EN

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Made in Czech Republic

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PDR-2/A
PDR-2/B

Programmable digital relay

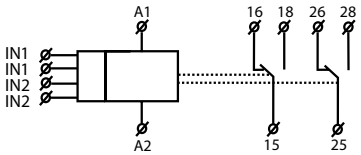
Characteristics

- multifunction programmable digital relay with 4 digit red LED display
- control and setting are done by 3 buttons, user-friendly menu, absolute accuracy in timer setting, time countdown on a display, galvanically separated START and STOP control inputs with UNI supply
- thanks to its complexity, it is possible to program also more demanding time functions by using 2 independent times
- 2 independent times, with combination of 2 inputs and 2 outputs
- PDR-2/A: 16 functions, choice of functions of the other relay, 30 memory places for most frequently used times
- PDR-2/B: 10 functions, 1 output of 10 functions can be assigned to each relay = 2 relays in one device, 20 memory places for most frequently used times
- supply voltage AC/DC 12 - 240 V or AC 230 V
- 3-MODULE, DIN rail mounting

Differences between PDR-2/A and PDR-2/B

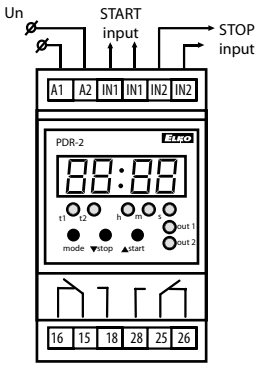
- PDR-2/B works as double-time relay with 2 independent outputs.
- Any function F1-10 and time can be set independently for both outputs (T1 for output 1 and T2 for output 2). It means it is not possible to use functions, where both time are being implied (F11-16).
- Controlling of PDR-2/B: short press of MODE key switches displayed image and internal controlling between output 1 and output 2.
- Internal keys START and STOP work in proper way.
- External controlling: input START works as starting one for output 1 and STOP works as starting one for output 2 - impossible to stop any functions externally.

Symbol

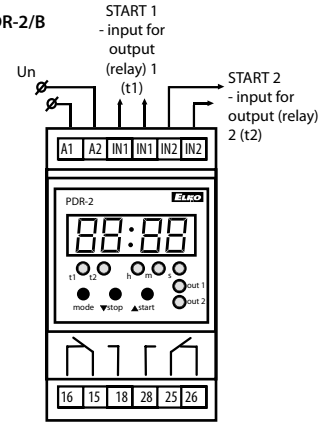


Connection

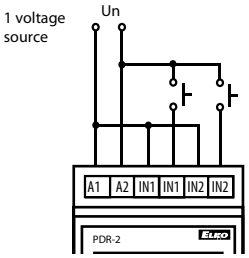
PDR-2/A

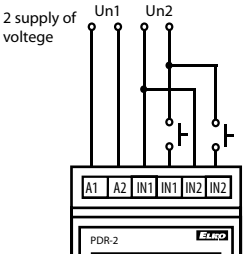


PDR-2/B

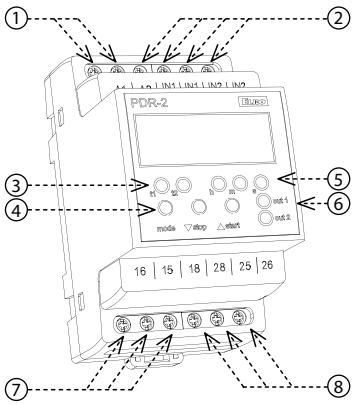


PDR-2/A / PDR-2/B





Description



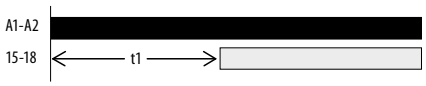
1. Supply terminals
2. Control inputs
3. Indication of operating times (t1, t2)
4. Controlling buttons:
   mode - key for entry to programming
   mode / key for browsing in menu
   stop - DOWN key / STOP key
   start - UP key / START key
5. Indication of time (h, m, s)
6. Indication of switched relays (1st relay / 2nd relay)
7. Output 1
8. Output 2

