

EV Fuse 10.3 x 38 mm, 1000 VDC, up to 50 A

new



Standard version



Screw-on version



PCB version



Screw-on version (axial)

1000VDC · EV Fuse

See below:  
[Approvals and Compliances](#)

**Description**

- High breaking capacity up to 50 kA @ 1000 VDC
- Manifold mounting versions

**Unique Selling Proposition**

- Designed for electric vehicles (EV Car)
- Very high rated current up to 50 A

**Applications**

- Battery Management System
- On-Board Battery Charger
- DC/DC Converters
- Air-Conditioning Compressor
- PCT Heater


**References**

Corresponding Fuseholder

**Weblinks**

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

**Technical Data**

|                              |  |
|------------------------------|--|
| Rated Voltage                | 800 - 1000VDC  |
| Rated current                | 10 - 50A   |
| Breaking Capacity            | 10 - 50kA  |
| Characteristic               | EV Fuse  |
| Mounting                     | Insert, PCB/THT, Screw   |
| Admissible Ambient Air Temp. | -40 °C to 125 °C   |
| Material: Tube               | Ceramics   |
| Material: Endcaps            | Ni/Sn-Plated Copper Alloy  |
| Unit Weight                  | 8.1 g  |
| Storage Conditions           | 0 °C to 60 °C, max. 70% r.h.   |
| Product Marking              |  Type, Rated current, Rated Voltage, Breaking Capacity, CE mark, Approvals, "EV Fuse" |

|                              |   |
|------------------------------|---|
| Solderability                | JESD22-B102E, Method 1  |
| Resistance to Soldering Heat | JEDEC J-STD-020, Method B                                     |
| Solderability                | 245 °C / 2 sec acc. to IEC 60068-2-20, Test Ta, method 1      |
| Resistance to Soldering Heat | 260 °C / 5 sec acc. to IEC 60068-2-20, Test Tb, method 1A     |
| Operational Life             | MIL-STD-202, Method 108 Condition D 1000h @ 0.4 x In @ 125 °C |
| Vibration, High Frequency    | MIL-STD-202, Method 204 Condition D                           |
| Temperature Cycling          | JESD22, Method JA-104 Condition G                             |
| Flame Retardance             | AEC-Q200-001  |

**Approvals and Compliances**


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

SCHURTER products are designed for use in industrial environments. They have approvals from independent testing bodies according to national and international standards. Products with specific characteristics and requirements such as required in the automotive sector according to IATF 16949, medical technology according to ISO 13485 or in the aerospace industry can be offered exclusively with customer-specific, individual agreements by SCHURTER.

**Approvals**


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

Approval Reference Type: AEO 10x38

| Approval Logo   | Certificates                 | Certification Body | Description             |
|---|------------------------------|--------------------|-------------------------|
|  | <a href="#">UL Approvals</a> | UL                 | UL File Number: E184831 |







## Application standards

Application standards where the product can be used

| Organization   | Design                         | Standard       | Description   |
|--|--------------------------------|----------------|---|
|  | Designed for applications acc. | IEC/UL 62368-1 | Audio/video, information and communication technology equipment - Part 1: Safety requirements |


## Compliances

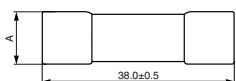
The product complies with following Guide Lines

| Identification   | Details  | Initiator   | Description   |
|--|--|-------------|---|
|  | <a href="#">CE declaration of conformity</a>   | 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. |
|  | <a href="#">UKCA declaration of conformity</a> | SCHURTER AG | The UKCA marking declares that the product complies with the applicable requirements laid down in the British Amendment of Regulation (EC) 765/2008.  |
|  | RoHS   | SCHURTER AG | Directive RoHS 2011/65/EU, Amendment (EU) 2015/863  |
|  | 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.                               |
|  | Automotive                                     | SCHURTER AG | AEC-Q200 is a test standard for passive components used in automotive applications. SCHURTER tests components according to the customer's agreement and is certified according to IATF 16949.         |

## Dimension [mm]

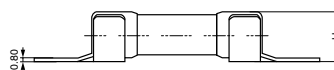
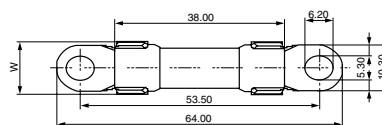
Standard

 10.3 mm



| Dimensions [mm] | 10-30 A | 40-50 A |
|-----------------|---------|---------|
| A               | ∅10.3   | ∅10.4   |

