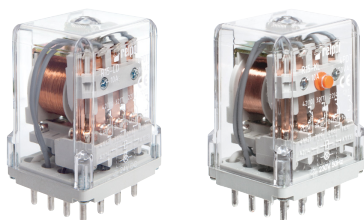


# R15 - 4 CO

## industrial relays of small dimensions



- Relays of general application
- For plug-in sockets: on 35 mm rail mount acc. to EN 60715; on panel mounting; with terminals for soldering
- Coils AC and DC, insulation class F: 155 °C
- Recognitions, certifications, directives: RoHS,     

### Contact data

|                                |                                                                                                                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number and type of contacts    | 4 CO                                                                                                                                                                                                              |
| Contact material               | <b>AgNi</b> , AgNi/Au flash gold plating, AgNi/Au hard gold plating                                                                                                                                               |
| Rated / max. switching voltage | AC 250 V / 440 V                                                                                                                                                                                                  |
| Min. switching voltage         | 10 V AgNi, 10 V AgNi/Au flash gold plating<br>5 V AgNi/Au hard gold plating                                                                                                                                       |
| Rated load (capacity)          | AC1 10 A / 250 V AC 10 A / 277 V AC UL 508<br>AC15 3 A / 120 V 1,5 A / 240 V (B300)<br>DC1 10 A / 24 V DC (see Fig. 3)<br>DC13 0,22 A / 120 V 0,1 A / 250 V (R300)                                                |
| Motor load                     | acc. to UL 508 1/2 HP 240 V AC, 4,9 FLA, single-phase motor <br>AC3 acc. to IEC 60947-4-1 0,37 kW 240 V AC, single-phase motor |
| Min. switching current         | 5 mA AgNi, 5 mA AgNi/Au flash gold plating<br>5 mA AgNi/Au hard gold plating                                                                                                                                      |
| Max. inrush current            | 20 A                                                                                                                                                                                                              |
| Rated current                  | 10 A                                                                                                                                                                                                              |
| Max. breaking capacity         | AC1 2 500 VA                                                                                                                                                                                                      |
| Min. breaking capacity         | 0,3 W AgNi, 0,3 W AgNi/Au flash gold plating<br>0,05 W AgNi/Au hard gold plating                                                                                                                                  |
| Contact resistance             | ≤ 100 mΩ                                                                                                                                                                                                          |
| Max. operating frequency       | • at rated load AC1 1 200 cycles/hour<br>• no load 12 000 cycles/hour                                                                                                                                             |

### Coil data

|                                   |                                                                                                                                                                                                                   |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated voltage                     | 50 Hz AC 6, 12, 24, 48, 60, 115, 120, 220, 230, 240, 400 V basic version<br>60 Hz AC 6, 12, 24, 48, 60, 110, 120, 220, 230, 240 V special version<br>DC 6, <b>12</b> , <b>24</b> , 48, 60, 110, 120, <b>220</b> V |
| Must release voltage              | AC: ≥ 0,15 U <sub>n</sub> DC: ≥ 0,1 U <sub>n</sub>                                                                                                                                                                |
| Operating range of supply voltage | see Tables 1, 2, 3                                                                                                                                                                                                |
| Rated power consumption           | AC 2,8 VA<br>DC 1,5 W                                                                                                                                                                                             |

### Insulation according to EN 60664-1

|                             |                                                                                                                                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Insulation rated voltage    | 250 V AC                                                                                                                                                                                        |
| Rated surge voltage         | 2 500 V 1,2 / 50 μs                                                                                                                                                                             |
| Overvoltage category        | III                                                                                                                                                                                             |
| Insulation pollution degree | 3                                                                                                                                                                                               |
| Dielectric strength         | • between coil and contacts 2 500 V AC type of insulation: basic<br>• contact clearance 1 500 V AC type of clearance: micro-disconnection<br>• pole - pole 2 000 V AC type of insulation: basic |
| Contact - coil distance     | • clearance ≥ 3 mm<br>• creepage ≥ 3,2 mm                                                                                                                                                       |

