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The following
is preliminary data.

Items available to order.

Current stock is limited.
Contact Altech for lead times.



- Cadmium - free contacts • Height 15,7 mm
- 5000 V / 10 mm reinforced insulation
- For PCB and plug-in sockets
- Accessories: sockets and modules • AC and DC coils
- Available special versions: with transparent cover ;
with the increased dielectric strength of the contact clearance
- Compliance with standard PN-EN 60335-1
- Recognitions, certifications, directives: RoHS,



Contact data

Number and type of contacts		2 CO, 2 NO
Contact material		AgNi, AgNi/Au 5 µm, AgSnO ₂
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage		5 V AgNi, 5 V AgNi/Au 5 µm, 10 V AgSnO ₂
Rated load (capacity)	AC 1	8 A / 250 V AC
	AC15	3 A / 120 V 1,5 A / 240 V (B300)
	AC3	550 W (single-phase motor)
	DC1	8 A / 24 V DC (see Fig. 3)
	DC13	0,22 A / 120 V 0,1 A / 250 V (R300)
Min. switching current		5 mA AgNi, 2 mA AgNi/Au 5 µm, 10 mA AgSnO ₂
Max. inrush current		15 A AgSnO ₂
Rated current		8 A
Max. breaking capacity	AC1	2 000 VA
Min. breaking capacity		0,3 W AgNi, 0,05 W AgNi/Au 5 µm, 1 W AgSnO ₂
Contact resistance		≤ 100 m Ω
Max. operating frequency		
• at rated load	AC 1	600 cycles/hour
• no load		72 000 cycles/hour

Coil data

Rated voltage	50/60 Hz AC	12 ... 240 V
	DC	3 ... 110 V
Must release voltage		AC: ≥ 0,15 U _n DC: ≥ 0,1 U _n
Operating range of supply voltage		see Tables 1, 2 and Fig. 4, 5
Rated power consumption	AC	0,75 VA
	DC	0,4 ... 0,48 W

Insulation according to PN-EN 60664-1

Insulation rated voltage		400 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 • contact clearance	5 000 V AC 1 000 V AC 2 000 V AC 2 500 V AC
	• pole - pole	type of insulation: reinforced type of clearance: micro-disconnection contacts 2 NO, type of clearance: full-disconnection type of insulation: basic
Contact - coil distance	• clearance	≥ 10 mm
	• creepage	≥ 10 mm

General data

Operating / release time (typical values)		7 ms / 3 ms
Electrical life (number of cycles)		
• resistive AC1		> 10 ⁵ 8 A, 250 V AC
• cos φ		see Fig. 2
• DC L/R=40 ms		> 10 ⁵ 0,15 A, 220 V DC
Mechanical life (cycles)		> 3 x 10 ⁷
Dimensions (L x W x H) / Weight		29 x 12,7 x 15,7 mm / 14 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+70 °C DC: -40...+85 °C -40...+70 °C
Cover protection category		IP 40 or IP 67 PN-EN 60529
Environmental protection		RTII or RTIII PN-EN 116000-3
Shock resistance		20 g
Vibration resistance	(NO/NC)	10 g / 5 g 10...150 Hz
Solder bath temperature / Soldering time		max. 270 °C / max. 5 s

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

For special version - relays in transparent cover: only available with IP 40 and RTII, operating temperature -40...+70 °C - see

For special version with contacts 2 NO: relays with increased contact gap, dielectric strength 2000 V AC - see "Ordering codes"

"Ordering codes"

RM84 miniature relays

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 20 °C)
1003	3	22	$\pm 10\%$	2,1	7,6
1005	5	60	$\pm 10\%$	3,5	12,7
1006	6	90	$\pm 10\%$	4,2	15,3
1009	9	200	$\pm 10\%$	6,3	22,9
1012	12	360	$\pm 10\%$	8,4	30,6
1018	18	710	$\pm 10\%$	12,6	45,9
1024	24	1 440	$\pm 10\%$	16,8	61,2
1036	36	3 140	$\pm 10\%$	25,2	91,8
1048	48	5 700	$\pm 10\%$	33,6	122,4
1060	60	7 500	$\pm 10\%$	42,0	153,0
1110	110	25 200	$\pm 10\%$	77,0	280,0

