



- 35 mm DIN rail mount, EN 50022 or on panel mounting with two M3 screws.
- Interface relay **PIR15 2 C/O** consists of:
 - electromagnetic relay **R15 2 C/O**, plug-in socket **ES 9** black,
 - time module **T(COM3)**, spring wire clip **PZ11 0031**.
- Interface relay **PIR15 3 C/O (standard)** consists of:
 - electromagnetic relay **R15 3 C/O**, plug-in socket **ES 12** black,
 - time module **T(COM3)**, spring wire clip **PZ11 0031**.
- Recognitions, certifications, directives: recognitions R15, RoHS,

Type of relay	PIR15 2 C/O		PIR15 32 C/O	
Output circuits - contact data				
Number and type of contacts		2 C/O - changeover		3 C/O - changeover
Contact material		AgNi		
Max. switching voltage		AC/DC 250 V / 300 V		
Min. switching voltage		5 V		
Rated load		AC1 10 A / 250 V AC		
		DC1 10 A / 24 V DC		
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		12 000 cycles/hour		
Input control circuit				
Rated voltage of output relay R15		50/60 Hz AC 24-48-60-110-120-230-240 V		
		DC 24-48-60-110-120-220 V		
Supply voltage of time module T(COM3)		24...240 V AC/DC (uniwersal module)		
Operating range of supply voltage		0,85 < U _n < 1,1 see Tables 1, 2		
Must operate voltage		≥ 0,85 U _n		
Rated power consumption		AC 3,0 VA		
		DC 2,0 W		
Range of supply frequency		48...63 Hz		
Insulation				
Insulation category		C250		
Insulation rated voltage		250 V AC		
Overvoltage category		III PN-EN 60664-1		
Dielectric strength				
• input - outputs		2 500 V AC		
• contact clearance		1 500 V AC		
• pole - pole		2 000 V AC		
Input - outputs distance				
• clearance		≥ 3 mm		
• creepage		≥ 4,2 mm		
General data				
Operating time (typical value)		AC: 12 ms DC: 18 ms		
Release time (typical value)		AC: 10 ms DC: 7 ms		
Electrical life				
• resistive AC1		≥ 2 x 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 38 x 83,1 mm		
Weight		168 g		
Ambient temperature				
• storage		-40...+70 °C		
• operating		-40...+55 °C		
Cover protection category		IP20		
Environmental protection		R15: RTI ES 9, ES 12: RT0 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.

Time module data

Functions ❶	E, E(S), Wu, Wu(S), Bi, Bi(S), Bp, Bp(S), R, Ws, Wa, Es
Function adjustment ❷	selection with microswitches
Time intervals	1 s; 10 s; 1 min.; 10 min.; 1 h; 10 h; 1 d; 10 d
Timing adjustment ❸	range - with microswitches within the range - with a potentiometer
Setting accuracy \ Repeatability	$\pm 1\%$ \ 0,2%
Temperature influence	$\pm 0,01\%$ / °C
Recovery time	150 ms
LED indicator	green LED - indication of time period T and the status of outputs after the time T has been measured ❹

❶ Descriptions of time functions - see pages 20-21. ❷ Settings of switches - see page 216. ❸ The green LED - T time measurement (flashing); excited operational relay, time not measured (steady light); de-excited operational relay, time not measured (no light).

