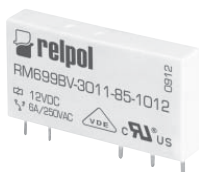


version (V)

version (H)



- Cover width only 5,0 mm
- Sealed for soldering and cleaning
- **Terminals arrangement: vertical version (V) and horizontal version (H)**
- Applications: for PLC's, industrial machinery, time relays, counters, temperature adjusters, measurement instruments, office equipment, etc.
- Recognitions, certifications, directives: RoHS,

## Contact data

|                                |     |                          |                               |
|--------------------------------|-----|--------------------------|-------------------------------|
| Number and type of contacts    |     | 1 C/O                    |                               |
| Contact material               |     | <b>AgSnO<sub>2</sub></b> | AgSnO <sub>2</sub> /Au 3 µm ❶ |
| Rated / max. switching voltage | AC  | 250 V / 400 V            | – / 30 V ❶                    |
| Max. switching voltage         | DC  | 125 V                    | 36 V ❶                        |
| Min. switching voltage         |     | 10 V                     | 5 V                           |
| Rated load                     | AC1 | 6 A / 250 V AC           | 0,05 A / 30 V AC ❶            |
|                                | DC1 | 6 A / 24 V DC            | 0,05 A / 36 V DC ❶            |
| Min. switching current         |     | 100 mA                   | 10 mA                         |
| Max. inrush current            |     | 10 A 20 ms               | 0,1 A 20 ms ❶                 |
| Rated current                  |     | 6 A                      | 0,05 A ❶                      |
| Max. breaking capacity         | AC1 | 1 500 VA                 | 1,2 VA ❶                      |
| Min. breaking capacity         |     | 1 W                      | 0,05 W                        |
| Contact resistance             |     | ≤ 100 mΩ 100 mA, 24 V    | ≤ 30 mΩ 10 mA, 5 V            |
| Max. operating frequency       |     |                          |                               |
| • at rated load                |     | AC1                      | 360 cycles/hour               |
| • no load                      |     |                          | 72 000 cycles/hour            |

## Coil data

|                                   |    |                           |
|-----------------------------------|----|---------------------------|
| Rated voltage                     | DC | 5...60 V                  |
| Must release voltage              |    | DC: ≥ 0,05 U <sub>n</sub> |
| Operating range of supply voltage |    | see Table 1               |
| Rated power consumption           | DC | 0,17...0,217 W            |

## Insulation according to PN-EN 60664-1

|                             |  |                                                   |
|-----------------------------|--|---------------------------------------------------|
| Insulation rated voltage    |  | 250 V AC                                          |
| Overvoltage category        |  | III                                               |
| Dielectric strength         |  |                                                   |
| • between coil and contacts |  | 4 000 V AC type of insulation: reinforced         |
| • contact clearance         |  | 1 000 V AC type of clearance: micro-disconnection |
| Contact - coil distance     |  |                                                   |
| • clearance                 |  | ≥ 6 mm                                            |
| • creepage                  |  | ≥ 8 mm                                            |

## General data

|                                           |             |                                                                                                                         |
|-------------------------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------|
| Operating / release time (typical values) |             | 8 ms / 4 ms                                                                                                             |
| Electrical life                           |             |                                                                                                                         |
| • resistive AC1                           |             | the NO and NC contact loaded (bilateral load): see Fig. 1<br>the NO contact loaded: > 3 x 10 <sup>4</sup> 6 A, 250 V AC |
| Mechanical life (cycles)                  |             | > 10 <sup>7</sup>                                                                                                       |
| Dimensions (L x W x H)                    |             | 28 x 5 x 15 mm                                                                                                          |
| Weight                                    |             | 6 g                                                                                                                     |
| Ambient temperature                       | • storage   | -40...+85 °C                                                                                                            |
|                                           | • operating | -40...+85 °C                                                                                                            |
| Cover protection category                 |             | IP 64 PN-EN 60529                                                                                                       |
| Environmental protection                  |             | RTIII PN-EN 116000-3                                                                                                    |
| Shock resistance                          |             | 5 g                                                                                                                     |
| Vibration resistance                      |             | 5 g 10...55 Hz                                                                                                          |
| Solder bath temperature                   |             | max. 235 °C                                                                                                             |
| Soldering time                            |             | max. 3,5 s                                                                                                              |

The data in bold type pertain to the standard versions of the relays.