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

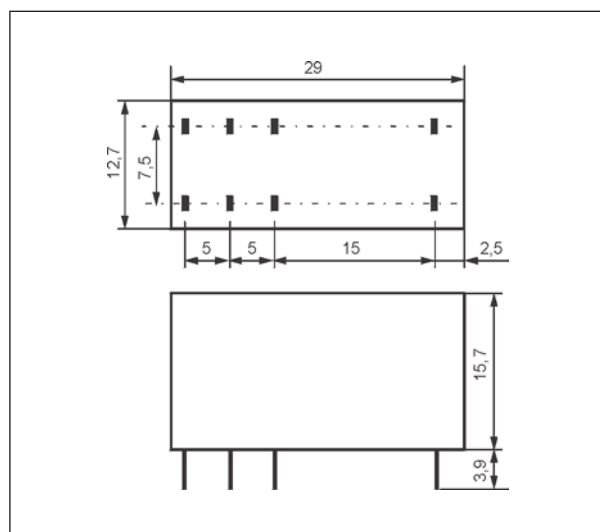
Coil data - AC 50/60 Hz voltage version

Table 2

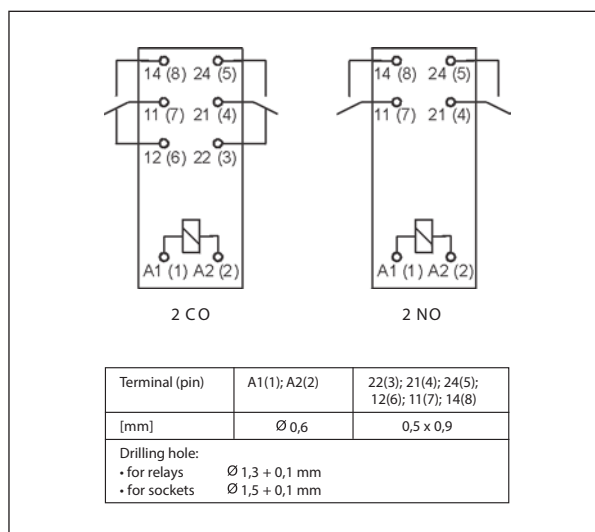
Coil code	Rated voltage V AC	Coil resistance at 20 °C Ω	Acceptable resistance	Coil operating range V AC 50 Hz	
				min. (at 20 °C)	max. (at 20 °C)
5012	12	100	$\pm 10\%$	9,6	13,2
5024	24	400	$\pm 10\%$	19,2	28,8
5048	48	1 550	$\pm 10\%$	38,4	57,6
5060	60	2 600	$\pm 10\%$	48,0	72,0
5110	110	8 900	$\pm 10\%$	88,0	132,0
5115	115	9 600	$\pm 10\%$	92,0	138,0
5120	120	10 200	$\pm 10\%$	96,0	144,0
5220	220	35 500	$\pm 10\%$	176,0	264,0
5230	230	38 500	$\pm 10\%$	184,0	276,0
5240	240	42 500	$\pm 15\%$	192,0	288,0

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

Dimensions



Connection diagrams (pin side view)

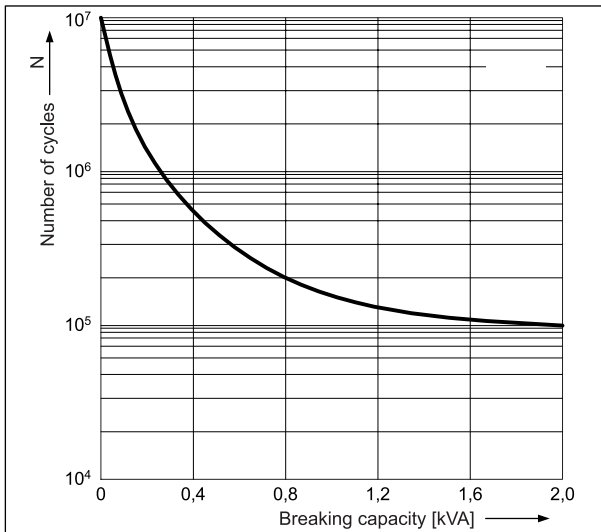


RM84

miniature relays

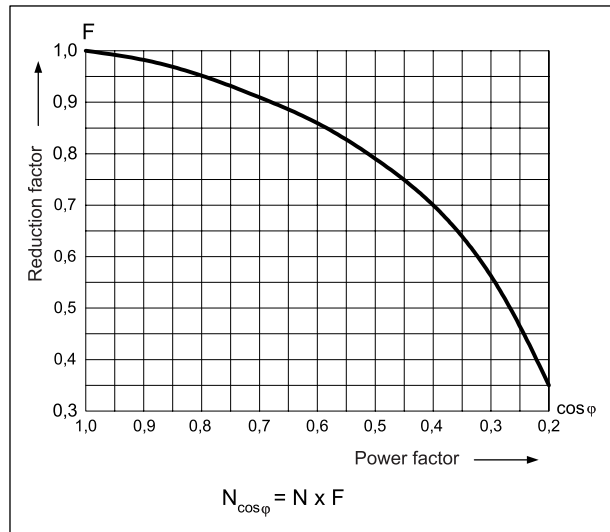
Electrical life at AC resistive load.
Switching frequency: 600 cycles/hour

