

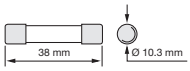



## E 90 fuse-disconnectors

E 90 series fuse-disconnectors are designed for connecting and disconnecting circuits under load, providing protection against short circuits and overloads. The case is made of self-extinguishing thermoplastic material resistant to high temperatures (all materials are UL listed) while the contact clips are in silver plated copper.

E 90 fuse-disconnectors can be sealed or padlocked to ensure operator safety during maintenance. Versions with blown fuse indicator allow to check whether the fuse is still working correctly or not. For easy and quick installation E 90 range is fully compatible with connecting bars, terminals and caps of S 200 MCBs

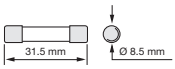
### E 90 fuse-disconnectors for 10.3 x 38 mm fuses (AC-22B)




| Poles | Rated current | Modules | Order details | | Bbn 8012542 | Price 1 piece | Price group | Weight 1 piece | Pack unit |
|---|---|---|---|---|---|---|---|---|---|
| | In | | Type code | Order code | EAN | | | kg | pc. |
| 1 | 32 | 1 | **E 91/32** | 2CSM200923R1801 | **009238** | | | 0.061 | 6 |
| 1 | 32 | 1 | **E 91/32s** | 2CSM202483R1801 | **024835** | | | 0.062 | 6 |
| 1+N | 32 | 2 | **E 91N/32** | 2CSM200893R1801 | **008934** | | | 0.130 | 3 |
| 2 | 32 | 2 | **E 92/32** | 2CSM200883R1801 | **008835** | | | 0.122 | 3 |
| 3 | 32 | 3 | **E 93/32** | 2CSM204753R1801 | **047537** | | | 0.183 | 2 |
| 3+N | 32 | 4 | **E 93N/32** | 2CSM204733R1801 | **047339** | | | 0.252 | 1 |
| 4 | 32 | 4 | **E 94/32** | 2CSM204723R1801 | **047230** | | | 0.244 | 1 |
| N | 32 | - | **E 9N** | 2CSM277953R1801 | **779537** | | | 0.069 | 6 |

s: version with blown fuse indicator light

### E 90 fuse-disconnectors for 8.5 x 31.5 mm fuses (AC-22B)




| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 1 | **E 91/20** | 2CSM200983R1801 | **009832** | | | 0.061 | 6 |
| 1 | 20 | 1 | **E 91/20s** | 2CSM202423R1801 | **024231** | | | 0.062 | 6 |
| 2 | 20 | 2 | **E 92/20** | 2CSM200953R1801 | **009535** | | | 0.122 | 3 |
| 3 | 20 | 3 | **E 93/20** | 2CSM200943R1801 | **009436** | | | 0.183 | 2 |
| N | 20 | - | **E 9N** | 2CSM277953R1801 | **779537** | | | 0.069 | 6 |

s: version with blown fuse indicator light

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## Technical features

| **Type** | | | **E 90/20** | **E 90/32** |
|---|---|---|---|---|
| **Fuse** | | | 8 x 32 | 10 x 38 |
| **Kind of current** | | | AC / DC | |
| **Rated frequency** | | [Hz] | = / 50-60 | |
| **Rated current** | | [A] | 20 | 32 |
| **Tightening torque** | | [Nm] | PZ2 2-2.5 | |
| **Protection degree** | | | IP20 | |
| **Padlocked (open)** | | | ■ | |
| **Sealed (closed)** | | | ■ | |
| **IEC 60947-3** | | | | |
| **Rated operational voltage** | | [V] | 400 | 690 |
| **Utilization category** | | | AC-22B / DC-20B | |
| **Power consumption per pole** | aM | [W] | 0.9 | 1.2 |
| | gG | [W] | 2.5 | 3.0 |
| **IEC 60269-1** | | | | |
| **Rated voltage AC** | | [V] | 400 | 690 |
| **Rated voltage DC** | | [V] | 400 | 690 |
| **IEC 60269-2** | | | | |
| **Fuse system** | | | F | |
| **Rated voltage AC** | | [V] | 400 | 690 |
| **Rated voltage DC** | | [V] | 250 | 440 |
| **Minimum rated breaking capacity** | | | 50 AC – 25 DC | |
| **IEC 60269-3** | | | | |
| **Fuse system** | | | B | |
| **Rated voltage AC** | | [V] | 400 | |

