



- Cadmium - free contacts
- Miniature size
- Automotive applications
- High inrush current
- for PCB mounting
- Following relays versions are available:  
**RA2** - standard design,  
**RAW2** - narrow pin layout design

### Contacts

|                              |                          |                                                                 |                   |
|------------------------------|--------------------------|-----------------------------------------------------------------|-------------------|
| Contact number & arrangement | 1C/O, 1NO, 2NO           |                                                                 |                   |
| Contact material             | <b>AgSnO<sub>2</sub></b> |                                                                 |                   |
| Max. switching voltage       | AC/DC                    | 60 V / 60 V                                                     |                   |
| Min. switching voltage       |                          | 1 V                                                             |                   |
| Min. switching current       |                          | 10 mA                                                           |                   |
| Max. inrush current          |                          | 1C/O: 110 A / 50 A (1NO/1NC)<br>1NO: 110 A      2NO: 2 x 110 A  |                   |
| Rated current                |                          | 1C/O: 20 A / 12 A (1NO/1NC)<br>1NO: 20 A      2NO: 2 x 12,5 A   |                   |
| Max. breaking capacity       |                          | 1C/O: 270 W / 162 W (1NO/1NC)<br>1NO: 270 W      2NO: 2 x 168 W |                   |
| Min. breaking capacity       |                          | 1 W                                                             |                   |
| Resistance                   |                          | ≤ 3 mΩ                                                          |                   |
| Max. operating frequency     | AC1                      |                                                                 |                   |
| • at rated load              |                          | 900 cycles/hour                                                 | 2 s ON / 2 s OFF  |
| • at motor load              |                          | 450 cycles/hour                                                 | 2 s ON / 6 s OFF  |
| • at lamp load               |                          | 120 cycles/hour                                                 | 2 s ON / 30 s OFF |
| • no load                    |                          | 36 000 cycles/hour                                              |                   |

### Coil

|                                   |    |                       |
|-----------------------------------|----|-----------------------|
| Rated voltage                     | DC | 5..48 V               |
| Must operate voltage              |    | ≤ 0,6 U <sub>n</sub>  |
| Must release voltage              |    | ≥ 0,15 U <sub>n</sub> |
| Operating range of supply voltage |    | see Table 1           |
| Rated power consumption           | DC | 1,44 W                |

### Insulation

|                          |          |  |
|--------------------------|----------|--|
| Insulation rated voltage | 60 V AC  |  |
| Dielectric strength      |          |  |
| • coil - contact         | 500 V AC |  |
| • contact - contact      | 500 V AC |  |
| Contact - coil distance  |          |  |
| • clearance              | ≥ 1 mm   |  |
| • creepage               | ≥ 1 mm   |  |

### General data

|                                |                                                              |                                                                                                                                                |
|--------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating time (typical value) | 10 ms                                                        |                                                                                                                                                |
| Release time (typical value)   | 3 ms                                                         |                                                                                                                                                |
| Electrical life                | DC1                                                          | 1C/O: > 10 <sup>5</sup> 20/12 A (1NO/1NC), 13,5 V DC<br>1NO: > 10 <sup>5</sup> 20 A, 13,5 V DC<br>2NO: > 10 <sup>5</sup> 2 x 12,5 A, 13,5 V DC |
| Mechanical life (cycles)       | > 10 <sup>7</sup>                                            |                                                                                                                                                |
| Dimensions (L x W x H)         | IP 00: 18,6 x 13,0 x 18,5 mm<br>IP 40: 20,5 x 15,3 x 19,7 mm |                                                                                                                                                |
| Weight                         | 12 g                                                         |                                                                                                                                                |
| Ambient temperature            |                                                              |                                                                                                                                                |
| • storing                      | -40...+100 °C                                                |                                                                                                                                                |
| • operating                    | -40...+85 °C                                                 |                                                                                                                                                |
| Cover protection category      | IP 40 or IP 00 (without housing)                             |                                                                                                                                                |
| Solder bath temperature        | max. 270 °C                                                  |                                                                                                                                                |
| Soldering time                 | max. 5 s                                                     |                                                                                                                                                |

Standard contact material marked with bolt type.