Fig. 1



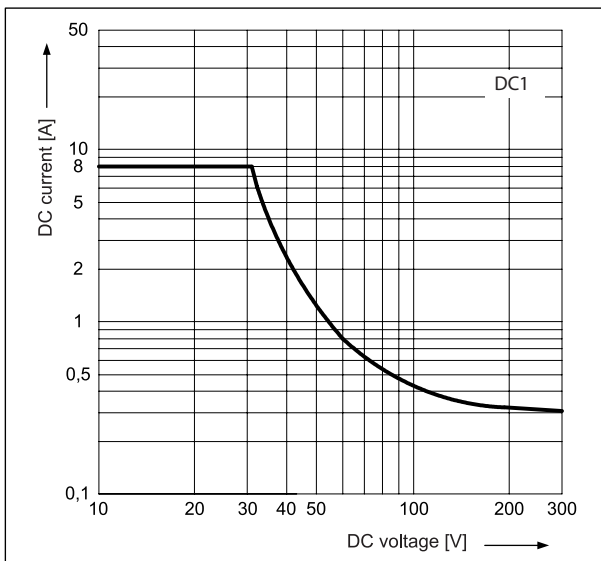
Electrical life reduction factor at AC inductive load

Fig. 2



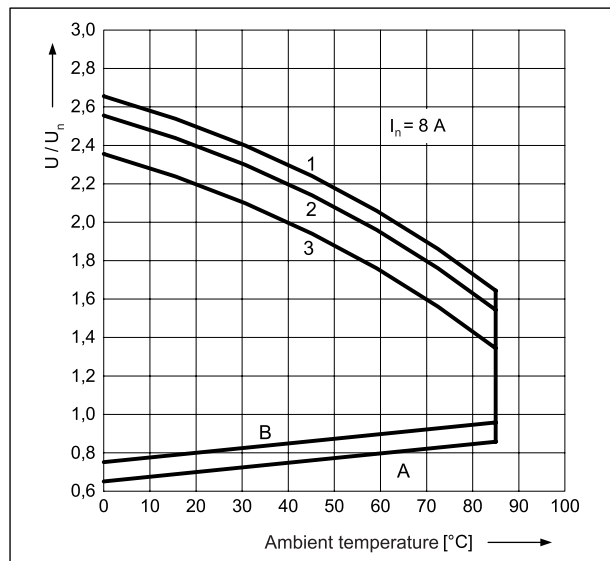
Max. DC resistive load breaking capacity

Fig. 3



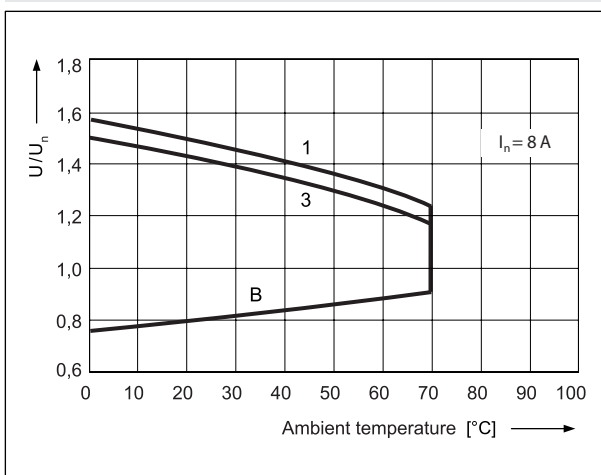
Coil operating range - DC

Fig. 4



Coil operating range - AC 50 Hz

Fig. 5



Description of Fig. 4 and 5

A - relations between make voltage and ambient temperature at no load on contacts. Coil temperature and ambient temperature are equal before coil energizing. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).

B - relations between make voltage and ambient temperature after initial coil heating up with $1,1 U_n$ at continues load of I_n on contacts. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).

