

Features

2 Pole, forcibly guided contacts, relay interface modules, 15.8 mm wide

48.12 - 2 Pole 8 A (screw terminal)

- DC sensitive coils
- Relay with forcibly guided contacts according to EN 50205 Type B
- 35 mm rail (EN 60715) mounting

48.12
Screw terminal



According to EN 50205 only 1 NO and 1 NC (11-14 and 21-22 or 11-12 and 21-24) shall be used as forcibly guided contacts.

For outline drawing see page 7

Contact specification

Contact configuration	2 CO (DPDT)
Rated current/Maximum peak current	A 8/15
Rated voltage/Maximum switching voltage V AC	250/400
Rated load AC1	VA 2,000
Rated load AC15 (230 V AC)	VA 500
Single phase motor rating (230 V AC)	kW 0.37
Breaking capacity DC1: 30/110/220V	A 8/0.65/0.2
Minimum switching load	mW (V/mA) 500 (10/10)
Standard contact material	AgNi

Coil specification

Nominal voltage (U_N)	V AC (50/60 Hz)	—
	V DC	12 - 24
Rated power AC/sens. DC	VA (50 Hz)/W	—/0.7
Operating range	AC	—
	sens. DC	$(0.75 \dots 1.2) U_N$
Holding voltage	AC/DC	— /0.4 U_N
Must drop-out voltage	AC/DC	— /0.1 U_N

Technical data

Mechanical life AC/DC	cycles	—/10 · 10 ⁶
Electrical life at rated load AC1	cycles	100 · 10 ³
Operate/release time	ms	10/4
Insulation between coil and contacts (1.2/50 μ s)	kV	6 (8 mm)
Dielectric strength between open contacts	V AC	1,500
Ambient temperature range	°C	−40...+70
Protection category		IP 20

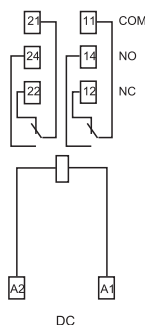
Approvals relay (according to type)



48.12



- 2 pole, 8 A
- Forcibly guided contacts relay
- Screw terminal
- 35 mm rail (EN 60715) mounting



48 Series - Relay interface modules 8 - 10 - 16 A

Features

1 & 2 Pole relay interface modules,
15.8 mm wide

Ideal interface for PLC and electronic systems

48.31 - 1 Pole 10 A (screw terminal)
48.52 - 2 Pole 8 A (screw terminal)
48.72 - 2 Pole 8 A (screwless terminal)

- AC coils or DC sensitive coils
- Instant ejection of relay using plastic retaining clip
- Supply status indication and EMC coil suppression module as standard
- Identification label
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting

48.31 / 48.52
Screw terminal



48.72
Screwless terminal



For outline drawing see page 7

Contact specification

Contact configuration	1 CO (SPDT)	2 CO (DPDT)
Rated current/Maximum peak current A	10/20	8/15
Rated voltage/Maximum switching voltage V AC	250/400	250/250
Rated load AC1 VA	2,500	2,000
Rated load AC15 (230 V AC) VA	500	400
Single phase motor rating (230 V AC) kW	0.37	0.3
Breaking capacity DC1: 30/110/220V A	10/0.3/0.12	8/0.3/0.12
Minimum switching load mW (V/mA)	300 (5/5)	300 (5/5)
Standard contact material	AgNi	AgNi

Coil specification

Nominal voltage (U_N)	V AC (50/60 Hz)	12 - 24 - 110 - 120 - 230	12 - 24 - 110 - 120 - 230
	V DC	12 - 24 - 125	12 - 24 - 125
Rated power AC/sens. DC VA (50 Hz)/W	AC	1.2/0.5	1.2/0.5
	sens. DC	(0.8...1.1) U_N	(0.8...1.1) U_N
Operating range	AC	(0.73...1.5) U_N	(0.73...1.5) U_N
	sens. DC	(0.73...1.5) U_N	(0.73...1.5) U_N
Holding voltage AC/DC	AC/DC	0.8 U_N / 0.4 U_N	0.8 U_N / 0.4 U_N
Must drop-out voltage AC/DC	AC/DC	0.2 U_N / 0.1 U_N	0.2 U_N / 0.1 U_N

