	6	6	6	6	6	
Matching fuse model		RT16-1	RT16-1	RT16-2	RT16-2	RT16-2	RT16-3	RT16-3	RT16-4	RT16-4	RT16-4	
Tightening torque (N·m) Connection		0.8	0.8	0.8	1.2	1.2	1.2	1.2	1.2	4	4	
Cabling cross section CU (mm <sup>2</sup> )		95	120	150	185	240	240	2 × 150	2 × 240	240	300	
Screw size		M6	M8	M8	M10	M10	M10	M10	M12	M12	M4	
Degree of protection		IP20										
Ambient air temperature (°C)		-5 to +40, max. 95 % humidity										
Storage temperature (°C)		-40 ~ +70										
Maximum operating altitude (meters)		2000										
Flame resistance	Conforming to UL 94	V1										

# Contactors

## Series 3SC8-F

### Selection and ordering data

#### 3SC8-F contactor

3



Rated operating current 400 V AC-3 (A)	Conventional thermal current (A)	Standard power ratings of 3 phase motors 50-60 Hz AC-3			Poles 	230 V 50 Hz	
		220 V	380 V	415 V		Please contact us for other coil voltage	
		230 V (KW)	400 V (KW)	440 V (KW)		Type code	Order code
115	200	30	55	59	3	C8 F1153P5	12093
					4	C8 F1154P5	12103
150	220	40	75	80	3	C8 F1503P5	12094
					4	C8 F1504P5	12104
185	275	55	90	100	3	C8 F1853P5	12095
					4	C8 F1854P5	12105
225	315	63	110	110	3	C8 F2253P5	12096
					4	C8 F2254P5	12106
265	350	75	132	140	3	C8 F2653P5	12097
					4	C8 F2654P5	12107
330	400	100	165	180	3	C8 F3303P5	12098
					4	C8 F3304P5	12108
400	500	115	200	220	3	C8 F4003P5	12099
					4	C8 F4004P5	12109
500	700	147	250	280	3	C8 F5003P5	12100
					4	C8 F5004P5	12110
630	1000	200	335	375	3	C8 F6303P5	12101
					4	C8 F6304P5	12111
780	1500	220	400	425	3	C8 F7803P5	12102
					4	C8 F7804P5	12112








#### 3SC8-FN reversing contactors



Rated operating current 400 V AC-3 (A)	Conventional thermal current (A)	Standard power ratings of 3 phase motors 50-60 Hz AC-3			Poles 	230 V 50 Hz	
		220 V	380 V	415 V		Please contact us for other coil voltage	
		230 V (KW)	400 V (KW)	440 V (KW)		Type code	Order code
115	200	30	55	60	3	C8 FN115P5	15718
					4	C8 FN1154P5	15719
150	250	40	75	80	3	C8 FN150P5	15720
					4	C8 FN1504P5	15721
185	275	55	90	100	3	C8 FN185P5	15722
					4	C8 FN1854P5	15723
225	315	63	110	120	3	C8 FN225P5	15724
					4	C8 FN2254P5	15725
265	350	75	132	140	3	C8 FN265P5	15726
					4	C8 FN2654P5	15727
330	400	100	165	180	3	C8 FN330P5	15728
					4	C8 FN3304P5	15729
400	500	115	200	220	3	C8 FN400P5	15730
					4	C8 FN4004P5	15731
500	700	147	250	280	3	C8 FN500P5	15732
					4	C8 FN5004P5	15733
630	1000	200	335	375	3	C8 FN630P5	15734
					4	C8 FN6304P5	15735
780	1500	220	400	425	3	C8 FN780P5	15736
					4	C8 FN7804P5	15737

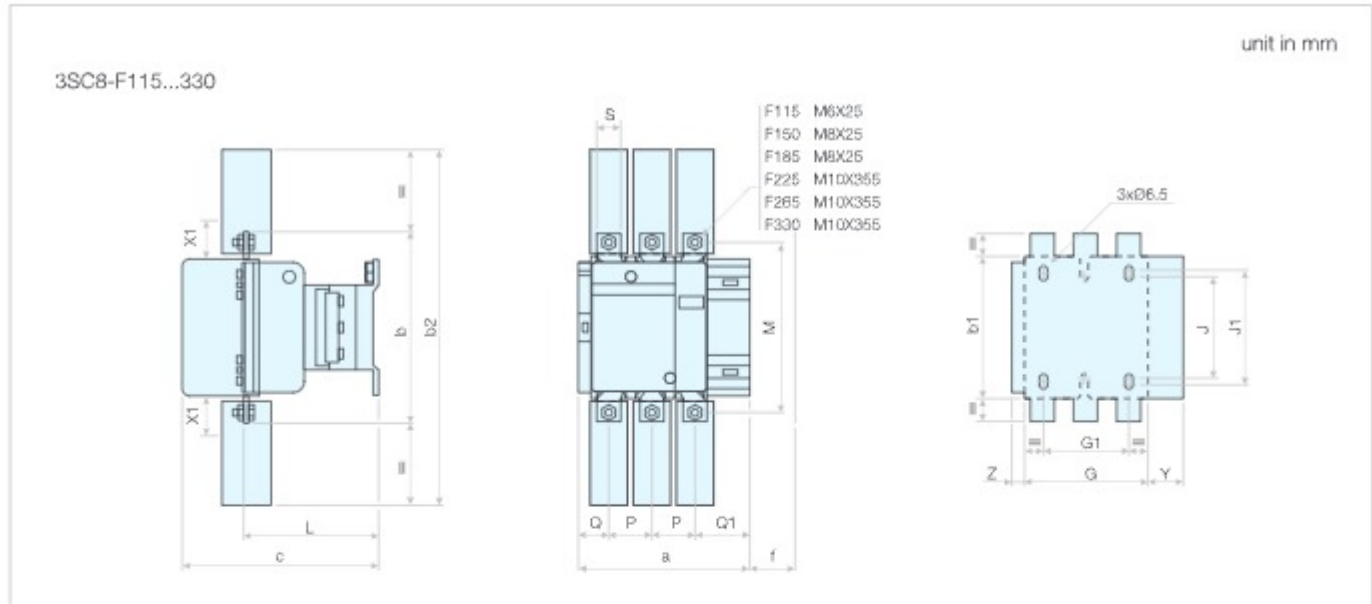
## Selection and ordering data

### Coil for contactor 3SC8-F

	Standard control circuit voltage (V AC)	Rated frequency (Hz)	Voltage code	Type code	Order code
<b>3SC8X-FF for AC contactor 3SC8-F115...150</b> 	230	50/60	P7	C8X-FFP7	<b>32002</b>
	240	50/60	U7	C8X-FFU7	<b>32003</b>
	380	50/60	Q7	C8X-FFQ7	<b>32004</b>
	440	50/60	R7	C8X-FFR7	<b>32006</b>
<b>3SC8X-FG for AC contactor 3SC8-F185...225</b> 	230	50/60	P7	C8X-FGP7	<b>32008</b>
	240	50/60	U7	C8X-FGU7	<b>32009</b>
	380	50/60	Q7	C8X-FGQ7	<b>32010</b>
	440	50/60	R7	C8X-FGR7	<b>32012</b>
<b>3SC8X-FH for AC contactor 3SC8-F265...330</b> 	230	50/60	P7	C8X-FHP7	<b>32014</b>
	240	50/60	U7	C8X-FHU7	<b>32015</b>
	380	50/60	Q7	C8X-FHQ7	<b>32016</b>
	440	50/60	R7	C8X-FHR7	<b>32018</b>
<b>3SC8X-FJ for AC contactor 3SC8-F400</b> 	230	50/60	P7	C8X-FJP7	<b>32020</b>
	240	50/60	U7	C8X-FJU7	<b>32021</b>
	380	50/60	Q7	C8X-FJQ7	<b>32022</b>
	440	50/60	R7	C8X-FJR7	<b>32024</b>
<b>3SC8X-FK for AC contactor 3SC8-F500</b> 	230	50/60	P7	C8X-FKP7	<b>32026</b>
	240	50/60	U7	C8X-FKU7	<b>32027</b>
	380	50/60	Q7	C8X-FKQ7	<b>32028</b>
	440	50/60	R7	C8X-FKR7	<b>32030</b>
<b>3SC8X-FL for AC contactor 3SC8-F630</b> 	230	50/60	P7	C8X-FLP7	<b>32032</b>
	240	50/60	U7	C8X-FLU7	<b>32033</b>
	380	50/60	Q7	C8X-FLQ7	<b>32034</b>
	440	50/60	R7	C8X-FLR7	<b>32036</b>
<b>3SC8X-FX for AC contactor 3SC8-F780</b> 	230	50/60	P7	C8X-FXP7	<b>32038</b>
	240	50/60	U7	C8X-FXU7	<b>32039</b>
	380	50/60	Q7	C8X-FXQ7	<b>32040</b>
	440	50/60	R7	C8X-FXR7	<b>32042</b>

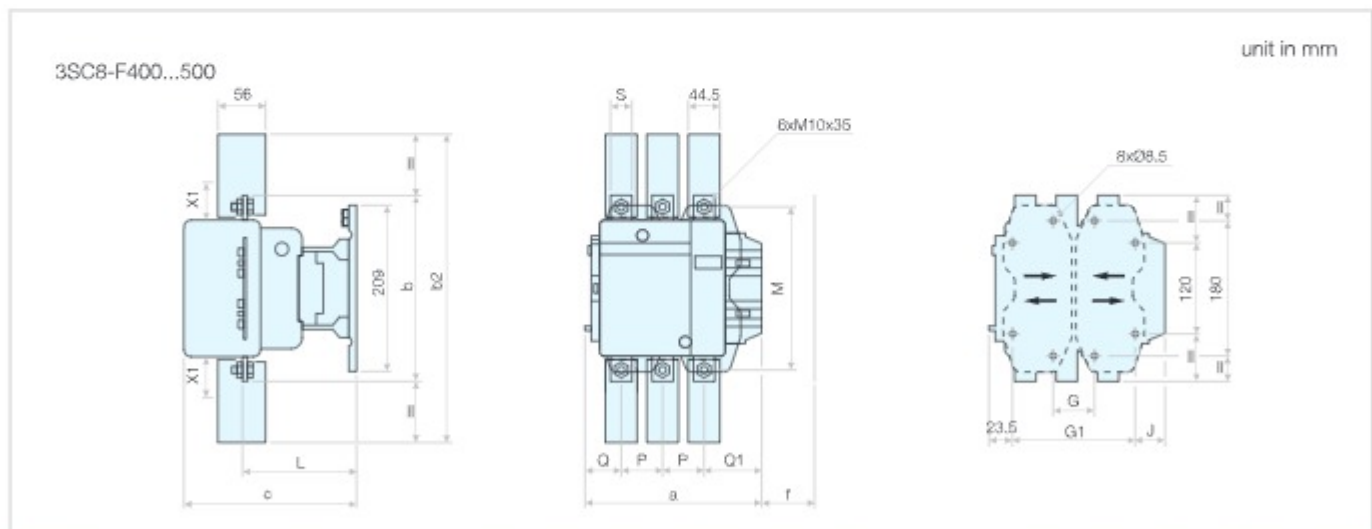
## Outline and installation dimensions (Series 3SC8-F)

