### Contact data

<table>
<thead>
<tr>
<th>Number and type of contacts</th>
<th>2 CO, 3 CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material</td>
<td>AgNi, AgNi/Au flash gold plating, AgNi/Au hard gold plating</td>
</tr>
<tr>
<td>Rated / max. switching voltage</td>
<td>AC 250 V / 440 V</td>
</tr>
<tr>
<td>Min. switching voltage</td>
<td>10 V AgNi, 10 V AgNi/Au flash gold plating</td>
</tr>
<tr>
<td>Rated load (capacity)</td>
<td>AC1 10 A / 250 V AC, 10 A / 277 V AC, UL 508</td>
</tr>
<tr>
<td></td>
<td>AC15 3 A / 120 V, 1.5 A / 240 V (B300)</td>
</tr>
<tr>
<td></td>
<td>AC3 370 W (single-phase motor, 0.5 HP / 240 V AC, UL 508)</td>
</tr>
<tr>
<td></td>
<td>DC1 10 A / 24 V DC (see Fig. 3)</td>
</tr>
<tr>
<td></td>
<td>DC13 0.22 A / 120 V, 0.1 A / 250 V (R300)</td>
</tr>
<tr>
<td>Min. switching current</td>
<td>5 mA</td>
</tr>
<tr>
<td>Max. inrush current</td>
<td>20 A</td>
</tr>
<tr>
<td>Rated current</td>
<td>10 A</td>
</tr>
<tr>
<td>Max. breaking capacity</td>
<td>AC1 2 500 VA</td>
</tr>
<tr>
<td>Min. breaking capacity</td>
<td>0.3 W AgNi, 0.3 W AgNi/Au flash gold plating</td>
</tr>
<tr>
<td></td>
<td>0.05 W AgNi/Au hard gold plating</td>
</tr>
<tr>
<td>Contact resistance</td>
<td>≤ 100 mΩ</td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>AC1 1 200 cycles/hour</td>
</tr>
<tr>
<td></td>
<td>no load 12 000 cycles/hour</td>
</tr>
</tbody>
</table>

### Coil data

| Rated voltage               | 50/60 Hz AC |
|                            | DC |
|                            | 6 ... 240 V |
|                            | 6 ... 220 V |
| Must release voltage       | AC: ≥ 0.15 Uₙ |
|                           | DC: ≥ 0.1 Uₙ |
| Operating range of supply voltage | see Tables 1, 2 |
| Rated power consumption    | AC 2.8 VA 50 Hz |
|                           | DC 2.5 VA 60 Hz |
|                           | 1.5 W |

### Insulation

According to PN-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
  - contact clearance: 1 500 V AC, type of clearance: micro-disconnection
  - pole - pole: 2 000 V AC, type of insulation: basic

### Contact - coil distance

- clearance: ≥ 3 mm
- creepage: ≥ 4.2 mm

### General data

- Operating / release time (typical values):
  - AC: 12 ms / 10 ms
  - DC: 18 ms / 7 ms
- Electrical life:
  - resistive AC1: > 2 x 10⁵ hours
  - cosφ: 10 A, 250 V AC
- Mechanical life (cycles):
  - > 2 x 10⁷ cycles
- Dimensions (L x W x H): 35 x 35 x 54.4 mm
- Weight: 83 g
- Ambient temperature:
  - storage: -40...+85 °C
  - operating: AC: -40...+55 °C, DC: -40...+70 °C
- Cover protection category: IP 40, PN-EN 60529
- Environmental protection:
  - RT1, PN-EN 116000-3
- 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.
R15 - 2 CO, 3 CO
industrial relays of small dimensions

Dimensions - plug-in version (WT), with lockable front test button type T

<table>
<thead>
<tr>
<th>2 CO</th>
<th>3 CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>![2 CO Diagram]</td>
<td>![3 CO Diagram]</td>
</tr>
</tbody>
</table>

Dimensions - plug-in version, with test button (no latching) or with plug (no manual operation)

<table>
<thead>
<tr>
<th>2 CO</th>
<th>3 CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>![2 CO Diagram]</td>
<td>![3 CO Diagram]</td>
</tr>
</tbody>
</table>

Test buttons R15-M404 and plugs R15-M203 need to ordered separately. They substitute buttons type T. To exchange by Customer themselves. Information on test buttons (no latching) and plugs - page 7.

Mounting

Relays R15 - 2 CO, 3 CO are offered in versions: • for plug-in sockets. With WT features as standard (W - mechanical indicator + T - lockable front test button). In these relays is possibility self-exchange of button type T for test button R15-M404 (no latching) or on plug R15-M203 (no manual operation). The buttons R15-M404 and the plugs R15-M203 need to ordered separately.

