

Relay Interface Modules 8 - 10 - 16 A



Control panels



Carousel warehouses



Medical and dentistry



Shipyards



Elevators and lifts



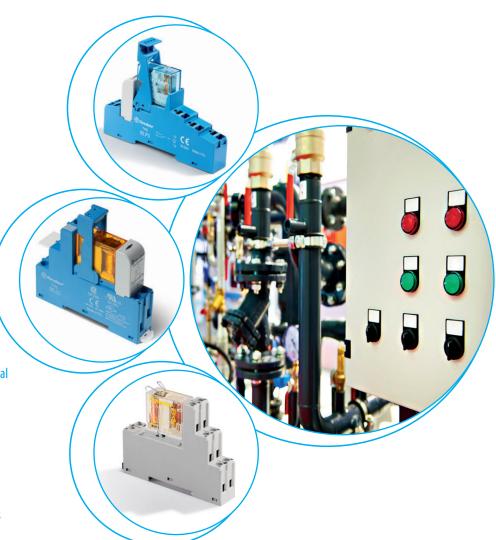
Panels for electrical distribution



Building automation



Hoists and cranes



2 CO relay interface modules, 15.8 mm wide

Type 48.12

Ideal for safety applications

- 2 CO 8 A
- Screw terminals
- Relay with forcibly guided contacts according to EN 61810-3 Type B (previously EN 50205)

Type 48.32

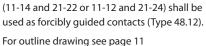
Ideal for energy applications

- 2 CO 8 A
- Breaking capacity DC inductive (L/R=40 ms)
 - 110 V = 0.5 A
 - 220 V = 0.2 A
- Screw terminals
- DC coils
- Identification label
- UL Listing (certain relay / socket combinations)
- 35 mm rail (EN 60715) mounting
- Cadmium-free contact material

48.12/32 Screw terminal



According to EN 61810-3 only 1 NO and 1 NC



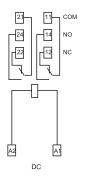


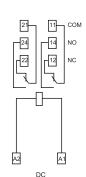
- 2 CO 8 A
- Screw terminals



finder

- 2 CO 8 A
- Screw terminals





For outline drawing see page 11			
Contact specification			
Contact configuration		2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak curr	ent A	8/15	8/15
Rated voltage/			
Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	2000	2000
Rated load AC15 (230 V AC)	VA	500	500
Single phase motor rating (230 V A	.C) kW	0.37	0.37
Breaking capacity DC1: 30/110/220	V A	8/0.65/0.4	8/0.65/0.4
Minimum switching load	mW (V/mA)	50 (5/5)	50 (5/5)
Standard contact material		AgNi+Au	AgNi+Au
Coil specification			
Nominal voltage (U _N)	V DC	24	24
Rated power DC	W	0.7	0.7
Operating range	DC	(0.751.2)U _N	(0.751.2)U _N
Holding voltage	DC	0.4 U _N	0.4 U _N
Must drop-out voltage	DC	0.1 U _N	0.1 U _N
Technical data			
Mechanical life DC	cycles	10 · 10 ⁶	10 · 10 ⁶
Electrical life at rated load AC1	cycles	100 · 10³	100 · 10³
Operate/release time	ms	10/4	10/4
Insulation between coil			
and contacts (1.2/50 μs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1500	1500
Ambient temperature range	°C	-40+70	-40+70
Protection category		IP 20	IP 20
Approvals relay (according to typ	e)	CE EHL @	O C C C C C C C C C C C C C C C C C C C



1 CO relay interface modules, 15.8 mm wide

Ideal interface for PLC and electronic systems

- 1 CO 10 A
- Push-in terminals

Type 48.31

- 1 CO 10 A
- Screw terminals
- AC coils or DC sensitive coils
- Supply status indication and EMC coil suppression module as standard
- Identification label
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting
- Cadmium-free contact material

