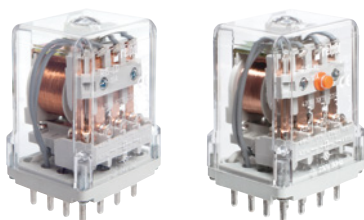







# R15 - 4 CO

## 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, AgCdO <sup>①</sup>	
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, 10 V AgCdO	
Rated load (capacity)	AC1	10 A / 250 V AC
	AC15	10 A / 277 V AC UL 508
	DC1	3 A / 120 V
	DC13	1,5 A / 240 V (B300)
Motor load	acc. to UL 508	10 A / 24 V DC (see Fig. 3)
	AC3 acc. to IEC 60947-4-1	0,22 A / 120 V
Motor load	acc. to UL 508	0,1 A / 250 V (R300)
	AC3 acc. to IEC 60947-4-1	1/2 HP 240 V AC, 4,9 FLA, single-phase motor <sup>②</sup> 0,37 kW 240 V AC, single-phase motor
Min. switching current	5 mA AgNi, 5 mA AgNi/Au flash gold plating 5 mA AgNi/Au hard gold plating, 10 mA AgCdO	
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, 0,5 W AgCdO	
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 Hz AC	6, 12, 24, 48, 60, 115, 120, 220, 230, 240, 400 V	basic version
	60 Hz AC	6, 12, 24, 48, 60, 110, 120, 220, 230, 240 V	special version
	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	
	DC	1,5 W	

### Insulation according to EN 60664-1

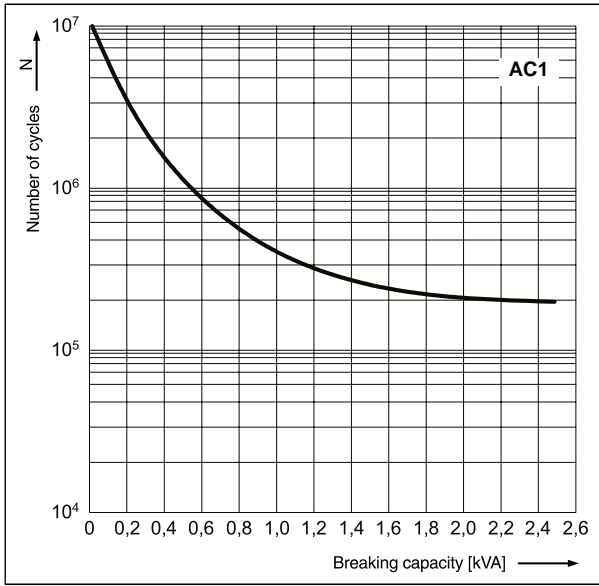
Insulation rated voltage	250 V AC		
Rated surge voltage	2 500 V 1,2 / 50 μs		
Overvoltage category	III		
Insulation pollution degree	3		
Dielectric strength	• between coil and contacts	2 500 V AC	type of insulation: basic
	• contact clearance	1 500 V AC	type of clearance: micro-disconnection
	• pole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

### General data

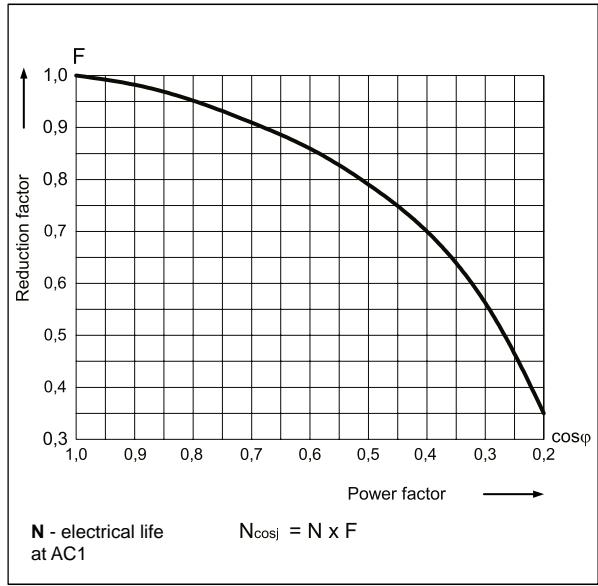
Operating / release time (typical values)	AC: 12 ms / 10 ms	DC: 18 ms / 7 ms
Electrical life	• resistive AC1	≥ 10 <sup>5</sup> 10 A, 250 V AC
	• cosφ	see Fig. 2
Mechanical life (cycles)	≥ 2 x 10 <sup>7</sup>	
Dimensions (L x W x H) / Weight	35 x 42,5 x 54,5 mm / 95 g	
Ambient temperature	• storage	-40...+85 °C
	• operating	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 / vibration resistance	10 g / 5 g 10...150 Hz	
Solder bath temperature / Soldering time	max. 270 °C / max. 5 s	

The data in bold type relate to the standard versions of the relays. <sup>①</sup> AgCdO contact material in electrical contacts is only for use in electrical and electronic equipment (EEE) in compliance with directive RoHS2 2011/65/EU in restricted categories of EEE covered by this directive. Relpol S.A. is not responsible for usage relays with AgCdO contact material in categories of EEE where it is prohibited by the directive RoHS2 2011/65/EU. <sup>②</sup> For single phase motors for 110-120 V AC do not use motors with higher FLA than given for 240 V AC.

