Relay Interface Modules
8 - 10 -16 A
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

According to EN 61810-3 only 1 NO and 1 NC (11-14 and 21-22 or 11-12 and 21-24) shall be used as forcibly guided contacts (Type 48.12).
For outline drawing see page 11

**Contact specification**

<table>
<thead>
<tr>
<th>Contact configuration</th>
<th>Rated current/Maximum peak current (A)</th>
<th>Rated voltage/Maximum switching voltage (V AC)</th>
<th>Rated load AC1 (VA)</th>
<th>Rated load AC15 (230 V AC) (VA)</th>
<th>Single phase motor rating (230 V AC) (kW)</th>
<th>Breaking capacity DC1 (30/110/220 V) A</th>
<th>Minimum switching load mW (V/mA)</th>
<th>Standard contact material</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 CO (DPDT)</td>
<td>8/15</td>
<td>250/400</td>
<td>2000</td>
<td>500</td>
<td>0.37</td>
<td>8/0.65/0.4</td>
<td>50 (5/5)</td>
<td>AgNi+Au</td>
</tr>
<tr>
<td>2 CO (DPDT)</td>
<td>8/15</td>
<td>250/400</td>
<td>2000</td>
<td>500</td>
<td>0.37</td>
<td>8/0.65/0.4</td>
<td>50 (5/5)</td>
<td>AgNi+Au</td>
</tr>
</tbody>
</table>

**Coil specification**

<table>
<thead>
<tr>
<th>Nominal voltage (U_n)</th>
<th>Rated power DC (W)</th>
<th>Operating range (DC)</th>
<th>Holding voltage (DC)</th>
<th>Must drop-out voltage (DC)</th>
<th>Technical data</th>
</tr>
</thead>
<tbody>
<tr>
<td>V DC</td>
<td>0.7</td>
<td>(0.75...1.2)U_n</td>
<td>0.4 U_n</td>
<td>0.1 U_n</td>
<td>Mechanic life AC</td>
</tr>
<tr>
<td>12 - 24</td>
<td></td>
<td>(0.75...1.2)U_n</td>
<td>0.4 U_n</td>
<td>0.1 U_n</td>
<td>10 - 10^6</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td>(0.75...1.2)U_n</td>
<td>0.4 U_n</td>
<td>0.1 U_n</td>
<td>100 - 10^3</td>
</tr>
</tbody>
</table>

**Technical data**

| Mechanical life DC (cycles) | 10 - 10^6 |
| 10 - 10^6                  | 100 - 10^3 |

**Approvals relay** (according to type)
1 CO relay interface modules, 15.8 mm wide

Ideal interface for PLC and electronic systems

**Type 48.P3**
- 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**
- Push-in terminal

**48.31**
- Screw terminal

For outline drawing see page 11

### Contact specification

<table>
<thead>
<tr>
<th>Contact configuration</th>
<th>1 CO (SPDT)</th>
<th>1 CO (SPDT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current/Maximum peak current A</td>
<td>10/20</td>
<td>10/20</td>
</tr>
<tr>
<td>Rated voltage/Maximum switching voltage V AC</td>
<td>250/400</td>
<td>250/400</td>
</tr>
<tr>
<td>Rated load AC1 VA</td>
<td>2500</td>
<td>2500</td>
</tr>
<tr>
<td>Rated load AC15 (230 V AC) VA</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Single phase motor rating (230 V AC) kW</td>
<td>0.37</td>
<td>0.37</td>
</tr>
<tr>
<td>Breaking capacity DC1: 30/110/220 V A</td>
<td>10/0.3/0.12</td>
<td>10/0.3/0.12</td>
</tr>
<tr>
<td>Minimum switching load mW (V/mA)</td>
<td>300 (5/5)</td>
<td>300 (5/5)</td>
</tr>
<tr>
<td>Standard contact material</td>
<td>AgNi</td>
<td>AgNi</td>
</tr>
</tbody>
</table>

### Coil specification

<table>
<thead>
<tr>
<th>Nominal voltage (U_n)</th>
<th>V AC (50/60 Hz) 12 - 24 - 110 - 120 - 230</th>
<th>12 - 24 - 110 - 120 - 230</th>
</tr>
</thead>
<tbody>
<tr>
<td>V DC</td>
<td>12 - 24 - 125</td>
<td>12 - 24 - 125</td>
</tr>
<tr>
<td>Rated power AC/sens. DC VA (50 Hz)/W</td>
<td>1.2/0.5</td>
<td>1.2/0.5</td>
</tr>
<tr>
<td>Operating range AC (0.8…1.1)U_n</td>
<td>(0.73…1.5)U_n</td>
<td>(0.73…1.5)U_n</td>
</tr>
<tr>
<td>sens. DC (0.73…1.5)U_n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holding voltage AC/DC 0.8 U_n / 0.4 U_n</td>
<td>0.8 U_n / 0.4 U_n</td>
<td></td>
</tr>
<tr>
<td>Must drop-out voltage AC/DC 0.2 U_n / 0.1 U_n</td>
<td>0.2 U_n / 0.1 U_n</td>
<td></td>
</tr>
</tbody>
</table>