Settings of switches

Function adjustment switches 1, 2, 3	E / E(S)	Wu / Wu(S)	Bi / Bi(S)	Bp / Bp(S)	R	Ws	Wa	Es
Timing adjustment (max.) switches 4, 5, 6	1 s	10 s	1 min.	10 min.	1 h	10 h	1 d	10 d

Input data - DC voltage version

Table 1

Input voltage code	Rated input voltage U_n V DC	Input resistance $\pm 10\%$ at 20 °C Ω	Input - voltage range V DC	
			min. (at 20 °C)	max. (at 55 °C)
024DC	24	430	19,2	26,4
048DC	48	1 750	38,4	52,8
060DC	60	2 700	48,0	66,0
110DC	110	9 200	88,0	121,0
120DC	120	11 000	96,0	132,0
220DC	220	37 000	176,0	242,0

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

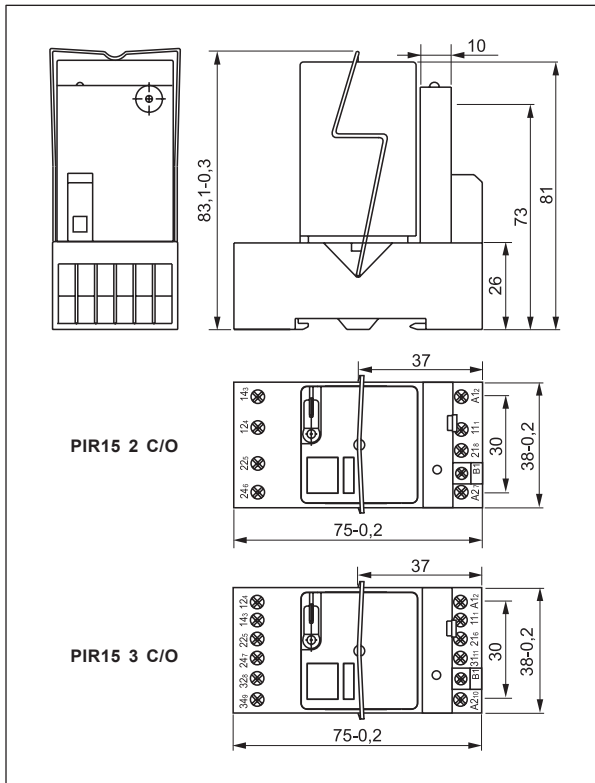
Input data - AC 50/60 Hz voltage version

Table 2

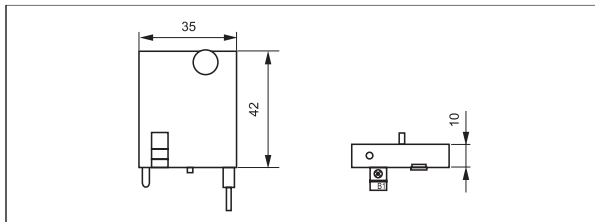
Input voltage code	Rated input voltage U_n V AC	Input resistance $\pm 15\%$ at 20 °C Ω	Input - voltage range V AC	
			min. (at 20 °C)	max. (at 55 °C)
024AC	24	75	19,2	26,4
048AC	48	305	38,4	52,8
060AC	60	475	48,0	66,0
110AC	110	1 700	88,0	121,0
120AC	120	1 910	96,0	132,0
230AC	230	7 080	184,0	253,0
240AC	240	7 760	192,0	264,0

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

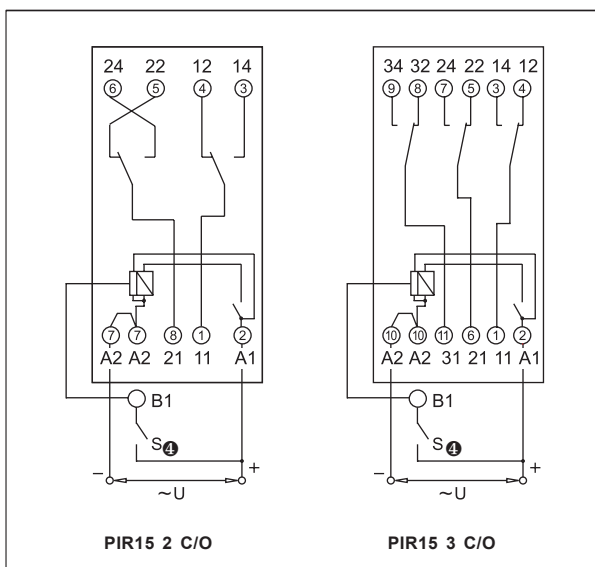
Dimensions - PIR 2 C/O, PIR 3 C/O relays