Type of load	cos φ ≥ 0.95 AC1	AC2	AC3	AC5a uncompensated	AC5a compensated	HAL.230V AC5b	AC6a	AC7b	AC12
Mat. contacts AgNi, contact 16A	250V / 16A	250V / 5A	250V / 3A	230V / 3A (690VA)	x	800W	x	250V / 3A	250V / 10A
Type of load	AC13	AC14	AC15	DC1	DC3	DC5	DC12	DC13	DC14
Mat. contacts AgNi, contact 16A	250V / 6A	250V / 6A	250V / 6A	24V / 16A	24V / 6A	24V / 4A	24V / 16A	24V / 2A	24V / 2A

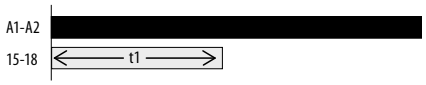
Function

Functions for PDR-2/A and PDR-2/B:

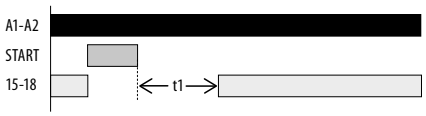
1. Delay on



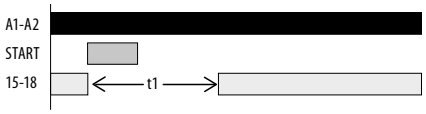
2. Delay off



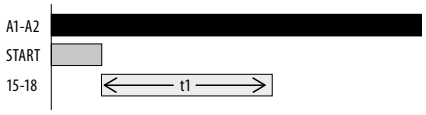
3. Delay on after break of control. contact



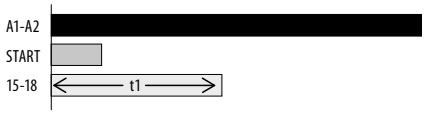
4. Delay onat make of control. contact



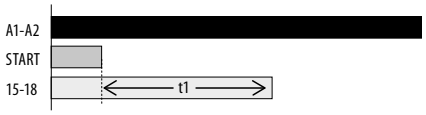
5. Delay off after break of output contact



6. Delay off at make of output contact

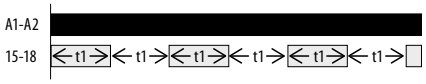


7. Delay off at break of control. contact with instant output

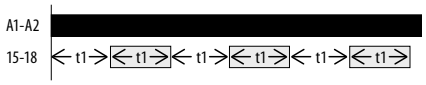


8. Delay off at make of control. contact with delayed output

9. Cycler beginning with impulse



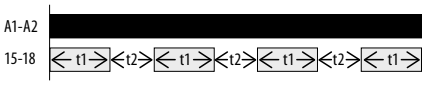
10. Cycler beginning with pause



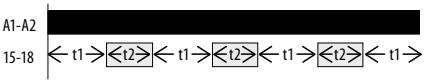
Recommendation: PDR-2/B is replaced by 2 simple time relays = 2 in one.

Functions for PDR-2/A:

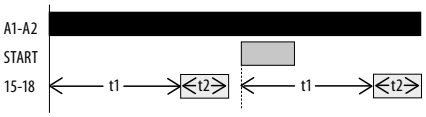
11. Cycler beginning with impulse with variable interval



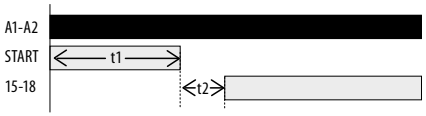
12. Cycler beginning with pause with variable interval



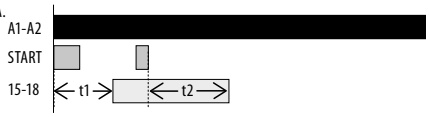
13. Generator of impulse



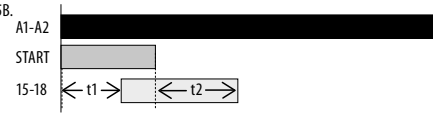
14. Changeover star / delta



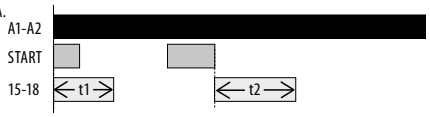
15A. Shift of pulse by 2 times



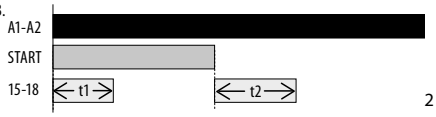
15B. Shift of impulse by 2 times



16A. Extended impulse by 2 times



16B. Extended impulse by 2 times



Controlling

- Use internal keys START and STOP on the front panel, or external inputs via terminals.
  Note: the device must not be in programming mode.
- External control: use 2 independent inputs (START and STOP).
- The inputs are galvanically separated from other parts of the device.
- Supply voltage and polarity of the inputs is marked on the top of the device.
- Priority of external and internal inputs is the same.
- STOP input (internal or external) is always superior to START.

