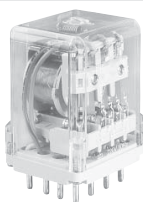




R15 2 C/O



R15 3 C/O



R15 4 C/O

• General purpose relays • For plug-in sockets, 35 mm DIN rail mount, EN 50022 or on panel mounting • Cadmium - free contacts - R15 2 C/O, R15 3 C/O relays • WT (mechanical indicator + lockable front test button) - standard features of R15 2 C/O, R15 3 C/O relays in cover, for plug-in sockets. Relays may be provided with the test buttons type P (no latching) and plugs - page 199 • **Have obtained LR Type Approval Certificate (Lloyd's Register) - R15...WT 2 C/O, R15...WT 3 C/O** • Recognitions, certifications, directives: RoHS,       

Contact data

Number and type of contacts		2 C/O, 3 C/O, 4 C/O
Contact material		2 C/O, 3 C/O: AgNi , AgNi/Au 0,2 µm, AgNi/Au 5 µm 4 C/O: AgCdO , AgCdO/Au 0,2 µm, AgCdO/Au 5 µm
Max. switching voltage	AC/DC	250 V / 250 V
Min. switching voltage		2 C/O, 3 C/O: 5 V AgNi, 5 V AgNi/Au 0,2 µm, 5 V AgNi/Au 5 µm 4 C/O: 10 V AgCdO, 10 V AgCdO/Au 0,2 µm, 5 V AgCdO/Au 5 µm
Rated load	AC1 DC1	10 A / 250 V AC 10 A / 24 V DC
Min. switching current		2 C/O, 3 C/O: 5 mA AgNi, 5 mA AgNi/Au 0,2 µm, 2 mA AgNi/Au 5 µm 4 C/O: 10 mA AgCdO, 10 mA AgCdO/Au 0,2 µm, 2 mA AgCdO/Au 5 µm
Max. inrush current		20 A
Rated current		10 A
Max. breaking capacity	AC1	2 500 VA
Min. breaking capacity		2 C/O, 3 C/O: 0,3 W AgNi, 0,3 W AgNi/Au 0,2 µm, 0,05 W AgNi/Au 5 µm 4 C/O: 0,5 W AgCdO, 0,5 W AgCdO/Au 0,2 µm, 0,05 W AgCdO/Au 5 µm
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	AC DC	2 C/O, 3 C/O: 6...240 V 50/60 Hz 6...220 V	4 C/O: 6...240 V 50 Hz, 60 Hz
Must release voltage		AC: ≥ 0,15 U _n	DC: ≥ 0,1 U _n
Operating range of supply voltage		see Tables 1, 2, 3, 4	
Rated power consumption		AC: 2,8 VA 50 Hz 2,5 VA 60 Hz	DC: 1,5 W

Insulation

Insulation category		2 C/O, 3 C/O: C250	4 C/O: B250
Insulation rated voltage		250 V AC	
Rated surge voltage		2 500 V AC	
Overtoltage category		III PN-EN 60664-1	
Insulation pollution degree		3	
Dielectric strength	• between coil and contacts • contact clearance • pole - pole	2 500 V AC 1 500 V AC 2 000 V AC	
Contact - coil distance	• clearance / • creepage	2 C/O, 3 C/O, 4 C/O: ≥ 3 mm / 2 C/O, 3 C/O: ≥ 4,2 mm, 4 C/O: ≥ 3,2 mm	

General data

Operating time (typical value)		AC: 12 ms	DC: 18 ms
Release time (typical value)		AC: 10 ms	DC: 7 ms
Electrical life	• resistive AC1 • cos φ	≥ 2 x 10 ⁵ 10 A, 250 V AC see Fig. 2	
Mechanical life (cycles)		≥ 2 x 10 ⁷	
Motor load - according to the UL 508		2 C/O: 1/3 HP 120 V AC, single-phase motor 3 C/O: 1/3 HP 120 V AC, single-phase motor 3 C/O: 1/2 HP 240 V AC, three-phase motor	1/2 HP 240 V AC, single-phase motor 1/2 HP 240 V AC, single-phase motor
Dimensions (L x W x H)		2 C/O, 3 C/O: 35 x 35 x 54,4 mm	4 C/O: 35 x 42,5 x 54,5 mm
Weight		2 C/O, 3 C/O: 83 g	4 C/O: 95 g
Ambient temperature	• storage • operating	-40...+85 °C AC: -40...+55 °C DC: -40...+70 °C	
Cover protection category		IP 40	
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 pertain to the standard versions of the relays.



