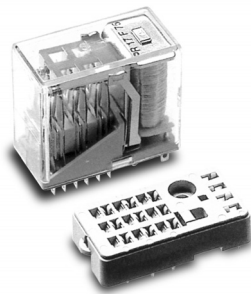


**PR 15 - 16 - 17
Miniature relay**



- Contact sets with different contact configurations
- Single or bifurcated contacts
- Solder pins, plug-in version or PCB version
- Accessories / sockets
- The relays comply with the IEC 61810-1

Technical data

Characteristics

| Type of relay | | PR 15-E PR 15-TE | PR 16-G PR 16-TG | PR 16-H PR 16-TH | PR 16-K PR 16-TK | PR 16-L PR 16-TL | PR 17-F | PR 17-Z |
|---|------------------|--|---------------------|---------------------|---------------------|---------------------|----------|----------|
| Coil data at 20°C | | | | | | | | |
| Min. energizing to operate relay | amp. turns | 80 | 120 | 120 | 120 | 120 | 130 | 130 |
| Min. energizing at which attracted armature drops ¹⁾ | amp. turns | 15 | 15 | 15 | 15 | 30 | 35 | 35 |
| Min. operating power for different windings ¹⁾ | mW | 100-140 | 210-310 | 210-310 | 210-310 | 220-320 | 290-410 | 290-410 |
| Rated power for different windings ²⁾ | W | 0.5 | 0.65 | 0.65 | 0.65 | 0.65 | 0.80 | 0.90 |
| Max. operating power | W | 2 | | | | | | |
| Energizing voltage range for different windings | V | 0.64-110 | 0.6-110 | 0.6-110 | 0.6-110 | 0.4-110 | 0.75-145 | 0.75-145 |
| Contact data | | | | | | | | |
| Contact material | | 0.2 μm - gold coated silver | | | | | | |
| Contact version | | Single | | | | | | |
| Max. operating voltage | V | 100 | | | | | | |
| Max. allowed contact current | A | 2 | | | | | | |
| Break power ³⁾ | W | 30 | | | | | | |
| Min. load | | 1 mA 100 mV | | | | | | |
| Contact resistance (measured at terminals) | mΩ | 50 to 100 depending on the contact version | | | | | | |
| General details | | | | | | | | |
| Max. ambient temperature | °C | 80 | 70 | 70 | 70 | 70 | 70 | 70 |
| Max. allowed winding temperature | °C | 130 | | | | | | |
| Test voltage between | | | | | | | | |
| Two contacts | V _{rms} | 500 | | | | | | |
| Contact and core | 50 Hz | 500 | | | | | | |
| Winding and core | | 500 | | | | | | |
| Mechanical life | operations | Approx. 10 ⁷ | | | | | | |
| Insulation resist. between | | | | | | | | |
| Two contacts | | More than 10 ⁹ | | | | | | |
| Contact and core | Ω | More than 10 ⁹ | | | | | | |
| Winding and core | | More than 10 ⁹ | | | | | | |
| Max. operating frequency of relay (min. load) | operat. sec. | 50 | | | | | | |
| Make time, including contact rebound, at ref. voltage, approx. | msec. | 13 | 10 | 10 | 10 | 10 | 18 | 18 |
| Break time approx. | msec. | 8 | 8 | 8 | 8 | 8 | 15 | 15 |
| Weight approx. | g | 20 | 25 | 25 | 25 | 25 | 30 | 30 |