Technical data

Mechanical life	cycles	10 · 10 ⁶	10 · 10 ⁶
Electrical life at rated load AC1	cycles	200 · 10 ³	100 · 10 ³
Operate/release time	ms	7/4 (AC) - 12/12 (DC)	7/4 (AC) - 12/12 (DC)
Insulation between coil and contacts (1.2/50 μ s)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1,000	1,000
Ambient temperature range	°C	-40...+70	-40...+70
Protection category		IP 20	IP 20

Approvals relay (according to type)



Features

1 & 2 Pole relay interface modules,
15.8 mm wide

Ideal interface for PLC and electronic systems

- 48.61 - 1 Pole 16 A (screw terminal)
- 48.81 - 1 Pole 16 A (screwless terminal)
- 48.62 - 2 Pole 10 A (screw terminal)
- 48.82 - 2 Pole 10 A (screwless terminal)

- AC coils or DC sensitive coils
- Instant ejection of relay using plastic retaining clip
- Supply status indication and EMC coil suppression module as standard
- Identification label
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting

48.61 / 48.62
Screw terminal



48.81 / 48.82
Screwless terminal



For outline drawing see page 7

Contact specification

Contact configuration	
Rated current/Maximum peak current	A
Rated voltage/Maximum switching voltage V AC	
Rated load AC1	VA
Rated load AC15 (230 V AC)	VA
Single phase motor rating (230 V AC)	kW
Breaking capacity DC1: 30/110/220V	A
Minimum switching load	mW (V/mA)
Standard contact material	

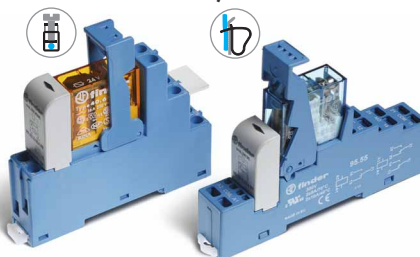
Coil specification

Nominal voltage (U _N)	V AC (50/60 Hz)
	V DC
Rated power AC/sens. DC	VA (50 Hz)/W
Operating range	AC
	sens. DC
Holding voltage	AC/DC
Must drop-out voltage	AC/DC

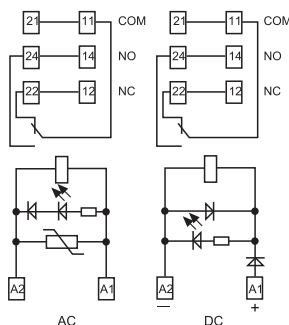
Technical data

Mechanical life	cycles
Electrical life at rated load AC1	cycles
Operate/release time	ms
Insulation between coil and contacts (1.2/50 µs)	kV
Dielectric strength between open contacts	V AC
Ambient temperature range	°C
Protection category	

48.61/81

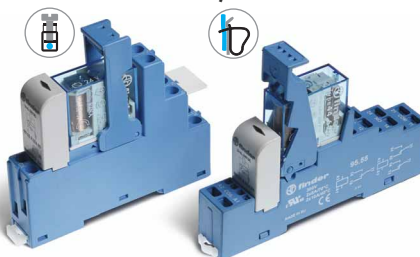


- 1 pole, 16 A
- Screw terminal and screwless terminal
- 35 mm rail (EN 60715) mounting

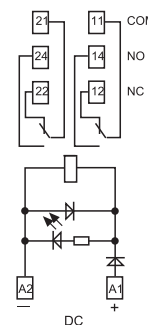


* For currents >10 A, contact terminals must be connected in parallel (21 with 11, 24 with 14, 22 with 12).

48.62/82



- 2 pole, 10 A
- Screw terminal and screwless terminal
- 35 mm rail (EN 60715) mounting



Approvals relay (according to type)



48 Series - Relay interface modules 8 - 10 - 16 A

Ordering information

Example: 48 series, 35 mm rail (EN 60715) mount, screw terminal relay interface module, 2 CO (DPDT) 8 A contacts, 24 V sensitive DC coil, green LED + diode, 99.02 coil indication.