### General data

|                                           |                                                                                                         |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Operating / release time (typical values) | AC: 12 ms / 10 ms DC: 18 ms / 7 ms                                                                      |
| Electrical life                           | • resistive AC1 ≥ 10 <sup>5</sup> 10 A, 250 V AC<br>• cosφ see Fig. 2                                   |
| Mechanical life (cycles)                  | ≥ 2 x 10 <sup>7</sup>                                                                                   |
| Dimensions (L x W x H) / Weight           | 35 x 42,5 x 54,5 mm / 95 g                                                                              |
| Ambient temperature                       | • storage -40...+85 °C<br>• operating (non-condensation and/or icing) AC: -40...+55 °C DC: -40...+70 °C |
| Cover protection category                 | IP 20 (with socket GZ14U, GZ14) EN 60529                                                                |
| Environmental protection                  | RTI EN 61810-7                                                                                          |
| Shock resistance                          | 10 g                                                                                                    |
| Vibration resistance                      | 5 g 10...150 Hz                                                                                         |
| Solder bath temperature                   | max. 270 °C                                                                                             |
| Soldering time                            | max. 5 s                                                                                                |

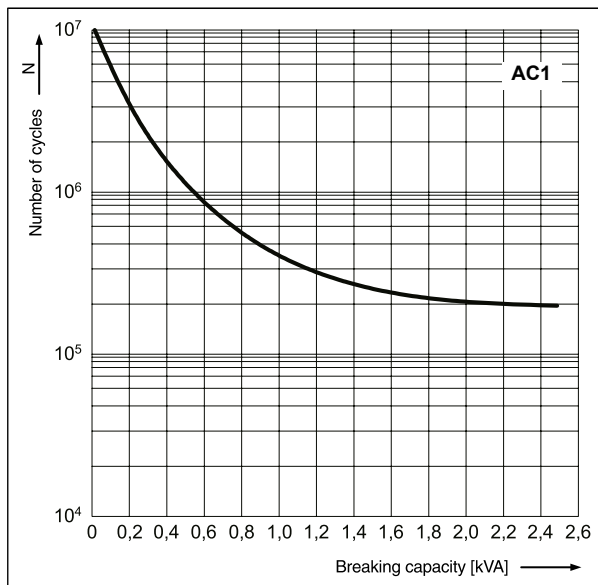
The data in bold type relate to the standard versions of the relays.  For single phase motors for 110-120 V AC do not use motors with higher FLA than given for 240 V AC.

# R15 - 4 CO

industrial relays of small dimensions

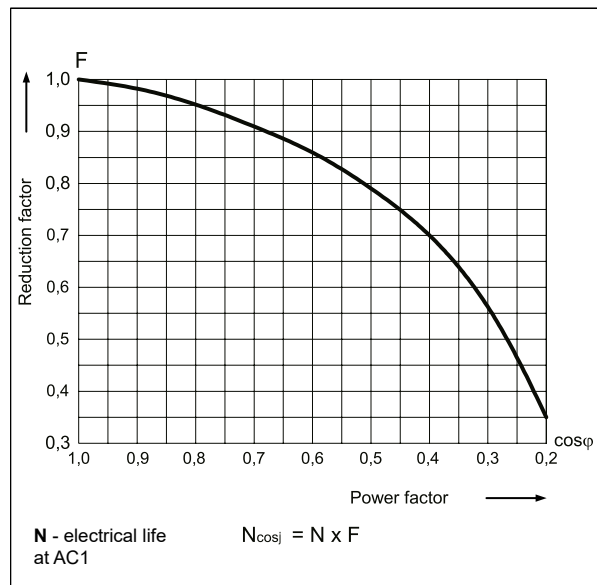
**Electrical life at AC resistive load.**  
Switching frequency: 1 200 cycles/hour

Fig. 1



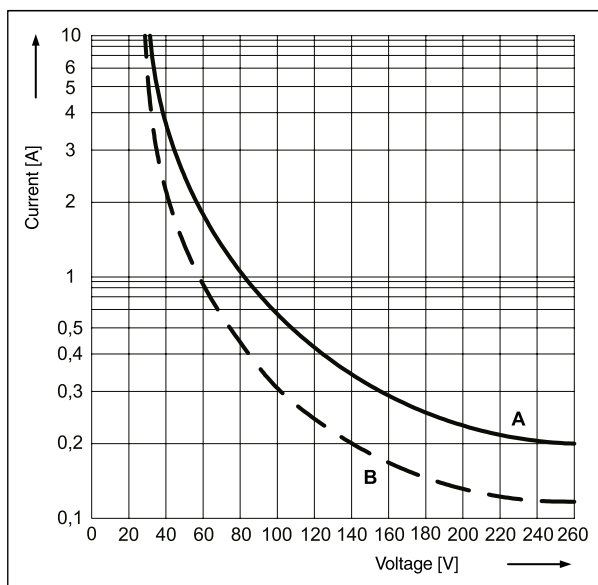
**Electrical life reduction factor**  
at AC inductive load

