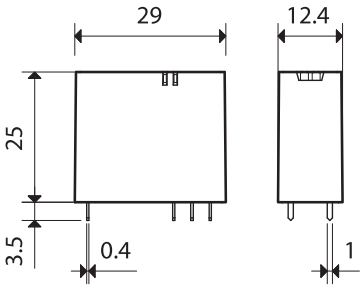
## Features

**1 Pole relay range**
**40.31 - 1 Pole 12 A (3.5 mm pin pitch)**
**40.61 - 1 Pole 16 A (5 mm pin pitch)**

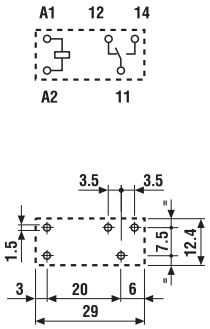
**PCB mount**

- DC sensitive coils as standard
- Cadmium Free contact material available
- 6 kV (1.2/50 µs) isolation coil-contacts
- 8 mm creepage and clearance distances between coil and contacts
- Meets EN 60335-1 glow wire requirements
- Flux proof: RT II standard, (RT III option)
- AC inductive load rating (related to AC15 utilisation category) 4 A 250 V approved according to EN 61810-1:2008 (Annex B tables B1, B2, B3)




### NEW 40.31-1x2x

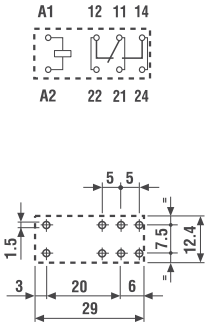
- 3.5 mm contact pin pitch
- 1 Pole 12 A




Copper side view

### NEW 40.61-xx2x

- 5 mm contact pin pitch
- 1 Pole 16 A




Copper side view

| | | | |
|---|---|---|---|
| **Contact specification** | | | |
| Contact configuration | | 1 CO (SPDT) | 1 CO (SPDT) |
| Rated current/Maximum peak current | A | 12/20 | 16/30 |
| Rated voltage/Maximum switching voltage | V AC | 250/400 | 250/400 |
| Rated load AC1 | VA | 3,000 | 4,000 |
| Rated load AC15 (230 V AC) | VA | 1,000 | 1,000 |
| Single phase motor rating (230 V AC) | kW | 0.55 | 0.55 |
| Breaking capacity DC1: 30/110/220 V | A | 12/0.3/0.12 | 16/0.3/0.12 |
| Minimum switching load | mW (V/mA) | 300 (5/5) | 500 (10/5) |
| Standard contact material | | AgNi | AgCdO |
| **Coil specification** | | | |
| Nominal voltage ($U_N$) | V AC (50/60 Hz) | – | – |
| | V DC | 12 - 24 | 12 - 24 |
| Rated power | W | 0.5 | 0.5 |
| Operating range | AC | – | – |
| | DC | (0.73...1.5)$U_N$ | (0.8...1.5)$U_N$ |
| 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 | cycles | $10 \cdot 10^6$ | $10 \cdot 10^6$ |
| Electrical life at rated load AC1 | cycles | $200 \cdot 10^3$ | $100 \cdot 10^3$ |
| Operate/release time | ms | 10/3 | 10/3 |
| 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...+85 | –40...+85 |
| Environmental protection | | RT II | RT II |
| **Approvals** (according to type) | | | |

## Ordering information

Example: 40 series PCB relay, 1 CO (SPDT) - 12 A, 24 V DC coil.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | A | B | C | D | |
| 4 | 0 | . | 3 | 1 | . | 7 | . | 0 | 2 | 4 | . | 1 | 0 | 2 | 0 |

**Series**

**Type**
3 = PCB - 3.5 mm pinning
6 = PCB - 5 mm pinning

**No. of poles**
1 = 1 pole
for: 40.31, 12 A
40.61, 16 A

**Coil version**
7 = Sensitive DC

**Coil voltage**
012 = 12 V DC
024 = 24 V DC

**A: Contact material**
1 = AgNi
2 = AgCdO
(for 40.61 only)

**B: Contact circuit**
0 = CO (SPDT)
3 = NO (SPST)

**C: Options**
2 = None

**D: Special versions**
0 = Standard flux proof (RT II)
1 = Wash tight (RT III)

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

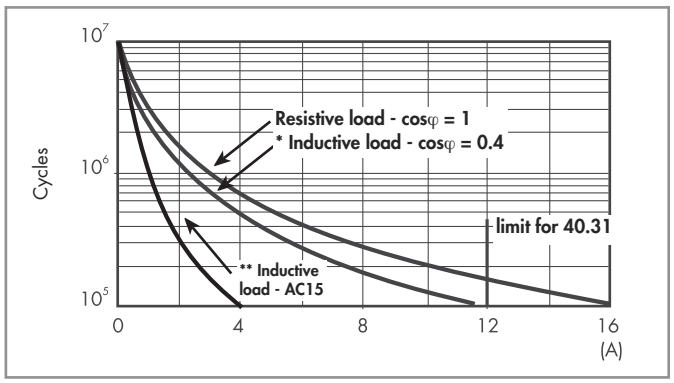
| Type | Coil version | A | B | C | D |
|---|---|---|---|---|---|
| 40.31 | DC | **1** | **0** - 3 | **2** | **0** - 1 |
| 40.61 | DC | 1 - **2** | **0** - 3 | **2** | **0** - 1 |

