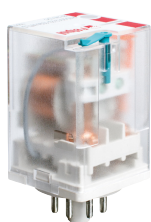
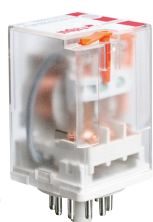


# R15 - 2 CO, 3 CO








## industrial relays of small dimensions



R15 - 2 CO



R15 - 3 CO

• Relays of general application • For plug-in sockets: 35 mm rail mount acc. to PN-EN 60715; on panel mounting: solder terminals • Contacts AgNi • Coils AC and DC • WT (mechanical indicator + lockable front test button) - standard features of relays in cover, for plug-in sockets. Relays may be provided with the test buttons (no latching) and plugs - page 7 • **Have obtained LR Type Approval Certificate (Lloyd's Register)** • Recognitions, certifications, directives: RoHS, AUCOTEAM GmbH Berlin - railroad standard,       

### Contact data

Number and type of contacts		2 CO, 3 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 5 V AgNi/Au hard gold plating
Rated load (capacity)	AC1 AC15 AC3 DC1 DC13	10 A / 250 V AC    10 A / 277 V AC UL 508 3 A / 120 V        1,5 A / 240 V (B300) 370 W (single-phase motor; 0,5 HP / 240 V AC UL 508) 10 A / 24 V DC (see Fig. 3) 0,22 A / 120 V    0,1 A / 250 V (R300)
Min. switching current		5 mA
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 0,05 W AgNi/Au hard gold plating
Contact resistance		≤ 100 mΩ
Max. operating frequency		
• at rated load	AC1	1 200 cycles/hour
• no load		12 000 cycles/hour

### Coil data

Rated voltage	50/60 Hz AC DC	6 ... 240 V 6 ... 220 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
Rated power consumption	AC DC	2,8 VA 50 Hz        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 • creepage	≥ 3 mm ≥ 4,2 mm

### General data

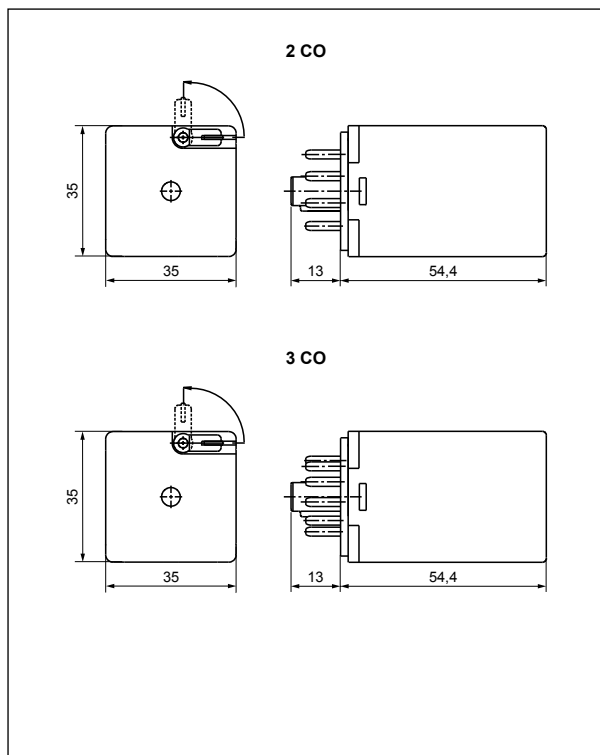
Operating / release time (typical values)		AC: 12 ms / 10 ms        DC: 18 ms / 7 ms
Electrical life		
• resistive AC1		> 2 x 10 <sup>5</sup> 10 A, 250 V AC
• cosφ		see Fig. 2
Mechanical life (cycles)		> 2 x 10 <sup>7</sup>
Dimensions (L x W x H)		35 x 35 x 54,4 mm
Weight		83 g
Ambient temperature	• storage • operating	-40...+85 °C AC: -40...+55 °C        DC: -40...+70 °C
Cover protection category		IP 40    PN-EN 60529
Environmental protection		RTI    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.