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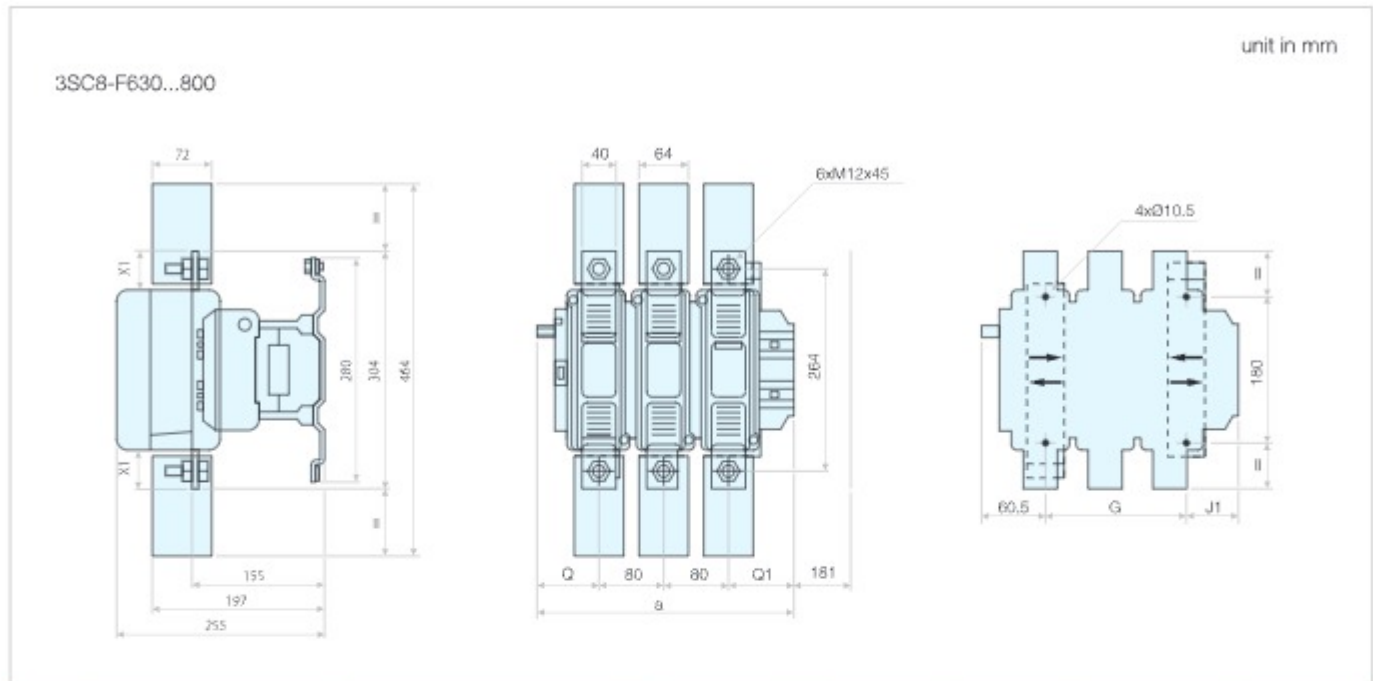
3SC8-F		a	b	b1	b2	c	f	G	G1	J	J1	L	M	P	Q	Q1	S	1	Y	Z
115	3P	163.5	162	137	265	171	131	106	80	106	120	107	147	37	29.5	60	20	26	44	13.5
	4P	200.5	162	137	265	171	131	143	80	106	120	107	147	37	29.5	60	20	26	44	13.5
150	3P	163.5	170	137	301	171	131	106	80	106	120	107	150	40	26	57.5	20	34	44	13.5
	4P	200.5	170	137	301	171	131	143	80	106	120	107	150	40	26	55.5	20	34	44	13.5
185	3P	168.5	174	137	305	181	130	111	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
	4P	208.5	174	137	305	181	130	151	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
225	3P	168.5	197	137	364	181	130	111	80	106	120	113.5	172	48	21	51.5	25	44.5	44	13.5
	4P	208.5	197	137	364	181	130	151	80	106	120	113.5	172	48	17	47.5	25	44.5	44	13.5
265	3P	201.5	203	145	375	213	147	142	96	106	120	141	178	48	39	66.5	25	44.5	38	21.5
	4P	244.5	203	145	375	213	147	190	96	106	120	141	178	48	34	66.5	25	44.5	38	21.5
330	3P	213	206	145	375	219	147	154.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5
	4P	261	206	145	375	219	147	202.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5

f = minimum distance required for coil removal

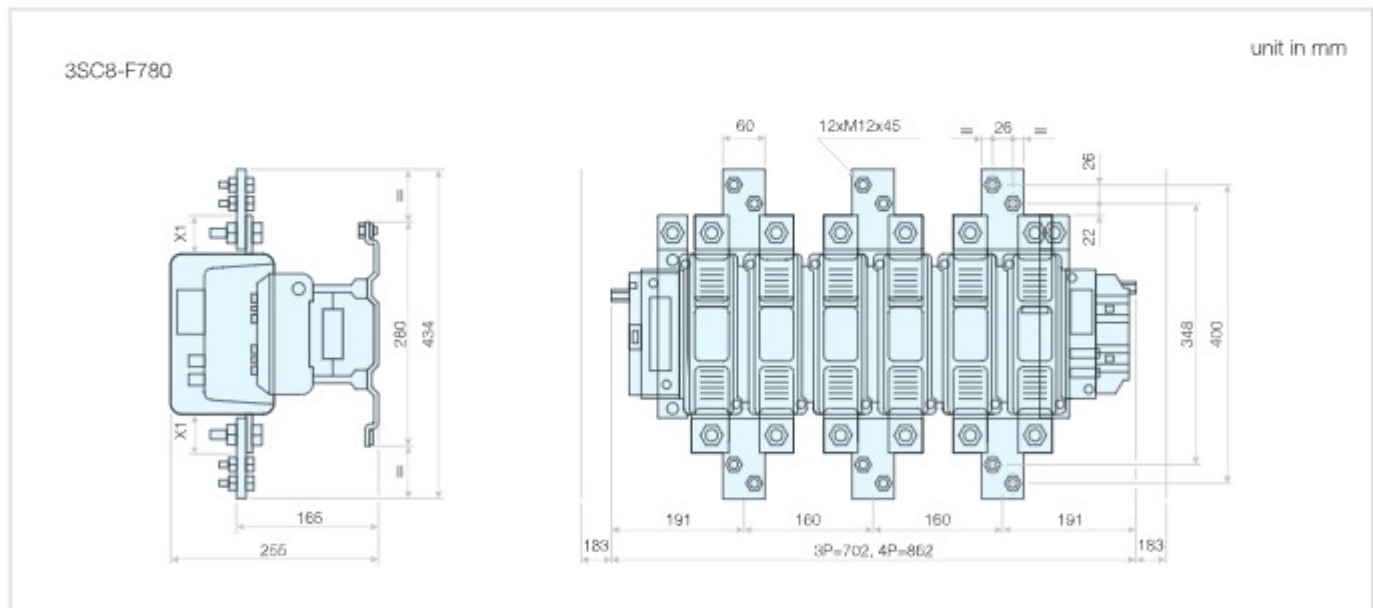


3SC8-F		a	b	b2	c	f	G*	G min.	G max.	G1*	G1 min.	G1 max.	J	L	M	P	Q	Q1	S
400	2P	213	206	375	219	119	80	66	102	170	156	192	19.5	145	181	48	69	96	25
	3P	213	206	375	219	119	80	66	102	170	156	192	19.5	145	181	48	43	74	25
	4P	261	206	375	219	119	80	66	150	170	156	240	67.5	145	181	48	43	74	25
500	2P	233	238	400	232	141	80	66	120	170	156	210	39.5	146	208	55	76	102	30
	3P	233	238	400	232	141	80	66	120	170	156	210	39.5	146	208	55	46	77	30
	4P	288	288	400	232	141	140	66	175	230	156	265	34.5	146	208	55	46	77	30

Outline and installation dimensions (Series 3SC8-F)



3SC8-F		a	G	G min.	G max.	J1	Q	Q1
630	2P	309	180	100	195	68.5	102	127
630, 800	3P	309	180	100	195	68.5	60	89
630	4P	309	240	150	275	68.5	60	89



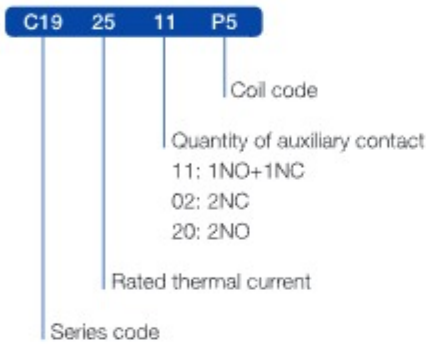
# Capacitor Switching Contactors Series 3SC19

## Applications and functions

- Switching parallel connection capacitance from low voltage reactive power compensating equipments
- Reducing efficiently the impact to capacitor and restraining over-voltage when switching ON/OFF with special flow-cut equipment

## Instruction of type code

3



## Technical specifications

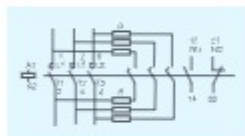
Type		3SC19-25	3SC19-32	3SC19-43	3SC19-50	3SC19-63	3SC19-80	3SC19-95	3SC19-125
Rated insulating voltage $U_i$	V	690	690	690	690	690	690	690	690
Rated conventional thermal current $I_{th}$	A	25	32	43	50	63	80	95	125
Controllable power AC-6b	220/230 V	Kvar	6	8.5	10	12	15	22	25
	380/400 V	Kvar	12	16	20	25	30	37	45
	660/690 V	Kvar	12	16	20	25	30	37	45
Rated current of capacitor	400 V	A	17.3	23	29	36	43	53	65
Rated working current 1.3Ie	A	22.5	30	37.7	47	56	69	85	94
Restrained surge capacity		$\leq 20 I_e$	$\leq 20 I_e$	$\leq 20 I_e$	$\leq 20 I_e$	$\leq 20 I_e$	$\leq 20 I_e$	$\leq 20 I_e$	$\leq 20 I_e$
Coil consumed power	Starting	VA	70	100	100	245	245	245	245
	Holding	VA	9	10	10	30	30	30	30
Auxiliary contact type	2NO		√	√	√	-	-	-	-
	2NC		√	√	√	-	-	-	-
	1NO + 1NC		√	√	√	-	-	-	-
	2NO + 1NC		-	-	-	√	√	√	√
	1NO + 2NC		-	-	-	√	√	√	√
Mechanical life	$10^6$	times	300	300	300	100	100	100	80
Electrical life	$10^6$	times	10	10	10	6	6	6	6
Operating frequency		times/h	120	120	120	120	120	120	120
Pollution grade			3	3	3	3	3	3	3
Installation category			3	3	3	3	3	3	3
Installation type	screws		√	√	√	√	√	√	√
	35mm DIN-rail		√	√	√	√	√	√	√
	75mm DIN-rail		-	-	-	-	√	√	√
Ambient air temperature	°C	-5 - +40	-5 - +40	-5 - +40	-5 - +40	-5 - +40	-5 - +40	-5 - +40	-5 - +40
Altitude	max. meter	2000	2000	2000	2000	2000	2000	2000	2000
Coil sectional area (mm <sup>2</sup> )		4	6	10	10	16	25	35	50
Tightening torque (N-m)		1.7	2.0	2.5	5	5	5	9	9