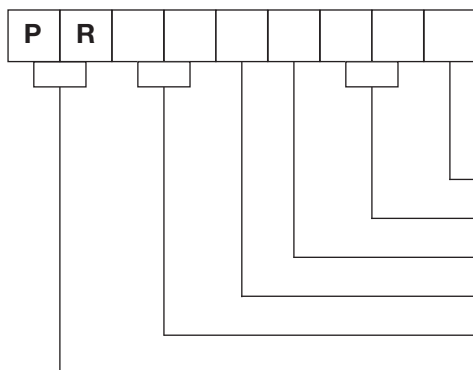
| Type of relay | | PR 15-A PR 15-TA | PR 15-B PR 15-TB | PR 15-D PR 15-TD | PR 16-C PR 16-TC | PR 15-M | PR 15-P PR 15-TP | PR 16-R PR 16-TR | PR 16-S PR 16-TS | PR 16-T PR 16-TT | PR 16-U PR 16-TU | |
|---|-----------------------------|--|---------------------|---------------------|---------------------|----------|---------------------|---------------------------|---------------------|---------------------|---------------------|--|
| Coil data at 20°C | | | | | | | | | | | | |
| Min. energizing to operate relay | amp. turns | 100 | 120 | 110 | 120 | 155 | 125 | 150 | 155 | 145 | 180 | |
| Min. energizing at which attracted armature drops ¹⁾ | amp. turns | 10 | 10 | 15 | 15 | 35 | 15 | 25 | 20 | 25 | 25 | |
| Min. operating power for different windings ¹⁾ | mW | 150-210 | 210-310 | 175-250 | 210-310 | 440-620 | 250-360 | 345-490 | 420-570 | 330-460 | 510-730 | |
| Rated power for different windings ²⁾ | W | 0.55 | 0.65 | 0.60 | 0.65 | 1.0 | 0.65 | 0.75 | 0.80 | 0.80 | 1.1 | |
| Max. operating power | W | 2 | | | | | | | | | | |
| Energizing voltage range for different windings | V | 0.5-110 | 0.6-110 | 0.55-110 | 0.6-110 | 0.92-145 | 0.64-110 | 0.78-110 | 0.83-110 | 0.77-110 | 0.94-110 | |
| Contact data | | | | | | | | | | | | |
| Contact material | 0.2 μm - gold coated silver | | | | | | | | | | | |
| Contact version | Single | | | | | | Double | | | | | |
| Max. operating voltage | V | 220 | | | | | | 100 | | | | |
| Max. allowed contact current | A | 5 | | | | | | 2 | | | | |
| Break power ³⁾ | W | to 30V: 100 - 30V-50V: 80 - 50V-220V: 50 | | | | | | 30 | | | | |
| Min. load | 1 mA 100 mV | | | | | | | | | | | |
| Contact resistance (measured at terminals) | mΩ | 50 to 100 depending on the contact version | | | | | | | | | | |
| General details | | | | | | | | | | | | |
| Max. ambient temperature | °C | 80 | 70 | 70 | 70 | 60 | 60 | 50 | 50 | 50 | 40 | |
| Max. allowed winding temperature | °C | 130 | | | | | | | | | | |
| Test voltage between | | | | | | | | | | | | |
| Two contacts | V _{rms} | 1000 | | | | | | 500 | | | | |
| Contact and core | 50 Hz | 1000 | | | | | | 500 | | | | |
| Winding and core | | 500 | | | | | | 500 | | | | |
| Mechanical life | operations | Approx. 10 ⁷ | | | | | | | | | | |
| Insulation resist. between | | | | | | | | | | | | |
| Two contacts | | | | | | | | More than 10 ⁹ | | | | |
| Contact and core | Ω | | | | | | | More than 10 ⁹ | | | | |
| Winding and core | | | | | | | | More than 10 ⁹ | | | | |
| Max. operating frequency of relay (min. load) | operat. sec. | 50 | | | | | | 10 | | | | |
| Make time, including contact rebound, at ref. voltage, approx. | msec. | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| Break time approx. | msec. | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | |
| Weight approx. | g | 20 | 20 | 20 | 25 | 30 | 20 | 25 | 25 | 25 | 25 | |

¹⁾ applies to min. operate voltage

²⁾ applies to ref. voltage $U_{ref} = \frac{U_{min} + U_{max}}{2}$

³⁾ applies to the ohmic and inductance load only if the contact arc is quenched

Ordering information



- Special information
- Winding designation
- Contact set version
- Terminal designation
- Overall size
- General designation

