

## 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 5

### 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 <sub>N</sub> )	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	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
	sens. DC	(0.73...1.75)U <sub>N</sub>	(0.73...1.75)U <sub>N</sub>
Holding voltage	AC/DC	0.8 U <sub>N</sub> / 0.4 U <sub>N</sub>	0.8 U <sub>N</sub> / 0.4 U <sub>N</sub>
Must drop-out voltage	AC/DC	0.2 U <sub>N</sub> / 0.1 U <sub>N</sub>	0.2 U <sub>N</sub> / 0.1 U <sub>N</sub>

### Technical data

Mechanical life AC/DC	cycles	10 · 10 <sup>6</sup> / 20 · 10 <sup>6</sup>	10 · 10 <sup>6</sup> / 20 · 10 <sup>6</sup>
Electrical life at rated load AC1	cycles	200 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>
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	1,000	1,000
Ambient temperature range	°C	-40...+70	-40...+70
Protection category		IP 20	IP 20

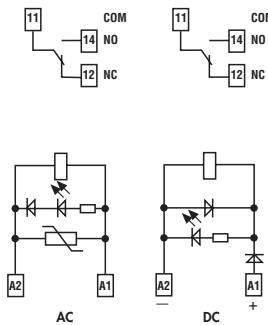
Approvals relay (according to type)



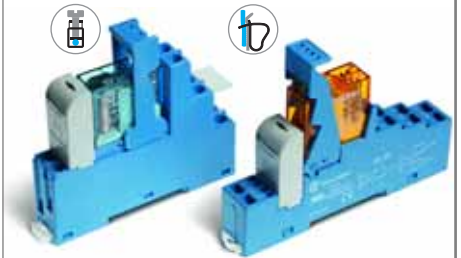
48.31



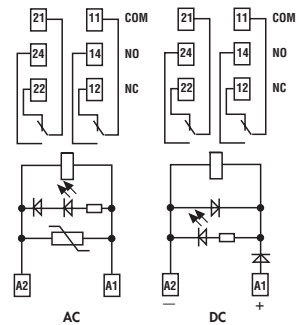
- 1 pole, 10 A
- Screw terminal
- 35 mm rail (EN 60715) mounting



48.52/72



- 2 pole, 8 A
- Screw terminal and screwless terminal
- 35 mm rail (EN 60715) mounting



## 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 5

### Contact specification

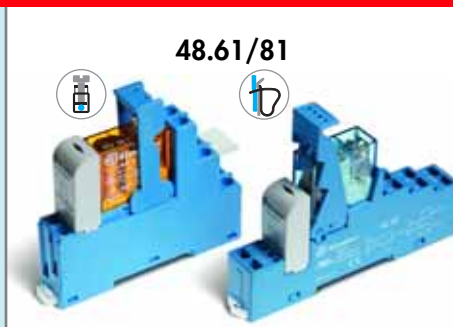
Contact configuration	1 CO (SPDT)	2 CO (DPDT)
Rated current/Maximum peak current A	16*/30	10/20
Rated voltage/Maximum switching voltage V AC	250/400	250/400
Rated load AC1 VA	4,000	2,500
Rated load AC15 (230 V AC) VA	750	500
Single phase motor rating (230 V AC) kW	0.55	0.37
Breaking capacity DC1: 30/110/220V A	16/0.3/0.12	10/0.3/0.12
Minimum switching load mW (V/mA)	500 (10/5)	300 (5/5)
Standard contact material	AgCdO	AgNi

### Coil specification

Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	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	—/0.5
Operating range	AC	(0.8...1.1)U <sub>N</sub>	—
	sens. DC	(0.8...1.5)U <sub>N</sub>	(0.8...1.5)U <sub>N</sub>
Holding voltage	AC/DC	0.8 U <sub>N</sub> /0.4 U <sub>N</sub>	—/0.4 U <sub>N</sub>
Must drop-out voltage	AC/DC	0.2 U <sub>N</sub> /0.1 U <sub>N</sub>	—/0.1 U <sub>N</sub>

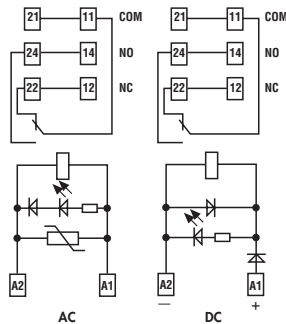
### Technical data

Mechanical life AC/DC	cycles	10 · 10 <sup>6</sup> /20 · 10 <sup>6</sup>	—/20 · 10 <sup>6</sup>
Electrical life at rated load AC1	cycles	100 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>
Operate/release time	ms	7/4 (AC) - 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	1,000	1,000
Ambient temperature range	°C	-40...+70	-40...+70
Protection category		IP 20	IP 20