1, 2, 3 - values on Y axis represent allowed overvoltage on coil at certain ambient temperature and contact load:

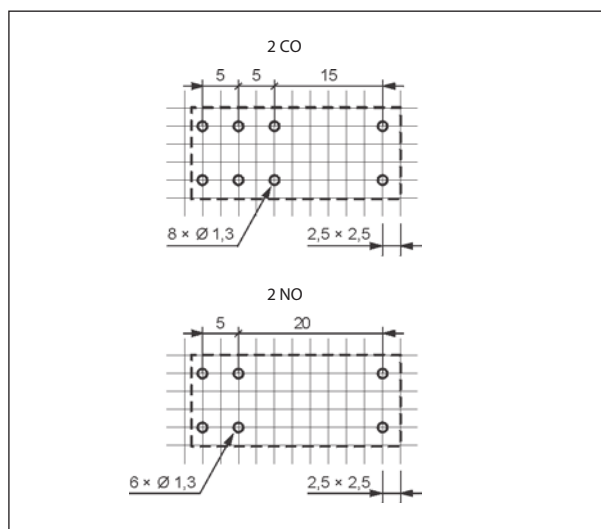
1 - no load

2 - 50% of rated load

3 - rated load

RM84 miniature relays

Pinout (solder side view)



Mounting

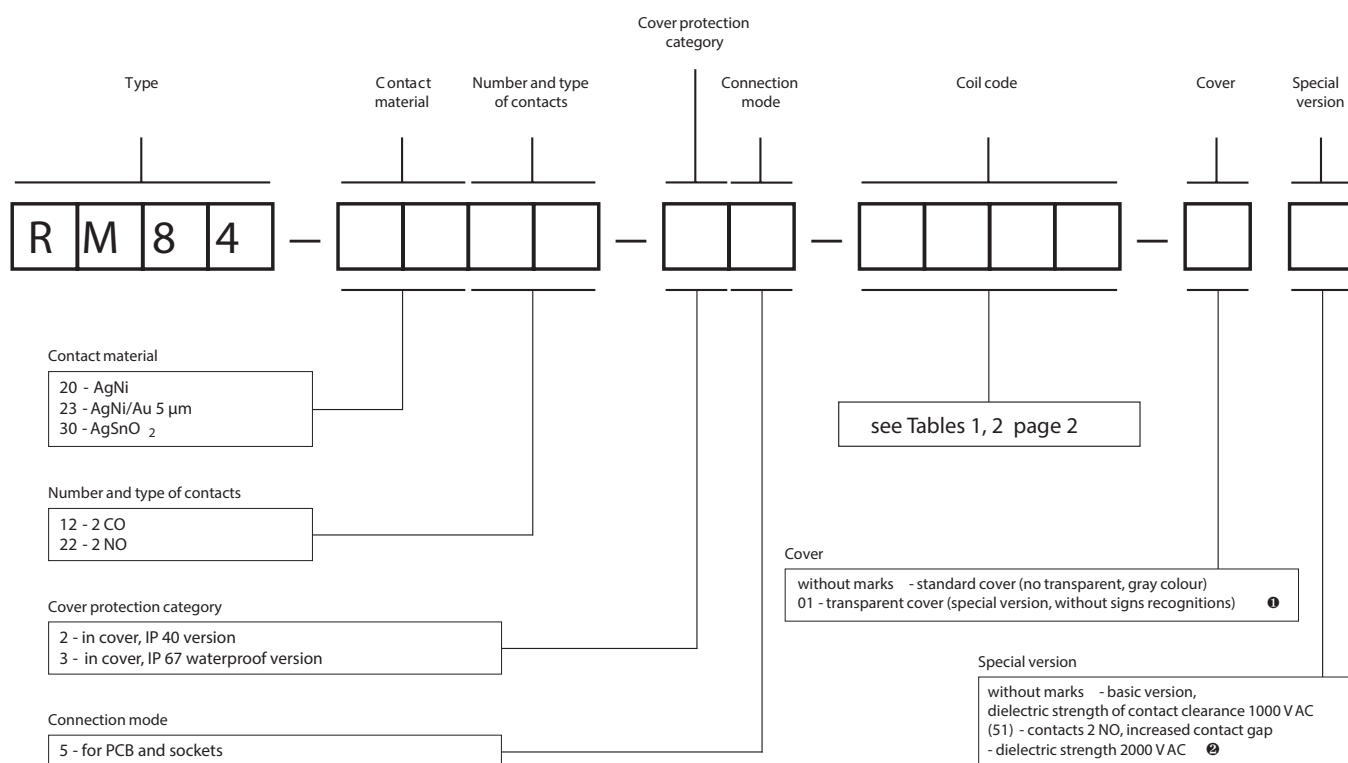
Relays RM84 ③ are designed for:

- direct PCB mounting
- screw terminals plug-in sockets GZT80 ④ and GZM80 ④ with clip GZT80-0040 or GZM80-0041 ; plug-in sockets GZS80 ④ with clip GZS-0040 or GZM80-0041 , 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with one M3 screw. Signalling / protecting modules type M... are available with sockets • plug-in sockets for PCB mounting EC50 with clip MP16-2 , MH16-2; plug-in sockets PW80 with clip MH16-2 ; plug-in sockets GD50 with clip MP16-2 , GD-0016, MH16-2.