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## Materials

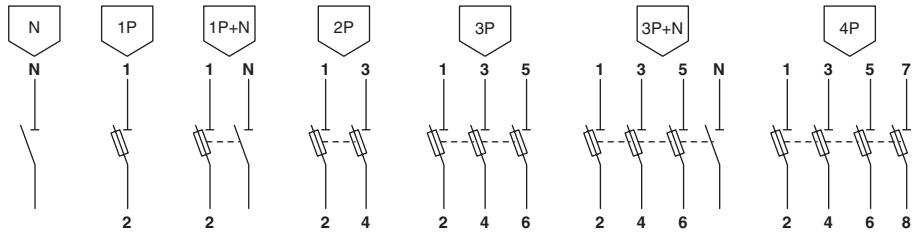
| | | |
|---|---|---|
| **Plastic parts** | Case: | Material PA 6 +30% glass fibre |
| | | Self extinguishing class: V2 (UL94) |
| | | Temperature resistance: 130 °C |
| | Opening handle | Material PA 66 +25% glass fibre |
| | | Self-extinguishing class V0 (UL94) |
| | | Temperature resistance: 140 °C |
| **Metal parts** | Clips | Silver plated copper |
| | Clip spring | Stainless steel |
| | Terminals | Galvanized steel |

## Utilization category

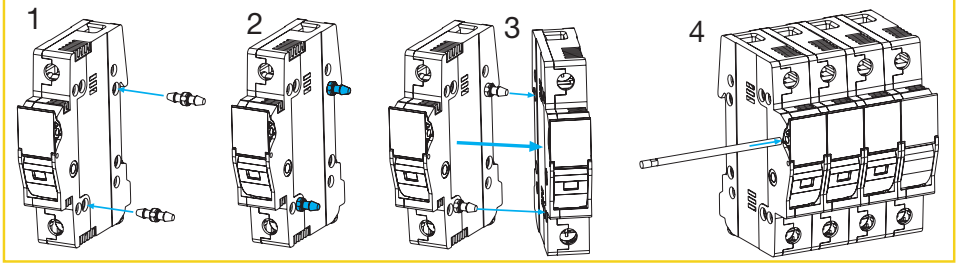
| Current type | Utilization category | Typical applications |
|---|---|---|
| **Alternating current** | AC-20A - AC-20B | Connecting and disconnecting under no load (in this case the devices must be marked “Do not disconnect under load”) |
| | AC-21A - AC-21B | Switching of resistive loads, including moderate overloads |
| | **AC-22A - AC-22B** | Switching of mixed resistive/inductive loads, including moderate overloads |
| | AC-23A - AC-23B | Switching of motors and other highly inductive loads |
| **Direct current** | **DC-20A - DC-20B** | Connecting and disconnecting under no load (in this case the devices must be marked “Do not disconnect under load”) |
| | DC-21A - DC-21B | Switching of resistive loads, including moderate overloads |
| | DC-22A - DC-22B | Switching of mixed resistive / inductive loads, including moderate overloads |
| | DC-23A - DC-23B | Switching of motors or other highly inductive loads |

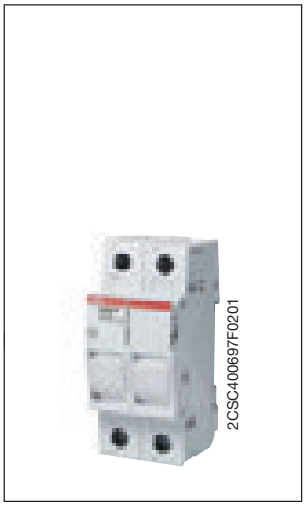
| | | |
|---|---|---|
| | Suffix A | Frequent use |
| | Suffix B | Infrequent use |

### Electrical symbols




### Multi-pole coupling



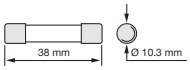



## E 90 PV fuse-disconnectors

E 90 PV series fuse-disconnectors, designed for operating voltages of 1000 V d.c. with utilization category DC-20B, are particularly suited for protection against overcurrents of photovoltaic systems.

