RM84 + GZT80

- Interface relay **PI84 with socket GZT80**, designed for continuous operation*, consists of: electromagnetic relay **RM84**, grey plug-in socket **GZT80**, 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 RM84, RoHS,

Contact data

Number and type of contacts	2 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) AC1	8 A / 250 V AC
AC15	3 A / 120 V 1,5 A / 240 V (B300)
DC1	8 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	1/3 HP 240 V AC, 3,6 FLA, single-phase motor ❶
AC3 acc. to IEC 60947-4-1	0,37 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	15 A
Rated current	8 A
Max. breaking capacity AC1	2 000 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**, 48, 115, 120, **230**, 240 V
DC	12, **24**, 48, 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

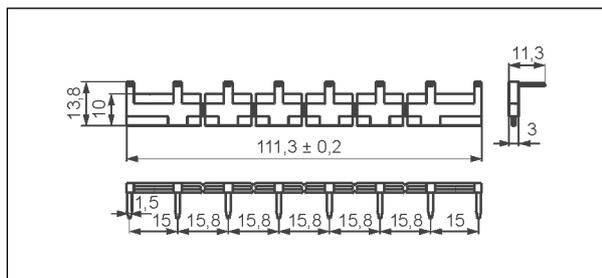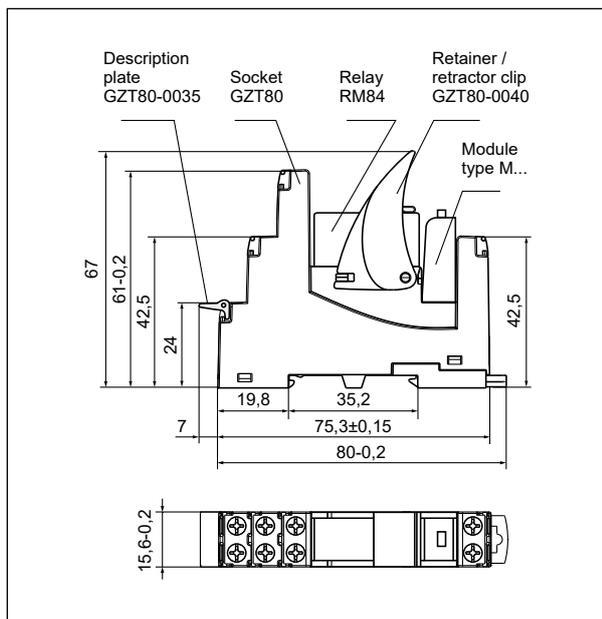|	
Insulation rated voltage	250 V AC
Rated surge voltage	4 000 V 1,2 / 50 µs
Overvoltage category	III
Insulation pollution degree	3
Dielectric strength • between coil and contacts	5 000 V AC type of insulation: reinforced
• contact clearance	1 000 V AC type of clearance: micro-disconnection
• pole - pole	2 500 V AC 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 • resistive AC1	> 10^5 8 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)	80 x 15,6 x 67 mm
Weight	61 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	RM84: RTII GZT80: RT0 EN 61810-1
Shock resistance	20 g
Vibration resistance (NO/NC)	10 g / 5 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 For single phase motors for 110-120 V AC do not use motors with higher FLA than given for 240 V AC.
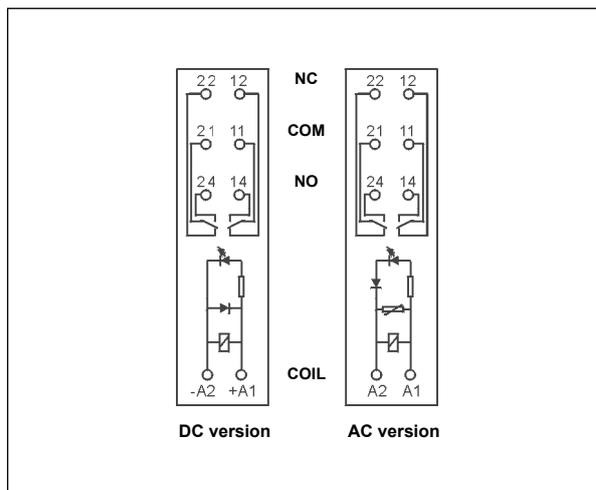
Dimensions

Description plate GZT80-0035 · Socket GZT80 · Relay RM84 · Retainer / retractor clip GZT80-0040 · Module type M...