③ For special version - relays in transparent cover: the distance of min. 5 mm between the mounting relays.

④ Plug-in sockets GZT80 , GZM80 and GZS80 may be linked with interconnection strip type ZGGZ80 .

Ordering codes



Examples of ordering code:

RM84-3012-25-5024

relay RM84 , for PCB and sockets, two changeover contacts, contact material AgSnO₂, coil voltage 24 V AC 50/60 Hz, in standard cover (no transparent, gray colour) IP 40

RM84-2012-25-1012-01

relay RM84 , for PCB and sockets, two changeover contacts, contact material AgNi, coil voltage 12 V DC in transparent cover (special version, without signs recognitions) IP 40

RM84-2322-35-1024 (51)

relay RM84 , special version with increased contact gap, for PCB and sockets, two normally open contacts, contact material AgNi/Au 5 µm, coil voltage 24 V DC, in standard cover (no transparent, gray colour) IP 67

Plug-in sockets and accessories

GZT80

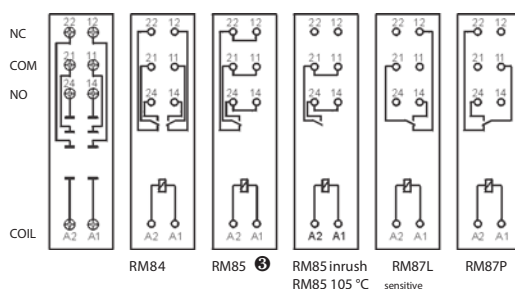
For RM84, RM85, RM85 inrush, RM85 105 °C sensitive, RM87L, RM87L sensitive, RM87P, RM87P sensitive

Screw terminals

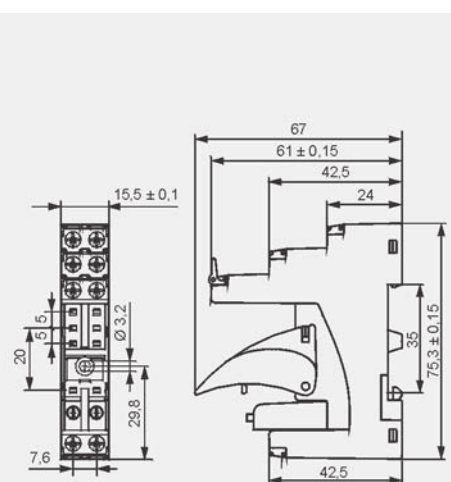
Max. tightening moment for the terminal: 0,7 Nm
35 mm rail mount acc. to PN-EN 60715 or on panel mounting
75,3 x 15,5 x 61(67) mm
Two poles, 5 mm pinout
12 A, 300 VAC



Connection diagrams



Dimensions



Accessories

ZGGZ80 GZM80-0041

GZM80

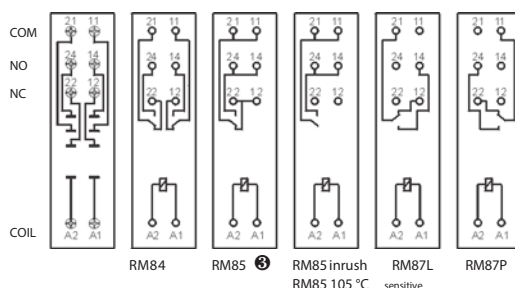
For RM84, RM85, RM85 inrush, RM85 105 °C sensitive, RM87L, RM87L sensitive, RM87P, RM87P sensitive

Screw terminals

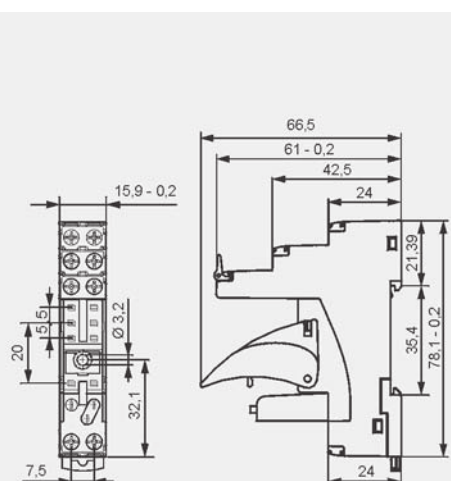
Max. tightening moment for the terminal: 0,7 Nm
35 mm rail mount acc. to PN-EN 60715 or on panel mounting
78,1 x 15,9 x 61(66,5) mm
Two poles, 5 mm pinout
12 A, 300 VAC