48.P3



48.31 Screw terminal



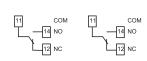


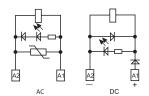


- 1 CO 10 A
- Push-in terminals

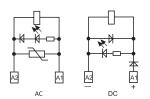


- 1 CO 10 A
- Screw terminals









For outline drawing see page 11			
Contact specification			
Contact configuration		1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak c	urrent A	10/20	10/20
Rated voltage/			
Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	2500	2500
Rated load AC15 (230 V AC)	VA	500	500
Single phase motor rating (230)	V AC) kW	0.37	0.37
Breaking capacity DC1: 30/110/2	220 V A	10/0.3/0.12	10/0.3/0.12
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	1.2/0.5	1.2/0.5
Operating range	AC	(0.81.1)U _N	(0.81.1)U _N
	sens. DC	(0.731.5)U _N	(0.731.5)U _N
Holding voltage	AC/DC	0.8 U _N / 0.4 U _N	0.8 U _N / 0.4 U _N
Must drop-out voltage	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 · 10³	200 · 10³
Operate/release time	ms	7/4 (AC) - 12/12 (DC)	7/4 (AC) - 12/12 (DC)
Insulation between coil			
and contacts (1.2/50 μs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength	V AC	1000	1000
between open contacts	v AC		
Ambient temperature range		-40+70	-40+70
Protection category		IP 20	IP 20

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Approvals relay (according to type)

Ideal interface for PLC and electronic systems

Type 48.P5

- 2 CO 8 A
- Push-in terminals

Type 48.52

- 2 CO 8 A
- Screw terminals
- AC coils or DC sensitive coils
- Supply status indication and EMC coil suppression module as standard
- Identification label
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting
- Cadmium-free contact material

48.P5 Push-in terminal



48.52 Screw terminal





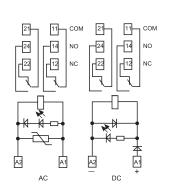


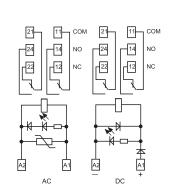
- 2 CO 8 A
- Push-in terminals





- 2 CO 8 A
- Screw terminals





For out	ine c	Irawi	ing	see	page	11	

3 1 1 3			
Contact specification			
Contact configuration		2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak c	urrent A	8/15	8/15
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	2000	2000
Rated load AC15 (230 V AC)	VA	400	400
Single phase motor rating (230)	V AC) kW	0.3	0.3
Breaking capacity DC1: 30/110/2	220 V A	8/0.3/0.12	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	1.2/0.5	1.2/0.5
Operating range	AC	(0.81.1)U _N	(0.81.1)U _N
	sens. DC	(0.731.5)U _N	(0.731.5)U _N
Holding voltage	AC/DC	0.8 U _N / 0.4 U _N	0.8 U _N / 0.4 U _N
Must drop-out voltage	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	100 · 10³	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 µs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1000	1000
Ambient temperature range	°C	-40+70	-40+70
Protection category		IP 20	IP 20
			1

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Approvals relay (according to type)



48.61

1 CO relay interface modules, 15.8 mm wide

Ideal interface for PLC and electronic systems

- 1 CO 16 A
- Push-in terminals

Type 48.61

- 1 CO 16 A
- Screw terminals
- AC coils or DC sensitive coils
- Supply status indication and EMC coil suppression module as standard
- Identification label
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting

For outline drawing see page 11

• Cadmium-free contact material available

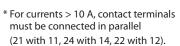
48.P6 Push-in terminal







48.61





• 1 CO 16 A

• Push-in terminals

14

12

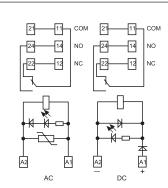
AC

-12

DC

• 1 CO 16 A

· Screw terminals



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

Contact specification Contact configuration 1 CO (SPDT) 1 CO (SPDT) Rated current/Maximum peak current Α 16*/30 16*/30 Rated voltage/ Maximum switching voltage V AC 250/400 250/400 Rated load AC1 VA 4000 4000 Rated load AC15 (230 V AC) VA 750 750 kW Single phase motor rating (230 V AC) 0.55 0.55 Breaking capacity DC1: 30/110/220 V 16/0.3/0.12 16/0.3/0.12 Α Minimum switching load 500 (10/5) 500 (10/5) mW (V/mA) Standard contact material AgCdO AgCdO **Coil specification** V AC (50/60 Hz) Nominal voltage (U_N) 12 - 24 - 110 - 120 - 230 12 - 24 - 110 - 120 - 230 V DC 12 - 24 - 125 12 - 24 - 125 VA (50 Hz)/W Rated power AC/sens. DC 1.2/0.5 1.2/0.5 Operating range AC $(0.8...1.1)U_N$ $(0.8...1.1)U_N$ sens. DC $(0.8...1.5)U_N$ $(0.8...1.5)U_N$ Holding voltage AC/DC 0.8 U_N / 0.4 U_N 0.8 U_N / 0.4 U_N AC/DC Must drop-out voltage 0.2 U_N / 0.1 U_N $0.2 U_N / 0.1 U_N$ **Technical data** Mechanical life cycles $10\cdot 10^6$ $10 \cdot 10^{6}$ Electrical life at rated load AC1 $100 \cdot 10^{3}$ $100\cdot 10^3$ cycles Operate/release time 7/4 (AC) - 12/12 (DC) 7/4 (AC) - 12/12 (DC) Insulation between coil and contacts (1.2/50 µs) kV 6 (8 mm) 6 (8 mm) Dielectric strength V AC 1000 1000 between open contacts Ambient temperature range °C -40...+70 -40...+70 Protection category CE [H | PRINA CAL US AL CE @ [H[@ B RINA @ c Nus @ 4

Approvals relay (according to type)

2 CO relay interface modules, 15.8 mm wide

Ideal interface for PLC and electronic systems

Type 48.P8

- 2 CO 10 A
- Push-in terminals

Type 48.62

- 2 CO 10 A
- Screw terminals
- DC sensitive coils
- Supply status indication and EMC coil suppression module as standard
- Identification label
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting
- Cadmium-free contact material





48.62 Screw terminal





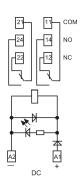


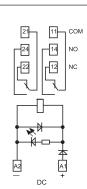
- 2 CO 10 A
- Push-in terminals



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- 2 CO 10 A
- Screw terminals





For outline drawing see page 1	1	
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Tor outline drawing see page 11			
Contact specification			
Contact configuration		2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak c	urrent A	10/20	10/20
Rated voltage/			
Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	2500	2500
Rated load AC15 (230 V AC)	VA	750	750
Single phase motor rating (230)	V AC) kW	0.37	0.37
Breaking capacity DC1: 30/110/2	220 V A	10/0.6/0.25	10/0.6/0.25
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)	-	_
	V DC	12 - 24 - 125	12 - 24 - 125
Rated power AC/sens. DC	VA (50 Hz)/W	—/0.5	—/0.5
Operating range	AC	_	_
	sens. DC	(0.81.5)U _N	(0.81.5)U _N
Holding voltage	AC/DC	—/0.4 U _N	—/0.4 U _N
Must drop-out voltage	AC/DC	—/0.1 U _N	—/0.1 U _N
Technical data			
Mechanical life	cycles	10 ⋅ 10 ⁶	10 · 10 ⁶
Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10³
Operate/release time	ms	12/12 (DC)	12/12 (DC)
Insulation between coil			
and contacts (1.2/50 μs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength	,		
between open contacts	V AC	1000	1000
Ambient temperature range	°C	-40+70	-40+70
Protection category		IP 20	IP 20

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Approvals relay (according to type)

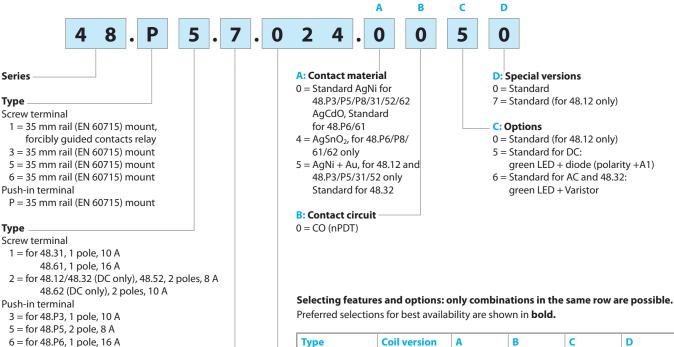
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Ordering information

48 SERIES

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



Type **Coil version** C D 7 48.12 DC 5 0 0 48.32 DC 5 0 0 6 **0** - 5 48.P3/P5/31/52 0 0 AC 6 48.P3/P5/31/52 Sensitive DC **0** - 5 0 5 0 48.P6/61 AC0 - 4 0 6 0 48.P6/61 Sensitive DC 0 - 4 0 5 0 5 48.P8/62 Sensitive DC 0 - 4 0 0

