









12 A / 250 V AC

- Miniature dimensions • Cadmium - free contacts • AC and DC coils
- For plug-in sockets, 35 mm rail mount acc. to PN-EN 60715 or on panel mounting • For PCB and soldering connections - option • Relays of general application • WT (mechanical indicator + lockable front test button) - standard features of relays for plug-in sockets. Relays may be provided with the test buttons (no latching) and plugs - page 251
- Recognitions, certifications, directives: RoHS, AUCOTEAM GmbH Berlin - railway standards,      

Contact data

Number and type of contacts	2 C/O	
Contact material	AgNi , AgNi/Au 0,2 µm, AgNi/Au 5 µm	
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage	5 V	
Rated load (capacity)	AC1	12 A / 250 V AC ❶ 10 A / 250 V AC ❷
	AC15	3 A / 120 V 1,5 A / 240 V (B300)
	AC3	370 W (single-phase motor)
	DC1	12 A / 24 V DC (see Fig. 3) ❶ 10 A / 24 V DC ❷
	DC13	0,22 A / 120 V 0,1 A / 250 V (R300)
Min. switching current	5 mA AgNi, 5 mA AgNi/Au 0,2 µm, 2 mA AgNi/Au 5 µm	
Max. inrush current	24 A	
Rated current	12 A ❶ 10 A ❷	
Max. breaking capacity	AC1	3 000 VA ❶ 2 500 VA ❷
Min. breaking capacity	0,3 W AgNi, 0,3 W AgNi/Au 0,2 µm, 0,1 W AgNi/Au 5 µm	
Contact resistance	≤ 100 mΩ	
Max. operating frequency		
• at rated load	AC1	1 200 cycles/hour
• no load	18 000 cycles/hour	

Coil data

Rated voltage	50/60 Hz AC	6 ... 240 V
	DC	5 ... 220 V
Must release voltage	AC: ≥ 0,2 U _n DC: ≥ 0,1 U _n	
Operating range of supply voltage	see Tables 1, 2	
Rated power consumption	AC	1,6 VA
	DC	0,9 W

Insulation according to PN-EN 60664-1

Insulation rated voltage	250 V AC	
Rated surge voltage	4 000 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	2 500 V AC type of insulation: basic	
Contact - coil distance		
• clearance	≥ 2,5 mm	
• creepage	≥ 4 mm	

General data

Operating / release time (typical values)	AC: 10 ms / 8 ms	DC: 13 ms / 3 ms
Electrical life		
• resistive AC1	≥ 10 ⁵ 12 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 ❶ 27,5 x 21,1 x 33,5 mm ❷	
	27,5 x 21,2 x 33 mm ❸	
Weight	35 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	RTI	PN-EN 116000-3
Shock resistance	(NO/NC)	10 g / 5 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.

❶ For plug-in sockets version: standard (WT) ❷ For PCB version ❸ For version with threaded bolt

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance (±10%) at 20 °C Ω	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

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

Coil data - AC 50/60 Hz voltage version

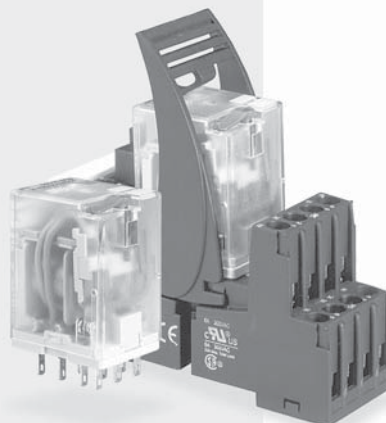
Table 2

Coil code	Rated voltage V AC	Coil resistance (±10%) at 20 °C Ω	Coil operating range V AC	
			min. (at 20 °C)	max. (at 55 °C)
5006	6	9,8	4,8	6,6
5012	12	39,5	9,6	13,2
5024	24	158,0	19,2	26,4
5042	42	470,0	33,6	46,2
5048	48	640,0	38,4	52,8
5060	60	930,0	48,0	66,0
5080	80	1 720,0	64,0	88,0
5110	110	3 450,0	88,0	121,0
5115	115	3 610,0	92,0	127,0
5120	120	3 770,0	96,0	132,0
5127	127	4 000,0	101,6	139,0
5220	220	15 400,0	176,0	242,0
5230	230	16 100,0	184,0	253,0
5240	240	16 800,0	192,0	264,0