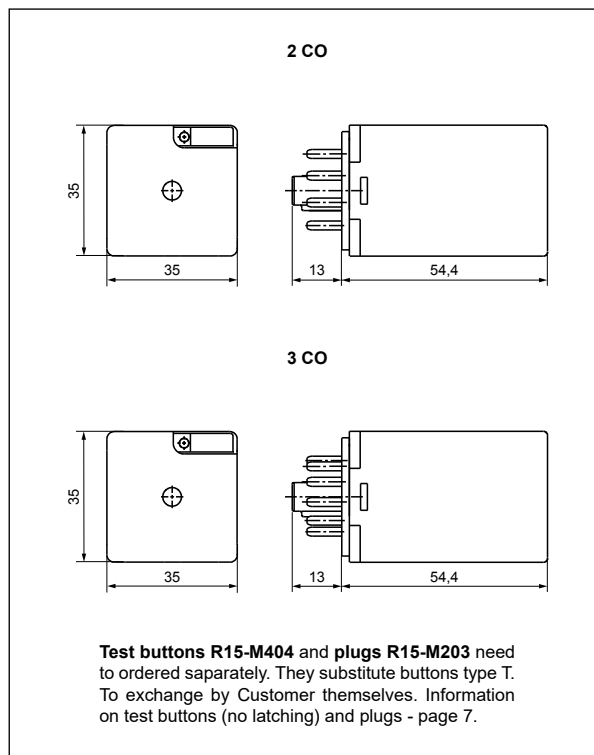
# R15 - 2 CO, 3 CO

industrial relays of small dimensions

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



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



## 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 be 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.

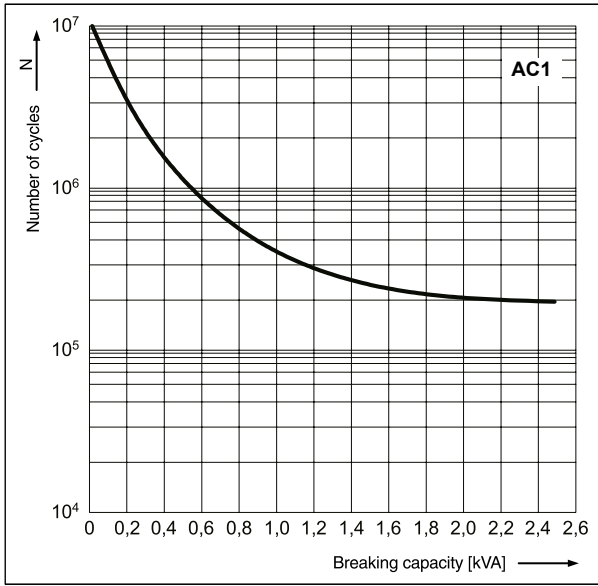
Relays R15 - 3 CO are designed for: • screw terminals plug-in sockets PS11 and PZ11 with clip PZ11 0031, 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws • screw terminals plug-in sockets GZU11 with clip GZU 1052, 35 mm rail mount acc. to PN-EN 60715 • screw terminals plug-in 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

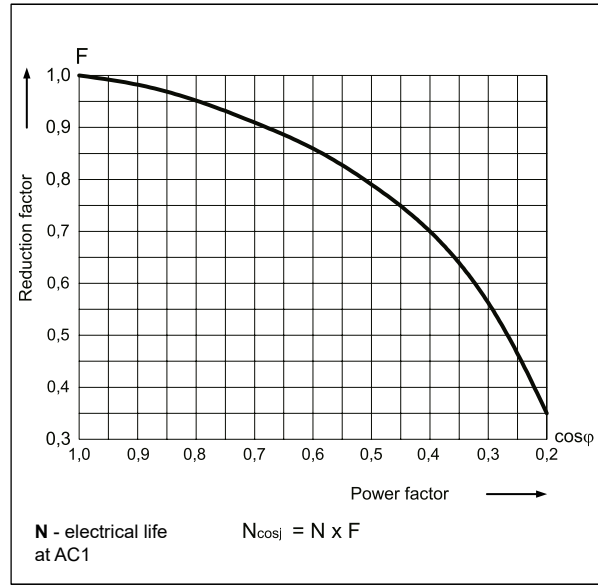
**Electrical life at AC resistive load.**  
Switching frequency: 1 200 cycles/hour

Fig. 1



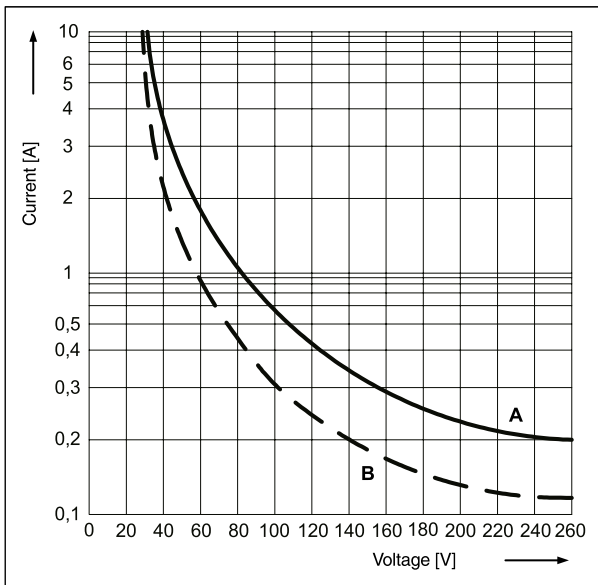
**Electrical life reduction factor at AC inductive load**