## Selection and ordering data

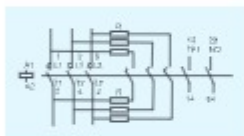
Rated conventional thermal current I <sub>th</sub> (A)	Controllable power			Auxiliary contact		230 V AC 50Hz	
	230 V (KW)	380 V (KW)	660 V (KW)	1	2	Type code	Order code
25	6	12	12	1	1	C19 2511 P5	27308
				0	2	C19 2502 P5	27309
				2	0	C19 2520 P5	27310
32	8.5	16	16	1	1	C19 3211 P5	27311
				0	2	C19 3202 P5	27312
				2	0	C19 3220 P5	27313
43	10	20	20	1	1	C19 4311 P5	27314
				0	2	C19 4302 P5	27315
				2	0	C19 4320 P5	27316
50	12	25	25	1	2	C19 5012 P5	27317
				2	1	C19 5021 P5	27318
63	15	30	30	1	2	C19 6312 P5	27319
				2	1	C19 6321 P5	27320
80	22	37	37	1	2	C19 8012P5	27321
				2	1	C19 8021P5	27322
95	23	45	45	1	2	C19 9512 P5	25496
				2	1	C19 9521 P5	25686
125	25	50	50	1	2	C19 12512 P5	27323
				2	1	C19 12521 P5	27324



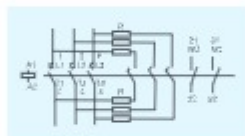
## Terminal and electric diagram



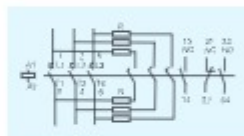
3SC19-2511  
3SC19-3211  
3SC19-4311



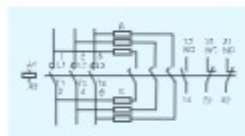
3SC19-2520  
3SC19-3220  
3SC19-4320



3SC19-2502  
3SC19-3202  
3SC19-4302

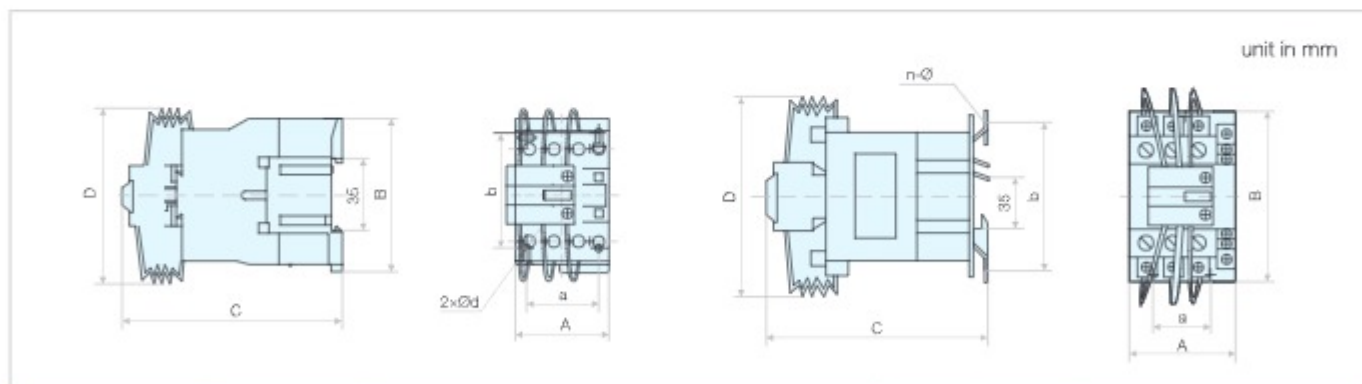


3SC19-5021  
3SC19-6321  
3SC19-8021  
3SC19-9521  
3SC19-12521



3SC19-5012  
3SC19-6312  
3SC19-8012  
3SC19-9512  
3SC19-12512

## Outline and installation dimensions



Type	Outline dimensions				Installation dimensions		
	A	B	C	D	a	b	C
3SC19-25	47	76	124	100	34/35	50/60	2-Ø4.5
3SC19-32	57	86	132	110	40	50/60	2-Ø4.5
3SC19-43	57	86	136	110	40	50/60	2-Ø4.5
3SC19-50	77	129	152	155	40	100/110	3-Ø6.5
3SC19-63	77	129	152	155	40	100/110	3-Ø6.5
3SC19-80	77	129	152	155	40	100/110	3-Ø6.5
3SC19-95	87	129	162	165	40	100/110	3-Ø6.5
3SC19-125	87	129	162	165	40	100/110	3-Ø6.5



# Thermal Overload Relays

## Series 3SR8-K

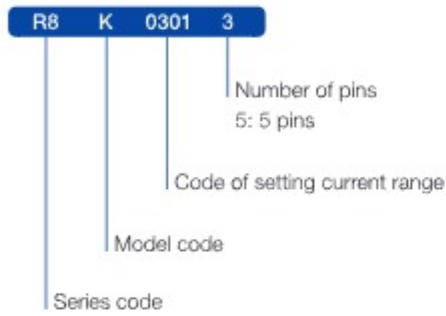
### Applications and functions for thermal relay

- Overload protection and phase-failure protection.
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors.



3

### Instruction of type code



### Technical specifications for assembled thermal relay of type 3SC8-K

- Standard: IEC 60947-4-1
- Tripping class: 10 A
- Number of connecting pin: 5
- Rated operational voltage  $U_e$  (V): up to 690
- Rated insulation voltage  $U_i$  (V): 690
- Rated impulse withstand voltage  $U_{imp}$  (kV): 6
- Rated current range  $I_n$  (A):  
0.1-0.16, 0.16-0.25, 0.25-0.4, 0.4-0.63, 0.63-1, 1-1.6,  
1.6-2.5, 2.5-4, 4-6, 5.5-8, 7-10, 9-13
- Signalling: Trip indicator
- Tightening torque (N·m): 0.8
- Degree of protection: IP20
- Ambient air temperature (°C): -5 to +40, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Maximum operating altitude (meters): 2000
- Flame resistance: V1
- Mounting: directly under the contactor

### Selection and ordering data

#### 3SR8-K thermal relay matched with contactor 3SC8-K

	Current setting range (A)	Fuses to be used with selected relay		Type code	Order code
		aM Type (A)	gG Type (A)		
3SR8-K 5 Pins	0.1-0.16	0.25	0.5	R8 K0301	15594
	0.16-0.25	0.25	0.5	R8 K0302	15595
	0.25-0.4	0.5	1	R8 K0303	15596
	0.4-0.63	1	1.6	R8 K0304	15597
	0.63-1	1	2	R8 K0305	15598
	1-1.6	2	6	R8 K0306	15599
	1.6-2.5	4	8	R8 K0307	15600
	2.5-4	4	10	R8 K0308	15601
	4-6	6	16	R8 K0310	15602
	5.5-8	8	20	R8 K0312	15603
	7-10	10	25	R8 K0314	15604
	9-13	16	32	R8 K0316	15605

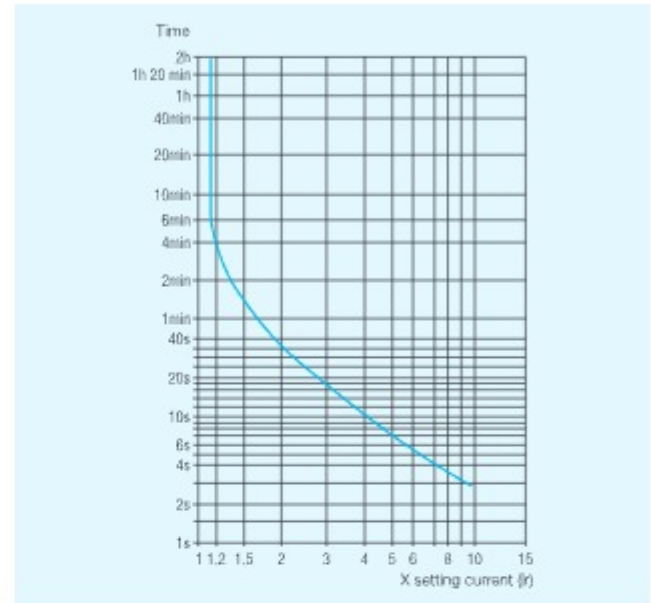
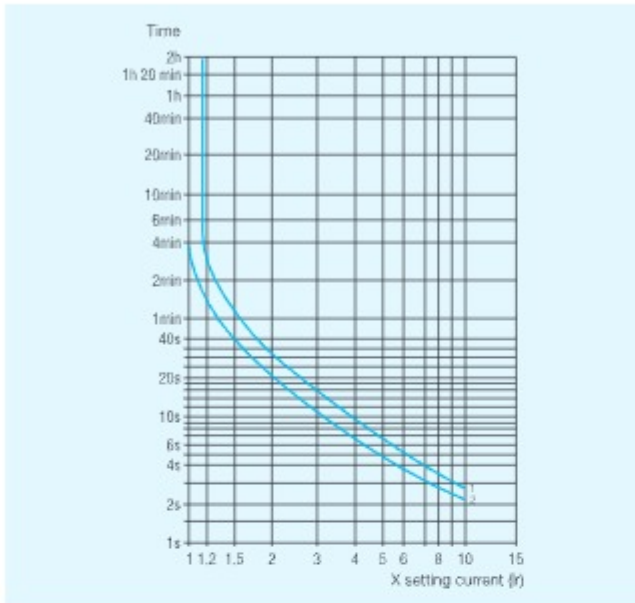


**Tripping curve of thermal relay 3SR8-K**

Average operating time related to multiples of the current setting (Class 10 A)