## Screw-on mounting

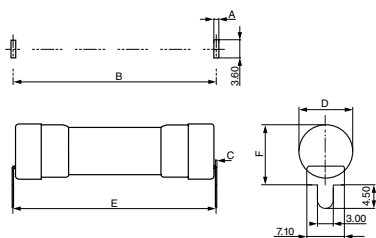


| Dimensions [mm] | 10-30 A  | 40-50 A  |
|-----------------|----------|----------|
| W               | 11.9±0.8 | 12.5±0.8 |
| H               | 11.1±0.8 | 11.3±0.8 |

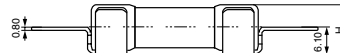
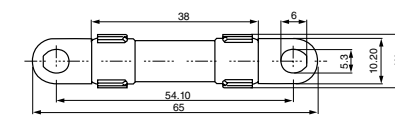
Mounting Torque: 3-5Nm

## Screw mount (Axial)

## PCB terminals



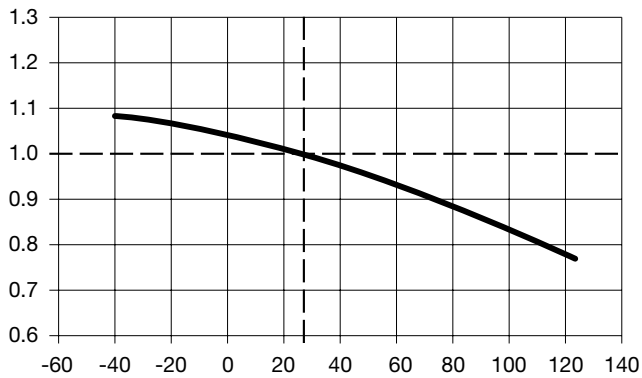
| Dimensions [mm] | 10 A - 30 A | 40 A - 50 A |
|-----------------|-------------|-------------|
| A               | 1.0         | 1.2         |
| B               | 38.9        | 41.2        |
| C               | 0.3±0.05    | 0.5±0.05    |
| D               | 10.8±0.5    | 11.1±0.5    |
| E               | 38.9±0.5    | 41.2±0.5    |
| F               | 11.5±0.5    | 11.5±0.5    |



| Dimensions [mm] | 10-30 A  | 40-50 A  |
|-----------------|----------|----------|
| W               | 11.9±0.8 | 12.5±0.8 |
| H               | 11.1±0.8 | 11.3±0.8 |

Mounting Torque: 3-5Nm

### Derating Curves

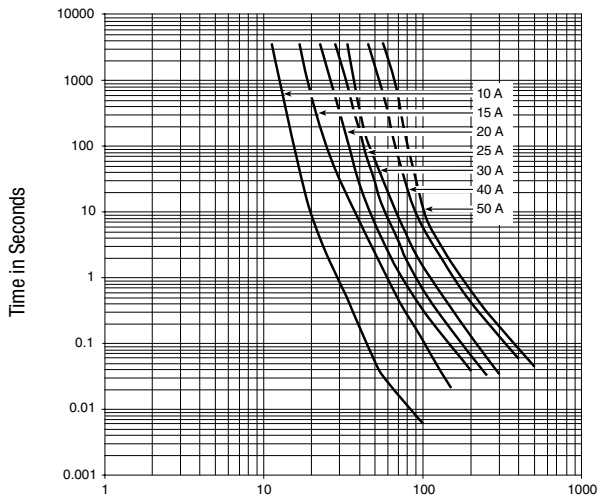


### Pre-Arcing Time

Rated Current  $I_n$     1.13 x  $I_n$  min.    1.35 x  $I_n$  max.    2.0 x  $I_n$  min.    2.0 x  $I_n$  max.    3.0 x  $I_n$  min.    3.0 x  $I_n$  max.    5.0 x  $I_n$  min.    5.0 x  $I_n$  max.


|             |        |        |        |       |        |      |       |     |
|-------------|--------|--------|--------|-------|--------|------|-------|-----|
| 10 A - 50 A | 60 min | 60 min | 500 ms | 100 s | 100 ms | 15 s | 30 ms | 1 s |
|-------------|--------|--------|--------|-------|--------|------|-------|-----|