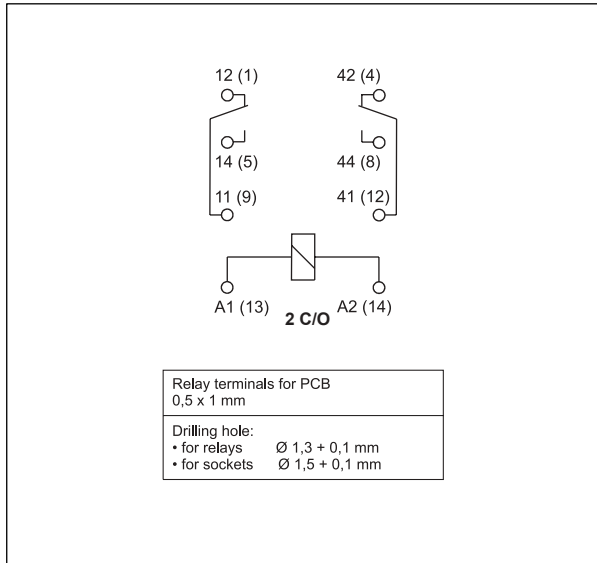
The data in bold type pertain to the standard versions of the relays.

EUROPRODUCT 2002
for electromagnetic relays
R2...WT, R3...WT, R4...WT
with sockets **GZT2, GZT3, GZT4**

ELECTROPRODUCT 2003
for electromagnetic relays
R2, R3, R4

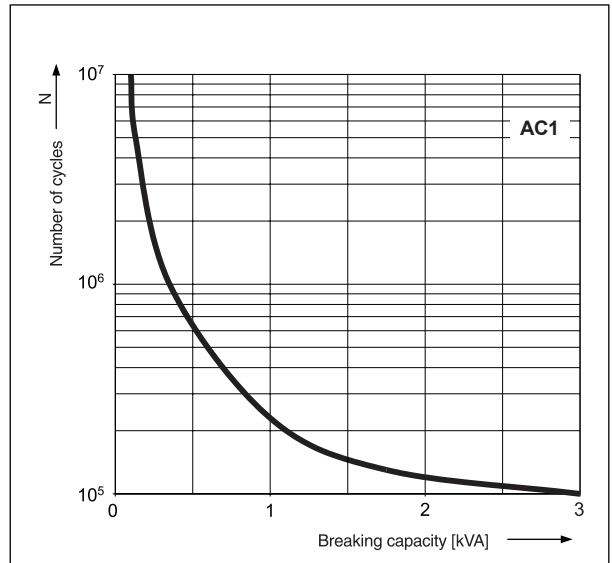


Connection diagram (pin side view)



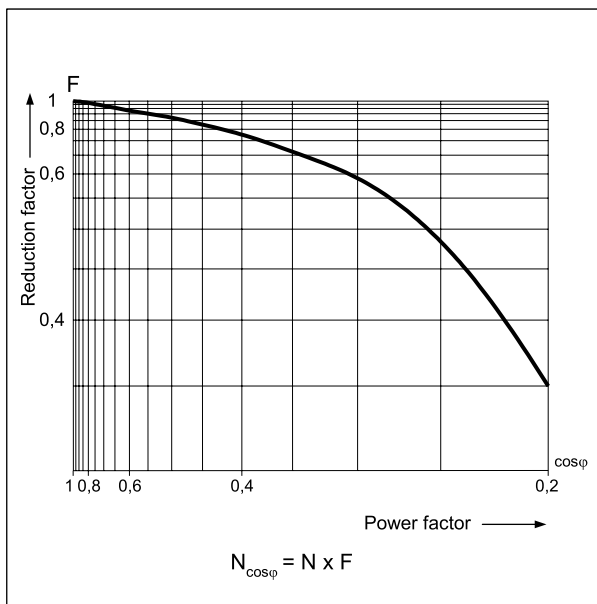
Electrical life at AC resistive load.
Switching frequency: 1 200 cycles/hour

