

Manual Motor Controller / Circuit Breaker for Equipment thermal-magnetic, 1 pole



Approvals and Compliances

Description

- Thermal-magnetic circuit breaker
- High short circuit performance
- Availability of AC and DC in the same frame size
- DIN-Rail Mounting

Applications

- Industrial appliances

Weblinks

[pdf datasheet](#), [html-datasheet](#), [General Product Information](#), [Distributor-Stock-Check](#), [Detailed request for product](#), [Product News](#)

Technical Data

General data

| | |
|--|---|
| Rated Voltage AC | IEC : 240 V; 50/60 Hz UL/CSA : 277 V; 50/60 Hz |
| Rated Voltage DC | 65 V |
| Rated current | 0.5 - 52 A , see approbations |
| Conditional short circuit capacity IEC 60934 | Icn: AC 240 V / DC 65 V: 5 kA (no fuse) |
| Conditional short circuit capacity UL 1077 | Icn: AC 277 V: 10 kA (with fuse class H/J, 4x rated current (min. 15 A)) Icn: AC 125 V: 10 kA (no fuse) Icn: AC 277 V: 5 kA (no fuse) Icn: DC 65 V: 2 kA (no fuse) |
| Conditional short circuit capacity UL 508 | Icn: AC 277 V: 5 kA (no fuse) |
| Degree of Protection | from front side IP 40 acc. to IEC 60529 |
| Lifetime | 1 x Ir : 6000 switching cycles |
| Dielectric Strength | 50Hz: > 2kV Impulse 1.2/50 µs |
| Vibration Resistance | ± 0.75 mm @ 5 - 57 Hz acc. to IEC 60068-2-6, test Fc 10 G @ 57 - 500 Hz acc. to IEC 60068-2-6, test Fc |
| Insulation Resistance | 250/440 VAC > 5 MΩ |
| Shock Resistance | 25 G / 10ms acc. to IEC 60068-2-27, test Ea |
| Ambient temperature | -20 °C to 60 °C |
| Weight | 100 - 130g |

| | |
|--------------------------------|---------------------------------------|
| Tripping Type | Positively trip free |
| Actuation Type | Manual ON/OFF |
| Permissible wire cross section | 1.5 - 25 mm ² / 16 - 4 AWG |

Switched neutral

| | |
|---------------|---|
| Rated Voltage | AC 277 V |
| Rated current | AC/DC 65 A |
| Function | The switched neutral closes with manual closure of the poles and opens automatically with thermal magnetic tripping of the poles. |

Add-on modules

| | |
|----------------|--|
| Add-on modules | Technical data for the additional module see separate data sheet |
|----------------|--|




Approvals and Compliances

Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [Details about Approvals](#)

Approvals


The approval mark is used by the testing authorities to certify compliance with the safety requirements placed on electronic products.

Approval Reference Type: AS168X

| Approval Logo | Certificates | Certification Body | Description |
|---|-------------------------------|--------------------|-------------------------|
|  | VDE Approvals | VDE | VDE Certificate Number: |
|  | UL Approvals | UL | UL File Number: |
|  | UL Approvals | UL | UL File Number: |




Application standards

Application standards where the product can be used

| Organization | Design | Standard | Description |
|--|--------------------------------|--------------|---|
|  | Designed for applications acc. | IEC/UL 60950 | IEC 60950-1 includes the basic requirements for the safety of information technology equipment. |