67
61-0,2
42,5
24
42,5
19,8
35,2
7
75,3±0,15
80-0,2
15,6-0,2

Interconnection strip type **ZGGZ80**

11,3
13,8
10
3
111,3 ± 0,2
1,5
15 15,8 15,8 15,8 15,8 15,8 15

Connection diagrams
(screw terminals side view)

22 12   NC
21 11   COM
24 14   NO
            COIL
-A2 +A1
DC version

22 12
21 11
24 14
A2 A1
AC version

Connection of GZT80 socket

8 A, 250 V AC

21   11
24   22   14   12
-A2 [   ] +A1
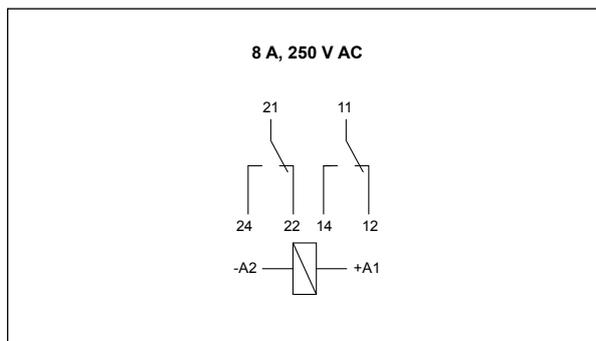
Mounting

Relays **PI84 with socket GZT80** 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 **GZT80** 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).
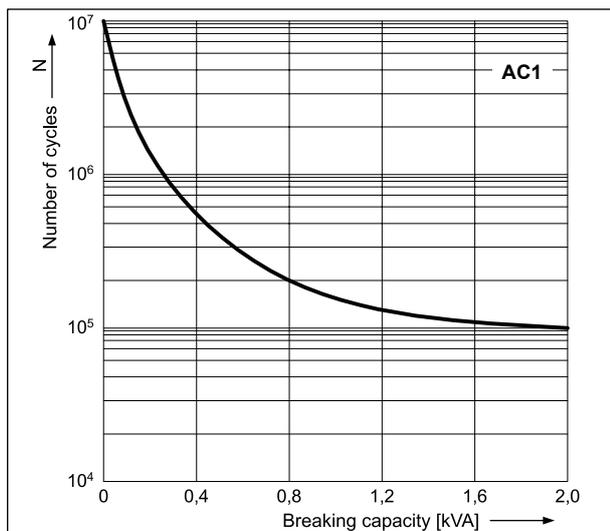
ZGGZ80

Interconnection strip ZGGZ80:
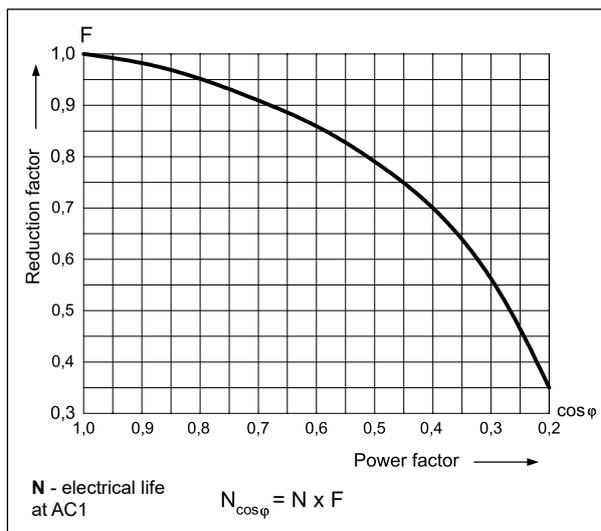bridging of common input signals.

