

# RM699B

## Slimline Interface Relays



RM699B  
for PCB mounting  
or plug-in sockets

- Cover width only 5,0 mm
- Sealed for soldering and cleaning
- Applications: for PLC's, industrial machinery, time relays, counters, temperature adjusters, measurement instruments, office equipment, etc.



### RM699B SPDT DC coil / 6A rated current

| Part Number            | Coil Voltage<br>DC | Coil Type | Coil Resistance<br>at 20°C in $\Omega$ | Coil Operating Range |                |
|------------------------|--------------------|-----------|----------------------------------------|----------------------|----------------|
|                        |                    |           |                                        | min. (at 20°C)       | max. (at 55°C) |
| ▶ RM699BV-3011-85-1005 | 5                  | DC        | 147                                    | 3.75                 | 7.5            |
| ▶ RM699BV-3011-85-1012 | 12                 | DC        | 848                                    | 9.0                  | 18.0           |
| ▶ RM699BV-3011-85-1024 | 24                 | DC        | 3390                                   | 18.0                 | 36.0           |
| ▶ RM699BV-3011-85-1048 | 48                 | DC        | 10600                                  | 36.0                 | 72.0           |
| ▶ RM699BV-3011-85-1060 | 60                 | DC        | 20500                                  | 45.0                 | 90.0           |

### RM699B SPDT gold plated contacts DC coil / 0.05A rated current

| Part Number          | Coil Voltage<br>DC | Coil Type | Coil Resistance<br>at 20°C in $\Omega$ | Coil Operating Range |                |
|----------------------|--------------------|-----------|----------------------------------------|----------------------|----------------|
|                      |                    |           |                                        | min. (at 20°C)       | max. (at 55°C) |
| RM699BV-3211-85-1005 | 5                  | DC        | 147                                    | 3.75                 | 7.5            |
| RM699BV-3211-85-1012 | 12                 | DC        | 848                                    | 9.0                  | 18.0           |
| RM699BV-3211-85-1024 | 24                 | DC        | 3390                                   | 18.0                 | 36.0           |
| RM699BV-3211-85-1048 | 48                 | DC        | 10600                                  | 36.0                 | 72.0           |
| RM699BV-3211-85-1060 | 60                 | DC        | 20500                                  | 45.0                 | 90.0           |

#### Contact Data

| Number and type of contacts |  | RM699B                                  |                                      |
|-----------------------------|--|-----------------------------------------|--------------------------------------|
|                             |  | SPDT                                    | SPDT                                 |
|                             |  | AgSnO <sub>2</sub>                      | AgSnO <sub>2</sub> / Au 3 $\mu$ m    |
| Contact material            |  | 400 V AC / 250 V DC                     | 30V AC / 36 V DC                     |
| Max. switching voltage      |  | 10 V                                    | 5V                                   |
| Min. switching voltage      |  | 6 A / 250 V AC                          | 0.05 A / 30V AC                      |
| Rated load                  |  | 6 A / 24 V DC; 0.15 A / 250 V DC        | 0.05 A / 36 V DC                     |
| Min. switching current      |  | 100 mA                                  | 10mA                                 |
| Max. inrush current         |  | 10 A 20 ms                              | 0.1 A 20 ms                          |
| Rated current               |  | 6A                                      | 0.05 A                               |
| Max. breaking capacity      |  | 1500 VA                                 | 1.2 VA                               |
| Min. breaking capacity      |  | 1 W                                     | 0.05 W                               |
| Contact resistance          |  | $\leq 100 \text{ m}\Omega$ 100 mA. 24 V | $\leq 30 \text{ m}\Omega$ 10 mA. 5 V |
| Max. operating frequency    |  |                                         |                                      |
| • at rated load             |  | 360 cycles/hour                         | 360 cycles/hour                      |
| • no load                   |  | 72000 cycles/hour                       | 72000 cycles/hour                    |

#### Coil Data

|                                   |    |                                     |
|-----------------------------------|----|-------------------------------------|
| Rated voltage                     | DC | 5 ... 60 V                          |
| Must release voltage              |    | DC: $\geq 0.05 U_n$                 |
| Operating range of supply voltage |    | see table above                     |
| Rated power consumption           | DC | 0.17 W 5 ... 24 V; 0.217 W 48. 60 V |

#### Insulation

|                             |                                                   |
|-----------------------------|---------------------------------------------------|
| 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                 | $\geq 6 \text{ mm}$                               |
| • creepage                  | $\geq 8 \text{ mm}$                               |

#### General data

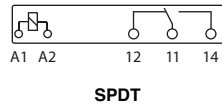
|                                           |                                                                                                                                                  |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating / release time (typical values) | 8 ms / 4 ms                                                                                                                                      |
| Electrical life (number of cycles)        |                                                                                                                                                  |
| • resistive AC1                           | the SPST (1 NO) and SPST (1 NC) contact loaded (bilateral load): see Fig. 1<br>the SPST (1 NO) contact loaded: $> 3 \times 10^4$ ; 6 A. 250 V AC |
| Mechanical life (cycles)                  | $> 10^7$                                                                                                                                         |
| 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. 260 °C                                                                                                                                      |
| Soldering time                            | max. 5 s                                                                                                                                         |

