

## Features

### 1 or 2 Pole 16 A Step relays for direct 35 mm rail mounting

- 17.4 mm wide
- Test button with mechanical indicators
- Choice of 6 switching sequences
- AC coils and DC coils
- Identification label
- Possible to connect illuminated push buttons with the additional part 026.00
- 35 mm rail (EN 50022) mount
- Cadmium free contact material

|   | 20.21  | 20.22, 24, 26, 28   | 20.23   |
|---|--|---|---|
|   |  |   |   |
|   | <ul style="list-style-type: none"> <li>• Single phase switch 1 NO (SPST-NO)</li> <li>• 35 mm rail mount</li> </ul> | <ul style="list-style-type: none"> <li>• Double phase switch</li> <li>• 35 mm rail mount</li> </ul> | <ul style="list-style-type: none"> <li>• Double phase switch 1NO+1NC (SPST-NO+SPST-NC)</li> <li>• 35 mm rail mount</li> </ul> |
|   |  |   |   |
| <b>Contact specification</b>                        |  |   |   |
| Contact configuration                               | 1 NO (SPST-NO)   | 2 NO (DPST-NO)  | 1NO+1NC (SPST-NO+SPST-NC)   |
| Rated current/Maximum peak current A                | 16/30  | 16/30   | 16/30   |
| Rated voltage/Maximum switching voltage V AC        | 250/400  | 250/400   | 250/400   |
| Rated load AC1 VA                                   | 4,000  | 4,000   | 4,000   |
| Rated load AC15 (230 V AC) VA                       | 750  | 750   | 750   |
| Nominal lamp rating: incandescent (230 V) W         | 2,000  | 2,000   | 2,000   |
| compensated fluorescent (230 V) W                   | 750  | 750   | 750   |
| uncompensated fluorescent (230 V) W                 | 1,000  | 1,000   | 1,000   |
| halogen (230 V) W                                   | 2,000  | 2,000   | 2,000   |
| Minimum switching load mW (V/mA)                    | 1,000 (10/10)  | 1,000 (10/10)   | 1,000 (10/10)   |
| Standard contact material                           | AgNi   | AgNi  | AgNi  |
| <b>Coil specification</b>                           |  |   |   |
| Nominal voltage (U <sub>N</sub> ) V AC (50/60 Hz)   | 8 - 12 - 24 - 48 - 110 - 120 - 230 - 240   |   |   |
| V DC  | 12 - 24 - 48 - 110   | 12 - 24 - 48 - 110  | 12 - 24 - 48 - 110  |
| Rated power AC/DC VA (50 Hz)/W                      | 6.5/5  | 6.5/5   | 6.5/5   |
| Operating range AC                                  | (0.85...1.1)U <sub>N</sub> (50 Hz)/(0.9...1.1)U <sub>N</sub> (60 Hz)   |   |   |
| DC  | (0.9...1.1)U <sub>N</sub>  | (0.9...1.1)U <sub>N</sub>   | (0.9...1.1)U <sub>N</sub>   |
| <b>Technical data</b>                               |  |   |   |
| Mechanical life cycles                              | 300 · 10 <sup>3</sup>  | 300 · 10 <sup>3</sup>   | 300 · 10 <sup>3</sup>   |
| Electrical life at rated load in AC1 cycles         | 100 · 10 <sup>3</sup>  | 100 · 10 <sup>3</sup>   | 100 · 10 <sup>3</sup>   |
| Minimum/Maximum impulse duration                    | 0.1s/1h (according to EN60669)   | 0.1s/1h (according to EN60669)  | 0.1s/1h (according to EN60669)  |
| Insulation between coil and contacts (1.2/50 μs) kV | 4  | 4   | 4   |
| Ambient temperature range °C                        | -40...+40  | -40...+40   | -40...+40   |
| Protection category                                 | IP 20  | IP 20   | IP 20   |
| <b>Approvals</b> (according to type)                |  |   |   |
|   |  |   |   |
|   |  |   |   |

## Ordering information

Example: 20 series relay, 35 mm rail (EN 50022) mount, double phase switch, 2 NO (DPST-NO) 16 A contacts, coil rated at 12 V DC, AgSnO<sub>2</sub> contacts.

**2 0 . 2 2 . 9 . 0 1 2 . 4 0 0 0**

Series

Type

2 = 35 mm rail (EN 50022) mount

No. of poles

- 1 = Single phase switch 1 NO (SPST-NO)
- 2 = Double phase switch 2 NO (DPST-NO)
- 3 = Double phase switch 1 NC+1 NO (SPST-NO+SPST-NC)
- 4 = 4 sequence double phase switch 2 NO (DPST-NO)
- 6 = 3 sequence double phase switch 2 NO (DPST-NO)
- 8 = 4 sequence double phase switch 2 NO (DPST-NO)

Contact material

- 0 = AgNi standard
- 4 = AgSnO<sub>2</sub>

Coil voltage

see coil specifications

Coil version

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

## Technical data

### Insulation

|                             |      |       |
|-----------------------------|------|-------|
| Dielectric strength         |      |       |
| between supply and contacts | V AC | 3,500 |
| between open contacts       | V AC | 2,000 |
| between adjacent contacts   | V AC | 2,000 |

### Other data

|   |                 |                           |                |                           |                |
|---|-----------------|---------------------------|----------------|---------------------------|----------------|
| Power lost to the environment           |                 |                           |                |                           |                |
| with rated current and coil deenergised | W               | 1.3 (20.21, 20.23, 20.28) |                | 2.6 (20.22, 20.24, 20.26) |                |
| ⊕ Screw torque                          | Nm              | 0.8                       |                | 0.8                       |                |
| Max. wire size                          |                 | <b>Coil terminals</b>     |                | <b>Contact terminals</b>  |                |
|   |                 | solid cable               | stranded cable | solid cable               | stranded cable |
|   | mm <sup>2</sup> | 1x4 / 2x2.5               | 1x2.5 / 2x2.5  | 1x6 / 2x4                 | 1x4 / 2x2.5    |
|   | AWG             | 1x12 / 2x14               | 1x14 / 2x14    | 1x10 / 2x12               | 1x12 / 2x14    |

If the coil is operated for a prolonged period of time, adequate ventilation of the relays must be provided - suggested gap of 9 mm between adjacent relays.