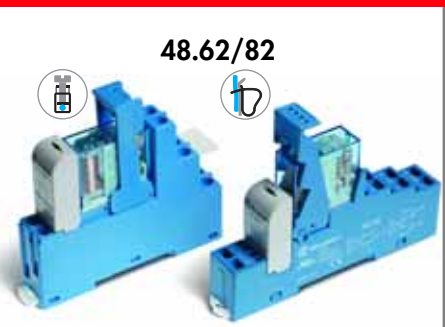


48.61/81

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

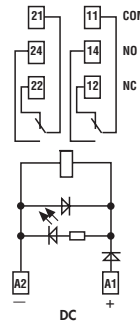


\* For currents > 10 A, contact terminals must be connected in parallel (21 with 11, 24 with 14, 22 with 12).



48.62/82

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



## 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.

**Series** ————

**Type** ————

Screw terminal

3 = 35 mm rail mount (EN 60715)

5 = 35 mm rail mount (EN 60715)

6 = 35 mm rail mount (EN 60715)

Screwless terminal

7 = 35 mm rail mount (EN 60715)

8 = 35 mm rail mount (EN 60715)

**No. of poles** ————

1 = 1 pole for 48.31, 10 A  
48.61, 48.81, 16 A

2 = 2 pole for 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)

**Coil voltage** ————

See coil specifications

**A**    **B**    **C**    **D**

<b>4</b>	<b>8</b>	<b>.</b>	<b>5</b>	<b>.</b>	<b>2</b>	<b>.</b>	<b>7</b>	<b>.</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>.</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>
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**A: Contact material**

0 = Standard AgNi for 48.31/52/62/72/82  
AgCdO, Standard for 48.61/81

4 = AgSnO<sub>2</sub>, for 48.61/62/81/82 only

5 = AgNi + Au (5 μm), for 48.31/52/72 only

**B: Contact circuit**

0 = CO (nPDT)

**D: Special versions**

0 = Standard

**C: Options**

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**.

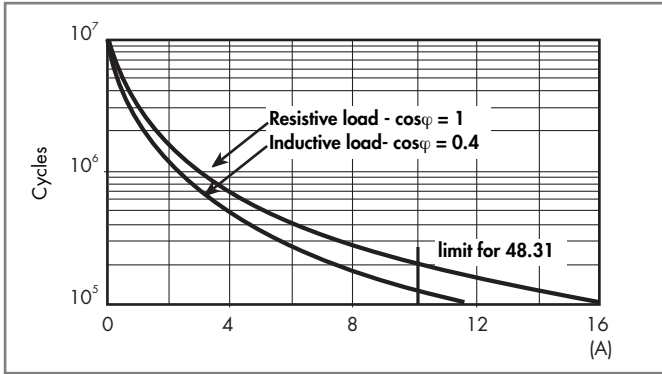
Type	Coil version	A	B	C	D
48.31/52/72	AC	<b>0</b> - 2 - 5	0	<b>6</b>	0
48.31/52/72	DC	<b>0</b> - 2 - 5	0	<b>5</b>	0
48.61/81	AC	<b>0</b> - 4	0	<b>6</b>	0
48.61/81	DC	<b>0</b> - 4	0	<b>5</b>	0
48.62/82	DC	<b>0</b> - 4	0	<b>5</b>	0