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Electrical life at AC resistive load. Switching frequency: 600 cycles/hour — Fig. 1

Electrical life reduction factor at AC inductive load — Fig. 2

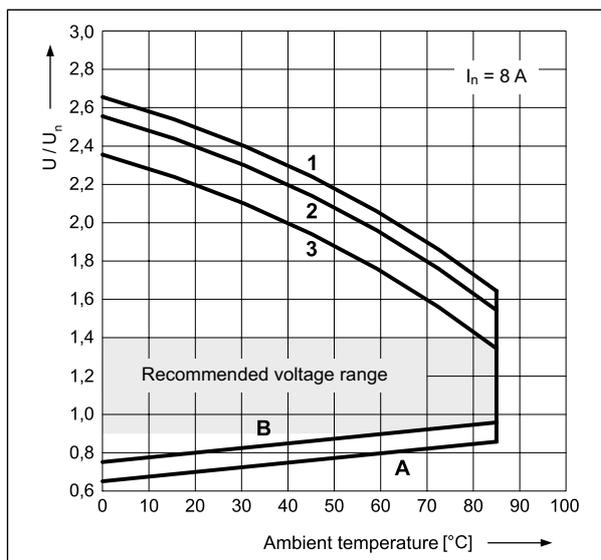**N** - electrical life at AC1

$$N_{cos\varphi} = N \times F$$

Max. DC resistive load breaking capacity — Fig. 3
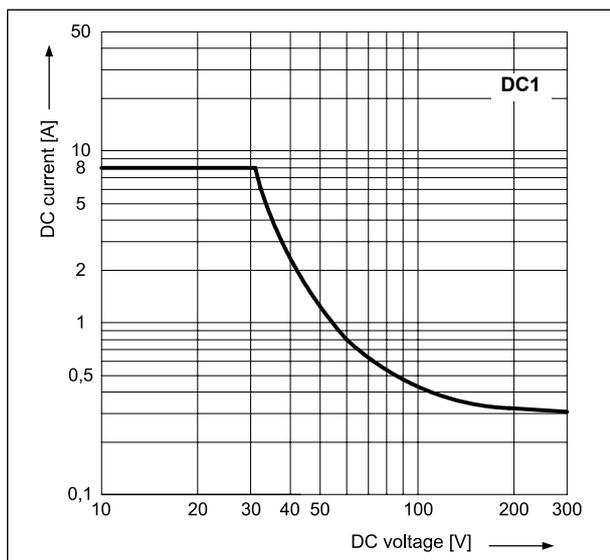
Coil operating range - DC — Fig. 4

Coil operating range - AC 50 Hz — Fig. 5
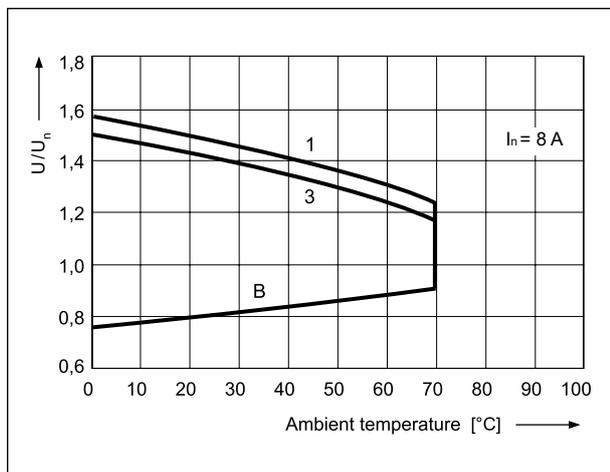
Description of Fig. 4 and 5

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

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 ❷	
				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
110DC	110	25 200	± 10%	77,0	280,0