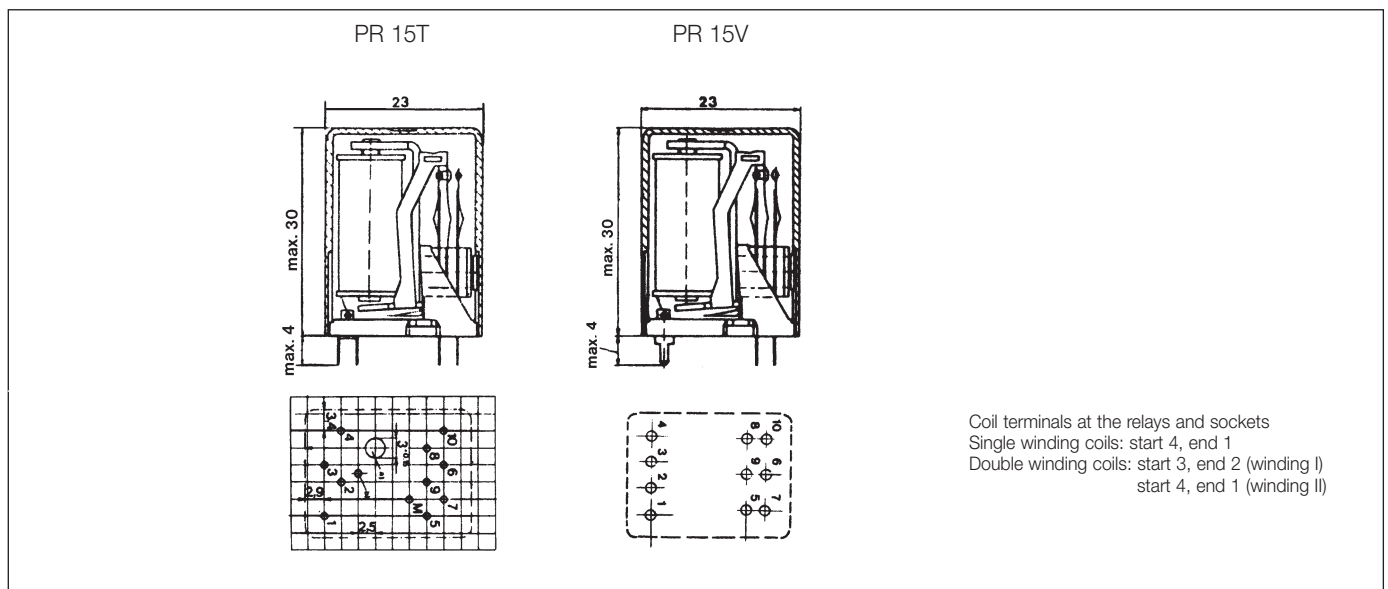
{ Without - plug-in types or soldering types
V - PCB types not in raster 2,5
T - PCB types in raster 2,5

Coil data at 20 °C

Type of relay PR 15

| Contact set version | | | A | B | D | E | P | |
|--|----------------|--------------|--|-----|------|-------|-------|--|
| Contact current | | | 5A | 5A | 5A | 2A | 2A | |
| Winding details | | | Voltage operating range at 20°C | | | | | |
| Designation | Resistance (Ω) | No. of turns | Min. Voltage U _{min.4)} (Vbc) | | | | | Max. Voltage U _{max.4)} (Vbc) |
| 00 | 20900±3140 | 32700 | 77 | 95 | 86 | 61 | 99 | 190 |
| 01 | 7600±1140 | 20700 | 43 | 53 | 47 | 34 | 55 | 110 |
| 02 | 3200±480 | 13400 | 29 | 36 | 32 | 23 | 37 | 70 |
| 03 | 1700±255 | 9900 | 21 | 26 | 23 | 16 | 26 | 50 |
| 04 | 890±89 | 7300 | 13.5 | 17 | 15 | 11 | 18 | 38 |
| 05 | 530±53 | 5800 | 10.5 | 13 | 11.5 | 8.2 | 13 | 30 |
| 06 | 325±33 | 4450 | 8.4 | 10 | 9.3 | 6.6 | 10.5 | 23 |
| 07 | 220±22 | 3700 | 6.8 | 8.5 | 7.5 | 5.3 | 8.7 | 20 |
| 08 | 150±15 | 3100 | 5.5 | 7 | 6.1 | 4.4 | 7.1 | 16 |
| 09 | 110±11 | 2700 | 4.6 | 5.6 | 5.1 | 3.7 | 5.8 | 13 |
| 10 | 58±5.8 | 1900 | 3.5 | 4.3 | 3.8 | 2.7 | 4.4 | 10 |
| 11 | 28±2.8 | 1350 | 2.3 | 3 | 2.6 | 1.8 | 3 | 7 |
| 12 | 18±1.8 | 1100 | 1.9 | 2.4 | 2.1 | 1.5 | 2.4 | 5.5 |
| 13 | 15±1.5 | 1020 | 1.67 | 2 | 1.85 | 1.3 | 2.1 | 5.2 |
| 14 | 9.5±0.95 | 840 | 1.26 | 1.6 | 1.4 | 1 | 1.62 | 4.2 |
| 15 | 6.8±0.68 | 720 | 1.08 | 1.4 | 1.19 | 0.9 | 1.37 | 3.5 |
| 16 | 5.1±0.51 | 640 | 0.9 | 1.1 | 0.99 | 0.7 | 1.14 | 3.1 |
| 17 | 1.5±0.15 | 340 | 0.5 | 0.6 | 0.55 | 0.4 | 0.64 | 1.7 |
| Contact designation ⁵⁾ | | | 1 1 | 2 2 | 2 1 | 21 21 | 21 21 | |
| Contact symbol | | | | | | | | |
| Numbers correspond sockets designation | | | | | | | | |