### Technical data

<table>
<thead>
<tr>
<th>Mechanical life cycles</th>
<th>10 - 10^6</th>
<th>10 - 10^6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical life at rated load AC1 cycles</td>
<td>200 - 10^2</td>
<td>200 - 10^2</td>
</tr>
<tr>
<td>Operate/release time ms</td>
<td>7/4 (AC) - 12/12 (DC)</td>
<td>7/4 (AC) - 12/12 (DC)</td>
</tr>
<tr>
<td>Insulation between coil and contacts (1.2/50 µs) kV</td>
<td>6 (8 mm)</td>
<td>6 (8 mm)</td>
</tr>
<tr>
<td>Dielectric strength between open contacts V AC</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Ambient temperature range °C</td>
<td>–40…+70</td>
<td>–40…+70</td>
</tr>
<tr>
<td>Protection category</td>
<td>IP 20</td>
<td>IP 20</td>
</tr>
</tbody>
</table>

### Approvals relay (according to type)
2 CO relay interface modules, 15.8 mm wide

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

### Contact specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>2 CO (DPDT)</th>
<th>2 CO (DPDT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current/Maximum peak current</td>
<td>A</td>
<td>8/15</td>
</tr>
<tr>
<td>Rated voltage/Maximum switching voltage</td>
<td>V AC</td>
<td>250/400</td>
</tr>
<tr>
<td>Rated load AC1</td>
<td>VA</td>
<td>2000</td>
</tr>
<tr>
<td>Rated load AC15 (230 V AC)</td>
<td>VA</td>
<td>400</td>
</tr>
<tr>
<td>Single phase motor rating (230 V AC)</td>
<td>kW</td>
<td>0.3</td>
</tr>
<tr>
<td>Breaking capacity DC1: 30/110/220 V</td>
<td>A</td>
<td>8/0.3/0.12</td>
</tr>
<tr>
<td>Minimum switching load</td>
<td>mW (V/mA)</td>
<td>300 (5/5)</td>
</tr>
<tr>
<td>Standard contact material</td>
<td></td>
<td>AgNi</td>
</tr>
</tbody>
</table>

### Coil specification

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage (U_n)</td>
<td>V AC (50/60 Hz)</td>
<td>12 - 24 - 110 - 120 - 230</td>
</tr>
<tr>
<td>Rated power AC/sens. DC</td>
<td>VA (50 Hz)/W</td>
<td>1.2/0.5</td>
</tr>
<tr>
<td>Operating range</td>
<td>AC</td>
<td>(0.8…1.1)U_n</td>
</tr>
<tr>
<td></td>
<td>sens. DC</td>
<td>(0.73…1.5)U_n</td>
</tr>
<tr>
<td>Holding voltage</td>
<td>AC/DC</td>
<td>0.8 U_n / 0.4 U_n</td>
</tr>
<tr>
<td>Must drop-out voltage</td>
<td>AC/DC</td>
<td>0.2 U_n / 0.1 U_n</td>
</tr>
</tbody>
</table>

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>10 - 10^6</th>
<th>10 - 10^6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical life</td>
<td>cycles</td>
<td></td>
</tr>
<tr>
<td>Electrical life at rated load AC1</td>
<td>cycles</td>
<td>100 - 10^4</td>
</tr>
<tr>
<td>Operate/release time</td>
<td>ms</td>
<td>7/4 (AC) - 12/12 (DC)</td>
</tr>
<tr>
<td>Insulation between coil and contacts (1.2/50 µs)</td>
<td>kV</td>
<td>6 (8 mm)</td>
</tr>
<tr>
<td>Dielectric strength between open contacts</td>
<td>V AC</td>
<td>1000</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>°C</td>
<td>-40…+70</td>
</tr>
<tr>
<td>Protection category</td>
<td></td>
<td>IP 20</td>
</tr>
</tbody>
</table>

### Approvals relay (according to type)

![CE], [FCC], [RINA], [CE], [EAC], [UL], [CSA], [CCC], [BIS], [TUV], [IP 20]
1 CO relay interface modules,
15.8 mm wide

