

# RMP85

## miniature relays

version AC



version DC



NEW

- Cadmium - free contacts • Height 25,5 mm
- 5000 V / 8 mm reinforced insulation
- For PCB and plug-in sockets
- Accessories: sockets and modules
- AC and DC coils
- WT (mechanical indicator + lockable front test button)  
- standard features of relays
- Recognitions, certifications, directives: RoHS,

### Contact data

Number and type of contacts		1 CO
Contact material		<b>AgNi</b>
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage		12 V 10 mA
Rated load	AC1	16 A / 250 V AC
Min. switching current		10 mA 12 V
Max. inrush current		32 A 20 ms
Rated current		16 A
Max. breaking capacity	AC1	4 000 VA
Min. breaking capacity		0,12 W 10 mA / 12 V
Contact resistance		≤ 100 mΩ 1 A / 6 V DC
Max. operating frequency		
• at rated load	AC1	360 cycles/hour
• no load		18 000 cycles/hour

### Coil data

Rated voltage	50 Hz AC	24 ... 230 V
	DC	12 ... 110 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 and Fig. 3, 4
Rated power consumption	AC	0,75 VA ❶
	DC	0,4 ... 0,48 W ❶

### Insulation according to PN-EN 60664-1

Insulation rated voltage		500 V AC
Rated surge voltage		4 000 V 1,2 / 50 μs
Overvoltage category		III
Insulation pollution degree		3
Insulation resistance		1000 MΩ 500 V DC
Dielectric strength		
• between coil and contacts		5 000 V AC type of insulation: reinforced
• contact clearance		1 000 V AC type of clearance: micro-disconnection
Contact - coil distance		
• clearance		≥ 8 mm
• creepage		≥ 8 mm

### General data

Operating / release time (typical values)		15 ms / 8 ms
Electrical life (number of cycles)		
• resistive AC1		> 3 x 10 <sup>4</sup> AC coils, 16 A, 250 V AC
		> 10 <sup>4</sup> DC coils, 16 A, 250 V AC
Mechanical life (cycles)		> 5 x 10 <sup>6</sup>
Dimensions (L x W x H)		29 x 13 x 25,5 mm
Weight		16 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+70 °C ❷ ❸ DC: -40...+85 °C ❷ ❸
Cover protection category		IP 40 wg PN-EN 60529
Environmental protection		RTII wg IEC 61810-7
Relative humidity		5...85%
Shock resistance		10 g
Vibration resistance	(NO/NC)	10 g / 5 g length direction: 10 g / 2 g ❹ 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 The data don't include the power of electronic indicating circuit when the relay picks-up. ❷ Operating temperature for relays mounted in sockets on 35 mm rail mount: -40...+55 °C. ❸ The distance between the mounting relays: min. 5 mm for versions AC; min. 1,5 mm for versions DC.

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**Coil data - DC voltage version**

**Table 1**

Coil code	Rated voltage V DC	Coil resistance at 20 °C $\Omega$	Acceptable resistance	Coil operating range V DC ④	
				min. (at 23 °C)	max. (at 23 °C)
<b>1012</b>	<b>12</b>	<b>360</b>	<b>± 10%</b>	<b>8,4</b>	<b>18,0</b>
<b>1024</b>	<b>24</b>	<b>1 440</b>	<b>± 10%</b>	<b>16,8</b>	<b>36,0</b>
1048	48	5 760	± 15%	33,6	72,0
1110	110	25 200	± 15%	77,0	165,0

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

④ The max. allowable voltage is coil overdrive voltage, it is the instantaneous max. voltage which the relay coil could endure in very short time.

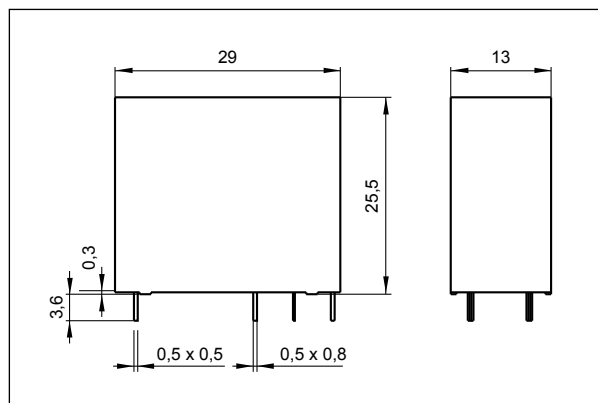
**Coil data - AC 500 Hz voltage version**