B

Series

Type

Screw terminal

- 1 = 35 mm rail (EN 60715) mount, forcibly guided contacts relay
 3 = 35 mm rail (EN 60715) mount
 5 = 35 mm rail (EN 60715) mount
 6 = 35 mm rail (EN 60715) mount

Screwless terminal

- 7 = 35 mm rail (EN 60715) mount
 8 = 35 mm rail (EN 60715) mount

No. of poles

- 1 = 1 pole for 48.31, 10 A
 48.61, 48.81, 16 A
 2 = 2 pole for 48.12, 48.52, 48.72, 8 A
 48.62, 48.82, 10 A
 (48.62, 48.82 DC only)

Coil version

- 7 = Sensitive DC
 8 = AC (50/60 Hz)
 9 = DC

Coil voltage

See coil specifications

A: Contact material

- 0 = Standard AgNi for 48.31/52/62/72/82 AgCdO, Standard for 48.61/81
 1 = AgNi, for 48.12
 4 = AgSnO₂, for 48.61/62/81/82 only
 5 = AgNi + Au, for 48.31/52/72 only

B: Contact circuit

- 0 = CO (nPDT)

D: Special versions

- 0 = Standard
 2 = Standard (for 48.12 only)

C: Options

- 0 = Standard (for 48.12 only)
 5 = Standard for DC: green LED + diode (polarity +A1)
 6 = Standard for AC: green LED + Varistor

Selecting features and options: only combinations in the same row are possible.

Preferred selections for best availability are shown in **bold**.

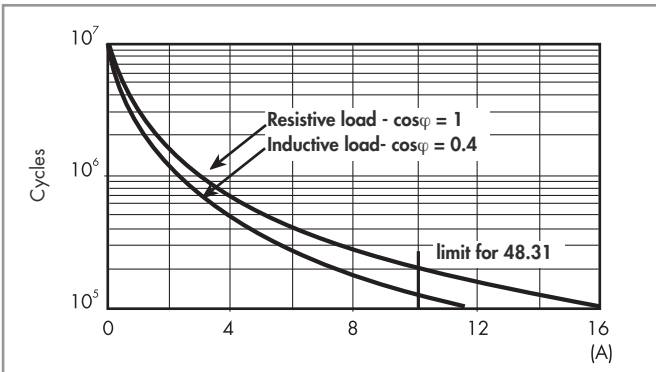
Type	Coil version	A	B	C	D
48.12	DC	1	0	0	2
48.31/52/72	AC	0 - 5	0	6	0
48.31/52/72	Sensitive DC	0 - 5	0	5	0
48.61/81	AC	0 - 4	0	6	0
48.61/81	Sensitive DC	0 - 4	0	5	0
48.62/82	Sensitive DC	0 - 4	0	5	0

Technical data

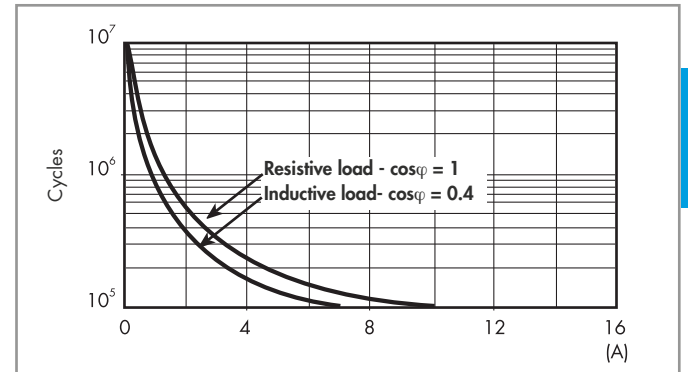
Insulation		48.12/31/61/62	48.52/72	48.12/31/61/62/81/82
Insulation according to EN 61810-1	insulation rated voltage	V 250	250	400
	rated impulse withstand voltage	kV 4	4	4
	pollution degree	3	2	2
	overvoltage category	III	III	III
Insulation between coil and contacts (1.2/50 µs)		kV 6 (8 mm)		
Dielectric strength between open contacts		V AC 1,000; 1,500 (48.12)		
Dielectric strength between adjacent contacts		V AC 2,000 (48.52); 2,500 (48.12/62)		
Conducted disturbance immunity				
Burst (5...50)ns, 5 kHz, on A1 - A2		EN 61000-4-4		level 4 (4 kV)
Surge (1.2/50 µs) on A1 - A2 (differential mode)		EN 61000-4-5		level 3 (2 kV)
Other data				
Bounce time: NO/NC		ms 2/5; 2/10 (48.12)		
Vibration resistance (10...200)Hz: NO/NC		g 20/5 (for 1 pole)	15/3; 20/6 (48.12) for 2 pole	
Power lost to the environment	without contact current	W 0.7		
	with rated current	W 1.2 (48.12/31)	1.3 (48.52/72)	1.2 (48.61/62/81/82)
Wire strip length		mm 8		
Screw torque		Nm 0.5		
Max. wire size		Screw terminal		Screwless terminal
		solid cable	stranded cable	solid cable
	mm ²	1x6 / 2x2.5	1x4 / 2x2.5	2x(0.2...1.5)
	AWG	1x10 / 2x14	1x12 / 2x14	2x(24...18)