Ideal interface for PLC and electronic systems

**Type 48.P6**
- 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
- Cadmium-free contact material available

48.P6
Push-in terminal

48.61
Screw terminal

<table>
<thead>
<tr>
<th>Contact specification</th>
<th>48.P6</th>
<th>48.61</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact configuration</td>
<td>1 CO (SPDT)</td>
<td>1 CO (SPDT)</td>
</tr>
<tr>
<td>Rated current/Maximum peak current</td>
<td>A</td>
<td>16*30</td>
</tr>
<tr>
<td>Rated voltage/Maximum switching voltage</td>
<td>V AC</td>
<td>250/400</td>
</tr>
<tr>
<td>Rated load AC1</td>
<td>VA</td>
<td>4000</td>
</tr>
<tr>
<td>Rated load AC15 (230 V AC)</td>
<td>VA</td>
<td>750</td>
</tr>
<tr>
<td>Single phase motor rating (230 V AC)</td>
<td>kW</td>
<td>0.55</td>
</tr>
<tr>
<td>Breaking capacity DC1: 30/110/220 V</td>
<td>A</td>
<td>16/0.3/0.12</td>
</tr>
<tr>
<td>Minimum switching load mW (V/mA)</td>
<td>500 (10/5)</td>
<td>500 (10/5)</td>
</tr>
<tr>
<td>Standard contact material</td>
<td>AgCdO</td>
<td>AgCdO</td>
</tr>
</tbody>
</table>

**Coil specification**

<table>
<thead>
<tr>
<th>Nominal voltage (U_{in})</th>
<th>V AC (50/60 Hz)</th>
<th>12 - 24 - 110 - 120 - 230</th>
<th>12 - 24 - 110 - 120 - 230</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated power AC/sens. DC</td>
<td>V AC (50 Hz)/W</td>
<td>1.2/0.5</td>
<td>1.2/0.5</td>
</tr>
<tr>
<td>Operating range</td>
<td>AC</td>
<td>(0.8...1.1)U_{in}</td>
<td>(0.8...1.1)U_{in}</td>
</tr>
<tr>
<td></td>
<td>sens. DC</td>
<td>(0.8...1.5)U_{in}</td>
<td>(0.8...1.5)U_{in}</td>
</tr>
<tr>
<td>Holding voltage</td>
<td>AC/DC</td>
<td>0.8 U_{in} / 0.4 U_{in}</td>
<td>0.8 U_{in} / 0.4 U_{in}</td>
</tr>
<tr>
<td>Must drop-out voltage</td>
<td>AC/DC</td>
<td>0.2 U_{in} / 0.1 U_{in}</td>
<td>0.2 U_{in} / 0.1 U_{in}</td>
</tr>
</tbody>
</table>

**Technical data**

<table>
<thead>
<tr>
<th>Mechanical life</th>
<th>cycles</th>
<th>10 - 10^6</th>
<th>10 - 10^6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical life at rated load AC1</td>
<td>cycles</td>
<td>100 - 10^2</td>
<td>100 - 10^2</td>
</tr>
<tr>
<td>Operate/release time</td>
<td>ms</td>
<td>7/4 (AC) - 12/12 (DC)</td>
<td>7/4 (AC) - 12/12 (DC)</td>
</tr>
<tr>
<td>Insulation between coil and contacts (1.2/50 µs)</td>
<td>kV</td>
<td>6 (8 mm)</td>
<td>6 (8 mm)</td>
</tr>
<tr>
<td>Dielectric strength between open contacts</td>
<td>V AC</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>°C</td>
<td>-40...+70</td>
<td>-40...+70</td>
</tr>
<tr>
<td>Protection category</td>
<td></td>
<td>IP 20</td>
<td>IP 20</td>
</tr>
</tbody>
</table>

**Approvals relay** (according to type)

* For currents > 10 A, contact terminals must be connected in parallel (21 with 11, 24 with 14, 22 with 12).
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.P8 48.62
Push-in terminal Screw terminal

For outline drawing see page 11

Contact specification

<table>
<thead>
<tr>
<th>Contact configuration</th>
<th>2 CO (DPDT)</th>
<th>2 CO (DPDT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current/Maximum peak current A</td>
<td>10/20</td>
<td>10/20</td>
</tr>
<tr>
<td>Rated voltage/Maximum switching voltage V AC</td>
<td>250/400</td>
<td>250/400</td>
</tr>
<tr>
<td>Rated load AC1 VA</td>
<td>2500</td>
<td>2500</td>
</tr>
<tr>
<td>Rated load AC15 (230 V AC) VA</td>
<td>750</td>
<td>750</td>
</tr>
<tr>
<td>Single phase motor rating (230 V AC) kW</td>
<td>0.37</td>
<td>0.37</td>
</tr>
<tr>
<td>Breaking capacity DC1: 30/110/220 V A</td>
<td>10/0.6/0.25</td>
<td>10/0.6/0.25</td>
</tr>
<tr>
<td>Minimum switching load mW (V/mA)</td>
<td>300 (5/5)</td>
<td>300 (5/5)</td>
</tr>
<tr>
<td>Standard contact material</td>
<td>AgNi</td>
<td>AgNi</td>
</tr>
</tbody>
</table>