Dimensions - time modules T(COM3)



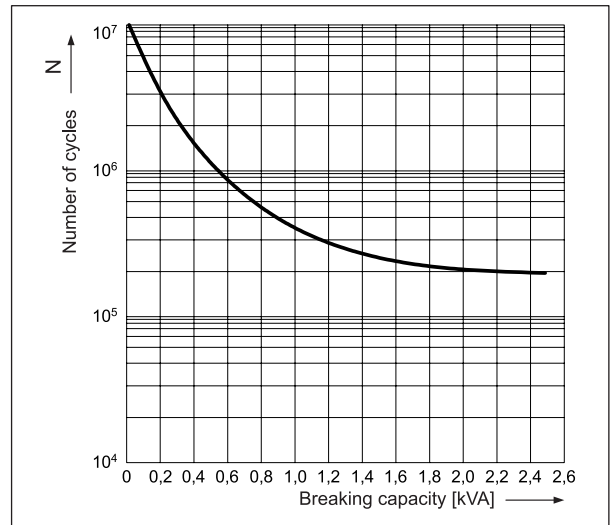
Connections diagrams (screw terminals side view)



④ Control contact (B1) S is activated by connecting it to A1 terminal.

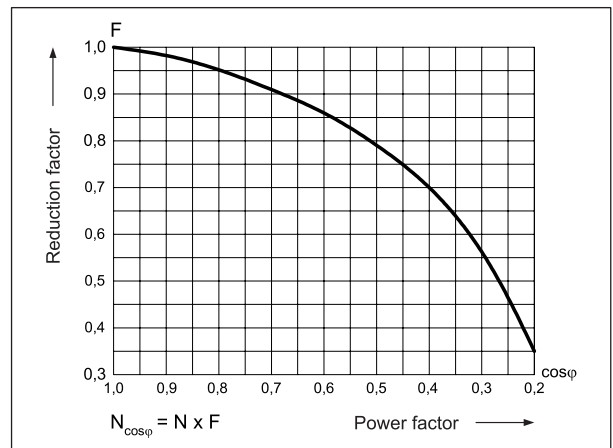
Electrical life at resistive load. Maximum switching frequency at rated load

Fig. 1



Electrical life reduction factor at AC inductive load

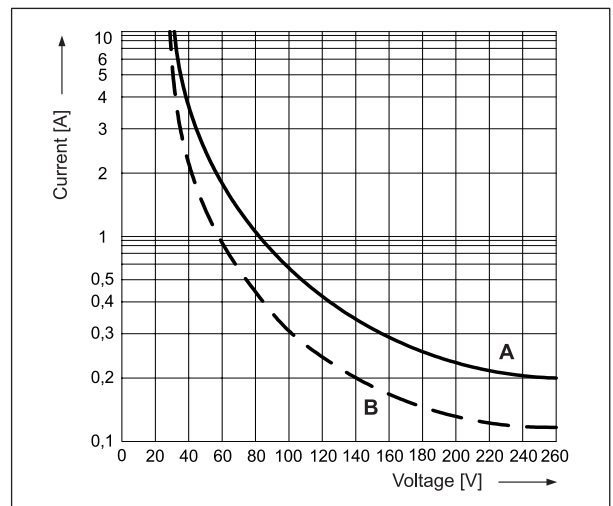
Fig. 2



Max. DC breaking capacity

A - resistive load $T = 0$ ms
B - inductive load $L/R = 40$ ms

Fig. 3



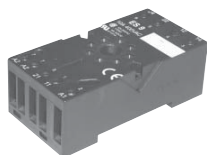
Mounting

Relays **PIR15...T** are designed for 35 mm DIN rail mount, EN 50022 or on panel mounting with two M3 screws. Interface relay **PIR15 2 C/O** consists of: electromagnetic relay **R15 2 C/O**, plug-in socket **ES 9** black, time module **T(COM3)** and spring wire clip **PZ11 0031**.