See coil specifications **Technical data**

Coil version

Coil voltage

7 = Sensitive DC

8 = AC (50/60 Hz)

9 = DC (for 48.12 only)

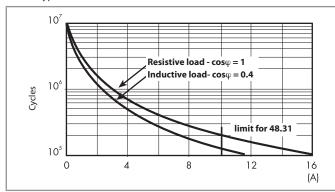
8 = for 48.P8 (DC only), 2 pole, 10 A

Insulation			48.12/31/32/61/P3	/P6 48.52/P5	48.12/31	/61/62/P3/P6/P8	
Insulation according to EN 61810-1	insulation rated voltage	V	250	250	400		
	rated impulse withstand volta	ge kV	4	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 con	ntacts	1000; 1500 (48.12/3	32)				
Dielectric strength between adjacent	contacts	2000 (48.P5/52); 25	00 (48.P8/62) 300	00 (48.12/32)			
Insulation between coil terminals							
Rated impulse voltage (surge) differer (according to EN 61000-4-5)		1.2/50 μs)	2				
Other data							
Bounce time: NO/NC		ms	2/5; 2/10 (48.12/32)				
Vibration resistance (10200)Hz: NO/	/NC	g	20/5 (for 1 pole) 15/3; 20/6 (48.12/32) for 2 pole				
Power lost to the environment	without contact current	W	0.7				
	with rated current	W	1.2 (48.12/31/32/P3) 2 (48.52/P5/61/62/P6/P8			62/P6/P8)	
Wire strip length		mm	8				
Screw torque (only for 48.12/31/3	32/52/61/81)	Nm	0.5				
Min. wire size			Screw terminal		Push-in termin	al	
			solid cable	stranded cable	solid cable	stranded cable	
		mm ²	0.5	0.5	0.5	0.5	
		AWG	21	21	21	21	
Max. wire size			Screw terminal		Push-in termin	1	
			solid cable	stranded cable	solid cable	stranded cable	
		mm ²	1 x 6 / 2 x 2.5	1 x 4 / 2 x 2.5	2 x 1.5 / 1 x 2.5	2 x 1.5 / 1 x 2.5	
		AWG	1 x 10 / 2 x 14	1 x 12 / 2 x 14	2 x 16 / 1 x 14	2 x 16 / 1 x 14	

Contact specification

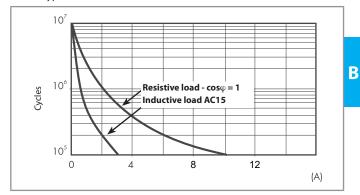
F 48 - Electrical life (AC) v contact current

Types 48.P3/P6/31/61



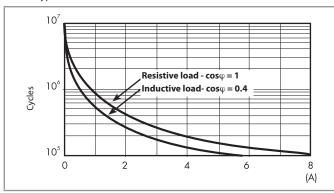
F 48 - Electrical life (AC) v contact current

Types 48.P8/62



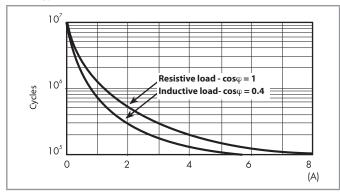
F 48 - Electrical life (AC) v contact current

Types 48.P5/52



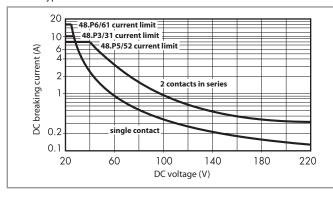
F 48 - Electrical life (AC) v contact current

Type 48.12/32



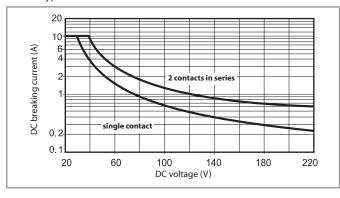
H 48 - Maximum DC1 breaking capacity

Types 48.P3/P5/P6/31/52/61



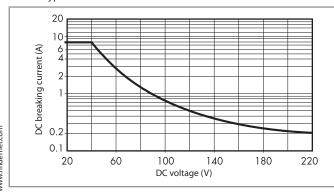
H 48 - Maximum DC1 breaking capacity

Types 48.P8/62



H 48 - Maximum DC1 breaking capacity

Type 48.12/32



- 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	Coil code	Operatir	ng range	Rated coil consumption
	Voltage U _N	code	U _{min} *	U_{max}	I at U _N
	O _N		U _{min}	U _{max}	I at O _N
	V		V	V	mA
3	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.P6, 48.P8

