

Interface relays

PI84 with socket GZT80	158		
PI85 with socket GZT80	162	PI6-1P	186
PI84 with socket GZM80	166	PI6-1T	188
PI85 with socket GZM80	170	PI6-OC	190
PIR2 with socket GZM2	174	PIR6W-1P-...	192
PIR3 with socket GZM3	177	PIR6W-1PS-...	195
PIR4 with socket GZM4	180	PIR6WB-1PS-...	198
PIR2M with socket GZ2	183	PI6W-1P	201

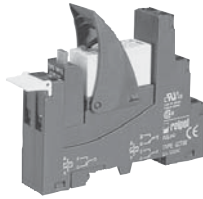
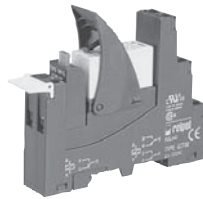
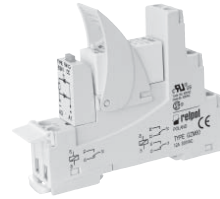
The interface relays perform the function of input/output separation in the applications with PLC controllers, and they are applied in numerous other electric devices as interface and output elements.

The basic features of the relays are:

- quick mounting,
- separation of control circuits from output circuits,
- coil overvoltage suppression devices,
- light indicators of operation,
- number of contacts: from 1 to 4.

The high quality and reliability of the interface relays have been proved by their numerous successful applications. Miniature and industrial relays of the types: RM699BV, RM84, RM85, R2, R3, R4 are the basis for these relays.

The relays are recognized and certified by:     
They meet the requirements of RoHS Directive.

Type of relay	PI84	PI85	PI84
❶ The data in bold type pertain to the standard versions of the relays. ❷ Between coil (input) and contacts ❸ AUCOTEAM GmbH Berlin - railway standards	with socket GZT80	with socket GZT80	with socket GZM80
			
	Dimensions (L x W x H)mm75,3 x 15,5 x 67	75,3 x 15,5 x 67	78,1 x 15,9 x 66,5

- ❶** The data in bold type pertain to the standard versions of the relays.
❷ Between coil (input) and contacts
❸ AUCOTEAM GmbH Berlin - railway standards

Contact data

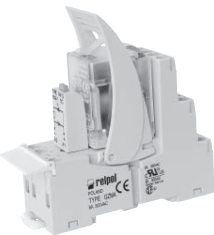
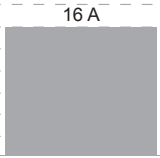
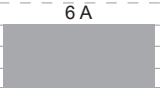
Number and type of contacts		2 C/O	1 C/O	2 C/O
Rated / max. switching voltage	V AC	250 / 440	250 / 440	250 / 440
Rated current	25 A 16 A 12 A 8 A 6 A 3 A 1 A	8 A	16 A	8 A
Contact material ❶		AgNi	AgNi	AgNi

Coil data / Input control circuit

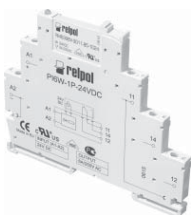
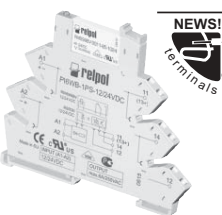
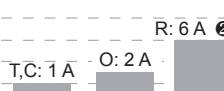
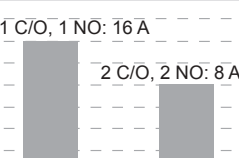
Rated voltage ❶	V AC	12 ... 230 50/60 Hz	12 ... 230 50/60 Hz	12 ... 230 50/60 Hz
	V DC	12 ... 110	12 ... 110	12 ... 110
Rated power consumption	VA AC	0,75	0,75	0,75
	W DC	0,4...0,48	0,4...0,48	0,4...0,48

General data

Electrical life (cycles)		> 10 ⁵	> 0,7 x 10 ⁵	> 10 ⁵
Mechanical life (cycles)		> 3 x 10 ⁷	> 3 x 10 ⁷	> 3 x 10 ⁷
Ambient temperature	°C AC	-40...+70	-40...+70	-40...+70
• operating	°C DC	-40...+85	-40...+85	-40...+85
Weight	g	62	62	59
Cover protection category		IP 20	IP 20	IP 20
Recognitions, certifications, directives		  recognitions RM84, RoHS	  recognitions RM85, RoHS	  recognitions RM84, RoHS
Insulation dielectric strength ❷	V AC	5 000	5 000	5 000
Contact - coil distance				
• clearance	mm	≥ 10	≥ 10	≥ 10
• creepage	mm	≥ 10	≥ 10	≥ 10
Operating time	ms	7	7	7
Release time	ms	3	3	3
Detailed informations		page 158	page 162	page 166

PI85	PIR2	PIR3	PIR4	PIR2M
with socket GZM80	with socket GZM2	with socket GZM3	with socket GZM4	with socket GZ2 
				
78,1 x 15,9 x 66,5	75 x 27 x 82	75 x 27 x 82	75 x 27 x 82	65,2 x 20 x 60,6
1 C/O	2 C/O	3 C/O	4 C/O	2 C/O
250 / 440	250 / 440	250 / 440	250 / 440	250 / 250
				
AgNi	AgNi	AgNi	AgNi	AgNi
12 ... 230 50/60 Hz	12 ... 230 50/60 Hz	12 ... 230 50/60 Hz	12 ... 230 50/60 Hz	6 ... 230 50/60 Hz
12 ... 110	12 ... 110	12 ... 110	12 ... 110	6 ... 110
0,75	1,6 50 Hz 1,3 60 Hz	1,6 50 Hz 1,3 60 Hz	1,6 50 Hz 1,3 60 Hz	1,2
0,4...0,48	0,9	0,9	0,9	0,9
$> 0,7 \times 10^5$	$> 10^5$	$> 10^5$	$> 10^5$	$\geq 2 \times 10^5$
$> 3 \times 10^7$	$> 2 \times 10^7$	$> 2 \times 10^7$	$> 2 \times 10^7$	$\geq 10^7$
-40...+70	-40...+55	-40...+55	-40...+55	-40...+55
-40...+85	-40...+70	-40...+70	-40...+70	-40...+55
59	97	107	108	44,5
IP 20	IP 20	IP 20	IP 20	IP 00
 recognitions RM85, RoHS	 AUCOTEAM® recognitions R2, RoHS	 AUCOTEAM® recognitions R3, RoHS	 AUCOTEAM® recognitions R4, RoHS	 recognitions R2M, RoHS
5 000	2 500	2 500	2 500	2 000
≥ 10	$\geq 2,5$	$\geq 2,5$	$\geq 1,6$	≥ 3
≥ 10	≥ 4	≥ 4	$\geq 3,2$	≥ 4
7	AC: 10, DC: 13	AC: 10, DC: 13	AC: 10, DC: 13	AC: 8, DC: 10
3	AC: 8, DC: 3	AC: 8, DC: 3	AC: 8, DC: 3	AC: 7, DC: 3
page 170	page 174	page 177	page 180	page 183

Type of relay		PI6-1P	PI6-1T	PI6-OC
❶ The data in bold type pertain to the standard versions of the relays. ❷ Contacts AgSnO₂ ❸ 0,3 / 0,3 24 V AC/DC ❹ Refers version PIR6W-....-230VAC/DC-10 with integrated anti-interference filter				
Dimensions (L x W x H)	mm	93,8 x 6,2 x 80	93,8 x 6,2 x 80	93,8 x 6,2 x 80
Output circuit - contact / output data		Triac		Transistor
Number and type of contacts / outputs		1 C/O	1 NO	1 NO
Rated / max. switching voltage	V AC	250 / 400 ❷	400 / 440	DC: 70 / 70
Rated current	25 A			
	16 A			
	12 A			
	8 A			
	6 A			
	3 A			
	1 A			
Contact material ❶		AgSnO ₂ AgSnO ₂ /Au 3 µm		
Input control circuit				
Rated voltage ❶	V AC			
	V DC	12 ... 36	5...32	5...32
	V AC/DC	24 ... 230 AC: 50/60 Hz	24 ... 230 AC: 50/60 Hz	24 ... 230 AC: 50/60 Hz
Rated power consumption	VA AC			
	W DC	0,3...0,7	0,3	0,3
	VA AC / W DC	0,3...1,6 / 0,3...1,6	1,6 / 1,6 230 V AC/DC ❹	1,0 / 1,0 230 V AC/DC ❹
General data				
Electrical life (cycles)		> 0,6 x 10 ⁵		
Mechanical life (cycles)		> 2 x 10 ⁷		
Ambient temperature	°C AC	-40...+55	-40...+55	-40...+55
	°C DC	-40...+60 12, 24 V DC	-40...+55	-40...+55
Weight	g	40	40	40
Cover protection category		IP 20	IP 20	IP 20
Recognitions, certifications, directives		CE cULus VDE PC	CE PC	CE PC
Insulation dielectric strength				
• input - output	V AC	4 000	4 000	3 000
Input - output distance				
• clearance	mm	≥ 6		
• creepage	mm	≥ 8		
Operating time	ms	AC: 7, DC: 6	max. 10 (zero turn-on)	
Release time	ms	AC: 15, DC: 10	max. 10	
Detailed informations		page 186	page 188	page 190

PIR6W-1P-...	PIR6W-1PS-...-⑤	PIR6WB-1PS-...-⑤	MT-PI-...
			
98,5 x 6,2 x 85,5	98,5 x 6,2 x 85,5	98,3 x 6,2 x 84,6	90 (98,8) x 17,5 x 63,5
Contacts	Contacts ⑤	Contacts ⑤	Contacts
1 C/O	1 C/O ⑤	1 C/O ⑤	1 C/O, 2 C/O, 1 NO, 2 NO
250 / 400 ②	250 / 400 ②	250 / 400 ②	... / max. 400 V AC, 300 V DC
			
AgSnO ₂ AgSnO ₂ /Au 3 μm	AgSnO ₂ AgSnO ₂ /Au 3 μm	AgSnO ₂ AgSnO ₂ /Au 3 μm	AgNi
12 ... 36 24 ... 230 AC: 50/60 Hz	6 ... 60 24 ... 230 AC: 50/60 Hz	6 ... 60 24 ... 230 AC: 50/60 Hz	115 ... 230 AC: 50/60 Hz 12 ... 48 12 ... 115 AC: 50 Hz
0,3 0,3...2,1 / 0,3...1,0	0,2...0,5 0,5...1,2 / 0,4...1,2	0,2...0,5 0,5...1,2 / 0,4...1,2	0,5...1,0 0,5...0,65 0,65...0,75 / 0,65...0,75
> 0,6 x 10 ⁵ > 2 x 10 ⁷	> 0,5 x 10 ⁵ > 10 ⁷	> 0,5 x 10 ⁵ > 10 ⁷	≥ 10 ⁷
-40...+55 -40...+60 12, 24 V DC	-40...+55 ② -40...+55 ②	-40 (-20 ④)...+55 -40 (-20 ④)...+55	-20...+45 -20...+45
45	45	55	1 C/O, 1 NO: 60 ⑥
IP 20	IP 20	IP 20	IP 20
			
4 000	4 000	4 000	1 C/O, 2 C/O: 3 000 ⑦
≥ 6 ≥ 8	≥ 6 ≥ 8	≥ 6 ≥ 8	
AC: 11, DC: 8, (AC/DC: 20 ④)	AC/DC: 20, DC: 8	AC/DC: 20, DC: 8	15
AC: 15, DC: 10, (AC/DC: 18 ④)	AC/DC: 25, DC: 10	AC/DC: 25 (18 ④), DC: 10	20
page 192	page 195	page 198	page 203

⑤ R - operational electromagnetic relay RM699BV type for PIR6W.-1PS-...-R.
T/C/O - operational solid state relay RSR30 type for PIR6W.-1PS-...-T (or C or O)
- see catalogue "Solid state relays" and www.relpol.com.pl
⑥ 2 C/O, 2 NO: 65 g
⑦ 1 NO, 2 NO: 4000 V AC

RM84 + GZT80



- Interface relay **PI84 with socket GZT80** consists of:
 - electromagnetic relay **RM84**, plug-in socket **GZT80** black,
 - signalling / protecting module **type M...** LED green:
- version **LD** (polarization N: +A1/-A2) - M41G or M43G; version **LV** - M91G or M93G,
- retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**
- 35 mm rail mount acc. to PN-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 C/O
Contact material		AgNi
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage		5 V
Rated load (capacity)	AC1	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
Max. inrush current		15 A
Rated current		8 A
Max. breaking capacity	AC1	2 000 VA
Min. breaking capacity		0,3 W
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 ... 230 V
	DC	12 ... 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		300 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
• cos φ		see Fig. 2
• L/R=40 ms		> 10 ⁵ 0,12 A, 220 V DC
Mechanical life (cycles)		> 3 x 10 ⁷
Dimensions (L x W x H)		75,3 x 15,5 x 67 mm
Weight		62 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+70 °C DC: -40...+85 °C
Cover protection category		IP 20 PN-EN 60529
Environmental protection		RM84: RTII GZT80: RT0 PN-EN 116000-3
Shock resistance		20 g
Vibration resistance	(NO/NC)	10 g / 5 g 10...150 Hz

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

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance $\pm 10\%$ at 20 °C Ω	Coil operating range at 20 °C V DC	
			min.	max.
12DC	12	360	8,4	30,6
24DC	24	1 440	16,8	61,2
110DC	110	25 200	77,0	280,0

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

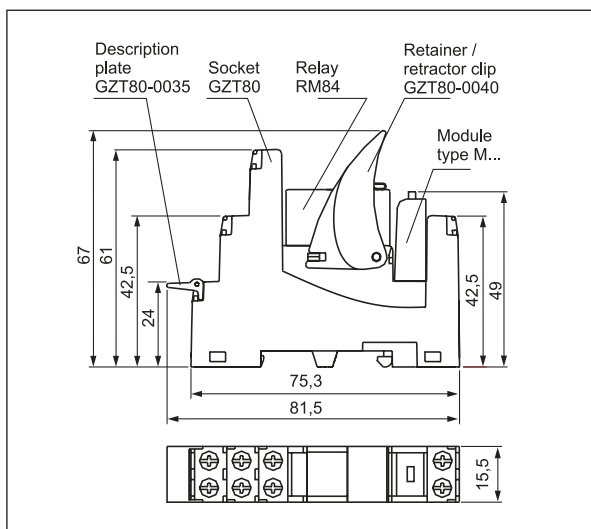
Coil data - AC 50/60 Hz voltage version

Table 2

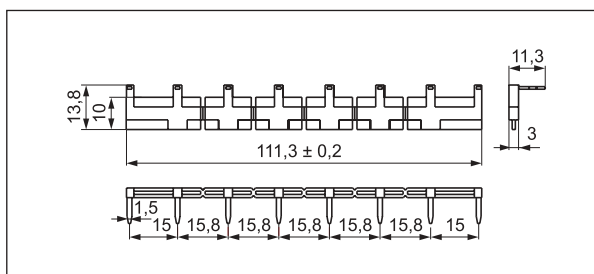
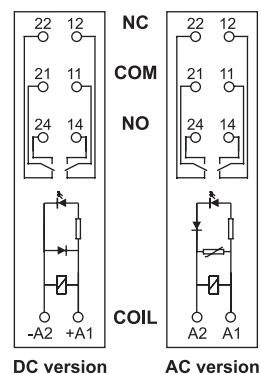
Coil code	Rated voltage V AC	Coil resistance $\pm 10\%$ at 20 °C Ω	Coil operating range at 20 °C V AC - 50 Hz	
			min.	max.
12AC	12	100	9,6	13,2
24AC	24	400	19,2	26,4
120AC	120	10 200	96,0	144,0
230AC	230	38 500	184,0	253,0

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

Dimensions

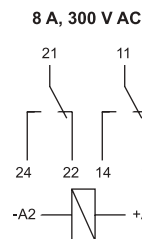


Connection diagrams (screw terminals side view)



Interconnection strip type **ZGGZ80**

Connection of GZT80



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

Fig. 1

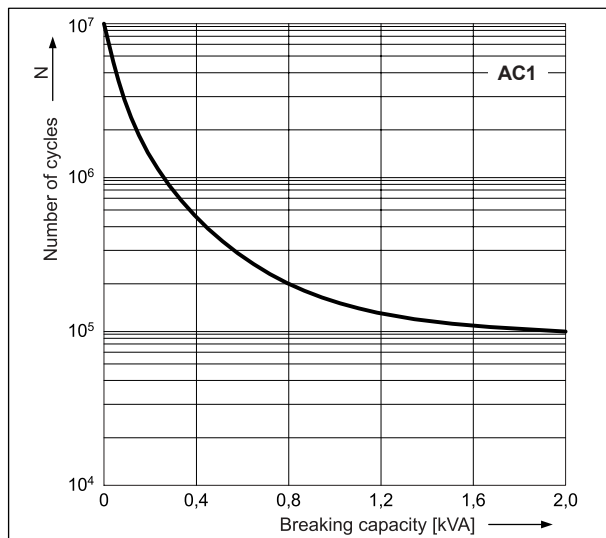

Electrical life reduction factor at AC inductive load

Fig. 2

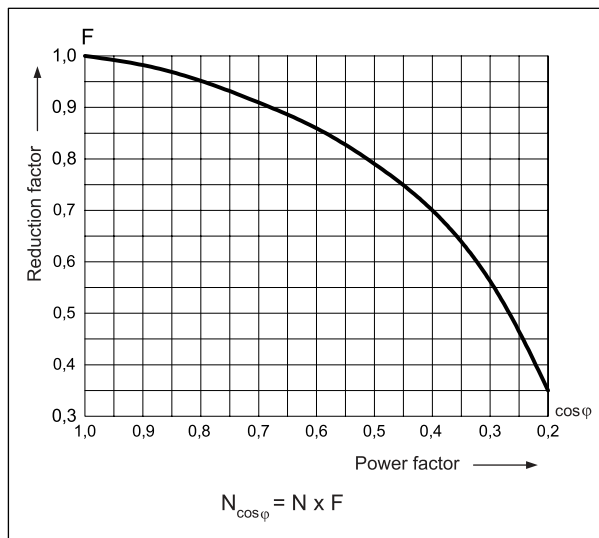

Max. DC resistive load breaking capacity

Fig. 3

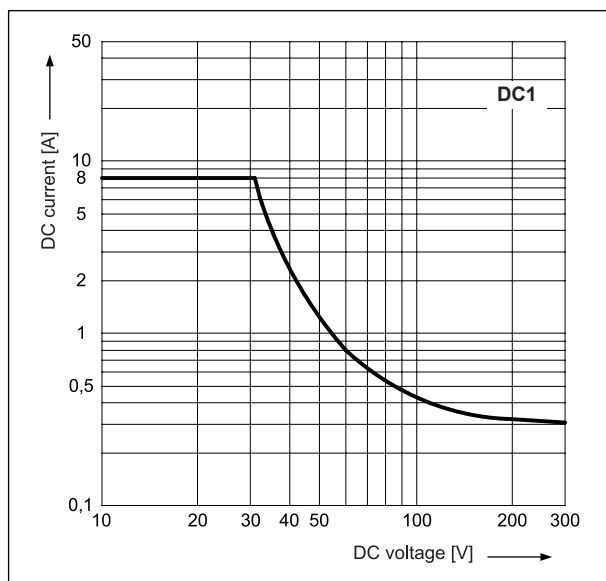

Coil operating range - DC

Fig. 4

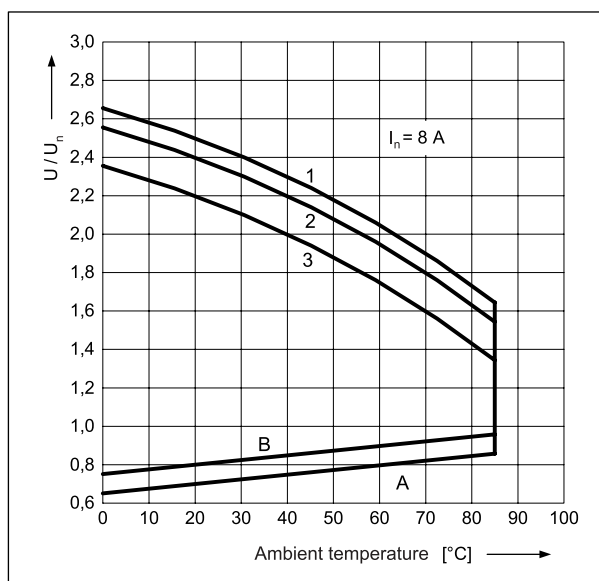
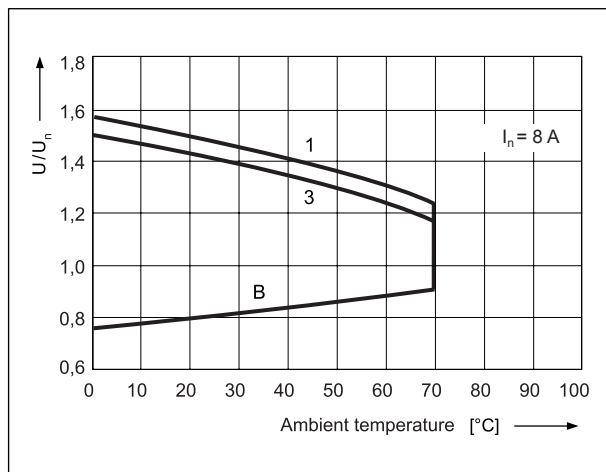

Coil operating range - AC 50 Hz

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:

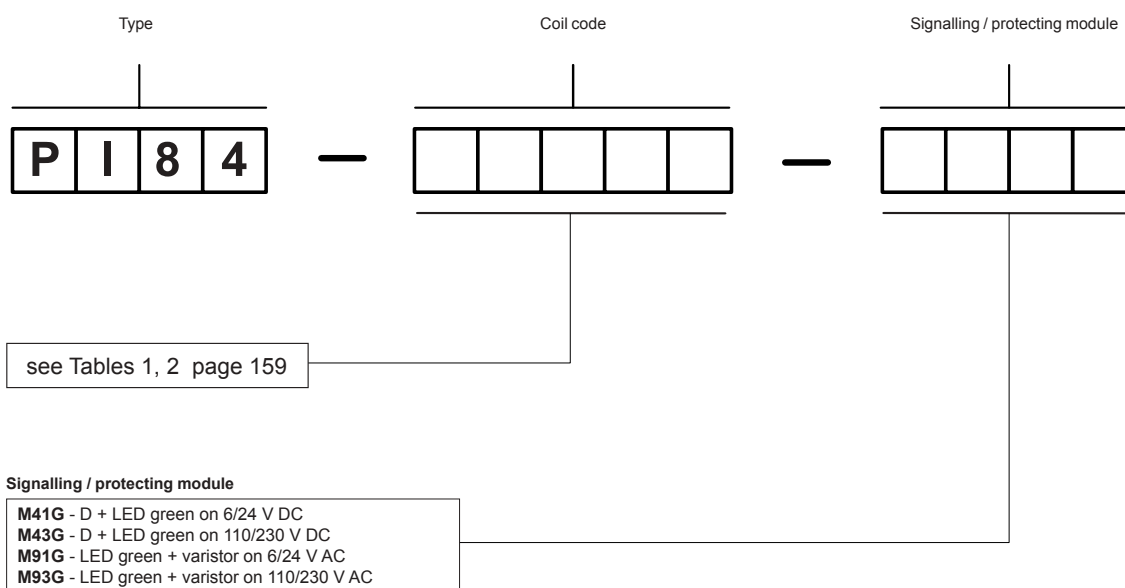
- 1** - no load
- 2** - 50% of rated load
- 3** - rated load

Mounting

Relays **PI84 with socket GZT80** ❶ are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with one M3 screw.