Fig. 1



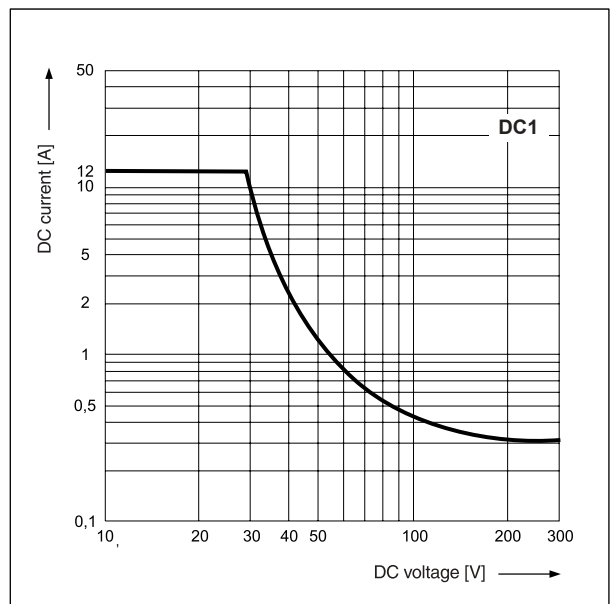
Electrical life reduction factor
at AC inductive load

Fig. 2



Max. DC resistive load breaking capacity

Fig. 3



Mounting

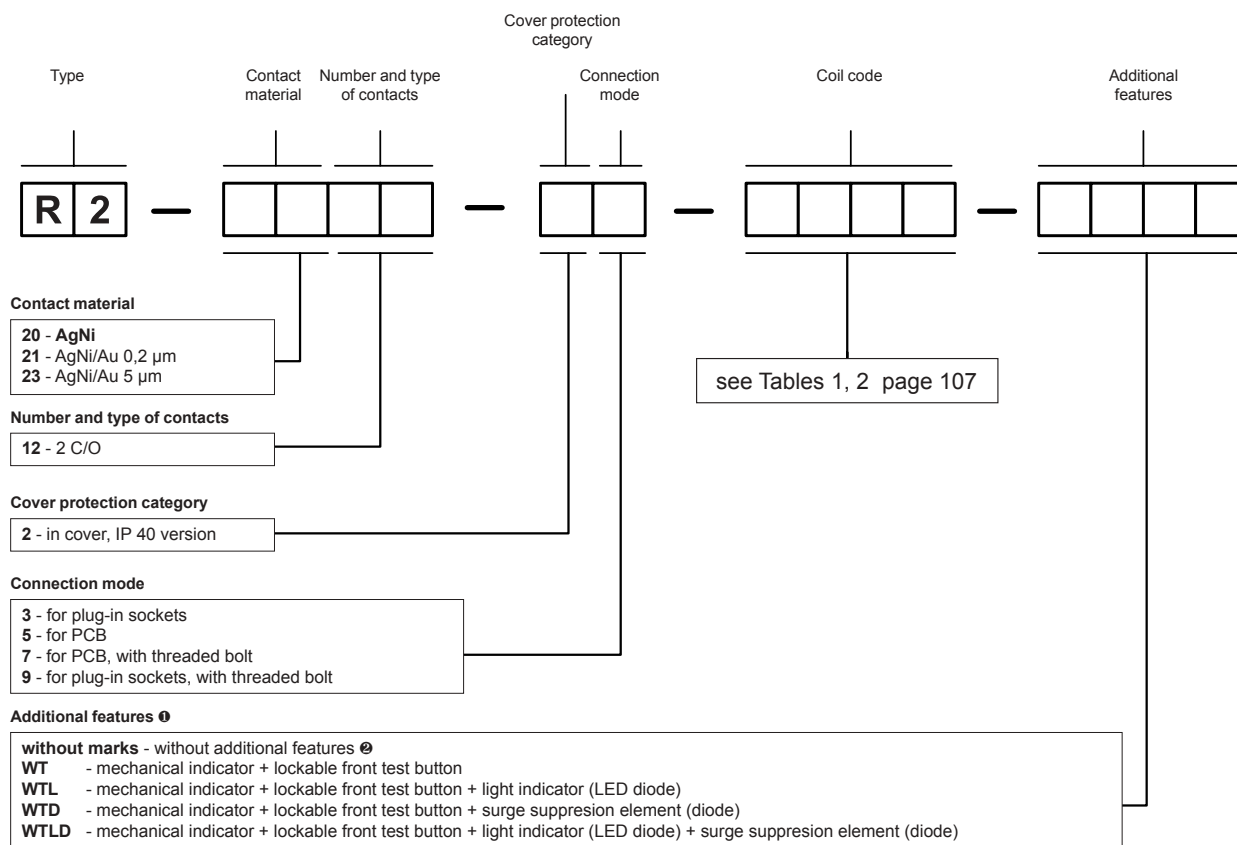
Relays **R2** are designed for: • screw terminals plug-in sockets **GZT2** and **GZM2** with clip **GZT4-0040** or **G4 1052**, 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws. Signalling / protecting modules **type M...** are available with sockets (see page 250) • plug-in sockets for PCB mounting **SU4/2D** with clip **G4 1053 (WT)** or **G4 1050 (without WT)** • solder terminals sockets **SU4/2L** with clip **G4 1053 (WT)** or **G4 1050 (without WT)** and spring clamp **G4 1040** • solder terminals sockets **G4/2** with clip **G4 1053 (WT)** or **G4 1050 (without WT)** • direct PCB mounting.