## Coil specifications

### DC version data

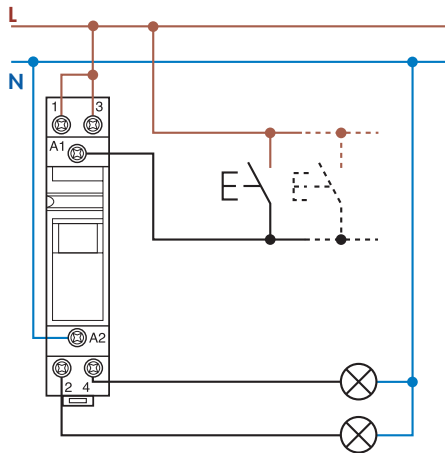
| Nominal voltage<br>U <sub>N</sub> | Coil code | Operating range  |                  | Resistance<br>R | Consumption<br>I at U <sub>N</sub> |
|-----------------------------------|-----------|------------------|------------------|-----------------|------------------------------------|
|                                   |           | U <sub>min</sub> | U <sub>max</sub> |                 |                                    |
| V                                 |           | V                | V                | Ω               | mA                                 |
| 12                                | 9.012     | 10.8             | 13.2             | 27              | 440                                |
| 24                                | 9.024     | 21.6             | 26.4             | 105             | 230                                |
| 48                                | 9.048     | 43.2             | 52.8             | 440             | 110                                |
| 110                               | 9.110     | 99               | 121              | 2,330           | 47                                 |

### AC version data

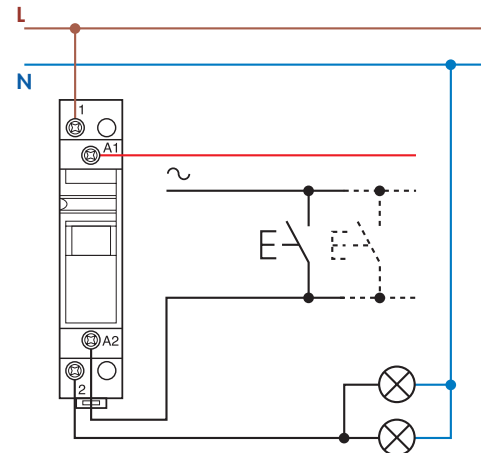
| Nominal voltage<br>U <sub>N</sub> | Coil code | Operating range  |                  | Resistance<br>R | Consumption<br>I at U <sub>N</sub><br>(50 Hz) |
|-----------------------------------|-----------|------------------|------------------|-----------------|---|
|                                   |           | U <sub>min</sub> | U <sub>max</sub> |                 |   |
| V                                 |           | V                | V                | Ω               | mA  |
| 8                                 | 8.008     | 6.8              | 8.8              | 4               | 800   |
| 12                                | 8.012     | 10.2             | 13.2             | 7.5             | 550   |
| 24                                | 8.024     | 20.4             | 26.4             | 27              | 275   |
| 48                                | 8.048     | 40.8             | 52.8             | 106             | 150   |
| 110                               | 8.110     | 93.5             | 121              | 590             | 64  |
| 120                               | 8.120     | 102              | 132              | 680             | 54  |
| 230                               | 8.230     | 195.5            | 253              | 2,500           | 28  |
| 240                               | 8.240     | 204              | 264              | 2,700           | 27.5  |

| Type  | Number of steps | Sequences |   |   |   |
|-------|-----------------|-----------|---|---|---|
|       |                 | 1         | 2 | 3 | 4 |
| 20.21 | 2               |           |   |   |   |
| 20.22 | 2               |           |   |   |   |
| 20.23 | 2               |           |   |   |   |
| 20.24 | 4               |           |   |   |   |
| 20.26 | 3               |           |   |   |   |
| 20.28 | 4               |           |   |   |   |

**Wiring diagrams**



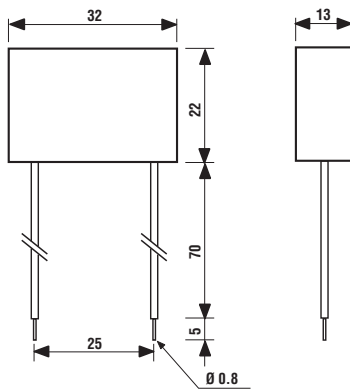
Example: 230 V AC supply voltage.



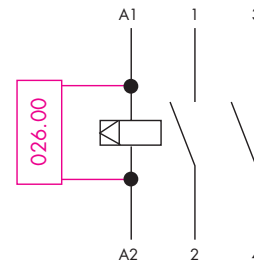
Example: 24 V AC supply voltage.

**Accessories**

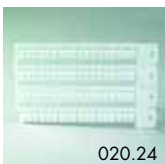
**Module for illuminated push-buttons**



**Type 026.00**  
Sealed version, 7.5 cm insulated and flexible terminals.



**Example of wiring diagram of type 026.00**  
This module is necessary if using up to a maximum of 15 illuminated push-buttons (1.5 mA max, 230 V AC) in the switching input circuit. It must be connected in parallel to the coil of the relay (see diagram).



**Sheet of marker tags**, plastic, 24 tags, 9x17 mm

020.24