Dimensions and Terminals Layout in mm

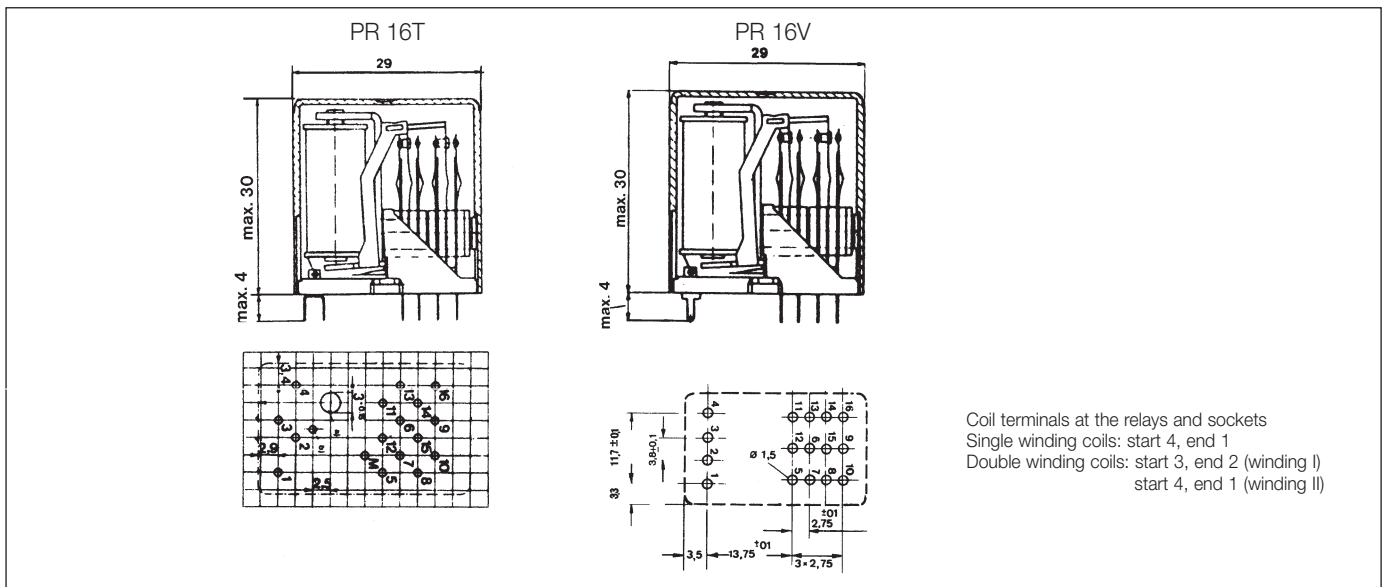


Coil data at 20 °C

Type of relay PR 16

| Contact set version | | | C | G | H | K | L | R | S | T | U | |
|--|----------------|--------------|---------------------------------|------------------------|------------------------|------------------------|--------------------|------------------------|------------------------|------------------------|--------------------|---------------------------------|
| Contact current | | | 5A | 2A | 2A | 2A | 2A | 2A | 2A | 2A | 2A | |
| Winding details | | | Voltage operating range at 20°C | | | | | | | | | |
| Designation | Resistance (Ω) | No. of turns | Min. Voltage $U_{min.4)}$ (Vcc) | | | | | | | | | Max. Voltage $U_{max.4)}$ (Vcc) |
| 00 | 20900±3140 | 32700 | | | 95 | | | 122 | 128 | 133 | 150 | 190 |
| 01 | 7600±1140 | 20700 | | | 53 | | | 68 | 71 | 66 | 86 | 110 |
| 02 | 3200±480 | 13400 | | | 36 | | | 45 | 48 | 44 | 56 | 70 |
| 03 | 1700±255 | 9900 | | | 26 | | | 32 | 35 | 32 | 40 | 50 |
| 04 | 890±89 | 7300 | | | 17 | | | 22 | 22 | 21 | 27 | 38 |
| 05 | 530±53 | 5800 | | | 13 | | | 16 | 17.5 | 16 | 20 | 30 |
