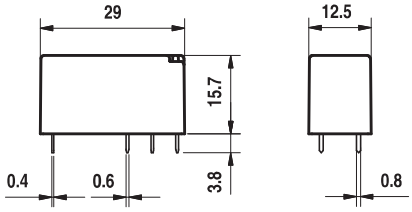
## Features

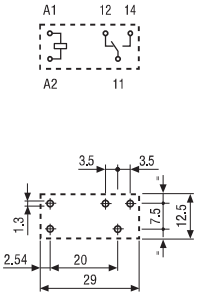
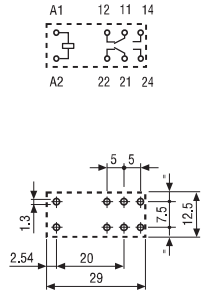
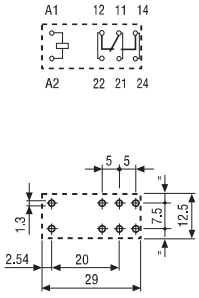
**1 & 2 Pole - Low profile (15.7 mm height)**
**41.31 - 1 Pole 12 A (3.5 mm pin pitch)**
**41.52 - 2 Pole 8 A (5 mm pin pitch)**
**41.61 - 1 Pole 16 A (5 mm pin pitch)**

**PCB mount**
**- direct or via PCB socket**
**35 mm rail mount**
**- via screw and screwless sockets**

- DC coils - 400 mW
- 8 mm, 6 kV (1.2/50 µs) isolation, coil-contacts
- Cadmium Free contact materials
- Flux proof: RT II standard, (RT III option)

| 41.31 | 41.52 | 41.61 |
|---|---|---|
|  |  |  |
| • 3.5 mm contact pin pitch<br>• 1 Pole 12 A<br>• PCB direct or via socket | • 5 mm contact pin pitch<br>• 2 Pole 8 A<br>• PCB direct or via socket | • 5 mm contact pin pitch<br>• 1 Pole 16 A<br>• PCB direct or via socket |




| 41.31 | 41.52 | 41.61 |
|---|---|---|
|  |  |  |
| Copper side view | Copper side view | Copper side view |

*For UL Horsepower and Pilot Duty ratings See "General technical information" page V*

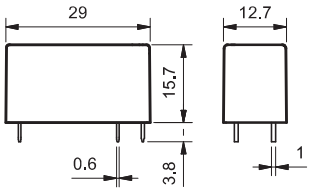
| | | 41.31 | 41.52 | 41.61 |
|---|---|---|---|---|
| **Contact specification** | | | | |
| Contact configuration | | 1 CO (SPDT) | 2 CO (DPDT) | 1 CO (SPDT) |
| Rated current/Maximum peak current | A | 12/25 | 8/15 | 16/30 |
| Rated voltage/Maximum switching voltage | V AC | 250/400 | 250/400 | 250/400 |
| Rated load AC1 | VA | 3,000 | 2,000 | 4,000 |
| Rated load AC15 (230 V AC) | VA | 600 | 400 | 750 |
| Single phase motor rating (230 V AC) | kW | 0.5 | 0.3 | 0.5 |
| Breaking capacity DC1: 30/110/220 V | A | 12/0.3/0.12 | 8/0.3/0.12 | 16/0.3/0.12 |
| Minimum switching load | mW (V/mA) | 300 (5/5) | 300 (5/5) | 300 (5/5) |
| Standard contact material | | AgNi | AgNi | AgNi |
| **Coil specification** | | | | |
| Nominal voltage ($U_N$) | V AC (50/60 Hz) | – | – | – |
| | V DC | 12 - 24 - 48 - 60 - 110 | 12 - 24 - 48 - 60 - 110 | 12 - 24 - 48 - 60 - 110 |
| Rated power AC/DC | VA (50 Hz)/W | –/0.4 | –/0.4 | –/0.4 |
| Operating range | AC | – | – | – |
| | DC | $(0.7...1.5)U_N$ | $(0.7...1.5)U_N$ | $(0.7...1.5)U_N$ |
| Holding voltage | AC/DC | $-/0.4U_N$ | $-/0.4\ U_N$ | $-/0.4\ U_N$ |
| Must drop-out voltage | AC/DC | $-/0.1U_N$ | $-/0.1\ U_N$ | $-/0.1\ U_N$ |
| **Technical data** | | | | |
| Mechanical life AC/DC | cycles | $-/30{\cdot}10^6$ | $-/30{\cdot}10^6$ | $-/30{\cdot}10^6$ |
| Electrical life at rated load AC1 | cycles | $150 \cdot 10^3$ | $80 \cdot 10^3$ | $70 \cdot 10^3$ |
| Operate/release time | ms | 5/4 | 5/4 | 5/4 |
| Insulation between coil and contacts (1.2/50 µs) | kV | 6 (8 mm) | 6 (8 mm) | 6 (8 mm) |
| Dielectric strength between open contacts | V AC | 1,000 | 1,000 | 1,000 |
| Ambient temperature range | °C | –40...+85 | –40...+85 | –40...+85 |
| Environmental protection | | RT II | RT II | RT II |
| **Approvals** (according to type) | | | RINA cULus VDE | |