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Coil data - DC voltage version

Table 1

Coil code	Rated voltage U_n V DC	Coil resistance $\pm 10\%$ at 20 °C Ω	Coil operating range V DC	
			min. (at 20 °C)	max. (at 55 °C)
1006	6	28	4,8	6,6
1012	12	110	9,6	13,2
1024	24	430	19,2	26,4
1048	48	1 750	38,4	52,8
1060	60	2 700	48,0	66,0
1110	110	9 200	88,0	121,0
1120	120	11 000	96,0	132,0
1220	220	37 000	176,0	242,0

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

Coil data - AC 50/60 Hz voltage version (standard for R15 2C/O, R15 3C/O)

Table 2

Coil code	Rated voltage U_n V AC	Coil resistance $\pm 15\%$ at 20 °C Ω	Coil operating range V AC	
			min. (at 20 °C)	max. (at 55 °C)
5006	6	4,3	4,8	6,6
5012	12	18,5	9,6	13,2
5024	24	75,0	19,2	26,4
5048	48	305,0	38,4	52,8
5060	60	475,0	48,0	66,0
5110	110	1 700,0	88,0	121,0
5120	120	1 910,0	96,0	132,0
5220	220	6 980,0	176,0	242,0
5230	230	7 080,0	184,0	253,0
5240	240	7 760,0	192,0	264,0

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

Coil data - AC 50 Hz voltage version (standard for R15 4C/O)

Table 3

Coil code	Rated voltage U_n V AC	Coil resistance $\pm 15\%$ at 20 °C Ω	Coil operating range V AC	
			min. (at 20 °C)	max. (at 55 °C)
3006	6	5,3	4,8	6,6
3012	12	20,0	9,6	13,2
3024	24	72,0	19,2	26,4
3048	48	360,0	38,4	52,8
3060	60	520,0	48,0	66,0
3110	110	2 000,0	88,0	121,0
3120	120	2 300,0	96,0	132,0
3220	220	7 000,0	176,0	242,0
3230	230	7 900,0	184,0	253,0
3240	240	8 300,0	192,0	264,0

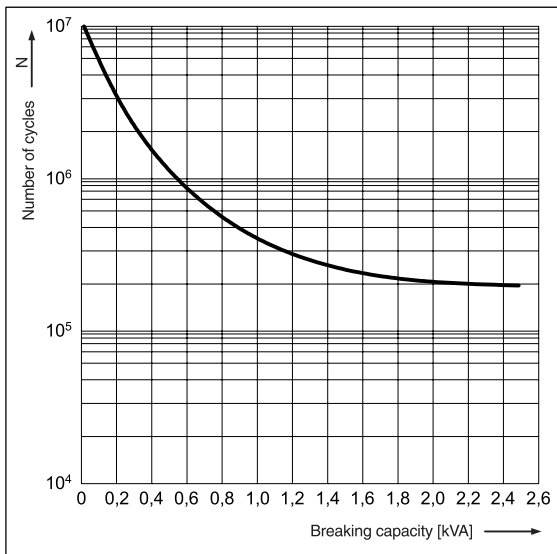
Coil data - AC 60 Hz voltage version (special for R15 4C/O)