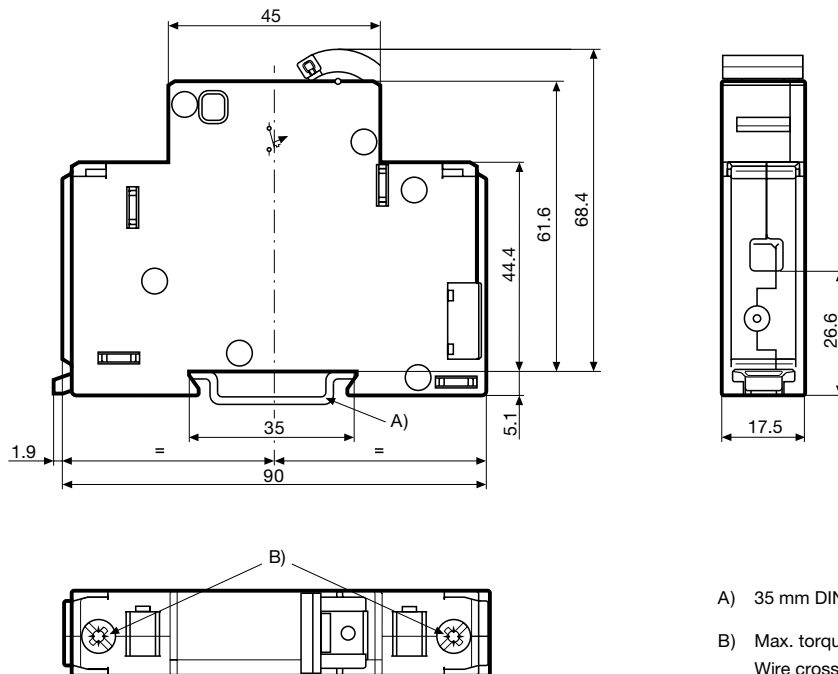
Compliances

The product complies with following Guide Lines

| Identification | Details | Initiator | Description |
|--|------------|-------------|---|
|  | RoHS | SCHURTER AG | EU Directive RoHS 2011/65/EU |
|  | China RoHS | SCHURTER AG | The law SJ / T 11363-2006 (China RoHS) has been in force since 1 March 2007. It is similar to the EU directive RoHS. |
|  | REACH | SCHURTER AG | On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as "REACH") entered into force. |

Dimension [mm]

AS168X 1 pole

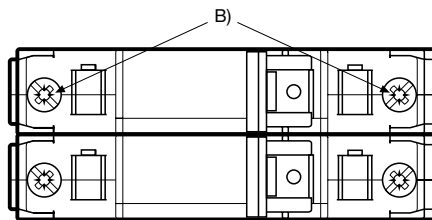
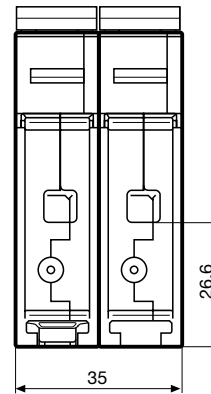
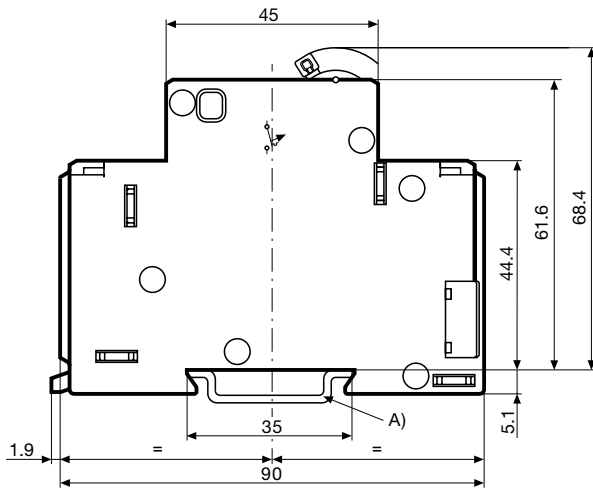


A) 35 mm DIN rail EN 50022

B) Max. torque

| Wire crossection | Max. torque |
|----------------------------|-----------------|
| 1.5 ... 10 mm ² | 2.5 Nm |
| 16 ... 25 mm ² | 3.1 Nm |
| AWG #16 ... 8 | 20 ... 22 lb-in |
| AWG #6 ... 4 | 26 ... 28 lb-in |