Fig. 2

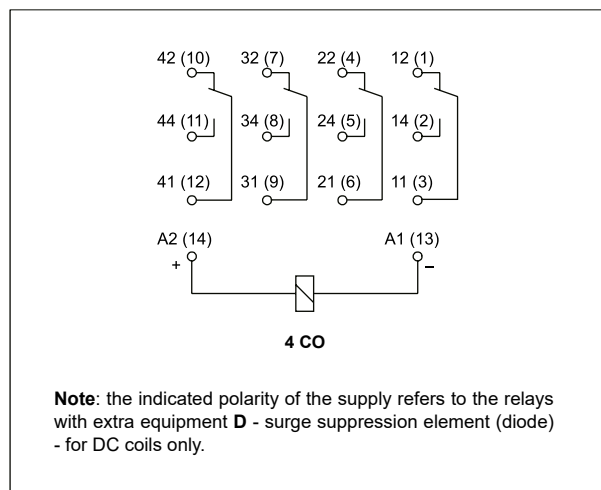


**Max. DC breaking capacity**  
**A - resistive load DC1**  
**B - inductive load  $L/R = 40$  ms**

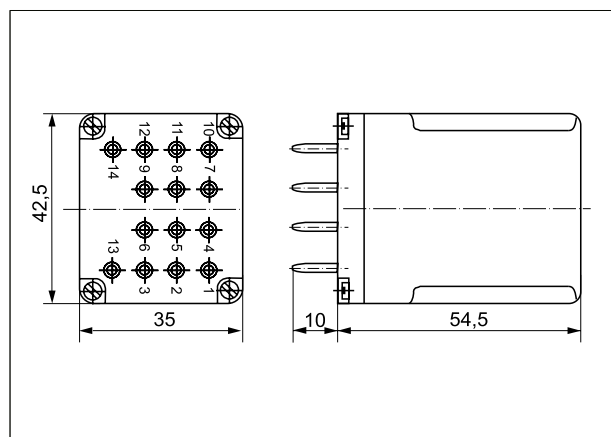
Fig. 3



**Connection diagram (pin side view)**



**Dimensions**



## GZ14Z

Screw terminals  
plug-in sockets  
for R15 - 4 CO  
to be mounted behind  
the assembly panel  
- see page 6



# R15 - 4 CO

## industrial relays of small dimensions

**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>V DC |                 |
|-------------|-----------------------|-----------------------------------------|------------------------------|------------------------------|-----------------|
|             |                       |                                         |                              | min. (at 20 °C)              | max. (at 70 °C) |
| 1006        | 6                     | 28                                      | $\pm 10\%$                   | 5,1                          | 6,6             |
| <b>1012</b> | <b>12</b>             | <b>110</b>                              | <b><math>\pm 10\%</math></b> | <b>10,2</b>                  | <b>13,2</b>     |
| <b>1024</b> | <b>24</b>             | <b>430</b>                              | <b><math>\pm 10\%</math></b> | <b>20,4</b>                  | <b>26,4</b>     |
| 1048        | 48                    | 1 750                                   | $\pm 10\%$                   | 40,8                         | 52,8            |
| 1060        | 60                    | 2 700                                   | $\pm 10\%$                   | 51,0                         | 66,0            |
| 1110        | 110                   | 9 200                                   | $\pm 10\%$                   | 93,5                         | 121,0           |
| 1120        | 120                   | 11 000                                  | $\pm 10\%$                   | 102,0                        | 132,0           |
| <b>1220</b> | <b>220</b>            | <b>37 000</b>                           | <b><math>\pm 10\%</math></b> | <b>187,0</b>                 | <b>242,0</b>    |

