R4 Miniature plug-in power relays



6 A/250 V AC

- WT - standard plug-in version with indicating flag and manual testing/latching lever
- Miniature size
- Cadmium - free contacts
- Coil AC and DC
- Plug-in version - rail mount TH35, EN 50022
- Plug-in, solder, PCB versions available
- General purpose relays

Contacts

Contact number & arrangement		4C/O
Contact material		AgNi; AgNi/Au 0,2 µm; AgNi/Au 5 µm
Voltage		
Max. switching voltage AC/DC		250 V / 250 V
Min. switching voltage		5 V
Current		
Rated load	AC1	6 A / 250 V AC - plug-in version 5 A / 250 V AC - PCB version
	DC1	6 A / 24 V DC - plug-in version 5 A / 24 V DC - PCB version
Min. switching current		5 mA (AgNi, AgNi/Au 0,2 µm) 1 mA (AgNi/Au 5 µm)
Max. inrush current		12 A
Rated current		6 A - plug-in version 5 A - PCB version
Max. breaking capacity	AC1	1 500 VA - plug-in version 1 250 VA - PCB version
Min. breaking capacity		0,1 W (AgNi/Au 5 µm); 0,3 W (AgNi, AgNi/Au 0,2 µm)
Resistance		≤ 100 mΩ at 100 mA, 24 V
Max. operating frequency		
• at rated load	AC1	1 200 cycles/hour
• no load		18 000 cycles/hour

Coil

Voltage	
Rated voltage	5...220V DC 6...240 V AC 50 Hz
Must release voltage	≥ 0,1 U_n DC; ≥ 0,2 U_n AC
Operating range of supply voltage	see Tables 1, 2
Rated power consumption	0,9 W DC; 1,6 VA AC

Insulation

Insulation category	B250
Voltage	
Insulation rated voltage	250 V AC
Dielectric strength	
• coil-contact	2 500 V AC
• contact-contact	1 500 V AC
• pole-pole	2 000 V AC
Contact-coil distance	
• clearance	≥ 1,6 mm
• creepage	≥ 3,2 mm

General data

Operating time (typical value)	10 ms AC; 13 ms DC
Release time (typical value)	8 ms AC; 3 ms DC
Electrical life	
• resistive	≥ 10^5 at 6 A, 250 V AC
• cos φ	see Fig. 2
Mechanical life (cycles)	≥ 2 x 10^7
Dimensions (L x W x H)	27,5 x 21,2 x 35,6 mm - plug-in standard version (WT) 27,5 x 21,2 x 33 mm - PCB version and version with threaded bolt
Weight	35 g
Ambient temperature	
• storing	-40...+85 °C
• operating	AC: -40...+55 °C; DC: -40...+70 °C
Cover protection category	IP 40
Shock resistance	10 g (NO); 5 g (NC)
Vibration resistance	5 g for 10...150 Hz
Solder bath temperature	max. 270 °C
Soldering time	max. 5 s
Approvals	B, cUL, UL, VDE, GOST

Coil data - DC version

Table 1

Coil code	Rated voltage V DC	Coil resistance (±10%) at 20 °C	Coil operating range V DC	
			min. (at 20 °C)	max. (at 55 °C)
1005	5	28	4,0	5,5
1006	6	40	4,8	6,6
1012	12	160	9,6	13,2
1024	24	640	19,2	26,4
1048	48	2 600	38,4	52,8
1060	60	4 000	48,0	66,0
1080	80	7 100	64,0	88,0
1110	110	13 600	88,0	121,0
1125	125	16 000	100,0	137,5
1220	220	54 000	176,0	242,0

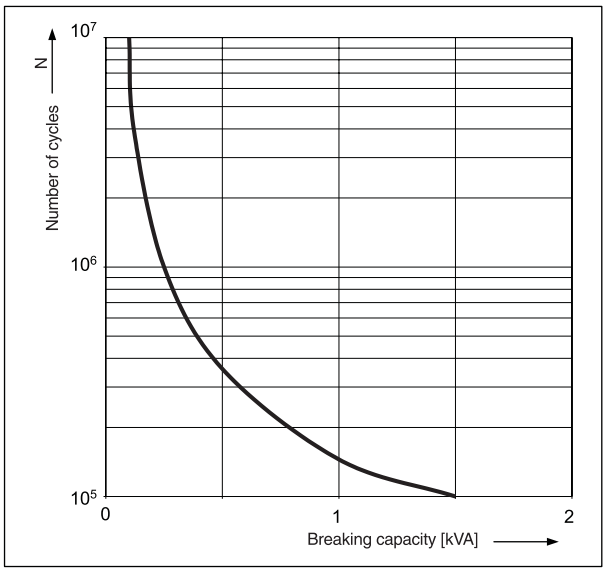
Coil data - AC 50 Hz version

Table 2

Coil code	Rated voltage V AC	Coil resistance (±10%) at 20 °C Ω	Coil operating range V AC	
			min. (at 20 °C)	max. (at 55 °C)
3006	6	12	4,8	6,6
3012	12	50	9,6	13,2
3024	24	190	19,2	26,4
3042	42	565	33,6	46,2
3048	48	785	38,4	52,8
3060	60	1 240	48,0	66,0
3080	80	2 190	64,0	88,0
3110	110	3 880	88,0	121,0
3120	120	4 150	96,0	132,0
3127	127	4 940	101,6	139,0
3220	220	16 300	176,0	242,0
3230	230/240	17 400	184,0	253,0