Connection diagrams



Dimensions



Accessories

ZGGZ80 GZM80-0041

GZS80

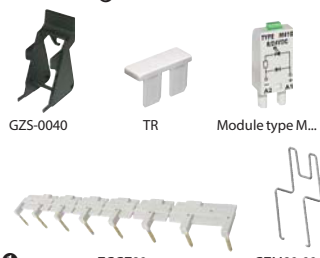
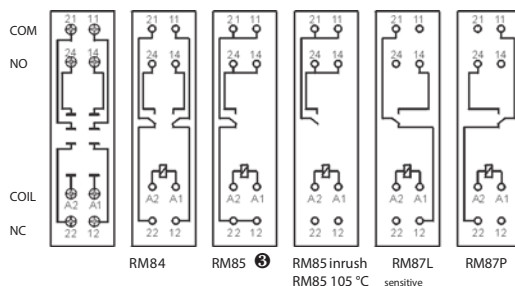
For RM84, RM85, RM85 inrush, RM85 105 °C sensitive, RM87L, RM87L sensitive, RM87P, RM87P sensitive

Screw terminals

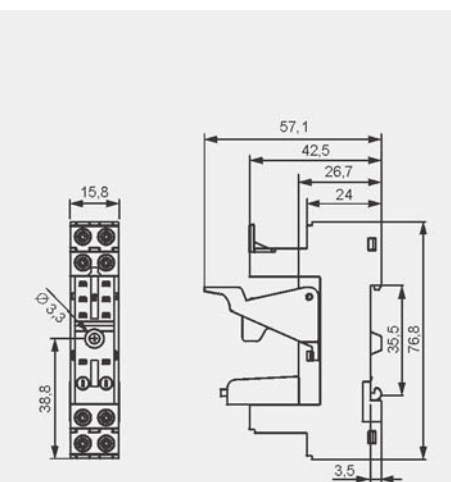
Max. tightening moment for the terminal: 0,5 Nm
35 mm rail mount acc. to PN-EN 60715 or on panel mounting
76,8 x 15,8 x 42,5(57,1) mm
Two poles, 5 mm pinout
10 A, 300 VAC



Connection diagrams



Dimensions



Accessories

ZGGZ80 GZM80-0041

① Mounting and sub-assemblies of accessories in the socket - see page 7.

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

③ For RM85, RM85 inrush, RM85 105 °C sensitive: loads above 12 A (GZT80, GZM80) or 10 A (GZS80) require bridging pairs of terminals: 11 with 21, 12 with 22, 14 with 24.

Plug-in sockets and accessories

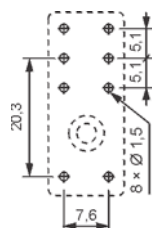
EC50

For RM84, RM85, RM85 inrush,
RM85 105 °C sensitive,
RM87L, RM87L sensitive,
RM87P, RM87P sensitive,
RM83, RM94

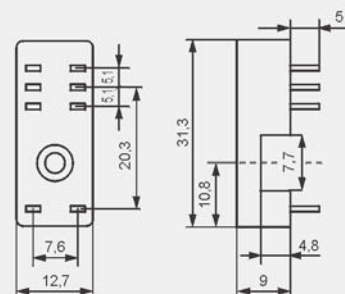
For PCB
31,3 x 12,7 x 9 mm
Two poles, 5 mm pinout
8 A, 300 V AC



Pinout



Dimensions



Accessories

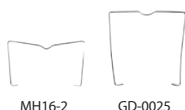
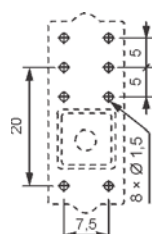
PW80

For RM84, RM85, RM85 inrush,
RM85 105 °C sensitive,
RM87L, RM87L sensitive,
RM87P, RM87P sensitive,
RM83, RM94

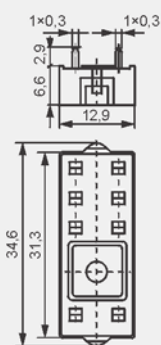
For PCB
34,6 x 12,9 x 6,6 mm
Two poles, 5 mm pinout
8 A, 250 V AC