Relays R15 - 2 CO are designed for: • screw terminals plug-in sockets PZ8 with clip PZ11 0031, 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws • screw terminals plug-in sockets GZU8 with clip GZU 1052, 35 mm rail mount acc. to PN-EN 60715 • screw terminals plug-in sockets GZ8 with clip GZ 1050, on panel mounting with two M3 screws • screw terminals plug-in sockets GZP8 with clip GZP-0054, 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws • solder terminals sockets GOP8 with clip R159 1051 and spring clamp R15 5922.

Relays R15 - 3 CO are designed for: • screw terminals plug-in sockets PS11 and PZ11 with clip PZ11 0031, 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws • screw terminals plug-in sockets GZU11 with clip GZU 1052, 35 mm rail mount acc. to PN-EN 60715 • screw terminals plug-in sockets GZ11 with clip GZ 1050, on panel mounting with two M3 screws • screw terminals plug-in sockets GZP11 with clip GZP-0054, 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws • solder terminals sockets GOP11 with clip R159 1051 and spring clamp R15 5922.
R15 - 2 CO, 3 CO
industrial relays of small dimensions

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

<table>
<thead>
<tr>
<th>AC1</th>
</tr>
</thead>
<tbody>
<tr>
<td>10^4</td>
</tr>
<tr>
<td>10^5</td>
</tr>
<tr>
<td>10^6</td>
</tr>
<tr>
<td>10^7</td>
</tr>
</tbody>
</table>

Breaking capacity [kVA]

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

Electrical life reduction factor at AC inductive load

\[ N_{\text{comp}} = N \times F \]

Note: the indicated polarity of the supply refers to the relays with extra equipment D - surge suppression element (diode)
- for DC coils only.

Connection diagrams (pin side view)
### Coil data - DC voltage version

<table>
<thead>
<tr>
<th>Coil code</th>
<th>Rated voltage V DC</th>
<th>Coil resistance at 20 °C Ω</th>
<th>Acceptable resistance</th>
<th>Coil operating range V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1006</td>
<td>6</td>
<td>28</td>
<td>± 10%</td>
<td>4.8</td>
</tr>
<tr>
<td>1012</td>
<td>12</td>
<td>110</td>
<td>± 10%</td>
<td>9.6, 13.2</td>
</tr>
<tr>
<td>1024</td>
<td>24</td>
<td>430</td>
<td>± 10%</td>
<td>19.2, 26.4</td>
</tr>
<tr>
<td>1048</td>
<td>48</td>
<td>1750</td>
<td>± 10%</td>
<td>38.4, 52.8</td>
</tr>
<tr>
<td>1060</td>
<td>60</td>
<td>2700</td>
<td>± 10%</td>
<td>48.0, 66.0</td>
</tr>
<tr>
<td>1110</td>
<td>110</td>
<td>9200</td>
<td>± 10%</td>
<td>88.0, 121.0</td>
</tr>
<tr>
<td>1120</td>
<td>120</td>
<td>11000</td>
<td>± 10%</td>
<td>96.0, 132.0</td>
</tr>
<tr>
<td>1220</td>
<td>220</td>
<td>37000</td>
<td>± 10%</td>
<td>176.0, 242.0</td>
</tr>
</tbody>
</table>

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

### Coil data - AC 50/60 Hz voltage version

<table>
<thead>
<tr>
<th>Coil code</th>
<th>Rated voltage V AC</th>
<th>Coil resistance at 20 °C Ω</th>
<th>Acceptable resistance</th>
<th>Coil operating range V AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>5006</td>
<td>6</td>
<td>4.3</td>
<td>± 15%</td>
<td>4.8, 6.6</td>
</tr>
<tr>
<td>5012</td>
<td>12</td>
<td>18.5</td>
<td>± 15%</td>
<td>9.6, 13.2</td>
</tr>
<tr>
<td>5024</td>
<td>24</td>
<td>75</td>
<td>± 15%</td>
<td>19.2, 26.4</td>
</tr>
<tr>
<td>5048</td>
<td>48</td>
<td>305</td>
<td>± 15%</td>
<td>38.4, 52.8</td>
</tr>
<tr>
<td>5060</td>
<td>60</td>
<td>475</td>
<td>± 15%</td>
<td>48.0, 66.0</td>
</tr>
<tr>
<td>5115</td>
<td>115</td>
<td>1840</td>
<td>± 15%</td>
<td>92.0, 126.5</td>
</tr>
<tr>
<td>5120</td>
<td>120</td>
<td>1910</td>
<td>± 15%</td>
<td>96.0, 132.0</td>
</tr>
<tr>
<td>5220</td>
<td>220</td>
<td>6980</td>
<td>± 15%</td>
<td>176.0, 242.0</td>
</tr>
<tr>
<td>5230</td>
<td>230</td>
<td>7080</td>
<td>± 15%</td>
<td>184.0, 253.0</td>
</tr>
<tr>
<td>5240</td>
<td>240</td>
<td>7760</td>
<td>± 15%</td>
<td>192.0, 264.0</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Contact material</th>
<th>Number and type of contacts</th>
<th>Connection mode</th>
<th>Coil code</th>
<th>Additional features</th>
</tr>
</thead>
<tbody>
<tr>
<td>R15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Contact material**
- 20 - AgNi
- 21 - AgNi/Au flash gold plating
- 23 - AgNi/Au hard gold plating

