

# Miniature Relay PT

2 pole 12 A, 3 pole 10 A or 4 pole 6 A  
DC- or AC-coil



F0191-A

## Features

- 2, 3 or 4 C/O contacts
- Switching performance up to 3000 VA
- Relay height 29 mm
- Cadmium-free contact material
- Mechanical and electrical indicator
- Manual test tab, optionally lockable.
- White marking tabs

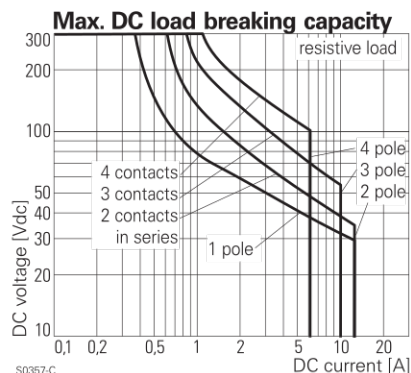
## Applications

Universal use in control and automation



Technical data of approved types on request

| Contact data                             | PT2                                   | PT3     | PT5     |
|------------------------------------------|---------------------------------------|---------|---------|
| Configuration                            | 2 C/O                                 | 3 C/O   | 4 C/O   |
| Type of contact                          | single contacts                       |         |         |
| Rated current                            | 12 A                                  | 10 A    | 6 A     |
| Rated voltage / max. breaking voltage AC | 250 Vac                               | 250 Vac | 250 Vac |
| Maximum switching voltage                | 440 Vac                               | 440 Vac | 250 Vac |
| Maximum breaking capacity AC             | 3000 VA                               | 2500 VA | 1500 VA |
| Make current                             | 24 A                                  | 20 A    | 12 A    |
| Contact material                         | AgNi 90/10, AgNi 90/10 gold plated    |         |         |
| Minimum contact load                     | 24 V, 10 mA / 20 mV, 1 mA gold plated |         |         |

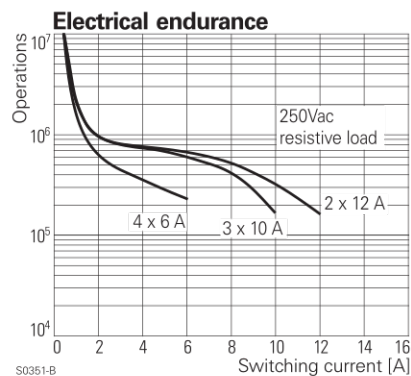


## Contact ratings

| Type  | Load                             | Operations        | Standard |
|-------|----------------------------------|-------------------|----------|
| PT570 | 6 A, 250 Vac, on the C/O contact | 1x10 <sup>5</sup> | VDE 0435 |

## Coil data

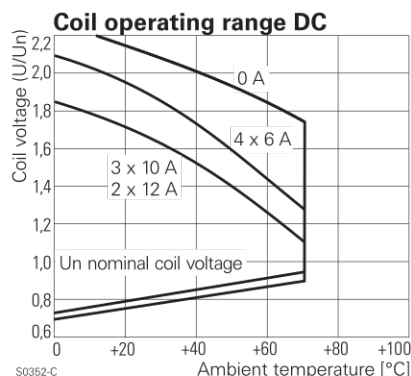
|                                          |                            |             |
|------------------------------------------|----------------------------|-------------|
| Nominal voltage                          | DC coil                    | 6...220 Vdc |
|                                          | AC coil                    | 6...230 Vac |
| Nominal coil power                       | DC coil                    | typ. 0.75 W |
|                                          | AC coil                    | typ. 1.0 VA |
| Operate category                         | 2 / b                      |             |
| Operating range for AC coil 60Hz at 70°C | 90...110% U <sub>nom</sub> |             |



## Coil versions, DC-coil

| Coil code  |            | Nominal   | Pull-in     | Release    | Coil           | Coil        |
|------------|------------|-----------|-------------|------------|----------------|-------------|
| Standard   | LED        | voltage   | voltage     | voltage    | resistance     | current     |
|            | bipolar    | Vdc       | Vdc         | Vdc        | Ω              | mA          |
| 006        | L06        | 6         | 4.5         | 0.6        | 48±10%         | 125.0       |
| 012        | L12        | 12        | 9.0         | 1.2        | 192±10%        | 62.5        |
| <b>024</b> | <b>L24</b> | <b>24</b> | <b>18.0</b> | <b>2.4</b> | <b>777±10%</b> | <b>31.3</b> |
| 048        | L48        | 48        | 36.0        | 4.8        | 3072±10%       | 15.6        |
| 060        | L60        | 60        | 45.0        | 6.0        | 4845±12%       | 12.5        |
| 110        | M10        | 110       | 82.5        | 11.0       | 16133±15%      | 6.8         |
| 220        | N20        | 220       | 165.0       | 22.0       | 64533±15%      | 3.4         |