❶ 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 261).

Ordering codes



Examples of ordering codes:

- PI84-12DC-M41G** interface relay **PI84**, which consists of: relay **RM84**, voltage version 12 V DC, plug-in socket **GZT80** black (screw terminals), signalling / protecting module **M41G** (version **LD**, polarization N: +A1/-A2, LED green), retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**
- PI84-24AC-M91G** interface relay **PI84**, which consists of: relay **RM84**, voltage version 24 V AC 50/60 Hz, plug-in socket **GZT80** black (screw terminals), signalling / protecting module **M91G** (version **LV**, LED green), retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**

RM85 + GZT80



- Interface relay **PI85 with socket GZT80** consists of:
 - electromagnetic relay **RM85**, plug-in socket **GZT80** black,
 - signalling / protecting module **type M...** LED green:
 - version **LD** (polarization N: +A1/-A2) - M41G or M43G; version **LV** - M91G or M93G,
 - retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**
- 35 mm rail mount acc. to PN-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 C/O
Contact material		AgNi
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage		5 V
Rated load (capacity)	AC1	16 A / 250 V AC
	AC15	3 A / 120 V 1,5 A / 240 V (B300)
	AC3	750 W (single-phase motor)
	DC1	16 A / 24 V DC (see Fig. 3)
	DC13	0,22 A / 120 V 0,1 A / 250 V (R300)
Min. switching current		5 mA
Max. inrush current		30 A
Rated current		16 A
Max. breaking capacity	AC1	4 000 VA
Min. breaking capacity		0,3 W
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 ... 230 V
	DC	12 ... 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		300 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
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
• cos φ		see Fig. 2
• L/R=40 ms		> 10 ⁵ 0,12 A, 220 V DC
Mechanical life (cycles)		> 3 x 10 ⁷
Dimensions (L x W x H)		75,3 x 15,5 x 67 mm
Weight		62 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+70 °C DC: -40...+85 °C
Cover protection category		IP 20 PN-EN 60529
Environmental protection		RM85: RTII GZT80: RT0 PN-EN 116000-3
Shock resistance		30 g
Vibration resistance		10 g 10...150 Hz

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

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance $\pm 10\%$ at 20 °C Ω	Coil operating range at 20 °C V DC	
			min.	max.
12DC	12	360	8,4	30,6
24DC	24	1 440	16,8	61,2
110DC	110	25 200	77,0	280,0

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

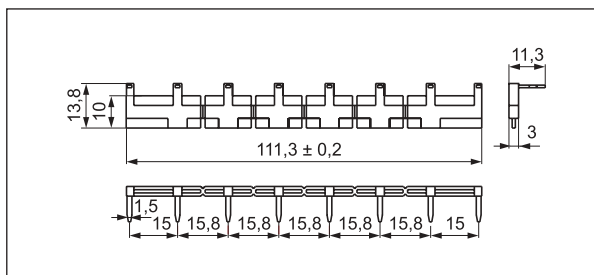
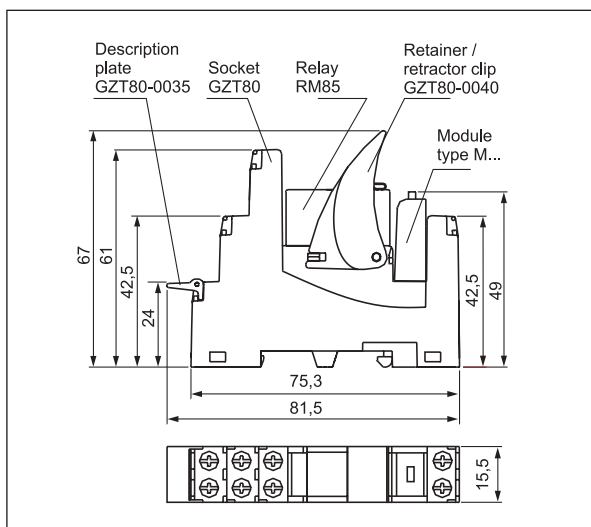
Coil data - AC 50/60 Hz voltage version

Table 2

Coil code	Rated voltage V AC	Coil resistance $\pm 10\%$ at 20 °C Ω	Coil operating range at 20 °C V AC - 50 Hz	
			min.	max.
12AC	12	100	9,6	13,2
24AC	24	400	19,2	26,4
120AC	120	10 200	96,0	144,0
230AC	230	38 500	184,0	253,0

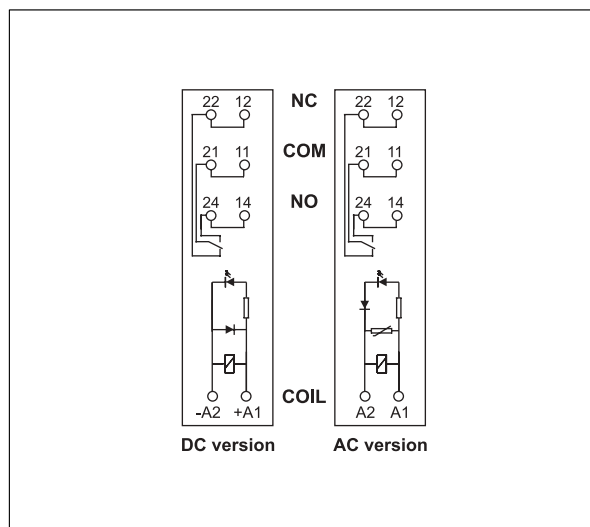
The data in bold type pertain to the standard versions of the relays.

Dimensions

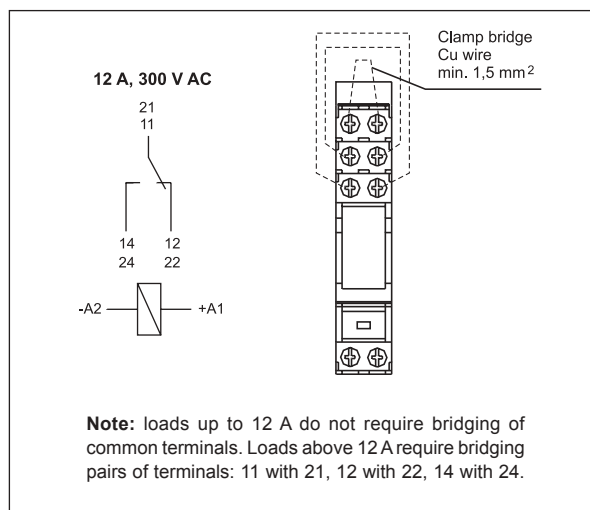


Interconnection strip type **ZGGZ80**

Connection diagrams (screw terminals side view)



Connection of GZT80



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

Fig. 1

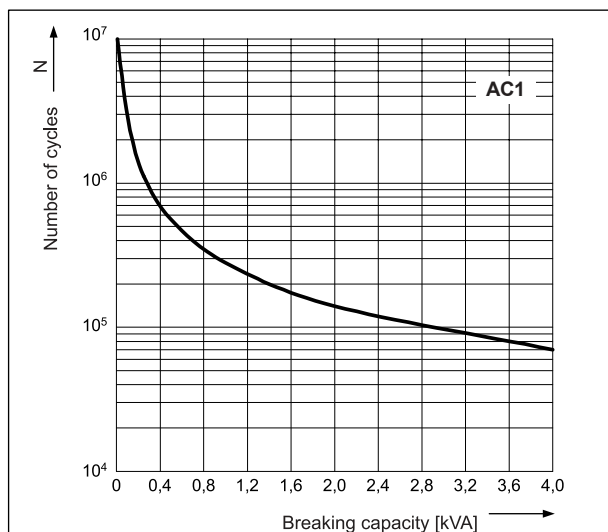

Electrical life reduction factor
at AC inductive load

Fig. 2

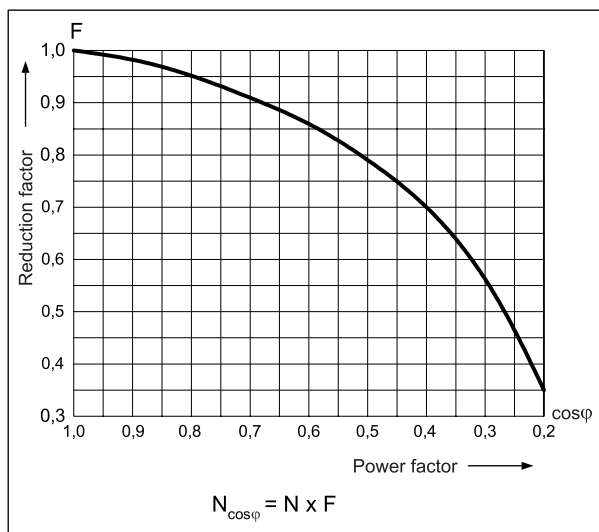

Max. DC resistive load breaking capacity

Fig. 3

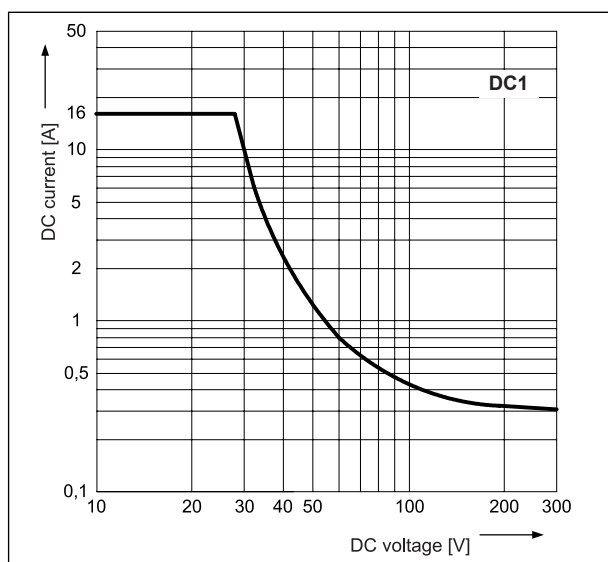

Coil operating range - DC

Fig. 4

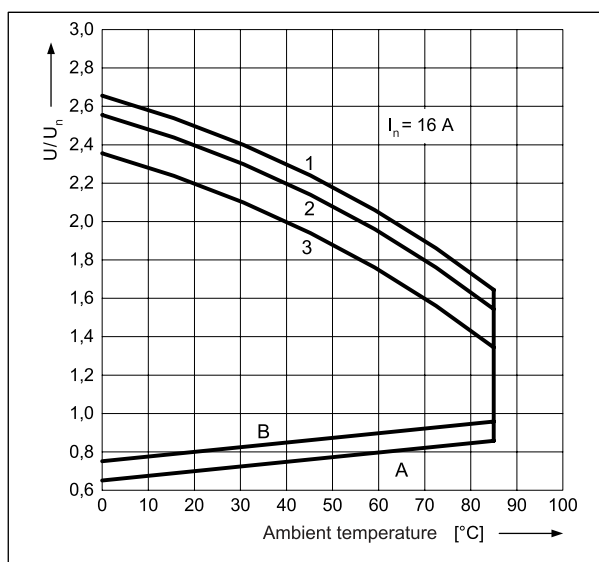
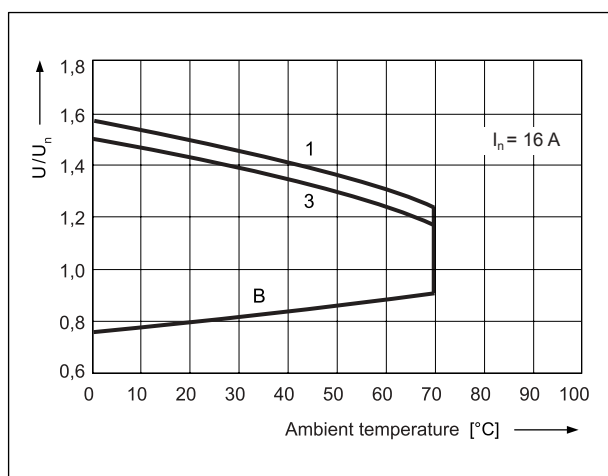

Coil operating range - AC 50 Hz

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:

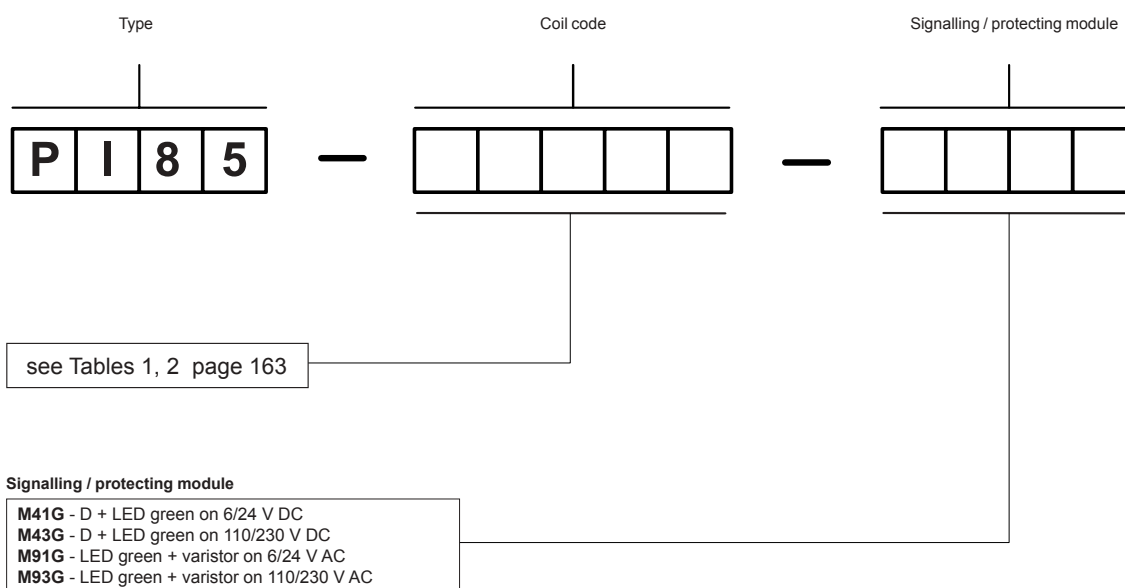
- 1** - no load
- 2** - 50% of rated load
- 3** - rated load

Mounting

Relays **PI85 with socket GZT80** ❶ are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with one M3 screw.

❶ 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 261).

Ordering codes



Examples of ordering codes:

- PI85-12DC-M41G** interface relay **PI85**, which consists of: relay **RM85**, voltage version 12 V DC, plug-in socket **GZT80** black (screw terminals), signalling / protecting module **M41G** (version **LD**, polarization N: +A1/-A2, LED green), retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**
- PI85-24AC-M91G** interface relay **PI85**, which consists of: relay **RM85**, voltage version 24 V AC 50/60 Hz, plug-in socket **GZT80** black (screw terminals), signalling / protecting module **M91G** (version **LV**, LED green), retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**

RM84 + GZM80



- Interface relay **PI84 with socket GZM80** consists of:
 - electromagnetic relay **RM84**, plug-in socket **GZM80** grey,
 - signalling / protecting module **type M...** LED green: version **LD** (polarization N: +A1/-A2) - M41G or M43G; version **LV** - M91G or M93G,
 - retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**
- 35 mm rail mount acc. to PN-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 C/O
Contact material		AgNi
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage		5 V
Rated load (capacity)	AC1	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
Max. inrush current		15 A
Rated current		8 A
Max. breaking capacity	AC1	2 000 VA
Min. breaking capacity		0,3 W
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 ... 230 V
	DC	12 ... 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		300 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
• cos φ		see Fig. 2
• cos φ = 0,4		10 ⁵ 3 A, 250 V AC
• L/R=40 ms		> 10 ⁵ 0,12 A, 220 V DC
Mechanical life (cycles)		> 3 x 10 ⁷
Dimensions (L x W x H)		78,1 x 15,9 x 66,5 mm
Weight		59 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+70 °C DC: -40...+85 °C
Cover protection category		IP 20 PN-EN 60529
Environmental protection		RM84: RTII GZM80: RT0 PN-EN 116000-3
Shock resistance		20 g
Vibration resistance	(NO/NC)	10 g / 5 g 10...150 Hz

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

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance $\pm 10\%$ at 20 °C Ω	Coil operating range at 20 °C V DC	
			min.	max.
012DC	12	360	8,4	30,6
024DC	24	1 440	16,8	61,2
110DC	110	25 200	77,0	280,0

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

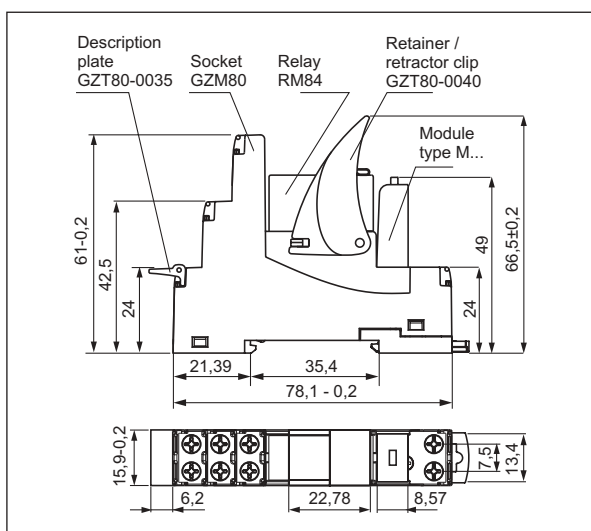
Coil data - AC 50/60 Hz voltage version

Table 2

Coil code	Rated voltage V AC	Coil resistance $\pm 10\%$ at 20 °C Ω	Coil operating range at 20 °C V AC - 50 Hz	
			min.	max.
012AC	12	100	9,6	13,2
024AC	24	400	19,2	26,4
120AC	120	10 200	96,0	144,0
230AC	230	38 500	184,0	253,0

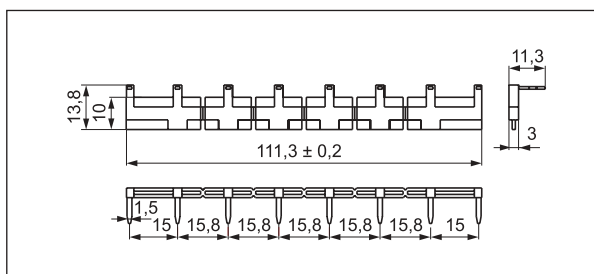
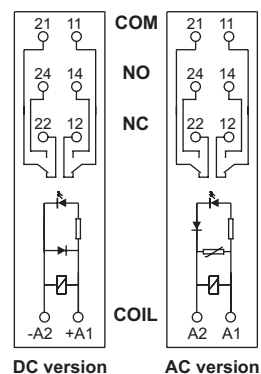
The data in bold type pertain to the standard versions of the relays.

Dimensions



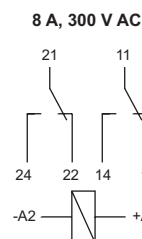
Connection diagrams

(screw terminals side view)



Interconnection strip type **ZGGZ80**

Connection of GZM80



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

Fig. 1

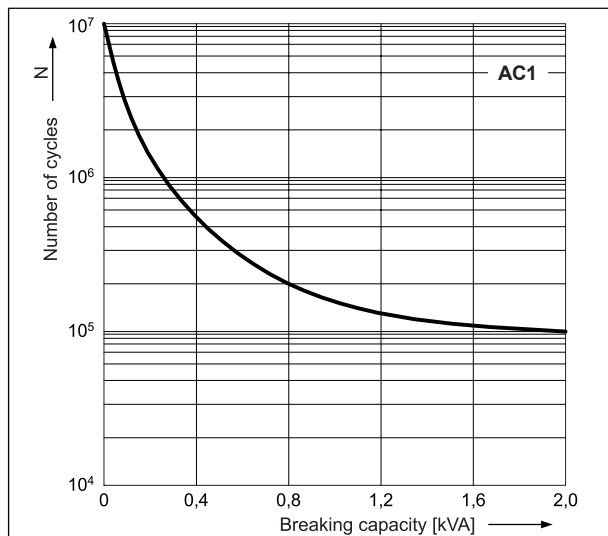

Electrical life reduction factor at AC inductive load

Fig. 2

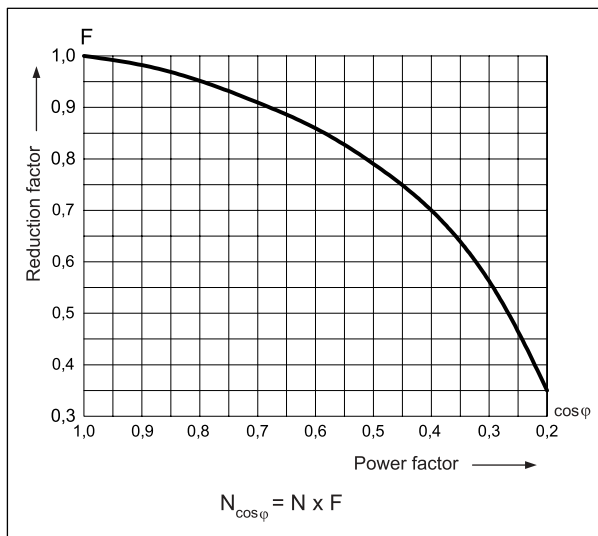

Max. DC resistive load breaking capacity

Fig. 3

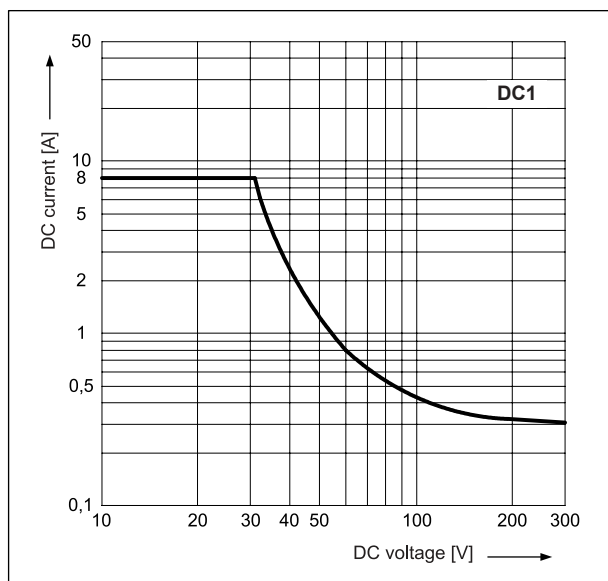

Coil operating range - DC

Fig. 4

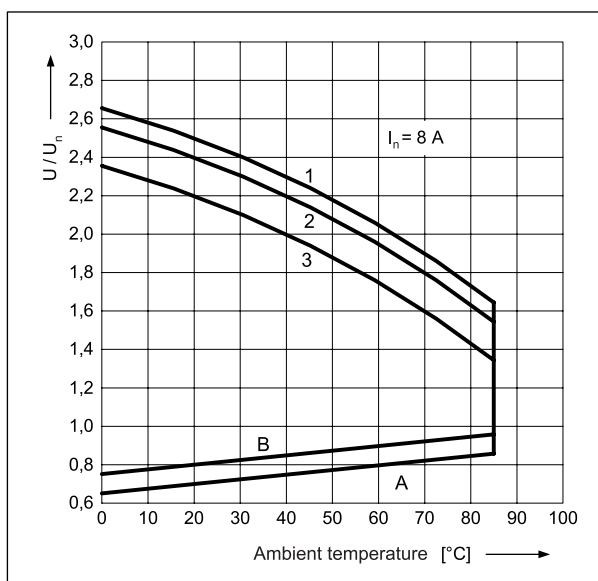
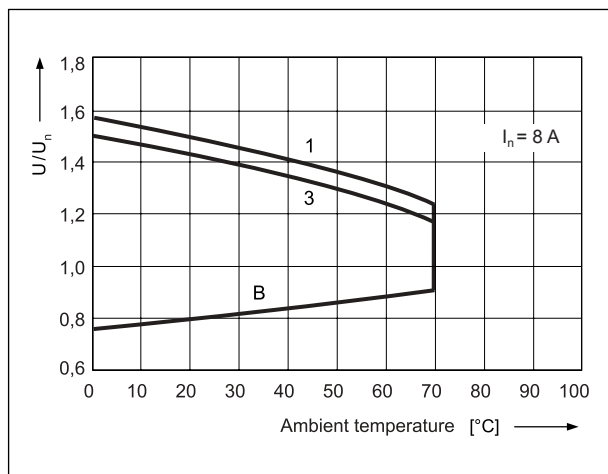

