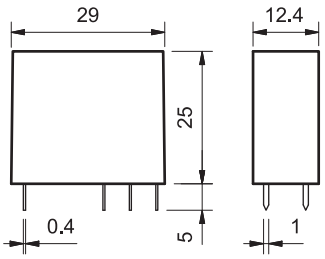
# 50 Series - Forcibly guided contacts relay 8 A

## Features

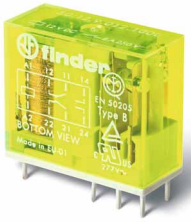
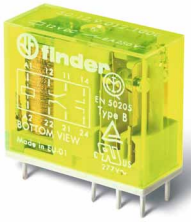
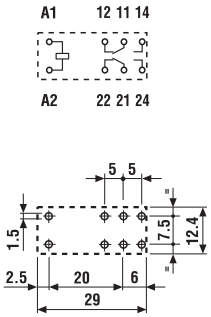
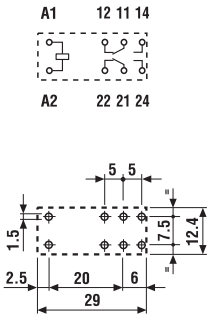
**PCB Relay with forcibly guided contacts according to EN 50205 type B**
**2 CO contacts ***

- High physical separation between adjacent contacts
- Cadmium Free contact materials
- 8 mm, 6 kV (1.2/50 µs) isolation, coil-contacts
- Flux proof: RT II




*According to EN 50205 only 1 NO and 1 NC (11-14 and 21-22 or 11-12 and 21-24) shall be used as forcibly guided contacts.

*FOR UL RATINGS SEE:*
*"General technical information" page* V

| | 50.12...1000 | 50.12...5000 |
|---|---|---|
| |  |  |
| | • For medium duty switching, suggested for DC loads<br>• 2 Pole 8 A<br>• 5 mm pinning<br>• PCB mounting | • For safety applications<br>• Gold plate contacts for low level switching capability<br>• 5 mm pinning<br>• PCB mounting |
| |  |  |
| | Copper side view | Copper side view |

| | | | |
|---|---|---|---|
| **Contact specification** | | | |
| Contact configuration | | 2 CO (DPDT) | 2 CO (DPDT) |
| Rated current/Maximum peak current | A | 8/15 | 8/15 |
| Rated voltage/Maximum switching voltage | V AC | 250/400 | 250/400 |
| Rated load AC1 | VA | 2,000 | 2,000 |
| Rated load AC15 (230 V AC) | VA | 500 | 500 |
| Single phase motor rating (230 V AC) | kW | 0.37 | 0.37 |
| Breaking capacity DC1: 30/110/220 V | A | 8/0.65/0.2 | 8/0.65/0.2 |
| Minimum switching load | mW (V/mA) | 500 (10/10) | 50 (5/5) |
| Standard contact material | | AgNi | AgNi + Au |
| **Coil specification** | | | |
| Nominal voltage ($U_N$) | V AC (50/60 Hz) | – | – |
| | V DC | 5 - 6 - 12 - 24 - 48 - 60 - 110 - 125 | 5 - 6 - 12 - 24 - 48 - 60 - 110 - 125 |
| Rated power AC/DC | VA (50 Hz)/W | –/0.7 | –/0.7 |
| Operating range | AC (50 Hz) | – | – |
| | DC | (0.75...1.2)$U_N$ | (0.75...1.2)$U_N$ |
| 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 AC/DC | cycles | –/10 · $10^6$ | –/10 · $10^6$ |
| Electrical life at rated load AC1 | cycles | 100 · $10^3$ | 100 · $10^3$ |
| Operate/release time | ms | 10/4 | 10/4 |
| Insulation between coil and contacts (1.2/50 µs) | kV | 6 (8 mm) | 6 (8 mm) |
| Dielectric strength between open contacts | V AC | 1,500 | 1,500 |
| Ambient temperature range | °C | –40...+70 | –40...+70 |
| Environmental protection | | RT II | RT II |
| **Approvals** (according to type) | | | |

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## Ordering information

Example: 50 series forcibly guided contacts, 2 CO (DPDT) 8 A contacts, 24 V DC coil.

| 5 0 | . | 1 | 2 | . | 9 | . | 0 2 4 | . | A 5 | B 0 | C 0 | D 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Series**

**Type**
1 = PCB - 5 mm pinning

**No. of poles**
2 = 2 pole 8 A

**Coil version**
9 = DC

**Coil voltage**
See coil specifications

**A: Contact material**
1 = Standard AgNi
5 = AgNi + Au

**B: Contact circuit**
0 = CO (DPDT)

**C: Options**
0 = None

**D: Special versions**
0 = Flux proof (RT II)

**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 |
|---|---|---|---|---|---|
| 50.12 | DC | **1** - 5 | **0** | **0** | **0** |