Table 4

Coil code	Rated voltage U_n V AC	Coil resistance $\pm 15\%$ at 20 °C Ω	Coil operating range V AC	
			min. (at 20 °C)	max. (at 55 °C)
6006	6	4,8	4,8	6,6
6012	12	17,0	9,6	13,2
6024	24	75,0	19,2	26,4
6048	48	310,0	38,4	52,8
6060	60	490,0	48,0	66,0
6110	110	1 760,0	88,0	121,0
6120	120	2 000,0	96,0	132,0
6220	220	6 900,0	176,0	242,0
6230	230	7 000,0	184,0	253,0
6240	240	7 100,0	192,0	264,0

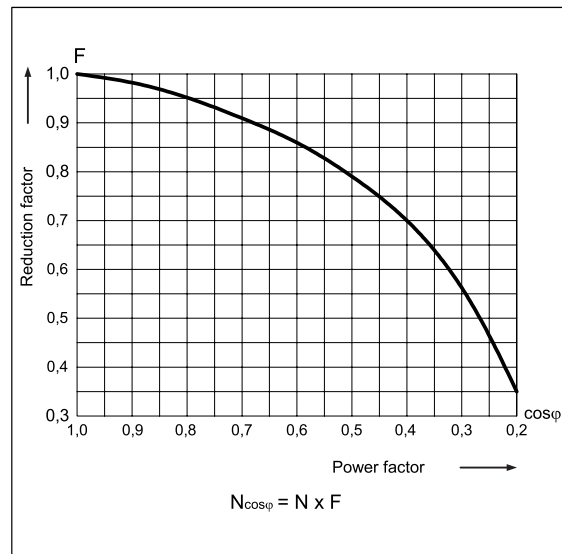
Electrical life at AC resistive load

Fig. 1



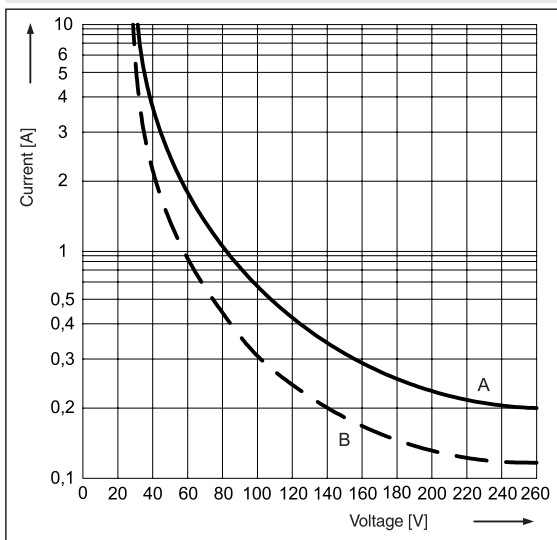
Electrical life reduction factor at AC inductive load

Fig. 2



Max. DC breaking capacity
A - resistive load $T = 0$ ms
B - inductive load $L/R = 40$ ms

Fig. 3



Mounting

Relays **R15 2 C/O** are designed for: • screw terminals plug-in sockets **PZ8** with clip **PZ11 0031**, 35 mm DIN rail mount, EN 50022 or on panel mounting; **GZU8** with clip **GZU 1052**, 35 mm DIN rail mount, EN 50022; **GZ8** with clip **GZ 1050**, on panel mounting • solder terminals sockets **GOP8** with clip **R159 1051** and spring clamp **R15 5922** • direct PCB mounting.

Relays **R15 3 C/O** are designed for: • screw terminals plug-in sockets **PS11** and **PZ11** with clip **PZ11 0031**, 35 mm DIN rail mount, EN 50022 or on panel mounting; **GZU11** with clip **GZU 1052**, 35 mm DIN rail mount, EN 50022; **GZ11** with clip **GZ 1050**, on panel mounting • solder terminals sockets **GOP11** with clip **R159 1051** and spring clamp **R15 5922** • direct PCB mounting.

Relays **R15 4 C/O** are designed for: • screw terminals plug-in sockets **GZ14U** with clip **GZ14 0737**, 35 mm DIN rail mount, EN 50022; **GZ14** with clip **GZ14 0737**, on panel mounting • solder terminals sockets **GOP14** with clip **R15 0736** and spring clamp **R15 5922**.