Coil operating range - AC 50 Hz

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:

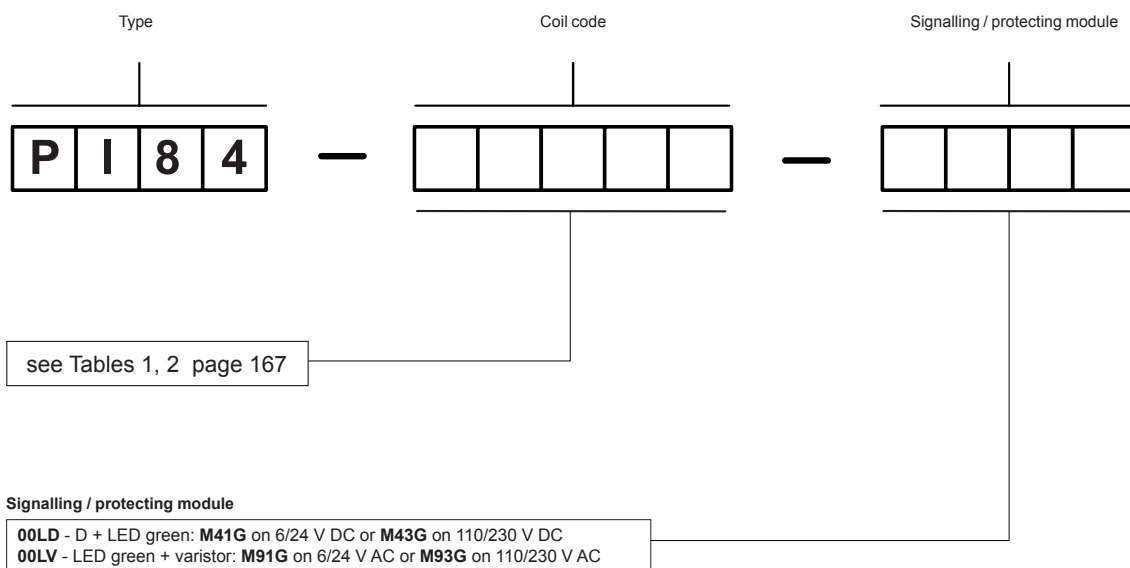
- 1** - no load
- 2** - 50% of rated load
- 3** - rated load

Mounting

Relays **PI84 with socket GZM80** ❶ are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with one M3 screw.

❶ 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 261).

Ordering codes



Examples of ordering codes:

- PI84-012DC-00LD** interface relay **PI84**, which consists of: relay **RM84**, voltage version 12 V DC, plug-in socket **GZM80** grey (screw terminals), signalling / protecting module **M41G** (version **LD**, polarization N: +A1/-A2, LED green), retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**
- PI84-230AC-00LV** interface relay **PI84**, which consists of: relay **RM84**, voltage version 230 V AC 50/60 Hz, plug-in socket **GZM80** grey (screw terminals), signalling / protecting module **M93G** (version **LV**, LED green), retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**

RM85 + GZM80



- Interface relay **PI85 with socket GZM80** consists of:
 - electromagnetic relay **RM85**, plug-in socket **GZM80** grey,
 - signalling / protecting module **type M...** LED green:
- version **LD** (polarization N: +A1/-A2) - M41G or M43G; version **LV** - M91G or M93G,
- retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**
- 35 mm rail mount acc. to PN-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 C/O
Contact material		AgNi
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage		5 V
Rated load (capacity)	AC1	16 A / 250 V AC
	AC15	3 A / 120 V 1,5 A / 240 V (B300)
	AC3	750 W (single-phase motor)
	DC1	16 A / 24 V DC (see Fig. 3)
	DC13	0,22 A / 120 V 0,1 A / 250 V (R300)
Min. switching current		5 mA
Max. inrush current		30 A
Rated current		16 A
Max. breaking capacity	AC1	4 000 VA
Min. breaking capacity		0,3 W
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 ... 230 V
	DC	12 ... 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		300 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
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
• cos φ		see Fig. 2
• L/R=40 ms		> 10 ⁵ 0,12 A, 220 V DC
Mechanical life (cycles)		> 3 x 10 ⁷
Dimensions (L x W x H)		78,1 x 15,9 x 66,5 mm
Weight		59 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+70 °C DC: -40...+85 °C
Cover protection category		IP 20 PN-EN 60529
Environmental protection		RM85: RTII GZM80: RT0 PN-EN 116000-3
Shock resistance		30 g
Vibration resistance		10 g 10...150 Hz

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

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance ±10% at 20 °C Ω	Coil operating range at 20 °C V DC	
			min.	max.
012DC	12	360	8,4	30,6
024DC	24	1 440	16,8	61,2
110DC	110	25 200	77,0	280,0

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

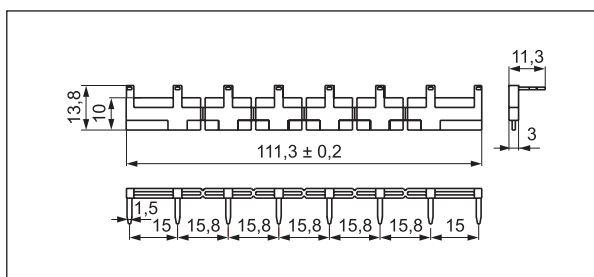
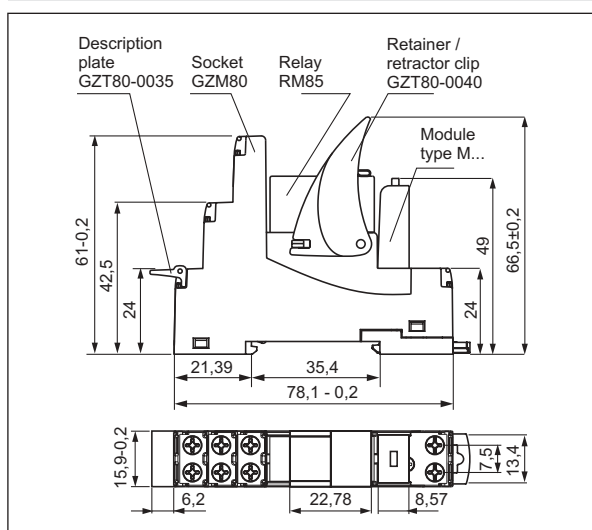
Coil data - AC 50/60 Hz voltage version

Table 2

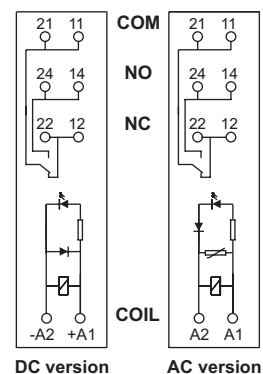
Coil code	Rated voltage V AC	Coil resistance ±10% at 20 °C Ω	Coil operating range at 20 °C V AC - 50 Hz	
			min.	max.
012AC	12	100	9,6	13,2
024AC	24	400	19,2	26,4
120AC	120	10 200	96,0	144,0
230AC	230	38 500	184,0	253,0

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

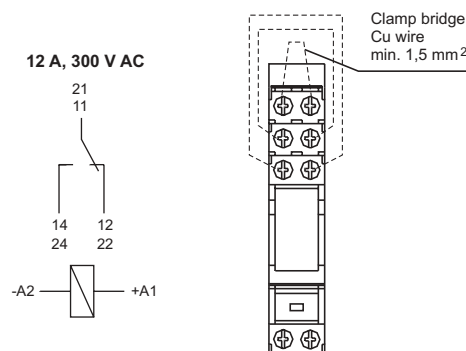
Dimensions

Interconnection strip type **ZGGZ80**

Connection diagrams (screw terminals side view)



Connection of GZM80



Note: loads up to 12 A do not require bridging of common terminals. Loads above 12 A require bridging pairs of terminals: 11 with 21, 12 with 22, 14 with 24.

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

Fig. 1

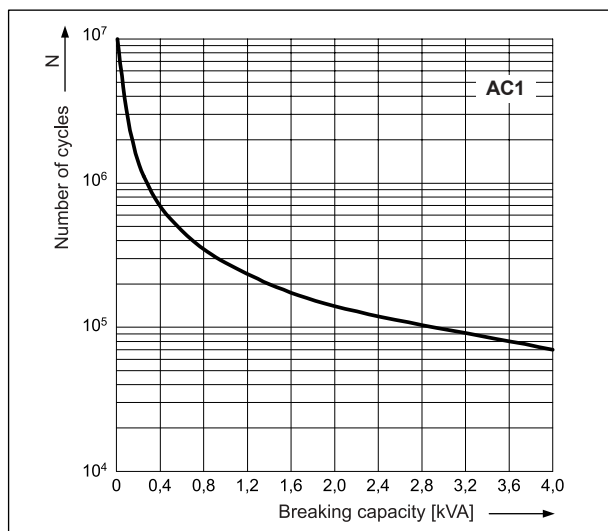

Electrical life reduction factor
at AC inductive load

Fig. 2

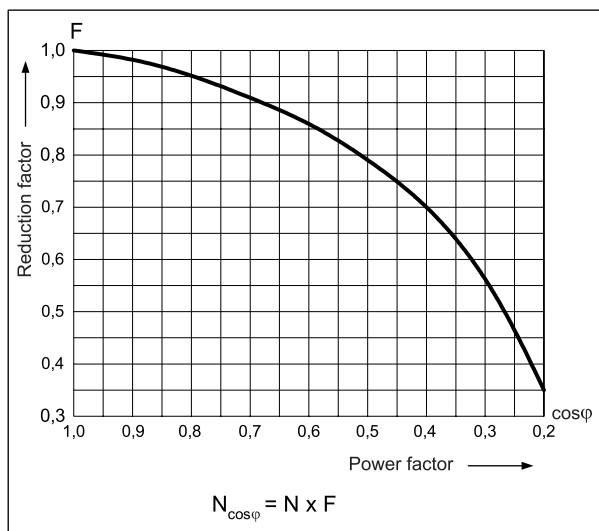

Max. DC resistive load breaking capacity

Fig. 3

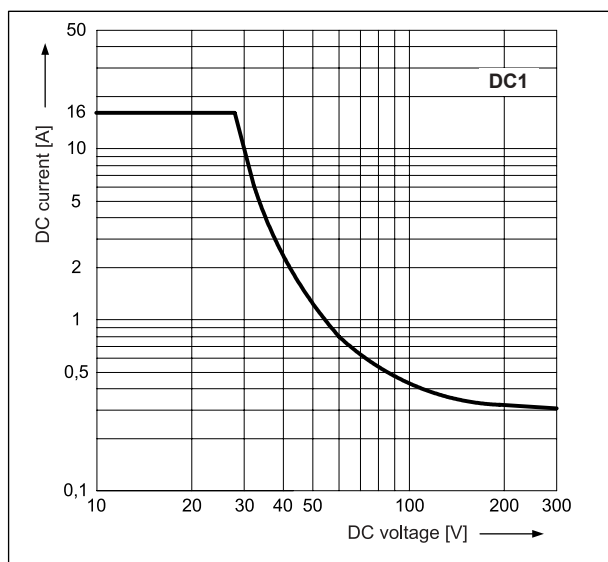

Coil operating range - DC

Fig. 4

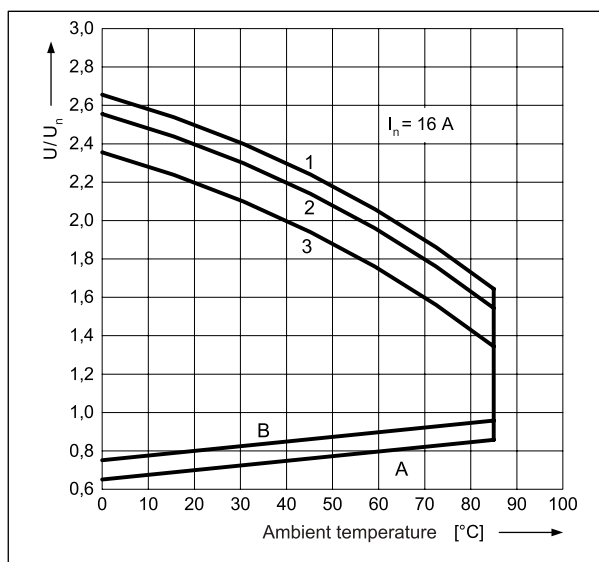
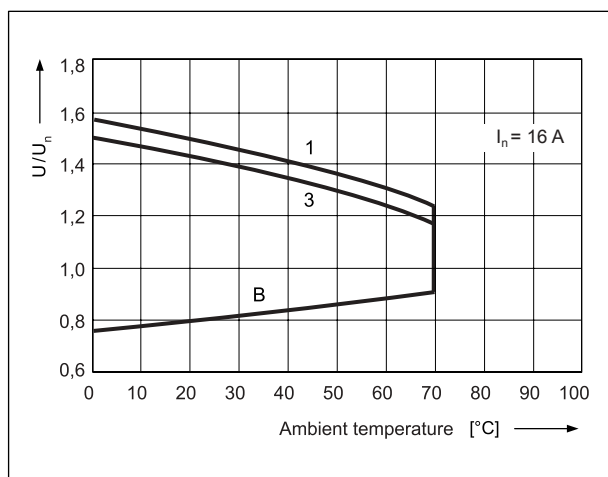

Coil operating range - AC 50 Hz

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 continuous 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:

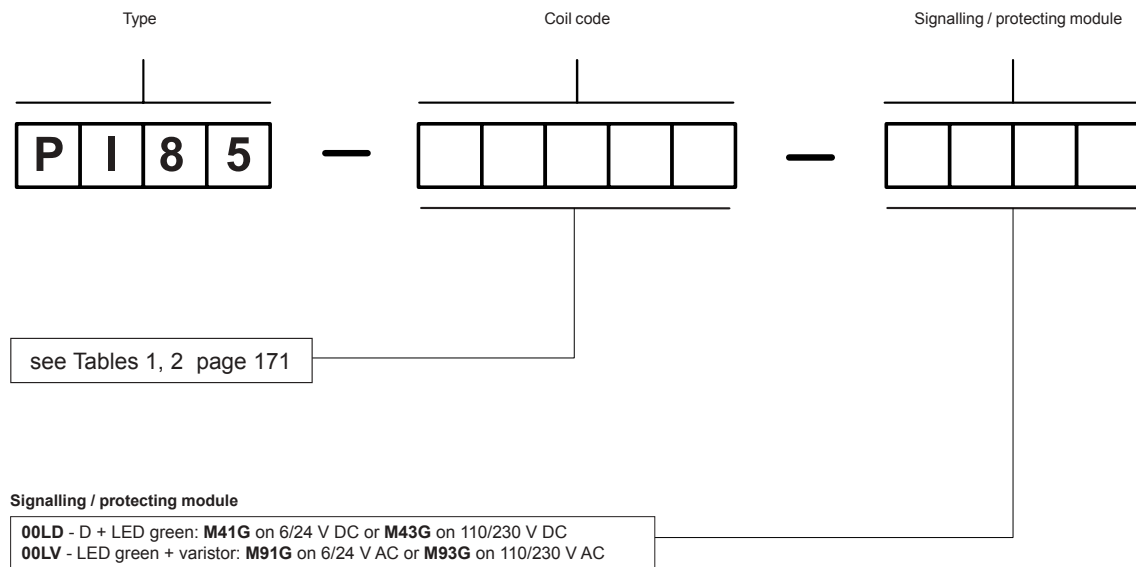
- 1** - no load
- 2** - 50% of rated load
- 3** - rated load

Mounting

Relays **PI85 with socket GZM80** ❶ are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with one M3 screw.

❶ 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 261).

Ordering codes



Examples of ordering codes:

- PI85-012DC-00LD** interface relay **PI85**, which consists of: relay **RM85**, voltage version 12 V DC, plug-in socket **GZM80** grey (screw terminals), signalling / protecting module **M41G** (version **LD**, polarization N: +A1/-A2, LED green), retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**
- PI85-230AC-00LV** interface relay **PI85**, which consists of: relay **RM85**, voltage version 230 V AC 50/60 Hz, plug-in socket **GZM80** grey (screw terminals), signalling / protecting module **M93G** (version **LV**, LED green), retainer / retractor clip **GZT80-0040**, white description plate **GZT80-0035**



R2 + GZM2

- Interface relay **PIR2** consists of: electromagnetic relay **R2**, plug-in socket **GZM2** grey, signalling / protecting module **type M...** LED green: version **LD** (polarization N: +A1/-A2) - M41G or M42G or M43G; version **LV** - M91G or M92G or M93G, retainer / retractor clip **GZT4-0040**, white description plate **GZT4-0035**
- 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws
- May be linked with interconnection strip type **ZGGZ4**
- Recognitions, certifications, directives: recognitions R2, RoHS, AUCOTEAM GmbH Berlin - railway standards,

Contact data

Number and type of contacts		2 C/O
Contact material		AgNi
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage		5 V
Rated load (capacity)	AC1	12 A / 250 V AC
	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)
	DC13	0,22 A / 120 V 0,1 A / 250 V (R300)
Min. switching current		5 mA
Max. inrush current		24 A
Rated current		12 A
Max. breaking capacity	AC1	3 000 VA
Min. breaking capacity		0,3 W
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	12 ... 230 V
	DC	12 ... 110 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	50 Hz: 1,6 VA 60 Hz: 1,3 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)		75 x 27 x 82 mm
Weight		97 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+55 °C DC: -40...+70 °C
Cover protection category		IP 20 PN-EN 60529
Environmental protection		R2: RTI GZM2: RT0 PN-EN 116000-3
Shock resistance	(NO/NC)	10 g / 5 g
Vibration resistance		5 g 10...150 Hz

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

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance ($\pm 10\%$) at 20 °C Ω	Coil operating range V DC	
			min. (at 20 °C)	max. (at 55 °C)
012DC	12	160	9,6	13,2
024DC	24	640	19,2	26,4
048DC	48	2 600	38,4	52,8
110DC	110	13 600	88,0	121,0

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

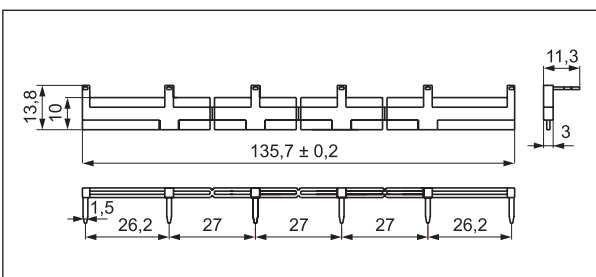
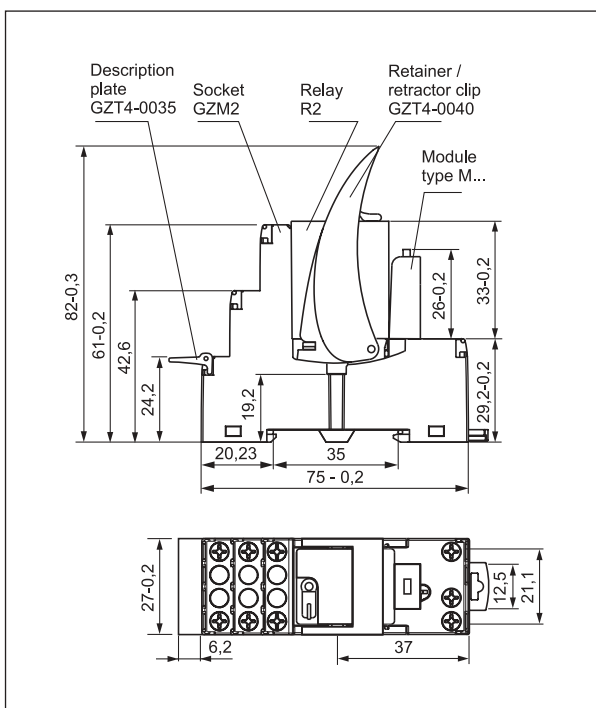
Coil data - AC 50/60 Hz voltage version

Table 2

Coil code	Rated voltage V AC	Coil resistance ($\pm 10\%$) at 20 °C Ω	Coil operating range V AC	
			min. (at 20 °C)	max. (at 55 °C)
012AC	12	39,5	9,6	13,2
024AC	24	158,0	19,2	26,4
048AC	48	640,0	38,4	52,8
120AC	120	3 770,0	96,0	132,0
230AC	230	16 100,0	184,0	253,0

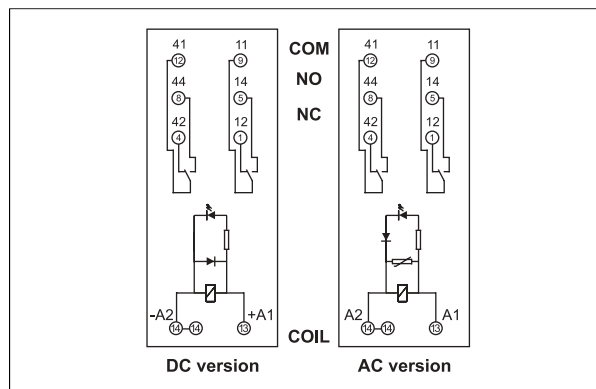
The data in bold type pertain to the standard versions of the relays.