AS168X 1 pole and switched neutral pole



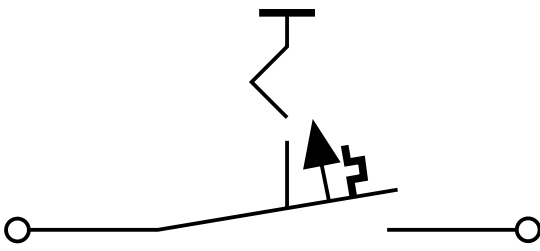
A) 35 mm DIN rail EN 50022

B) Max. torque

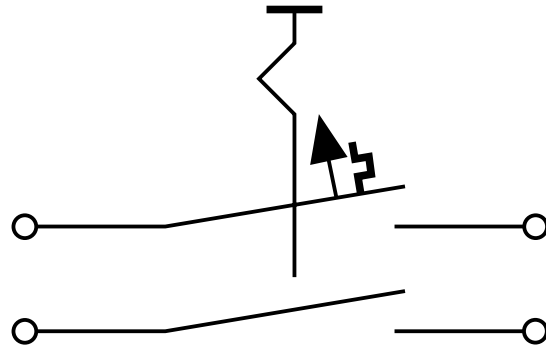
| Wire crosssection | Max. torque |
|----------------------------|-----------------|
| 1.5 ... 10 mm ² | 2.5 Nm |
| 16 ... 25 mm ² | 3.1 Nm |
| AWG #16 ... 8 | 20 ... 22 lb-in |
| AWG #6 ... 4 | 26 ... 28 lb-in |

Diagrams

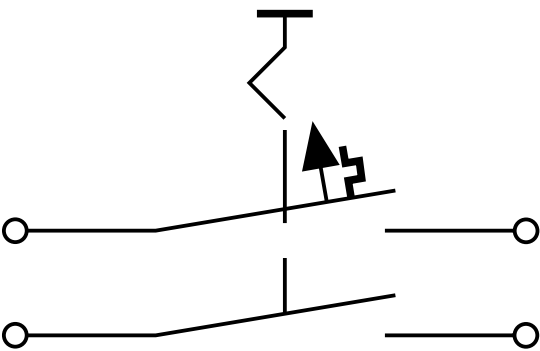
AS168X-CB1...