### Time-Current-Curves



Current in Amperes

### All Variants

| Rated Current [A] | Mounting | Rated Voltage [VDC] | Breaking Capacity | Voltage Drop 1.0 $I_n$ max. [mV] | Power Dissipation 0.5 $I_n$ typ. [mW] | Melting $I^2t$ 10.0 $I_n$ typ. [A <sup>2</sup> s] |  | Order Number |
|-------------------|----------|---------------------|-------------------|----------------------------------|---------------------------------------|---|---|--------------|
| 10                | Standard | 1000                | 1)                | 225                              | 860                                   | 62  | ●   | 8020.2050    |
| 15                | Standard | 1000                | 1)                | 175                              | 1000                                  | 488   | ●   | 8020.2051    |
| 20                | Standard | 1000                | 1)                | 165                              | 1300                                  | 1507  | ●   | 8020.2052    |
| 25                | Standard | 1000                | 1)                | 165                              | 1400                                  | 2094  | ●   | 8020.2056    |
| 30                | Standard | 1000                | 1)                | 155                              | 1800                                  | 3150  | ●   | 8020.2053    |
| 40                | Standard | 800                 | 2)                | 155                              | 1800                                  | 9600  | ●   | 8020.2054    |
| 50                | Standard | 800                 | 2)                | 155                              | 2600                                  | 11417   | ●   | 8020.2055    |
| 10                | Screw    | 1000                | 1)                | 225                              | 860                                   | 62  | ●   | 8020.2060    |

| Rated Current [A] | Mounting      | Rated Voltage [VDC] | Breaking Capacity | Voltage Drop 1.0 I <sub>n</sub> max. [mV] | Power Dissipation 0.5 I <sub>n</sub> typ. [mW] | Melting I <sup>2</sup> t 10.0 I <sub>n</sub> typ. [A <sup>2</sup> s] |  | Order Number |
|-------------------|---------------|---------------------|-------------------|---|--|--|---|--------------|
| 15                | Screw         | 1000                | 1)                | 175                                       | 1000   | 488  | ●   | 8020.2061    |
| 20                | Screw         | 1000                | 1)                | 165                                       | 1300   | 1507   | ●   | 8020.2062    |
| 25                | Screw         | 1000                | 1)                | 165                                       | 1400   | 2094   | ●   | 8020.2066    |
| 30                | Screw         | 1000                | 1)                | 155                                       | 1800   | 3150   | ●   | 8020.2063    |
| 40                | Screw         | 800                 | 2)                | 155                                       | 1800   | 9600   | ●   | 8020.2064    |
| 50                | Screw         | 800                 | 2)                | 155                                       | 2600   | 11417  | ●   | 8020.2065    |
| 10                | Screw (Axial) | 1000                | 1)                | 225                                       | 860  | 62   | ●   | 8020.2080    |
| 15                | Screw (Axial) | 1000                | 1)                | 175                                       | 1000   | 488  | ●   | 8020.2081    |
| 20                | Screw (Axial) | 1000                | 1)                | 165                                       | 1300   | 1507   | ●   | 8020.2082    |
| 25                | Screw (Axial) | 1000                | 1)                | 165                                       | 1400   | 2094   | ●   | 8020.2086    |
| 30                | Screw (Axial) | 1000                | 1)                | 155                                       | 1800   | 3150   | ●   | 8020.2083    |
| 40                | Screw (Axial) | 800                 | 2)                | 155                                       | 1800   | 9600   | ●   | 8020.2084    |
| 50                | Screw (Axial) | 800                 | 2)                | 155                                       | 2600   | 11417  | ●   | 8020.2085    |
| 10                | PCB           | 1000                | 1)                | 225                                       | 860  | 62   | ●   | 8020.2090    |
| 15                | PCB           | 1000                | 1)                | 175                                       | 1000   | 488  | ●   | 8020.2091    |
| 20                | PCB           | 1000                | 1)                | 165                                       | 1300   | 1507   | ●   | 8020.2092    |
| 25                | PCB           | 1000                | 1)                | 165                                       | 1400   | 2094   | ●   | 8020.2096    |
| 30                | PCB           | 1000                | 1)                | 155                                       | 1800   | 3150   | ●   | 8020.2093    |
| 40                | PCB           | 800                 | 2)                | 155                                       | 1800   | 9600   | ●   | 8020.2094    |
| 50                | PCB           | 800                 | 2)                | 155                                       | 2600   | 11417  | ●   | 8020.2095    |

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

1) UL: 20 kA @ 1000 VDC with L/R < 3 ms; internal testing: 10 kA @ 275 VAC with 0.99 ≥ cos φ ≥ 0.7

1) Internal tests: 50 kA @ 1000 VDC with L/R ≤ 1 ms

2) UL: 20 kA @ 800 VDC with L/R < 3 ms; internal testing: 10 kA @ 275 VAC with 0.99 ≥ cos φ ≥ 0.7

### Packaging Unit

|                  |                 |
|------------------|-----------------|
| Standard version | Bulk (10 pcs.)  |
| PCB version      | Bulk (100 pcs.) |
| Screw-on version | Bulk (50 pcs.)  |

### Accessories

#### Description



**ESO 10.3x38**  
 Fuse Inserter/Extractor with Cover Function for 10.3x38 mm Fuses in Clips, Patent Pending

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