Contact specification

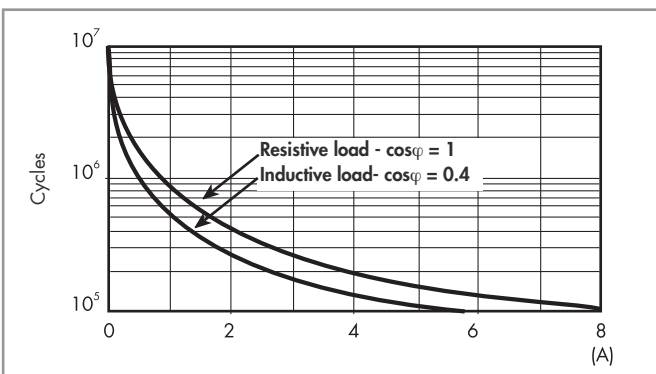
F 48 - Electrical life (AC) v contact current
Types 48.31/61/81



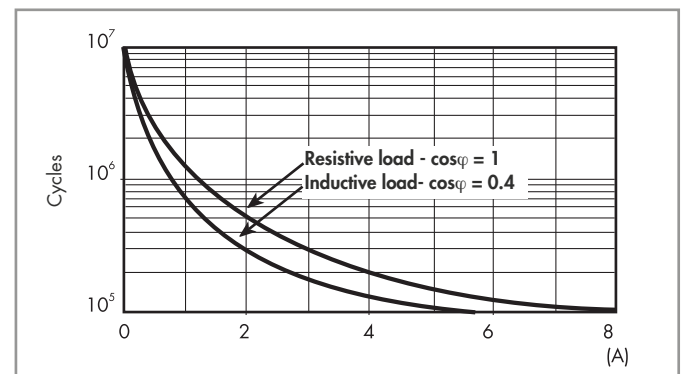
F 48 - Electrical life (AC) v contact current
Types 48.62/82



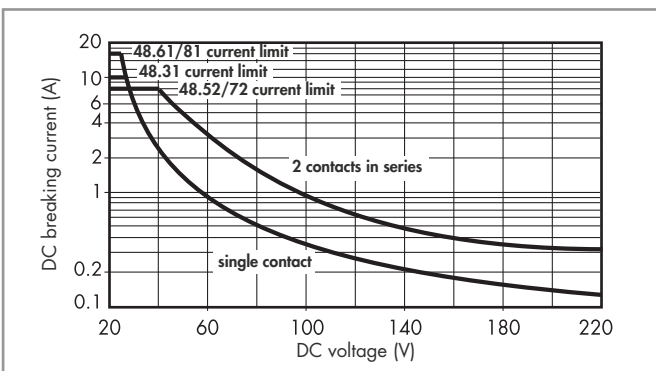
F 48 - Electrical life (AC) v contact current
Types 48.52/72



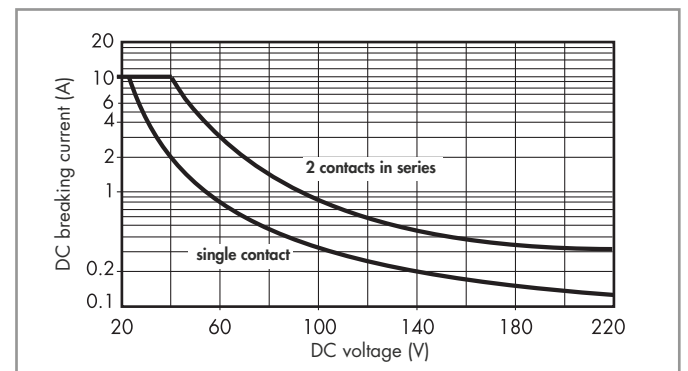
F 48 - Electrical life (AC) v contact current
Type 48.12