All figures are given for coil without preenergization, at ambient temperature +20°C



# Miniature Relay PT

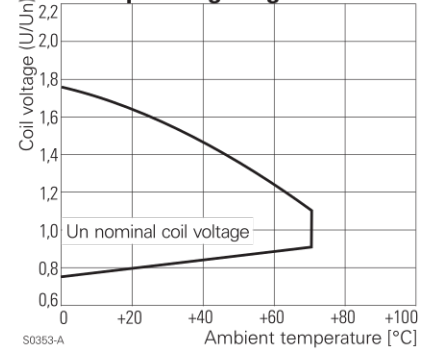
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## Coil versions, AC-coil

| Coil code  |            | Nominal voltage Vac | Pull-in voltage Vac | Release voltage Vac | Coil resistance $\Omega$           | Coil current mA |
|------------|------------|---------------------|---------------------|---------------------|------------------------------------|-----------------|
| Standard   | LED        |                     |                     |                     |                                    |                 |
| 506        | R06        | 6                   | 4.8                 | 1.8                 | $11 \pm 10\%$                      | 166.5           |
| 512        | R12        | 12                  | 9.6                 | 3.6                 | $48 \pm 10\%$                      | 83.3            |
| <b>524</b> | <b>R24</b> | <b>24</b>           | <b>19.2</b>         | <b>7.2</b>          | <b><math>192 \pm 10\%</math></b>   | <b>41.6</b>     |
| 548        | R48        | 48                  | 38.4                | 14.4                | $777 \pm 10\%$                     | 21.3            |
| 560        | R60        | 60                  | 48.0                | 18.0                | $1306 \pm 10\%$                    | 16.7            |
| 615        | S15        | 115                 | 92.0                | 34.5                | $4845 \pm 12\%$                    | 8.8             |
| <b>730</b> | <b>T30</b> | <b>230</b>          | <b>184.0</b>        | <b>69.0</b>         | <b><math>19465 \pm 15\%</math></b> | <b>4.3</b>      |

All figures are given for coil without preenergization, at ambient temperature +20°C

## Coil operating range AC



| Insulation                                                          | PT2                                            | PT3                                            | PT5                                            |
|---------------------------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
| Dielectric strength coil-contacts                                   | 2500 V <sub>rms</sub>                          | 2500 V <sub>rms</sub>                          | 2500 V <sub>rms</sub>                          |
| open contact circuit in unenergized position typ. adjacent contacts | 1500 V <sub>rms</sub><br>2500 V <sub>rms</sub> | 1500 V <sub>rms</sub><br>2500 V <sub>rms</sub> | 1500 V <sub>rms</sub><br>2000 V <sub>rms</sub> |
| Clearance / creepage                                                | 3 / 4 mm                                       | 2.6 / 4 mm                                     | 1.8 / 3 mm                                     |
| Insulation to IEC 60664                                             |                                                |                                                |                                                |
| Voltage rating                                                      | 240 V                                          | 240 V                                          | 240 V                                          |
| Pollution degree                                                    | 3                                              | 3                                              | 2                                              |
| Overvoltage category                                                | III                                            | III                                            | III                                            |
| Insulation to VDE 0110b (2/79)                                      |                                                |                                                |                                                |
| Insulation category / ref. voltage                                  | C / 250                                        | C / 250                                        | B / 250                                        |
| Tracking resistance of relay base                                   |                                                | CTI 175                                        |                                                |

## Other data

|                                                     |                                                                      |
|-----------------------------------------------------|----------------------------------------------------------------------|
| Flammability class according to UL 94               | V-0                                                                  |
| Ambient temperature                                 | DC-coil -40...+70 °C<br>AC-coil -40...+70 °C                         |
| Mechanical life                                     | DC-coil >30x10 <sup>6</sup> ops.<br>AC-coil >20x10 <sup>6</sup> ops. |
| Max. switching rate at rated- / minimum load        | 6 min <sup>-1</sup> / 600 min <sup>-1</sup>                          |
| Operate- / release time                             | 15 / 10 ms                                                           |
| Bounce time                                         | 5 ms                                                                 |
| Vibration resistance N/O contact/N/C contact        | >7 / 4 g                                                             |
| Shock resistance (function) N/O contact/N/C contact | >20 / 5 g                                                            |
| Category of protection (IEC 61810)                  | RT II                                                                |
| Relay weight                                        | 30 g                                                                 |
| Packaging unit                                      | 10 pcs.                                                              |
| Accessories                                         | see accessories PT                                                   |