**Number and type of contacts**
- 12 - 2 CO
- 13 - 3 CO

**Connection mode**
- see Tables 1, 2 page 4

**Additional features**
- WT - mechanical indicator + lockable front test button
- WTL - mechanical indicator + lockable front test button + light indicator (LED diode)
- WTD - mechanical indicator + lockable front test button + surge suppression element (diode)
- WTD - mechanical indicator + lockable front test button + light indicator (LED diode) + surge suppression element (diode)
- WTV - mechanical indicator + lockable front test button + surge suppression element (varistor)
- WTLD - mechanical indicator + lockable front test button + light indicator (LED diode) + surge suppression element (varistor)

**Test buttons (no latching) and plugs** need to ordered separately. They substitute buttons type T. To exchange by Customer themselves.

- Button R15-M404-A - orange colour (AC coils)
- Button R15-M404-D - green colour (DC coils)
- Plug R15-M203-A - orange colour (AC coils)
- Plug R15-M203-D - green colour (DC coils)

**Note:**
While the relay operates, the test button of the T type becomes heated. In order to push the test button manually, you should first turn the supply voltage off, and wait some time until the button becomes colder (or push the button immediately using a protective glove or an insulated tool). The button shall be pushed smoothly and quickly. The normally open contacts are closed with the button for the time during which the button is pushed. Releasing the button opens the normally open contacts. Normally open contacts may be closed with the blocking function of the button (it shall be turned by 90°). When the button is turned back, the normally open contacts are opened.

For relays with additional features D - surge suppression element (diode) (versions WTD and WTLD) - fixed supply polarity compulsory for the DC load of coils: +A1(2) / -A2(7) for R15 - 2 CO and +A1(2) / -A2(10) for R15 - 3 CO. 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:**
- R15-2012-23-1024-WT: relay R15, for plug-in sockets, two changeover contacts, contact material AgNi, coil voltage 24 V DC, with mechanical indicator and lockable front test button, in cover IP 40
- R15-2013-23-5230-WTL: relay R15, for plug-in sockets, three changeover contacts, contact material AgNi, coil voltage 230 V AC 50/60 Hz, with mechanical indicator and lockable front test button and light indicator (LED diode), in cover IP 40
Additional features for industrial relays

Industrial relays for plug-in sockets: R2N, R3N, R4N, R15 - 2 CO, R15 - 3 CO with WT features as standard (W - mechanical indicator + T - lockable front test button). Detailed information on additional features of individual relays can be found in the data sheets on the side of “Ordering codes”.

Note:
While the relay operates, the test button of the T type becomes heated. In order to push the test button manually, you should first turn the supply voltage off, and wait some time until the button becomes colder (or push the button immediately using a protective glove or an insulated tool). The button shall be pushed smoothly and quickly. The normally open contacts are closed with the button for the time during which the button is pushed. Releasing the button opens the normally open contacts. Normally open contacts may be closed with the blocking function of the button (it shall be turned by 90°). When the button is turned back, the normally open contacts are opened.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>For industrial relays</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>mechanical indicator</td>
<td>R2N, R3N, R4N, (R15 - 2 CO, 3 CO)</td>
</tr>
<tr>
<td>T</td>
<td>lockable front test button, orange colour - AC coils, green colour - DC coils</td>
<td>R2N, R3N, R4N, (R15 - 2 CO, 3 CO)</td>
</tr>
<tr>
<td>L</td>
<td>light indicator (LED diode), located inside the relay</td>
<td>R2N, R3N, R4N, NY2, (R15 - 2 CO, 3 CO, 4 CO), RUC, RUC-M</td>
</tr>
<tr>
<td>D</td>
<td>surge suppression element (diode) - only for DC coils</td>
<td>R2N, R3N, R4N, NY2, (R15 - 2 CO, 3 CO, 4 CO)</td>
</tr>
<tr>
<td>V</td>
<td>surge suppression element (varistor) - only for AC coils</td>
<td>(R15 - 2 CO, 3 CO)</td>
</tr>
<tr>
<td>K</td>
<td>test button without block function</td>
<td>(R15 - 4 CO), RUC</td>
</tr>
</tbody>
</table>