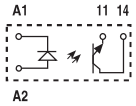
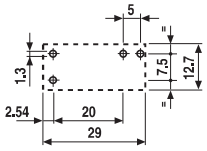
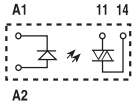
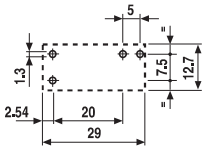
## Features

**Solid State Relays**

**Printed circuit mount:**
**- direct or via PCB socket**
**35 mm rail mount:**
**- via screw or screwless sockets**

- Single circuit output switching options
  - 5 A 24 V DC
  - 3 A 240 V AC
- Silent, high speed switching with long electrical life
- Low profile (15.7 mm)
- Wash tight: RT III
- 2,500 V insulation, input-output



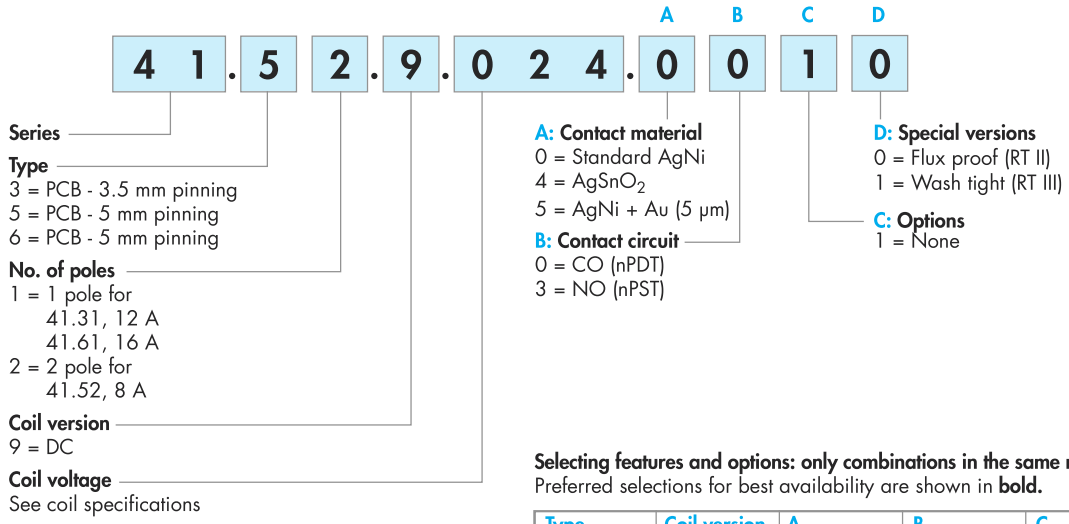

| | 41.81 - 9024 | 41.81 - 8240 |
|---|---|---|
| |  |  |
| | • 5 A, 24 V DC output switching<br>• PCB or 93 Series sockets | • 3 A, 240 V AC output switching<br>• Zero crossing switching<br>• PCB or 93 Series sockets |
| |  <br><br>  <br><br>Copper side view |  <br><br>  <br><br>Copper side view |

