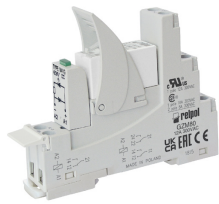


PI85 with socket GZM80 interface relays

RM85 + GZM80



- Interface relay **PI85 with socket GZM80**, designed for continuous operation*, consists of: electromagnetic relay **RM85**, grey plug-in socket **GZM80**, signalling / protecting module type **M...**, retainer / retractor clip **GZT80-0040** (plastic), white description plate **GZT80-0035**
- 35 mm rail mount acc. to EN 60715 or on panel mounting with one M3 screw • May be linked with interconnection strip type **ZGGZ80**
- Recognitions, certifications, directives**: recognitions RM85, RoHS,



Contact data

| | |
|--------------------------------|--|
| Number and type of contacts | 1 CO |
| Contact material | AgNi , AgNi/Au hard gold plating, AgSnO ₂ |
| Rated / max. switching voltage | AC 250 V / 300 V |
| Min. switching voltage | 5 V AgNi, 5 V AgNi/Au hard gold plating, 10 V AgSnO ₂ |
| Rated load (capacity) | 16 A / 250 V AC ❶ |
| AC15 | 3 A / 120 V 1,5 A / 240 V (B300) |
| DC1 | 16 A / 24 V DC (see Fig. 3) |
| DC13 | 0,22 A / 120 V 0,1 A / 250 V (R300) |
| Motor load | acc. to UL 508 1/2 HP 240 V AC, 4,9 FLA, single-phase motor ❷ |
| AC3 acc. to IEC 60947-4-1 | 0,5 kW 240 V AC, single-phase motor |
| Min. switching current | 5 mA AgNi, 2 mA AgNi/Au hard gold plating, 10 mA AgSnO ₂ |
| Max. make current | 30 A |
| Rated current | 16 A |
| Max. breaking capacity | AC1 4 000 VA |
| Min. breaking capacity | 0,3 W AgNi, 0,05 W AgNi/Au hard gold plating, 1 W AgSnO ₂ |
| Contact resistance | ≤ 100 mΩ |
| Max. operating frequency | • at rated load AC1 600 cycles/hour |
| • no load | 72 000 cycles/hour |

Coil data

| | |
|-----------------------------------|--|
| Rated voltage | 50/60 Hz AC 12, 24 , 115, 120, 230 , 240 V |
| DC | 12, 24 , 48, 60, 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 EN 60664-1

| | |
|-----------------------------|---|
| Insulation rated voltage | 300 V AC |
| Rated surge voltage | 4 000 V 1,2 / 50 μs |
| Overvoltage category | III |
| Insulation pollution degree | 3 |
| Dielectric strength | 5 000 V AC type of insulation: reinforced |
| • between coil and contacts | 1 000 V AC type of clearance: micro-disconnection |
| • contact clearance | |
| Contact - coil distance | • clearance ≥ 10 mm |
| • creepage | ≥ 10 mm |

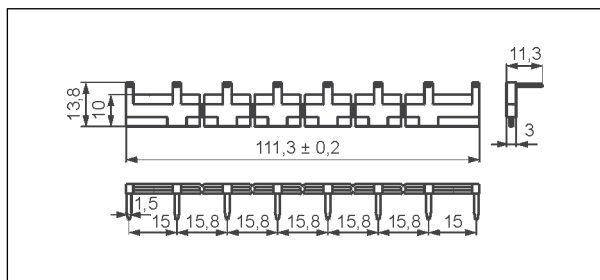
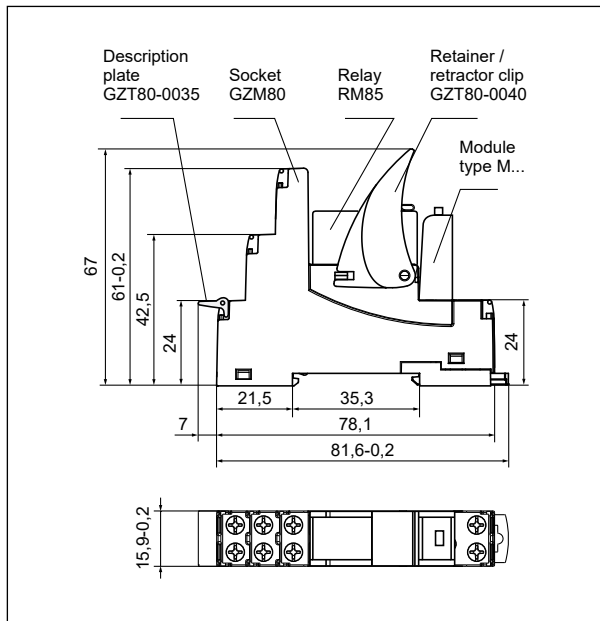
General data