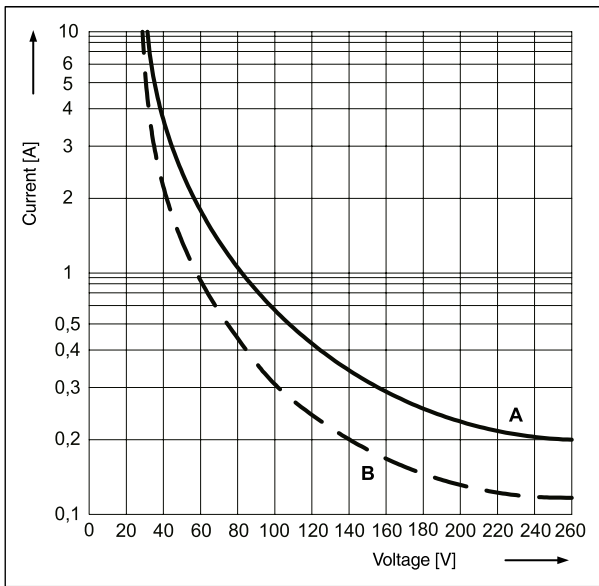
**Electrical life at AC resistive load.**  
Switching frequency: 1 200 cycles/hour Fig. 1



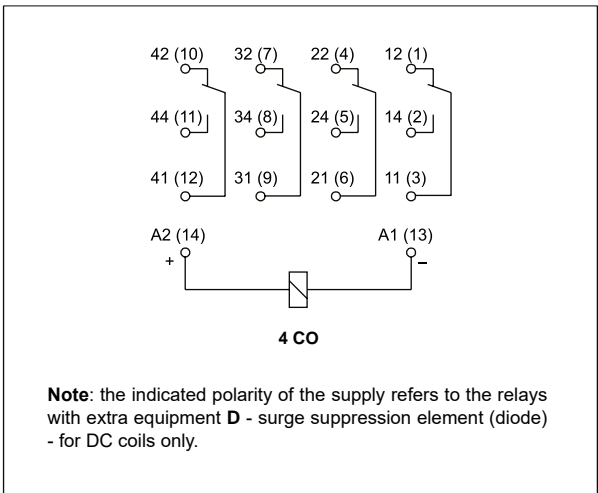
**Electrical life reduction factor at AC inductive load** Fig. 2



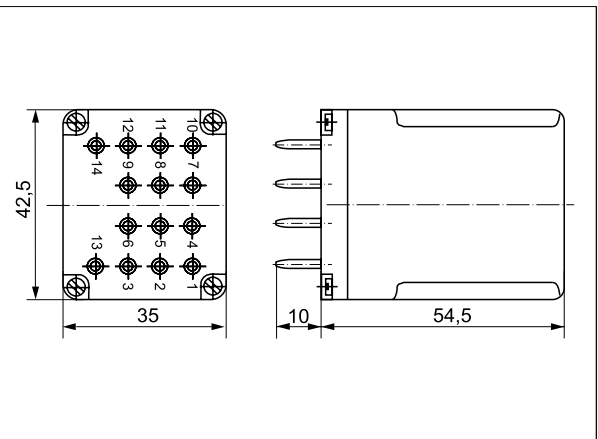
**Max. DC breaking capacity**  
**A - resistive load DC1** Fig. 3  
**B - inductive load L/R = 40 ms**



**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 373



Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance at 20 °C Ω	Acceptable resistance	Coil operating range V DC	
				min. (at 20 °C)	max. (at 70 °C)
1006	6	28	± 10%	5,1	6,6
<b>1012</b>	<b>12</b>	<b>110</b>	<b>± 10%</b>	<b>10,2</b>	<b>13,2</b>
<b>1024</b>	<b>24</b>	<b>430</b>	<b>± 10%</b>	<b>20,4</b>	<b>26,4</b>
1048	48	1 750	± 10%	40,8	52,8
1060	60	2 700	± 10%	51,0	66,0
1110	110	9 200	± 10%	93,5	121,0
1120	120	11 000	± 10%	102,0	132,0
<b>1220</b>	<b>220</b>	<b>37 000</b>	<b>± 10%</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 V AC	Coil resistance at 20 °C Ω	Acceptable resistance	Coil operating range V AC	
				min. (at 20 °C)	max. (at 55 °C)
3006	6	4,8	± 15%	5,1	6,6
3012	12	20	± 15%	10,2	13,2
3024	24	72	± 15%	20,4	26,4
3048	48	360	± 15%	40,8	52,8
3060	60	520	± 15%	51,0	66,0
3115	115	2 100	± 15%	97,7	126,5
3120	120	2 300	± 15%	102,0	132,0
3220	220	7 000	± 15%	187,0	242,0
3230	230	7 900	± 15%	195,5	253,0
3240	240	8 300	± 15%	204,0	264,0
3400	400	21 500	± 15%	340,0	440,0