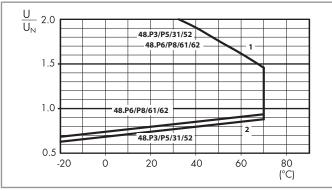
AC coil data

Nominal voltage U _N	Coil code	Operating range U _{min} U _{max}		Rated coil consumption I at U_N (50 Hz)
V		V	V	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, for 48.32 (24 V only)

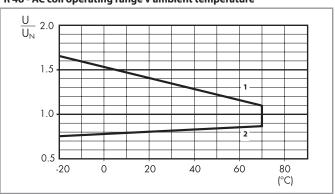
7 1 7 71 7 7						
Nominal voltage	Coil code	Operating range		Resistance	Rated coil consumption	
U _N		U _{min}	U _{max}	R	I at U _N	
V		V	V	Ω	mA	
12	9 .012	9	14.4	205	58.5	
24	9 .024	18	28.8	820	29.3	

R 48 - DC coil operating range v ambient temperature



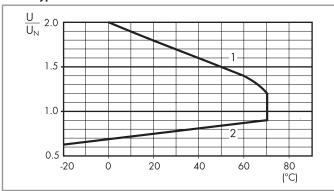
- 1 Max. permitted coil voltage.
- 2 Min. pick-up voltage with coil at ambient temperature.

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 48.12/32



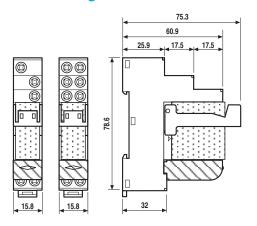
- 1 Max. permitted coil voltage.
- **2** Min. pick-up voltage with coil at ambient temperature.



Combinations

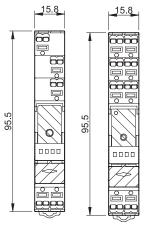
Code	Type of socket	Type of relay	Module	Retaining clip
48.12	95.05.7	50.12	_	095.71
48.32	95.05	50.12	99.02	095.01
48.31	95.03	40.31	99.02	095.01
48.52	95.05	40.52	99.02	095.01
48.61	95.05	40.61	99.02	095.01
48.62	95.05	40.62	99.02	095.01
48.P3	95.P3	40.31	99.02	095.91.3
48.P5	95.P5	40.52	99.02	095.91.3
48.P6	95.P5	40.61	99.02	095.91.3
48.P8	95.P5	40.62	99.02	095.91.3

Outline drawings

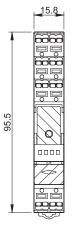


Types 48.31 48.32 / 48.52 / 48.61 / 48.62

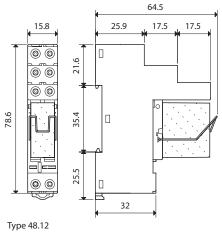






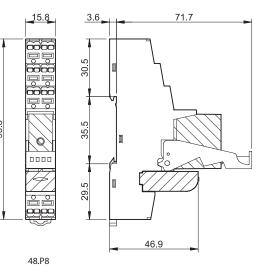


48.P6



Screw terminal





Push-in terminal









097.42

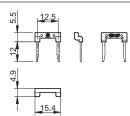
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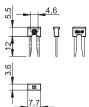




2-way jumper link for type 48.P3/P5/P6/P8	097.52
Rated values	10 A - 250 V



2-way jumper link for type 48.P3/P5/P6/P8	097.42
Rated values	10 A - 250 V





Marker tag holder for type 48.P3/P5/P6/P8 and 48.12/31/32/52/61/62 097.00

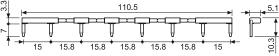
095.18 (blue)

10 A - 250 V



097.00

8-way jumper link for screw terminal version Rated values





060.48



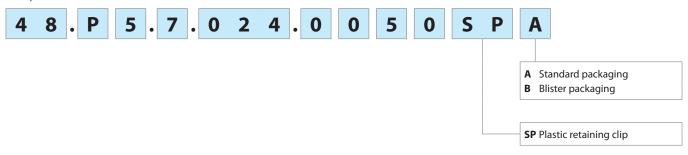
060.48

095.18

Packaging codes

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

Example:



095.18.0 (black)