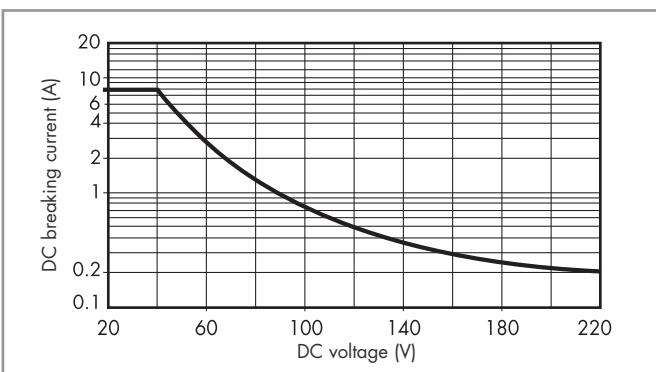
H 48 - Maximum DC1 breaking capacity
Types 48.31/52/61/72/81



H 48 - Maximum DC1 breaking capacity
Types 48.62/82



H 48 - Maximum DC1 breaking capacity
Type 48.12



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of $\geq 100 \cdot 10^3$ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.
Note: the release time for the load will be increased.

Coil specifications

DC coil data (0.5 W sensitive)

Nominal voltage U_N V	Coil code	Operating range U_{min}^* U_{max} V V		Rated coil consumption I at U_N mA
12	7.012	8.8	18	41
24	7.024	17.5	36	22.2
125	7.125	91	188	4

* $U_{min} = 0.8 U_N$ for 48.61, 48.62, 48.81 and 48.82

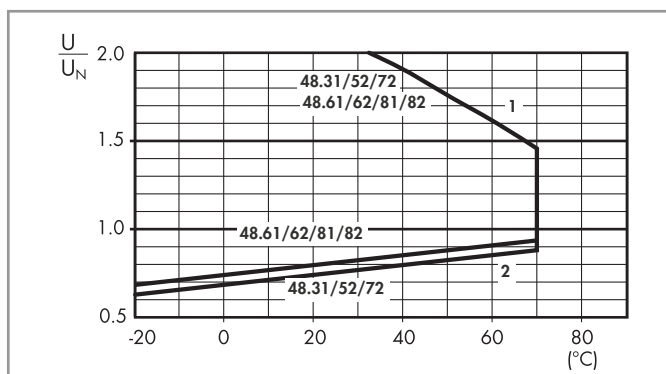
AC coil data

Nominal voltage U_N V	Coil code	Operating range U_{min} U_{max} V V		Rated coil consumption I at U_N (50Hz) mA
12	8.012	9.6	13.2	90.5
24	8.024	19.2	26.4	46
110	8.110	88	121	10.1
120	8.120	96	132	11.8
230	8.230	184	253	7.0

DC coil data, 2 pole relay - Type 48.12

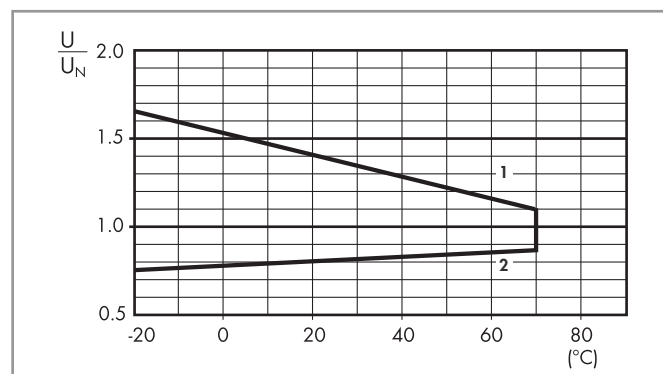
Nominal voltage U_N V	Coil code	Operating range U_{min} U_{max} V V		Resistance R Ω	Rated coil consumption I at U_N mA
12	9.012	9	14.4	205	58.5
24	9.024	18	28.8	820	29.3

