



### 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

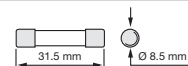
#### E 90 fuse-disconnectors for 10.3 x 38 mm fuses (AC-22B)



Poles	Rated current In	Modules	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1	32	1	<b>E 91/32</b>	2CSM200923R1801	<b>009238</b>			0.061	6
1	32	1	<b>E 91/32s</b>	2CSM202483R1801	<b>024835</b>			0.062	6
1+N	32	2	<b>E 91N/32</b>	2CSM200893R1801	<b>008934</b>			0.130	3
2	32	2	<b>E 92/32</b>	2CSM200883R1801	<b>008835</b>			0.122	3
3	32	3	<b>E 93/32</b>	2CSM204753R1801	<b>047537</b>			0.183	2
3+N	32	4	<b>E 93N/32</b>	2CSM204733R1801	<b>047339</b>			0.252	1
4	32	4	<b>E 94/32</b>	2CSM204723R1801	<b>047230</b>			0.244	1
N	32	-	<b>E 9N</b>	2CSM277953R1801	<b>779537</b>			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	<b>E 91/20</b>	2CSM200983R1801	<b>009832</b>			0.061	6
1	20	1	<b>E 91/20s</b>	2CSM202423R1801	<b>024231</b>			0.062	6
2	20	2	<b>E 92/20</b>	2CSM200953R1801	<b>009535</b>			0.122	3
3	20	3	<b>E 93/20</b>	2CSM200943R1801	<b>009436</b>			0.183	2
N	20	-	<b>E 9N</b>	2CSM277953R1801	<b>779537</b>			0.069	6

s: version with blown fuse indicator light

### 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
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
Rated voltage DC	[V]	250
Minimum rated breaking capacity		50 AC – 25 DC

#### IEC 60269-3

Fuse system		B
Rated voltage AC	[V]	400

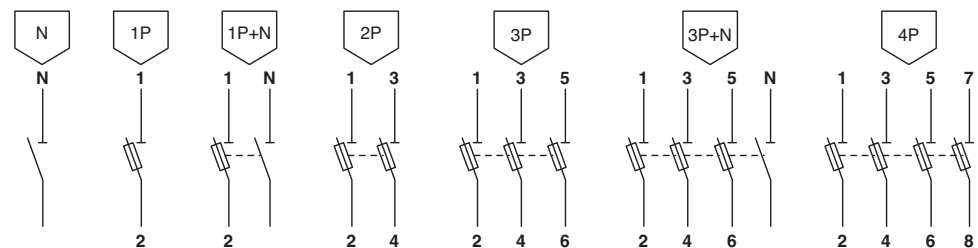
Materials

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

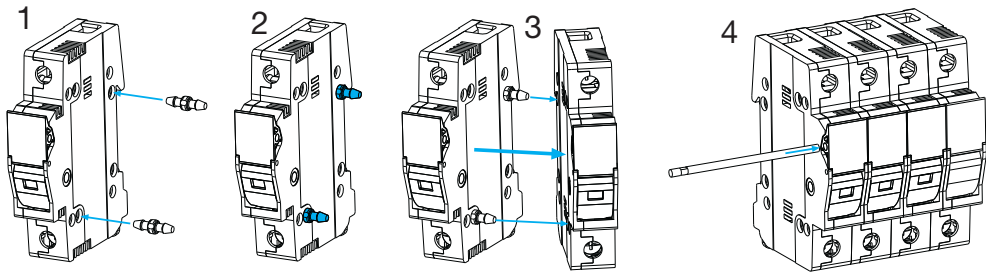
Utilization category

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
	<b>AC-22A - AC-22B</b>	Switching of mixed resistive/inductive loads, including moderate overloads
	AC-23A - AC-23B	Switching of motors and other highly inductive loads
Direct current	<b>DC-20A - DC-20B</b>	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



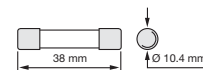
Multi-pole coupling





E 90 range class CC fuseholders are appropriate to protect against overloads and short circuits. They are designed for use with class CC cartridge fuses and they are available in 1P, 1P+N, 2P, 3P, 3P+N, 4P and N poles. Fuseholders can be safely locked in open position and sealed in closed position. E 90 range assure maximum protection against direct contacts thanks to IP20 finger-safe protection degree. They are the ideal solution in industrial and process control systems, automated systems, industrial systems and individual control circuits. Versions with blown fuse indicator allow to check whether the fuse is still working correctly or not.

**E 90 for class CC cartridge fuses**



Poles	Rated current In	Modules	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1	30	1	<b>E 91/30</b>	2CSM205833R1801	<b>058335</b>			0,061	6
1	30	1	<b>E 91/30s</b>	2CSM251533R1801	<b>515333</b>			0,062	6
1+N	30	2	<b>E 91N/30</b>	2CSM200693R1801	<b>006930</b>			0,13	3
2	30	2	<b>E 92/30</b>	2CSM202443R1801	<b>024439</b>			0,122	3
3	30	3	<b>E 93/30</b>	2CSM200683R1801	<b>006831</b>			0,183	2
3+N	30	4	<b>E 93N/30</b>	2CSM202433R1801	<b>024330</b>			0,252	1
4	30	4	<b>E 94/30</b>	2CSM200673R1801	<b>006732</b>			0,244	1
N	30	1	<b>E 9N</b>	2CSM277953R1801	<b>779537</b>			0,069	6

s: version with blown fuse indicator light

**Accessories for E 90 disconnecter fuseholders**

Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
<b>E 90/ACP</b>	2CSM205823R1801	<b>058236</b>			0,050	1

