### Circuit Breaker for Equipment thermal-magnetic, 3 poles





# **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

#### References

Last order possibility: 31.08.2018 Last delivery date: 30.09.2018

#### Weblinks

pdf datasheet, html-datasheet, General Product Information, Distributor-Stock-Check, Detailed request for product, Product News

### **Technical Data**

| General data                                 |   |
|--|---|
| Rated Voltage DC                             | IEC 360 V<br>UL/CSA 360 V   |
| Rated current                                | 0.5 - 50 A, see approbations  |
| Conditional short circuit capacity IEC 60934 | Icn: DC 360 V: 4.5 kA (no fuse)   |
| Conditional short circuit capacity UL 1077   | Icn: DC 360 V: 10 kA (no fuse)  |
| Degree of Protection                         | from front side IP 40 acc. to IEC 60529   |
| Dielectric Strength                          | 50 Hz: > 2 kV<br>Impulse 1.2/50 µs  |
| Vibration Resistance                         | ± 0.75 mm @ 5 - 60 Hz<br>acc. to IEC 60068-2-6, test Fc<br>10 G @ 60 - 500 Hz<br>acc. to IEC 60068-2-6, test Fc |
| Insulation Resistance                        | 250/440 VAC > 5 MΩ  |
| Shock Resistance                             | 30 G / 18ms<br>acc. to IEC 60068-2-27, test Ea  |
| Ambient temperature                          | -10 °C to 55 °C   |
| Weight                                       | 100 - 130 g   |
|  |   |

| Tripping Type                  |  |
|--------------------------------|--|
|                                | Positively trip free   |
| Actuation Type                 | Manual ON/OFF  |
| Permissible wire cross section | 1.5 - 25 mm² / 16 - 4 AWG  |
| Switched neutral               |  |
| Rated Voltage                  | AC 277 V   |
| Rated current                  | AC/DC 65 A   |
| Function                       | The switched neutral closes with ma-<br>nual closure of the poles and opens<br>automatically with thermal magnetic<br>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                      |
|------------------|---------------|--------------------|----------------------------------|
| Ď <sup>V</sup> E | VDE Approvals | VDE                | VDE Certificate Number: 40005743 |
| c UL us          | UL Approvals  | UL                 | UL File Number: E216629 / E71572 |
| c <b>SU</b> us   | UL Approvals  | UL                 | UL File Number: E216629 / E71572 |

### **Product standards**

Product standards that are referenced

| Organization | Design                | Standard  | Description   |
|--------------|-----------------------|-----------|---|
| <u>IEC</u>   | Designed according to | IEC 60934 | Circuit-breakers for equipment (CBE)                                  |
| (UL)         | Designed according to | UL 1077   | Standard for Supplementary Protectors for Use in Electrical Equipment |
| CSA<br>Group | Designed according to | CSA C22.2 | Supplementary Protectors  |

# **Application standards**

Application standards where the product can be used

| Organization | Design                         | Standard     | Description  |
|--------------|--------------------------------|--------------|--|
| <u>IEC</u>   | Designed for applications acc. | IEC/UL 60950 | IEC 60950-1 includes the basic requirements for the safety of information technologyequipment. |

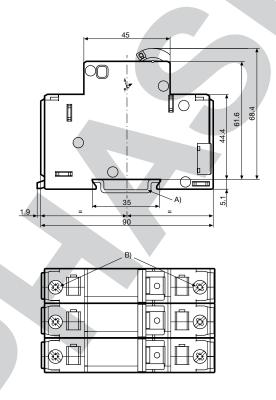
#### **Compliances**

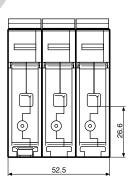
The product complies with following Guide Lines

| The product complies w | iti i lollowii ig Guide Liries |             |   |
|------------------------|--------------------------------|-------------|---|
| Identification         | Details                        | Initiator   | Description   |
| C€                     | CE declaration of conformity   | SCHURTER AG | The CE marking declares that the product complies with the applicable requirements laid down in the harmonisation of Community legislation on its affixing in accordance with EU Regulation 765/2008. |
| RoHS                   | RoHS                           | SCHURTER AG | EU Directive RoHS 2011/65/EU  |
| <b>50</b>              | 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                  | REACH                          | SCHURTER AG | On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration,<br>Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as<br>"REACH") entered into force.                         |

# Dimension [mm]

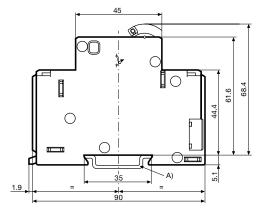
AS168X 3 pole

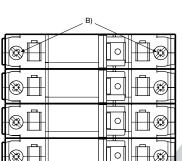


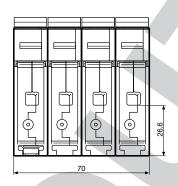


- A) 35 mm DIN rail EN 50022
  - 8) Max. torque
    Wire crosssection
    1.5 ... 10 mm²
    16 ... 25 mm²
    3.1 Nm
    AWG #16 ... 8
    20 ... 22 lb-in
    AWG #6 ... 4

# AS168X 3 pole and switched neutral pole







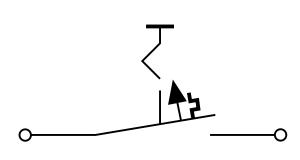
A) 35 mm DIN rail EN 50022

B) Max. torque

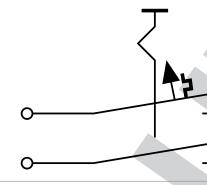
| Wire crosssection      | Max. torque |
|------------------------|-------------|
| 1.5 10 mm <sup>2</sup> | 2.5 Nm      |
| 16 25 mm <sup>2</sup>  | 3.1 Nm      |
| AWG #16 8              | 20 22 lb-in |
| AWG #6 4               | 26 28 lb_in |

# **Diagrams**

AS168X-CB1...