**Table 2**

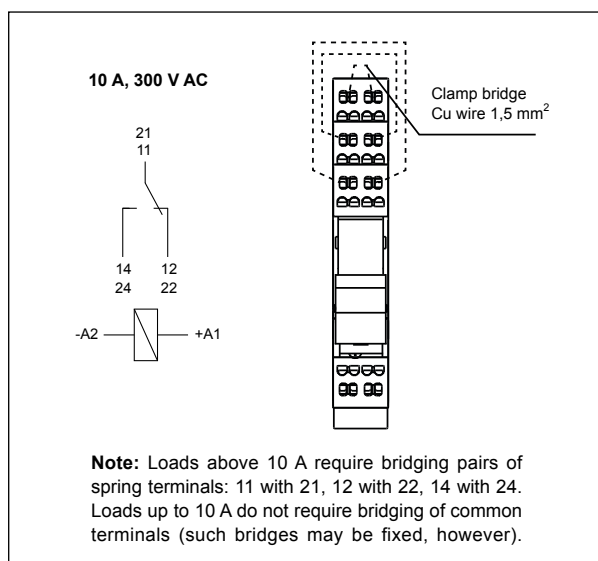
Coil code	Rated voltage V AC	Coil resistance at 20 °C $\Omega$	Acceptable resistance	Coil operating range V AC 50 Hz	
				min. (at 23 °C)	max. (at 23 °C)
<b>5024</b>	<b>24</b>	<b>350</b>	<b>± 10%</b>	<b>18,0</b>	<b>26,4</b>
5115	115	8 100	± 15%	86,3	126,5
<b>5230</b>	<b>230</b>	<b>32 500</b>	<b>± 15%</b>	<b>172,5</b>	<b>253,0</b>