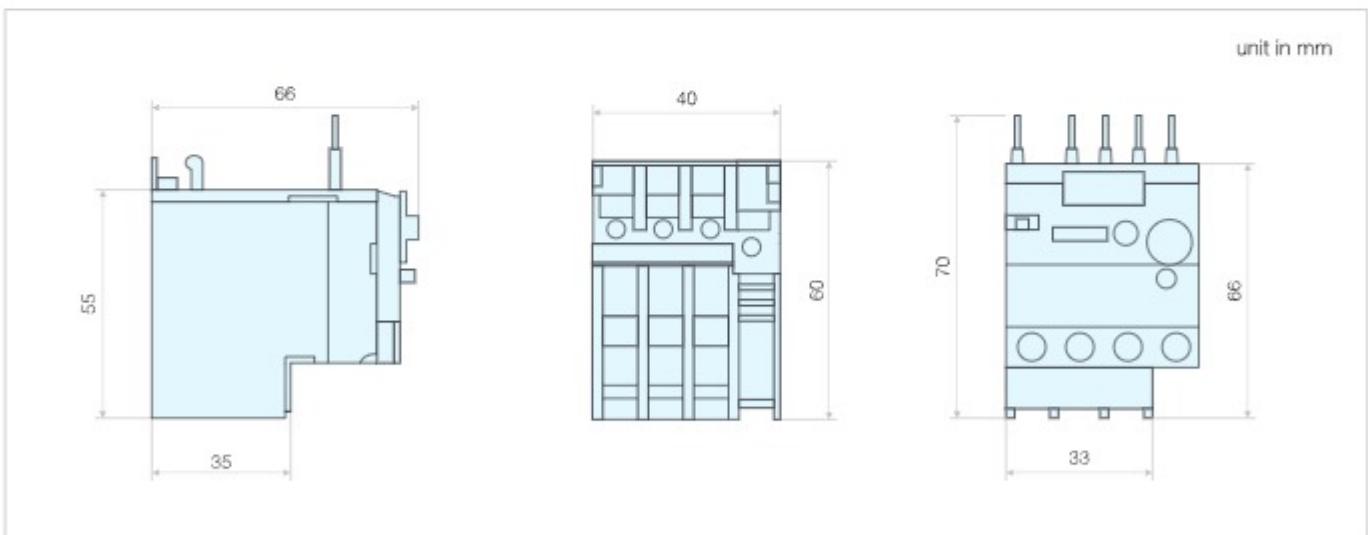
Balanced 3-phase operation, from cold state

Balanced operation with 2 phases only, from cold state



- 1 Setting: at lower end of scale
- 2 Setting: at upper end of scale

**Outline and installation dimensions (3SC8-K, 3SR8-K)**



# Thermal Overload Relays

## Series 3SR8

### Applications and functions for thermal relay 3SR8

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors.



### Instruction of type code

3




R8	25	0.16
Max. setting current range (A):		
	0.16: 0.1-0.16	10: 7-10
	0.25: 0.16-0.25	13: 9-13
	0.4: 0.25-0.4	18: 12-18
	0.63: 0.4-0.63	25: 17-25
	1: 0.63-1	32: 23-32
	1.6: 1-1.6	36: 28-36
	2: 1.25-2	40: 30-40
	2.5: 1.6-2.5	50: 37-50
	4: 2.5-4	65: 48-65
	6: 4-6	70: 55-70
	8: 5.5-8	80: 63-80
		93: 80-93
Rated frame current (A): 25, 36, 93		
Series code		

### Technical specifications for assembled thermal relay of type 3SR8

Type	3SR8-D13	3SR8-D23	3SR8-D33
Standard	IEC 60947-4-1		
Tripping class	10 A		
Rated working current I <sub>e</sub> (A)	25	36	93
Setting range (A)	0.1-25	23-36	23-93
Rated insulation voltage U <sub>i</sub> (V)	690		
Rated impulse withstand voltage U <sub>imp</sub> (kV)	6		
Signalling Trip indicator	Trip indicator		
Tightening torque (N·m)	0.8		
Degree of protection	IP20		
Ambient air temperature (°C)	-5 to +40, max. 95 % humidity		
Storage temperature (°C)	-40 - +75		
Maximum operating altitude (meters)	2000		
Flame resistance	V1		
Mounting	Directly under the contactor		


### Selection and ordering data

#### Series 3SR8

	Rated frame current (A)	Current setting range (A)	Matched fuse type		Matched AC contactor	Type code	Order code		
			aM (A)	gG (A)					
	25	0,1-0,16	0,25	2	3SC8-09	R8 25/0,16	22875		
		0,16-0,25	0,25	2	3SC8-09	R8 25/0,25	22876		
		0,25-0,4	1	2	3SC8-09	R8 25/0,40	22877		
		0,4-0,63	1	2	3SC8-09	R8 25/0,63	22878		
		0,63-1	2	4	3SC8-09	R8 25/1	22879		
		1-1,6	2	4	3SC8-09	R8 25/1,6	22880		
		1,25-2	4	6	3SC8-09	R8 25/2	22881		
		1,6-2,5	4	6	3SC8-09	R8 25/2,5	22882		
		2,5-4	6	10	3SC8-09	R8 25/4	22883		
		4-6	8	16	3SC8-09	R8 25/6	22884		
		5,5-8	12	20	3SC8-09	R8 25/8	22885		
		7-10	12	20	3SC8-12	R8 25/10	22886		
		9-13	16	25	3SC8-12	R8 25/13	22887		
		12-18	20	35	3SC8-18	R8 25/18	22888		
		17-25	25	50	3SC8-25	R8 25/25	22889		
			36	23-32	40	63	3SC8-32	R8 36/32	22890
				28-36	40	80	3SC8-32	R8 36/36	22891
	93	23-32	40	63	3SC8-40	R8 93/32	22892		
		30-40	40	100	3SC8-40	R8 93/40	22893		
		37-50	63	100	3SC8-50	R8 93/50	22894		
		48-65	63	100	3SC8-65	R8 93/65	22895		
		55-70	80	125	3SC8-80	R8 93/70	22896		
		63-80	80	125	3SC8-80	R8 93/80	22897		
		80-93	100	160	3SC8-95	R8 93/93	22898		

3

#### Mounting block

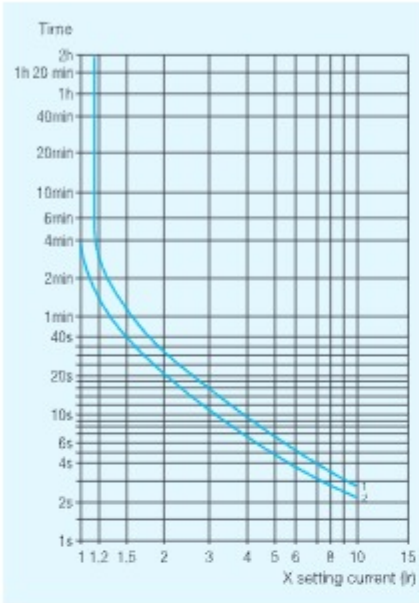
	Matched relay	Type code	Order code
	R8 25	C8 A7D1064	15971
	R8 36	C8 A7D2064	15972
	R8 93	C8 A7D3064	15973

# Thermal Overload Relays Series 3SR8

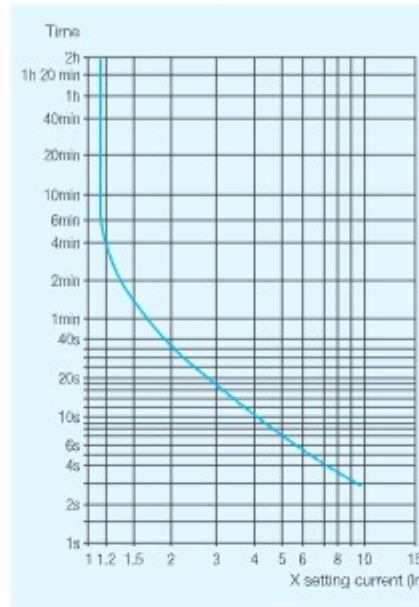
## Action characteristics for thermal relay 3SR8

Average operating time related to multiples of the current setting (Class 10 A)

Balanced 3-phase operation, from cold state

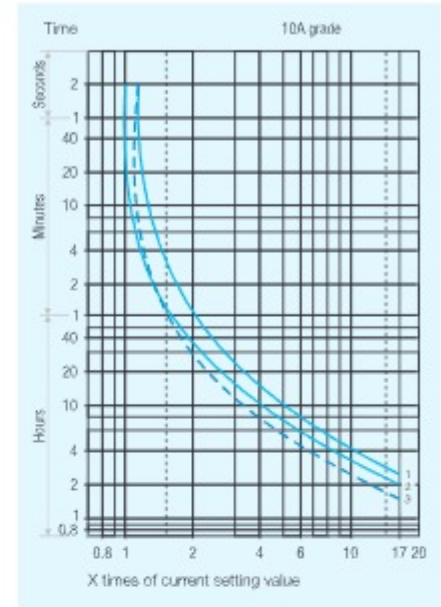


Balanced operation with 2 phases only, from cold state



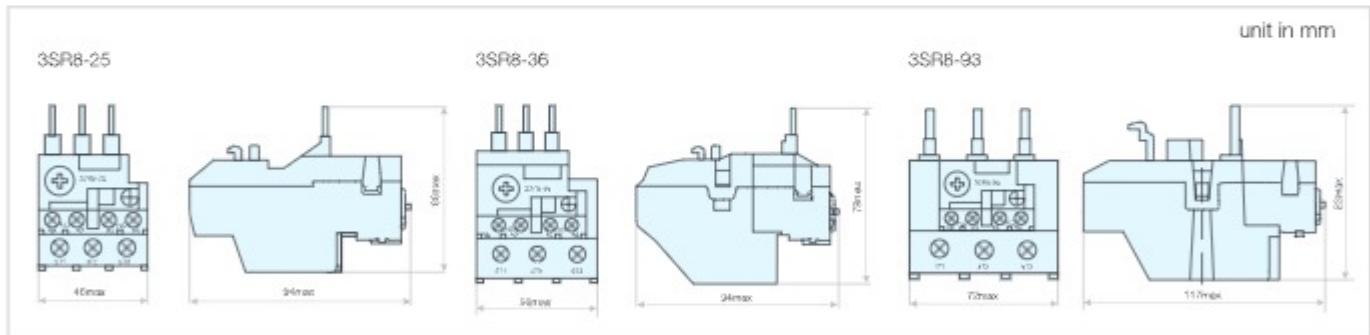
- 1 Setting: at lower end of scale
- 2 Setting: at upper end of scale