Fig. 2

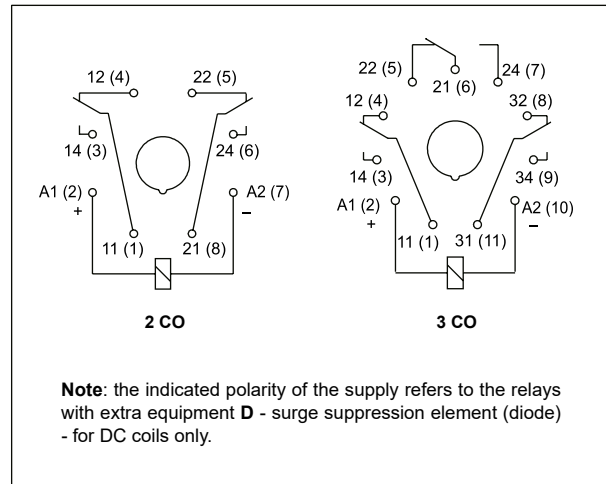


**Max. DC breaking capacity**  
A - resistive load DC1  
B - inductive load L/R = 40 ms

Fig. 3



**Connection diagrams (pin side view)**



# R15 - 2 CO, 3 CO

## industrial relays of small dimensions

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance at 20 °C $\Omega$	Acceptable resistance	Coil operating range V DC	
				min. (at 20 °C)	max. (at 70 °C)
1006	6	28	$\pm 10\%$	4,8	6,6
<b>1012</b>	<b>12</b>	<b>110</b>	<b><math>\pm 10\%</math></b>	<b>9,6</b>	<b>13,2</b>
<b>1024</b>	<b>24</b>	<b>430</b>	<b><math>\pm 10\%</math></b>	<b>19,2</b>	<b>26,4</b>
1048	48	1 750	$\pm 10\%$	38,4	52,8
1060	60	2 700	$\pm 10\%$	48,0	66,0
1110	110	9 200	$\pm 10\%$	88,0	121,0
1120	120	11 000	$\pm 10\%$	96,0	132,0
<b>1220</b>	<b>220</b>	<b>37 000</b>	<b><math>\pm 10\%</math></b>	<b>176,0</b>	<b>242,0</b>

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

Coil data - AC 50/60 Hz voltage version

Table 2

Coil code	Rated voltage V AC	Coil resistance at 20 °C $\Omega$	Acceptable resistance	Coil operating range V AC	
				min. (at 20 °C)	max. (at 55 °C)
5006	6	4,3	$\pm 15\%$	4,8	6,6
5012	12	18,5	$\pm 15\%$	9,6	13,2
<b>5024</b>	<b>24</b>	<b>75</b>	<b><math>\pm 15\%</math></b>	<b>19,2</b>	<b>26,4</b>
5048	48	305	$\pm 15\%$	38,4	52,8
5060	60	475	$\pm 15\%$	48,0	66,0
5115	115	1 840	$\pm 15\%$	92,0	126,5
5120	120	1 910	$\pm 15\%$	96,0	132,0
5220	220	6 980	$\pm 15\%$	176,0	242,0
<b>5230</b>	<b>230</b>	<b>7 080</b>	<b><math>\pm 15\%</math></b>	<b>184,0</b>	<b>253,0</b>
5240	240	7 760	$\pm 15\%$	192,0	264,0