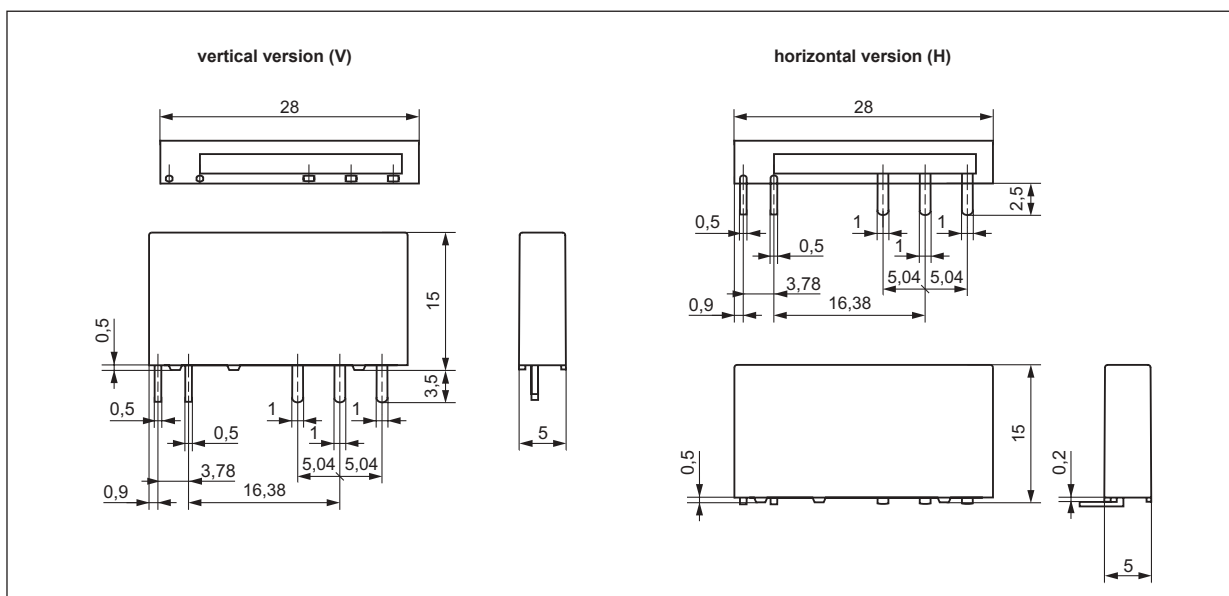
❶ For gold-plated contacts - when the maximum values given have been exceeded, the gold layer is destroyed. Then, the advantages of gold-plating disappear and the values are as for AgSnO<sub>2</sub> contacts (see beside). In consequence however, the life of the contact may be shorter than that of the normal power contact.