## Technical data

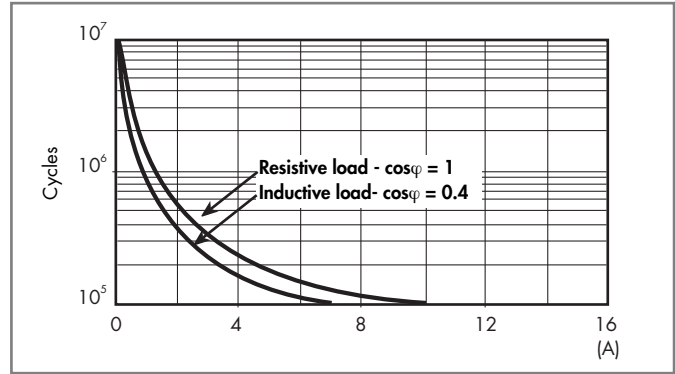
Insulation		48.31/61/62	48.52	48.31/61/62	
Insulation according to EN 61810-1	insulation rated voltage	V 250	250	400	
	rated impulse withstand voltage	kV 4	4	4	
	pollution degree	3	2	2	
	overvoltage category	III	III	III	
Insulation between coil and contacts (1.2/50 μs)		kV 6 (8 mm)			
Dielectric strength between open contacts		V AC 1,000			
Dielectric strength between adjacent contacts		V AC 2,000 (48.52); 2,500 (48.62)			
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			
Vibration resistance (5...55)Hz: NO/NC		g 10/4 (for 1 pole)		15/3 (for 2 pole)	
Power lost to the environment	without contact current	W 0.7			
	with rated current	W 1.2 (48.31)	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	<b>Screw terminal</b>		<b>Screwless terminal</b>		
		solid cable	stranded cable	solid cable	stranded cable
	mm <sup>2</sup>	1x6 / 2x2.5	1x4 / 2x2.5	2x(0.2...1.5)	2x(0.2...1.5)
	AWG	1x10 / 2x14	1x12 / 2x14	2x(24...18)	2x(24...18)

## Contact specification

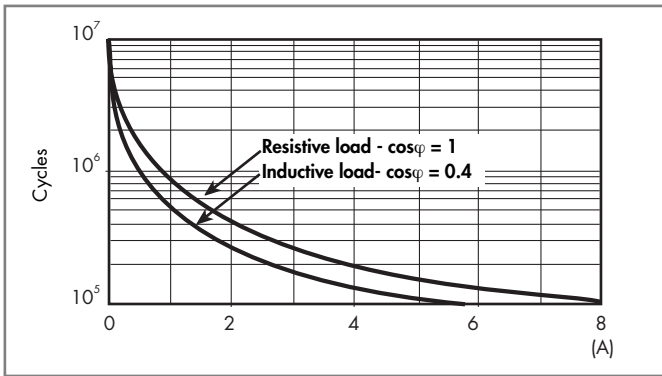
**F 48 - Electrical life (AC) v contact current**  
Types 48.31/61/81



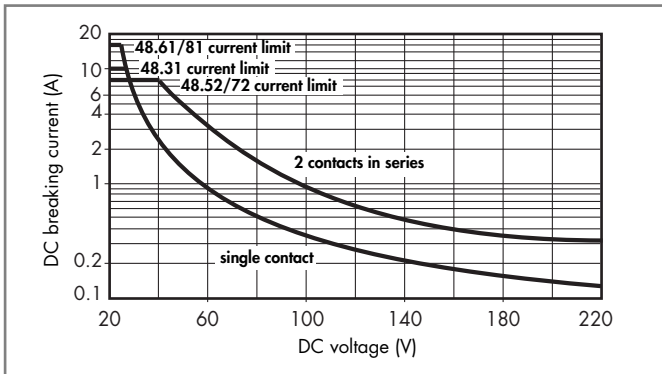
**F 48 - Electrical life (AC) v contact current**  
Types 48.62/82



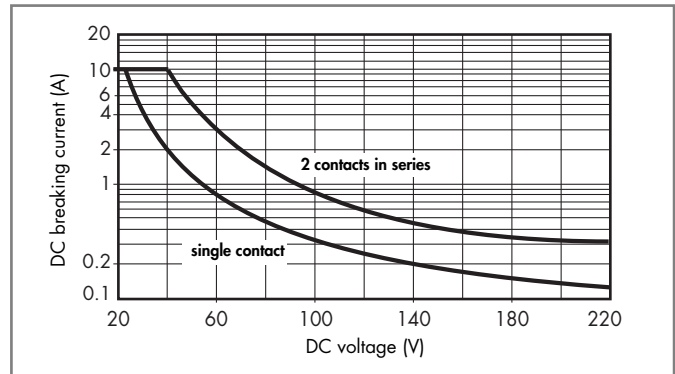
**F 48 - Electrical life (AC) v contact current**  
Types 48.52/72



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



**H 48 - Maximum DC1 breaking capacity**  
Types 48.62/82



- 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.