R15 2 C/O, R15 3 C/O in cover, for plug-in sockets

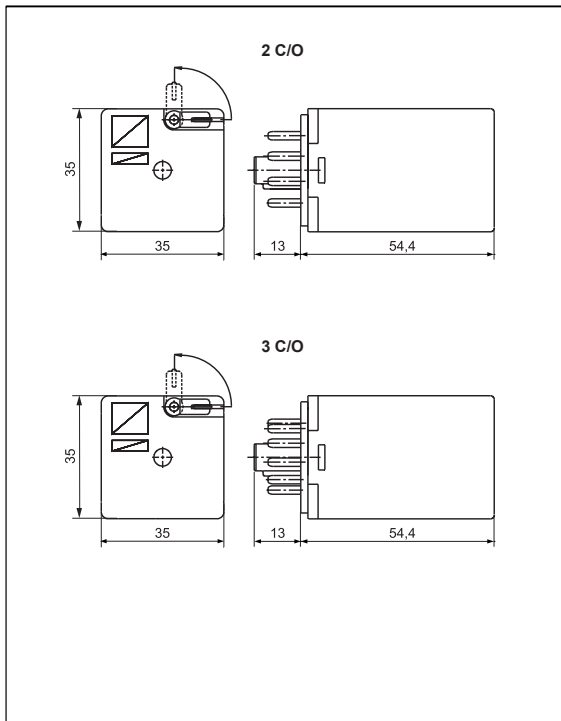


R15 2 C/O

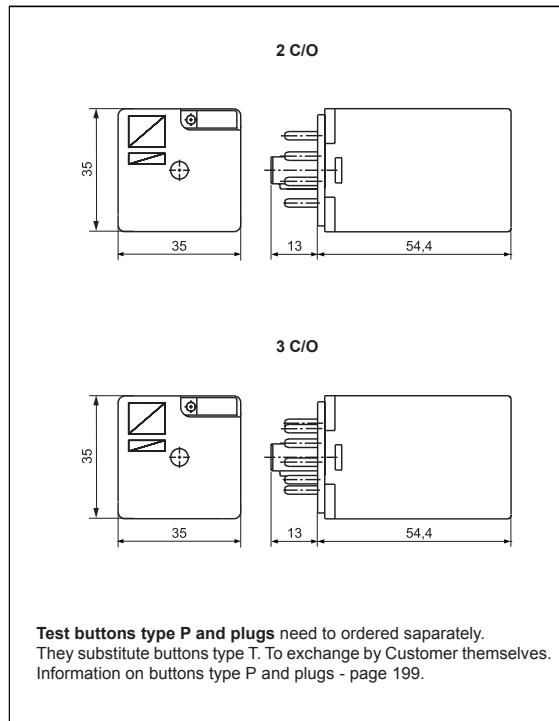
R15 3 C/O

- WT (mechanical indicator + lockable front test button) - standard features of R15 2 C/O, R15 3 C/O relays in cover, for plug-in sockets. Relays may be provided with the test buttons type P (no latching) and plugs - page 199
- **Have obtained LR Type Approval Certificate (Lloyd's Register) - R15...WT 2 C/O, R15...WT 3 C/O**
- Recognitions, certifications, directives: RoHS,

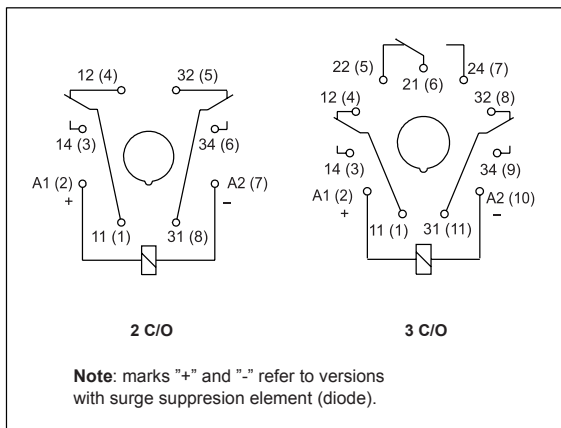
Dimensions - plug-in version (WT), with lockable front test button type T