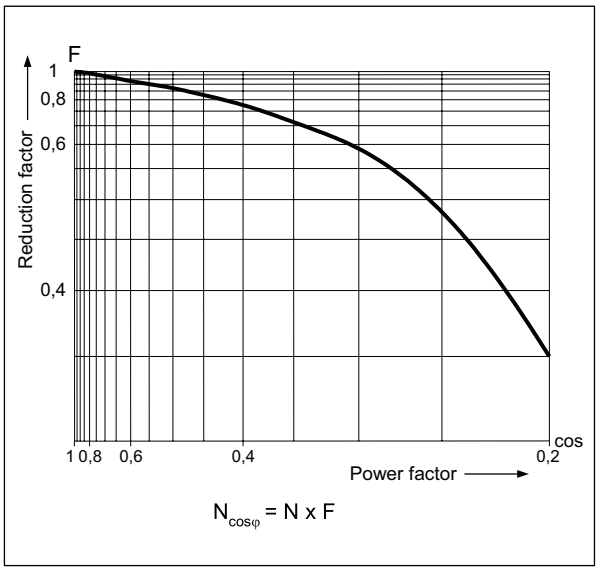
Electrical life at AC resistive load

Fig. 1



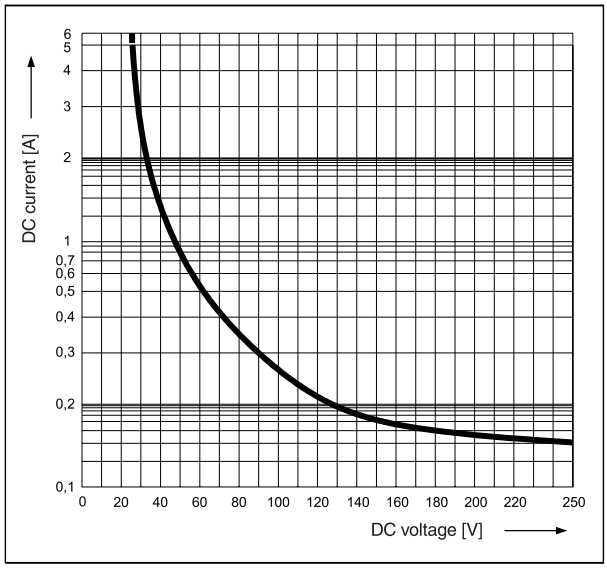
Electrical life reduction factor at AC inductive load

Fig. 2

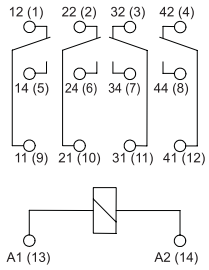


Maximum DC resistive load breaking capacity

Fig. 3

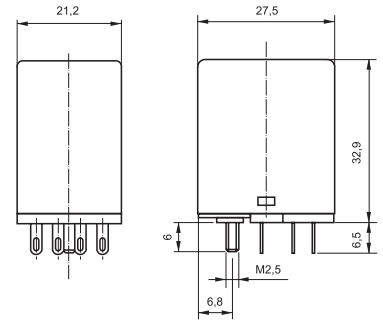


Connections diagram (pin side view)