Dimensions



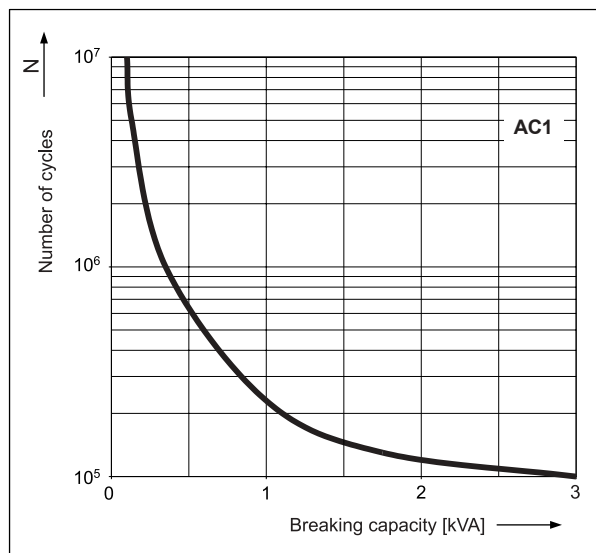
Interconnection strip type **ZGGZ4**

Connection diagrams (screw terminals 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

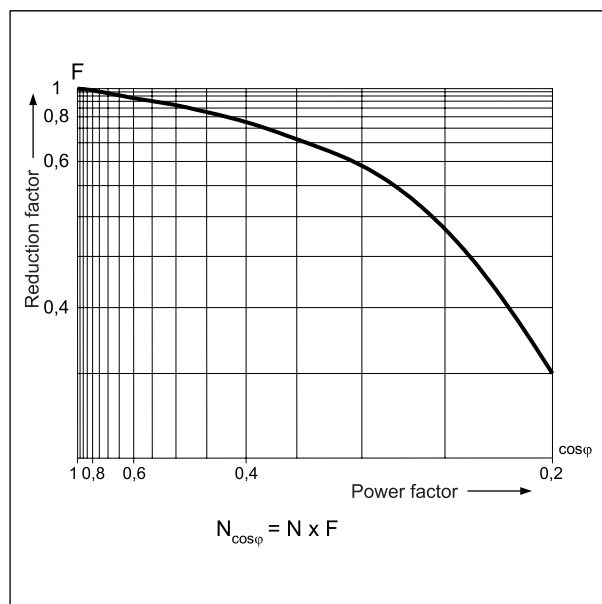
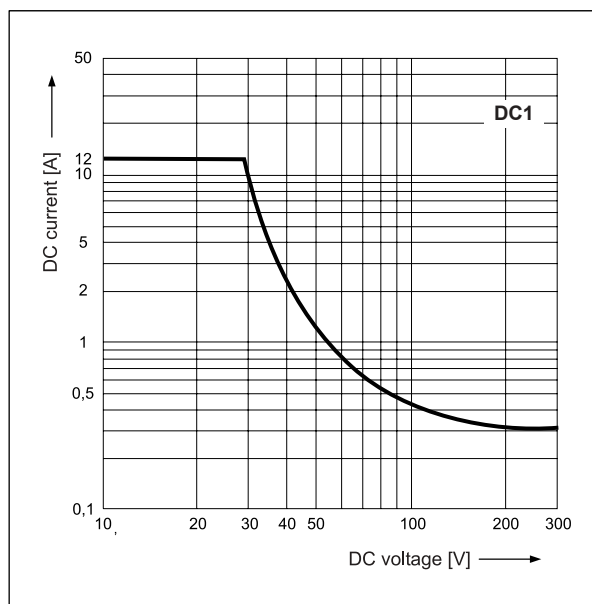

Max. DC resistive load breaking capacity

Fig. 3

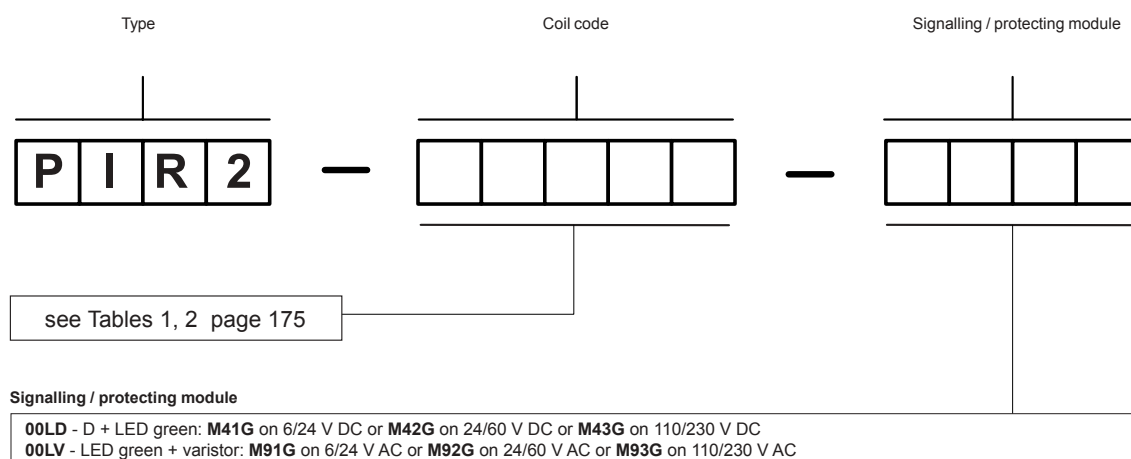


Mounting

Relays **PIR2 with socket GZM2** are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws.

Plug-in sockets **GZM2** may be linked with interconnection strip type **ZGGZ4**. Strip **ZGGZ4** bridges common input signals, maximum permissible current is 10 A / 250 V AC. Possibility of connection of 6 sockets. Colours of strips: **ZGGZ4-1** grey, **ZGGZ4-2** black (see page 262).

Ordering codes



Examples of ordering codes:

- PIR2-012DC-00LD** interface relay **PIR2**, which consists of: relay **R2**, voltage version 12 V DC, plug-in socket **GZM2** grey (screw terminals), signalling / protecting module **M41G** (version **LD**, polarization N: +A1/-A2, LED green), retainer / retractor clip **GZT4-0040**, white description plate **GZT4-0035**
- PIR2-230AC-00LV** interface relay **PIR2**, which consists of: relay **R2**, voltage version 230 V AC 50/60 Hz, plug-in socket **GZM2** grey (screw terminals), signalling / protecting module **M93G** (version **LV**, LED green), retainer / retractor clip **GZT4-0040**, white description plate **GZT4-0035**



R3 + GZM3

- Interface relay **PIR3** consists of: electromagnetic relay **R3**, plug-in socket **GZM3** grey, signalling / protecting module **type M...** LED green: version **LD** (polarization N: +A1/-A2) - M41G or M42G or M43G; version **LV** - M91G or M92G or M93G, retainer / retractor clip **GZT4-0040**, white description plate **GZT4-0035**
- 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws
- May be linked with interconnection strip type **ZGGZ4**
- Recognitions, certifications, directives: recognitions R3, RoHS, AUCOTEAM GmbH Berlin - railway standards,

Contact data

Number and type of contacts		3 C/O
Contact material		AgNi
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage		5 V
Rated load (capacity)	AC1	10 A / 250 V AC
	AC15	3 A / 120 V 1,5 A / 240 V (B300)
	AC3	370 W (single-phase motor)
	DC1	10 A / 24 V DC (see Fig. 3)
	DC13	0,22 A / 120 V 0,1 A / 250 V (R300)
Min. switching current		5 mA
Max. inrush current		20 A
Rated current		10 A
Max. breaking capacity	AC1	2 500 VA
Min. breaking capacity		0,3 W
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	12 ... 230 V
	DC	12 ... 110 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	50 Hz: 1,6 VA 60 Hz: 1,3 VA
	DC	0,9 W

Insulation according to PN-EN 60664-1

Insulation rated voltage		250 V AC
Rated surge voltage		with AC coils: 2 500 V 1,2 / 50 μs with DC coils: 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 10 A, 250 V AC
• cos φ		see Fig. 2
Mechanical life (cycles)		> 2 x 10 ⁷
Dimensions (L x W x H)		75 x 27 x 82 mm
Weight		107 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+55 °C DC: -40...+70 °C
Cover protection category		IP 20 PN-EN 60529
Environmental protection		R3: RTI GZM3: RT0 PN-EN 116000-3
Shock resistance	(NO/NC)	10 g / 5 g
Vibration resistance		5 g 10...150 Hz

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

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance ($\pm 10\%$) at 20 °C Ω	Coil operating range V DC	
			min. (at 20 °C)	max. (at 55 °C)
012DC	12	160	9,6	13,2
024DC	24	640	19,2	26,4
048DC	48	2 600	38,4	52,8
110DC	110	13 600	88,0	121,0

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

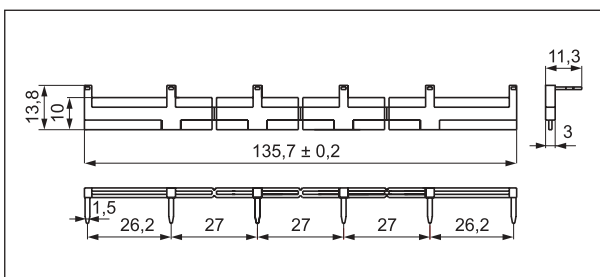
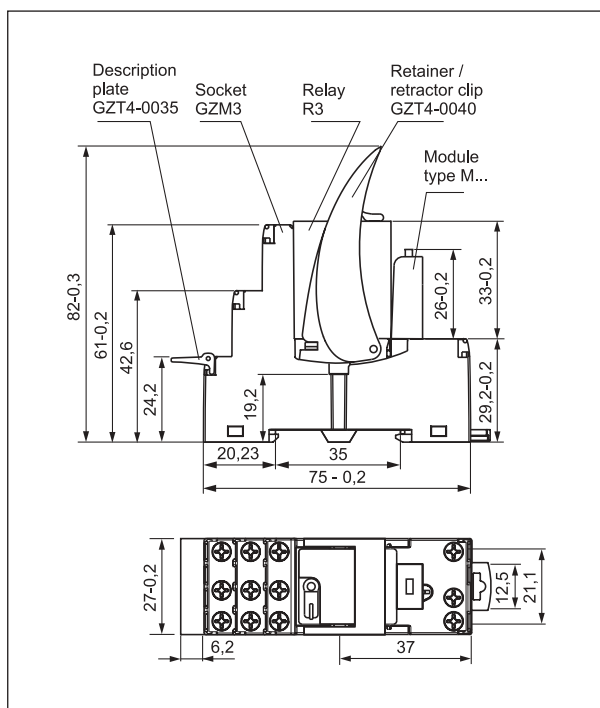
Coil data - AC 50/60 Hz voltage version

Table 2

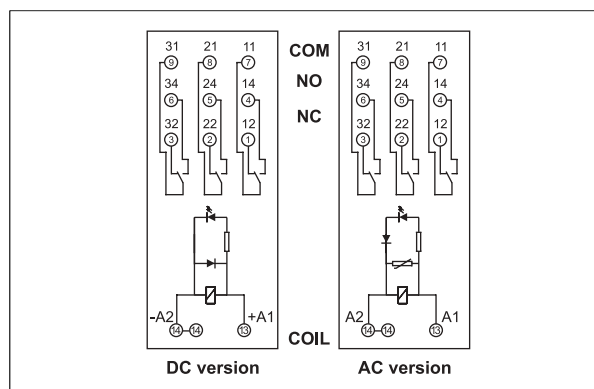
Coil code	Rated voltage V AC	Coil resistance ($\pm 10\%$) at 20 °C Ω	Coil operating range V AC	
			min. (at 20 °C)	max. (at 55 °C)
012AC	12	39,5	9,6	13,2
024AC	24	158,0	19,2	26,4
048AC	48	640,0	38,4	52,8
120AC	120	3 770,0	96,0	132,0
230AC	230	16 100,0	184,0	253,0

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

Dimensions

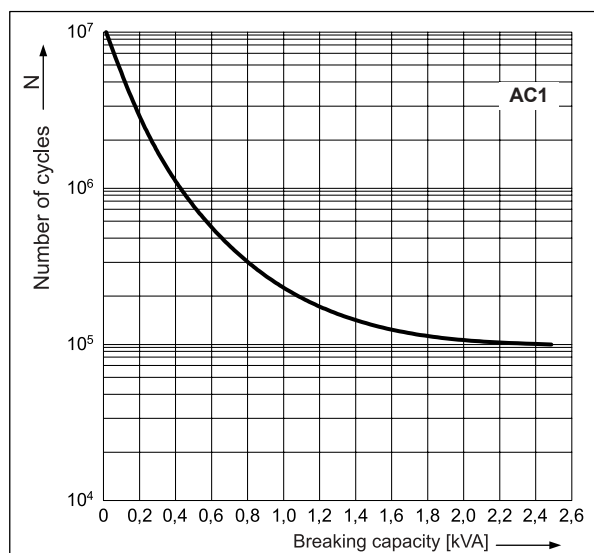
Interconnection strip type **ZGGZ4**

Connection diagrams (screw terminals side view)



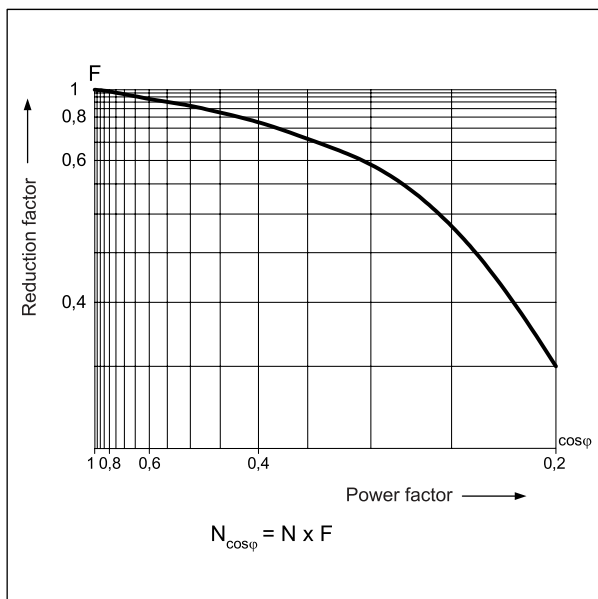
Electrical life at AC resistive load. Switching frequency: 1 200 cycles/hour

Fig. 1



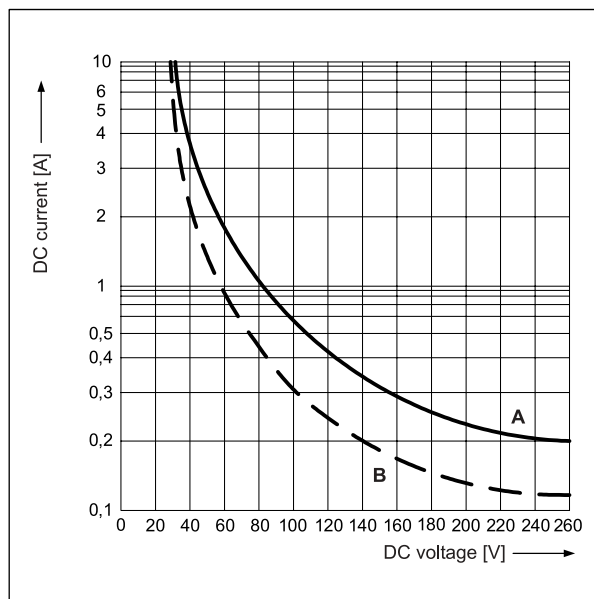
**Electrical life reduction factor
at AC inductive load**

Fig. 2



Max. DC breaking capacity
A - resistive load DC1
B - inductive load L/R = 40 ms

Fig. 3

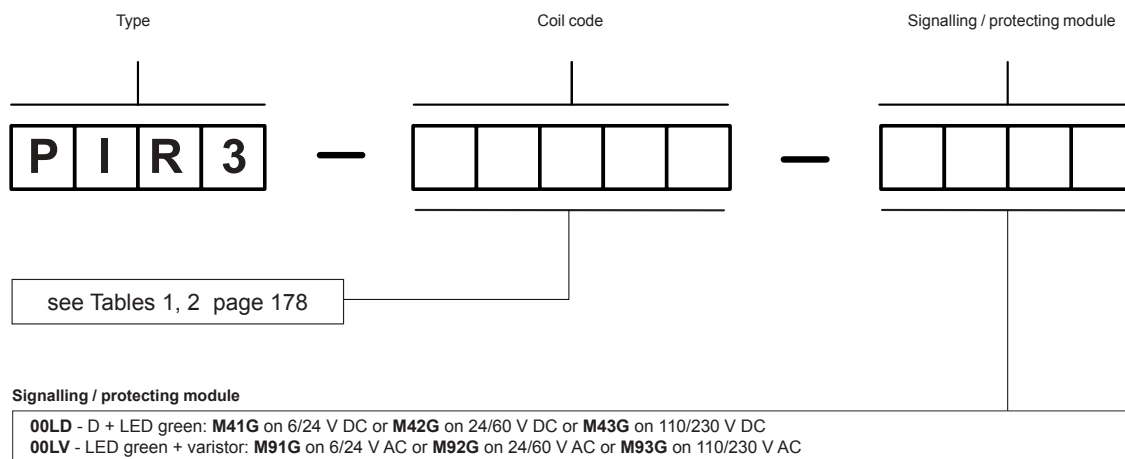


Mounting

Relays **PIR3** with socket **GZM3** ❶ are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws.

❶ Plug-in sockets **GZM3** may be linked with interconnection strip type **ZGGZ4**. Strip **ZGGZ4** bridges common input signals, maximum permissible current is 10 A / 250 V AC. Possibility of connection of 6 sockets. Colours of strips: **ZGGZ4-1** grey, **ZGGZ4-2** black (see page 262).

Ordering codes



Examples of ordering codes:

PIR3-012DC-00LD

interface relay **PIR3**, which consists of: relay **R3**, voltage version 12 V DC, plug-in socket **GZM3** grey (screw terminals), signalling / protecting module **M41G** (version **LD**, polarization N: +A1/-A2, LED green), retainer / retractor clip **GZT4-0040**, white description plate **GZT4-0035**

PIR3-230AC-00LV

interface relay **PIR3**, which consists of: relay **R3**, voltage version 230 V AC 50/60 Hz, plug-in socket **GZM3** grey (screw terminals), signalling / protecting module **M93G** (version **LV**, LED green), retainer / retractor clip **GZT4-0040**, white description plate **GZT4-0035**



R4 + GZM4

- Interface relay **PIR4** consists of: electromagnetic relay **R4**, plug-in socket **GZM4** grey, signalling / protecting module **type M...** LED green: version **LD** (polarization N: +A1/-A2) - M41G or M42G or M43G; version **LV** - M91G or M92G or M93G, retainer / retractor clip **GZT4-0040**, white description plate **GZT4-0035**
- 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws
- May be linked with interconnection strip type **ZGGZ4**
- Recognitions, certifications, directives: recognitions R4, RoHS, AUCOTEAM GmbH Berlin - railway standards,

Contact data

Number and type of contacts		4 C/O
Contact material		AgNi
Rated / max. switching voltage	AC	250 V / 250 V
Min. switching voltage		5 V
Rated load (capacity)	AC1	6 A / 250 V AC
	AC15	1,5 A / 120 V 0,75 A / 240 V (C300)
	AC3	125 W (single-phase motor)
	DC1	6 A / 24 V DC (see Fig. 3)
	DC13	0,22 A / 120 V 0,1 A / 250 V (R300)
Min. switching current		5 mA
Max. inrush current		12 A
Rated current		6 A
Max. breaking capacity	AC1	1 500 VA
Min. breaking capacity		0,3 W
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	12 ... 230 V
	DC	12 ... 110 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	50 Hz: 1,6 VA 60 Hz: 1,3 VA
	DC	0,9 W

Insulation according to PN-EN 60664-1

Insulation rated voltage		250 V AC
Rated surge voltage		2 500 V 1,2 / 50 μs
Overvoltage category		II
Insulation pollution degree		2
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		2 000 V AC type of insulation: basic
Contact - coil distance		
• clearance		≥ 1,6 mm
• creepage		≥ 3,2 mm

General data

Operating / release time (typical values)		AC: 10 ms / 8 ms DC: 13 ms / 3 ms
Electrical life		
• resistive AC1		> 10 ⁵ 6 A, 250 V AC
• cos φ		see Fig. 2
Mechanical life (cycles)		> 2 x 10 ⁷
Dimensions (L x W x H)		75 x 27 x 82 mm
Weight		108 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+55 °C DC: -40...+70 °C
Cover protection category		IP 20 PN-EN 60529
Environmental protection		R4: RTI GZM4: RT0 PN-EN 116000-3
Shock resistance	(NO/NC)	10 g / 5 g
Vibration resistance		5 g 10...150 Hz

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

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance ($\pm 10\%$) at 20 °C Ω	Coil operating range V DC	
			min. (at 20 °C)	max. (at 55 °C)
012DC	12	160	9,6	13,2
024DC	24	640	19,2	26,4
048DC	48	2 600	38,4	52,8
110DC	110	13 600	88,0	121,0

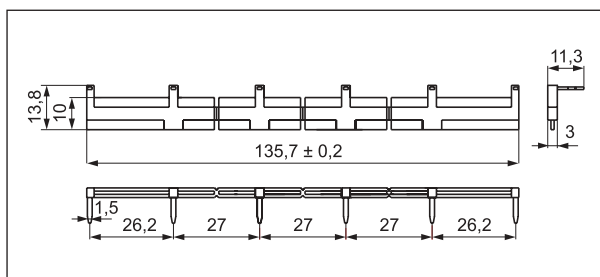
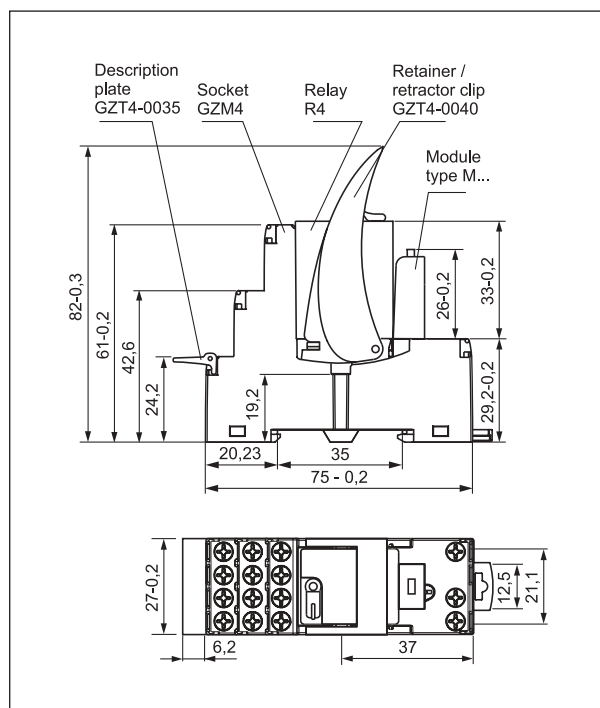
The data in bold type pertain to the standard versions of the relays.