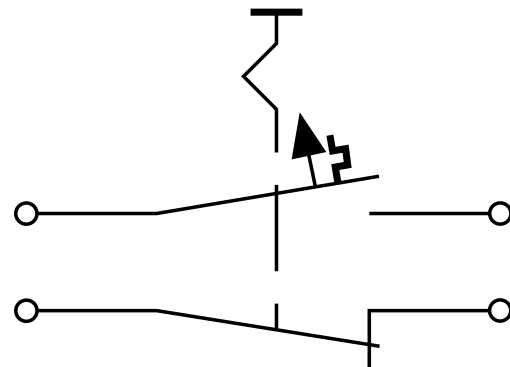
AS168X-CB1...N



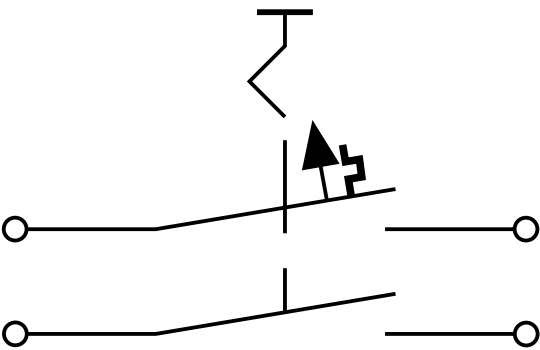
AS168X-CB1... / AS168X-ACBH1



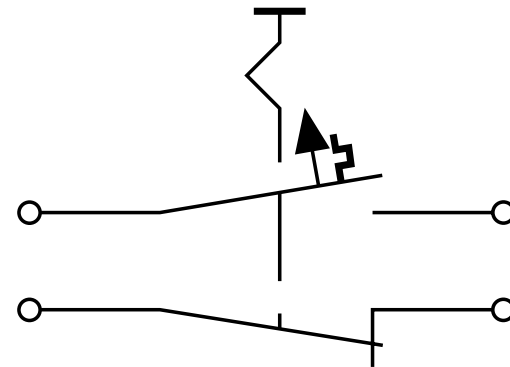
AS168X-CB1... / AS168X-ACBH2



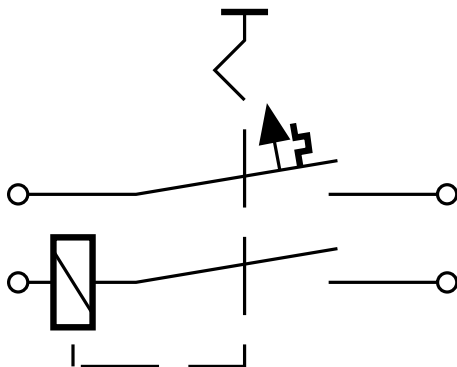
AS168X-CB1... / AS168X-ACBS1







AS168X-CB1... / AS168X-ACBS2



AS168X-CB1... / AS168X-ACBA



| Symbol | Standard | Rated current | Rated voltage AC | Conditional short circuit capacity Icn | Rated voltage DC | Conditional short circuit capacity Icn |
|---|----------------------------|---------------|------------------|--|------------------|--|
|  | UL 508 CSA C22.2 no. 14 | 0.5 - 52 A | 277 V | 5 kA | - | - |
|  | UL 1077 | 0.5 - 40 A | 240 V | 10 kA | - | - |
| | CSA C22.2 no. 235 | 0.5 - 50 A | 277 V 125 V | 5 kA 10 kA | 65 V | 2 kA |
|  | EN 60934 | 0.5 - 30 A | 240 V | 4.5 kA | 65 V | 4.5 kA |
|  | GB 17701 | - | - | - | - | - |

Effect of ambient temperature

AC-breaker are calibrated for an ambient temperature of +40°C, DC-breakers for +23°C. To determine the rated current for a lower or higher ambient temperature, use a correction factor from the table below:

| Ambient temperature [°C] | Correction factor AC version | Correction factor DC version |
|--------------------------|------------------------------|------------------------------|
| -20 | 0.78 | 0.80 |
| -5 | 0.82 | 0.87 |
| 0 | 0.83 | 0.90 |
| +10 | 0.87 | 0.95 |
| +23 | 0.91 | 1.00 |
| +30 | 0.95 | 1.05 |
| +40 | 1.00 | 1.10 |
| +50 | 1.05 | 1.20 |
| +60 | 1.11 | 1.30 |

Example DC version: Rated current = 10 A; Environmental temperature = 50 °C; --> Correction factor = 1.2; Resulting current = 12 A