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

**Coil data - AC 50 Hz voltage version, basic**

**Table 2**

| Coil code | Rated voltage<br>V AC | Coil resistance<br>at 20 °C<br>$\Omega$ | Acceptable<br>resistance | Coil operating range<br>V AC |                 |
|-----------|-----------------------|-----------------------------------------|--------------------------|------------------------------|-----------------|
|           |                       |                                         |                          | min. (at 20 °C)              | max. (at 55 °C) |
| 3006      | 6                     | 4,8                                     | $\pm 15\%$               | 5,1                          | 6,6             |
| 3012      | 12                    | 20                                      | $\pm 15\%$               | 10,2                         | 13,2            |
| 3024      | 24                    | 72                                      | $\pm 15\%$               | 20,4                         | 26,4            |
| 3048      | 48                    | 360                                     | $\pm 15\%$               | 40,8                         | 52,8            |
| 3060      | 60                    | 520                                     | $\pm 15\%$               | 51,0                         | 66,0            |
| 3115      | 115                   | 2 100                                   | $\pm 15\%$               | 97,7                         | 126,5           |
| 3120      | 120                   | 2 300                                   | $\pm 15\%$               | 102,0                        | 132,0           |
| 3220      | 220                   | 7 000                                   | $\pm 15\%$               | 187,0                        | 242,0           |
| 3230      | 230                   | 7 900                                   | $\pm 15\%$               | 195,5                        | 253,0           |
| 3240      | 240                   | 8 300                                   | $\pm 15\%$               | 204,0                        | 264,0           |
| 3400      | 400                   | 21 500                                  | $\pm 15\%$               | 340,0                        | 440,0           |

**Coil data - AC 60 Hz voltage version, special**

**Table 3**

| Coil code | Rated voltage<br>V AC | Coil resistance<br>at 20 °C<br>$\Omega$ | Acceptable<br>resistance | Coil operating range<br>V AC |                 |
|-----------|-----------------------|-----------------------------------------|--------------------------|------------------------------|-----------------|
|           |                       |                                         |                          | min. (at 20 °C)              | max. (at 55 °C) |
| 6006      | 6                     | 4,8                                     | $\pm 15\%$               | 5,1                          | 6,6             |
| 6012      | 12                    | 17                                      | $\pm 15\%$               | 10,2                         | 13,2            |
| 6024      | 24                    | 65                                      | $\pm 15\%$               | 20,4                         | 26,4            |
| 6048      | 48                    | 310                                     | $\pm 15\%$               | 40,8                         | 52,8            |
| 6060      | 60                    | 490                                     | $\pm 15\%$               | 51,0                         | 66,0            |
| 6110      | 110                   | 1 760                                   | $\pm 15\%$               | 93,5                         | 121,0           |
| 6120      | 120                   | 2 000                                   | $\pm 15\%$               | 102,0                        | 132,0           |
| 6220      | 220                   | 6 900                                   | $\pm 15\%$               | 187,0                        | 242,0           |
| 6230      | 230                   | 7 000                                   | $\pm 15\%$               | 195,5                        | 253,0           |
| 6240      | 240                   | 7 100                                   | $\pm 15\%$               | 204,0                        | 264,0           |

# R15 - 4 CO

## industrial relays of small dimensions

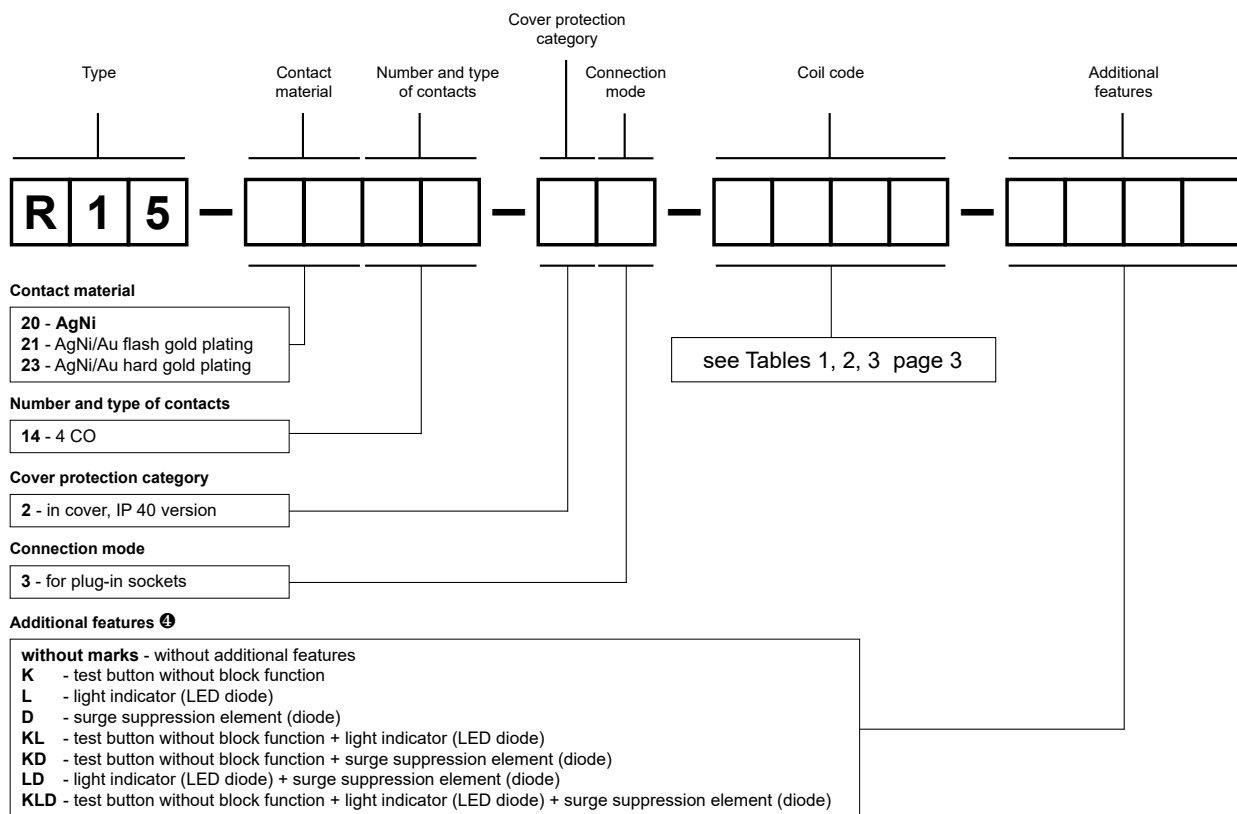
### Mounting, sockets and accessories for relays

