

**ELKO EP, s.r.o.**  
 Palackého 493  
 769 01 Holešov, Vsetuly  
 Czech Republic  
 Tel.: +420 573 514 211  
 e-mail: elko@elkoep.com  
 www.elkoep.com

Made in Czech Republic



## HRN-41 HRN-42

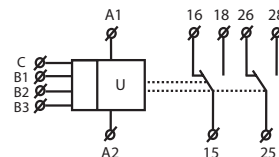
Voltage monitoring relays in 1P - AC/DC



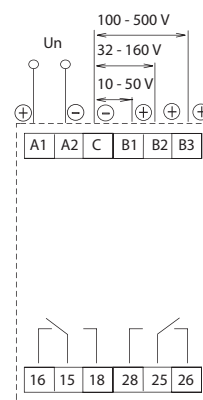
### Characteristics

- Relay is used for monitoring AC or DC voltage in three ranges.
- Monitors level of voltage in two independent levels (Umin, Umax).
- Setting the monitored upper level (Umax) in % of range.
- Setting the monitored lower level (Umin):
  - in % of the set upper limit (HRN-41, function HYSTERESIS)
  - in % of range (HRN-42, function WINDOW)
- Selectable function of output contacts (independently/in parallel).
- Independent adjustable time delay of both levels (eliminating short-term drops and spikes).
- Galvanically separated power supply from monitoring inputs.
- Output contact for each monitored voltage level.

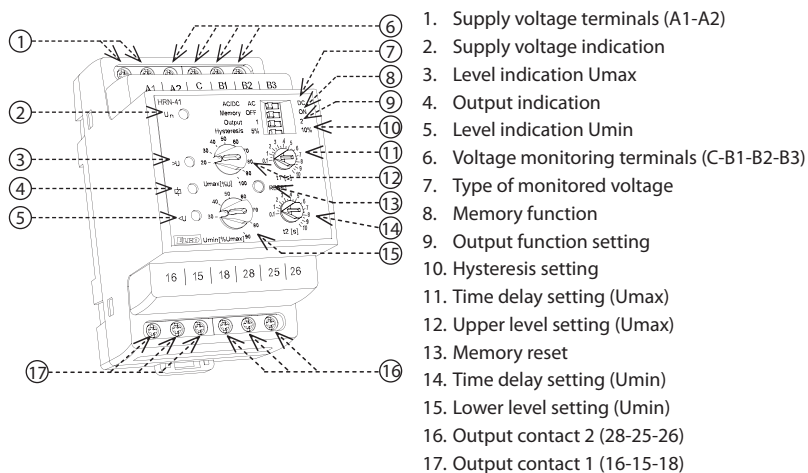
### Symbol



### Connection



### Description



Type of load	cos φ ≥ 0.95 AC1	AC2	AC3	AC5a uncompensated	AC5a compensated	AC5b	AC6a	AC7b	AC12
Contact material AgNi, 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
Contact material AgNi, 16A	250V / 6A	250V / 6A	250V / 6A	24V / 16A	24V / 6A	24V / 4A	24V / 16A	24V / 2A	24V / 2A

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Supply		
Supply terminals:		A1-A2
Supply voltage:	UNI	AC/DC 24 – 240 V (AC 50-60 Hz)
Consumption (max.):		3 VA/1 W
Supply voltage:	400V	AC 400 V (50-60 Hz)
Consumption (max.):		5 VA/2.5 W
Supply voltage tolerance:		-15 %; +10 %

Measuring

Monitored terminals:	C-B1	C-B2	C-B3
Monitored ranges*:	AC/DC 10 – 50 V (AC 50-60 Hz)	AC/DC 32 – 160 V (AC 50-60 Hz)	AC/DC 100 – 500 V (AC 50-60 Hz)
Input resistance:	212 kΩ	676 kΩ	2.12 MΩ
Max. permanent voltage:	100 V	300 V	600 V
Peak overload (1 s):	250 V	700 V	1 kV
Time delay Umax (t1):	adjustable, 0.1 – 10 s		
Time delay Umin (t2):	adjustable, 0.1 – 10 s		

Accuracy

Setting accuracy (mech.):	5 %
Repeat accuracy:	< 1 %
Temperature dependance:	< 0.1 %/°C (°F)
Limit values tolerance:	5 %
Hysteresis (fault to OK):	selectable, 5 %/10 % from the upper range value