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 (0.8…1.5)U_n | (0.8…1.5)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 - 10^3 |
| 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 |

Approvals relay (according to type)
**Ordering information**

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.

Series: 4 8 . P 5 7 0 2 4 0 0 5 0

<table>
<thead>
<tr>
<th>A: Contact material</th>
<th>B: Contact circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = Standard AgNi for 48.P3/P5/P8/31/52/62</td>
<td>0 = CO (nPDT)</td>
</tr>
<tr>
<td>1 = 35 mm rail (EN 60715) mount, forcibly guided contacts relay</td>
<td></td>
</tr>
<tr>
<td>2 = for 48.12/48.32 (DC only), 48.P2, 2 poles, 8 A</td>
<td></td>
</tr>
<tr>
<td>3 = for 48.P3, 1 pole, 10 A</td>
<td></td>
</tr>
<tr>
<td>4 = AgSnO2, for 48.P6/P8/61/62 only</td>
<td></td>
</tr>
<tr>
<td>5 = AgNi + Au, for 48.12 and 48.P3/P5/31/52 only</td>
<td></td>
</tr>
<tr>
<td>6 = for 48.P6, 1 pole, 16 A</td>
<td></td>
</tr>
<tr>
<td>7 = Sensitive DC</td>
<td></td>
</tr>
<tr>
<td>8 = AC (50/60 Hz)</td>
<td></td>
</tr>
<tr>
<td>9 = DC (for 48.12 only)</td>
<td></td>
</tr>
</tbody>
</table>

**Technical data**

<table>
<thead>
<tr>
<th>Insulation</th>
<th>48.12/31/32/61/P3/P6</th>
<th>48.52/P5</th>
<th>48.12/31/61/62/P3/P6/P8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation according to EN 61810-1</td>
<td>insulation rated voltage V</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>rated impulse withstand voltage kV</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>pollution degree</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>overvoltage category</td>
<td>III</td>
<td>III</td>
<td>III</td>
</tr>
<tr>
<td>Insulation between coil and contacts (1.2/50 µs) kV</td>
<td>6 (8 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dielectric strength between open contacts V AC</td>
<td>1000; 1500 (48.12/32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated impulse voltage (surge) differential mode (according to EN 61000-4-5) kV (1.2/50 µs)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Other data**

| Bounce time: NO/NC ms | 2/5; 2/10 (48.12/32) | |
| Vibration resistance (10...200)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) |
| Wire strip length mm | 8 | |
| Screw torque (only for 48.12/31/32/52/61/81) Nm | 0.5 | |

**Min. wire size**

<table>
<thead>
<tr>
<th>Screw terminal</th>
<th>Push-in terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>solid cable</td>
<td>stranded cable</td>
</tr>
<tr>
<td>mm²</td>
<td>0.5</td>
</tr>
<tr>
<td>AWG</td>
<td>21</td>
</tr>
</tbody>
</table>

**Max. wire size**

<table>
<thead>
<tr>
<th>Screw terminal</th>
<th>Push-in terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>solid cable</td>
<td>stranded cable</td>
</tr>
<tr>
<td>mm²</td>
<td>1 x 6 / 2 x 2.5</td>
</tr>
<tr>
<td>AWG</td>
<td>1 x 10 / 2 x 14</td>
</tr>
</tbody>
</table>
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)

<table>
<thead>
<tr>
<th>Nominal voltage $U_N$</th>
<th>Coil code</th>
<th>Operating range</th>
<th>Rated coil consumption $I$ at $U_N$</th>
<th>mA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$U_{\text{min}}^*$</td>
<td>$U_{\text{max}}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>12</td>
<td>7.012</td>
<td>8.8</td>
<td>18</td>
</tr>
<tr>
<td>24</td>
<td>7.024</td>
<td>17.5</td>
<td>36</td>
<td>41</td>
</tr>
<tr>
<td>125</td>
<td>7.125</td>
<td>91</td>
<td>188</td>
<td>4</td>
</tr>
</tbody>
</table>