Available combinations:
WT, WTL, WTD, WTLD - in relays R2N, R3N, R4N for plug-in sockets
L, D, LD - in relays RY2 for plug-in sockets
K, L, KL, KD, LD, KLD - in relays R15 - 2 CO, 3 CO for plug-in sockets
K, L, KL - in relays RUC
L - in relays RUC-M

Voltage versions, in covers:
R15 - 2 CO, 3 CO
Test buttons (no latching) and plugs

Test buttons (no latching) are recommended for R2N...WT, R3N...WT, R4N...WT, R15...WT 2 CO, R15...WT 3 CO relays - for applications that do not allow permanent contact latching. By manual operation (pressing the button) relay contacts can get switched for as long time as long the button is pressed. Contacts return to initial position as soon as pressure is released from the button. Those operations can be done while the coil is deenergized.

Button R4P-0001 or R15-M404 can be easily inserted by the Customer after removal of button type T (see Fig. 2). Button type T can be removed with screwdriver as shown on Fig. 1.

While the relay operates, the test button becomes heated. In order to push the test button manually, you should first turn the supply voltage off, and wait some time until the button becomes colder (or push the button immediately using a protective glove or an insulated tool). The button shall be pushed smoothly and quickly.

Plugs R4W-0003 or R15-M203 can substitute button type T if manual operation (latching and testing) is not allowed. Changing button type T for plug can be done by Customer themselves in the same way as changing button type T for button (no latching).

Dimensions - test button R4P-0001
for R2N...WT, R3N...WT, R4N...WT

Dimensions - test button R15-M404
for R15...WT 2 CO, R15...WT 3 CO

Dimensions - plug R4W-0003
for R2N...WT, R3N...WT, R4N...WT

Dimensions - plug R15-M203
for R15...WT 2 CO, R15...WT 3 CO
Plug-in sockets and accessories

PZ8
For R15 - 2 CO
Screw terminals
Max. tightening moment for the terminal: 0,7 Nm
35 mm rail mount
acc. to PN-EN 60715
or on panel mounting
68,2 x 38 x 24,2 mm
Two poles
10 A, 250 V AC

GZU8
For R15 - 2 CO
Screw terminals
Max. tightening moment for the terminal: 0,7 Nm
35 mm rail mount
acc. to PN-EN 60715
or on panel mounting
73 x 38,2 x 27,2 mm
Two poles
10 A, 300 V AC

GZ8
For R15 - 2 CO
Screw terminals
Max. tightening moment for the terminal: 0,7 Nm
On panel mounting
82,8 x 35,5 x 22,5 mm
Two poles
10 A, 300 V AC

GZP8
For R15 - 2 CO
Screw terminals
Max. tightening moment for the terminal: 0,5 Nm
35 mm rail mount
acc. to PN-EN 60715
or on panel mounting
73 x 38,2 x 27,2 mm
Two poles
12 A, 300 V AC

Have obtained LR Type Approval Certificate (Lloyd’s Register).

www.relpol.com.pl

Export Sales Department  phone +48 68 47 90 832, 951  e-mail: export@relpol.com.pl
GZU11
For R15 - 3 CO
Screw terminals
Max. tightening moment for the terminal: 0.7 Nm
35 mm rail mount
or on panel mounting
82 x 35.5 x 25.7 mm
Three poles
10 A, 250 V AC

PS11
For R15 - 3 CO
Screw terminals
Max. tightening moment for the terminal: 0.7 Nm
35 mm rail mount
or on panel mounting
68.2 x 38 x 24.2 mm
Three poles
10 A, 250 V AC

PZ11
For R15 - 3 CO
Solder terminals
47.2 x 32 x 22 mm
Two poles
10 A, 250 V AC

Have obtained LR Type Approval Certificate (Lloyd’s Register).
Plug-in sockets and accessories

GZ11
For R15 - 3 CO
Screw terminals
Max. tightening moment for the terminal: 0.7 Nm
On panel mounting
82.8 x 35.5 x 22.5 mm
Three poles
10 A, 250 V AC

GZP11
For R15 - 3 CO
Screw terminals
Max. tightening moment for the terminal: 0.5 Nm
35 mm rail mount acc. to PN-EN 60715
or on panel mounting
73 x 38.2 x 27.2 mm
Three poles
12 A, 300 V AC

GOP11
For R15 - 3 CO
Solder terminals
47.2 x 32 x 22 mm
Three poles
10 A, 250 V AC

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.