Relays **R15 4 - CO** are designed for mounting in plug-in sockets.

| Sockets<br>for R15 - 4 CO                                  | Accessories       | Additional<br>features |
|------------------------------------------------------------|-------------------|------------------------|
|                                                            | Spring wire clips |                        |
| Screw terminals sockets, 35 mm rail mount (EN 60715)       |                   |                        |
| GZ14U                                                      | GZ14 0737         | –                      |
| Screw terminals sockets, on panel mounting (two M3 screws) |                   |                        |
| GZ14                                                       | GZ14 0737         | –                      |
| GZ14Z ②                                                    | GZ14 0737         | –                      |
| Solder terminals sockets                                   |                   |                        |
| GOP14                                                      | R15 0736          | spring clamps ③        |

② Sockets GZ14Z: to be mounted behind the assembly panel - see page 6. ③ Spring clamps R15 5922 for spring wire clips.

### Ordering codes



④ **D, KD, LD, KLD** - only for DC coils

#### Note:

For relays with additional features **D** - surge suppression element (diode) (versions **D, KD, LD, KLD**) - fixed supply polarity compulsory for the DC load of coils: -A1(13) / +A2(14). The polarity is indicated on the relay cover. For other versions of the relays with DC coils any polarity is possible.

Examples of ordering codes:

**R15-2014-23-1024-KD**

relay **R15**, for plug-in sockets, four changeover contacts, contact material AgNi, coil voltage 24 V DC, with test button without block function and surge suppression element (diode), in cover IP 40

**R15-2114-23-3230-KL**

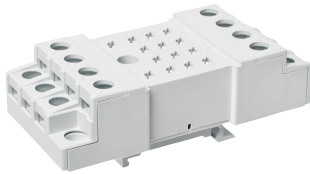
relay **R15**, for plug-in sockets, four changeover contacts, contact material AgNi/Au flash gold plating, coil voltage 230 V AC 50 Hz, with test button without block function and light indicator (LED diode), in cover IP 40

## Plug-in sockets and accessories

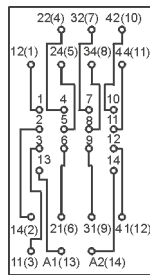
### GZ14U

For R15 - 4 CO

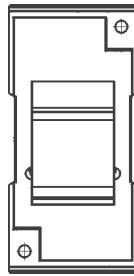
Screw terminals  
Max. tightening moment  
for the terminal: 0,7 Nm  
35 mm rail mount  
acc. to EN 60715  
96,8 x 46,4 x 33,3 mm  
Four poles  
10 A, 250 V AC