| | |
|---|---|
| Operating / release time (typical values) | 7 ms / 3 ms |
| Electrical life | • resistive AC1 > 0,7 x 10 ⁵ 16 A, 250 V AC |
| • cosφ | 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) | 81,6 x 15,9 x 67 mm |
| Weight | 60 g |
| Ambient temperature | • storage -40...+85 °C |
| (non-condensation and/or icing) | • operating coil AC: -40...+70 °C coil DC: -40...+85 °C |
| Cover protection category | IP 20 EN 60529 |
| Environmental protection | RM85: RTII GZM80: RT0 EN 61810-1 |
| Shock resistance | 30 g |
| Vibration resistance | 10 g 10...150 Hz |

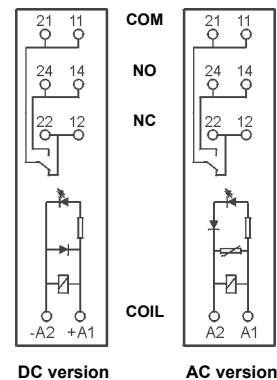
The data in bold type relate to the standard versions of the relays. *The relays are designed for continuous operation while maintaining the parameters declared in the data sheet. **The cULus certification covers the certifications of the interface kit components, i.e. socket and relay. ❶ Loads above 12 A require bridging pairs of screw terminals: 11 with 21, 12 with 22, 14 with 24 - see page 2. ❷ For single phase motors for 110-120 V AC do not use motors with higher FLA than given for 240 V AC.

PI85 with socket GZM80 interface relays

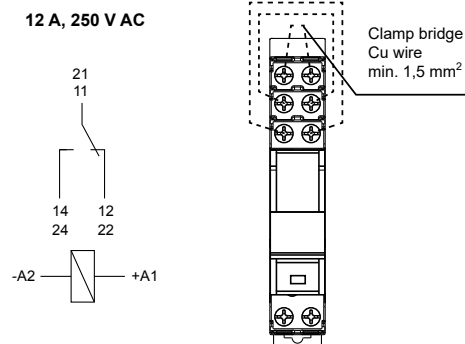
Dimensions

Interconnection strip type **ZGGZ80**

Connection diagrams (screw terminals side view)



Connection of GZM80 socket

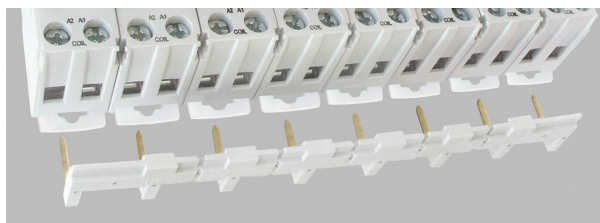


Note: Loads above 12 A require bridging pairs of screw terminals: 11 with 21, 12 with 22, 14 with 24. Loads up to 12 A do not require bridging of common terminals (such bridges may be fixed, however).