The single-pole or two-pole E 90 PV disconnectors for 10.3 x 38 mm cylindrical fuse links offer a reliable, compact and affordable solution for photovoltaic installations. Versions with blown fuse indicator allow to check whether the fuse is still working correctly or not.

### E 90 PV fuse-disconnectors for 10.3 x 38 mm fuses (DC-20B)




| Poles | Rated current | Modules | Order details | | Bbn 8012542 | Price 1 piece | Price group | Weight 1 piece | Pack unit |
|---|---|---|---|---|---|---|---|---|---|
| | In | | Type code | Order code | EAN | | | kg | pc. |
| 1 | 32 | 1 | **E 91/32 PV** | 2CSM204713R1801 | **047131** | | | 0,061 | 6 |
| 1 | 32 | 1 | **E 91/32 PVs** | 2CSM204693R1801 | **046936** | | | 0,062 | 6 |
| 2 | 32 | 2 | **E 92/32 PV** | 2CSM204703R1801 | **047032** | | | 0,122 | 3 |

s: version with blown fuse indicator light

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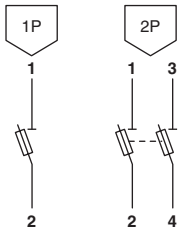
### Electrical symbols

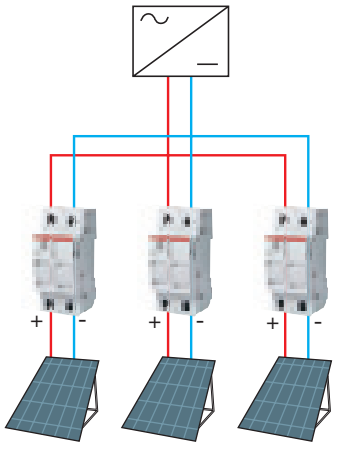



### Technical features

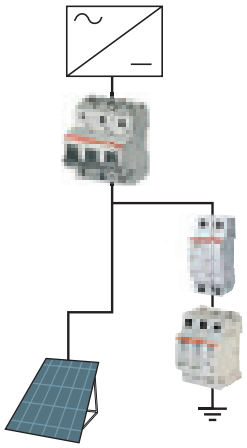
| Type | | | E 90/32 PV |
|---|---|---|---|
| Fuse | | | 10 x 38 |
| Kind of current | | | DC |
| Rated frequency | | [Hz] | = / 50-60 |
| Rated Current | | [A] | 32 |
| Tightening Torque | | [Nm] | PZ2 2-2.5 |
| Protection degree | | | IP20 |
| Padlocked (open) | | | ■ |
| Sealed (closed) | | | ■ |

| IEC 60947-3 | | | |
|---|---|---|---|
| Rated operational voltage | | [V] | 1000 |
| Utilization category | | | DC-20B |
| Power consumption | aM | [W] | 1.2 |
| per pole | gG | [W] | 3.0 |

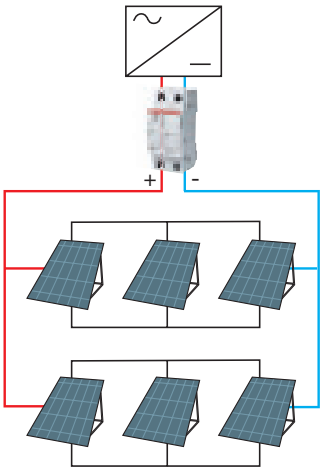
### Application example of fuse disconnectors in photovoltaic system



**Lines protection**
E 90 PV fuse-disconnectors allow overload protection of each line, thus preventing damage of critical plant components.



**OVR Surge Protective Device protection**
E 90 PV fuse-disconnectors can be installed in field enclosure as back-up protection of Surge Protective Device.



**Inverter protection**
In small photovoltaic plants, inverter protection against overload and short-circuit is possible by means of E 90 PV.

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