#### Connection diagram



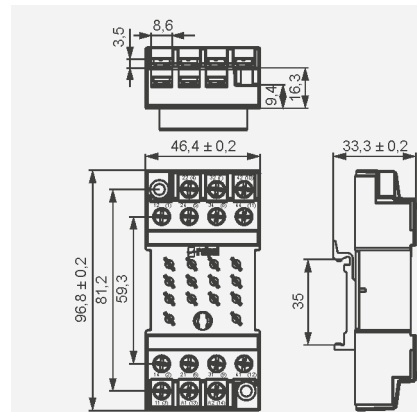
#### Adaptor



GZ14 0737

#### Accessories

#### Dimensions



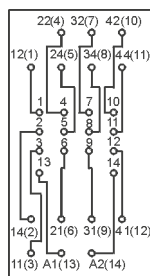
### GZ14

For R15 - 4 CO

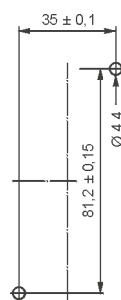
Screw terminals  
Max. tightening moment  
for the terminal: 0,7 Nm  
On panel mounting  
96,8 x 46,4 x 24,5 mm  
Four poles  
10 A, 250 V AC



#### Connection diagram



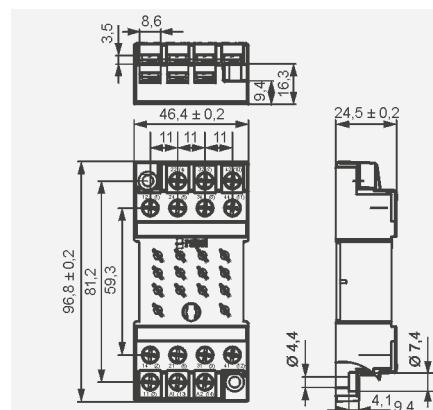
#### Mounting dimensions



GZ14 0737

#### Accessories

#### Dimensions



### GZ14U

Screw terminals  
plug-in sockets  
for R15 - 4 CO



## Plug-in sockets and accessories

### GZ14Z

For R15 - 4 CO

Screw terminals

Max. tightening moment  
for the terminal: 0,7 Nm

**On panel mounting, behind**

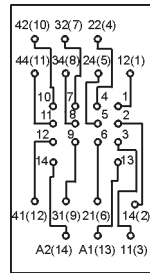
92,2 x 46 x 23 mm

Four poles

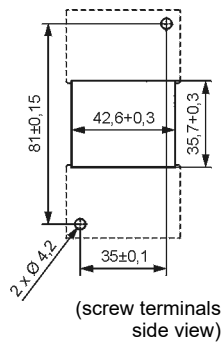
10 A, 250 V AC



#### Connection diagram



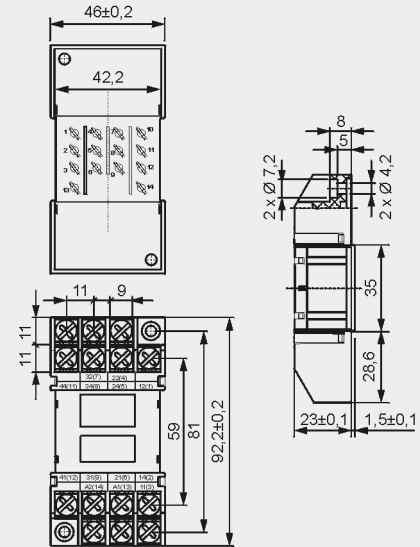
#### Mounting dimensions



GZ14 0737

#### Accessories

#### Dimensions



### GOP14

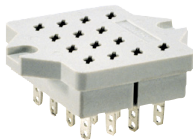
For R15 - 4 CO

Solder terminals

50 x 42 x 23 mm

Four poles

10 A, 250 V AC



#### Accessories

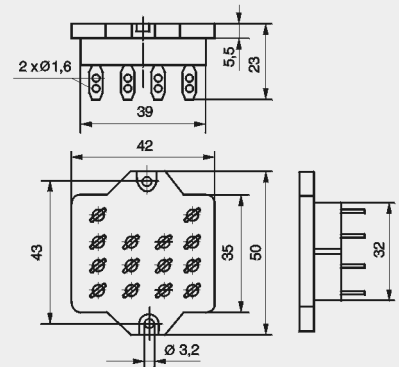


R15 0736



R15 5922

#### Dimensions



#### PRECAUTIONS:

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product. 2. Never touch any live parts of the device. 3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire. 4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.