• Plug-in sockets **GZT2** and **GZM2** may be linked with interconnection strip type **ZGGZ4** (see page 262).

Contact material selection for different load types

- **AgNi** - for resistive or inductive loads,
- **AgNi/Au 0,2 µm** - contact surface protection against oxidation during storage,
- **AgNi/Au 5 µm** - for small resistive loads in control circuits.

Ordering codes



① WT - standard features of relays for plug-in sockets. WTD, WTLD - only for DC coils

② Refer relays for PCB and with threaded bolt

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 251.

- Button R4P-0001-A - orange colour (AC coils)
- Button R4P-0001-D - green colour (DC coils)
- Plug R4W-0003-A - orange colour (AC coils)
- Plug R4W-0003-D - green colour (DC coils)

Note:

For relays with DC coils and additional features inclusive: **D** - surge suppression element (diode) and **L** - light indicator (LED diode) coil supply polarization is fixed. Terminal A1 (13) "+"; terminal A2 (14) "-". Supply polarization is marked on relay cover. Colour of lockable front test button type T represents type of coil supply current: orange - AC coil, green - DC coil.

Examples of ordering codes:

- R2-2012-23-1024-WT** relay **R2**, 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
- R2-2012-25-1024** relay **R2**, contact material AgNi, with two changeover contacts, in cover IP 40, for PCB, voltage version 24 V DC

Plug-in sockets and accessories for relays R2

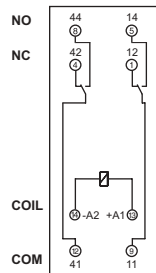
GZT2

For R2

Screw terminals
Maximum screw torque: 0,7 Nm
35 mm rail mount acc. to PN-EN 60715
or on panel mounting
76,3 x 27 x 42,5(80) mm ^②
Two poles
12 A, 300 V AC



Connection diagram



ZGGZ4



GZT4-0040



G4 1052

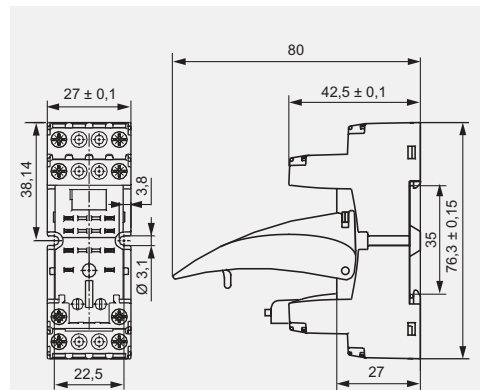


GZT4-0035



Module type M...