## Tripping curve for thermal relay 3SR8

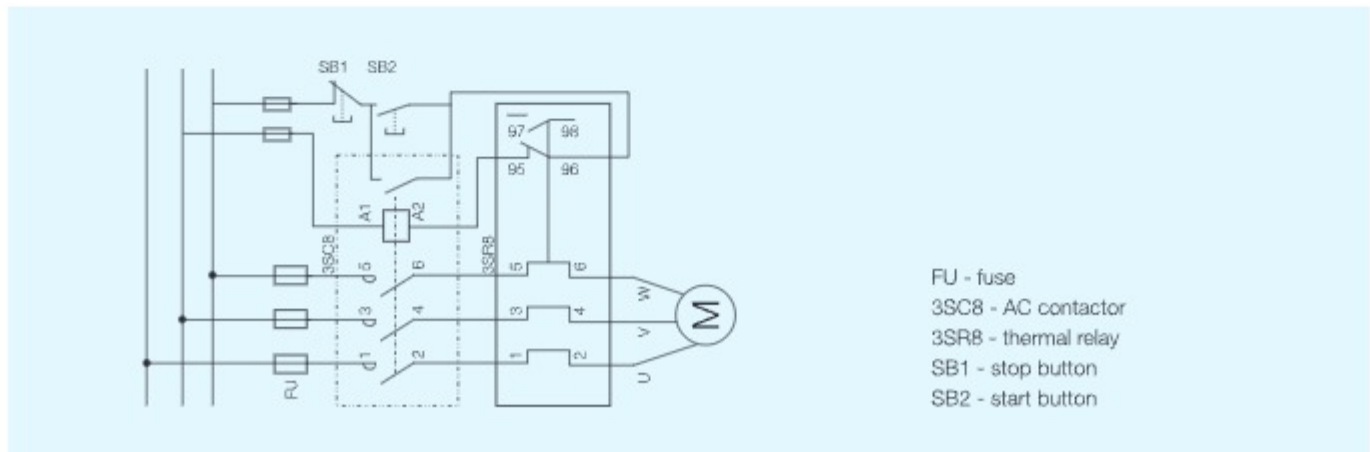


1. Equilibrium running, 3 phase, start from cold state
2. Equilibrium running, 2 phase, start from cold state
3. Equilibrium running, 3 phase, after long period of setting current (hot state)

## Outline and installation dimensions



## Operating principle diagram of overload relay



- FU - fuse
- 3SC8 - AC contactor
- 3SR8 - thermal relay
- SB1 - stop button
- SB2 - start button

## Applications and functions

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of a fuse or circuit breaker.
- Used for the protection of motors.



## Technical specifications

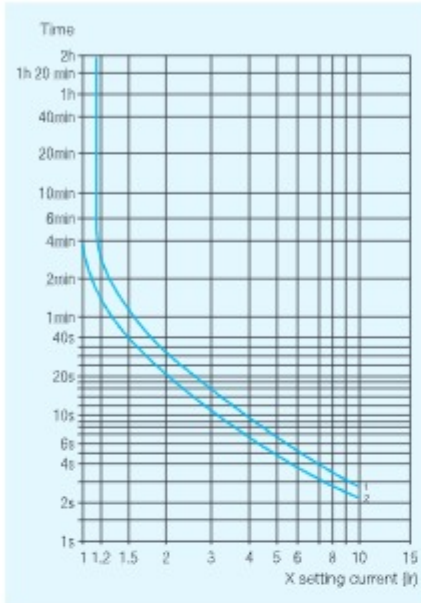
Type	VTR51-25	VTR51-36	VTR51-93
Standard	IEC 60947-4-1		
Tripping class	10 A		
Rated working current I <sub>e</sub> (A)	25	36	93
Setting range (A)	0,1-0,16, 0,16-0,25, 0,25-0,4, 0,4-0,63, 0,63-1, 1-1,6, 1,25-2, 1,6-2,5, 2,5-4, 4-6, 5,5-8, 7-10, 9-13, 12-18, 17-25	23-32, 28-36,	23-32, 30-40, 37-50, 48-65, 55-70, 63-80, 80-93
Rated insulation voltage U <sub>i</sub> (V)	690		
Rated impulse withstand voltage U <sub>imp</sub> (kV)	6		
Signalling Trip indicator	Trip indicator		
Tightening torque (N·m)	0,8		
Degree of protection	IP20		
Ambient air temperature (°C)	-5 to +40, max. 95 % humidity		
Storage temperature (°C)	-40 - +75		
Maximum operating altitude (meters)	2000		
Flame resistance	V1		
Mounting	Directly under the contactor		

# Thermal Overload Relays Series VTR51

## Operating characteristics

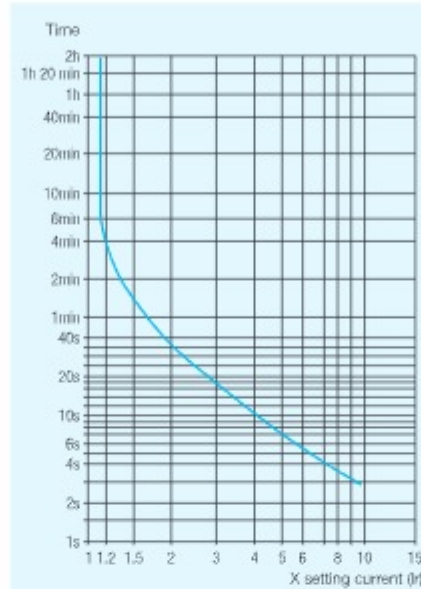
Average operating time related to multiples of the current setting (Class 10 A)

Balanced 3-phase operation, from cold state

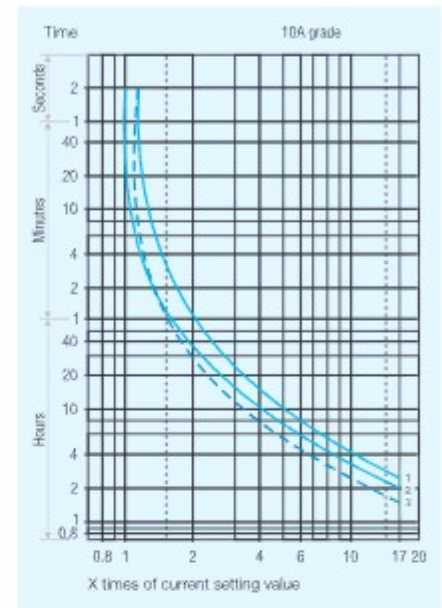


- 1 Setting: at lower end of scale
- 2 Setting: at upper end of scale

Balanced operation with 2 phases only, from cold state

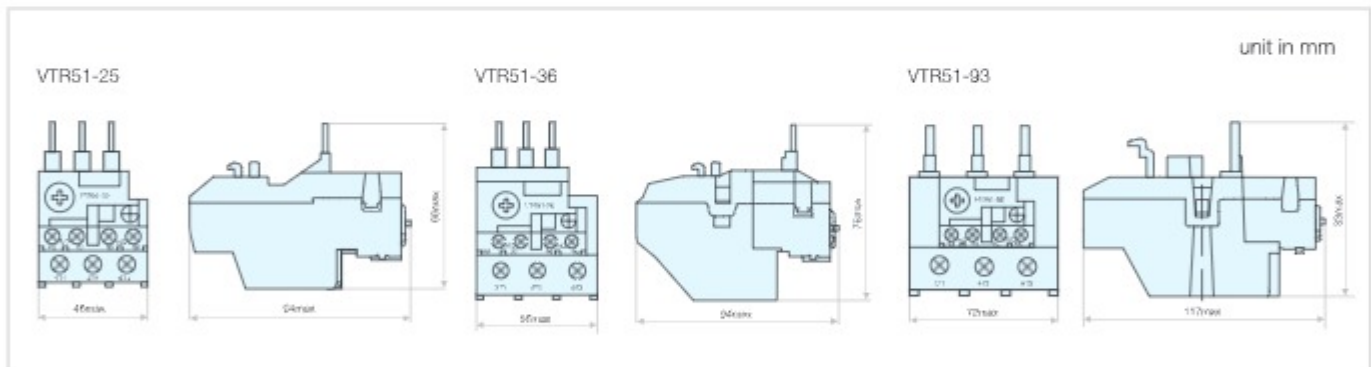


## Tripping curve

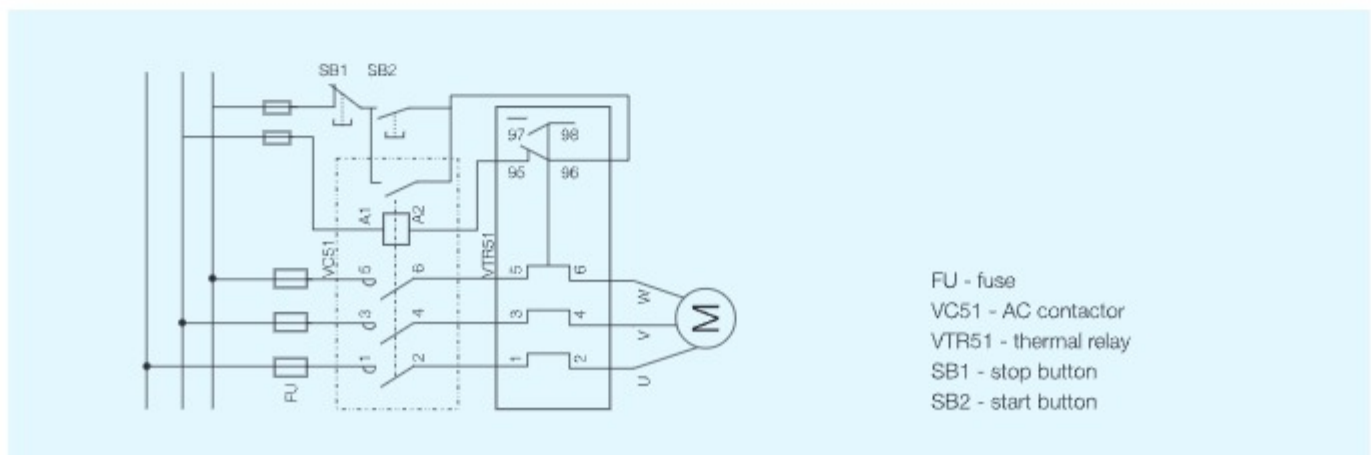


1. Equilibrium running, 3 phase, start from cold state
2. Equilibrium running, 2 phase, start from cold state
3. Equilibrium running, 3 phase, after long period of setting current (hot state)