Coil data - AC 50/60 Hz voltage version

Coil code	Rated voltage V AC	Coil resistance ($\pm 10\%$) at 20 °C Ω	Coil operating range V AC	
			min. (at 20 °C)	max. (at 55 °C)
012AC	12	39,5	9,6	13,2
024AC	24	158,0	19,2	26,4
048AC	48	640,0	38,4	52,8
120AC	120	3 770,0	96,0	132,0
230AC	230	16 100,0	184,0	253,0

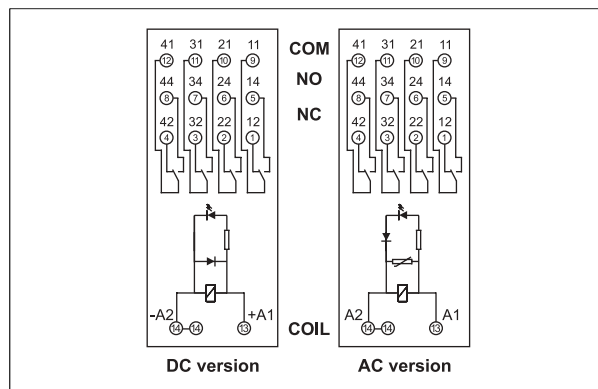
The data in bold type pertain to the standard versions of the relays.

Dimensions



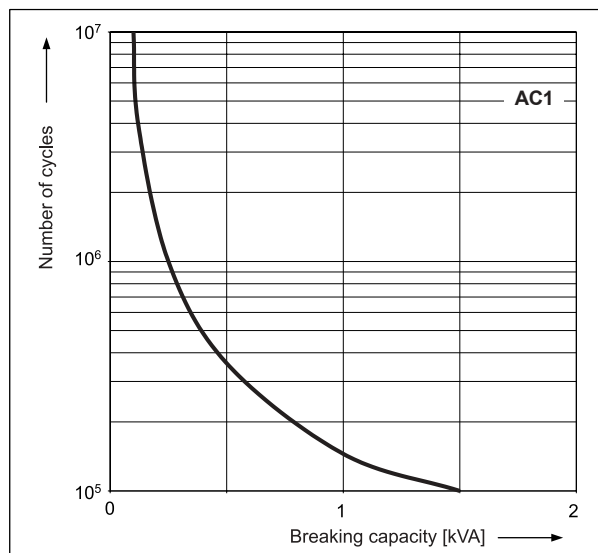
Interconnection strip type **ZGGZ4**

Connection diagrams (screw terminals side view)



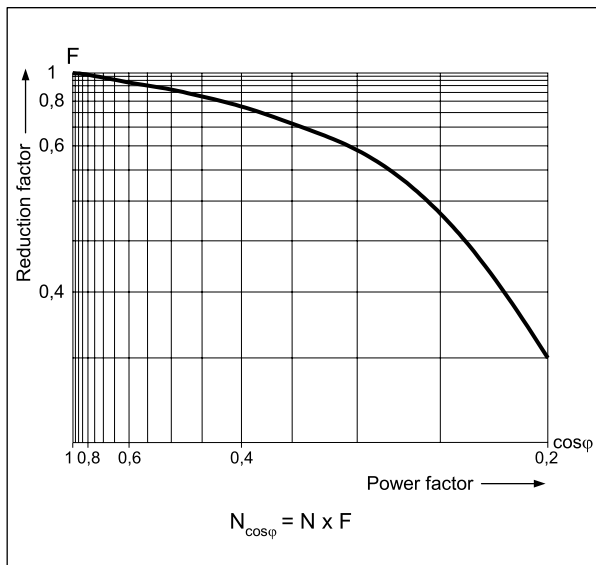
Electrical life at AC resistive load. Switching frequency: 1 200 cycles/hour

Fig. 1



Electrical life reduction factor at AC inductive load

Fig. 2

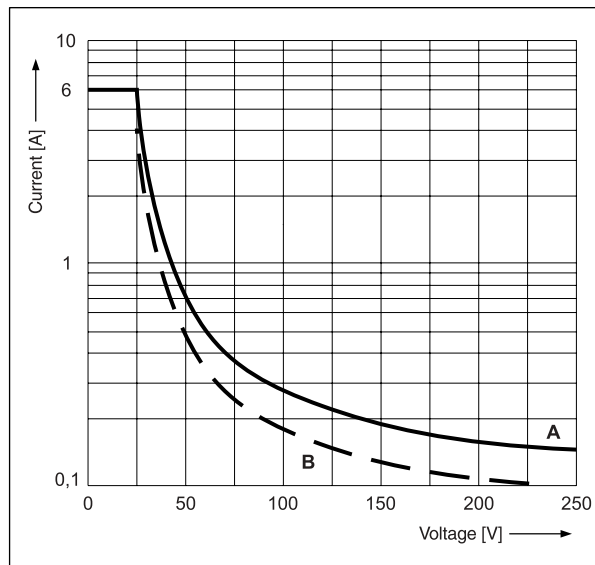


Max. DC breaking capacity

A - resistive load DC1

B - inductive load $L/R = 40$ ms

Fig. 3

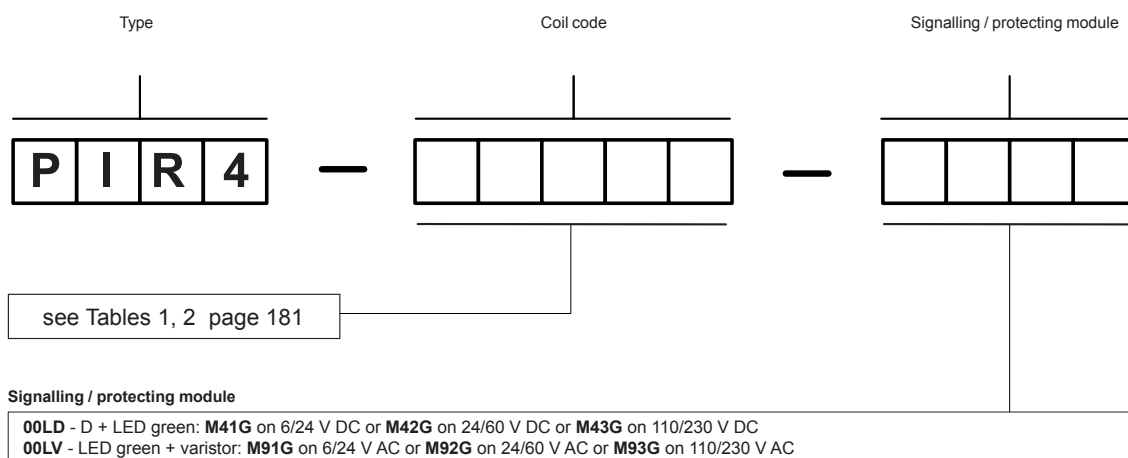


Mounting

Relays **PIR4 with socket GZM4** are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws.

Plug-in sockets **GZM4** may be linked with interconnection strip type **ZGGZ4**. Strip **ZGGZ4** bridges common input signals, maximum permissible current is 10 A / 250 V AC. Possibility of connection of 6 sockets. Colours of strips: **ZGGZ4-1** grey, **ZGGZ4-2** black (see page 262).

Ordering codes



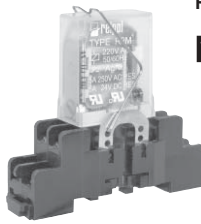
Examples of ordering codes:

PIR4-012DC-00LD

interface relay **PIR4**, which consists of: relay **R4**, voltage version 12 V DC, plug-in socket **GZM4** grey (screw terminals), signalling / protecting module **M41G** (version **LD**, polarization N: +A1/-A2, LED green), retainer / retractor clip **GZT4-0040**, white description plate **GZT4-0035**

PIR4-230AC-00LV

interface relay **PIR4**, which consists of: relay **R4**, voltage version 230 V AC 50/60 Hz, plug-in socket **GZM4** grey (screw terminals), signalling / protecting module **M93G** (version **LV**, LED green), retainer / retractor clip **GZT4-0040**, white description plate **GZT4-0035**



R2M + GZ2



- Interface relay **PIR2M** consists of:
 - electromagnetic relay **R2M**, plug-in socket **GZ2** black,
 - spring wire clip **GZ2 1060**, two spring clamps **GZ2 1111**
- 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws
- Recognitions, certifications, directives: recognitions R2M, RoHS,

Contact data

Number and type of contacts		2 C/O
Contact material		AgNi
Rated / max. switching voltage	AC	250 V / 250 V
Min. switching voltage		5 V
Rated load (capacity)	AC1	5 A / 250 V AC
	DC1	5 A / 24 V DC
Min. switching current		5 mA
Rated current		5 A
Max. breaking capacity	AC1	1 250 VA
Min. breaking capacity		0,3 W
Contact resistance		≤ 100 mΩ
Max. operating frequency		
• at rated load	AC1	1 200 cycles/hour
• no load		36 000 cycles/hour

Coil data

Rated voltage	50/60 Hz AC	6 ... 230 V
	DC	6 ... 110 V
Must release voltage		≥ 0,05 U _n
Operating range of supply voltage		see Tables 1, 2
Rated power consumption	AC	1,2 VA
	DC	0,9 W

Insulation according to PN-EN 60664-1

Insulation rated voltage		250 V AC
Rated surge voltage		2 500 V 1,2 / 50 μs
Overvoltage category		II
Insulation pollution degree		3
Dielectric strength		
• between coil and contacts	2 000 V AC	type of insulation: basic
• contact clearance	1 000 V AC	type of clearance: micro-disconnection
• pole - pole	2 000 V AC	type of insulation: basic
Contact - coil distance		
• clearance		≥ 3 mm
• creepage		≥ 4 mm

General data

Operating / release time (typical values)	AC: 8 ms / 7 ms	DC: 10 ms / 3 ms
Electrical life		
• resistive AC1	≥ 2 x 10 ⁵	5 A, 250 V AC
• cos φ		see Fig. 2
Mechanical life (cycles)		≥ 10 ⁷
Dimensions (L x W x H)		65,2 x 20 x 60,6 mm
Weight		44,5 g
Ambient temperature	• storage	-40...+70 °C
	• operating	-40...+55 °C
Cover protection category	IP 00	PN-EN 60529
Shock resistance		10 g
Vibration resistance		5 g 10...150 Hz

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

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance ($\pm 10\%$) at 20 °C Ω	Coil operating range V DC	
			min. (at 20 °C)	max. (at 55 °C)
006DC	6	47	4,8	6,6
012DC	12	188	9,6	13,2
024DC	24	750	19,2	26,4
048DC	48	2 660	38,4	52,8
110DC	110	13 480	88,0	121,0

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

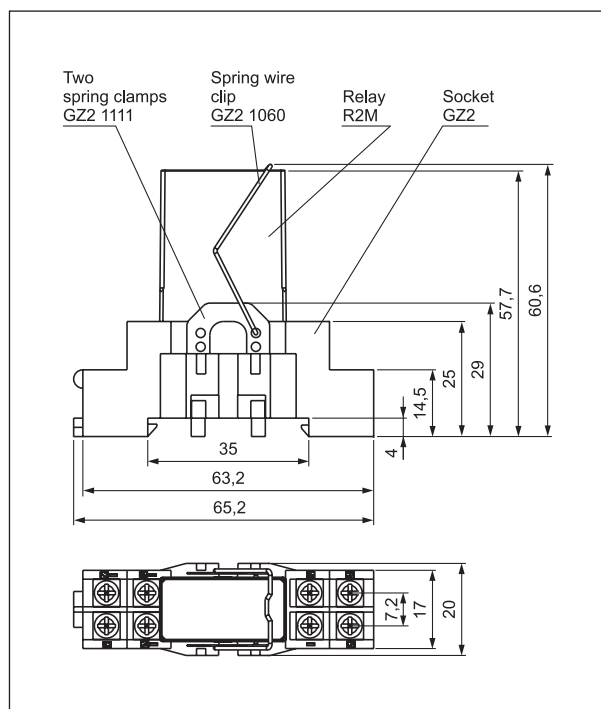
Coil data - AC 50/60 Hz voltage version

Table 2

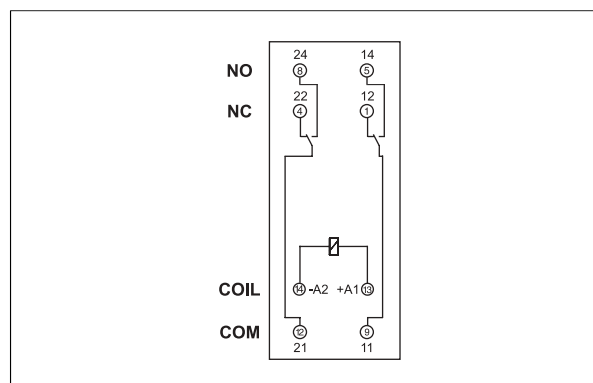
Coil code	Rated voltage V AC	Coil resistance ($\pm 10\%$) at 20 °C Ω	Coil operating range V AC	
			min. (at 20 °C)	max. (at 55 °C)
006AC	6	16	4,8	6,6
012AC	12	68	9,6	13,2
024AC	24	270	19,2	26,4
115AC	115	5 990	92,0	126,0
230AC	230	21 470	184,0	253,0

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

Dimensions

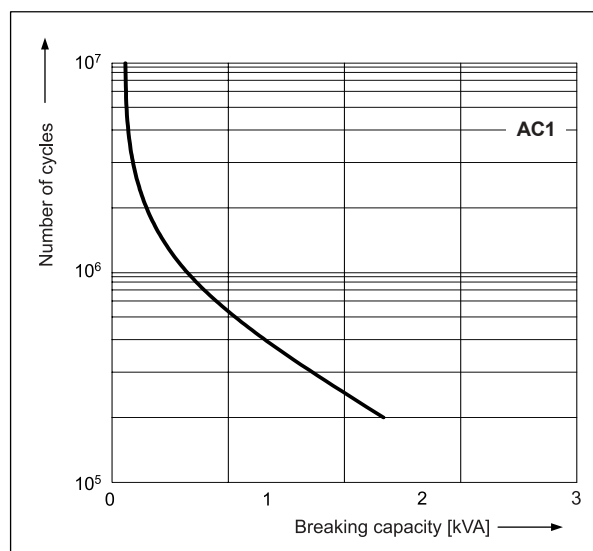


Connection diagrams (screw terminals side view)



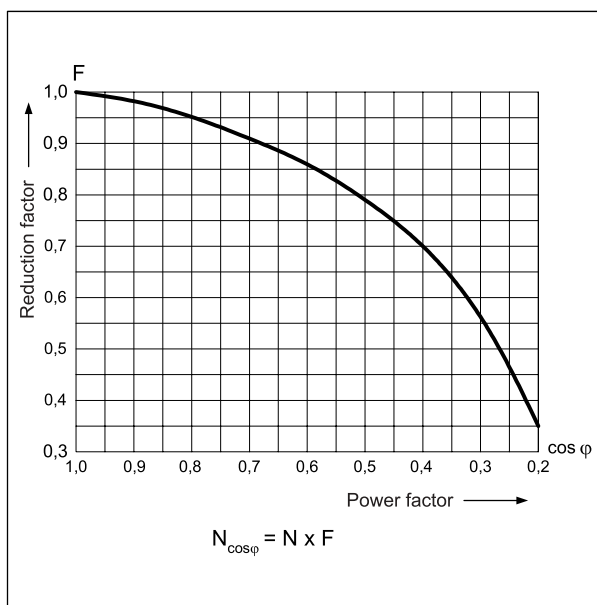
Electrical life at AC resistive load. Switching frequency: 1 200 cycles/hour

Fig. 1



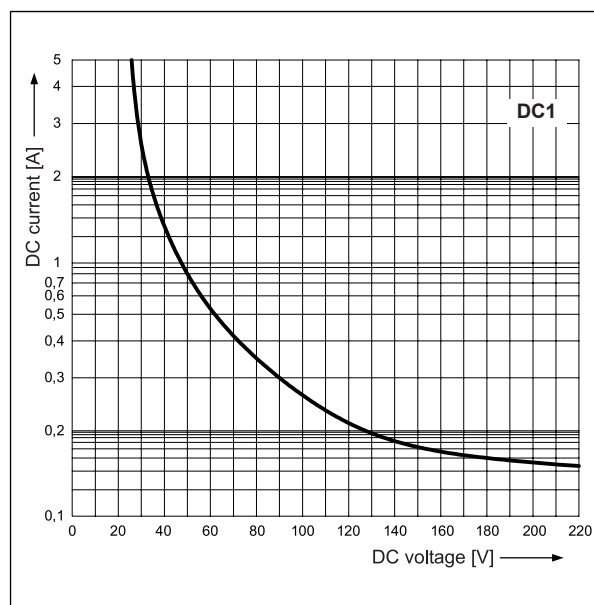
Electrical life reduction factor at AC inductive load

Fig. 2



Max. DC resistive load breaking capacity

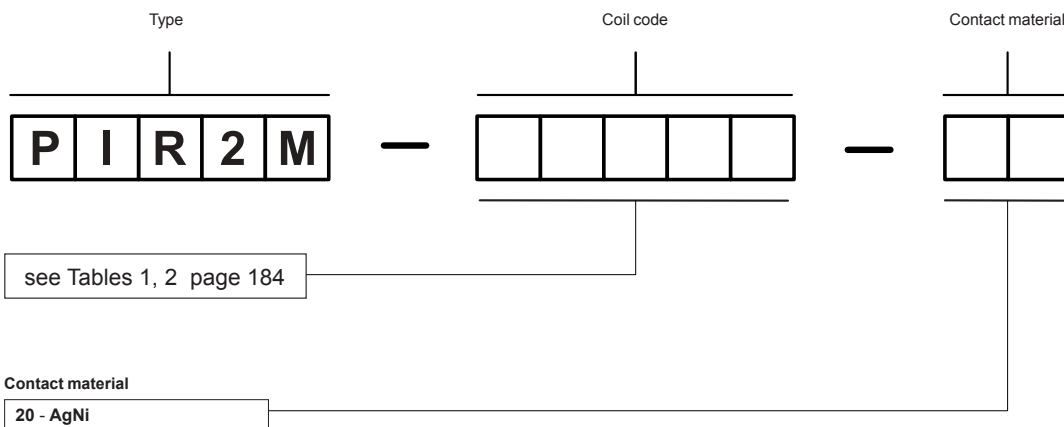
Fig. 3



Mounting

Relays **PIR2M with socket GZ2** are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with two M3 screws.

Ordering codes



Examples of ordering codes:

PIR2M-012DC-20

interface relay **PIR2M**, which consists of: relay **R2M**, voltage version 12 V DC, contact material AgNi, socket **GZ2** black (screw terminals), spring wire clip **GZ2 1060**, two spring clamps **GZ2 1111**

PIR2M-230AC-20

interface relay **PIR2M**, which consists of: relay **R2M**, voltage version 230 V AC 50/60 Hz, contact material AgNi, socket **GZ2** black (screw terminals), spring wire clip **GZ2 1060**, two spring clamps **GZ2 1111**



- Interface relay **PI6-1P** - with changeover relay, rated load 6 A / 250 V (AC1)
- 35 mm rail mount acc. to PN-EN 60715
- May be linked with interconnection strip type **ZG20**
- Equipped in LED green
- Version for long lines, with anti-interference filter (**PI6-1P-230VAC/DC-10**)
- Recognitions, certifications, directives:    



Contact data

Number and type of contacts	1 C/O		
Contact material	AgSnO₂		AgSnO ₂ /Au 3 μm ❶
Rated / max. switching voltage	AC	250 V / 400 V	– / 30 V ❶
Max. switching voltage	DC	250 V	36 V ❶
Min. switching voltage	AC/DC	10 V	5 V
Rated load	AC1	6 A / 250 V AC	0,05 A / 30 V AC ❶
	DC1	6 A / 24 V DC	0,05 A / 36 V DC ❶
Min. switching current	100 mA		10 mA
Max. inrush current	10 A 20 ms		0,1 A 20 ms ❶
Rated current	6 A		0,05 A ❶
Max. breaking capacity	AC1	1 500 VA	1,2 VA ❶
Min. breaking capacity	1 W		0,05 W
Contact resistance	≤ 100 mΩ 100 mA, 24 V		≤ 30 mΩ 10 mA, 5 V
Max. operating frequency			
• at rated load	AC1	360 cycles/hour	
• no load		72 000 cycles/hour	

Input control circuit

Rated voltage	DC	12 ... 36 V		
	AC: 50/60 Hz AC/DC	24 ... 230 V		
Must release voltage		AC: ≥ 0,2 U _n	AC: ≥ 0,35 U _n ❷	DC: ≥ 0,1 U _n
Operating range of supply voltage	see Table 1			
Must operate voltage		AC and DC: ≤ 0,8 U _n	AC: 0,6...0,85 U _n ❷	DC: ≤ 0,8 U _n ❷
Input polarization current		AC: 8 mA < I _p < 10 mA 230 V AC ❷		
Rated power consumption	DC	0,3...0,7 W		
	AC/DC	0,3...1,6 VA / 0,3...1,6 W		
Max. length of supply line		≤ 300 m	AC supply ❷	

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	• input - output	4 000 V AC	50/60 Hz, 1 min., type of insulation: reinforced
	• input - output	6 000 V	1,2 / 50 μs, surge voltage
	• mass - input, output	2 500 V AC	50/60 Hz, 1 min.
	• contact clearance	1 000 V AC	50/60 Hz, 1 min., type of clearance: micro-disconnection
Input - output distance			
• clearance \ creepage	≥ 6 mm \ ≥ 8 mm		

General data

Operating time (typical value)	AC: 7 ms	DC: 6 ms
Release time (typical value)	AC: 15 ms	DC: 10 ms
Electrical life	• resistive AC1	> 0,6 x 10 ⁵ 6 A, 250 V AC
	• cos φ = 0,4	> 2 x 10 ⁵ 2 A, 250 V AC
	• resistive DC1	10 ⁵ 6 A, 30 V DC
Mechanical life (cycles)	> 2 x 10 ⁷	
Dimensions (L x W x H)	93,8 x 6,2 x 80 mm	
Weight	40 g	
Ambient temperature	• storage	-40...+70 °C
	• operating	-40...+55 °C
		-40...+40 °C 230 V AC ❷
		-40...+60 °C 12, 24 V DC
		-40...+50 °C 230 V DC ❷
Protection category	IP 20	PN-EN 60529
Environmental protection	RTI	PN-EN 116000-3

The data in bold type pertain to the standard versions of the relays. ❶ For gold-plated contacts - when the maximum values given have been exceeded, the gold layer is destroyed. Then, the advantages of gold-plating disappear and the values are as for AgSnO₂ contacts (see beside). In consequence however, the life of the contact may be shorter than that of the normal power contact. ❷ Refers version for long lines (max. 300 m) **PI6-1P-230VAC/DC-10** - relay with integrated anti-interference filter (desigend on the basis of appropriately selected elements R and C, and Zener diode), resistant to occurrence of induced voltages in long distances of control wires.