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



Connections diagrams (pin side view)

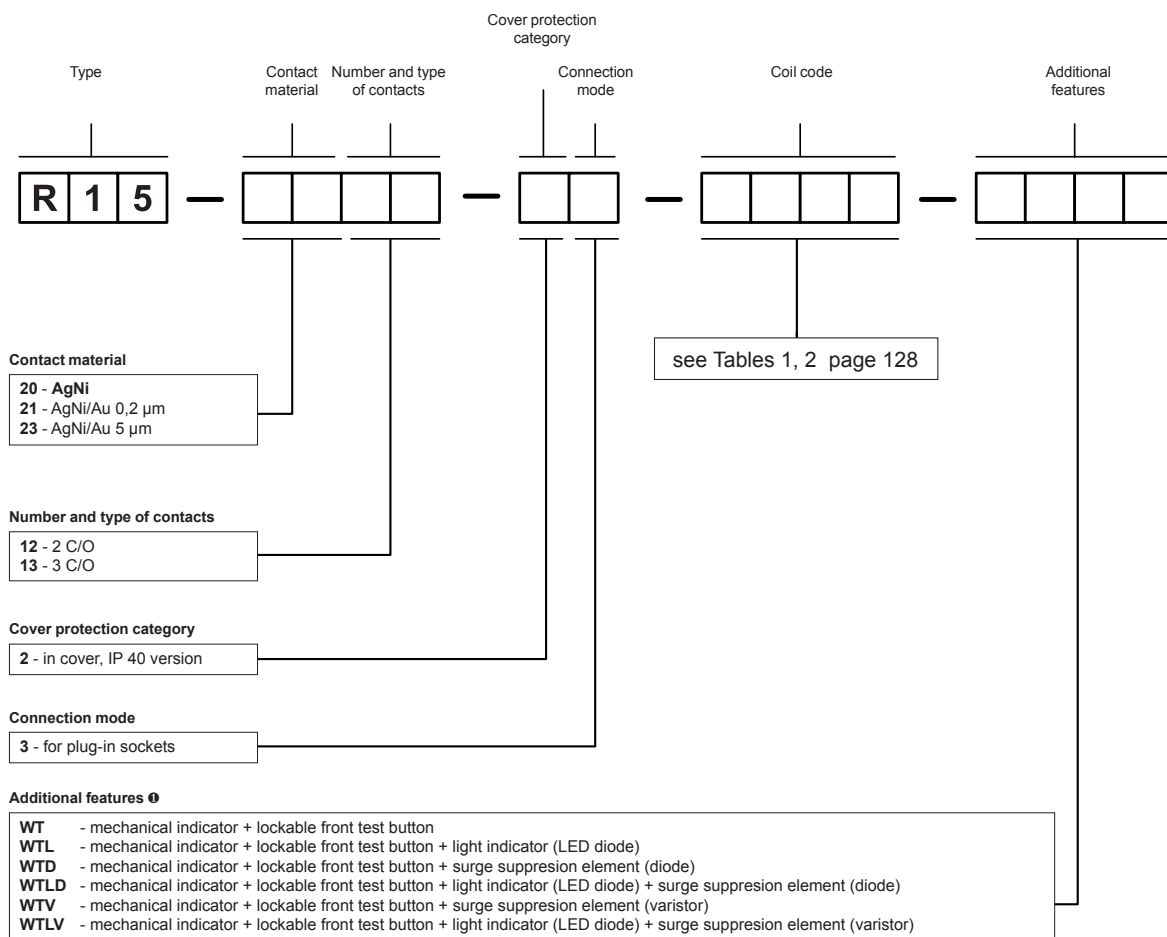


Mounting

WT (mechanical indicator with lockable front test button) - offered as standard features for **R15 2 C/O** and **R15 3 C/O** relays for plug-in sockets. **It is possibility self-exchange of button type T for: button type P (no latching) or plug (no manual operation).** Buttons type P and plugs need to ordered separately.