Entry to programming mode
- Press MODE key for longer than 2 s.
- Use the same key for browsing MENU.
- In a MENU you require, set a value of parameter by an appropriate number of presses of the keys START (+) or STOP (-). Having chosen all parameters, return to the initial mode by a long press of MODE key.

Function setting
- In 1st MENU (F-parameter) of the programming mode, there is a possibility to choose any function out of 1-16 (PDR-2/A) and 1-10 (PDR-2/B).

Program memory
- In 2 nd MENU (P-parameter) of the programming mode, there are 30 memory locations for the most often used times.
- Use START (+) and STOP (-) keys to choose a required memory location by following required time is set (all memory locations are zeroed from factory).
- All data will be stored in the memory converting to the initial mode and will be kept for min. 10 years, also without supply power connected.

Time t1 setting
- In 3rd MENU of programming mode t1 (LED t1 on), there is a possibility to set time t1.
- Set value by keys START (+ upward), shift between individual positions by STOP (-) key.
- A position, which is being set, is signaled by blinking an appropriate segment.
- A digit place, which is being set, is signaled by an appropriate LED - hours, minutes, seconds.
- Adjustable time ranges: hours 1 - 99 / minutes 1 - 59 / seconds 1 - 59 / hundredths 1 - 99.

Time t2 setting
- In 4th MENU of the programming mode, there is a possibility to set required time t2 (LED t2 is on).

Current time format displaying
- In 5th MENU, there is a possibility to choose a mode of displaying current time.
- Set by keys START (+) and STOP (-).
- Options: rad0 - only seconds and hundredths are displayed
  rad1 - only minutes and seconds are displayed
  rad2 - only hours and minutes are displayed
  Auto - time displayed in the current position, switching over by itself
- Time which is being set is indicated by corresponding LED.

Brightness setting
- In 6th MENU (J-parameter) there is a possibility to set a brightness of the display and other signaling LEDs on the front panel.
- Set by the keys START (+) and STOP (-).
- Brightness can be set in the range 1 - 10.

Supply power failure mode
- In 7th MENU there is a possibility to set, if a state of the device and current time shall be stored in memory in case of supply power failure or not.
- After the failure if option U ON is allowed, the device continues from the point where it was interrupted.
- Selecting option U OFF, device starts from beginning.
- Options: U On - function on
  U OFF - function off

Choice of 2nd relay function
- In 8th MENU of the programming mode, there is a possibility to select a mode of 2nd relay in functions, when this relay is not being used.
- Keys START (+) and STOP (-) enable to select some of the following options:
  roFF - 2nd relay OFF
  ro1 - 2nd relay switching together with 1st relay
  rno1 - 2nd relay switching together with 1st relay, but inversely
  ri1 - 2nd relay follows external input START
  rni1 - 2nd relay follows external input START inversely
  ri2 - 2nd relay follows external input STOP
  rni2 - 2nd relay follows external input STOP inversely

Choice of mode of cycle interrupting
- In the programming mode (Parameter-I), there is a possibility to set response of PDR to "START" key, after the press of "STOP" key when timing.
- Do by pressing keys START (+) and STOP (-). Following options available:
  I 01 - impossible to start neither externally nor internally
  I 02 - countdown of time from the beginning
  I 03 - countdown from the interruption
  I 04 - internal START not working, external one works as possibility I 02

Factory setting
Function: F01 (delay ON)
Memory: P01
Time t1: 1:00 hour
Time t2: 1:00 hour
Time format displaying: Auto (switching by itself)
Brightness: J05 (middle position)
Supply power failure mode: U OFF
Mode of 2nd relay: r OFF
Mode of cycle interrupting: I 02 (countdown of time from the beginning)