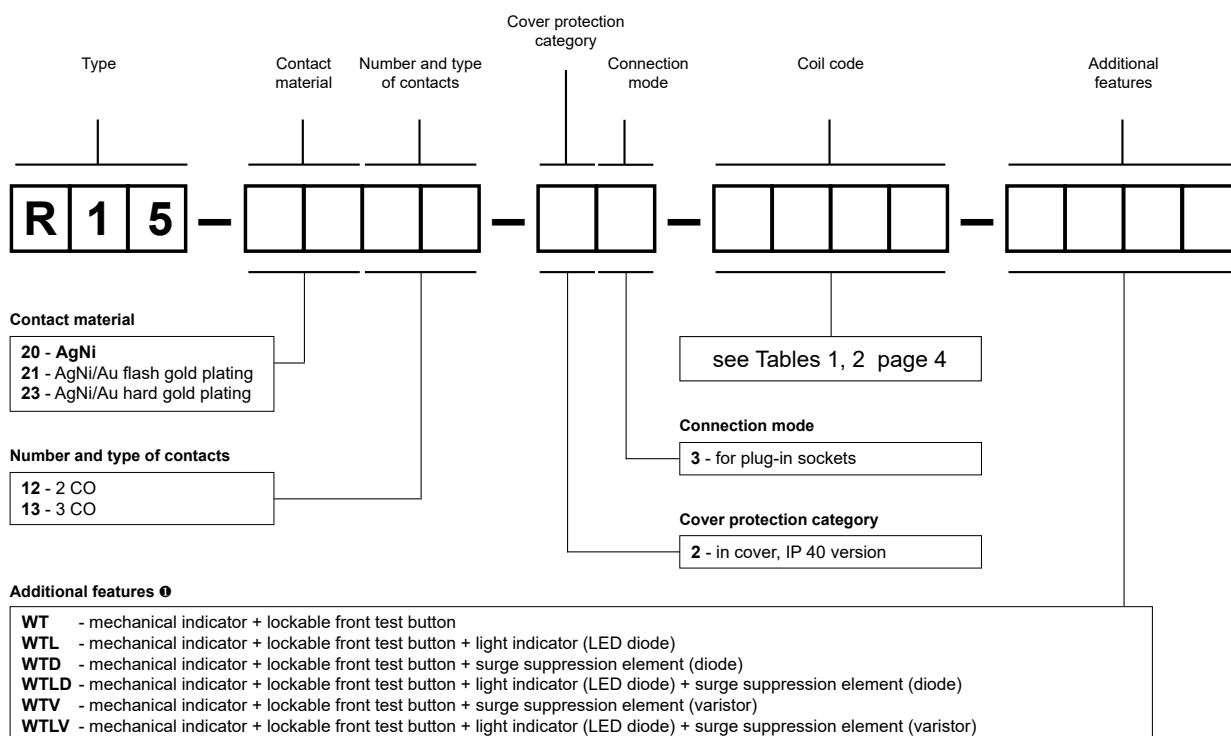
The data in bold type relate to the standard versions of the relays.



# R15 - 2 CO, 3 CO

## industrial relays of small dimensions

### Ordering codes



❶ **WT** - standard features of relays for plug-in sockets. **WTD, WTLD** - only for DC coils, **WTV, WTLV** - only for AC coils

**Test buttons (no latching) and plugs** need to be ordered separately. They substitute buttons type T. To be exchanged by the customer themselves.

Information on test buttons (no latching) and plugs - page 7.

- 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.

Type 	Description	For industrial relays
<b>W</b>	mechanical indicator	R2N, R3N, R4N, (R15 - 2 CO, 3 CO  )
<b>T</b>	lockable front test button, orange colour - AC coils, green colour - DC coils	R2N, R3N, R4N, (R15 - 2 CO, 3 CO  )
<b>L</b>	light indicator (LED diode), located inside the relay	R2N, R3N, R4N, RY2, (R15 - 2 CO, 3 CO, 4 CO  ) RUC, RUC-M
<b>D</b>	surge suppression element (diode) - only for DC coils	R2N, R3N, R4N, RY2, (R15 - 2 CO, 3 CO, 4 CO  )
<b>V</b>	surge suppression element (varistor) - only for AC coils	(R15 - 2 CO, 3 CO  )
<b>K</b>	test button without block function	(R15 - 4 CO  ) RUC

### Available combinations:

**WT, WTL, WTD, WTL D** - in relays R2N, R3N, R4N for plug-in sockets

**L, D, LD** - in relays RY2 for plug-in sockets

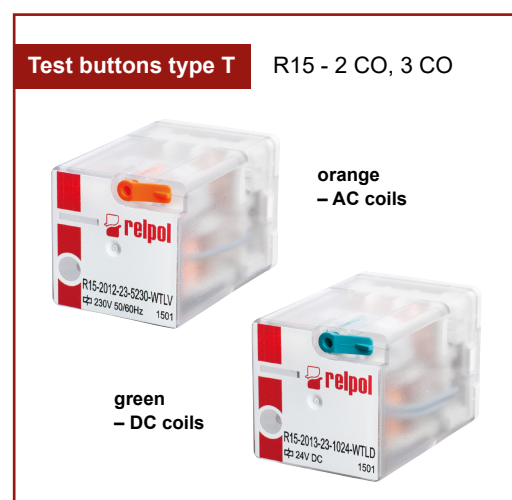
**WT, WTL, WTD, WTL D, WTV, WTL V** - in relays R15 - 2 CO, 3 CO for plug-in sockets