Pinout



Dimensions



Accessories

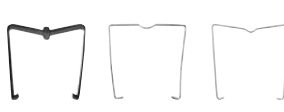
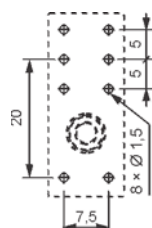
GD50

For RM84, RM85, RM85 inrush,
RM85 105 °C sensitive,
RM87L, RM87L sensitive,
RM87P, RM87P sensitive,
RM83, RM94

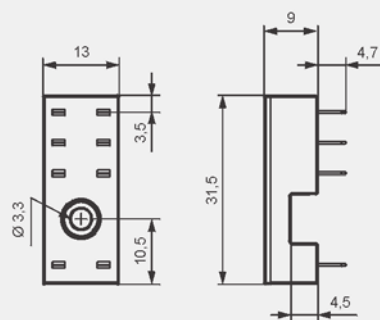
For PCB
31,5 x 13 x 9 mm
Two poles, 5 mm pinout
8 A, 300 V AC



Pinout



Dimensions

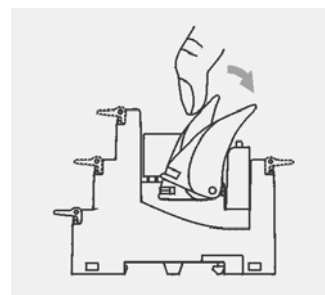


Accessories

Mounting and sub-assemblies of the relay and accessories in the socket

Signalling / protecting module type M...