Coil data - DC voltage version

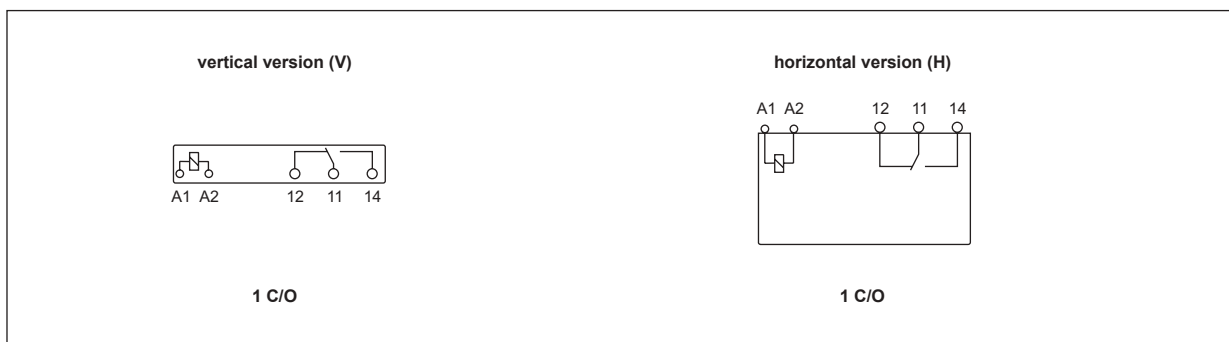
Table 1

| Coil code | Rated voltage<br>V DC | Coil resistance<br>at 20°C<br>$\Omega$ | Acceptable<br>resistance | Coil operating range<br>at 20°C<br>V DC |      | Power<br>consumption<br>mW |
|-----------|-----------------------|----------------------------------------|--------------------------|-----------------------------------------|------|----------------------------|
|           |                       |                                        |                          | min.                                    | max. |                            |
| 1005      | 5                     | 147                                    | $\pm 10\%$               | 3,75                                    | 7,5  | 170                        |
| 1012      | 12                    | 848                                    | $\pm 10\%$               | 9,0                                     | 18,0 | 170                        |
| 1024      | 24                    | 3 390                                  | $\pm 15\%$               | 18,0                                    | 36,0 | 170                        |
| 1048      | 48                    | 10 600                                 | $\pm 15\%$               | 36,0                                    | 72,0 | 217                        |
| 1060      | 60                    | 20 500                                 | $\pm 15\%$               | 45,0                                    | 90,0 | 217                        |

## Dimensions

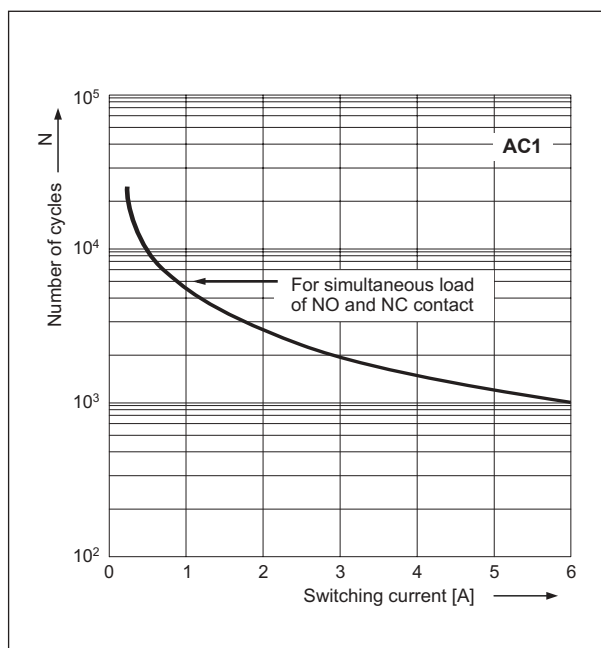


## Connection diagrams (pin side view)



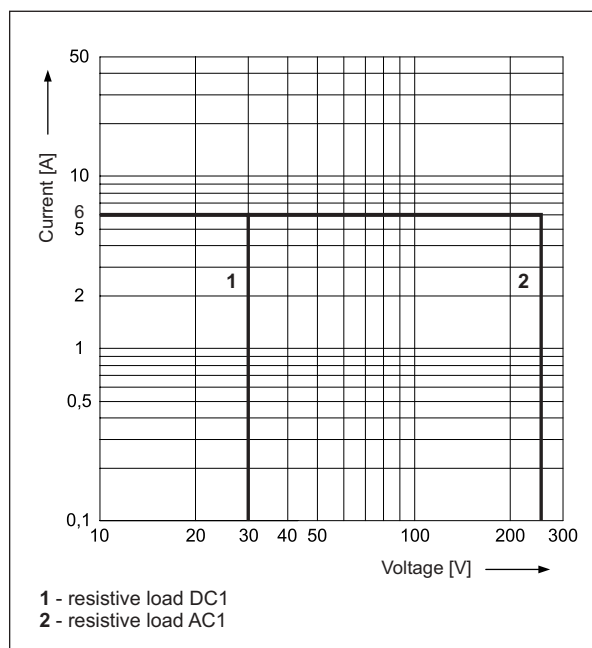
**Electrical life at AC resistive load.**  
Switching frequency as for rated load