**Technical features**

30A		
Rated voltage Un	[V]	600 AC/DC
Rated current In	[A]	30
Rated frequency	[Hz]	50/60
Fuse dimensions	[mm]	10,4 x 38,1
Tightening torque	[lib-in]	18-22
Rated temperature	[°C]	75
Sealability		■
Lockability		■
Marking		UL CSA
Standards		UL 512



### E 90h fuse holders

E 90h fuse holders are suitable for protection against overloads and short circuits. Available in a single module 1P+N version and in a three-module 3P+N version, they are designed for use with gG and aM cylindrical fuse links. The body is made from self-extinguishing material resistant to high temperatures, while the contact clips are in silver-plated copper. E 90h fuse holders can be sealed or padlocked to assure operator safety during maintenance. Versions with blown fuse indicator allow to check whether the fuse is still working correctly or not.

#### E 90h fuse holders for 10.3 x 38 mm fuses (AC-20B)



Poles	Rated current In	Modules	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1+N	32	1	E 91hN/32	2CSM200913R1801	009139			0.070	6
1+N	32	1	E 91hN/32s	2CSM206573R1801	065739			0.071	6
3+N	32	3	E 93hN/32	2CSM204743R1801	047438			0.192	2

s: version with blown fuse indicator light

#### E 90h fuse holders for 8.5 x 31.5 mm fuses (AC-20B)



1+N	20	1	E 91hN/20	2CSM200963R1801	009634			0.070	6
1+N	20	1	E 91hN/20s	2CSM200703R1801	007036			0.071	6
3+N	20	3	E 93hN/20	2CSM200933R1801	009337			0.192	2

s: version with blown fuse indicator light

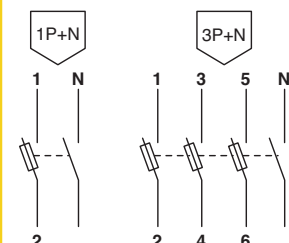
#### Accessories for E90 fuse disconnectors and for E 90h fuse holders series

-	-	-	E 90/ACP	2CSM205823R1801	058236			0.118	1
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### Fuse indicator LED



### Electrical symbols



### Technical features

Type	E 90h/20	E 90h/32
Fuse	8 x 32	10 x 38
Kind of current		AC / DC
Rated frequency	[Hz]	= / 50-60
Rated current	[A]	20
Power consumption per pole	aM [W]	0.9
	gG [W]	2.5
Tightening torque	[Nm]	PZ2 2-2.5
Protection degree		IP20
Padlocked (open)		■
Sealed (closed)		■

#### IEC 60269-1

Rated voltage AC	[V]	400
Rated voltage DC	[V]	400

#### IEC 60269-2

Fuse system		F
Rated voltage AC	[V]	400
Rated voltage DC	[V]	250
Minimum rated breaking capacity		50 AC – 25 DC

#### IEC 60269-3

Fuse system		B
Rated voltage AC	[V]	400

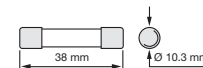


### E 90 PV fuse-disconnectors

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)

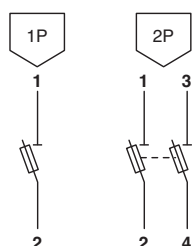


Poles	Rated current In	Modules	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1	32	1	<b>E 91/32 PV</b>	2CSM204713R1801	<b>047131</b>			0,061	6
1	32	1	<b>E 91/32 PVs</b>	2CSM204693R1801	<b>046936</b>			0,062	6
2	32	2	<b>E 92/32 PV</b>	2CSM204703R1801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

s: version with blown fuse indicator light

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#### Electrical symbols



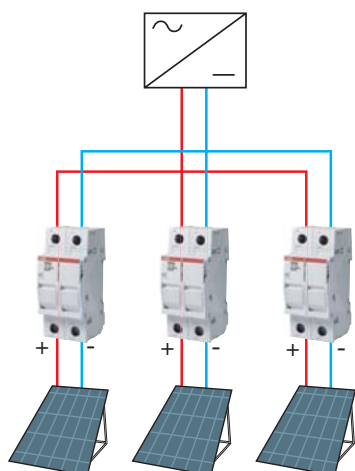
#### Technical features

Type	<b>E 90/32 PV</b>	
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 per pole	aM [W]	1.2
	gG [W]	3.0

#### Application example of fuse disconnectors in photovoltaic system



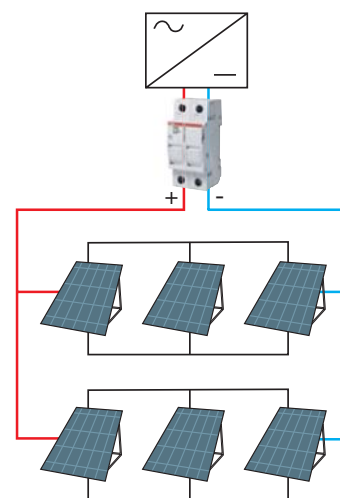
##### Lines protection

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



##### OV 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.