Electromagnetic relay

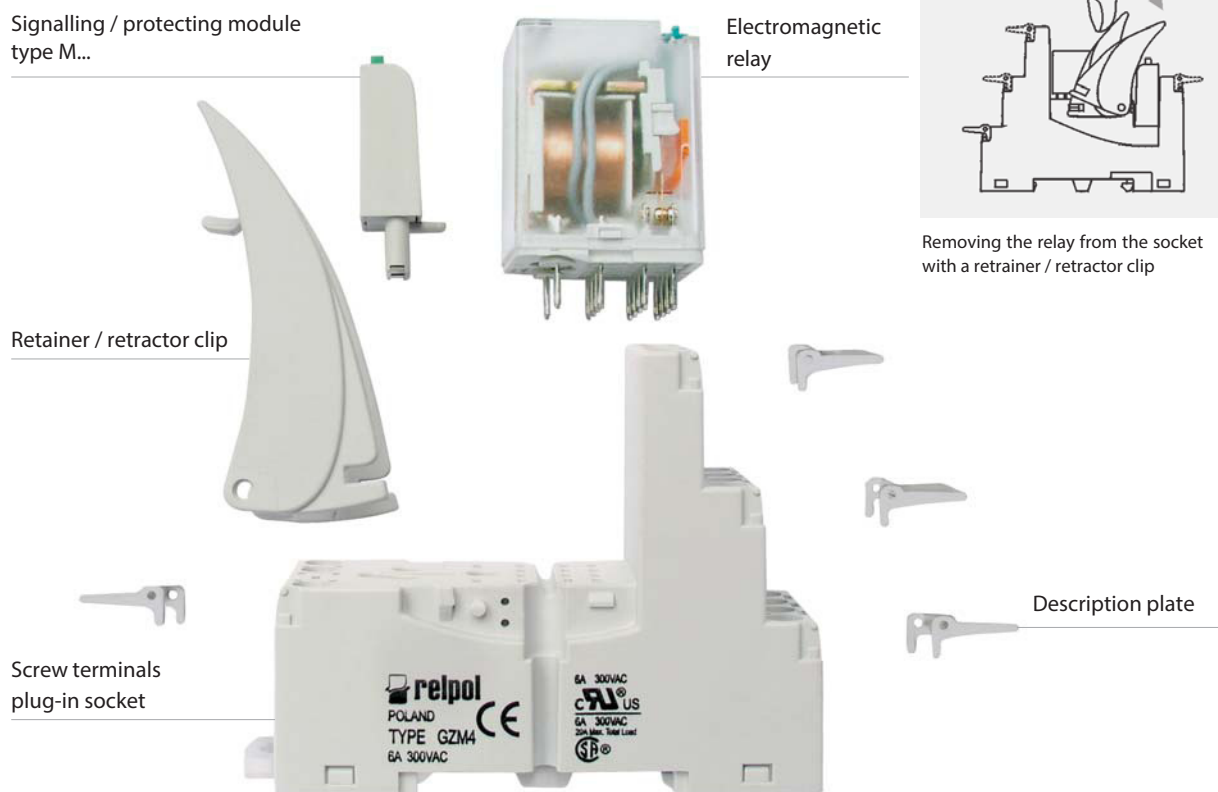


Removing the relay from the socket with a retractor / retractor clip

Retainer / retractor clip

Screw terminals plug-in socket

Description plate



Accessories

Type of plug-in socket	GZT80, GZT92, GZM80, GZM92	GZS80, GZS92	ES 32	GZT2, GZT3, GZT4, GZM2, GZM3, GZM4
Retainer / retractor clips				
Type	GZT80-0040	GZS-0040	MS16	GZT4-0040
Colour	gray	black	black	gray
Description plates				
Type	GZT80-0035	TR	TR	GZT4-0035
Colour	white	white	white	white
For relays	RM84, RM85, RM85 inrush, RM85 105 °C sensitive, RM87, RM87 sensitive	RM84, RM85, RM85 inrush, RM85 105 °C sensitive, RM87, RM87 sensitive	RM96 1 CO	R2, R3, R4
Height of relay	15...16,5 mm	15...16,5 mm	15...16,5 mm	35,6 mm

Signalling / protecting modules type M...

For sockets type: GZT80, GZT92, GZM80, GZM92, GZS80, GZS92, ES 32,
GZT2, GZT3, GZT4, GZM2, GZM3, GZM4

Modules type M... are parallely connected with relay coil.

Polarity P: -A1/+A2. Polarity N: +A1/-A2.



Modules type M...	Layout	Layout	Type of module ❶
Module D (polarization P) It limits overvoltage on DC coils.		6/230 V DC	M21P
Module D (polarization N) It limits overvoltage on DC coils.		6/230 V DC	M21N
Module LD (polarization P) It limits overvoltage on DC coils. Coil energizing indication.		6/24 V DC 24/60 V DC 110/230 V DC	M31R, M31G M32R, M32G M33R, M33G
Module LD (polarization N) It limits overvoltage on DC coils. Coil energizing indication.		6/24 V DC 24/60 V DC 110/230 V DC	M41R, M41G M42R, M42G M43R, M43G
Module RC It protects against EMC disturbance. It limits overvoltage.		6/24 V AC 24/60 V AC 110/240 V AC	M51 M52 M53
Module L Coil energizing indication.		6/24 V AC/DC 24/60 V AC/DC 110/230 V AC/DC	M61R, M61G M62R, M62G M63R, M63G
Module LV It limits overvoltage on AC and DC coils. Coil energizing indication.		6/24 V AC/DC 24/60 V AC/DC 110/230 V AC/DC	M91R, M91G M92R, M92G M93R, M93G
Module V It limits overvoltage on AC and DC coils. No indication.		24 V AC 130 V AC 230 V AC	M71 M72 M73
Module R It limits overvoltage on AC coils.		110/230 V AC	M103

❶ M...R - LED red, M...G - LED green

MODULE

type M...



LED red
M...R



LED green
M...G

Interconnection strips ZGGZ80



PI85-...-00L.

ZGGZ80

ZGGZ80 for:

Plug-in sockets	Relays for plug-in sockets	Interface relays ①
GZT80	RM84, RM85, RM85 inrush,	PI84-...-M..G (GZT80 + RM84)
GZM80	RM85 105 °C sensitive,	PI84-...-00L (GZM80 + RM84)
GZS80	RM87L ②, RM87P ②	PI85-...-M..G (GZT80 + RM85)
GZT92	RM87N ②	PI85-...-00L (GZM80 + RM85)
GZM92		
GZS92		
ES 32	RM96 1 CO	

① Interface relay PI84 (PI85) is offered as a set: plug-in socket GZT80 or GZM80 + miniature relay RM84 (RM85) + signalling / protecting module type M... + retainer / retractor clip GZT80-0040 + description plate GZT80-0035 . ② Also versions RM87. sensitive

Interconnection strip ZGGZ80

- designed for the co-operation with plug-in sockets of miniature relays and with interface relays PI84 and PI85, which are equipped with screw terminals; sockets and relays are mounted on 35 mm rail mount acc. to PN-EN 60715,
- bridges common input signals (coil terminals A1 or A2) or output signals - see photo at the top,
- maximum permissible current is 10 A / 250 V AC,
- possibility of connection of 8 sockets or relays,
- colours of strips: ZGGZ80-1 grey, ZGGZ80-2 black.