## Outline and installation dimensions



## Operating principle diagram



## Selection and ordering data

### VTR51

Type	For contactor	Current setting range (A)	Fuses to be used with selected relay		Type code	Order code	
			aM (A)	gG (A)			
VTR51-25	VC51-09	0,1-0,16	0,25	2	VTR51-25-0,16	15965	
		0,16-0,25	0,25	2	VTR51-25-0,25	15966	
		0,25-0,4	1	2	VTR51-25-0,4	15967	
		0,4-0,63	1	2	VTR51-25-0,63	15968	
		0,63-1	2	4	VTR51-25-1	15969	
		1-1,6	2	4	VTR51-25-1,6	15970	
		1,25-2	4	6	VTR51-25-2	14914	
		1,6-2,5	4	6	VTR51-25-2,5	14915	
		2,5-4	6	10	VTR51-25-4	14916	
		4-6	8	16	VTR51-25-6	14917	
		5,5-8	12	20	VTR51-25-8	14918	
		VC51-12	7-10	12	20	VTR51-25-10	14919
			9-13	16	25	VTR51-25-13	14920
		VC51-18	12-18	20	35	VTR51-25-18	14921
		VC51-25	17-25	25	50	VTR51-25-25	14922
VTR51-36	VC51-32	23-32	40	63	VTR51-36-32	14923	
		28-36	40	80	VTR51-36-36	14924	
VTR51-93	VC51-40	23-32	40	63	VTR51-93-32	14925	
		30-40	40	100	VTR51-93-40	14926	
		VC51-50	37-50	63	100	VTR51-93-50	14927
		VC51-65	48-65	63	100	VTR51-93-65	14928
		VC51-80	55-70	80	125	VTR51-93-70	14929
			63-80	80	125	VTR51-93-80	36059
VC51-95	80-93	100	160	VTR51-93-93	36060		



3

### Terminal block adapter for mounting a relay

	For relays	Type code	Order code
		VTR51-25	VTR51-A71
VTR51-36		VTR51-A72	36062
VTR51-93		VTR51-A73	36063





# Thermal Overload Relays

## Series 3SR8-F

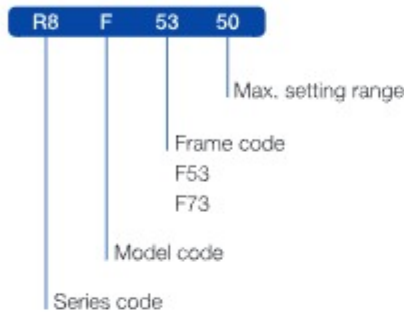
### Applications and functions for thermal relay 3SR8-F

- Protecting the loads from overload and phase failure
- Implementing short-circuit protection by means of fuse or circuit breaker.
- Used for the protection of motors.



3

### Instruction of type code



### Technical specifications for thermal relay 3SR8-F

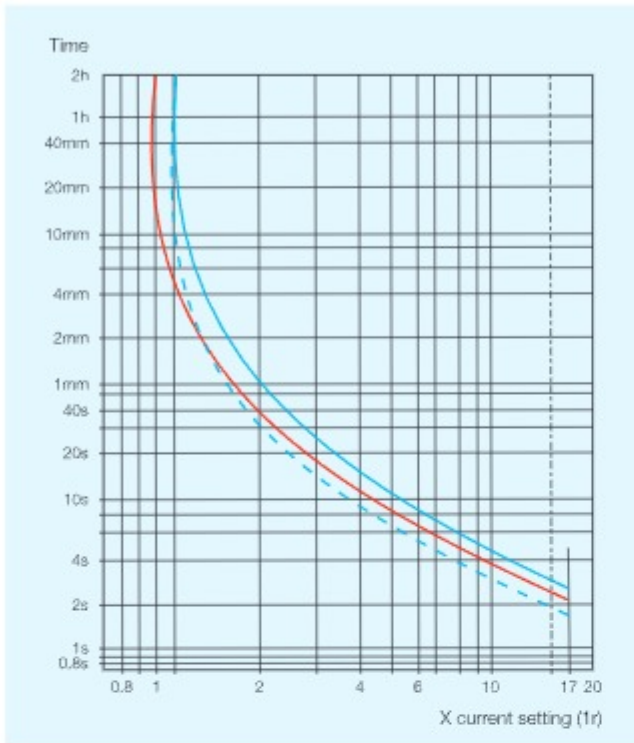
Type	3SR8-F53	3SR8-F73
Standard	IEC 60947-4-1	
Tripping class	10 A, 20 A	
Rated operational voltage $U_e$ (V)	1000	
Rated working current $I_e$ (A)	220	630
Setting range (A)	30-220	200-630
Reset	Manual on front of relay	
Rated insulation voltage $U_i$ (V)	1000	
Rated impulse withstand voltage $U_{imp}$ (kV)	6	
Tightening torque (N·m)	0.8	
Degree of protection	IP20	
Ambient air temperature (°C)	-5 to +40, max. 95 % humidity	
Storage temperature (°C)	-40 – +75	
Maximum operating altitude (meters)	2000	
Flame resistance	V1	

### Selection and ordering data

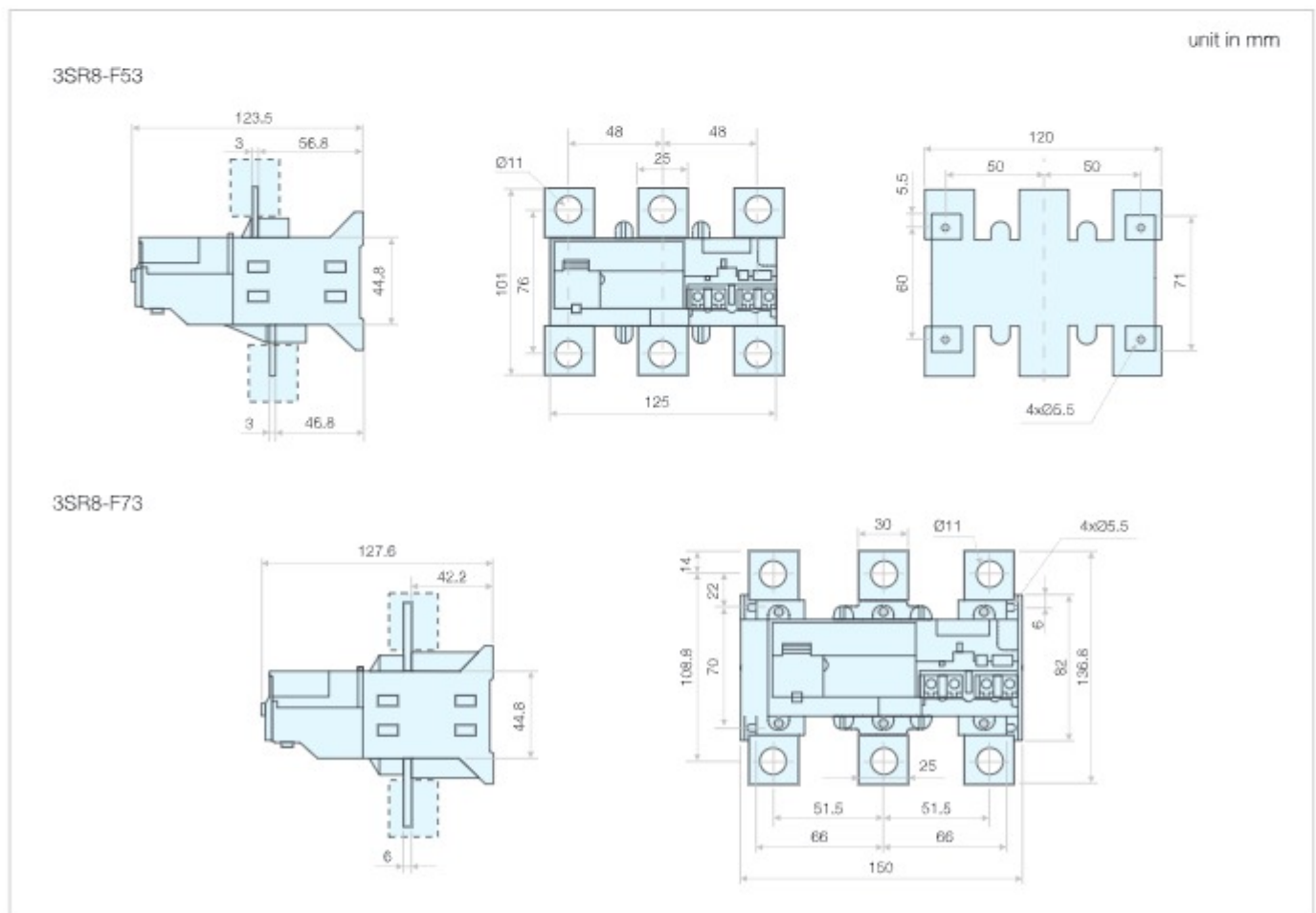
#### 3SR8-F thermal relay matched with contactor 3SC8-F

	Current setting range (A)	Fuses to be used with selected relay maximum rating		Matched contactor	Type code	Order code
		aM Type (A)	gG Type (A)			
	30-50	50	80	3SC8-F115...F185	R8 F53/50	15710
	48-80	80	125	3SC8-F115...F185	R8 F53/80	15711
	60-100	100	200	3SC8-F115...F185	R8 F53/100	15712
	90-150	160	250	3SC8-F115...F185	R8 F53/150	15713
	132-220	250	315	3SC8-F225...F265	R8 F53/220	15714
	200-330	400	500	3SC8-F225...F500	R8 F73/330	15715
	300-500	500	800	3SC8-F225...F500	R8 F73/500	15716
	380-630	630	800	3SC8-F400...F630	R8 F73/630	15717

Tripping curve for thermal relay 3SR8-F



Outline and installation dimensions (Series 3SR8-F)



# Enclosed Direct-on-line (DOL) Staters Series 3SQ1 & VQ51

## Applications and functions

- Controlling the direct start and halt of the electromotor
- Protecting the motor from overload and phase failure
- Used in remote making and breaking circuit and frequently starting and controlling motor.