R15 2 C/O, R15 3 C/O in cover, for plug-in sockets

Ordering codes



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

Test buttons type P and plugs need to ordered separately. They substitute buttons type T. To exchange by Customer themselves.

Information on buttons type P and plugs - page 199.

- 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:

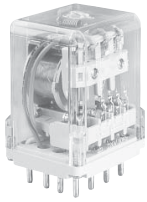
Colour of lockable front test button type T represents type of coil supply current: orange - AC coil, green - DC coil.

Examples of ordering codes:

R15-2012-23-1024-WT relay **R15**, contact material AgNi, with two changeover contacts, in cover IP 40, for plug-in sockets, voltage version 24 V DC, with mechanical indicator and lockable front test button

R15-2013-23-5230-WTL relay **R15**, contact material AgNi, with three changeover contacts, in cover IP 40, for plug-in sockets, voltage version 230 V AC 50/60 Hz, with mechanical indicator and lockable front test button and light indicator (LED diode)

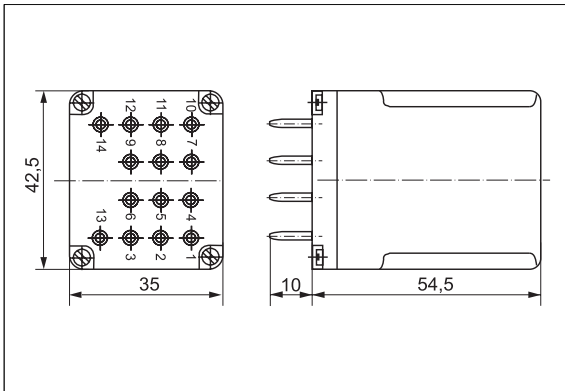
R15 4 C/O in cover, for plug-in sockets



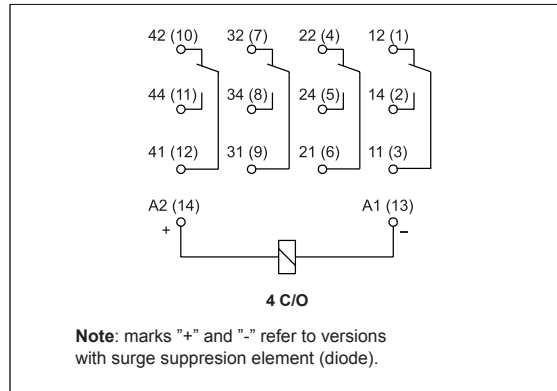
R15 4 C/O

• Recognitions, certifications, directives: RoHS,

Dimensions



Connections diagram (pin side view)



Ordering codes

Type	Contact material	Number and type of contacts	Cover protection category	Connection mode	Coil code	Additional features
R 1 5						

Contact material
 10 - AgCdO
 11 - AgCdO/Au 0,2 μm
 13 - AgCdO/Au 5 μm

Number and type of contacts
 14 - 4 C/O

Cover protection category
 2 - in cover, IP 40 version

Connection mode
 3 - for plug-in sockets

Additional features

- without marks - without additional features
- K - test button without block function
- L - light indicator (LED diode)
- D - surge suppression element (diode)
- KL - test button without block function + light indicator (LED diode)
- KD - test button without block function + surge suppression element (diode)
- LD - light indicator (LED diode) + surge suppression element (diode)
- KLD - test button without block function + light indicator (LED diode) + surge suppression element (diode)

see Tables 1, 3, 4 pages 128, 129

ⓘ D, KD, LD, KLD - only for DC coils

Note: for R15 4 C/O relays 50/60 Hz coils are not offered, show coil according with Table 3 or 4, pages 128, 129.

Example of ordering code:

R15-1014-23-3230-K relay **R15**, contact material AgCdO, with four changeover contacts, in cover IP 40, for plug-in sockets, voltage version 230 V AC 50 Hz, with test button without block function