Technical parameters

	PDR-2/A		PDR-2/B	
	UNI	230 V	UNI	230 V
Function:	16		10	
Supply terminals:	A1 - A2			
Voltage range:	AC/DC 12-240V (AC 50-60 Hz)	AC 230 V/ 50-60 Hz	AC/DC 12-240V (AC 50-60 Hz)	AC 230 V/ 50-60 Hz
Power input max. (apparent / loss):	AC 0.5-2.5 VA/ DC 0.4 - 2.5 W	AC16 VA / 2.5 W	AC 0.5-2.5 VA/ DC 0.4 - 2.5 W	AC 16 VA / 2.5 W
Max. dissipated power (Un + terminals):	5.5 W			
Supply voltage tolerance:	-15 %; +10 %			
Time ranges:	0.01 s - 100 h			
Repeat accuracy:	0.2 % - set value stability			
Temperature coefficient:	0.01 % / °C, at = 20 °C (0.01 % / °F, at = 68 °F)			

Time data

Time range:	0.01 s - 99 h 59 min 59 sec 99 ss
Minimal time step:	0.01 s
Time deviation:	0.01 % of set value
Setting error:	0 %
Setting, reset accuracy:	100 %
Digital places:	selected via program

Output

Number of contacts:	2x changeover / SPDT (AgNi / Silver Alloy)
Current rating:	16 A / AC1
Breaking capacity:	4000 VA / AC1, 384 W / DC
Inrush current:	30 A / < 3 s
Switching voltage:	250 V AC / 24 V DC
Output indication:	red LED
Mechanical life:	$3x10^7$
Electrical strength (AC1):	$0.7x10^5$

Control

Power the control input:	AC 0.01-0.25 VA	AC 0.25 VA	AC 0.01-0.25 VA	AC 0.25 VA
Glow tubes connetions:	No			
Impulse length:	min. 1 ms / max. unlimited			
Reset time:	max. 200 ms			
Display - colour:	red			
Number and height of digits:	4 positions with separating colon, height 10 mm (0.39˝)			
Luminace:	2200 - 3800 ucd			
Light wavelength:	635 nm			
Brightness setting:	range 20 - 100 % in 10 steps adjustable			
Memory - memory locations:	30 for times ranges + service function		20 for times ranges + service function	
Data stored for:	min. 10 years			

Other information

Operating temperature:	-20 °C to 55 °C (-4 °F to 131 °F)			
Storage temperature:	-30 °C to 70 °C (-22 °F to 158 °F)			
Electrical strength:	4 kV (supply - output)			
Operating position:	any			
Mounting:	DIN rail EN 60715			
Protection degree:	IP40 from front panel / IP20 terminals			
Overvoltage category:	III.			
Pollution degree:	2			
Max. cable size (mm^2):	solid wire max. 1x 2.5 or 2x 1.5 / with sleeve max. 1x 1.5 (AWG 12)			
Dimensions:	90 x 52 x 65 mm (3.5˝ x 2˝ x 2.6˝)			
Weight:	140 g (4.9 oz.)	142 g (5 oz.)	140 g (4.9 oz.)	142 g (5 oz.)
Standards:	EN 61812-1, EN 61010-1			

Warning

Device is constructed for connection in 1-phase main alternating current voltage and must be installed according to norms valid in the state of application. Connection according to the details in this direction. Installation, connection, setting and servicing should be installed by qualified electrician staff only, who has learnt these instruction and functions of the device. This device contains protection against overvoltage peaks and disturbancies in supply. For correct function of the protection of this device there must be suitable protections of higher degree (A, B, C) installed in front of them. According to standards elimination of disturbancies must be ensured. Before installation the main switch must be in position "OFF" and the device should be de-energized. Don´t install the device to sources of excessive electro-magnetic interference. By correct installation ensure ideal air circulation so in case of permanent operation and higher ambient temperature the maximal operating temperature of the device is not exceeded. For installation and setting use screw-driver cca 2 mm. The device is fully-electronic - installation should be carried out according to this fact. Non-problematic function depends also on the way of transportation, storing and handling. In case of any signs of destruction, deformation, non-function or missing part, don´t install and claim at your seller it is possible to dismount the device after its lifetime, recycle, or store in protective dump.