| | | | | | |
|---|---|---|---|---|---|
| **Output circuit** | | | | | |
| Contact configuration | | 1 NO (SPST-NO) | | 1 NO (SPST-NO) | |
| Rated current/Maximum peak current (100 µs) | A | 5/40 | | 3/40 | |
| Rated voltage/Maximum blocking voltage | V | (24/35)DC | | (240/275)AC | |
| Switching voltage range | V | (1.5...35)DC | | (12...275)AC | |
| Minimum switching current | mA | 1 | | 50 | |
| Max. "OFF-state" leakage current | mA | 0.01 | | 1 | |
| Max. "ON-state" voltage drop | V | 0.3 | | 1.1 | |
| **Input circuit** | | | | | |
| Nominal voltage | V DC | 12 | 24 | 12 | 24 |
| Operating range | V DC | 8...17 | 14...32 | 8...17 | 14...32 |
| Control current | mA | 5.5 | 9 | 8.8 | 9 |
| Release voltage | V DC | 4 | 9 | 4 | 9 |
| Impedance | Ω | 1,550 | 2,600 | 1,030 | 2,600 |
| **Technical data** | | | | | |
| Operate/release time | ms | 0.05/0.25 | | 10/10 | |
| Dielectric strength between input/output | V | 2,500 | | 2,500 | |
| Ambient temperature range | °C | –20...+60 | | –20...+60 | |
| Environmental protection | | RT III | | RT III | |
| **Approvals** (according to type) | | CE cULus | | | |

## Ordering information

*Electromechanical relay (EMR)*

Example: 41 series low-profile PCB relay, 2 CO (DPDT), 24 V DC coil.

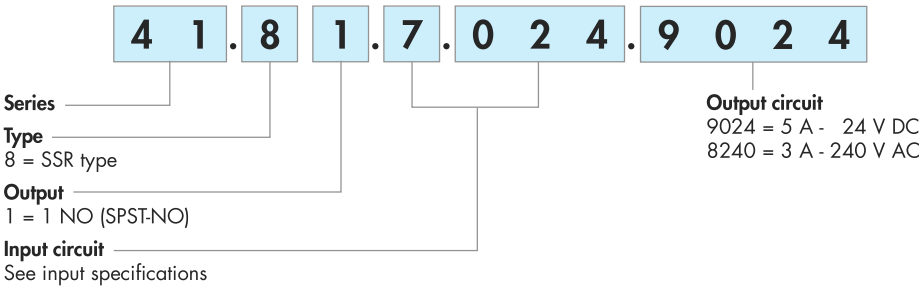



**Selecting features and options: only combinations in the same row are possible.**
Preferred selections for best availability are shown in **bold.**

| Type | Coil version | A | B | C | D |
|---|---|---|---|---|---|
| 41.31 | DC | **0** - 4 - 5 | **0** - 3 | **1** | **0** - 1 |
| 41.52 | DC | **0** - 5 | **0** - 3 | **1** | **0** - 1 |
| 41.61 | DC | **0** - 4 | **0** - 3 | **1** | **0** - 1 |

*Solid state relay (SSR)*

Example: 41 series SSR relay, 5 A output, 24 V DC supply.



## Electromechanical relay

## Technical data

| | | | 1 pole | | 2 pole | |
|---|---|---|---|---|---|---|
| **Insulation according to EN 61810-1** | | | | | | |
| Nominal voltage of supply system | | V AC | 230/400 | | 230/400 | |
| Rated insulation voltage | | V AC | 250 | 400 | 250 | 400 |
| Pollution degree | | | 3 | 2 | 3 | 2 |
| **Insulation between coil and contact set** | | | | | | |
| Type of insulation | | | Reinforced (8 mm) | | Reinforced (8 mm) | |
| Overvoltage category | | | III | | III | |
| Rated impulse voltage | | kV (1.2/50 µs) | 6 | | 6 | |
| Dielectric strength | | V AC | 4,000 | | 4,000 | |
| **Insulation between adjacent contacts** | | | | | | |
| Type of insulation | | | — | | Basic | |
| Overvoltage category | | | — | | III | |
| Rated impulse voltage | | kV (1.2/50 µs) | — | | 4 | |
| Dielectric strength | | V AC | — | | 2,000 | |
| **Insulation between open contacts** | | | | | | |
| Type of disconnection | | | Micro-disconnection | | Micro-disconnection | |
| Dielectric strength | | V AC/kV (1.2/50 µs) | 1,000/1.5 | | 1,000/1.5 | |
| **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 | 15/2 | | | |
| Shock resistance | | g | 16 | | | |
| Power lost to the environment | without contact current | W | 0.4 | | | |
| | with rated current | W | 1.7 (41.31) | 1.2 (41.52) | 1.8 (41.61) | |
| Recommended distance between relays mounted on PCB | | mm | ≥ 5 | | | |