**K, L, D, KL, KD, LD, KLD** - in relays R15 - 4 CO for plug-in sockets

**K, L, KL** - in relays RUC

**L** - in relays RUC-M

 Voltage versions, in covers



## Test buttons (no latching) and plugs

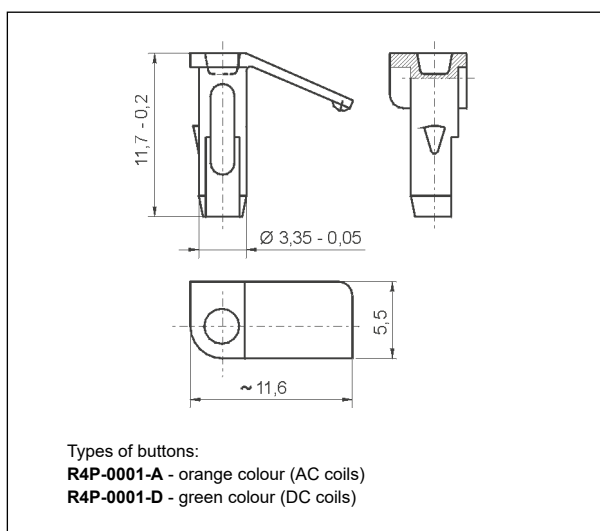
**Test buttons (no latching)** are recommended for R2N...WT, R3N...WT, R4N...WT, R15...WT 2 CO, R15...WT 3 CO relays - **for applications that do not allow permanent contact latching**. By manual operation (pressing the button) relay contacts can get switched for as long time as long the button is pressed. 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.

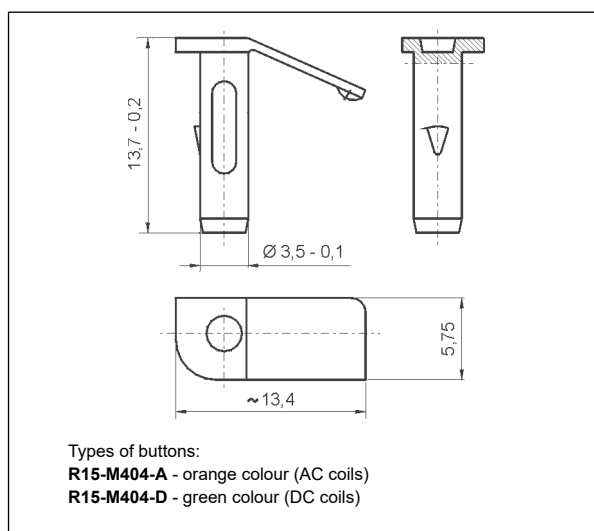
Ⓢ While the relay operates, the test button becomes heated. In order to push the test button manually, you should first turn the supply voltage off, and wait some time until the button becomes colder (or push the button immediately using a protective glove or an insulated tool). The button shall be pushed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