Mounting

Relays **PI85 with socket GZM80** are designed for direct mounting on 35 mm rail mount acc. to EN 60715 or on panel mounting with one M3 screw. **Connections:** max. cross section of the cables (stranded): 2 x 2,5 mm² (2 x 14 AWG), stripping length: 6,5 mm, max. tightening moment for the terminal: 0,7 Nm.

Plug-in sockets **GZM80** may be linked with interconnection strip type **ZGGZ80**. Strip **ZGGZ80** bridges common input signals, maximum permissible current is 10 A / 250 V AC, possibility of connection of 8 sockets. Colours of strips: **ZGGZ80-1** grey, **ZGGZ80-2** black (see page 5).



ZGGZ80

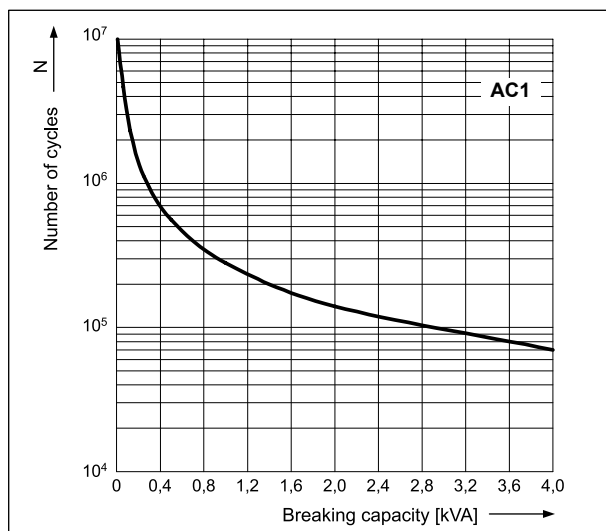
Interconnection strip ZGGZ80:
bridging of common input signals.

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.

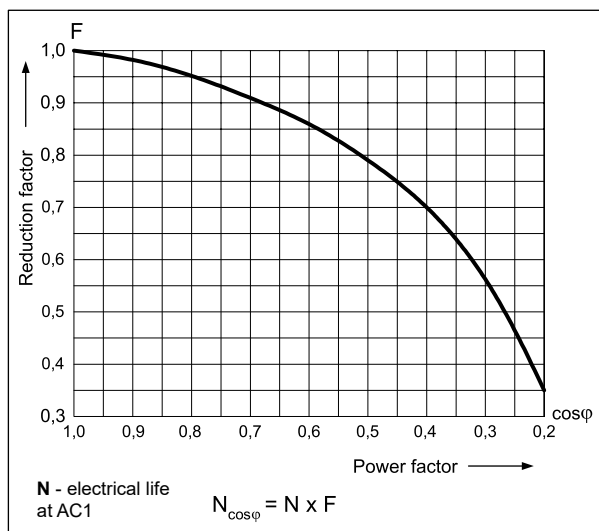
**Electrical life at AC resistive load.
Switching frequency: 600 cycles/hour**

Fig. 1



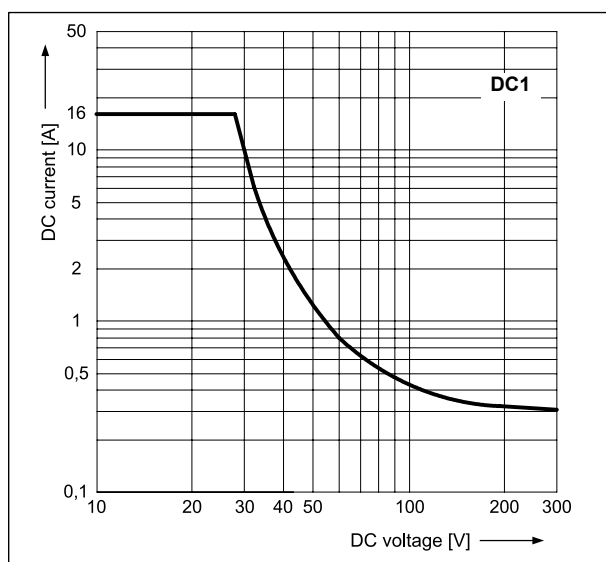
**Electrical life reduction factor
at AC inductive load**