| 06 | 325±33 | 4450 | | | 10 | | | 13 | 14 | 13 | 16 | 23 |
| 07 | 220±22 | 3700 | | | 8.5 | | | 10.5 | 11.5 | 10.5 | 13 | 20 |
| 08 | 150±15 | 3100 | | | 7 | | | 8.6 | 9.1 | 8.4 | 10.5 | 16 |
| 09 | 110±11 | 2700 | | | 5.6 | | | 7.2 | 7.6 | 7.0 | 8.9 | 13 |
| 10 | 58±5.8 | 1900 | | | 4.3 | | | 5.5 | 5.8 | 5.4 | 6.7 | 10 |
| 11 | 28±2.8 | 1350 | | | 3 | | | 3.7 | 3.8 | 3.5 | 4.6 | 7 |
| 12 | 18±1.8 | 1100 | | | 2.4 | | | 2.9 | 3.2 | 2.9 | 3.6 | 5.5 |
| 13 | 15±1.5 | 1020 | | | 2 | | | 2.6 | 2.8 | 2.6 | 3.2 | 5.2 |
| 14 | 9.5±0.95 | 840 | | | 1.6 | | | 2.0 | 2.1 | 1.93 | 2.5 | 4.2 |
| 15 | 6.8±0.68 | 720 | | | 1.4 | | | 1.65 | 1.8 | 1.65 | 2.0 | 3.5 |
| 16 | 5.1±0.51 | 640 | | | 1.1 | | | 1.40 | 1.5 | 1.38 | 1.7 | 3.1 |
| 17 | 1.5±0.15 | 340 | | | 0.6 | | | 0.78 | 0.83 | 0.77 | 0.94 | 1.7 |
| Contact designation ⁵⁾ | | | 21 21 | 1 - 1 - 1 1 - 1 - 1 | 2 - 2 - 2 2 - 2 - 2 | 2 - 2 - 1 2 - 2 - 1 | 21 - 21 21 - 21 | 1 - 1 - 1 1 - 1 - 1 | 2 - 2 - 2 2 - 2 - 2 | 2 - 2 - 1 2 - 2 - 1 | 21 - 21 21 - 21 | |
| Contact symbol | | | | | | | | | | | | |
| Numbers correspond sockets designation | | | | | | | | | | | | |