Ampere-Horsepower

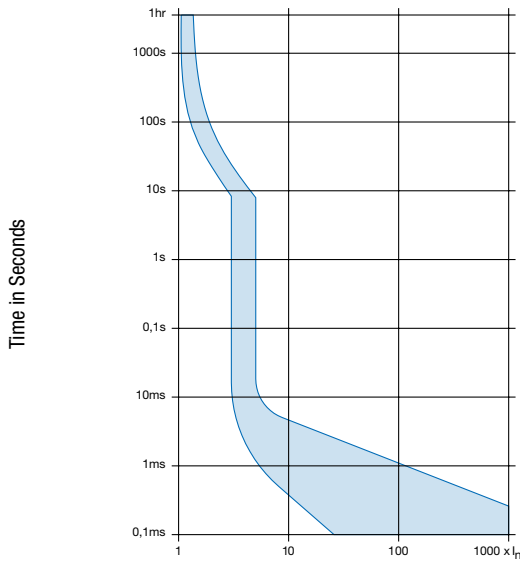
| AS168X-CB | Motor Nameplate | | Horsepower (FLA & LRC Ratings Apply where no HP Rating is given) | | | | | | | |
|--------------------------------|-----------------|-------------------------|---|-------|-------|---------|-------|-------|---------|---------|
| | | | Nominal Circuit Voltage, VAC | | | | | | | |
| | | | 110-120 | 200 | 208 | 220-240 | 265 | 277 | 380-415 | 440-480 |
| Rated Current (See Note #1) | FLA Rating | Starting/ LRC Rating | | | | | | | 1 pole | 2 pole |
| 0.5A | 0.5A | 3° | | | | | | | | |
| 1A | 1A | 6° | | | | | | | 1/10 | |
| 1.5A | 1.5A | 9° | | | | 1/10 | 1/10 | 1/10 | 1/6 | |
| 2A | 2A | 12A | | | | 1/8 | 1/6 | 1/6 | 1/4 | |
| 3A | 3A | 18A | 1/10 | 1/6 | 1/6 | 1/4 | 1/4 | 1/3 | 1/3 | 1/2 |
| 4A | 4A | 24A | 1/8 | 1/4 | 1/3 | 1/3 | 1/3 | 1/3 | 1/2 | 1 |
| 5A | 5A | 30A | 1/6 | 1/3 | 1/3 | 1/2 | 1/2 | 1/2 | 3/4 | 1 1/2 |
| 6A | 6A | 36A | 1/4 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 1 | 2 |
| 7A | 7A | 42A | 1/4 | 1/2 | 1/2 | 3/4 | 1 | 1 | 1 1/2 | 2 |
| 8A | 8A | 48A | 1/3 | 3/4 | 3/4 | 1 | 1 | 1 | 2 | 2 |
| 9A | 9A | 54A | 1/3 | 3/4 | 1 | 1 | 1 | 1 1/2 | 2 | 3 |
| 10A | 10A | 60A | 1/2 | 1 | 1 | 1 1/2 | 1 1/2 | 2 | 2 | 3 |
| 12A | 12A | 72A | 1/2 | 1 1/2 | 1 1/2 | 2 | 2 | 2 | 3 | 3 |
| 13A | 13A | 78A | 1/2 | 1 1/2 | 1 1/2 | 2 | 2 | 2 | 3 | 3 |
| 15A | 15A | 90A | 3/4 | 2 | 2 | 2 | 3 | 3 | 3 | 5 |
| 16A | 16A | 96A | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 5 |
| 18A | 18A | 108A | 1 | 2 | 2 | 3 | 3 | 3 | 5 | 5 |
| 20A | 20A | 120A | 1 1/2 | 3 | 3 | 3 | 3 | 3 | 5 | 5 |
| 23A | 23A | 138A | 1 1/2 | 3 | 3 | 3 | 3 | 3 | 5 | 7 1/2 |
| 25A | 25A | 150A | 2 | 3 | 3 | 3 | 5 | 5 | 5 | 7 1/2 |
| 27A | 27A | 162A | 2 | 3 | 3 | 3 | 5 | 5 | 7 1/2 | 10 |
| 30A | 30A | 180A | 2 | 3 | 3 | 5 | 5 | 5 | 7 1/2 | 10 |