Interface relay **PIR15 3 C/O** consists of: electromagnetic relay **R15 3 C/O**, plug-in socket **ES 12** black, time module **T(COM3)** and spring wire clip **PZ11 0031**.



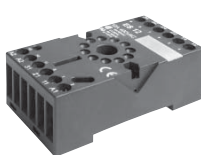
R15 2 C/O



ES 9



R15 3 C/O



ES 12

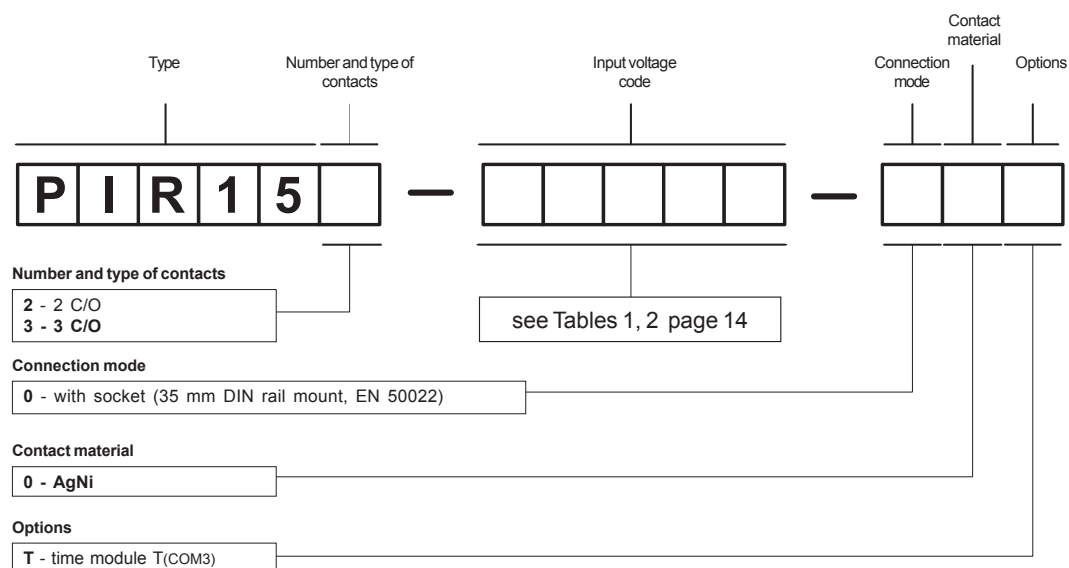


T(COM3)



PZ11 0031

Ordering codes



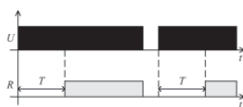
Examples of ordering codes:

PIR152-012DC-00T

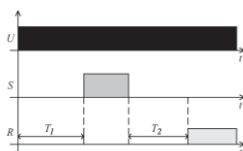
interface relay **PIR15 2 C/O**, which consists of: relay **R15 2 C/O**, contact material AgNi, rated input voltage 12 V DC, plug-in socket **ES 9** black (screw terminals), time module **T(COM3)**, spring wire clip **PZ11 0031**

PIR153-230AC-00T

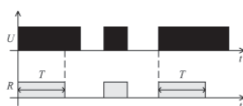
interface relay **PIR15 3 C/O**, which consists of: relay **R15 3 C/O**, contact material AgNi, rated input voltage 230 V AC 50/60 Hz, plug-in socket **ES 12** black (screw terminals), time module **T(COM3)**, spring wire clip **PZ11 0031**

E - ON Delay Voltage Controlled

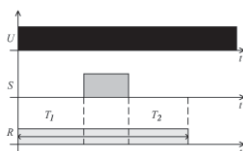
After the supply voltage [U] has been applied, the preset time [T] measurement starts. After the time [T] has been measured, the output relay [R] switches to ON position and remains in such until the supply voltage [U] is removed.