## Technical data

| | | | | |
|---|---|---|---|---|
| **Insulation according to EN 61810-1** | | | | |
| Nominal voltage of supply system | | V AC | 230/400 | |
| Rated insulation voltage | | V AC | 250 | 400 |
| Pollution degree | | | 3 | 2 |
| **Insulation between coil and contact set** | | | | |
| Type of insulation | | | Reinforced (8 mm) | |
| Overvoltage category | | | III | |
| Rated impulse voltage | | kV (1.2/50 µs) | 6 | |
| Dielectric strength | | V AC | 4,000 | |
| **Insulation between open contacts** | | | | |
| Type of disconnection | | | Micro-disconnection | |
| Dielectric strength | | V AC/kV (1.2/50 µs) | 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 (10...200)Hz: NO/NC | | g | 20/5 | |
| Shock resistance NO/NC | | g | 20/5 | |
| Power lost to the environment | without contact current | W | 0.5 | |
| | with rated current | W | 1.2 (40.31) | 1.8 (40.61) |
| Recommended distance between relays mounted on PCB | | mm | ≥ 5 | |

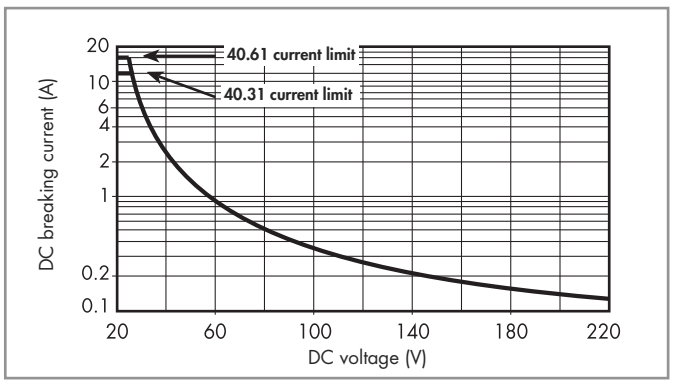
## Contact specification

**F 40 - Electrical life (AC) v contact current**
Types 40.31/61




* Inductive load - cosφ = 0.4: inrush current = rated current
** Inductive load - AC15: inrush current = 10 x rated current

**H 40 - Maximum DC1 breaking capacity**




- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ $100 \cdot 10^3$ 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

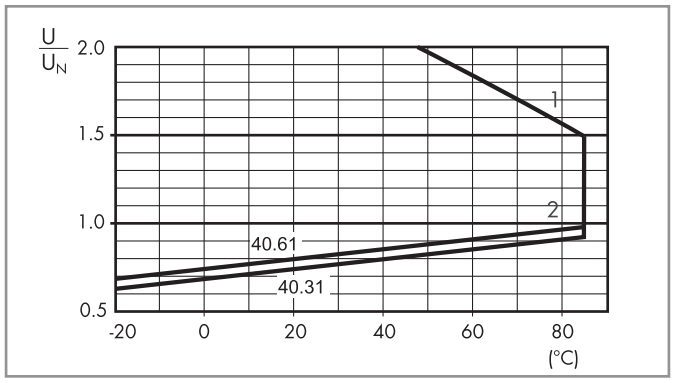
**DC coil data - 0.5 W sensitive** (type 40.31)

| Nominal voltage $U_N$ | Coil code | Operating range $U_{min}$ | Operating range $U_{max}$ | Resistance R | Rated coil consumption I at $U_N$ |
|---|---|---|---|---|---|
| V | | V | V | Ω | mA |
| 12 | **7**.012 | 8.8 | 18 | 300 | 40 |
| 24 | **7**.024 | 17.5 | 36 | 1,200 | 20 |

**DC coil data - 0.5 W sensitive** (type 40.61)

| Nominal voltage $U_N$ | Coil code | Operating range $U_{min}$ | Operating range $U_{max}$ | Resistance R | Rated coil consumption I at $U_N$ |
|---|---|---|---|---|---|
| V | | V | V | Ω | mA |
| 12 | **7**.012 | 9.6 | 18 | 300 | 40 |
| 24 | **7**.024 | 19.2 | 36 | 1,200 | 20 |

**R 40 - DC coil operating range v ambient temperature**




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