Fig. 1



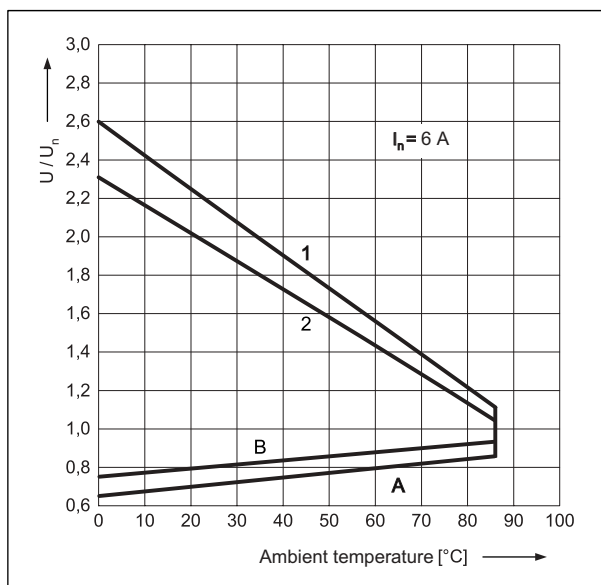
**Max. resistive load breaking capacity**

Fig. 2



**Coil operating range - DC**

Fig. 3



**Description of Fig. 3**

**A** - relations between make voltage and ambient temperature at no load on contacts. Coil temperature and ambient temperature are equal before coil energizing. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).

**B** - relations between make voltage and ambient temperature after initial coil heating up with  $1,1 U_n$ , at continues load of  $I_n$  on contacts. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).

**1, 2** - values on Y axis represent allowed overvoltage on coil at certain ambient temperature and contact load:

**1** - no load

**2** - rated load

## Mounting

Relays **RM699B vertical version (V)** are designed for:

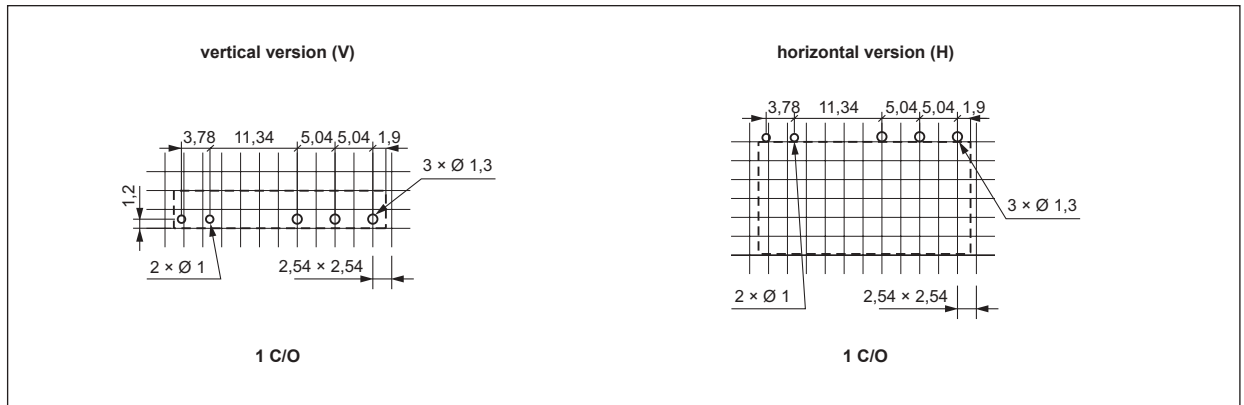
- direct PCB mounting
- sockets **PI6W-1P**, 35 mm rail mount acc. to PN-EN 60715 (see page 200).

Relays **RM699B horizontal version (H)** are designed for direct PCB mounting.