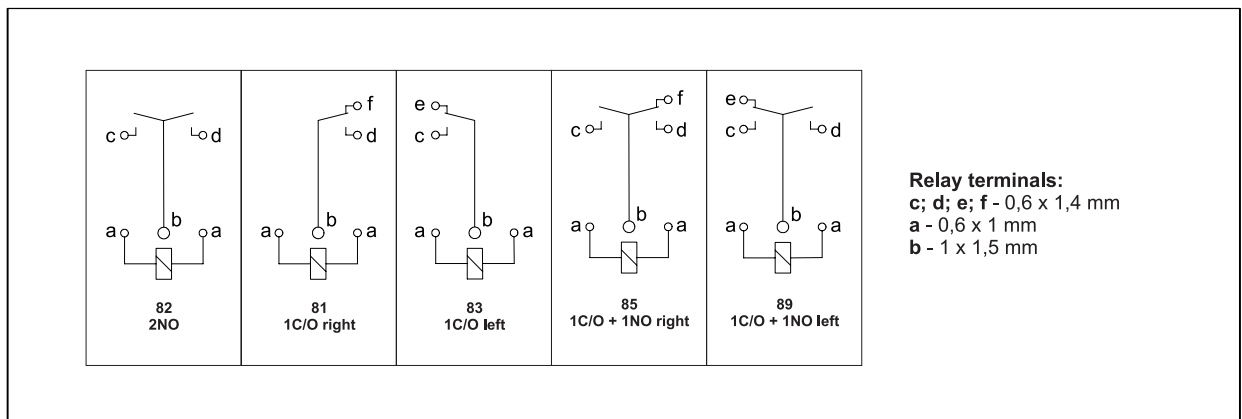
Coil data - DC voltage version

Table 1

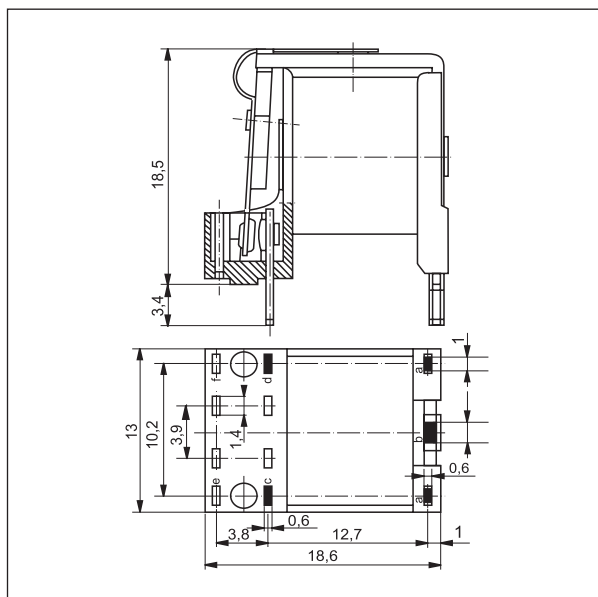
| Coil code   | Rated voltage<br>V DC | Coil resistance<br>$\pm 10\%$ at 20 °C<br>$\Omega$ | Coil operating range at 85 °C<br>V DC |             |
|-------------|-----------------------|----------------------------------------------------|---------------------------------------|-------------|
|             |                       |                                                    | min.                                  | max.        |
| 1005        | 5                     | 18                                                 | 4,0                                   | 6,6         |
| 1006        | 6                     | 24                                                 | 4,8                                   | 8,0         |
| 1009        | 9                     | 55                                                 | 7,2                                   | 12,0        |
| <b>1012</b> | <b>12</b>             | <b>100</b>                                         | <b>9,6</b>                            | <b>16,0</b> |
| 1015        | 15                    | 152                                                | 12,0                                  | 20,0        |
| 1018        | 18                    | 230                                                | 14,4                                  | 23,9        |
| 1024        | 24                    | 390                                                | 19,2                                  | 31,9        |
| 1048        | 48                    | 1 590                                              | 38,4                                  | 63,8        |

Standard coil rated voltages marked with bold type.

Connections diagram (pin side view)

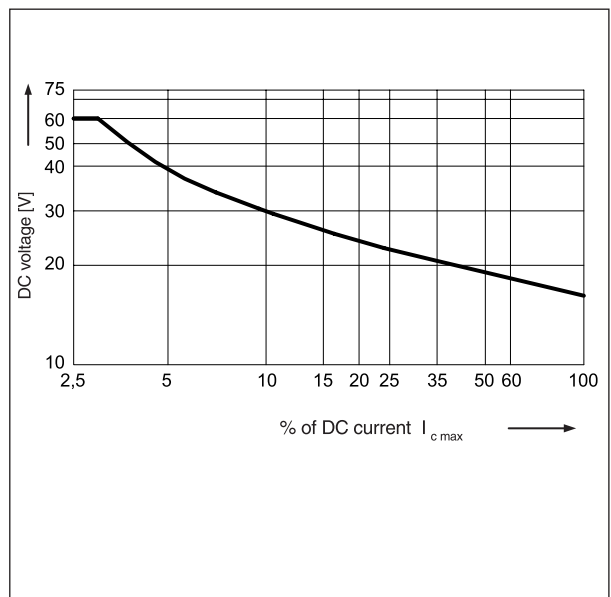


Dimensions



Max. DC resistive load breaking capacity

Fig. 1



## Mounting

Relays **RA2** are designed for direct PCB mounting.

## Ordering codes