# RM699B

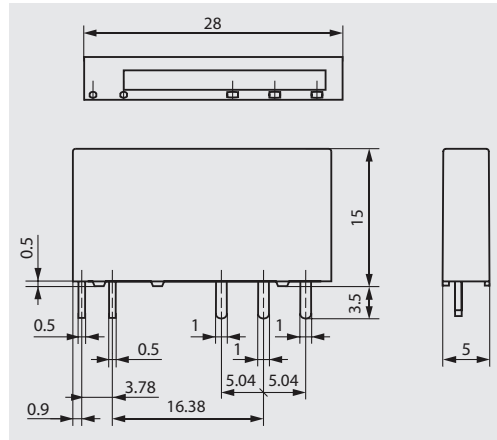
## Slimline Interface Relays



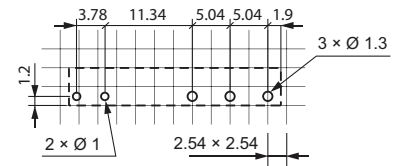
### CONNECTION DIAGRAMS



### DIMENSIONS

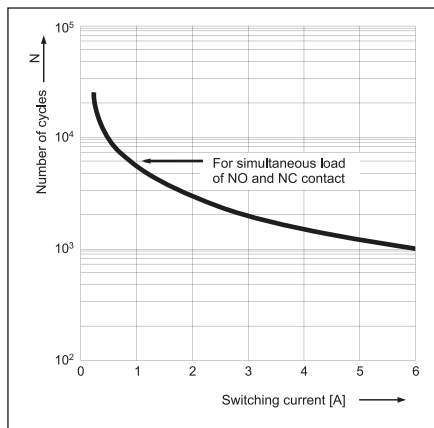


### PIN OUTS

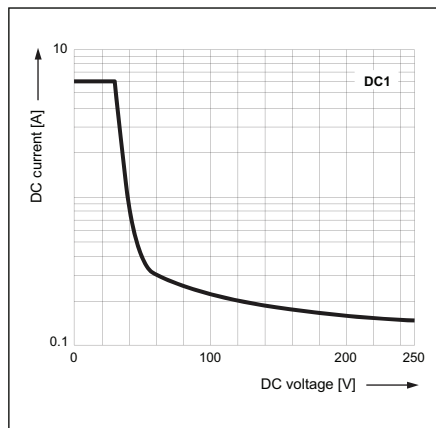


### LOAD CHARTS

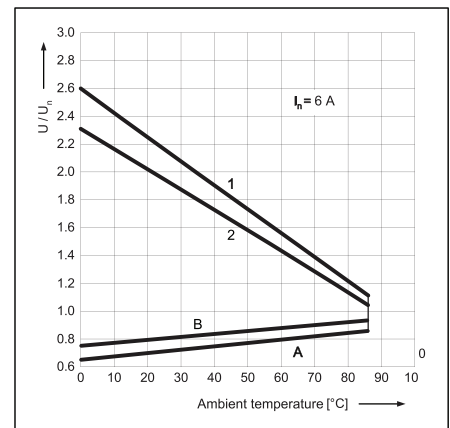
Electrical life at AC resistive current.  
Switching frequency: 360 cycles/hour Fig. 1



Max. DC 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

### Socket Ordering Codes

| Part Number<br>Screw Clamp Terminals | Part Number<br>Spring Clamp Terminals | Rated input<br>voltage $U_n$ | Power of<br>input circuit |
|--------------------------------------|---------------------------------------|------------------------------|---------------------------|
| PI6W-1PS-6VDC                        | PI6WB-1PS-6VDC                        | 5 VDC                        | 0.3 W                     |
| PI6W-1PS-12/24VDC                    | PI6WB-1PS-12/24VDC                    | 12/24 VDC                    | 0.2 W                     |
| PI6W-1PS-36VDC                       | PI6WB-1PS-36VDC                       | 36 VDC                       | 0.3 W                     |
| PI6W-1PS-48VDC                       | PI6WB-1PS-48VDC                       | 48 VDC                       | 0.4 W                     |
| PI6W-1PS-60VDC                       | PI6WB-1PS-60VDC                       | 60 VDC                       | 0.5 W                     |
| PI6W-1PS-24VAC/DC                    | PI6WB-1PS-24VAC/DC                    | 24 VAC/DC                    | 0.5VA / 0.4W              |
| PI6W-1PS-42VAC/DC                    | PI6WB-1PS-42VAC/DC                    | 42 VAC/DC                    | 0.5VA / 0.4W              |
| PI6W-1PS-115VAC/DC                   | PI6WB-1PS-115VAC/DC                   | 115 VAC/DC                   | 1.2VA / 1.2W              |
| PI6W-1PS-230VAC/DC                   | PI6WB-1PS-230VAC/DC                   | 230 VAC/DC                   | 1.2VA / 1.2W              |



For relay socket combinations see pages 96-97 (screw clamp terminals) and pages 100-101 (spring clamp terminals).