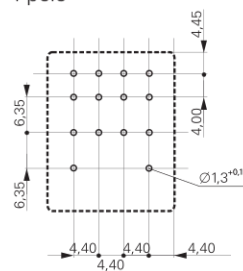
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## PCB layout / terminal assignment

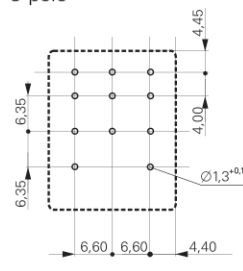
View on solder pins  
Dimensions in mm

4-pole



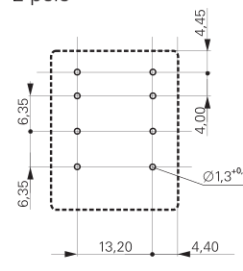
S0354-AA

3-pole



S0354-AB

2-pole

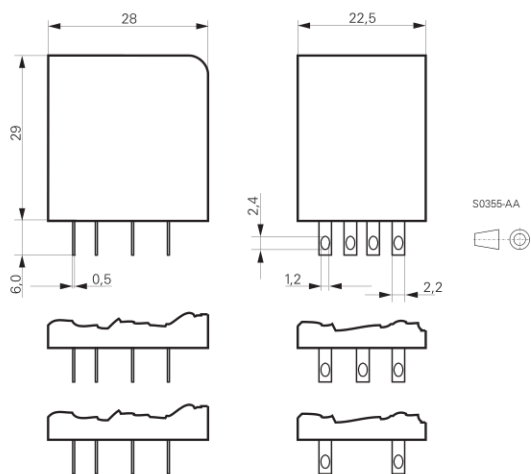


S0354-AC

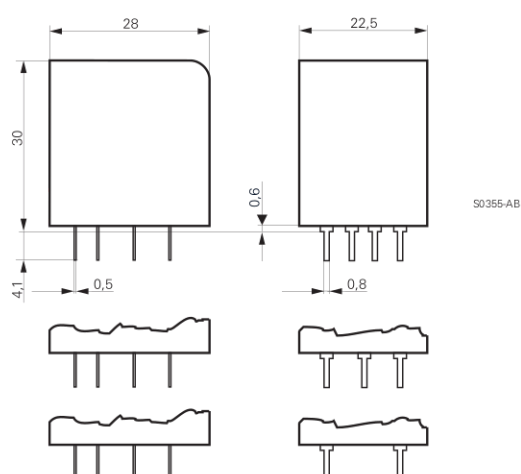
## Dimensions

Dimensions in mm

Solder- and plug-in terminals (standard version)



PCB version



## Product key

Type

Contact configuration

**2** 2 C/O contacts

**3** 3 C/O contacts

**5** 4 C/O contacts

Contact material

**7** AgNi 90/10, with test button\*)

**8** AgNi 90/10, gold plated, with test button\*)

Version

**0** standard, AMP 2.8

**1** PCB terminals

Coil

Coil code: please refer to coil versions table, preferred types in bold print

\*) Version with closed cap without test button available on request.

Other types on request.

|          |          |  |  |  |  |  |
|----------|----------|--|--|--|--|--|
| <b>P</b> | <b>T</b> |  |  |  |  |  |
|----------|----------|--|--|--|--|--|