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

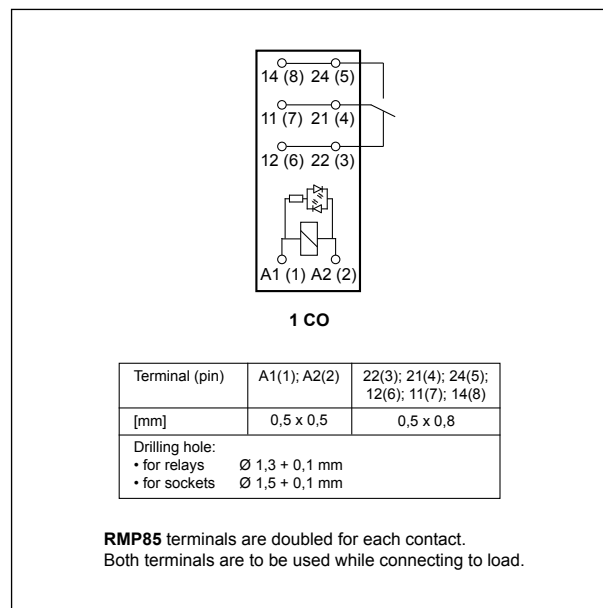
## Dimensions



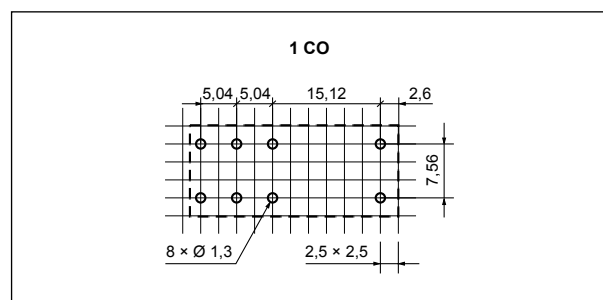
## Connection of GZMB80 socket



## Connection diagram (pin side view)

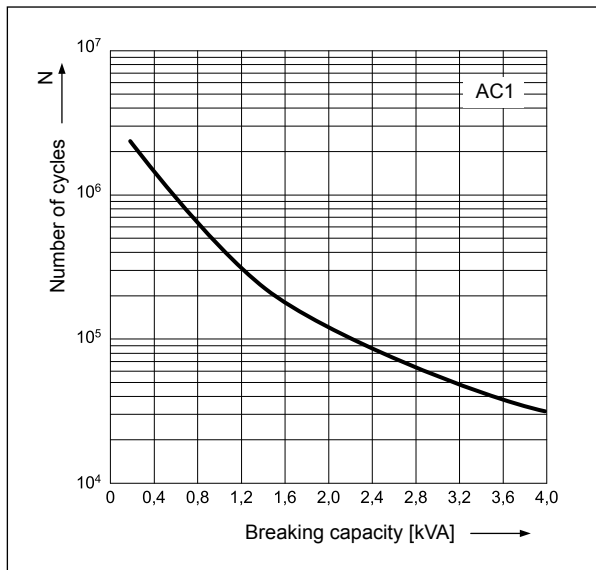


## Pinout (solder side view)



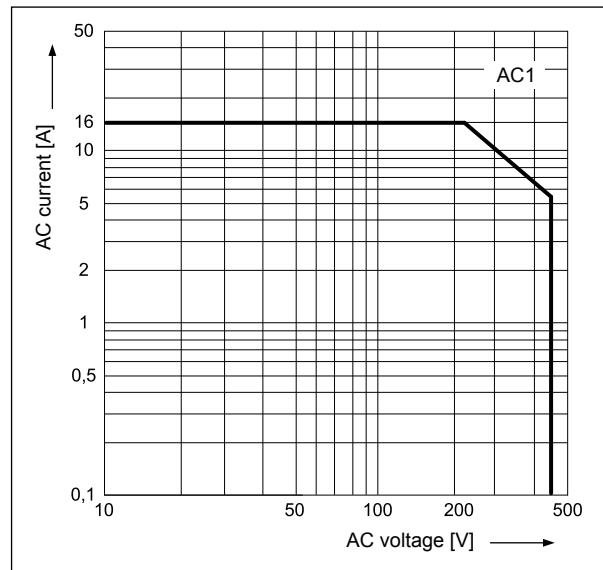
**Electrical life at AC resistive load.**  
Switching frequency: 360 cycles/hour

Fig. 1



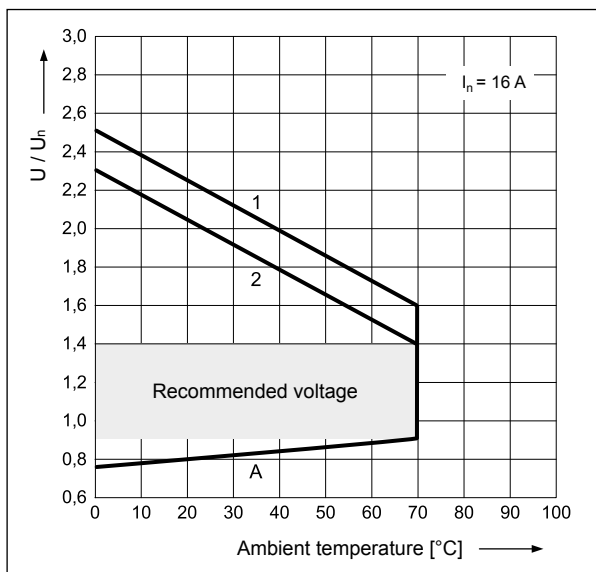
**Max. AC 50 Hz resistive load breaking capacity**

Fig. 2



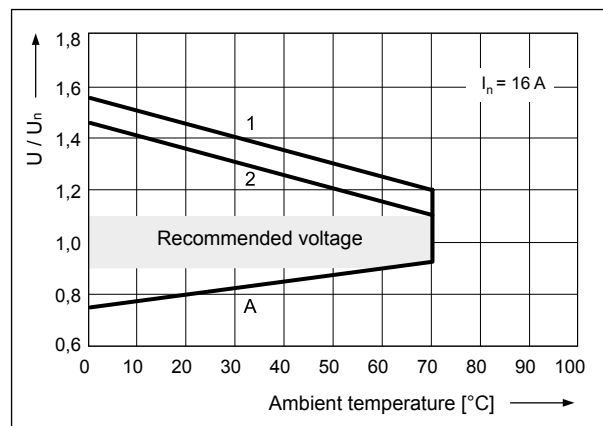
**Coil operating range - DC**

Fig. 3



**Coil operating range - AC 50 Hz**

Fig. 4



#### Description of Fig. 3 and 4

**A** - 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** - values on Y axis represent allowed overvoltage on coil at certain ambient temperature and contact load:

**1** - no load

**2** - rated load

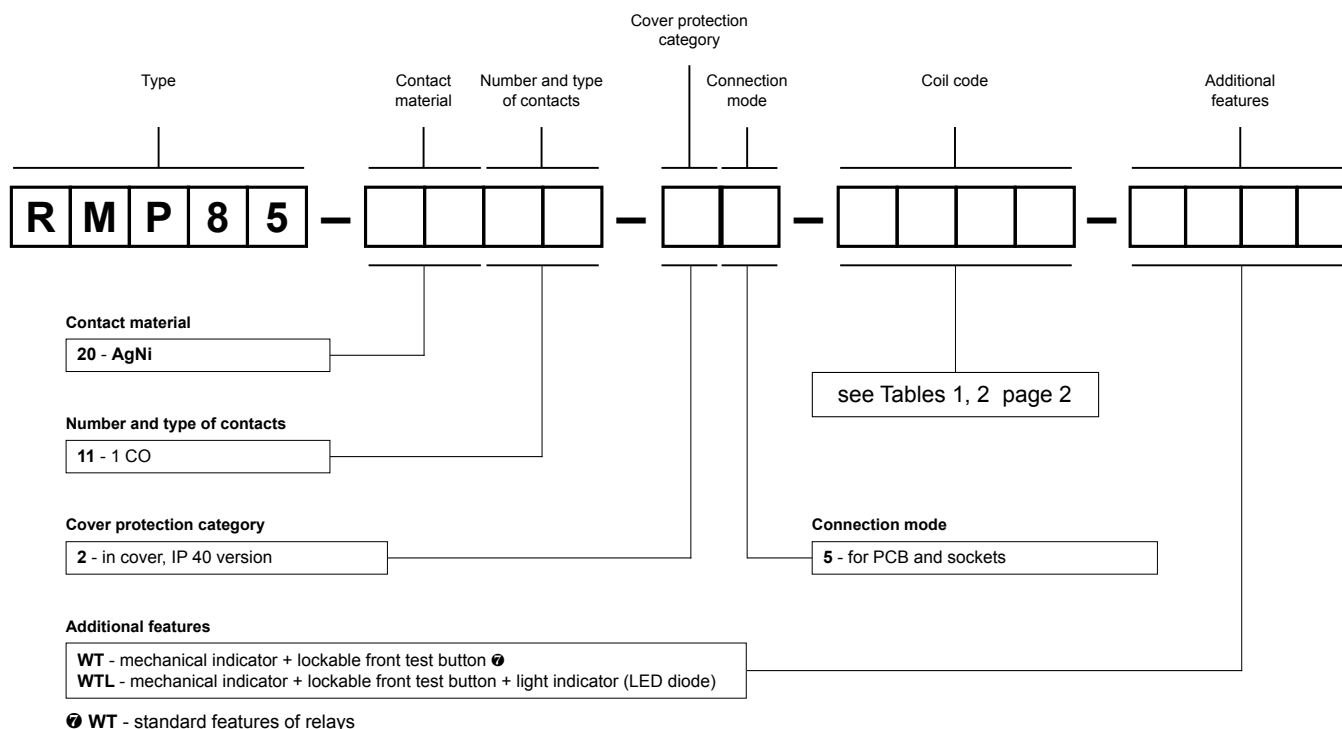
**Note:** the use of the relay at energizing voltage other than the rated voltage may lead to reduced electrical life. Energizing voltage exceeding the recommended range may damage the insulation of the relay coil.

## Mounting

Relays **RMP85** ⑤ are designed for: • direct PCB mounting • spring terminals plug-in sockets **GZMB80** ⑤ ⑥ with clip **GZMB80-0025**, 35 mm rail mount acc. to P-EN 60715. Signalling / protecting modules **type M...** are available with sockets (see page 7) • plug-in sockets for PCB mounting **EC 50** and **GD50** with clip **MH25-2**.

⑤ The distance between the mounting relays: min. 5 mm for versions AC; min. 1,5 mm for versions DC. ⑥ Loads above 10 A require bridging pairs of terminals: 11 with 21, 12 with 22, 14 with 24 - see page 2. ⑦ For sockets **GZMB80** - see page 5 (wire connection).