R 48 - DC coil operating range v ambient temperature



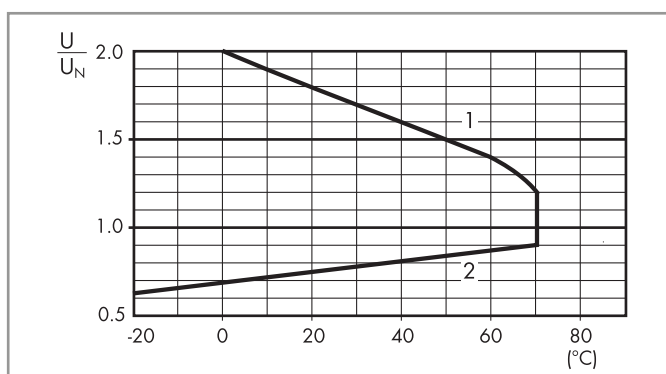
- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

R 48 - AC coil operating range v ambient temperature



- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

R 48 - DC coil operating range v ambient temperature Type 48.12



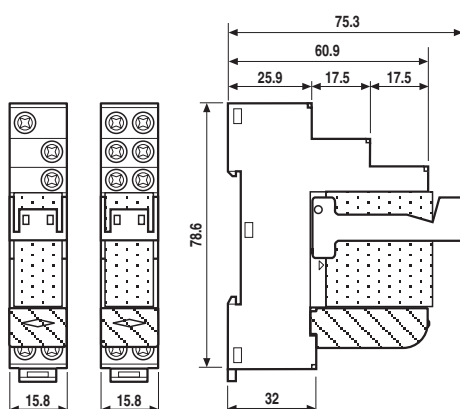
- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

Combinations

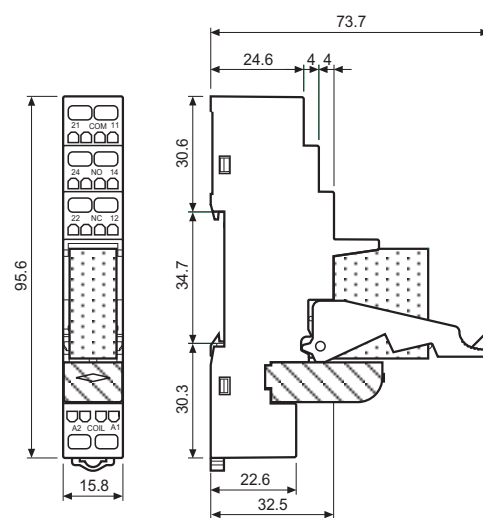
Code	Type of socket	Type of relay	Module	Retaining clip
48.12	95.05.0	50.12	—	095.71
48.31	95.03	40.31	99.02	095.01
48.52	95.05	40.52	99.02	095.01
48.61	95.05	40.61	99.02	095.01
48.62	95.05	44.62	99.02	095.01
48.72	95.55	40.52	99.02	095.91.3
48.81	95.55	40.61	99.02	095.91.3
48.82	95.55	44.62	99.02	095.91.3

B

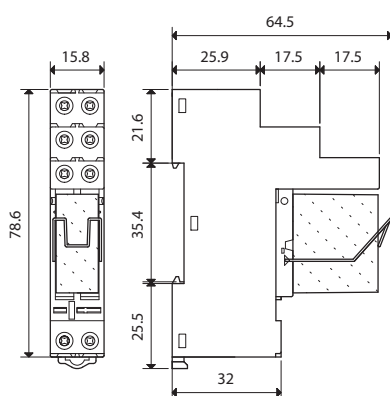
Outline drawing



48.31 48.52 / 48.61 / 48.62
Screw terminal



48.72 / 48.81 / 48.82
Screwless terminal



48.12
Screw terminal

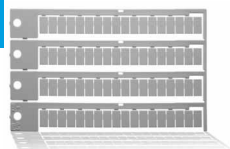
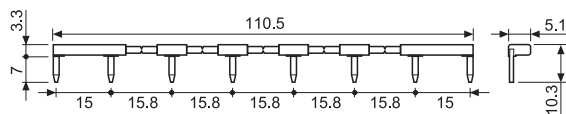


Accessories



095.18

8-way jumper link for screw terminal version	095.18 (blue)	095.18.0 (black)
Rated values	10 A - 250 V	



060.72

Sheet of marker tags , plastic, 72 tags, 6x12 mm	060.72
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Packaging codes

How to code and identify retaining clip and packaging options for sockets.

Example:

4 8 . 5 2 . 7 . 0 2 4 . 0 0 5 0 S P A

A Standard packaging
B Blister packaging

SP Plastic retaining clip