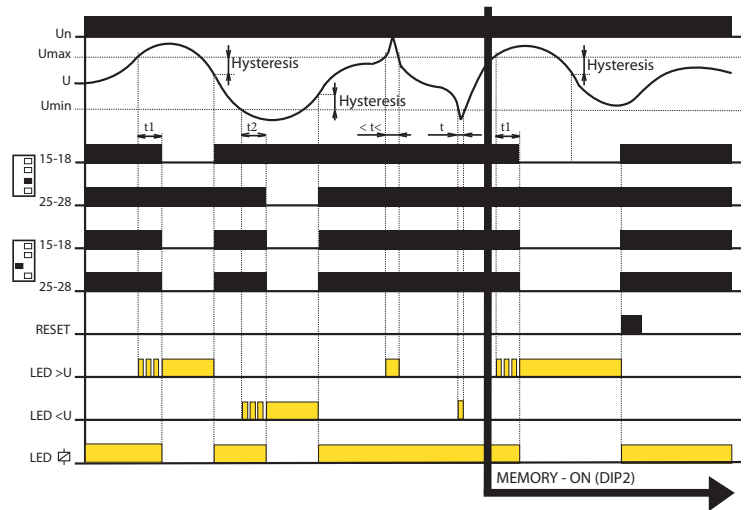
Output

Contact type:	2x changeover/SPDT (AgNi)
Current rating:	16 A/AC1
Breaking capacity:	4000 VA/AC1, 384 W/DC1
Inrush current:	30 A/< 3 s
Switching voltage:	250 V AC/24 V DC
Power dissipation (max.):	2.4 W
Mechanical life:	10.000.000 ops.
Electrical life (AC1):	100.000 ops.

Other information

Operating temperature:	-20 °C .. +55 °C (-4 .. 131 °F)
Storage temperature:	-30 °C .. +70 °C (-22 .. 158 °F)
Dielectric strength:	
supply – output	AC 4 kV
output 1 – output 2	AC 4 kV
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP40 front panel / IP20 terminals
Overvoltage category:	III.
Pollution degree:	2
Cross-wire section – solid/ stranded with ferrule (mm²):	max. 1x 2.5, 2x 1.5/ max. 1x 2.5 (AWG 14)
Dimensions:	90 x 52 x 65 mm (3.5" x 2" x 2.6")
Weight:	UNI – 148 g (5.2 oz), 400 V – 249 g (8.8 oz)
Standards:	EN 60255-1, EN 60255-26, EN 60255-27

\* Only one input can be monitored at a time.



- If the value of the monitored voltage is in the zone between the set upper and lower levels, the OK state occurs, both output contacts are closed and the yellow LED illuminates. If the value of the monitored voltage is outside the set limits ( $U > U_{max}$  or  $U < U_{min}$ ), a fault state occurs.
- When moving to a fault state ( $U > U_{max}$ ), time delay t1 is running and red LED >U simultaneously flashes. After the time t1 elapses, the red LED >U illuminates and the relevant output contact opens.
- When moving to a fault state ( $U < U_{min}$ ), time delay t2 is running and red LED <U simultaneously flashes. After the time t2 elapses, the red LED <U illuminates and the relevant output contact opens.
- When moving from a fault state to the OK state, the relevant red LED immediately goes out, and the corresponding output contact closes.

Warning

This device is constructed for connection in 1-phase network AC/DC 24 – 240 V, AC 400 V and must be installed according to norms valid in the state of an application. Installation, connection, setting and servicing must be carried out by qualified electrician staff only, which have perfectly understood the instructions and functions of the device. This device contains protection against overvoltage peaks and disturbing impulses in the power supply network. For the correct function of the protection of this device, there must be suitable protections of higher degrees (A,B,C) installed in front of them and according to the standards, interference of switching devices must be securely eliminated (contactors, motors, inductive loads, etc.). Before installation, make sure that the device is de-energized and the main switch is in the "OFF" position. Don't install the device to sources of excessive electromagnetic interference. Ensure correct installation by perfect air circulation so that during continuous operation and a higher ambient temperature, the device does not exceed the maximum allowed operating temperature. For installation and setting use a screwdriver with a width of approx 2 mm. Keep in mind that this is a fully electronic device and approach accordingly with the installation. Non-problematic function of the device is also dependent on the previous method of transportation, storage, and handling. In case of any signs of damage, deformation, malfunction, or missing parts, don't install this device and claim it at the dealer. The product must be treated as electronic waste at the end of its life.