Input data

Table 1

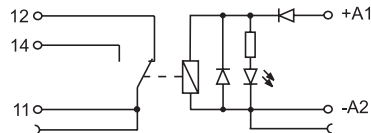
Interface relay code	Rated input voltage U_n	Power of input control circuit	Input - voltage range V	
			min. (at 20 °C)	max. (at 55 °C)
PI6-1P-12VDC	12 V DC	0,3 W	9,6	14,4
PI6-1P-24VDC	24 V DC	0,4 W	19,2	28,0
PI6-1P-36VDC	36 V DC	0,7 W	28,8	40,0
PI6-1P-24VAC/DC	24 V AC/DC	0,5 VA / 0,5 W	19,2	26,4
PI6-1P-42VAC/DC	42 V AC/DC	0,3 VA / 0,3 W	33,6	50,0
PI6-1P-115VAC/DC	115 V AC/DC	0,8 VA / 0,8 W	92,0	130,0
PI6-1P-230VAC/DC	230 V AC/DC	0,8 VA / 0,8 W	184,0	253,0
PI6-1P-230VAC/DC-10 ②	230 V AC/DC	1,6 VA / 1,6 W	196,0	253,0
PI6-1P-12VDC-01 ①	12 V DC	0,3 W	9,6	14,4
PI6-1P-24VDC-01 ①	24 V DC	0,4 W	19,2	28,0
PI6-1P-36VDC-01 ①	36 V DC	0,7 W	28,8	40,0
PI6-1P-24VAC/DC-01 ①	24 V AC/DC	0,5 VA / 0,5 W	19,2	26,4
PI6-1P-230VAC/DC-01 ①	230 V AC/DC	0,8 VA / 0,8 W	184,0	253,0

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

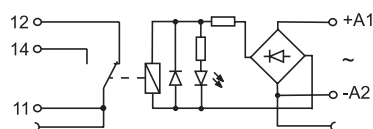
① Version with gold-plated contacts. ② Version for long lines (max. 300 m), with anti-interference filter.

Connection diagrams

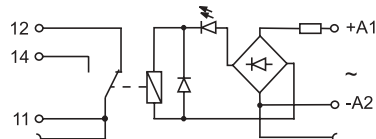
PI6-1P-12VDC, PI6-1P-12VDC-01
PI6-1P-24VDC, PI6-1P-24VDC-01
PI6-1P-36VDC, PI6-1P-36VDC-01



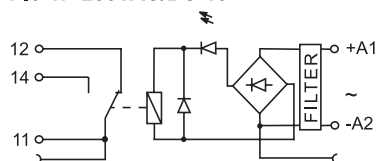
PI6-1P-24VAC/DC, PI6-1P-24VAC/DC-01
PI6-1P-42VAC/DC



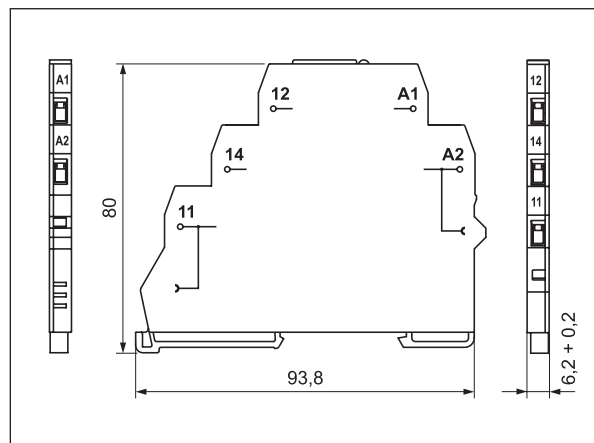
PI6-1P-115VAC/DC
PI6-1P-230VAC/DC, PI6-1P-230VAC/DC-01



PI6-1P-230VAC/DC-10



Dimensions



Mounting

Relays **PI6-1P** are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715. Maximum size of wires 1 x 2,5 mm² (1 x 14 AWG). Rated contactability 2 x 1,5 mm² (2 x 16 AWG). Maximum screw torque: 0,3 Nm.

PI6-1P may be linked with interconnection strip type **ZG20**. Strip **ZG20** bridges common input or output signals, maximum permissible current is 36 A / 250 V AC. Colours of strips: **ZG20-1** red, **ZG20-2** black, **ZG20-3** blue (see page 189).

Ordering codes

Ordering codes **PI6-1P** are specified in Table 1, "Interface relay code" column.



- Interface relay **PI6-1T** - with triac output, rated load 1,2 A / 400 V AC
- 35 mm rail mount acc. to PN-EN 60715
- May be linked with interconnection strip type **ZG20**
- Equipped in LED green
- Recognitions, certifications, directives:  



Output circuit - Triac

Number and type of outputs		1 NO
Rated / max. switching voltage	AC	400 V / 440 V
Min. switching voltage	AC	20 V
Rated load	AC1	1,2 A / 400 V AC
Min. switching current		10 mA
Max. non-repeat surge current		30 A $t=20$ ms
Rated current		1,2 A
I^2t for fusing		5,1 A ² s $t=1-10$ ms
dI/dt		50 A/ μ s
dV/dt		40 V/ μ s
R_{th} junction to ambient		70 °C/W

Input control circuit

Rated voltage	DC	5...32 V
	AC: 50/60 Hz AC/DC	24 ... 230 V
Turn-off voltage		AC: $\geq 0,2 U_n$ DC: $\geq 0,1 U_n$
Rated power consumption	DC	0,3 W
	AC/DC	0,3 VA / 0,3 W
	AC/DC	1,6 VA / 1,6 W
		5...32 V DC at 24 V
		24 V AC/DC
		230 V AC/DC

Insulation according to PN-EN 60664-1

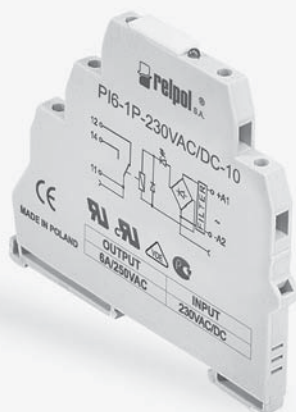
Insulation rated voltage		600 V AC
Insulation pollution degree		2
Dielectric strength	• input - output	4 000 V AC 50/60 Hz, 1 min., type of insulation: reinforced

General data

Operating time		10 ms	max. (zero turn-on)
Release time		10 ms	max.
Dimensions (L x W x H)		93,8 x 6,2 x 80 mm	
Weight		40 g	
Ambient temperature	• storage	-40...+70 °C	
	• operating	-40...+55 °C	
Protection category		IP 20	PN-EN 60529
Environmental protection		RTI	PN-EN 116000-3

EUROPRODUCT 2003
for interface relays **PI6**

Gold medal
AUTOMATICON 2004
for interface relays **PI6**

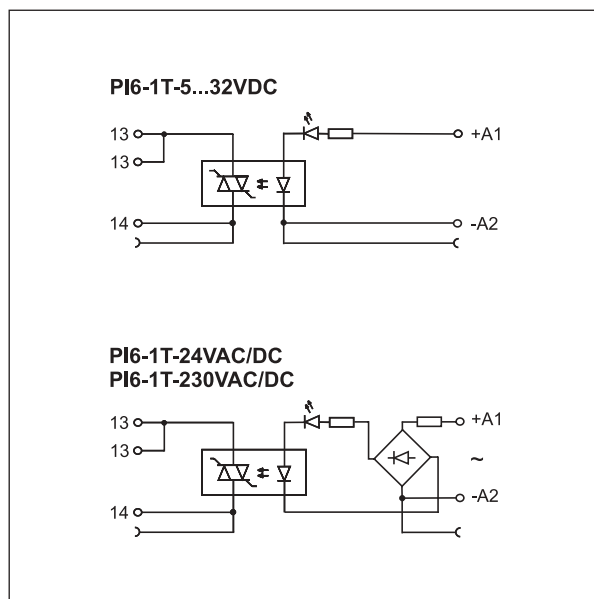


Input data

Table 1

Interface relay code	Rated input voltage U_n	Power of input control circuit
PI6-1T-5...32VDC	5...32 V DC	0,3 W at 24 V
PI6-1T-24VAC/DC	24 V AC/DC	0,3 VA / 0,3 W
PI6-1T-230VAC/DC	230 V AC/DC	1,6 VA / 1,6 W

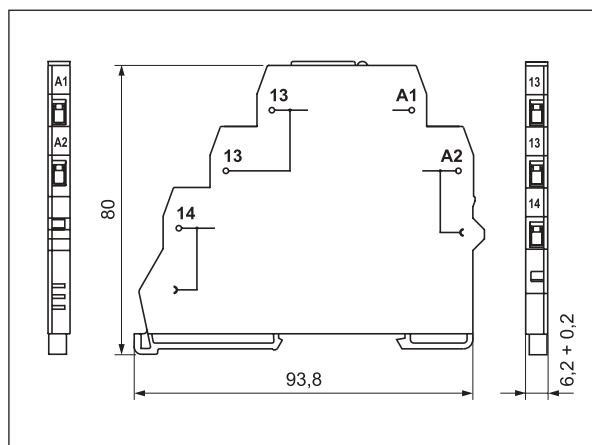
Connection diagrams



Ordering codes

Ordering codes **PI6-1T** are specified in Table 1, "Interface relay code" column.

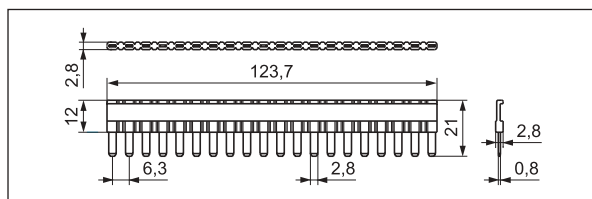
Dimensions



Mounting

Relays **PI6-1T** are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715. Maximum size of wires $1 \times 2,5 \text{ mm}^2$ (1 x 14 AWG). Rated contactability $2 \times 1,5 \text{ mm}^2$ (2 x 16 AWG). Maximum screw torque: 0,3 Nm.

PI6-1T may be linked with interconnection strip type **ZG20**. Strip **ZG20** bridges common input or output signals, maximum permissible current is 36 A / 250 V AC. Colours of strips: **ZG20-1** red, **ZG20-2** black, **ZG20-3** blue.



Interconnection strip type **ZG20**



- Interface relay **PI6-OC** - with transistor output, rated load 0,5 A / 70 V DC
- 35 mm rail mount acc. to PN-EN 60715
- May be linked with interconnection strip type **ZG20**
- Equipped in LED green
- Recognitions, certifications, directives:  



Output circuit - Transistor

Number and type of outputs		1 NO
Rated / max. switching voltage	DC	70 V / 70 V
Min. switching voltage	DC	5 V
Rated load	DC1	0,5 A / 70 V DC
Min. switching current		1 mA
Rated current		0,5 A

Input control circuit

Rated voltage	DC	5...32 V
	AC: 50/60 Hz AC/DC	24 ... 230 V
Turn-off voltage		AC: $\geq 0,2 U_n$ DC: $\geq 0,1 U_n$
Rated power consumption	DC	0,3 W
	AC/DC	0,3 VA / 0,3 W
	AC/DC	1,0 VA / 1,0 W

Insulation according to PN-EN 60664-1

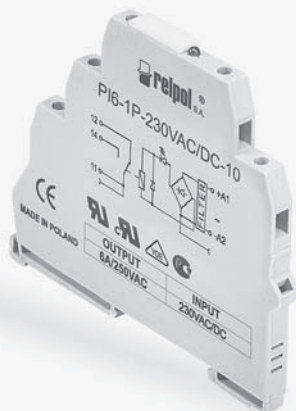
Insulation rated voltage		600 V AC
Insulation pollution degree		2
Dielectric strength	• input - output	3 000 V AC 50/60 Hz, 1 min., type of insulation: reinforced

General data

Max. switching frequency		10 kHz 5...32 V DC (for load up to 24 V DC: 15 kHz)
Dimensions (L x W x H)		93,8 x 6,2 x 80 mm
Weight		40 g
Ambient temperature	• storage	-40...+70 °C
	• operating	-40...+55 °C
Protection category		IP 20 PN-EN 60529
Environmental protection		RTI PN-EN 116000-3

EUROPRODUCT 2003
for interface relays **PI6**

Gold medal
AUTOMATICON 2004
for interface relays **PI6**

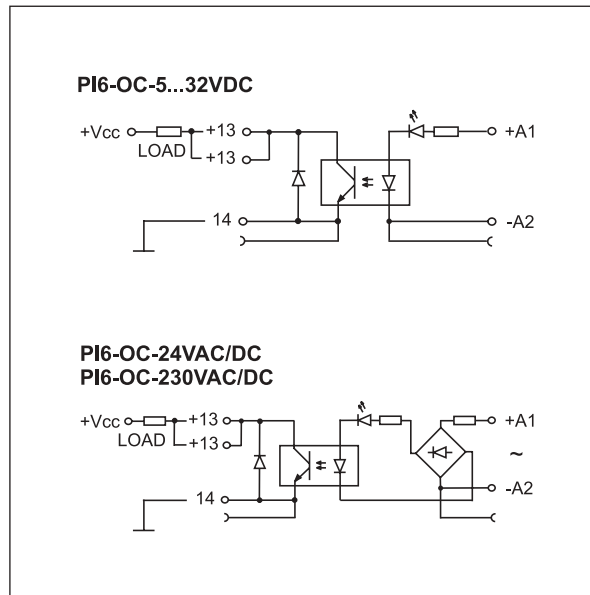


Input data

Table 1

Interface relay code	Rated input voltage U_n	Power of input control circuit
PI6-OC-5...32VDC	5...32 V DC	0,3 W at 24 V
PI6-OC-24VAC/DC	24 V AC/DC	0,3 VA / 0,3 W
PI6-OC-230VAC/DC	230 V AC/DC	1,0 VA / 1,0 W

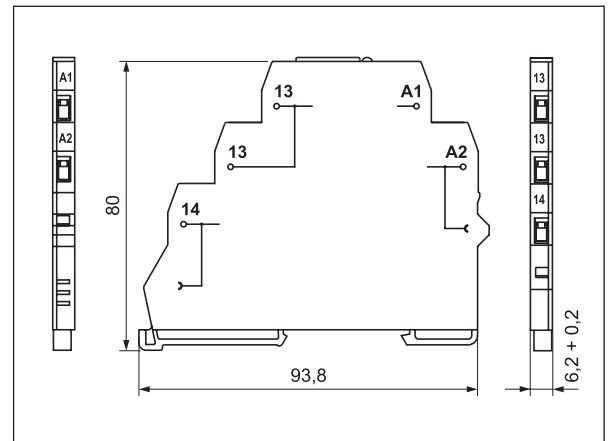
Connection diagrams



Ordering codes

Ordering codes **PI6-OC** are specified in Table 1, "Interface relay code" column.

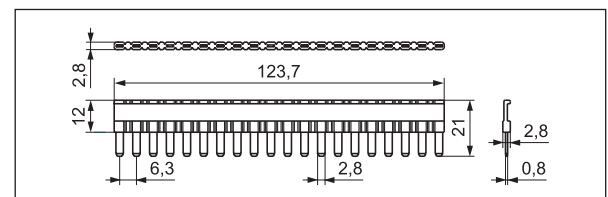
Dimensions



Mounting

Relays **PI6-OC** are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715. Maximum size of wires 1 x 2,5 mm² (1 x 14 AWG). Rated contactability 2 x 1,5 mm² (2 x 16 AWG). Maximum screw torque: 0,3 Nm.

PI6-OC may be linked with interconnection strip type **ZG20**. Strip **ZG20** bridges common input or output signals, maximum permissible current is 36 A / 250 V AC. Colours of strips: **ZG20-1** red, **ZG20-2** black, **ZG20-3** blue.



Interconnection strip type **ZG20**

RM699BV + PI6W-1P-...



- Interface relay **PIR6W-1P-...** consists of:
 - socket with electronic **PI6W-1P-...** with screw terminals,
 - changeover relay **RM699BV**, rated load 6 A / 250 V (AC1) ①
- 35 mm rail mount acc. to PN-EN 60715 • May be linked with interconnection strip type **ZG20** • Equipped in LED green • Version for long lines, with anti-interference filter (**PIR6W-1P-230VAC/DC-10** ②) • Accessories: description plates **PI6W-1246** • Recognitions, certifications, directives:

Output circuit (RM699BV) - contact data ①



Number and type of contacts	1 C/O	
Contact material	AgSnO₂	AgSnO ₂ /Au 3 μm ②
Rated / max. switching voltage	AC	250 V / 400 V
Max. switching voltage	DC	250 V
Min. switching voltage	AC/DC	10 V
Rated load	AC1	6 A / 250 V AC
	DC1	6 A / 24 V DC
Min. switching current	100 mA	
Max. inrush current	10 A 20 ms	
Rated current	6 A	
Max. breaking capacity	AC1	1 500 VA
Min. breaking capacity	1 W	
Contact resistance	≤ 100 mΩ 100 mA, 24 V	
Max. operating frequency	360 cycles/hour	
• at rated load	AC1	72 000 cycles/hour
• no load		

Input control circuit

Rated voltage	DC	12 ... 36 V		
	AC: 50/60 Hz AC/DC	24 ... 230 V		
Must release voltage		AC: $\geq 0,2 U_n$	AC: $\geq 0,35 U_n$ ③	DC: $\geq 0,1 U_n$
Operating range of supply voltage		see Table 1		
Must operate voltage		AC and DC: $\leq 0,8 U_n$	AC: $0,6...0,85 U_n$ ③	DC: $\leq 0,8 U_n$ ③
Rated power consumption	DC	0,3 W		
	AC/DC	0,3...2,1 VA / 0,3...1,0 W		
Max. length of supply line		≤ 300 m	AC supply ③	

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	• input - output	4 000 V AC 50/60 Hz, 1 min., type of insulation: reinforced	
	• input - output	6 000 V 1,2 / 50 μs, surge voltage	
	• mass - input, output	2 500 V AC 50/60 Hz, 1 min.	
	• contact clearance	1 000 V AC 50/60 Hz, 1 min., type of clearance: micro-disconnection	
Input - output distance	≥ 6 mm \ ≥ 8 mm		
• clearance \ creepage			

General data

Operating time (typical value)	AC: 11 ms	DC: 8 ms	AC/DC: 20 ms at U=0,85 U _n ③
Release time (typical value)	AC: 15 ms	DC: 10 ms	AC/DC: 18 ms ④
Electrical life • resistive AC1 • cos ϕ = 0,4	> 0,6 x 10 ⁵ > 2 x 10 ⁵	6 A, 250 V AC, 360 cycles/hour 2 A, 250 V AC	
Mechanical life (cycles)	> 2 x 10 ⁷		
Dimensions (L x W x H) / Weight	98,5 x 6,2 x 85,5 mm / 45 g		
Ambient temperature • storage • operating	-40...+70 °C -40...+55 °C -40...+60 °C 12, 24 V DC		
Protection category	IP 20	PN-EN 60529	
Environmental protection	RTI	PN-EN 116000-3	
Shock resistance	10 g		
Vibration resistance	5 g 10...500 Hz		

The data in bold type pertain to the standard versions of the relays. ① Characteristics of the contact capacity of relays **PIR6W-1P-...** with **RM699BV** - see page 42. ② For gold-plated contacts - when the maximum values given have been exceeded, the gold layer is destroyed. Then, the advantages of gold-plating disappear and the values are as for AgSnO₂ contacts (see beside). In consequence however, the life of the contact may be shorter than that of the normal power contact. ③ Refers version for long lines (max. 300 m) **PIR6W-1P-230VAC/DC-10** - relay which includes the socket **PI6W-1P-230VAC/DC-10** with integrated anti-interference filter (designed on the basis of appropriately selected elements R and C, and Zener diode), resistant to occurrence of induced voltages in long distances of control wires, designed exclusively for cooperation with operational relay **RM699BV-3011-85-1060**.

Input data

Table 1

Interface relay code	Input - voltage range V	
	min.	max.
PIR6W-1P-12VDC	9,6	14,4
PIR6W-1P-24VDC	19,2	28,0
PIR6W-1P-36VDC	28,8	40,0
PIR6W-1P-24VAC/DC	19,2	26,4
PIR6W-1P-42VAC/DC	33,6	50,0
PIR6W-1P-115VAC/DC	92,0	130,0
PIR6W-1P-230VAC/DC	184,0	253,0
PIR6W-1P-230VAC/DC-10 ④	196,0 ④	253,0
PIR6W-1P-12VDC-01 ②	9,6	14,4
PIR6W-1P-24VDC-01 ②	19,2	28,0
PIR6W-1P-36VDC-01 ②	28,8	40,0
PIR6W-1P-24VAC/DC-01 ②	19,2	26,4
PIR6W-1P-42VAC/DC-01 ②	33,6	50,0
PIR6W-1P-115VAC/DC-01 ②	92,0	130,0
PIR6W-1P-230VAC/DC-01 ②	184,0	253,0

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

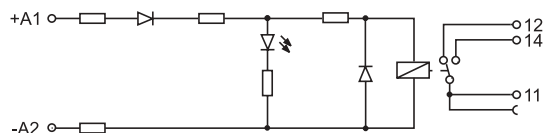
② Version with gold-plated contacts.

④ Version for long lines (max. 300 m), with anti-interference filter.