## 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 adjacent contacts** | | | | |
| Type of insulation | | | Basic | |
| Overvoltage category | | | III | |
| Rated impulse voltage | | kV (1.2/50 µs) | 4 | |
| Dielectric strength | | V AC | 3,000 | |
| **Insulation between open contacts** | | | | |
| Type of disconnection | | | Micro-disconnection | |
| Dielectric strength | | V AC/kV (1.2/50 µs) | 1,500/2.5 | |
| **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 | 2/10 | |
| Vibration resistance (10...200)Hz: NO/NC | | g | 20/6 | |
| Shock resistance NO/NC | | g | 20/5 | |
| Power lost to the environment | without contact current | W | 0.7 | |
| | with rated current | W | 1.2 | |
| Recommended distance between relays mounted on PCB | | mm | ≥ 5 | |



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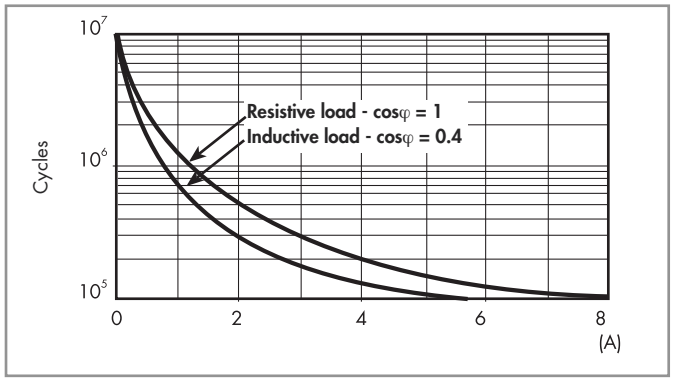
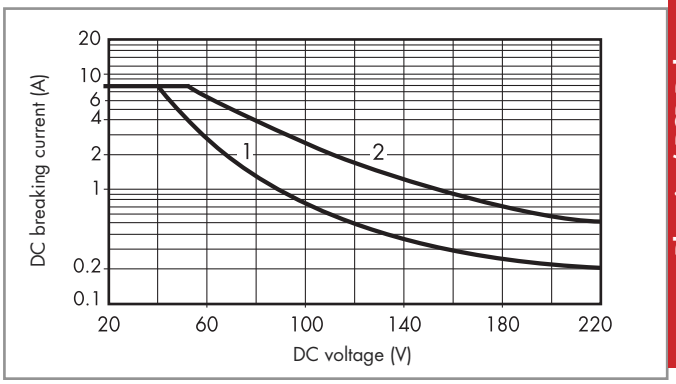
## Contact specification

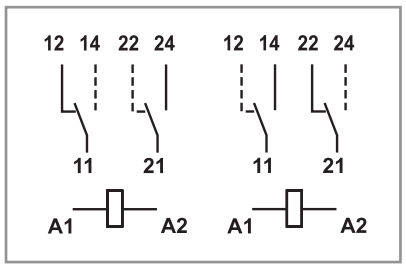
**F 50 - Electrical life (AC) v contact current**




**H 50 - Maximum DC1 breaking capacity**




- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ 100·10³ 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.



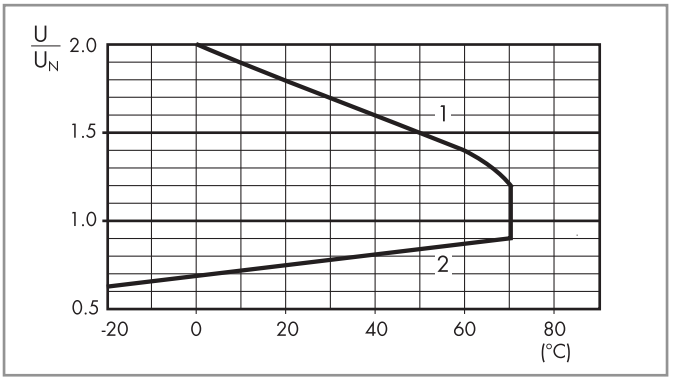

Alternative selection of NO and NC contacts to provide Forcibly guided (mechanically linked) contacts, in accordance with EN 50205 (type B).

## Coil specifications

**DC coil data**

| 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 |
| 5 | **9**.005 | 3.8 | 6 | 35 | 143 |
| 6 | **9**.006 | 4.5 | 7.2 | 50 | 120 |
| 12 | **9**.012 | 9 | 14.4 | 205 | 58.5 |
| 24 | **9**.024 | 18 | 28.8 | 820 | 29.3 |
| 48 | **9**.048 | 36 | 57.6 | 3,280 | 14.4 |
| 60 | **9**.060 | 45 | 72 | 5,140 | 11.7 |
| 110 | **9**.110 | 82.5 | 131 | 17,250 | 6.4 |
| 125 | **9**.125 | 93.7 | 150 | 22,300 | 5.6 |

**R 50 - DC coil operating range v ambient temperature**
Standard coil




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