| AS168X-CB | Motor Nameplate | | Horsepower (FLA & LRC Ratings Apply where no HP Rating is given) | | | | | | |
|--------------------------------|-----------------|-------------------------|---|-------|-------|---------|---------|---------|--------|
| | | | Nominal Circuit Voltage, VAC | | | | | | |
| | | | 110-120 | 200 | 208 | 220-240 | 380-415 | 440-480 | |
| Rated Current (See Note #1) | FLA Rating | Starting/ LRC Rating | | | | | | | 3 pole |
| 0.5A | 0.5A | | | | | | | | |
| 1A | 1A | | | | | | | | |
| 1.5A | 1.5A | 10A | | | | | | 1/2 | 1/2 |
| 2A | 2A | 12.5A | | | | | | 3/4 | 3/4 |
| 3A | 3A | 20A | | 1/2 | 1/2 | 1/2 | 1 | 1 | 1 1/2 |
| 4A | 4A | 25A | | 3/4 | 3/4 | 3/4 | 1 1/2 | 1 1/2 | 2 |
| 5A | 5A | 32A | 1/2 | 1 | 1 | 1 | 2 | 2 | 3 |
| 6A | 6A | 32A | 1/2 | 1 | 1 | 1/2 | 2 | 2 | 3 |
| 7A | 7A | 32A | 3/4 | 1/2 | 1/2 | 2 | 3 | 3 | 3 |
| 8A | 8A | 46A | 3/4 | 2 | 2 | 2 | 3 | 3 | 5 |
| 9A | 9A | 46A | 1 | 2 | 2 | 2 | 3 | 3 | 5 |
| 10A | 10A | 46A | 1 | 2 | 2 | 3 | 5 | 5 | 5 |
| 12A | 12A | 63.5A | 1 1/2 | 3 | 3 | 3 | 5 | 5 | 7 1/2 |
| 13A | 13A | 63.5A | 1 1/2 | 3 | 3 | 3 | 5 | 5 | 7 1/2 |
| 15A | 15A | 81A | 2 | 3 | 3 | 3 | 7 1/2 | 7 1/2 | 10 |
| 16A | 16A | 81A | 2 | 3 | 3 | 5 | 7 1/2 | 7 1/2 | 10 |
| 18A | 18A | 81A | 2 | 5 | 5 | 5 | 10 | 10 | 10 |
| 20A | 20A | 81A | 3 | 5 | 5 | 5 | 10 | 10 | 10 |
| 23A | 23A | 116A | 3 | 5 | 5 | 7 1/2 | 10 | 10 | 15 |
| 25A | 25A | 116A | 3 | 5 | 7 1/2 | 7 1/2 | 10 | 10 | 15 |
| 27A | 27A | 145A | 3 | 7 1/2 | 7 1/2 | 7 1/2 | 15 | 15 | 20 |
| 30A | 30A | 145A | 3 | 7 1/2 | 7 1/2 | 10 | 15 | 15 | 20 |

Note #1: For AC motor circuit nameplate FLA loads, AC general-use loads, AC resistance loads

Time-Current-Curves

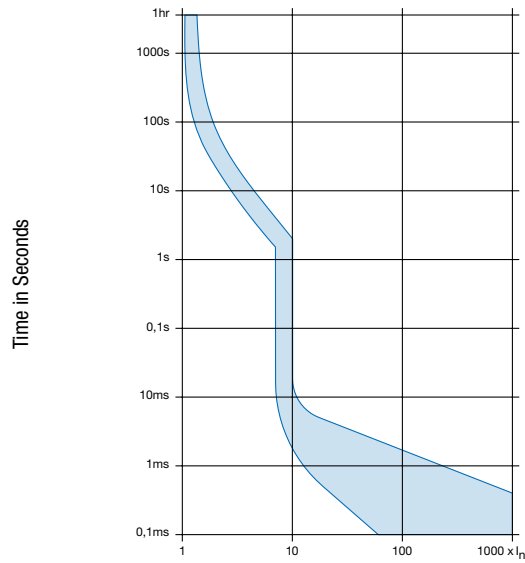
Version F / Magnetic 3-5 xI_n



Multiple of Rated Current I_n

Reference Temperature +23°

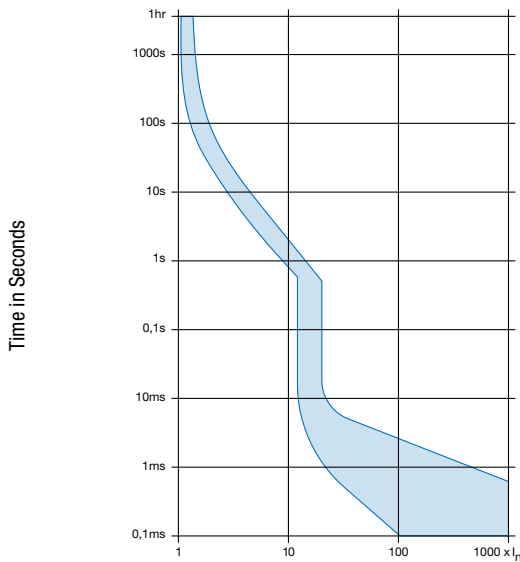
Version G / Magnetic 6-10 xI_n



Multiple of Rated Current I_n

Reference Temperature +23°

Version H / Magnetic 12-20 xI_n



Multiple of Rated Current I_n

Reference Temperature +23°

Config. Code

AS168X-CB 1 DG 200 N

The characters are placeholders for the correspondingly keys of selections from the key tables.