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

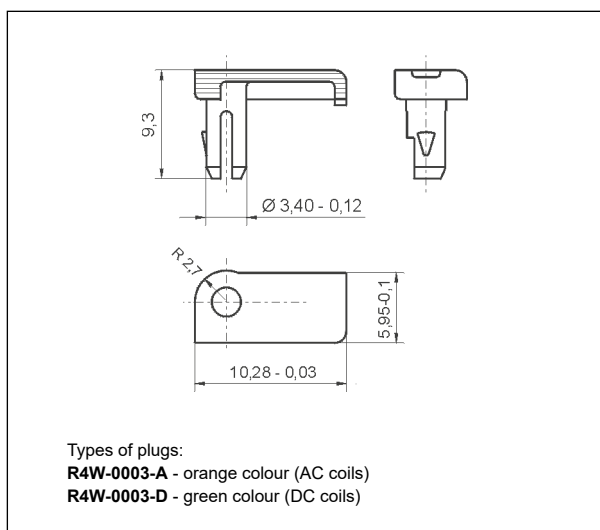


### Dimensions - test button R15-M404 for R15...WT 2 CO, R15...WT 3 CO

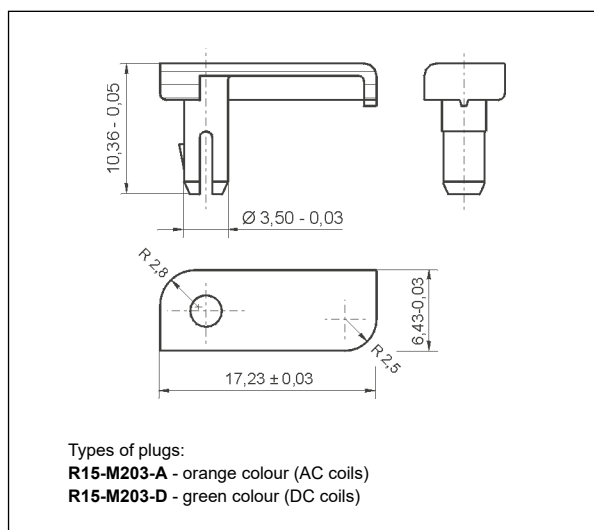


**Plugs R4W-0003** or **R15-M203** can substitute button type **T** if **manual operation (latching and testing) is not allowed**. Changing button type **T** for plug can be done by Customer themselves in the same way as changing button type **T** for button (no latching).

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



### Dimensions - plug R15-M203 for R15...WT 2 CO, R15...WT 3 CO



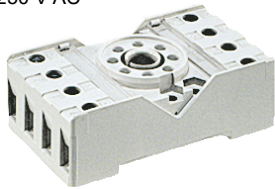


# Plug-in sockets and accessories

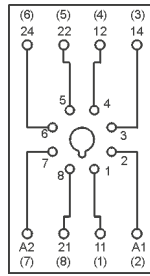
## PZ8

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

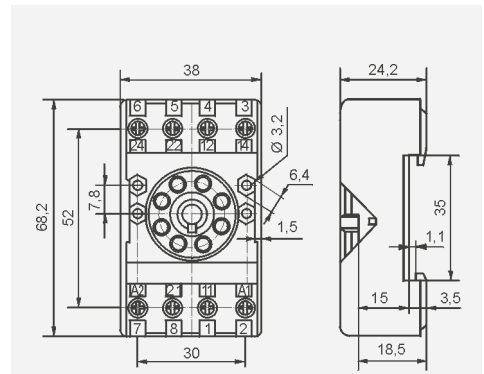


### Connection diagram



PZ11 0031

### Dimensions



### Accessories

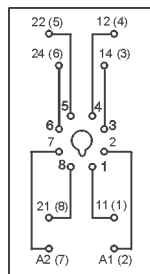
## GZU8

For R15 - 2 CO

Screw terminals  
Max. tightening moment  
for the terminal: 0,7 Nm  
35 mm rail mount  
acc. to PN-EN 60715  
82 x 35,5 x 25,7 mm  
Two poles  
10 A, 300 V AC