## Ordering codes



### Test buttons type T RMP84, RMP85

#### Note:

Normally open contacts may be closed with the blocking function of the test button of the T type (it shall be bent by 90° to vertical position). When the button is drawn back, the normally open contacts are opened.



orange  
- AC coils



blue  
- DC coils

Examples of ordering code:

**RMP85-2011-25-1024-WT**

relay **RMP85**, for PCB and sockets, one changeover contact, contact material AgNi, coil voltage 24 V DC, with mechanical indicator and lockable front test button, in cover IP 40

**RMP85-2011-25-5230-WTL**

relay **RMP85**, for PCB and sockets, one changeover contact, contact material AgNi, coil voltage 230 V AC 50 Hz, with mechanical indicator and lockable front test button and light indicator (LED diode), in cover IP 40

# Plug-in sockets and accessories

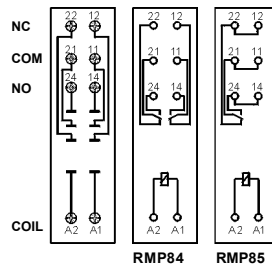
## GZMB80

For RMP84, RMP85

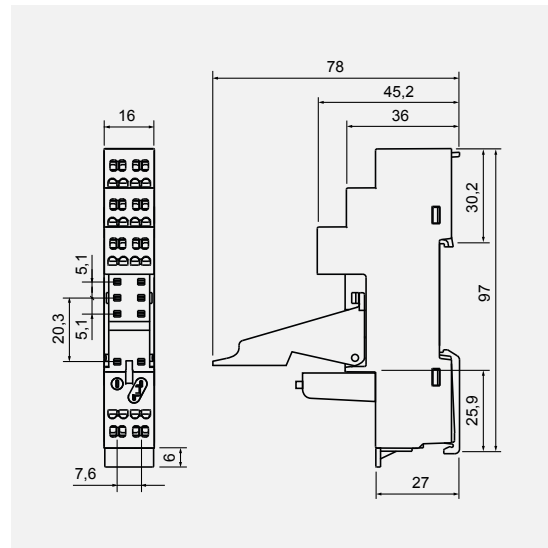
Spring terminals  
Max. cross section  
of the cables:  
1 x 0,2...1,5 mm<sup>2</sup>  
(1 x 24...16 AWG)  
Length of the cable  
deinsulation: 9...11 mm

35 mm rail mount  
acc. to PN-EN 60715  
97 x 16 x 45,2(78) mm ②  
Two poles, 5 mm pinout  
10 A, 300 V AC

## Connection diagrams ③



## Dimensions



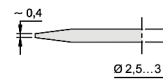
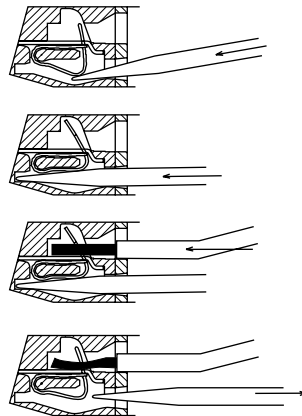
GZMB80-0025



TR



Module type M...



The drawings present the sequence of operations in course of inserting wires to the spring terminal, and the recommended screwdriver to be used for opening of case springs, comply with the DIN 5264 FORM „A“.

## Accessories ①

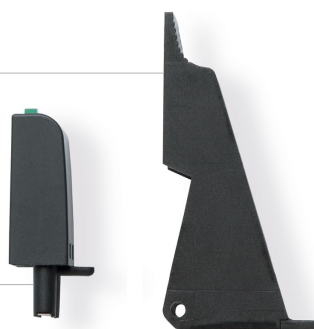
## Wire connection

① Mounting and sub-assemblies of accessories in the socket - see page 5. Signalling / protecting modules type M... - see page 7. ② In the bracket the height of socket with retainer / retractor clip is shown. ③ For RMP85: Loads above 10 A require bridging pairs of terminals: 11 with 21, 12 with 22, 14 with 24 - see page 2.

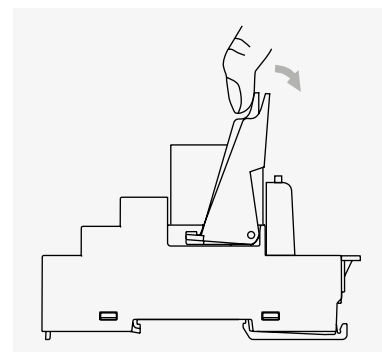
## Mounting and sub-assemblies of the relay and accessories in the socket

Retainer / retractor clip

Signalling / protecting module type M...