Fig. 2



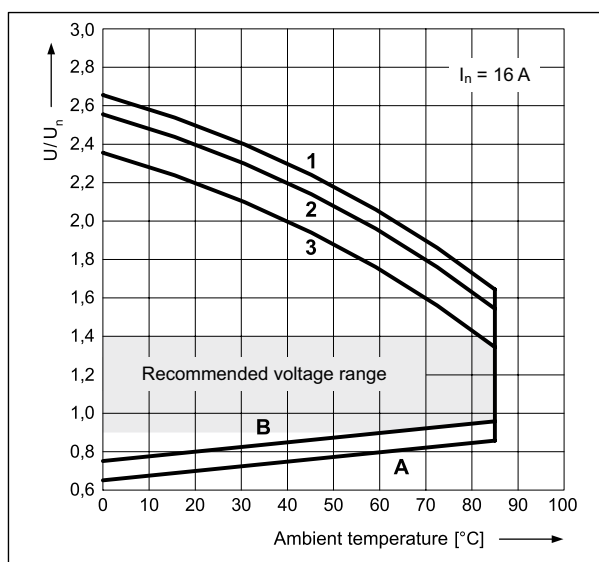
Max. DC resistive load breaking capacity

Fig. 3



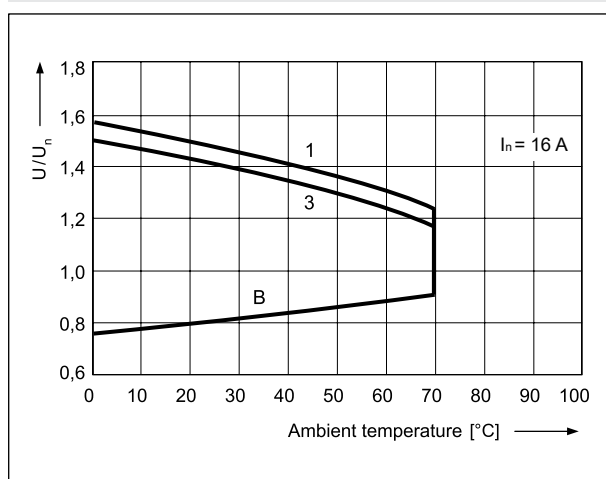
Coil operating range - DC

Fig. 4



Coil operating range - AC 50 Hz

Fig. 5



Description of Fig. 4 and 5

Using voltage other than the rated coil voltage may reduce the electrical life of the relay. Figure 4 shows the permissible voltage range for the relay coil, higher coil supply voltages may damage the coil insulation.

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 in AC1 category
- 3** - rated load in AC1 category

PI85 with socket GZM80 interface 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 ③ | |
|--------------|-----------------------|----------------------------------|--------------------------|--------------------------------|-----------------|
| | | | | min. (at 20 °C) | max. (at 20 °C) |
| 012DC | 12 | 360 | ± 10% | 8,4 | 30,6 |
| 024DC | 24 | 1 440 | ± 10% | 16,8 | 61,2 |
| 048DC | 48 | 5 700 | ± 10% | 33,6 | 122,4 |
| 060DC | 60 | 7 500 | ± 10% | 42,0 | 153,0 |
| 110DC | 110 | 25 200 | ± 10% | 77,0 | 280,0 |

The data in bold type relate to the standard versions of the relays. ③ The coil parameters are given for 20 °C and a relay with no load on the contacts. See details in Figure 5: permissible operating voltage range of the coil - DC voltage.