Dimensions

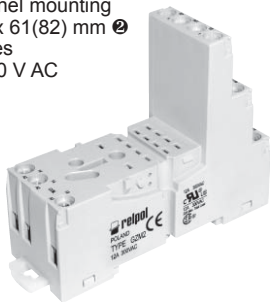


Accessories ①

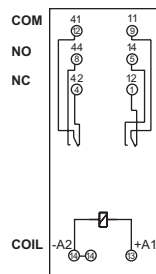
GZM2

For R2

Screw terminals
Maximum screw torque: 0,7 Nm
35 mm rail mount acc. to PN-EN 60715
or on panel mounting
75 x 27 x 61(82) mm ^②
Two poles
12 A, 300 V AC



Connection diagram



ZGGZ4



GZT4-0040



G4 1052

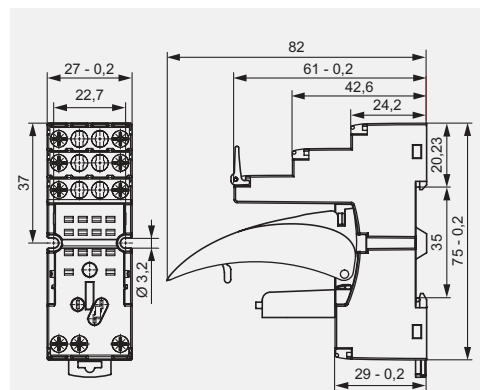


GZT4-0035



Module type M...

Dimensions



① "Mounting and sub-assemblies of accessories in the socket" and "Signalling / protecting modules type M..." - see www.repol.com.pl - Product Guide - Type of relay - Additional information.

② In the bracket the height of socket with retainer / retractor clip is shown.

Plug-in sockets and accessories for relays R2

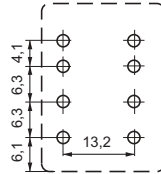
SU4/2D

For R2

For PCB
29,6 x 21,5 x 11mm
Two poles
12 A, 250 V AC



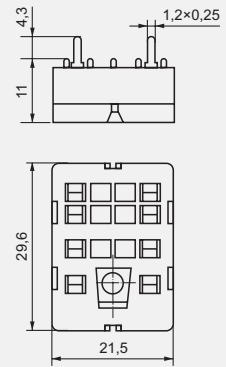
Pinout



Accessories ⑥

G4 1053 G4 1050

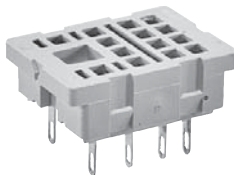
Dimensions



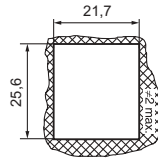
SU4/2L

For R2

Solder terminals
29,6 x 21,5 x 18,1 mm
Two poles
12 A, 250 V AC



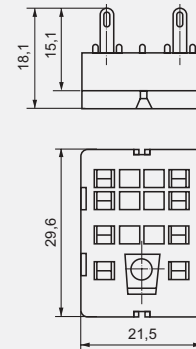
Dimensions of opening on panel mounting



Accessories ⑥

G4 1053 G4 1050 G4 1040

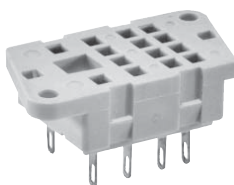
Dimensions



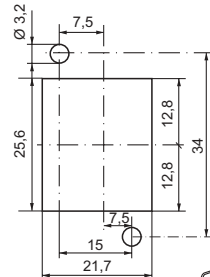
G4/2

For R2

Solder terminals
40,5 x 21,5 x 18,1 mm
Two poles
12 A, 250 V AC



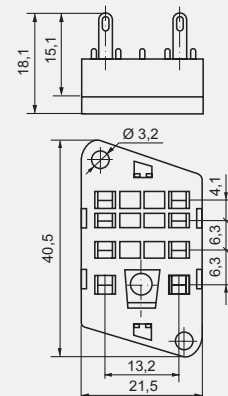
Pinout of openings on panel mounting



Accessories ⑥

G4 1053 G4 1050

Dimensions



⑥ G4 1053 - for R2...WT, R4...WT relays; G4 1050 - for R2, R4 without WT