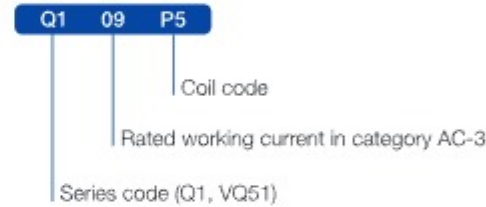


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## Technical specifications

- Standards: IEC 60947-4-1, IEC 60439-1
- Rated working current (A): 09, 12, 18, 25, 32, 40, 50, 65, 80, 95
- Rated operational voltage U<sub>e</sub> (V): 690
- Rated insulation voltage U<sub>i</sub> (V): 690
- Rated impulse withstand voltage U<sub>imp</sub> (kV): 8
- Rated frequency (Hz): 50/60
- Control (2 pushbuttons mounted on enclosure cover):  
1 green Start button "I"; 1 red Stop/Reset button "O"
- Enclosure:
  - 3SQ1(VQ51)-09/12/18 Double insulated, degree of protection IP65;
  - 3SQ1(VQ51)-25/32 Double insulated, degree of protection IP55;
  - 3SQ1(VQ51)-40/50/65/80/95 Metal, degree of protection IP65
- Electrical life (x 10<sup>5</sup> times): 5
- Mechanical life (x 10<sup>5</sup> times): 50
- The model of matched AC contactor: 3SC8, VC51
- The model of matched thermal relay: 3SR8, VTR51
- Ambient air temperature (°C): -5 to +40, max. 95 % humidity
- Storage temperature (°C): -40 ~ +75
- Maximum operating altitude (meters): 2000

## Instruction of type code



## Selection and ordering data

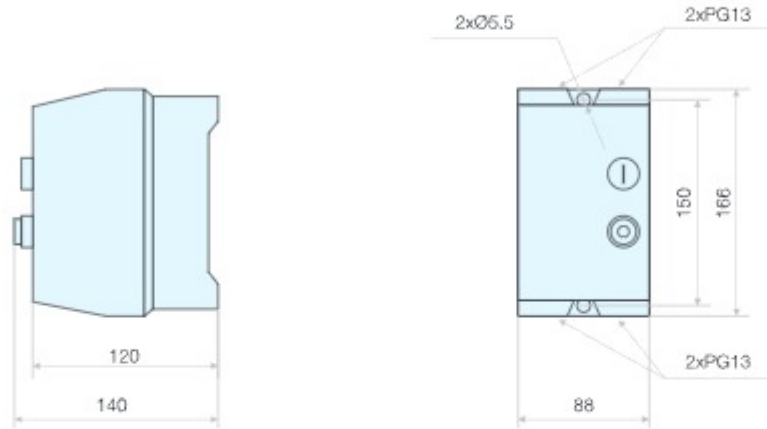
	Standard power ratings of 3 phase motors 50-60 Hz in category AC-3			Rated working current in category AC-3, 380 V (A)	Conventional thermal current I <sub>th</sub> (A)	Type code of matched contactor	Type code of matched thermal relay	230 V 50 Hz	
	220 V (KW)	380 V (KW)	660 V (KW)					Type code	Order code
	2.2	4	5.5	9	20	C809	R8 D13	Q1 09P5	25606
	3	5.5	7.5	12	20	C812	R8 D13	Q1 12P5	25607
	4	7.5	9	18	32	C818	R8 D13	Q1 18P5	25608
	5.5	11	15	25	40	C825	R8 D13	Q1 25P5	25609
	7.5	15	18.5	32	50	C832	R8 D13	Q1 32P5	25610
	11	18.5	30	40	60	C840	R8 D33	Q1 40P5	25611
	15	22	33	50	80	C850	R8 D33	Q1 50P5	25612
	18.5	30	37	65	80	C865	R8 D33	Q1 65P5	25613
	22	37	45	80	110	C880	R8 D33	Q1 80P5	25614
	25	45	45	95	125	C895	R8 D33	Q1 95P5	25615
	2.2	4	5.5	9	20	VC5109	VTR51 D13	VQ51-09P5	38199
	3	5.5	7.5	12	20	VC5112	VTR51 D13	VQ51-12P5	38200
	4	7.5	9	18	32	VC5118	VTR51 D13	VQ51-18P5	38201
	5.5	11	15	25	40	VC5125	VTR51 D13	VQ51-25P5	38202
	7.5	15	18.5	32	50	VC5132	VTR51 D13	VQ51-32P5	38203
	11	18.5	30	40	60	VC5140	VTR51 D33	VQ51-40P5	38204
	15	22	33	50	80	VC5150	VTR51 D33	VQ51-50P5	38205
	18.5	30	37	65	80	VC5165	VTR51 D33	VQ51-65P5	38206
	22	37	45	80	110	VC5180	VTR51 D33	VQ51-80P5	38207
	25	45	45	95	125	VC5195	VTR51 D33	VQ51-95P5	38208



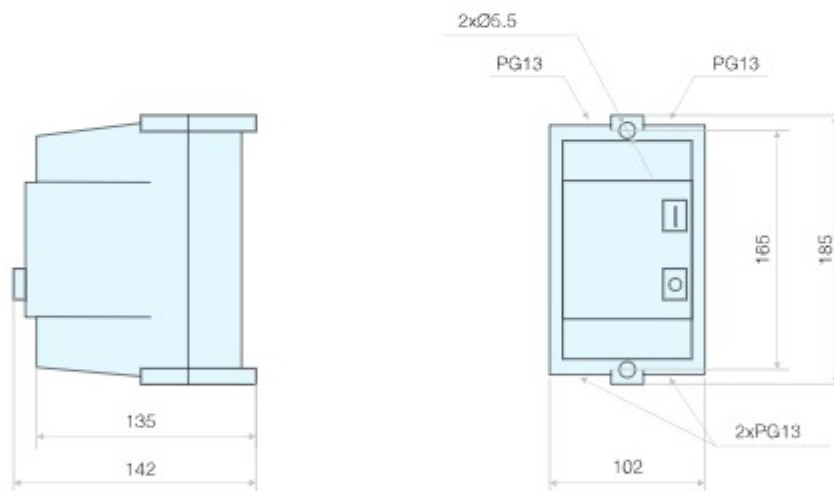
Outline and installation dimensions

unit in mm

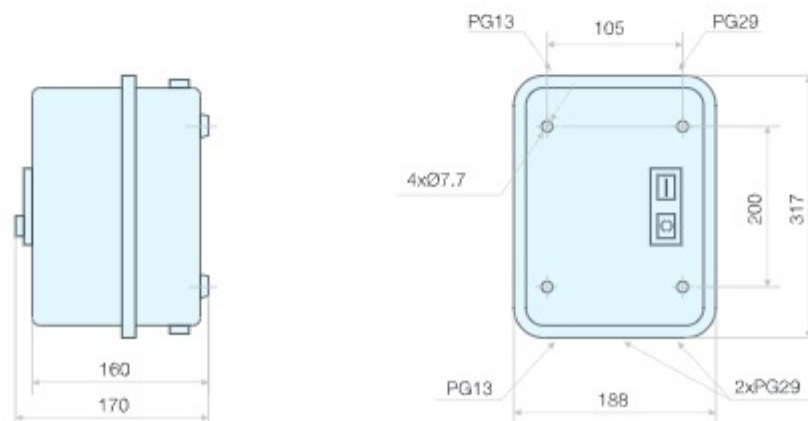
**3SQ1(VQ51)-09/12/18**



**3SQ1(VQ51)-25/32**



**3SQ1(VQ51)-40/50/65/80/95**

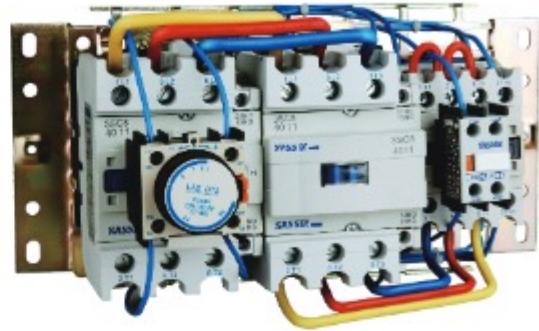


# Star-delta Starters

## Series 3SQ8-D & VXQ51

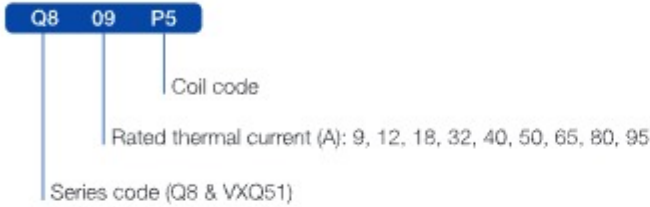
### Applications and functions

- For startup of motor that has heavy duty and current used is high
- Reducing the starting current and starting torque when motor starts up
- Smaller circuit breakers and thinner 3-phase line wires can be installed to supply power to the motor





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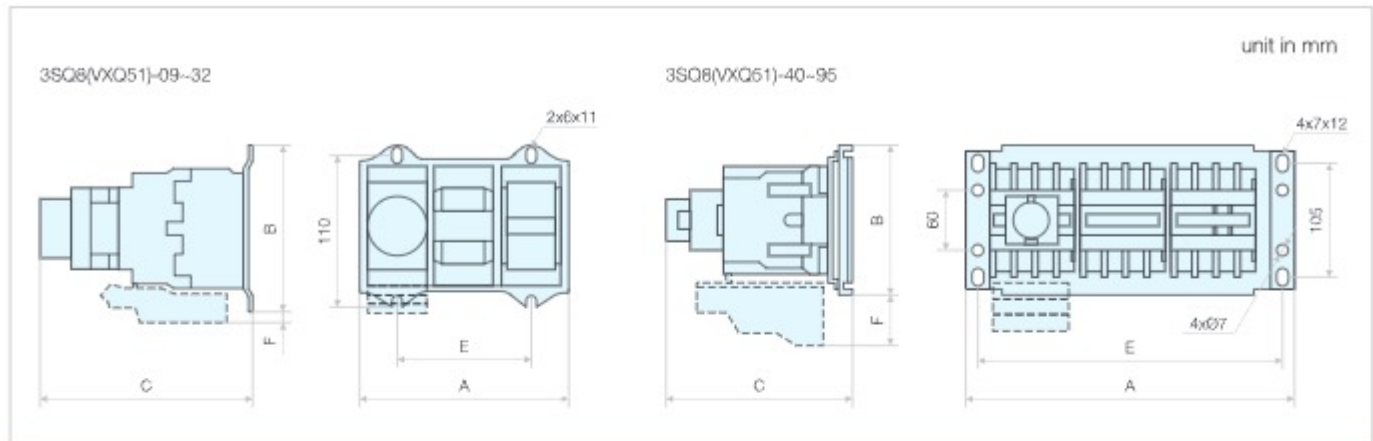
### Instruction of type code



### Selection and ordering data

Rated operating current 380V AC-3 (A)	Standard power ratings of 3 phase motors 50-60 Hz AC-3				Type code of matched contactor	230 V 50 Hz Please contact us for other coil voltage		
	220 V 230 V (KW)	380 V 400 V (KW)	415 V (KW)	445 V (KW)		Type code	Order code	
	9	4	7.5	7.5	7.5	C809	Q8 D093P5	12981
	12	5.5	11	11	11	C812	Q8 D123P5	12982
	18	7.5	15	15	18.5	C818	Q8 D183P5	12983
	25	11	18.5	18.5	22	C825	Q8 D253P5	12984
	32	15	25	25	30	C832	Q8 D323P5	12985
	40	18.5	33	33	37	C840	Q8 D403P5	12986
	50	25	45	45	59	C850	Q8 D503P5	12987
	65	30	55	55	59	C865	Q8 D653P5	12988
	80	37	63	63	75	C880	Q8 D803P5	12989
95	45	80	80	80	C895	Q8 D953P5	12990	
	9	4	7.5	7.5	7.5	VC5109	VXQ51-09P5	38209
	12	5.5	11	11	11	VC5112	VXQ51-12P5	38210
	18	7.5	15	15	18.5	VC5118	VXQ51-18P5	38211
	25	11	18.5	18.5	22	VC5125	VXQ51-25P5	38212
	32	15	25	25	30	VC5132	VXQ51-32P5	38213
	40	18.5	33	33	37	VC5140	VXQ51-40P5	38214
	50	25	45	45	59	VC5150	VXQ51-60P5	38215
	65	30	55	55	59	VC5165	VXQ51-65P5	38216
	80	37	63	63	75	VC5180	VXQ51-80P5	38217
95	45	80	80	80	VC5195	VXQ51-95P5	38218	

## Outline and installation dimensions



Model	A	B	C	E	F
3SQ8(VXQ51)-09-18	135	124	153	90±0.5	22
3SQ8(VXQ51)-25-32	166	124	165	90±0.5	35
3SQ8(VXQ51)-40-65	285	143	178	267±1.0	50
3SQ8(VXQ51)-80-95	315	143	187	297±1.0	80

# Motor Protection Circuit Breakers Series 3SM18

## Applications and functions

- Providing motor overload protection and short-circuit protection.