Electromagnetic relay

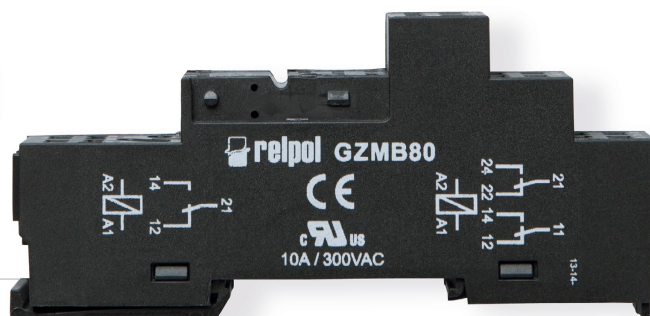


Removing the relay from the socket with a retractor / retractor clip

Description plate



Spring terminals plug-in socket



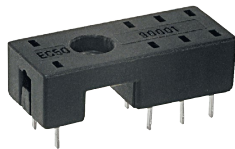
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## Plug-in sockets and accessories

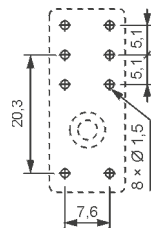
### EC 50

For RMP84, RMP85

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



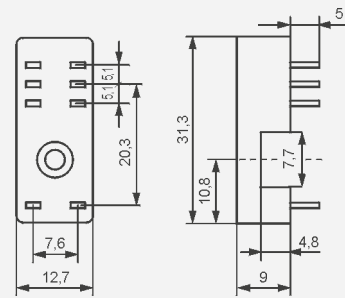
#### Pinout



#### Accessories

MH25-2

#### Dimensions



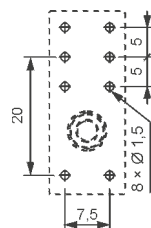
### GD50

For RMP84, RMP85

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



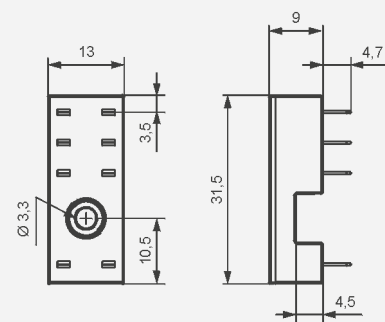
#### Pinout



#### Accessories

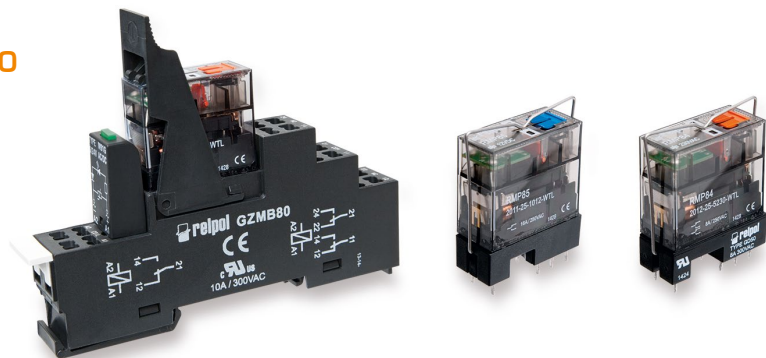
MH25-2

#### Dimensions



### GZMB80, EC 50, GD50

Plug-in sockets  
for relays  
RMP84, RMP85



#### PRECAUTIONS:

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product. 2. Never touch any live parts of the device. 3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire. 4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.

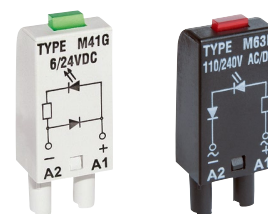
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## For sockets type:

GZT80, GZM80, GZS80, GZMB80, GZT92, GZM92, GZS92, ES 32, GZT2, GZM2, GZMB2, GZT3, GZM3, GZT4, GZM4, GZMB4

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

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



Modules type M...	Layout	Voltage	Type of module ① ②
<b>Module D (polarization P)</b> It limits overvoltage on DC coils.		6/230 V DC	M21P
<b>Module D (polarization N)</b> It limits overvoltage on DC coils.		6/230 V DC	M21N
<b>Module LD (polarization P)</b> 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
<b>Module LD (polarization N)</b> 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
<b>Module RC</b> It protects against EMC disturbance. It limits overvoltage.		6/24 V AC 24/60 V AC 110/240 V AC	M51 M52 M53
<b>Module L</b> Coil energizing indication.		6/24 V AC/DC 24/60 V AC/DC 110/230 V AC/DC	M61R, M61G M62R, M62G M63R, M63G
<b>Module LV</b> 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
<b>Module V</b> It limits overvoltage on AC and DC coils. No indication.		24 V AC 130 V AC 230 V AC	M71 M72 M73
<b>Module R</b> It limits overvoltage on AC coils.		110/230 V AC	M103

① M...R - LED red, M...G - LED green

② When ordering modules indicate their color: gray or black.