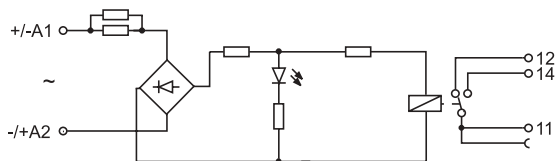
④ 196,0 V at supply voltage AC; 184,0 V at supply voltage DC

Connection diagrams

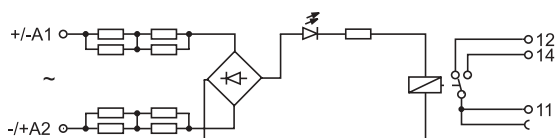
PIR6W-1P-12VDC, PIR6W-1P-12VDC-01
PIR6W-1P-24VDC, PIR6W-1P-24VDC-01
PIR6W-1P-36VDC, PIR6W-1P-36VDC-01



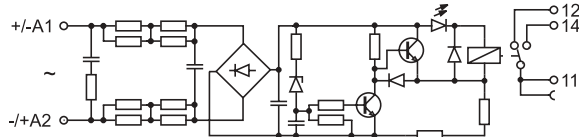
PIR6W-1P-24VAC/DC, PIR6W-1P-24VAC/DC-01
PIR6W-1P-42VAC/DC, PIR6W-1P-42VAC/DC-01



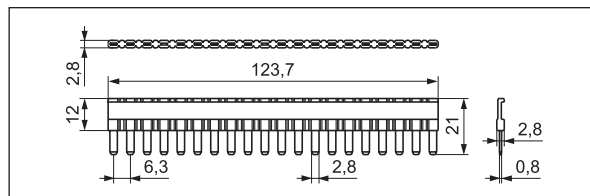
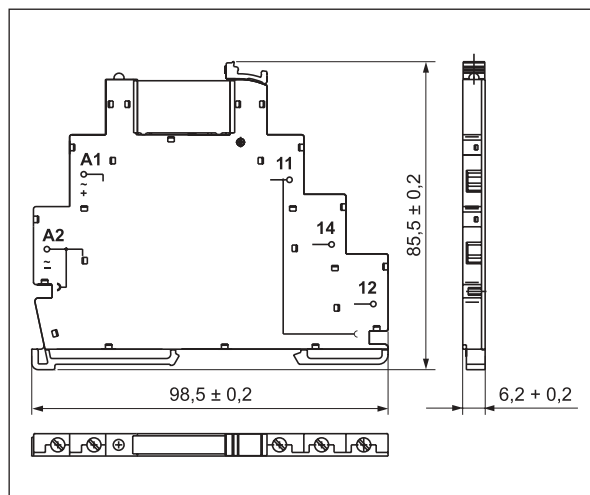
PIR6W-1P-115VAC/DC, PIR6W-1P-115VAC/DC-01
PIR6W-1P-230VAC/DC, PIR6W-1P-230VAC/DC-01



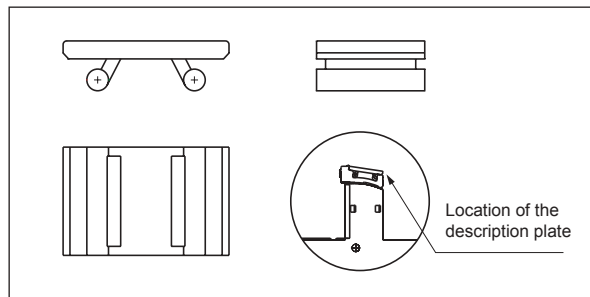
PIR6W-1P-230VAC/DC-10



Dimensions



Interconnection strip type **ZG20**



Description plate **PI6W-1246**

Ordering codes

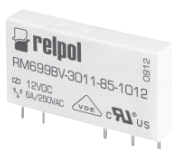
Ordering codes **PIR6W-1P-...** are specified in Tables 1, 2, "Interface relay code" column.

Mounting

Relays **PIR6W-1P-...** are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715. Maximum size of wires 1 x 2,5 mm² (1 x 14 AWG). Rated contactability 2 x 1,5 mm² (2 x 16 AWG). Maximum screw torque: 0,3 Nm. Interface relay **PIR6W-1P-...** consists of: socket with electronic **PI6W-1P-...** and electromagnetic relay **RM699BV**. **PIR6W-1P-...** may be linked with interconnection strip type **ZG20**. Strip **ZG20** bridges common input or output signals, maximum permissible current is 36 A / 250 V AC. Colours of strips: **ZG20-1** red, **ZG20-2** black, **ZG20-3** blue. Description plates of **PI6W-1246** type are offered for **PIR6W-1P-...** relays; they are delivered with the relays, not mounted.



PI6W-1P-...



RM699BV



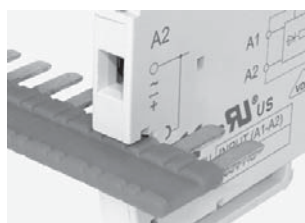
ZG20



PI6W-1246



Green LED:
signalling the operation
status of the relay.



Interconnection strip ZG20:
bridging of common
input or output signals.



Movable ejector:
protection and easy replacement
of the operational relay.

Table of codes

Table 2

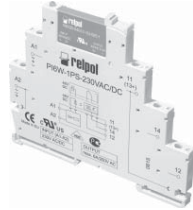
Interface relay code	Rated input voltage U_n ⑤	Power of input control circuit	Socket code	Operational relay code	Rated voltage of operational relay U_s ⑤
PIR6W-1P-12VDC	12 V DC	0,3 W	PI6W-1P-12VDC	RM699BV-3011-85-1012	12 V DC
PIR6W-1P-24VDC	24 V DC	0,3 W	PI6W-1P-24VDC	RM699BV-3011-85-1024	24 V DC
PIR6W-1P-36VDC	36 V DC	0,3 W	PI6W-1P-36VDC	RM699BV-3011-85-1024	24 V DC
PIR6W-1P-24VAC/DC	24 V AC/DC	0,3 VA / 0,3 W	PI6W-1P-24VAC/DC	RM699BV-3011-85-1024	24 V DC
PIR6W-1P-42VAC/DC	42 V AC/DC	0,4 VA / 0,4 W	PI6W-1P-42VAC/DC	RM699BV-3011-85-1024	24 V DC
PIR6W-1P-115VAC/DC	115 V AC/DC	0,9 VA / 0,9 W	PI6W-1P-115VAC/DC	RM699BV-3011-85-1024	24 V DC
PIR6W-1P-230VAC/DC	230 V AC/DC	0,8 VA / 0,8 W	PI6W-1P-230VAC/DC	RM699BV-3011-85-1060	60 V DC
PIR6W-1P-230VAC/DC-10 ⑥	230 V AC/DC	2,1 VA / 1,0 W	PI6W-1P-230VAC/DC-10	RM699BV-3011-85-1060	60 V DC
PIR6W-1P-12VDC-01 ②	12 V DC	0,3 W	PI6W-1P-12VDC	RM699BV-3211-85-1012	12 V DC
PIR6W-1P-24VDC-01 ②	24 V DC	0,3 W	PI6W-1P-24VDC	RM699BV-3211-85-1024	24 V DC
PIR6W-1P-36VDC-01 ②	36 V DC	0,3 W	PI6W-1P-36VDC	RM699BV-3211-85-1024	24 V DC
PIR6W-1P-24VAC/DC-01 ②	24 V AC/DC	0,3 VA / 0,3 W	PI6W-1P-24VAC/DC	RM699BV-3211-85-1024	24 V DC
PIR6W-1P-42VAC/DC-01 ②	42 V AC/DC	0,4 VA / 0,4 W	PI6W-1P-42VAC/DC	RM699BV-3211-85-1024	24 V DC
PIR6W-1P-115VAC/DC-01 ②	115 V AC/DC	0,9 VA / 0,9 W	PI6W-1P-115VAC/DC	RM699BV-3211-85-1024	24 V DC
PIR6W-1P-230VAC/DC-01 ②	230 V AC/DC	0,8 VA / 0,8 W	PI6W-1P-230VAC/DC	RM699BV-3211-85-1060	60 V DC

The data in bold type pertain to the standard versions of the relays. ② Version with gold-plated contacts. ⑥ Version for long lines (max. 300 m), with anti-interference filter. ⑤ It shall be remarked that rated input voltage of the operational relay U_s not always complies with the rated input voltage U_n (which is important on ordering operational relays for sockets).

RM699BV + PI6W-1PS-...



RSR30 + PI6W-1PS-...



- Interface relay **PIR6W-1PS-...** consists of:
 - universal socket with electronic **PI6W-1PS-...** with screw terminals,
 - changeover relay **RM699BV**, rated load 6 A / 250 V (AC1) ❶ or solid state relay **RSR30** ❶
- 35 mm rail mount acc. to PN-EN 60715 • May be linked with interconnection strip type **ZG20** • Equipped in LED green • Accessories: description plates **PI6W-1246** • Recognitions, certifications, directives:



Output circuit (RM699BV) - contact data ❶

Number and type of contacts (code of output)		1 C/O (R)	1 C/O (R-01)
Contact material		AgSnO₂	AgSnO ₂ /Au 3 μm ❷
Rated / max. switching voltage	AC	250 V / 400 V	– / 30 V ❷
Max. switching voltage	DC	250 V	36 V ❷
Min. switching voltage	AC/DC	10 V	5 V
Rated load	AC1	6 A / 250 V AC	0,05 A / 30 V AC ❷
	DC1	6 A / 24 V DC	0,05 A / 36 V DC ❷
Min. switching current		100 mA	10 mA
Max. inrush current		10 A 20 ms	0,1 A 20 ms ❷
Rated current		6 A	0,05 A ❷
Max. breaking capacity	AC1	1 500 VA	1,2 VA ❷
Min. breaking capacity		1 W	0,05 W
Contact resistance		≤ 100 mΩ 100 mA, 24 V	≤ 30 mΩ 10 mA, 5 V
Max. operating frequency			
• at rated load		AC1	360 cycles/hour
• no load			72 000 cycles/hour

Output circuit (RSR30) - output data ❶

Type of output (code of output)	Triac (T) max. 2 A	Transistor (C) max. 1 A	Transistor (O) max. 2 A
Number and type of outputs	1 NO	1 NO	1 NO
Rated voltage	240 V AC	48 V DC	24 V DC
Max. output voltage	280 V AC	60 V DC	32 V DC
Min. output voltage	12 V AC	1,5 V DC	1,5 V DC
Rated continuous output current	AC1	1 A	
	DC1	1 A	2 A
Min. making capacity current	50 mA	1 mA	1 mA
Max. off-state leakage current (rest condition)	1,5 mA	1 mA	1 mA
Max. on-state voltage drop on the connection (operating state)	1,2 V	0,4 V	0,24 V
Operating switching frequency		10 Hz	10 Hz

Input control circuit

Rated voltage	DC	6 ... 60 V	
	AC: 50/60 Hz AC/DC	24 ... 230 V	
Must release voltage		AC: ≥ 0,2 U _n	DC: ≥ 0,1 U _n
Operating range of supply voltage		0,8...1,2 U _n	0,85...1,2 U _n 6 V DC
Must operate voltage		≤ 0,8 U _n	≤ 0,85 U _n 6 V DC
Rated power consumption	DC	0,2...0,5 W	
	AC/DC	0,5...1,2 VA / 0,4...1,2 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	• input - output	4 000 V AC 50/60 Hz, 1 min., type of insulation: reinforced
	• input - output	6 000 V 1,2 / 50 μs, surge voltage
	• mass - input, output	2 500 V AC 50/60 Hz, 1 min.
	• contact clearance	1 000 V AC 50/60 Hz, 1 min., output R and R-01, type of clearance: micro-disconnection
Input - output distance		
• clearance \ creepage		≥ 6 mm \ ≥ 8 mm
Mass - input, output distance		
• clearance \ creepage		≥ 3 mm \ ≥ 3,6 mm

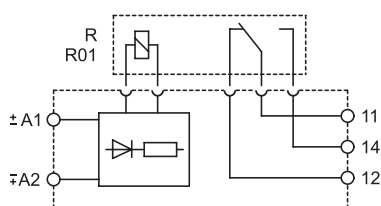
The data in bold type pertain to the standard versions of the relays. ❶ Characteristics of the contact capacity of relays **PIR6W-1PS-...** with **RM699BV** - see page 42; **PIR6W-1PS-...** with **RSR30** - see catalogue "Solid state relays" and www.repol.com.pl ❷ For gold-plated contacts - when the maximum values given have been exceeded, the gold layer is destroyed. Then, the advantages of gold-plating disappear and the values are as for AgSnO₂ contacts (see beside). In consequence however, the life of the contact may be shorter than that of the normal power contact.

General data

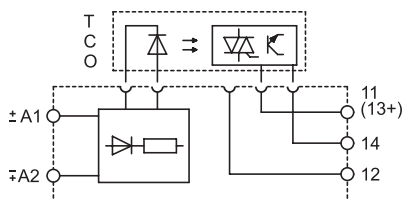
Operating time (typical value)	PIR6W-...-R, PIR6W-...-R01: DC: 8 ms AC/DC: 20 ms PIR6W-...-T: DC: 100 μ s AC/DC: 10 ms PIR6W-...-C, PIR6W-...-O: DC: 50 μ s AC/DC: 10 ms
Release time (typical value)	PIR6W-...-R, PIR6W-...-R01: DC: 10 ms AC/DC: 25 ms PIR6W-...-T: DC: 1/2 cycle + 1 ms AC/DC: 30 ms PIR6W-...-C, PIR6W-...-O: DC: 600 μ s AC/DC: 20 ms
Electrical life • resistive AC1	> 0,5 x 10 ⁵ 6 A, 250 V AC
Mechanical life (cycles)	> 10 ⁷
Dimensions (L x W x H)	98,5 x 6,2 x 85,5 mm
Weight	45 g
Ambient temperature • storage / operating	PIR6W-...-R, PIR6W-...-R01: -40...+70 °C / -40...+55 °C PIR6W-...-T: -40...+70 °C / -20...+55 °C PIR6W-...-C: -25...+70 °C / -25...+55 °C PIR6W-...-O: -25...+70 °C / -20...+55 °C
Protection category	IP 20 PN-EN 60529
Environmental protection	RTI PN-EN 116000-3
Shock resistance	10 g
Vibration resistance	5 g 10...500 Hz

Connection diagrams

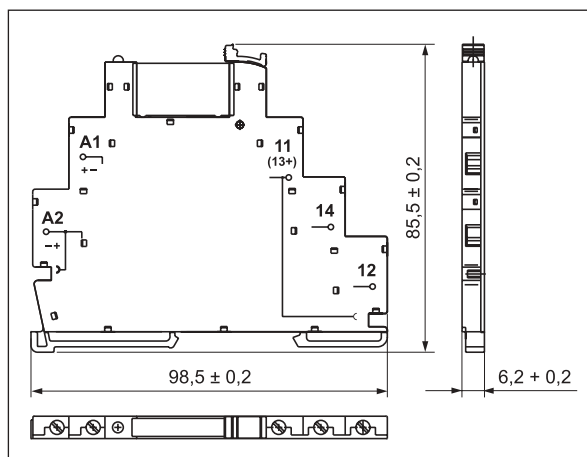
PIR6W-1PS-...-R, PIR6W-1PS-...-R01



PIR6W-1PS-...-T, PIR6W-1PS-...-C, PIR6W-1PS-...-O



Dimensions



Ordering codes

Ordering codes **PIR6W-1PS-...** are specified in Table 1, "Interface relay code" column.

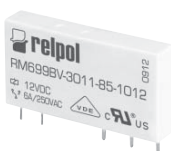
Mounting

Relays **PIR6W-1PS-...** are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715. Maximum size of wires 1 x 2,5 mm² (1 x 14 AWG). Rated contactability 2 x 1,5 mm² (2 x 16 AWG). Maximum screw torque: 0,3 Nm. Interface relay **PIR6W-1PS-...** consists of: universal socket with electronic **PI6W-1PS-...** and electromagnetic relay **RM699BV** or solid state relay **RSR30**.

PIR6W-1PS-... may be linked with interconnection strip type **ZG20** (see pages 193, 194). Description plates of **PI6W-1246** type are offered for **PIR6W-1PS-...** relays (see pages 193, 194).



PI6W-1PS-...



RM699BV



RSR30



ZG20



PI6W-1246

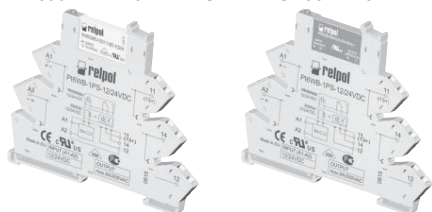
Table of codes

Table 1

Interface relay code	Rated input voltage U_n ②	Power of input control circuit	Socket code	Operational relay code	Rated voltage of operational relay U_s ③
PIR6W-1PS-6VDC-R	6 V DC	0,3 W	PI6W-1PS-6VDC	RM699BV-3011-85-1005	5 V DC
PIR6W-1PS-12VDC-R	12 V DC	0,2 W	PI6W-1PS-12/24VDC	RM699BV-3011-85-1012	12 V DC
PIR6W-1PS-24VDC-R	24 V DC	0,3 W	PI6W-1PS-12/24VDC	RM699BV-3011-85-1024	24 V DC
PIR6W-1PS-36VDC-R	36 V DC	0,3 W	PI6W-1PS-36VDC	RM699BV-3011-85-1024	24 V DC
PIR6W-1PS-48VDC-R	48 V DC	0,4 W	PI6W-1PS-48VDC	RM699BV-3011-85-1024	24 V DC
PIR6W-1PS-60VDC-R	60 V DC	0,5 W	PI6W-1PS-60VDC	RM699BV-3011-85-1024	24 V DC
PIR6W-1PS-24VAC/DC-R	24 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-24VAC/DC	RM699BV-3011-85-1012	12 V DC
PIR6W-1PS-42VAC/DC-R	42 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-42VAC/DC	RM699BV-3011-85-1024	24 V DC
PIR6W-1PS-115VAC/DC-R	115 V AC/DC	1,2 VA / 1,2 W	PI6W-1PS-115VAC/DC	RM699BV-3011-85-1024	24 V DC
PIR6W-1PS-230VAC/DC-R	230 V AC/DC	1,2 VA / 1,2 W	PI6W-1PS-230VAC/DC	RM699BV-3011-85-1048	48 V DC
PIR6W-1PS-6VDC-R01 ②	6 V DC	0,3 W	PI6W-1PS-6VDC	RM699BV-3211-85-1005	5 V DC
PIR6W-1PS-12VDC-R01 ②	12 V DC	0,2 W	PI6W-1PS-12/24VDC	RM699BV-3211-85-1012	12 V DC
PIR6W-1PS-24VDC-R01 ②	24 V DC	0,3 W	PI6W-1PS-12/24VDC	RM699BV-3211-85-1024	24 V DC
PIR6W-1PS-36VDC-R01 ②	36 V DC	0,3 W	PI6W-1PS-36VDC	RM699BV-3211-85-1024	24 V DC
PIR6W-1PS-48VDC-R01 ②	48 V DC	0,4 W	PI6W-1PS-48VDC	RM699BV-3211-85-1024	24 V DC
PIR6W-1PS-60VDC-R01 ②	60 V DC	0,5 W	PI6W-1PS-60VDC	RM699BV-3211-85-1024	24 V DC
PIR6W-1PS-24VAC/DC-R01 ②	24 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-24VAC/DC	RM699BV-3211-85-1012	12 V DC
PIR6W-1PS-42VAC/DC-R01 ②	42 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-42VAC/DC	RM699BV-3211-85-1024	24 V DC
PIR6W-1PS-115VAC/DC-R01 ②	115 V AC/DC	1,2 VA / 1,2 W	PI6W-1PS-115VAC/DC	RM699BV-3211-85-1024	24 V DC
PIR6W-1PS-230VAC/DC-R01 ②	230 V AC/DC	1,2 VA / 1,2 W	PI6W-1PS-230VAC/DC	RM699BV-3211-85-1048	48 V DC
PIR6W-1PS-6VDC-T	6 V DC	0,1 W	PI6W-1PS-6VDC	RSR30-D05-A1-24-020-1	5 V DC
PIR6W-1PS-12VDC-T	12 V DC	0,2 W	PI6W-1PS-12/24VDC	RSR30-D12-A1-24-020-1	12 V DC
PIR6W-1PS-24VDC-T	24 V DC	0,3 W	PI6W-1PS-12/24VDC	RSR30-D24-A1-24-020-1	24 V DC
PIR6W-1PS-36VDC-T	36 V DC	0,3 W	PI6W-1PS-36VDC	RSR30-D24-A1-24-020-1	24 V DC
PIR6W-1PS-48VDC-T	48 V DC	0,4 W	PI6W-1PS-48VDC	RSR30-D24-A1-24-020-1	24 V DC
PIR6W-1PS-60VDC-T	60 V DC	0,5 W	PI6W-1PS-60VDC	RSR30-D24-A1-24-020-1	24 V DC
PIR6W-1PS-24VAC/DC-T	24 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-24VAC/DC	RSR30-D12-A1-24-020-1	12 V DC
PIR6W-1PS-42VAC/DC-T	42 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-42VAC/DC	RSR30-D24-A1-24-020-1	24 V DC
PIR6W-1PS-115VAC/DC-T	115 V AC/DC	1,0 VA / 1,0 W	PI6W-1PS-115VAC/DC	RSR30-D24-A1-24-020-1	24 V DC
PIR6W-1PS-6VDC-C	6 V DC	0,1 W	PI6W-1PS-6VDC	RSR30-D05-D1-04-025-1	5 V DC
PIR6W-1PS-12VDC-C	12 V DC	0,2 W	PI6W-1PS-12/24VDC	RSR30-D12-D1-04-025-1	12 V DC
PIR6W-1PS-24VDC-C	24 V DC	0,3 W	PI6W-1PS-12/24VDC	RSR30-D24-D1-04-025-1	24 V DC
PIR6W-1PS-36VDC-C	36 V DC	0,3 W	PI6W-1PS-36VDC	RSR30-D24-D1-04-025-1	24 V DC
PIR6W-1PS-48VDC-C	48 V DC	0,4 W	PI6W-1PS-48VDC	RSR30-D24-D1-04-025-1	24 V DC
PIR6W-1PS-60VDC-C	60 V DC	0,5 W	PI6W-1PS-60VDC	RSR30-D24-D1-04-025-1	24 V DC
PIR6W-1PS-24VAC/DC-C	24 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-24VAC/DC	RSR30-D12-D1-04-025-1	12 V DC
PIR6W-1PS-42VAC/DC-C	42 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-42VAC/DC	RSR30-D24-D1-04-025-1	24 V DC
PIR6W-1PS-115VAC/DC-C	115 V AC/DC	1,0 VA / 1,0 W	PI6W-1PS-115VAC/DC	RSR30-D24-D1-04-025-1	24 V DC
PIR6W-1PS-230VAC/DC-C	230 V AC/DC	1,0 VA / 1,0 W	PI6W-1PS-230VAC/DC	RSR30-D48-D1-04-025-1	48 V DC
PIR6W-1PS-6VDC-O	6 V DC	0,1 W	PI6W-1PS-6VDC	RSR30-D05-D1-02-040-1	5 V DC
PIR6W-1PS-12VDC-O	12 V DC	0,2 W	PI6W-1PS-12/24VDC	RSR30-D12-D1-02-040-1	12 V DC
PIR6W-1PS-24VDC-O	24 V DC	0,3 W	PI6W-1PS-12/24VDC	RSR30-D24-D1-02-040-1	24 V DC
PIR6W-1PS-36VDC-O	36 V DC	0,3 W	PI6W-1PS-36VDC	RSR30-D24-D1-02-040-1	24 V DC
PIR6W-1PS-48VDC-O	48 V DC	0,4 W	PI6W-1PS-48VDC	RSR30-D24-D1-02-040-1	24 V DC
PIR6W-1PS-60VDC-O	60 V DC	0,5 W	PI6W-1PS-60VDC	RSR30-D24-D1-02-040-1	24 V DC
PIR6W-1PS-24VAC/DC-O	24 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-24VAC/DC	RSR30-D12-D1-02-040-1	12 V DC
PIR6W-1PS-42VAC/DC-O	42 V AC/DC	0,5 VA / 0,4 W	PI6W-1PS-42VAC/DC	RSR30-D24-D1-02-040-1	24 V DC
PIR6W-1PS-115VAC/DC-O	115 V AC/DC	1,0 VA / 1,0 W	PI6W-1PS-115VAC/DC	RSR30-D24-D1-02-040-1	24 V DC
PIR6W-1PS-230VAC/DC-O	230 V AC/DC	1,0 VA / 1,0 W	PI6W-1PS-230VAC/DC	RSR30-D48-D1-02-040-1	48 V DC

The data in bold type pertain to the standard versions of the relays. ② Version with gold-plated contacts. ③ It shall be remarked that rated input voltage of the operational relay U_s not always complies with the rated input voltage U_n (which is important on ordering operational relays for sockets).