E(S) - ON Delay Voltage Controlled with Control Contact

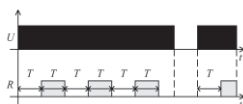
After the supply voltage [U] has been applied, the time [T] measurement starts. If the control contact [S] is switched on, the measurement of time [T] is interrupted for the time of switching the control contact [S]. After the control contact [S] has been switched off, the time [T] ($T=T_1+T_2$) is continued to be measured. After the time [T] has been measured, the output relay [R] will switch, and it will be in operating position until the supply voltage [U] is removed.

Wu - Single Shot Leading Edge Voltage Controlled

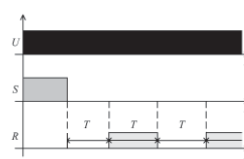
After the supply voltage [U] has been applied, the output relay [R] switches immediately, and the preset time [T] is measured. After the preset time [T] has been measured, the output relay [R] returns to the initial state.

Wu(S) - Single Shot Leading Edge Voltage Controlled with Control Contact

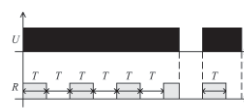
After the supply voltage [U] has been applied, the output relay [R] switches immediately and the preset time [T] measurement starts. If the control contact [S] is switched on, the time [T] measurement will be interrupted for the time for which the control contact [S] is switched. After the control contact [S] has been released, the time [T] ($T=T_1+T_2$) is continued to be measured. After the preset time [T] has been measured, the output relay [R] returns to the initial position.

Bp - Flasher Pause First

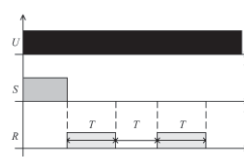
After the supply voltage [U] has been applied, the preset time [T] measurement starts. After the time [T] has been measured, the output relay [R] switches to ON position and the preset time [T] is being measured once more. After the preset time [T] has been measured, the output relay [R] returns to the initial state, and the next operating cycle of the relay starts. The relay operates until the supply voltage is removed.

Bp(S) - Flasher Pause First with Control Contact

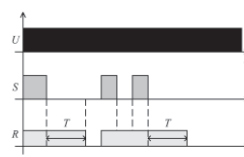
After the control contact [S] has been switched on and then off at the supply voltage [U] being applied, the measurement of the preset time [T] starts. After the time has been measured, the output relay [R] switches, and the time [T] is measured again. After the time has been measured, the output relay returns to the initial position, and the next cycle of the relay operation starts. The relay operates until the supply voltage is removed.

Bi - Flasher Impulse First

After the supply voltage [U] has been applied, the preset time [T] measurement starts simultaneously with switching of the output relay [R]. After the preset time [T] has been measured, the output relay [R] returns to the initial state, and the next operating cycle of the relay starts. The relay operates until the supply voltage is removed.

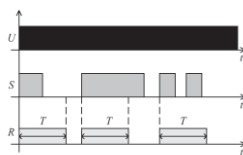
Bi(S) - Flasher Impulse First with Control Contact

After the control contact [S] has been switched on and then off at the supply voltage [U] being applied, the measurement of the preset time [T] starts with the simultaneous switching of the output relay [R]. After the time [T] has been measured, the output relay [R] returns to the initial position and the time [T] measurement starts again. After the time [T] has been measured, the next cycle of the relay operation starts. The relay operates until the supply voltage is removed.