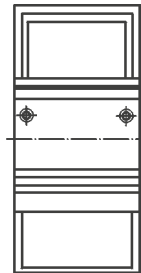


### Connection diagram

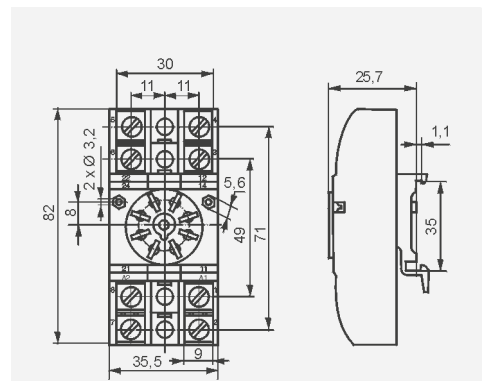


GZU 1052

### Adaptor



### Dimensions

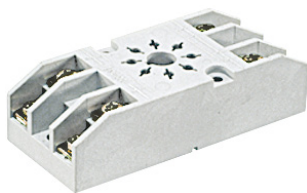


### Accessories

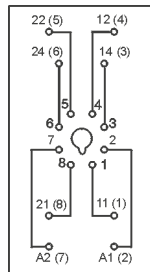
## GZ8

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

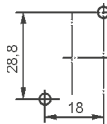


### Connection diagram

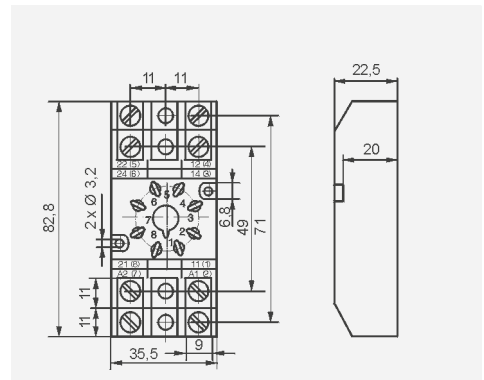


GZ 1050

### Mounting dimensions



### Dimensions



### Accessories

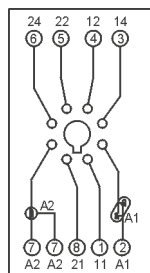
## GZP8

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



### Connection diagram



GZP-0054

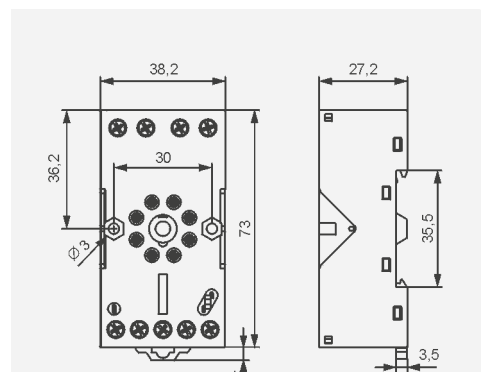


Time module COM3



GZP-0035

### Dimensions



### Accessories

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

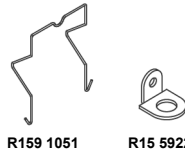


# Plug-in sockets and accessories

## GOP8

For R15 - 2 CO

Solder terminals  
47,2 x 32 x 22 mm  
Two poles  
10 A, 250 V AC

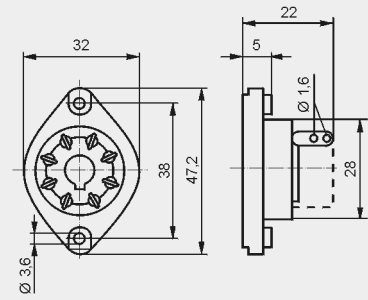


Accessories

R159 1051

R15 5922

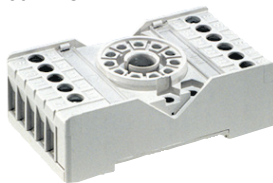
## Dimensions



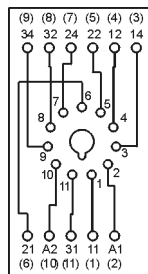
## PS11 ①

For R15 - 3 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  
Three poles  
10 A, 250 V AC



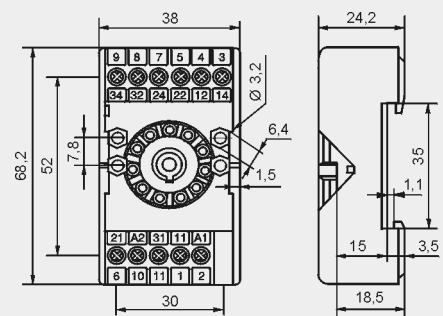
## Connection diagram



Accessories

PZ11 0031

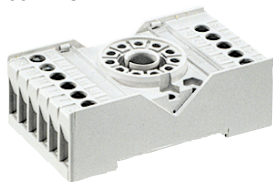
## Dimensions



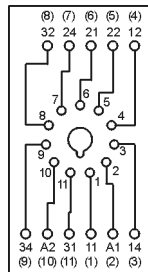
## PZ11 ①

For R15 - 3 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  
Three poles  
10 A, 250 V AC



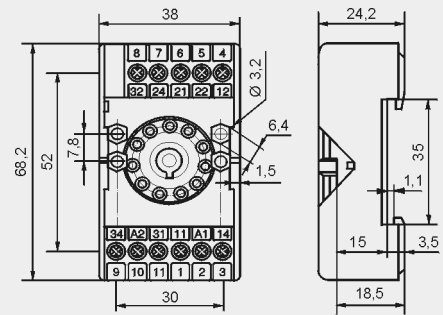
## Connection diagram



Accessories

PZ11 0031

## Dimensions



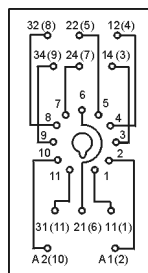
## GZU11

For R15 - 3 CO

Screw terminals  
Max. tightening moment  
for the terminal: 0,7 Nm  
35 mm rail mount  
acc. to PN-EN 60715  
82 x 35,5 x 25,7 mm  
Three poles  
10 A, 250 V AC