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| Product key | Cont. config.                            | Cont. material            | Version               | Coil           | Coil                      | Part number           |             |             |             |
|-------------|------------------------------------------|---------------------------|-----------------------|----------------|---------------------------|-----------------------|-------------|-------------|-------------|
| PT270024    | 2 C/O contacts                           | AgNi 90/10<br>test button | AMP 2.8<br>connectors | DC coil        | 24 Vdc                    | 4-1419111-2           |             |             |             |
| PT270524    |                                          |                           |                       | AC-coil        | 24 Vac                    | 4-1419111-8           |             |             |             |
| PT270615    |                                          |                           |                       |                | 115 Vac                   | 5-1419111-0           |             |             |             |
| PT270730    |                                          |                           |                       |                | 230 Vac                   | 5-1419111-1           |             |             |             |
| PT270L24    |                                          |                           |                       | DC coil+LED    | 24 Vdc                    | 9-1415001-1           |             |             |             |
| PT270R24    |                                          |                           |                       | AC-coil+LED    | 24 Vac                    | 0-1415002-1           |             |             |             |
| PT270S15    |                                          |                           |                       |                | 115 Vac                   | 2-1415039-1           |             |             |             |
| PT270T30    |                                          |                           |                       |                | 230 Vac                   | 3-1415002-1           |             |             |             |
| PT271024    |                                          |                           |                       | PCB terminals  | DC coil                   | 24 Vdc                | 5-1419111-3 |             |             |
| PT271524    |                                          |                           |                       |                | AC-coil                   | 24 Vac                | 5-1419111-6 |             |             |
| PT271615    |                                          | 115 Vac                   | 4-1419135-0           |                |                           |                       |             |             |             |
| PT271730    |                                          | 230 Vac                   | 5-1419111-8           |                |                           |                       |             |             |             |
| PT370024    | 3 C/O contacts                           | AgNi 90/10<br>test button | AMP 2.8<br>connectors | DC coil        | 24 Vdc                    | 6-1419111-1           |             |             |             |
| PT370524    |                                          |                           |                       | AC-coil        | 24 Vac                    | 6-1419111-6           |             |             |             |
| PT370615    |                                          |                           |                       |                | 115 Vac                   | 6-1419111-8           |             |             |             |
| PT370730    |                                          |                           |                       |                | 230 Vac                   | 6-1419111-9           |             |             |             |
| PT370L24    |                                          |                           |                       | DC coil+LED    | 24 Vdc                    | 5-1415002-1           |             |             |             |
| PT370R24    |                                          |                           |                       | AC-coil+LED    | 24 Vac                    | 7-1415002-1           |             |             |             |
| PT370S15    |                                          |                           |                       |                | 115 Vac                   | 9-1415039-1           |             |             |             |
| PT370T30    |                                          |                           |                       |                | 230 Vac                   | 9-1415002-1           |             |             |             |
| PT371024    |                                          |                           |                       | PCB terminals  | DC coil                   | 24 Vdc                | 7-1419111-1 |             |             |
| PT371524    |                                          |                           |                       |                | AC-coil                   | 24 Vac                | 7-1419111-3 |             |             |
| PT371615    |                                          |                           |                       |                |                           | 115 Vac               | 0-1393154-8 |             |             |
| PT371730    |                                          |                           |                       |                |                           | 230 Vac               | 7-1419111-5 |             |             |
| PT570024    |                                          |                           |                       | 4 C/O contacts | AgNi 90/10<br>test button | AMP 2.8<br>connectors | DC coil     | 24 Vdc      | 1-1393154-2 |
| PT570524    |                                          |                           |                       |                |                           |                       | AC-coil     | 24 Vac      | 8-1419111-7 |
| PT570615    |                                          | 115 Vac                   | 9-1419111-0           |                |                           |                       |             |             |             |
| PT570730    |                                          | 230 Vac                   | 9-1419111-1           |                |                           |                       |             |             |             |
| PT570L24    | DC coil+LED                              | 24 Vdc                    | 6-1415001-1           |                |                           |                       |             |             |             |
| PT570R24    | AC-coil+LED                              | 24 Vac                    | 7-1415001-1           |                |                           |                       |             |             |             |
| PT570S15    |                                          | 115 Vac                   | 7-1415003-1           |                |                           |                       |             |             |             |
| PT570T30    |                                          | 230 Vac                   | 8-1415001-1           |                |                           |                       |             |             |             |
| PT571024    | PCB terminals                            | DC coil                   | 24 Vdc                |                |                           |                       | 9-1419111-3 |             |             |
| PT571524    |                                          | AC-coil                   | 24 Vac                |                |                           |                       | 9-1419111-6 |             |             |
| PT571615    |                                          |                           | 115 Vac               |                |                           |                       | 1-1393154-5 |             |             |
| PT571730    |                                          |                           | 230 Vac               |                |                           |                       | 9-1419111-8 |             |             |
| PT580024    | AgNi 90/10<br>gold plated<br>test button | AMP 2.8<br>connectors     | DC coil               |                |                           |                       | 24 Vdc      | 1-1393154-7 |             |
| PT580524    |                                          |                           | AC-coil               |                |                           |                       | 24 Vac      | 2-1393154-1 |             |
| PT580730    |                                          |                           |                       |                |                           |                       | 230 Vac     | 2-1393154-2 |             |
| PT580L24    |                                          |                           | DC coil+LED           |                |                           |                       | 24 Vdc      | 5-1415026-1 |             |
| PT580R24    |                                          |                           | AC-coil+LED           |                |                           |                       | 24 Vac      | 6-1415026-1 |             |
| PT580T30    |                                          |                           |                       |                |                           |                       | 230 Vac     | 7-1415026-1 |             |
| PT581024    |                                          |                           | PCB terminals         | DC coil        | 24 Vdc                    | 7-1419135-2           |             |             |             |
| PT581730    |                                          |                           |                       | AC-coil        | 230 Vac                   | 2-1393154-3           |             |             |             |
|             |                                          |                           |                       |                |                           |                       |             |             |             |