- 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		Rated coil consumption I at $U_N$ mA
		$U_{min}^*$ V	$U_{max}^{**}$ V	
12	7.012	8.8	21	41
24	7.024	17.5	42	22.2
125	7.125	91	219	4

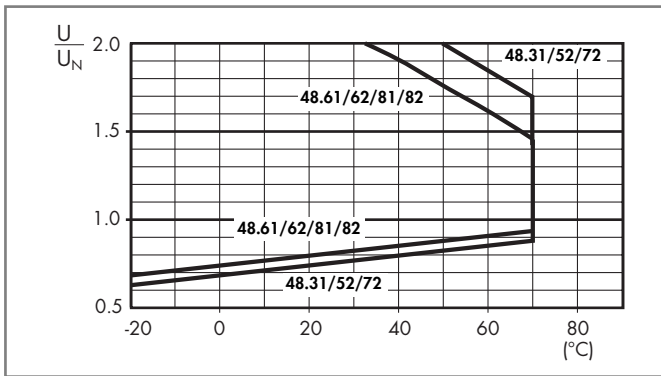
\* $U_{min} = 0.8 U_N$  for 48.61, 48.62, 48.81 and 48.82

\*\* $U_{max} = 1.5 U_N$  for 48.61, 48.62, 48.81 and 48.82

### AC coil data

Nominal voltage $U_N$ V	Coil code	Operating range		Rated coil consumption I at $U_N$ (50Hz) mA
		$U_{min}$ V	$U_{max}$ V	
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

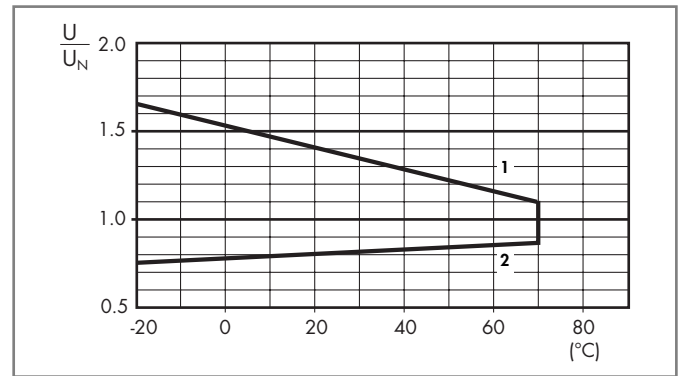
### R 48 - DC coil operating range v ambient temperature



1 - Max. permitted coil voltage.

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

### R 48 - DC coil operating range v ambient temperature



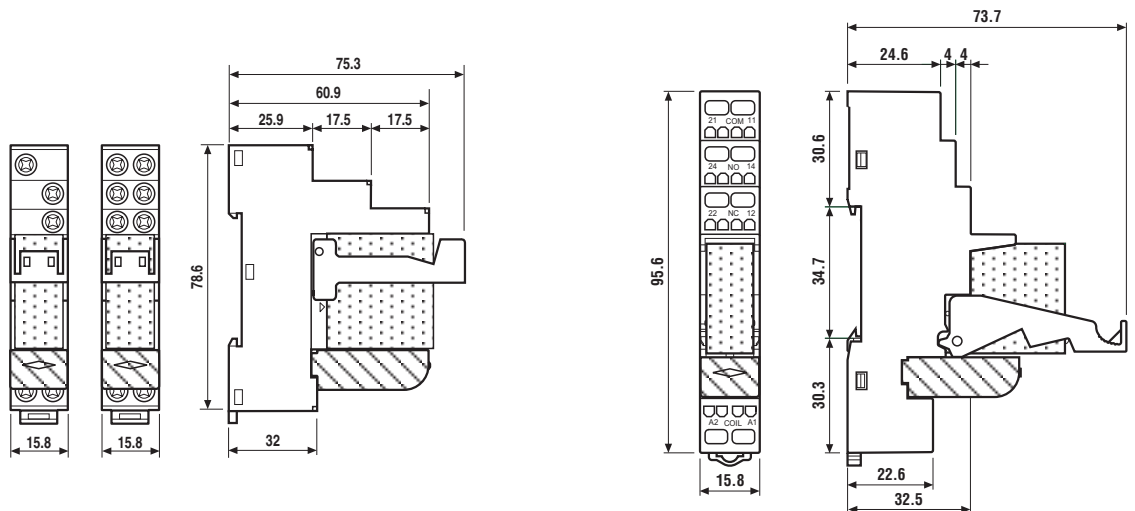
1 - Max. permitted coil voltage.

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

## Combinations

Code	Type of socket	Type of relay	Module	Retaining clip
48.31	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

## Outline drawing



48.31 48.52 / 48.61 / 48.62  
Screw terminal



48.72 / 48.81 / 48.82  
Screwless terminal

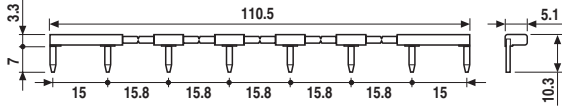


## Accessories



095.18

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



060.72

<b>Sheet of marker tags</b> , 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**