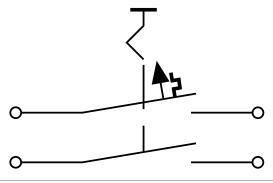


AS168X-CB1... / AS168X-ACBH1

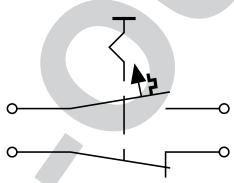


AS168X-CB1... / AS168X-ACBH2

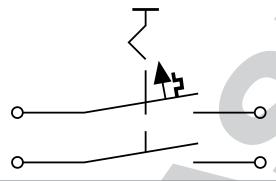
AS168X-CB1...N



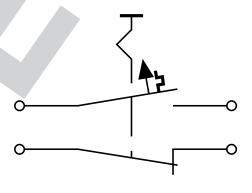
AS168X-CB1... / AS168X-ACBS1

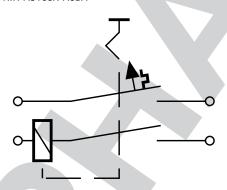


AS168X-CB1... / AS168X-ACBS2



AS168X-CB1... / AS168X-ACBA





| Symbol         | Standard                   | Rated current | Rated voltage DC | Conditional short circuit capacity Icn |
|----------------|----------------------------|---------------|------------------|--|
| c UL us        | UL 508<br>CSA C22.2 no. 14 | -             | -                | -                                      |
| c <b>FL</b> us | UL 1077                    | 0.5 - 40 A    | 360 V            | 10 kA                                  |
|                | CSA C22.2 no. 235          | -             | -                | -                                      |
| <u>₽</u>       | EN 60934                   | 0.5 - 50 A    | 360 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:

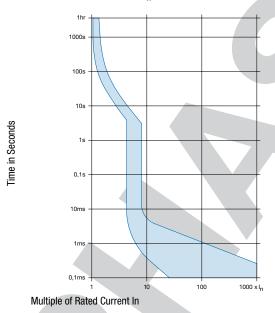
| Ambient temperature [°C] | Correction factor AC version | Correction factor DC version |
|--------------------------|------------------------------|------------------------------|
| -20                      | 0.78                         | 0.80                         |
| -5                       | 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

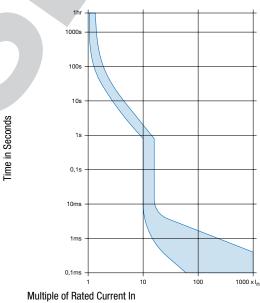
#### **Time-Current-Curves**

Version DF / Magnetic 4.5-8 xI<sub>n</sub>

Reference Temperature +23°

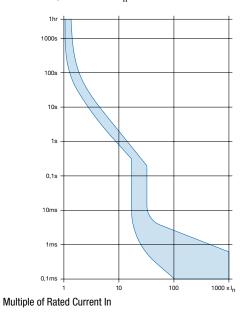


Version DG / Magnetic 9-16 xl<sub>n</sub>



Reference Temperature +23°

# Version DH / Magnetic 18-32 xI<sub>n</sub>



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 <b>1</b> DG 200 N = <b>Number of Poles</b> |                   |
|--|-------------------|
| Number of Poles                                      | Configuration key |
| 3-pole   | 3                 |

# AS168X-CB 1 **DG** 200 N = Tripping characteristics

| Tripping characteristics           | Configuration key |
|------------------------------------|-------------------|
| 1.05-1.35xln / 4.5-8xln / 0.5-50 A | DF                |
| 1.05-1.35xln / 9-16xln / 0.5-50 A  | DG                |
| 1.05-1.35xln / 18-32xln / 6.0-50 A | DH                |

# 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               |
| Other rated currents on request |                   |

| Rated current | Configuration key |
|---------------|-------------------|
| 8.0 A         | 080               |
| 9.0 A         | 090               |
| 10.0 A        | 100               |
| 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               |

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 |
|-----------------------------------|---------------|------------------|-----------------|--------------|
|                                   |               |                  |                 |              |
| 1.05-1.35xln / 9-16xln / 0.5-50 A | 2.0 A         |                  | AS168X-CB3DG020 | 4420.0607    |
| 1.05-1.35xln / 9-16xln / 0.5-50 A | 20.0 A        |                  | AS168X-CB3DG200 | 4420.0940    |

Availability for all products can be searched real-time: https://www.schurter.com/en/Stock-Check/Stock-Check-SCHURTER

**Packaging Unit** 1 Pcs



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