Coil data - AC 60 Hz voltage version, special

Table 3

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

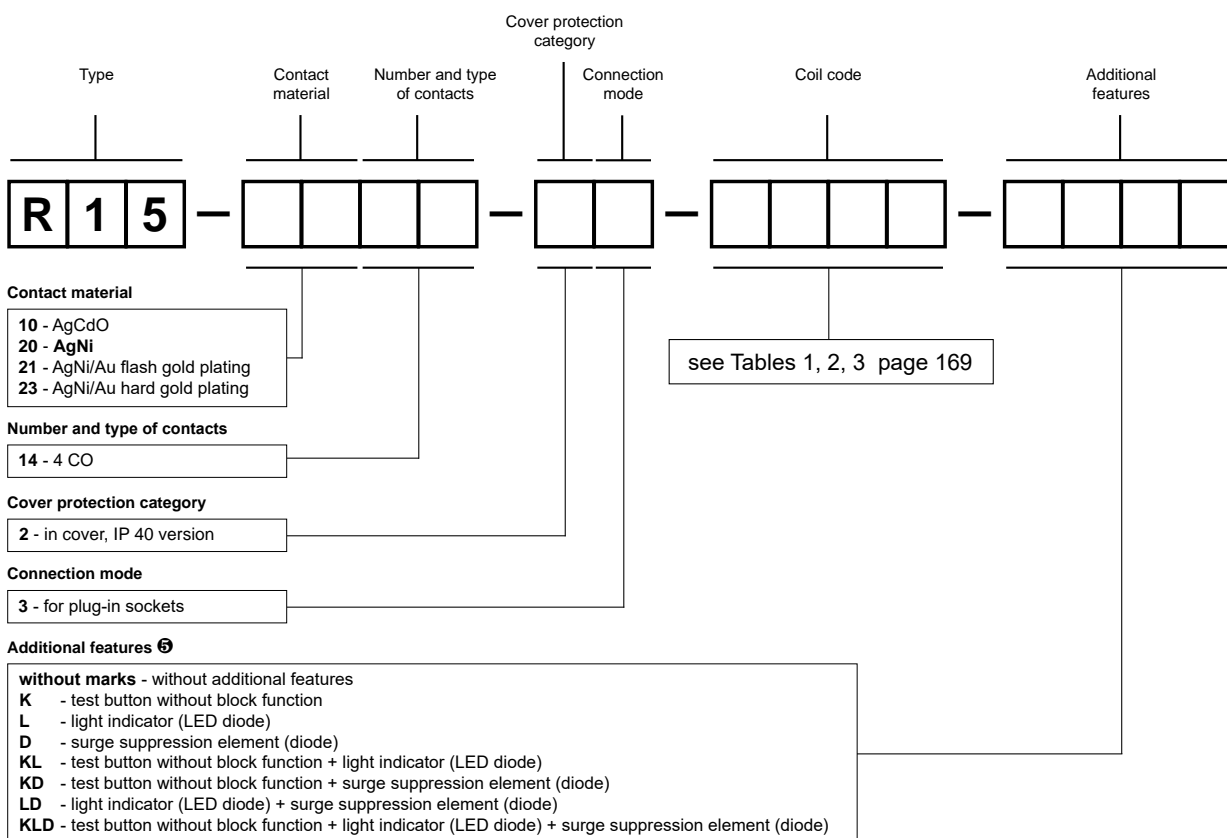
## Mounting, sockets and accessories for relays

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

Sockets for R15 - 4 CO	Accessories	Additional features
	Spring wire clips	
<b>Screw terminals sockets, 35 mm rail mount (EN 60715)</b>		
GZ14U	GZ14 0737	–
<b>Screw terminals sockets, on panel mounting (two M3 screws)</b>		
GZ14	GZ14 0737	–
GZ14Z ⑥	GZ14 0737	–
<b>Solder terminals sockets</b>		
GOP14	R15 0736	spring clamps ⑦

⑥ Sockets GZ14Z: to be mounted behind the assembly panel - see page 373. ⑦ Spring clamps R15 5922 for spring wire clips.

## Ordering codes



⑥ 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