AS168X-CB **1** DG 200 N = Number of Poles

Number of Poles

Configuration key

1-pole

1

AS168X-CB 1 DG 200 N = Tripping characteristics

| Tripping characteristics | Configuration key |
|-----------------------------------|-------------------|
| 1.0-1.25xIn / 3-5xIn / 0.5-52 A | F |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | G |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | H |

AS168X-CB 1 DG 200 N = Rated current

| Rated current | Configuration key |
|---------------|-------------------|
| 0.05 A | 005 |
| 1.0 A | 010 |
| 1.5 A | 015 |
| 2.0 A | 020 |
| 3.0 A | 030 |
| 4.0 A | 040 |
| 5.0 A | 050 |
| 6.0 A | 060 |
| 7.0 A | 070 |
| 8.0 A | 080 |
| 9.0 A | 090 |
| 10.0 A | 100 |

Other rated currents on request

| Rated current | Configuration key |
|---------------|-------------------|
| 12.0 A | 120 |
| 15.0 A | 150 |
| 16.0 A | 160 |
| 18.0 A | 180 |
| 20.0 A | 200 |
| 23.0 A | 230 |
| 25.0 A | 250 |
| 27.0 A | 270 |
| 30.0 A | 300 |
| 32.0 A | 320 |
| 35.0 A | 350 |
| 40.0 A | 400 |
| 45.0 A | 450 |
| 50.0 A | 500 |
| 52.0 A | 520 |

Other rated currents on request

AS168X-CB 1 DG 200 N = Switched neutral

| Switched neutral | Configuration key |
|-----------------------|-------------------|
| Switched neutral pole | N |

Variants

| Tripping characteristics | Rated current | Switched neutral | Config. Code | Order Number |
|-----------------------------------|---------------|-----------------------|-----------------|--------------|
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 1.0 A | | AS168X-CB1G010 | 4420.0206 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 2.0 A | | AS168X-CB1G020 | 4420.0230 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 3.0 A | | AS168X-CB1G030 | 4420.0229 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 3.0 A | Switched neutral pole | AS168X-CB1G030N | 4420.0973 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 4.0 A | | AS168X-CB1G040 | 4420.0231 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 5.0 A | | AS168X-CB1G050 | 4420.0202 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 6.0 A | | AS168X-CB1G060 | 4420.0201 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 7.0 A | | AS168X-CB1G070 | 4420.0329 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 8.0 A | | AS168X-CB1G080 | 4420.0228 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 10.0 A | | AS168X-CB1G100 | 4420.0261 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 10.0 A | Switched neutral pole | AS168X-CB1G100N | 4420.0512 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 12.0 A | | AS168X-CB1G120 | 4420.0597 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 15.0 A | | AS168X-CB1G150 | 4420.0248 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 16.0 A | | AS168X-CB1G160 | 4420.0260 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 20.0 A | | AS168X-CB1G200 | 4420.0262 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 25.0 A | | AS168X-CB1G250 | 4420.0232 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 30.0 A | | AS168X-CB1G300 | 4420.0233 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A | 35.0 A | | AS168X-CB1G350 | 4420.0839 |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 1.0 A | | AS168X-CB1H010 | 4420.0595 |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 3.0 A | | AS168X-CB1H030 | 4420.0694 |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 4.0 A | | AS168X-CB1H040 | 4420.0173 |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 6.0 A | | AS168X-CB1H060 | 4420.0596 |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 8.0 A | | AS168X-CB1H080 | 4420.0714 |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 10.0 A | | AS168X-CB1H100 | 4420.0572 |

| Tripping characteristics | Rated current | Switched neutral | Config. Code | Order Number |
|-----------------------------------|---------------|------------------|----------------|--------------|
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 15.0 A | | AS168X-CB1H150 | 4420.0675 |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 16.0 A | | AS168X-CB1H160 | 4420.0768 |

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Packaging Unit 1 Pcs