Dimensions and Terminals Layout in mm

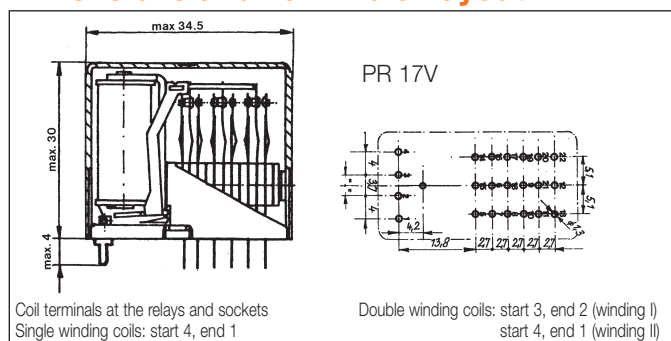


Coil data at 20 °C

Type of relay PR 17

| Contact set version | | | F | M | Z | |
|--|----------------|--------------|--|--------------------|--------------------------------|--|
| Contact current | | | 2A | 5A | 2A | |
| Winding details | | | Voltage operating range at 20°C | | | |
| Designation | Resistance (Ω) | No. of turns | Min. Voltage $U_{min.4)}$ (V _{DC}) | | | Max. Voltage $U_{max.4)}$ (V _{DC}) |
| 70 | 25000±3750 | 34000 | 118 | 145 | 118 | 240 |
| 71 | 9200±1380 | 22000 | 66 | 81 | 66 | 145 |
| 72 | 3800±570 | 14100 | 43 | 52 | 43 | 94 |
| 73 | 1900±285 | 10400 | 29 | 35 | 29 | 66 |
| 74 | 1050±105 | 7600 | 21 | 26 | 21 | 50 |
| 75 | 630±63 | 6100 | 15.5 | 19 | 15.5 | 39 |
| 76 | 390±39 | 4650 | 13 | 20 | 13 | 31 |
| 77 | 270±27 | 3900 | 10.5 | 13 | 10.5 | 25.5 |
| 78 | 185±18.5 | 3300 | 8.1 | 10 | 8.1 | 21.5 |
| 79 | 130±13 | 2800 | 7.0 | 8.5 | 7.0 | 18 |
| 80 | 94±9.4 | 2300 | 6.2 | 7.5 | 6.2 | 15 |
| 81 | 70±7.0 | 2000 | 5.3 | 6.4 | 5.3 | 13 |
| 82 | 33±3.3 | 1400 | 3.5 | 4.3 | 3.5 | 9.0 |
| 83 | 22±2.2 | 1130 | 4.5 | 4.0 | 3.3 | 7.3 |
| 84 | 18±1.8 | 1050 | 2.6 | 3.2 | 2.6 | 6.6 |
| 85 | 10.5±1.05 | 816 | 1.9 | 2.4 | 1.9 | 5.1 |
| 86 | 6.6±0.66 | 635 | 1.55 | 1.9 | 1.55 | 4.0 |
| 87 | 5.4±0.54 | 590 | 1.35 | 1.65 | 1.35 | 3.6 |
| 88 | 1.75±0.18 | 348 | 0.75 | 0.95 | 0.75 | 2.1 |
| Contact designation ⁵⁾ | | | 21 - 21 - 21 21 - 21 - 21 | 21 - 21 21 - 21 | 1 - 1 - 1 - 1 1 - 1 - 1 - 1 | |
| Contact symbol | | | | | | |
| Numbers correspond sockets designation | | | | | | |

Dimensions and Terminals Layout in mm



4) The operating voltage limits $U_{min.}$ and $U_{max.}$ depend on the ambient temperature in accordance with:

$$U_{min. (t)} = K_1 \times U_{min.} (20^\circ C) \quad U_{max. (t)} = K_2 \times U_{max.} (20^\circ C)$$

| Coeff. t | 20°C | 30°C | 40°C | 50°C | 60°C | 70°C | 80°C |
|----------|------|------|------|------|-------|-------|-------|
| K_1 | 1.0 | 1.05 | 1.09 | 1.13 | 1.17 | 1.215 | 1.255 |
| K_2 | 1.0 | 0.93 | 0.86 | 0.79 | 0.705 | 0.615 | 0.5 |

t = Ambient temperature
 K_1 K_2 = Factors
 $U_{min.}$ = Min. voltage at ambient temperature t
 $U_{max.}$ = Max. voltage at ambient temperature t

5) Where: 1 = Make contact 2 = Break contact 21 = Change-over contact

Mechanical dimensions in mm

(max. width of relay 19 mm)

| Relay types | Soldering sockets | Printed wiring sockets | Locking springs |
|-------------|-------------------|------------------------|-----------------|
| PR15 | TLK 1115 | TLK1215 | 421-505-404 |
| PR 16 | TLK 1116 | TLK 1216 | 421-506-434 |
| PR17 | TLK 1117 | TLK 1217 | 421-507-256 |