## Instruction of type code

**M18 2 M 0.16**

Max. setting current range	
0.1-0.16	0.16-0.25
0.25-0.4	0.4-0.63
0.63-1	1-1.6
1.6-2.5	2.5-4
4-6.3	6-10
9-14	13-18
17-23	20-25
24-32	25-40
40-63	56-80

Pushbutton type

Frame code  
2: 0.16~32A  
3: 40~80A

Series code



### Technical specifications


Type	3SM18-25-32																	3SM18-63-80			
Standards	IEC 60947-2, IEC 60947-4-1																				
Utilization according to IEC 60947-2	A																				
category according to IEC 60947-4-1	AC-3																				
Rated insulation voltage U <sub>i</sub> (V)	690																				
Rated operational voltage U <sub>e</sub> (V)	230/240, 400/415, 440, 500, 660/690																				
Rated impulse withstand voltage U <sub>imp</sub> (kA)	8																				
Rated range of setting current (A)	0.1-0.16	0.16-0.25	0.25-0.4	0.4-0.63	0.63-1	1-1.6	1.6-2.5	2.5-4	4-6.3	6-10	9-14	13-18	17-23	20-25	24-32	25-40	40-63	56-80			
Rated current of release (A)	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	10	14	18	23	25	32	40	63	80			
Rated frequency (Hz)	50/60																				
Rated ultimate short-circuit breaking capacity I <sub>cu</sub> (kA)	230/240 V	100	100	100	100	100	100	100	100	100	100	100	50	50	100	100	100	100			
Rated service short-circuit breaking capacity I <sub>cs</sub> (kA)	400/415 V	100	100	100	100	100	100	100	100	100	15	15	15	15	35	35	35	35			
	440 V	100	100	100	100	100	100	100	100	100	8	8	6	6	-	25	25	25			
Arcing distance (mm)	500 V	100	100	100	100	100	100	100	100	100	6	6	4	4	-	8	8	8			
	660/690 V	100	100	100	100	100	100	3	3	3	3	3	3	3	-	4	4	4			
Standard rated power of three-phase (kW)	230/240 V	100	100	100	100	100	100	100	100	100	100	100	50	50	75	75	75	75			
	400 V	100	100	100	100	100	100	100	100	100	7.5	6	7.5	6	17.5	17.5	17.5	17.5			
	440 V	100	100	100	100	100	100	100	100	100	4	4	3	3	-	12.5	12.5	12.5			
	500 V	100	100	100	100	100	100	100	100	100	4.5	4.5	3	3	-	4	4	4			
	660/690 V	100	100	100	100	100	100	2.25	2.25	2.25	2.25	2.25	2.25	2.25	-	2	2	2			
Current setting value of instantaneous electromagnetic release I <sub>r</sub> (A)	1.5	2.4	5	8	13	22.5	33.5	51	78	138	170	223	327	327	327	480	756	960			
Current rating off use-link of back-up fuse, which is only needed in case of I <sub>cc</sub> >I <sub>cu</sub> (I <sub>cc</sub> : prospective short-circuit breaking current)	230/240 V	aM A	●	●	●	●	●	●	●	●	●	●	●	●	80	80	●	●			
		gV/gG A	●	●	●	●	●	●	●	●	●	●	●	●	100	100	●	●			
● Fuse is not required	400/415 V	aM A	●	●	●	●	●	●	●	●	●	●	●	●	63	63	63	63			
		gV/gG A	●	●	●	●	●	●	●	●	●	●	●	●	80	80	80	80			
	440 V	aM A	●	●	●	●	●	●	●	●	50	50	50	50	50	50	-	250			
		gV/gG A	●	●	●	●	●	●	●	●	63	63	63	63	63	63	-	315			
	500 V	aM A	●	●	●	●	●	●	●	●	50	50	50	50	50	50	-	160			
		gV/gG A	●	●	●	●	●	●	●	●	63	63	63	63	63	63	-	200			
	660/690 V	aM A	●	●	●	●	●	●	●	16	25	32	32	40	40	40	-	160			
		gV/gG A	●	●	●	●	●	●	●	20	32	40	40	50	50	50	-	200			
Add-on auxiliary contact blocks	Front mounting	1NO+1NC, 2NO																			
	Side mounting	1NO+1NC, 2NO																			
Shunt release	●																				
Under voltage release	●																				
Auxiliary alarm	1NO+1NO, 1NO+1NC, 1NC+1NO, 1NC+1NC																				
Enclosure	●																				
Electrical life in AC-3 (times)	10000																				
Mechanical life (times)	20000																				
Tightening torque (N·m)	1.7																				
Degree of protection	IP20; IP65 with enclosure																				
Ambient air temperature (°C)	-5 to +40, max. 95 % humidity																				
Storage temperature (°C)	-40 ~ +75																				
Maximum operating altitude (meters)	2000																				



# Motor Protection Circuit Breakers Series 3SM18


## Selection and ordering data

### 3SM18




Setting range of thermal trips (A)	Rated current of release (A)	Type code	Order code
0,1-0,16	0,16	M18 2M0,16	12730
0,16-0,25	0,25	M18 2M0,25	12731
0,25-0,4	0,4	M18 2M0,4	12732
0,4-0,63	0,63	M18 2M0,63	12733
0,63-1	1	M18 2M1,0	12734
1-1,6	1,6	M18 2M1,6	12735
1,6-2,5	2,5	M18 2M2,5	12736
2,5-4	4	M18 2M4,0	12737
4-6,3	6,3	M18 2M6,3	12738
6-10	10	M18 2M10	12739
9-14	14	M18 2M14	12740
13-18	18	M18 2M18	12741
17-23	23	M18 2M23	12742
20-25	25	M18 2M25	12743
24-32	32	M18 2M32	12744
25-40	40	M18 3/40	12767
40-63	63	M18 3/63	12768
56-80	80	M18 3/80	12769

### 3SM18 with enclosure




Setting range of thermal trips (A)	Rated current of release (A)	Type code	Order code
0,1-0,16	0,16	M18 4M0,16	12770
0,16-0,25	0,25	M18 4M0,25	12771
0,25-0,4	0,4	M18 4M0,4	12772
0,4-0,63	0,63	M18 4M0,63	12773
0,63-1	1	M18 4M1,0	12774
1-1,6	1,6	M18 4M1,6	12775
1,6-2,5	2,5	M18 4M2,5	12776
2,5-4	4	M18 4M4,0	12777
4-6,3	6,3	M18 4M6,3	12778
6-10	10	M18 4M10	12779
9-14	14	M18 4M14	12780
13-18	18	M18 4M18	12781
17-23	23	M18 4M23	12782
20-25	25	M18 4M25	12783
24-32	32	M18 4M32	12784

### 3SM18-2-AV Under-voltage release



Rated operational voltage $U_e$ (V)	Voltage range of operation	Frequency (HZ)	Type code	Order code
110-127	35%-70% $U_e$	50/60	AU115	12790
220-240	35%-70% $U_e$	50/60	AU225	12791
380-415	35%-70% $U_e$	50/60	AU385	12792

### 3SM18-2-AS Shunt release



Rated operational voltage $U_e$ (V)	Voltage range of operation	Frequency (HZ)	Type code	Order code
110-127	70%-110% $U_e$	50/60	AS115	12793
220-240	70%-110% $U_e$	50/60	AS225	12794
380-415	70%-110% $U_e$	50/60	AS385	12795

## Selection and ordering data

### 3SM18-2-AN11 Auxiliary contact

	Mounting type	Contact position	Conventional thermal current I <sub>th</sub> (A)	Type code	Order code
				AE11	12786
	Top	1NO+1NC	2.5	AE11	12786
	Top	2NO	2.5	AE20	12787
	Side	1NO+1NC	6	AN11	12788
	Side	2NO	6	AN20	12789

### 3SM18-2-AD Auxiliary Alarm

	Contact position	Conventional thermal current I <sub>th</sub> (A)	Type code	Order code
			AD1010	12796
	1NO+1NO	6	AD1010	12796
	1NO+1NC	6	AD1001	12797
	1NC+1NO	6	AD0110	12798
	1NC+1NC	6	AD0101	12799

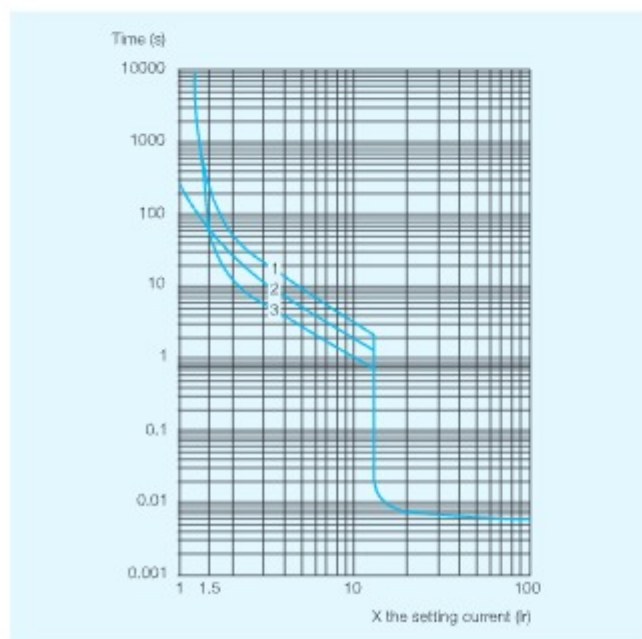
### Enclosure

	Type	Type code	Order code
		M18 2B	12785
	3SM18-2B	M18 2B	12785

## Tripping Curve

Average operating times at 20 °C related to multiples of the setting current

1: 3 poles from cold state; 2: 2 poles from cold state; 3: 3 poles from hot state



## Outline and installation dimensions