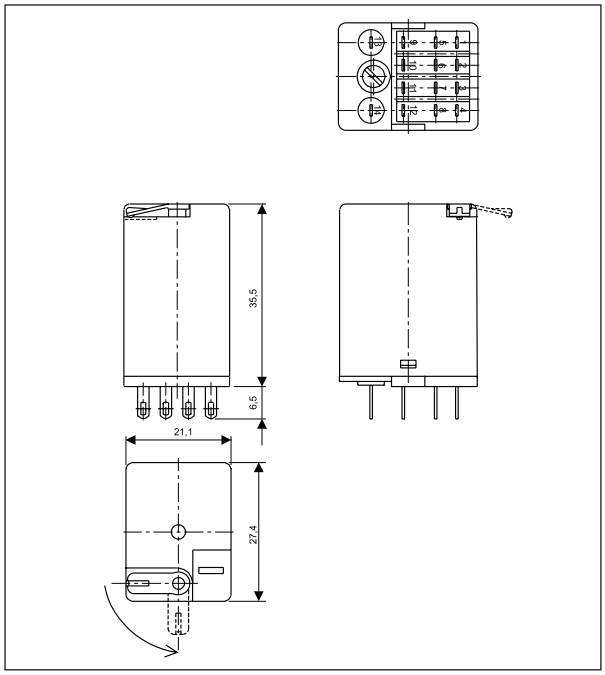


Terminal (pin)	12(1); 22(2); 32(3); 42(4); 14(5); 24(6); 34(7); 44(8); 11(9); 21(10); 31(11); 41(12); A1(13); A2(14)
mm	0,5 x 1,0
Drilling hole	for relays ϕ 1,3 mm ± 0,1 for sockets ϕ 1,5 mm ± 0,1

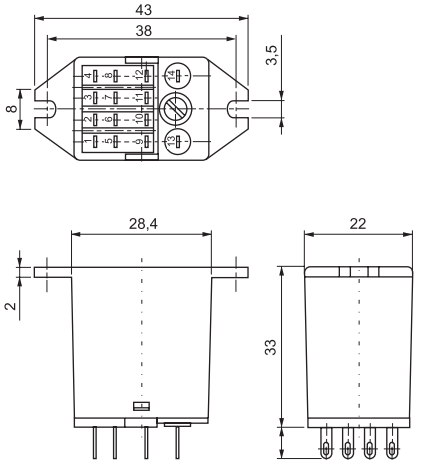
Dimensions - version with threaded bolt (without WT)



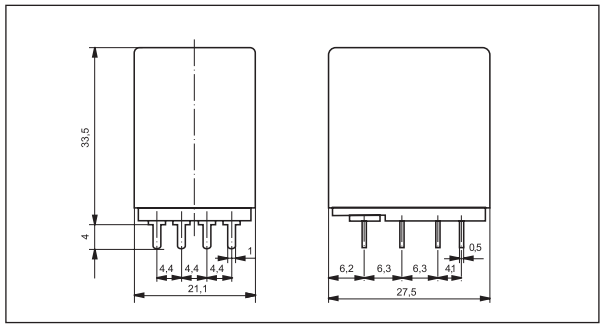
Dimensions - plug-in version (WT), with manual testing/latching lever



Dimensions - version with cover equipped with mounting flange (without WT)



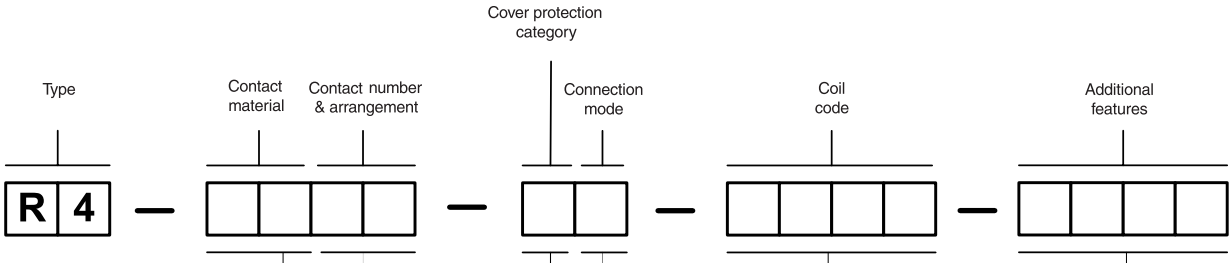
Dimensions - PCB version (without WT)



Mounting

Relays **R4** are designed for:
- screw terminals sockets **GZT4** (modules and clips available) and **GZ4** - for DIN rail mounting,
- PCB terminals sockets **SU4D** - for PCB mounting,,
- solder terminals sockets **SU4L** and **G4**,
- direct PCB mounting.

Ordering codes



Contact material

20 - AgNi
21 AgNi/Au 0,2 µm
23 - AgNi/Au 5 µm

Conatct number & arrangement

14 - 4C/O

Cover protection category

2 - IP40
4 - IP40; version with mounting flange

Connection mode

3 - plug-in
5 - PCB
7 - PCB with threaded bolt
9 - plug-in with threaded bolt

See Tables 1, 2, page 2

Additional features*

- - - - - no additional features
L - LED indicator
D - arc suppressing diode
LD - LED indicator +arc suppressing diode
WT - indicating flag + manual testing/latching lever (standard)
WTL - indicating flag + manual testing/latching lever + LED indicator
WTD - indicating flag + manual testing/latching lever + arc suppressing diode
WTLD - indicating flag + manual testing/latching lever + LED indicator + arc suppressing diode

* **D, LD, WTD, WTLD** - only for DC coils
WT - standard features plug-in power relays