R - OFF Delay with Control Contact

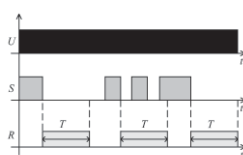
The supply voltage [U] must be applied to the time relay continuously. After the control contact [S] has been closed, the output relay [R] switches immediately. After opening of the control contact [S] measurement of the preset time [T] starts. After the preset time [T] has lapsed, the output relay [R] returns to the initial position. If the control contact [S] is closed again, even before the preset time [T] has lapsed, the previously measured time is cancelled, and after the control contact [S] has been opened, the preset time [T] is measured again.

Ws - Single Shot Leading Edge with Control Contact



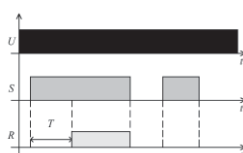
The supply voltage [U] must be applied to the time relay continuously. After the control contact [S] has been closed, the output relay [R] switches immediately. After opening of the control contact [S] measurement of the preset time [T] starts. After the preset time [T] has lapsed, the output relay [R] returns to the initial position. In course of the time [T] measurement the control contact [S] may be repeatedly closed and opened with no influence upon the output relay [R]. It is only after the time [T] has lapsed that closing of the control contact [S] causes switching the output relay [R] on again and measurement of the time [T].

Wa - Single Shot Trailing Edge with Control Contact



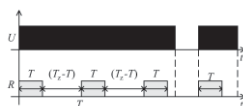
The supply voltage [U] must be applied to the time relay continuously. Closing of the control contact [S] does not result in measurement of the time delay or switching of the output relay [R]. It is only when the control contact [S] is opened that the output relay [R] switches immediately and the preset time [T] measurement starts. After the preset time [T] has lapsed, the output relay [R] returns to the initial position. In course of the time [T] measurement the control contact [S] may be repeatedly closed and opened with no influence upon the output relay [R]. It is only after the time [T] has lapsed that closing and opening of the control contact [S] causes switching the output relay [R] on again and measurement of the time [T].

Es - ON Delay with Control Contact



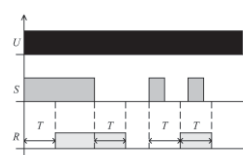
The supply voltage [U] shall be applied to the time relay continuously. After the control contact [S] has been closed, the preset time [T] is measured after which the output relay [R] is switched on and remains in this position until the control contact [S] is opened. If the closing time of [S] is shorter than the preset time [T], the relay [R] will not operate.

PWM - Pulse with Modulation



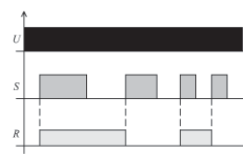
After the supply voltage has been applied, the output relay switches on for the preset time [T], and then switches off for the remaining time interval to complete the full value of the preset interval [Tz].

Esa - Delayed Switching ON and OFF Controlled with Control Contact



The supply voltage [U] must be applied to the time relay continuously. After the control contact [S] has been closed, the preset time [T] measurement starts, and after it has lapsed, the output relay [R] is switched on. If closing time of control contact [S] is shorter than setting time delay [T] output relay [R] will switch on after time delay [T] and will be on during time [T]. Closing of control contact [S] during time of switch on output relay [R] will not influence for realize function.

B - Flasher with Control Contact



Each closing of the control contact [S] results in the change of the output relay position to the opposite one (a feature of bistable relay).

Permanent switching ON and OFF

The functions available in TR4N relays. The functions ON and OFF are selected with TIME potentiometer. In the ON function, the normally open contacts are closed all the time whereas in the OFF function they are open. The position of the FUNC potentiometer is of no significance in these functions as is the preset measurement time. The ON or OFF functions are used for the time relay operation control in electric systems.

OFF - OFF mode

The mode available in PIR6WT-1Z relays. The OFF mode is selected with the switches of TIME range settings. In the OFF mode the normally open contact is permanently open. The position of MODE setting switches is of no significance with this mode. The OFF mode appears useful in operation control of the the time relay in electrical system.

U - supply voltage; R - output state of the relay; S - control contact state; T, T1, T2 - measured times; Tz - value of the set interval; t - time axis