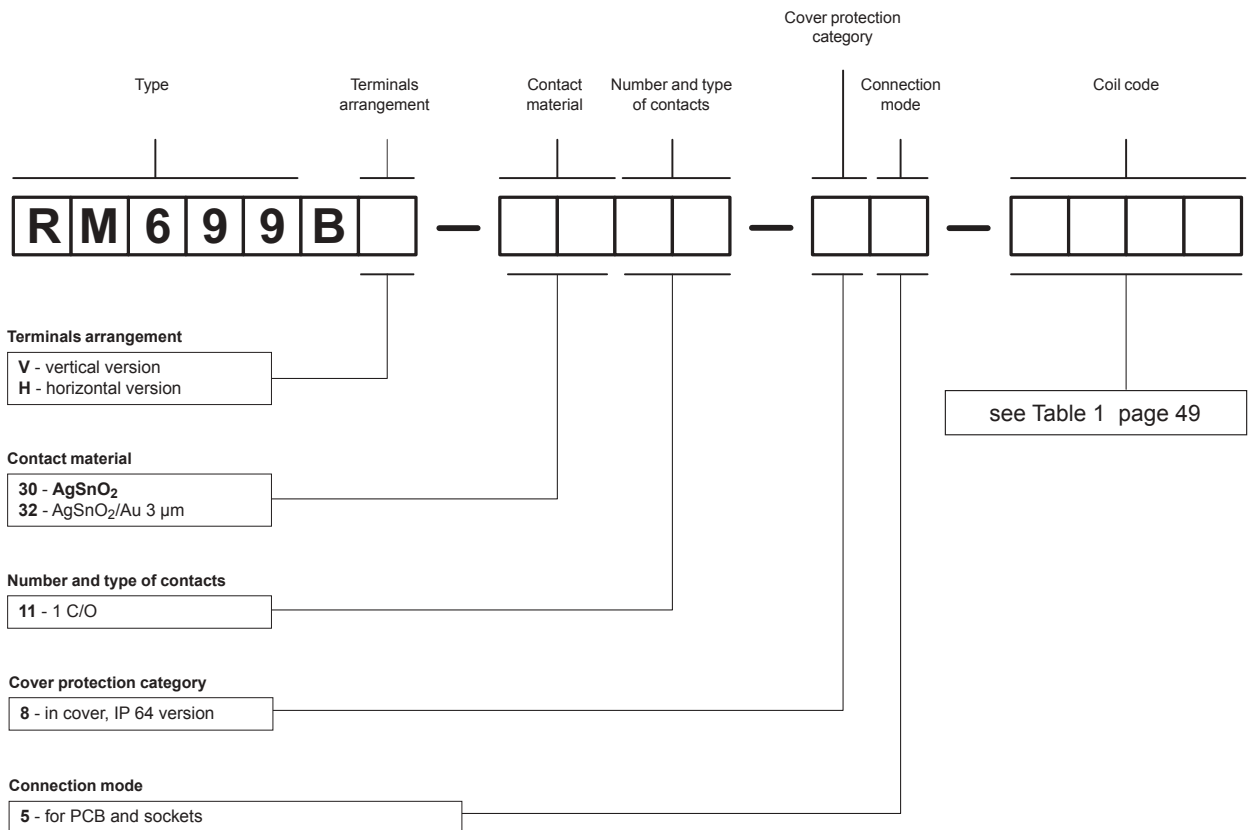


**PI6W-1P**

## Pinout (solder side view)



## Ordering codes



Examples of ordering code:

**RM699BV-3011-85-1012**

relay **RM699B**, vertical version, contact material AgSnO<sub>2</sub>, with one changeover contact, in cover IP 64, for PCB and sockets, voltage version 12 V DC

**RM699BH-3211-85-1005**

relay **RM699B**, horizontal version, contact material AgSnO<sub>2</sub>/Au 3 µm, with one changeover contact, in cover IP 64, for PCB, voltage version 5 V DC

# Plug-in sockets and accessories

## for relays RM699B

### PI6W-1P

For RM699BV, RSR30 ⑩

Screw terminals

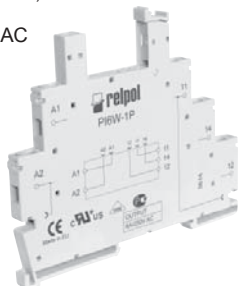
Maximum screw torque: 0,3 Nm

35 mm rail mount acc. to PN-EN 60715

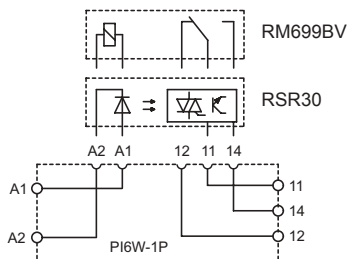
98,5 x 6,2 x 85,5 mm

One pole

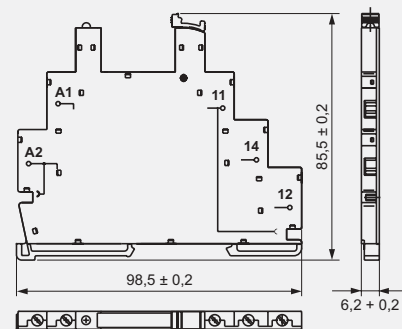
6 A, 250 V AC



### Connection diagram



### Dimensions



### Accessories



ZG20



PI6W-1246

⑩ Solid state relays **RSR30** type - see catalogue "Solid state relays" and [www.relpol.com.pl](http://www.relpol.com.pl)