RM699BV + PI6WB-1PS... RSR30 + PI6WB-1PS...



- Interface relay **PIR6WB-1PS...** consists of: - universal socket with electronic **PI6WB-1PS...** with spring terminals ❶, - changeover relay **RM699BV**, rated load 6 A / 250 V (AC1) ❷ or solid state relay **RSR30** ❸
- 35 mm rail mount acc. to PN-EN 60715 • May be linked with interconnection strip type **ZG20** • Equipped in LED green • Version for long lines, with anti-interference filter (**PIR6WB-1P-230VAC/DC-10** ❹) • Accessories: description plates **PI6W-1246** • Recognitions, certifications, directives:



Output circuit (RM699BV) - contact data ❷

Number and type of contacts (code of output)	1 C/O (R)	1 C/O (R-01)
Contact material	AgSnO ₂	AgSnO ₂ /Au 3 μm ❸
Rated / max. switching voltage	AC 250 V / 400 V	- / 30 V ❸
Max. switching voltage	DC 250 V	36 V ❸
Min. switching voltage	AC/DC 10 V	5 V
Rated load	AC1 6 A / 250 V AC DC1 6 A / 24 V DC	0,05 A / 30 V AC ❸ 0,05 A / 36 V DC ❸
Min. switching current	100 mA	10 mA
Max. inrush current	10 A 20 ms	0,1 A 20 ms ❸
Rated current	6 A	0,05 A ❸
Max. breaking capacity	AC1 1 500 VA	1,2 VA ❸
Min. breaking capacity	1 W	0,05 W
Contact resistance	≤ 100 mΩ 100 mA, 24 V	≤ 30 mΩ 10 mA, 5 V
Max. operating frequency		
• at rated load	AC1 360 cycles/hour	
• no load	72 000 cycles/hour	

Output circuit (RSR30) - output data ❸

Type of output (code of output)	Triac (T) max. 2 A	Transistor (C) max. 1 A	Transistor (O) max. 2 A
Number and type of outputs	1 NO	1 NO	1 NO
Rated voltage	240 V AC	48 V DC	24 V DC
Max. output voltage	280 V AC	60 V DC	32 V DC
Min. output voltage	12 V AC	1,5 V DC	1,5 V DC
Rated continuous output current	AC1 1 A DC1	1 A	2 A
Min. making capacity current	50 mA	1 mA	1 mA
Max. off-state leakage current (rest condition)	1,5 mA	1 mA	1 mA
Max. on-state voltage drop on the connection (operating state)	1,2 V	0,4 V	0,24 V
Operating switching frequency		10 Hz	10 Hz

Input control circuit

Rated voltage	DC 6 ... 60 V AC: 50/60 Hz AC/DC 24 ... 230 V		
Must release voltage	AC: ≥ 0,2 U _n	AC: ≥ 0,35 U _n ❹	DC: ≥ 0,1 U _n
Operating range of supply voltage	0,8...1,2 U _n	0,85...1,2 U _n 6 V DC	
Must operate voltage	≤ 0,8 U _n	≤ 0,85 U _n 6 V DC	AC: 0,6...0,85 U _n ❹
Rated power consumption	DC 0,2...0,5 W AC/DC 0,5...1,2 VA / 0,4...1,2 W		
Max. length of supply line	≤ 300 m	AC supply ❷	

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	• input - output	4 000 V AC	50/60 Hz, 1 min., type of insulation: reinforced
	• input - output	6 000 V	1,2 / 50 μs, surge voltage
	• contact clearance	1 000 V AC	50/60 Hz, 1 min., output R and R-01, type of clearance: micro-disconnection
Input - output distance			
• clearance \ creepage		≥ 6 mm \ ≥ 8 mm	

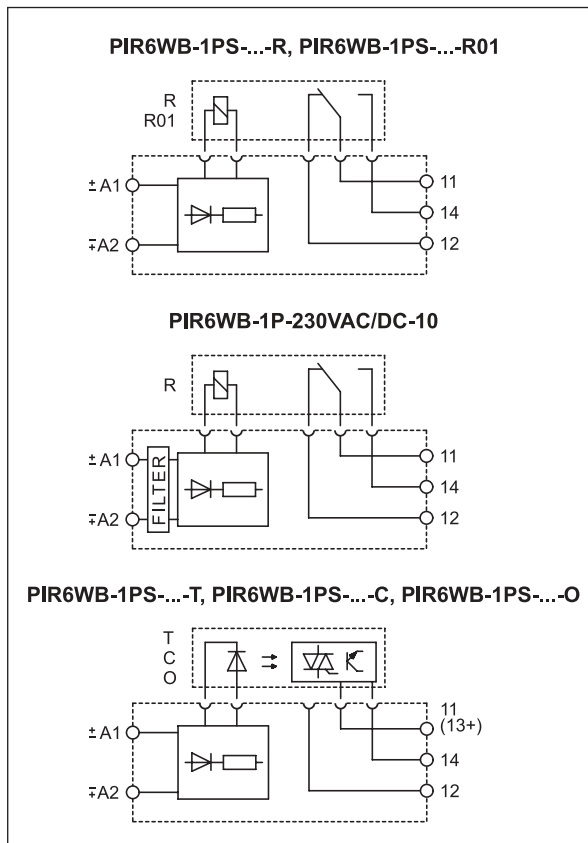
The data in bold type pertain to the standard versions of the relays. ❶ Spring fixing terminals for electric wires (cage springs CAGE CLAMP® - is the registered trademark of WAGO Kontakttechnik GmbH & Co. KG, Germany). ❷ Characteristics of the contact capacity of relays **PIR6WB-1PS...** with **RM699BV** - see page 42; **PIR6WB-1PS...** with **RSR30** - see catalogue "Solid state relays" and www.relpol.com.pl ❸ For gold-plated contacts - when the maximum values given have been exceeded, the gold layer is destroyed. Then, the advantages of gold-plating disappear and the values are as for AgSnO₂ contacts (see beside). In consequence however, the life of the contact may be shorter than that of the normal power contact. ❹ Refers version for long lines (max. 300 m) **PIR6WB-1P-230VAC/DC-10** - relay which includes the socket **PI6WB-1P-230VAC/DC-10** with integrated anti-interference filter (designed on the basis of appropriately selected elements R and C, and Zener diode), resistant to occurrence of induced voltages in long distances of control wires, designed exclusively for cooperation with operational relay **RM699BV-3011-85-1060**.

General data

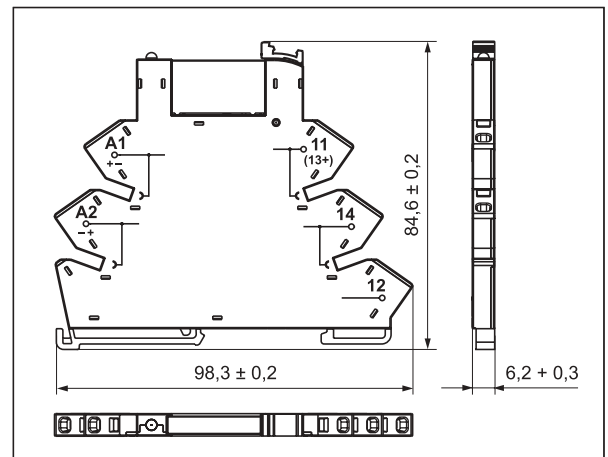
④ Version for long lines (max. 300 m), with anti-interference filter.

Operating time (typical value)	PIR6WB-...-R, PIR6WB-...-R01: DC: 8 ms AC/DC: 20 ms PIR6WB-...-T: DC: 100 µs AC/DC: 10 ms PIR6WB-...-C, PIR6WB-...-O: DC: 50 µs AC/DC: 10 ms
Release time (typical value)	PIR6WB-...-R, PIR6WB-...-R01: DC: 10 ms AC/DC: 25 ms (18 ms ④) PIR6WB-...-T: DC: 1/2 cycle + 1 ms AC/DC: 30 ms PIR6WB-...-C, PIR6WB-...-O: DC: 600 µs AC/DC: 20 ms
Electrical life • resistive AC1	> 0,5 x 10 ⁵ 6 A, 250 V AC
Mechanical life (cycles)	> 10 ⁷
Dimensions (L x W x H) / Weight	98,3 x 6,2 x 84,6 mm / 55 g
Ambient temperature • storage / operating	PIR6WB-...-R, PIR6WB-...-R01: -40 (-25 ④)...+70 °C / -40 (-20 ④)...+55 °C PIR6WB-...-T: -40...+70 °C / -20...+55 °C PIR6WB-...-C: -25...+70 °C / -25...+55 °C PIR6WB-...-O: -25...+70 °C / -20...+55 °C
Protection category	IP 20 PN-EN 60529
Environmental protection	RTI PN-EN 116000-3
Shock / vibration resistance	10 g / 5 g 10...500 Hz

Connection diagrams

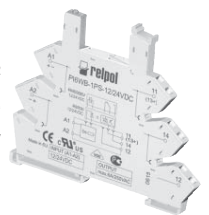


Dimensions



Mounting

Relays **PIR6WB-1PS-...** direct mounting on 35 mm rail mount acc. to PN-EN 60715. Range of wires 1 x 0,22...2,5 mm² (1 x 24...14 AWG). Rated contactability 1 x 1,5 mm² (1 x 16 AWG). Recommended length of the insulated cable 8...9 mm. Interface relay **PIR6WB-1PS-...** consists of: universal socket with electronic **PI6WB-1PS-...** and electromagnetic relay **RM699BV** or solid state relay **RSR30** (see page 196).



PI6WB-1PS-...

PIR6WB-1PS-... may be linked with interconnection strip type **ZG20** (see pages 193, 194). Description plates of **PI6W-1246** type are offered for **PIR6WB-1PS-...** relays (see pages 193, 194).

Ordering codes

Ordering codes **PIR6WB-1PS-...** are specified in Table 1, "Interface relay code" column.

Wire connection

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".

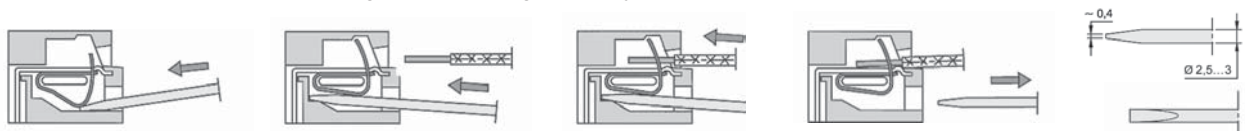


Table of codes

Table 1

Interface relay code	Rated input voltage U_n ⑤	Power of input control circuit	Socket code	Operational relay code	Rated voltage of operational relay U_s ⑥
PIR6WB-1PS-6VDC-R	6 V DC	0,3 W	PI6WB-1PS-6VDC	RM699BV-3011-85-1005	5 V DC
PIR6WB-1PS-12VDC-R	12 V DC	0,2 W	PI6WB-1PS-12/24VDC	RM699BV-3011-85-1012	12 V DC
PIR6WB-1PS-24VDC-R	24 V DC	0,3 W	PI6WB-1PS-12/24VDC	RM699BV-3011-85-1024	24 V DC
PIR6WB-1PS-36VDC-R	36 V DC	0,3 W	PI6WB-1PS-36VDC	RM699BV-3011-85-1024	24 V DC
PIR6WB-1PS-48VDC-R	48 V DC	0,4 W	PI6WB-1PS-48VDC	RM699BV-3011-85-1024	24 V DC
PIR6WB-1PS-60VDC-R	60 V DC	0,5 W	PI6WB-1PS-60VDC	RM699BV-3011-85-1024	24 V DC
PIR6WB-1PS-24VAC/DC-R	24 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-24VAC/DC	RM699BV-3011-85-1012	12 V DC
PIR6WB-1PS-42VAC/DC-R	42 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-42VAC/DC	RM699BV-3011-85-1024	24 V DC
PIR6WB-1PS-115VAC/DC-R	115 V AC/DC	1,2 VA / 1,2 W	PI6WB-1PS-115VAC/DC	RM699BV-3011-85-1024	24 V DC
PIR6WB-1PS-230VAC/DC-R	230 V AC/DC	1,2 VA / 1,2 W	PI6WB-1PS-230VAC/DC	RM699BV-3011-85-1048	48 V DC
PIR6WB-1P-230VAC/DC-10 ④	230 V AC/DC	2,1 VA / 1,0 W	PI6WB-1P-230VAC/DC-10	RM699BV-3011-85-1060	60 V DC
PIR6WB-1PS-6VDC-R01 ⑤	6 V DC	0,3 W	PI6WB-1PS-6VDC	RM699BV-3211-85-1005	5 V DC
PIR6WB-1PS-12VDC-R01 ⑤	12 V DC	0,2 W	PI6WB-1PS-12/24VDC	RM699BV-3211-85-1012	12 V DC
PIR6WB-1PS-24VDC-R01 ⑤	24 V DC	0,3 W	PI6WB-1PS-12/24VDC	RM699BV-3211-85-1024	24 V DC
PIR6WB-1PS-36VDC-R01 ⑤	36 V DC	0,3 W	PI6WB-1PS-36VDC	RM699BV-3211-85-1024	24 V DC
PIR6WB-1PS-48VDC-R01 ⑤	48 V DC	0,4 W	PI6WB-1PS-48VDC	RM699BV-3211-85-1024	24 V DC
PIR6WB-1PS-60VDC-R01 ⑤	60 V DC	0,5 W	PI6WB-1PS-60VDC	RM699BV-3211-85-1024	24 V DC
PIR6WB-1PS-24VAC/DC-R01 ⑤	24 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-24VAC/DC	RM699BV-3211-85-1012	12 V DC
PIR6WB-1PS-42VAC/DC-R01 ⑤	42 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-42VAC/DC	RM699BV-3211-85-1024	24 V DC
PIR6WB-1PS-115VAC/DC-R01 ⑤	115 V AC/DC	1,2 VA / 1,2 W	PI6WB-1PS-115VAC/DC	RM699BV-3211-85-1024	24 V DC
PIR6WB-1PS-230VAC/DC-R01 ⑤	230 V AC/DC	1,2 VA / 1,2 W	PI6WB-1PS-230VAC/DC	RM699BV-3211-85-1048	48 V DC
PIR6WB-1PS-6VDC-T	6 V DC	0,1 W	PI6WB-1PS-6VDC	RSR30-D05-A1-24-020-1	5 V DC
PIR6WB-1PS-12VDC-T	12 V DC	0,2 W	PI6WB-1PS-12/24VDC	RSR30-D12-A1-24-020-1	12 V DC
PIR6WB-1PS-24VDC-T	24 V DC	0,3 W	PI6WB-1PS-12/24VDC	RSR30-D24-A1-24-020-1	24 V DC
PIR6WB-1PS-36VDC-T	36 V DC	0,3 W	PI6WB-1PS-36VDC	RSR30-D24-A1-24-020-1	24 V DC
PIR6WB-1PS-48VDC-T	48 V DC	0,4 W	PI6WB-1PS-48VDC	RSR30-D24-A1-24-020-1	24 V DC
PIR6WB-1PS-60VDC-T	60 V DC	0,5 W	PI6WB-1PS-60VDC	RSR30-D24-A1-24-020-1	24 V DC
PIR6WB-1PS-24VAC/DC-T	24 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-24VAC/DC	RSR30-D12-A1-24-020-1	12 V DC
PIR6WB-1PS-42VAC/DC-T	42 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-42VAC/DC	RSR30-D24-A1-24-020-1	24 V DC
PIR6WB-1PS-115VAC/DC-T	115 V AC/DC	1,0 VA / 1,0 W	PI6WB-1PS-115VAC/DC	RSR30-D24-A1-24-020-1	24 V DC
PIR6WB-1PS-6VDC-C	6 V DC	0,1 W	PI6WB-1PS-6VDC	RSR30-D05-D1-04-025-1	5 V DC
PIR6WB-1PS-12VDC-C	12 V DC	0,2 W	PI6WB-1PS-12/24VDC	RSR30-D12-D1-04-025-1	12 V DC
PIR6WB-1PS-24VDC-C	24 V DC	0,3 W	PI6WB-1PS-12/24VDC	RSR30-D24-D1-04-025-1	24 V DC
PIR6WB-1PS-36VDC-C	36 V DC	0,3 W	PI6WB-1PS-36VDC	RSR30-D24-D1-04-025-1	24 V DC
PIR6WB-1PS-48VDC-C	48 V DC	0,4 W	PI6WB-1PS-48VDC	RSR30-D24-D1-04-025-1	24 V DC
PIR6WB-1PS-60VDC-C	60 V DC	0,5 W	PI6WB-1PS-60VDC	RSR30-D24-D1-04-025-1	24 V DC
PIR6WB-1PS-24VAC/DC-C	24 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-24VAC/DC	RSR30-D12-D1-04-025-1	12 V DC
PIR6WB-1PS-42VAC/DC-C	42 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-42VAC/DC	RSR30-D24-D1-04-025-1	24 V DC
PIR6WB-1PS-115VAC/DC-C	115 V AC/DC	1,0 VA / 1,0 W	PI6WB-1PS-115VAC/DC	RSR30-D24-D1-04-025-1	24 V DC
PIR6WB-1PS-230VAC/DC-C	230 V AC/DC	1,0 VA / 1,0 W	PI6WB-1PS-230VAC/DC	RSR30-D48-D1-04-025-1	48 V DC
PIR6WB-1PS-6VDC-O	6 V DC	0,1 W	PI6WB-1PS-6VDC	RSR30-D05-D1-02-040-1	5 V DC
PIR6WB-1PS-12VDC-O	12 V DC	0,2 W	PI6WB-1PS-12/24VDC	RSR30-D12-D1-02-040-1	12 V DC
PIR6WB-1PS-24VDC-O	24 V DC	0,3 W	PI6WB-1PS-12/24VDC	RSR30-D24-D1-02-040-1	24 V DC
PIR6WB-1PS-36VDC-O	36 V DC	0,3 W	PI6WB-1PS-36VDC	RSR30-D24-D1-02-040-1	24 V DC
PIR6WB-1PS-48VDC-O	48 V DC	0,4 W	PI6WB-1PS-48VDC	RSR30-D24-D1-02-040-1	24 V DC
PIR6WB-1PS-60VDC-O	60 V DC	0,5 W	PI6WB-1PS-60VDC	RSR30-D24-D1-02-040-1	24 V DC
PIR6WB-1PS-24VAC/DC-O	24 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-24VAC/DC	RSR30-D12-D1-02-040-1	12 V DC
PIR6WB-1PS-42VAC/DC-O	42 V AC/DC	0,5 VA / 0,4 W	PI6WB-1PS-42VAC/DC	RSR30-D24-D1-02-040-1	24 V DC
PIR6WB-1PS-115VAC/DC-O	115 V AC/DC	1,0 VA / 1,0 W	PI6WB-1PS-115VAC/DC	RSR30-D24-D1-02-040-1	24 V DC
PIR6WB-1PS-230VAC/DC-O	230 V AC/DC	1,0 VA / 1,0 W	PI6WB-1PS-230VAC/DC	RSR30-D48-D1-02-040-1	48 V DC

The data in bold type pertain to the standard versions of the relays. ④ Version for long lines (max. 300 m), with anti-interference filter. ⑤ It shall be remarked that rated input voltage of the operational relay U_s not always complies with the rated input voltage U_n (which is important on ordering operational relays for sockets).



- Socket **PI6W-1P** without electronic
- Co-operate with relays: **RM699BV** - electromagnetic, **RSR30** - solid state **1**
- The input voltage complies with the voltage of the operational relay applied
- 35 mm rail mount acc. to PN-EN 60715
- May be linked with interconnection strip type **ZG20**
- Accessories: description plates **PI6W-1246**
- Recognitions, certifications, directives:    



Output circuit

Number and type of contacts / outputs	1 C/O, 1 NO depending on the relay applied
Max. voltage	AC/DC 250 V / –
Max. load	AC1 6 A / 250 V AC
Rated current	6 A

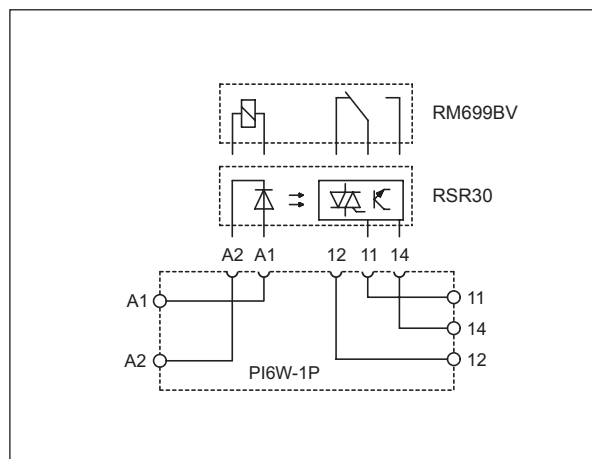
Insulation according to PN-EN 60664-1

Insulation rated voltage	250 V AC
Rated surge voltage	4 000 V 1,2 / 50 μ s
Overvoltage category	III
Insulation pollution degree	3
Dielectric strength	• input - output • input - output
Input - output distance	4 000 V AC 50/60 Hz, 1 min., type of insulation: reinforced
• clearance \ creepage	6 000 V 1,2 / 50 μ s, surge voltage
	$\geq 6 \text{ mm} \setminus \geq 8 \text{ mm}$

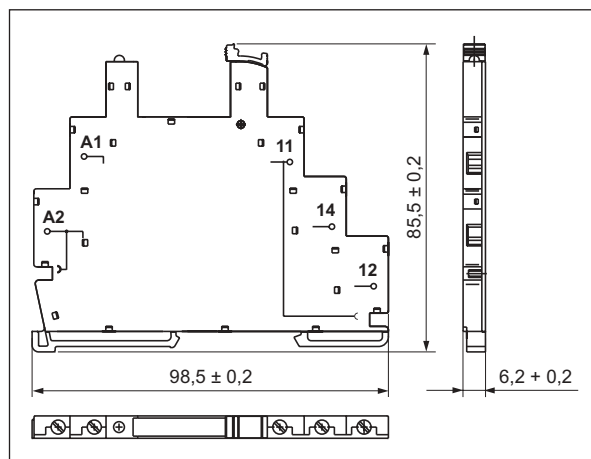
General data

Dimensions (L x W x H)	98,5 x 6,2 x 85,5 mm
Weight	40 g
Ambient temperature	• storage • operating
	-40...+70 °C -40...+55 °C -40...+60 °C 12, 24 V DC
Protection category	IP 20 PN-EN 60529
Environmental protection	RTI PN-EN 116000-3

Connection diagram



Dimensions



Ordering codes

Ordering codes: **PI6W-1P**.

Mounting

Sockets **PI6W-1P** are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715. Maximum size of wires 1 x 2,5 mm² (1 x 14 AWG). Rated contactability 2 x 1,5 mm² (2 x 16 AWG). Maximum screw torque: 0,3 Nm.

PI6W-1P may be linked with interconnection strip type **ZG20** (see pages 193, 194). Description plates of **PI6W-1246** type are offered for **PI6W-1P** sockets (see pages 193, 194).