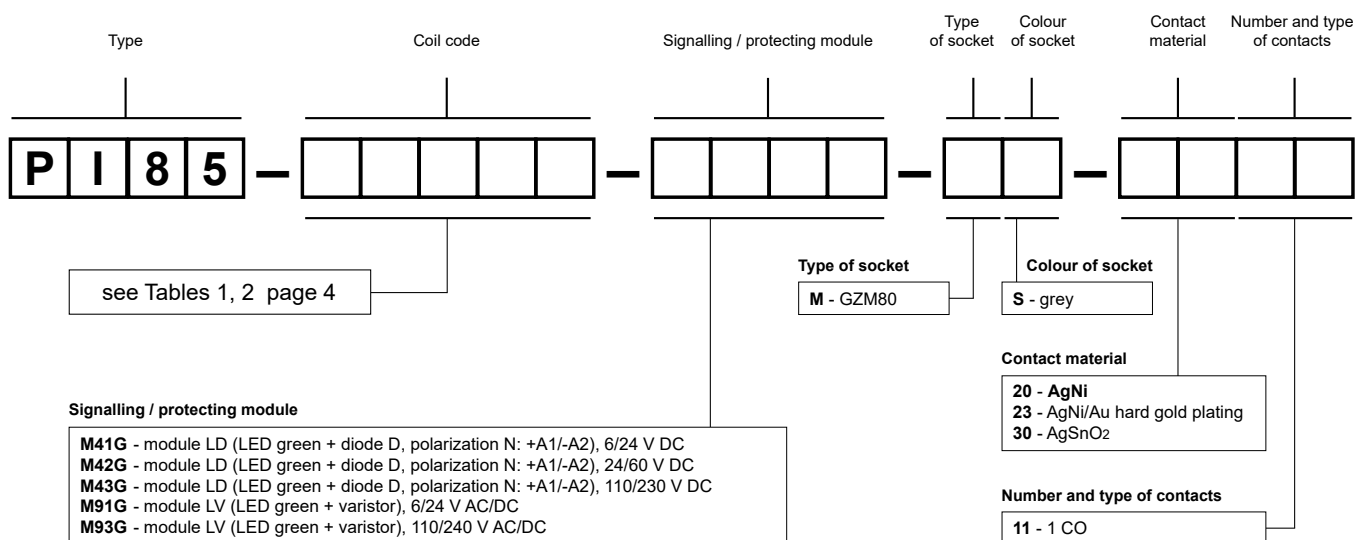
Coil data - AC 50/60 Hz voltage version

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) |
| 012AC | 12 | 100 | ± 10% | 9,6 | 13,2 |
| 024AC | 24 | 400 | ± 10% | 19,2 | 28,8 |
| 115AC | 115 | 9 600 | ± 10% | 92,0 | 138,0 |
| 120AC | 120 | 10 200 | ± 10% | 96,0 | 144,0 |
| 230AC | 230 | 38 500 | ± 10% | 184,0 | 276,0 |
| 240AC | 240 | 42 500 | ± 15% | 192,0 | 288,0 |

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

Ordering codes



Examples of ordering codes:

PI85-012DC-M41G-MS-2011

interface relay **PI85** consists of: relay **RM85** (one changeover contact, contact material AgNi, coil voltage 12 V DC), socket **GZM80** (grey, screw terminals), signalling / protecting module **M41G** (version LD), retainer / retractor clip **GZT80-0040** (plastic), description plate **GZT80-0035** (white)

PI85-230AC-M93G-MS-3011

interface relay **PI85** consists of: relay **RM85** (one changeover contact, contact material AgSnO₂, coil voltage 230 V AC 50/60 Hz), socket **GZM80** (grey, screw terminals), signalling / protecting module **M93G** (version LV), retainer / retractor clip **GZT80-0040** (plastic), description plate **GZT80-0035** (white)

Interconnection strips ZGGZ80



PI85-...-MS-...
(RM85 + GZM80)

ZGGZ80

■ ZGGZ80 for:

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

^① Interface relay **PI84 (PI85)** is offered as a **set**: electromagnetic relay **RM84 (RM85)** + plug-in socket **GZT80** or **GZM80** + 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 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.