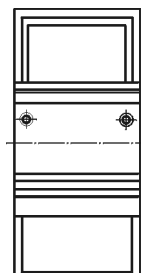
## Connection diagram



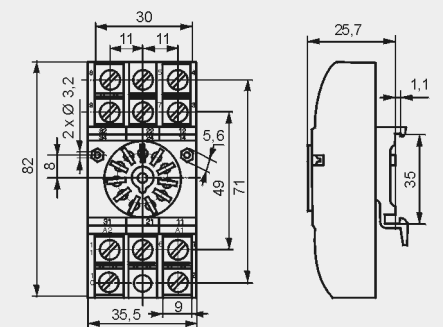
Accessories

GZU 1052

## Adaptor



## Dimensions



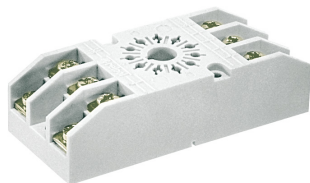
① Have obtained LR Type Approval Certificate (Lloyd's Register).

# Plug-in sockets and accessories

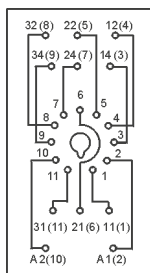
## GZ11

For R15 - 3 CO

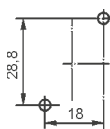
Screw terminals  
Max. tightening moment for the terminal: 0,7 Nm  
On panel mounting  
82,8 x 35,5 x 22,5 mm  
Three poles  
10 A, 250 V AC



### Connection diagram

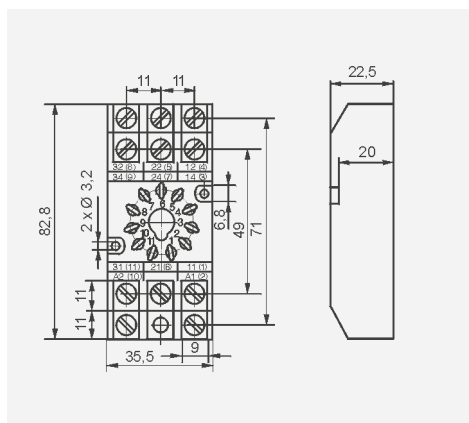


### Mounting dimensions



GZ 1050

### Dimensions

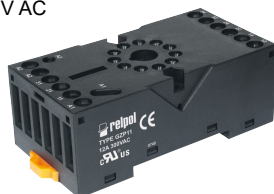


### Accessories

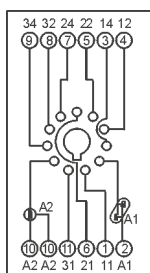
## GZP11

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



### Connection diagram



Time module COM3

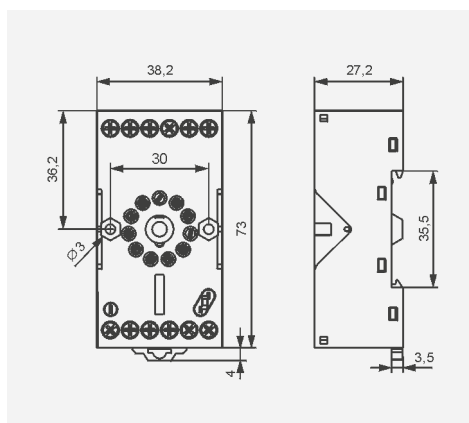


GZP-0054



GZP-0035

### Dimensions



### Accessories

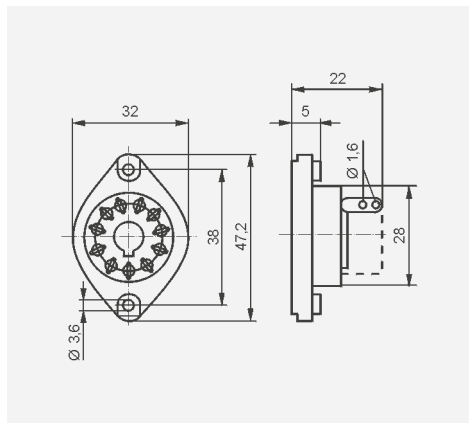
## GOP11

For R15 - 3 CO

Solder terminals  
47,2 x 32 x 22 mm  
Three poles  
10 A, 250 V AC



### Dimensions



### Accessories



R159 1051



R15 5922

### 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.