$^* U_{\text{min}} = 0.8 U_N$ for 48.61, 48.62, 48.P6, 48.P8

### AC coil data

<table>
<thead>
<tr>
<th>Nominal voltage $U_N$</th>
<th>Coil code</th>
<th>Operating range</th>
<th>Rated coil consumption $I$ at $U_N$ (50 Hz)</th>
<th>mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>12</td>
<td>8.012</td>
<td>9.6</td>
<td>13.2</td>
</tr>
<tr>
<td>24</td>
<td>8.024</td>
<td>19.2</td>
<td>26.4</td>
<td>46</td>
</tr>
<tr>
<td>110</td>
<td>8.110</td>
<td>88</td>
<td>121</td>
<td>10.1</td>
</tr>
<tr>
<td>120</td>
<td>8.120</td>
<td>96</td>
<td>132</td>
<td>11.8</td>
</tr>
<tr>
<td>230</td>
<td>8.230</td>
<td>184</td>
<td>253</td>
<td>7.0</td>
</tr>
</tbody>
</table>

### DC coil data (0.7 W standard) - Type 48.12/48.32, (48.32 available only 24 V DC)

<table>
<thead>
<tr>
<th>Nominal voltage $U_N$</th>
<th>Coil code</th>
<th>Operating range</th>
<th>Resistance $R$</th>
<th>Rated coil consumption $I$ at $U_N$</th>
<th>mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>12</td>
<td>9.012</td>
<td>9</td>
<td>14.4</td>
<td>205</td>
</tr>
<tr>
<td>24</td>
<td>9.024</td>
<td>18</td>
<td>28.8</td>
<td>820</td>
<td>29.3</td>
</tr>
</tbody>
</table>

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.

Type 48.12/32
## Combinations

<table>
<thead>
<tr>
<th>Code</th>
<th>Type of socket</th>
<th>Type of relay</th>
<th>Module</th>
<th>Retaining clip</th>
</tr>
</thead>
<tbody>
<tr>
<td>48.12</td>
<td>95.05.7</td>
<td>50.12</td>
<td>—</td>
<td>095.71</td>
</tr>
<tr>
<td>48.32</td>
<td>95.05</td>
<td>50.12</td>
<td>99.02</td>
<td>095.01</td>
</tr>
<tr>
<td>48.31</td>
<td>95.03</td>
<td>40.31</td>
<td>99.02</td>
<td>095.01</td>
</tr>
<tr>
<td>48.52</td>
<td>95.05</td>
<td>40.52</td>
<td>99.02</td>
<td>095.01</td>
</tr>
<tr>
<td>48.61</td>
<td>95.05</td>
<td>40.61</td>
<td>99.02</td>
<td>095.01</td>
</tr>
<tr>
<td>48.62</td>
<td>95.05</td>
<td>40.62</td>
<td>99.02</td>
<td>095.01</td>
</tr>
<tr>
<td>48.P3</td>
<td>95.P3</td>
<td>40.31</td>
<td>99.02</td>
<td>095.91.3</td>
</tr>
<tr>
<td>48.P5</td>
<td>95.P5</td>
<td>40.52</td>
<td>99.02</td>
<td>095.91.3</td>
</tr>
<tr>
<td>48.P6</td>
<td>95.P5</td>
<td>40.62</td>
<td>99.02</td>
<td>095.91.3</td>
</tr>
<tr>
<td>48.P8</td>
<td>95.P5</td>
<td>40.62</td>
<td>99.02</td>
<td>095.91.3</td>
</tr>
</tbody>
</table>

## Outline drawings


Screw terminal

Type 48.12

Screw terminal


Push-in terminal
### Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-way jumper link for type 48.P3/P5/P6/P8</td>
<td>097.58</td>
</tr>
<tr>
<td>Rated values</td>
<td>10 A - 250 V</td>
</tr>
<tr>
<td>2-way jumper link for type 48.P3/P5/P6/P8</td>
<td>097.52</td>
</tr>
<tr>
<td>Rated values</td>
<td>10 A - 250 V</td>
</tr>
<tr>
<td>2-way jumper link for type 48.P3/P5/P6/P8</td>
<td>097.42</td>
</tr>
<tr>
<td>Rated values</td>
<td>10 A - 250 V</td>
</tr>
<tr>
<td>Marker tag holder for type 48.P3/P5/P6/P8 and 48.12/31/32/52/61/62</td>
<td>097.00</td>
</tr>
</tbody>
</table>

### Packaging codes

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

Example:

```
48 . P 5 . 7 . 0 2 4 . 0 0 5 0 S P A
```

- **A**: Standard packaging
- **B**: Blister packaging
- **SP**: Plastic retaining clip


Please see general technical information