The data in bold type relate to the standard versions of the relays.   ❷ 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.
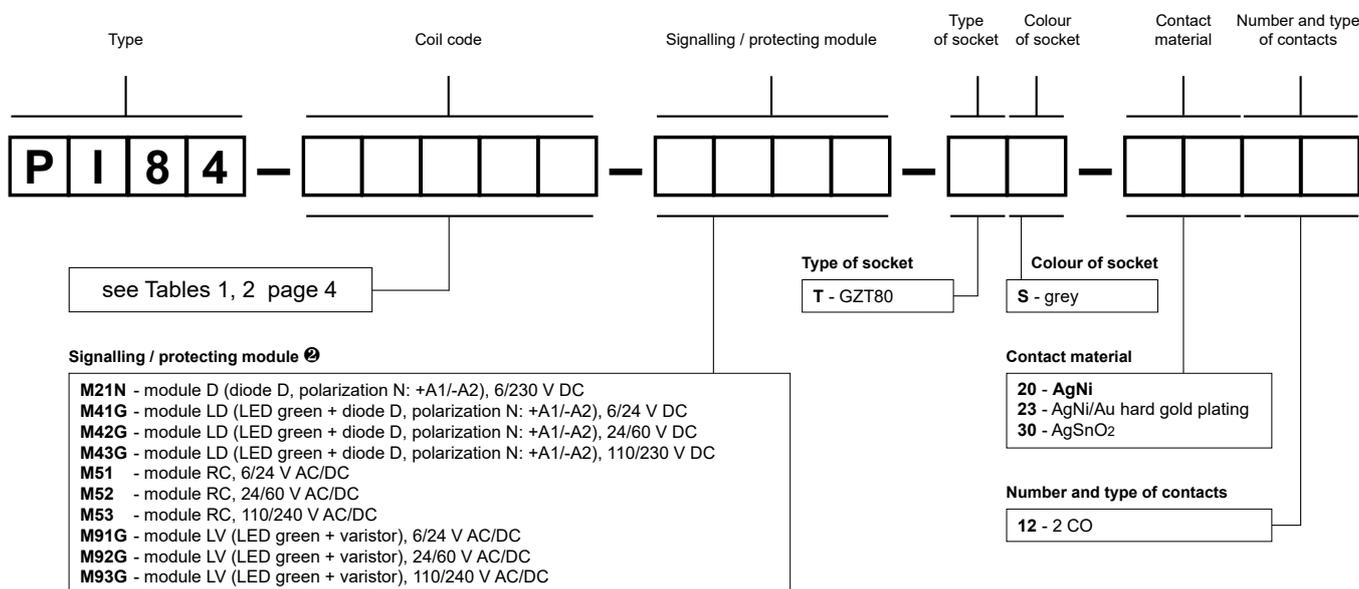
Coil data - AC 50/60 Hz voltage version   Table 2

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**
048AC	48	1 550	± 10%	38,4	57,6
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

Type	Coil code	Signalling / protecting module	Type of socket	Colour of socket	Contact material	Number and type of contacts

$$P\;I\;8\;4 - \square\square\square\square\square - \square\square\square\square - \square\square - \square\square\square\square$$

see Tables 1, 2 page 4

Type of socket
T - GZT80

Colour of socket
S - grey

Signalling / protecting module ❷

M21N - module D (diode D, polarization N: +A1/-A2), 6/230 V DC
M41G - module LD (LED green + diode D, polarization N: +A1/-A2), 6/24 V DC
M42G - module LD (LED green + diode D, polarization N: +A1/-A2), 24/60 V DC
M43G - module LD (LED green + diode D, polarization N: +A1/-A2), 110/230 V DC
M51   - module RC, 6/24 V AC/DC
M52   - module RC, 24/60 V AC/DC
M53   - module RC, 110/240 V AC/DC
M91G - module LV (LED green + varistor), 6/24 V AC/DC
M92G - module LV (LED green + varistor), 24/60 V AC/DC
M93G - module LV (LED green + varistor), 110/240 V AC/DC

Contact material

20 - AgNi
23 - AgNi/Au hard gold plating
30 - $AgSnO_2$

Number and type of contacts

12 - 2 CO

❷ Modules D, RC - only for versions with contacts AgNi

Examples of ordering codes:

PI84-012DC-M41G-TS-2012   interface relay **PI84** consists of: relay **RM84** (two changeover contacts, contact material AgNi, coil voltage 12 V DC), socket **GZT80** (grey, screw terminals), signalling / protecting module **M41G** (version LD), retainer / retractor clip **GZT80-0040** (plastic), description plate **GZT80-0035** (white)

PI84-230AC-M93G-TS-3012   interface relay **PI84** consists of: relay **RM84** (two changeover contacts, contact material $AgSnO_2$, coil voltage 230 V AC 50/60 Hz), socket **GZT80** (grey, screw terminals), signalling / protecting module **M93G** (version LV), retainer / retractor clip **GZT80-0040** (plastic), description plate **GZT80-0035** (white)

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

ZGGZ80

■ ZGGZ80 for:

Plug-in sockets	Relays for plug-in sockets	Interface relays ❶
GZT80	RM84, RM85, RM85 inrush, RM85 105 °C sensitive, RM87L ❷, RM87P ❷, RM87N ❷	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	

❶ 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**.   ❷ 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.

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