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Made in Czech Republic

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## HRN-56

Relay for monitoring phase sequence and failure



### Characteristics

- relay monitors phase sequence and failure (e.g. control of correct motor winding etc.)
- relay is designated for monitoring of 3-phase networks
- supply from all phases which means that relay is functional also in case of one phase failure
- supply and monitored supply  $U_n$ :

1 MODULE:

HRN-56/208 - 3 x 208 V

HRN-56/240 - 3 x 240 V

HRN-56/400 - 3 x 400 V

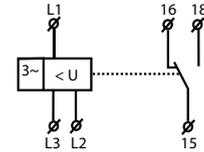
3 MODULE:

HRN-56/480 - 3 x 480 V

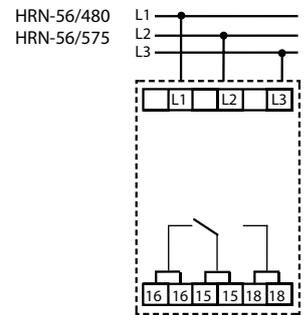
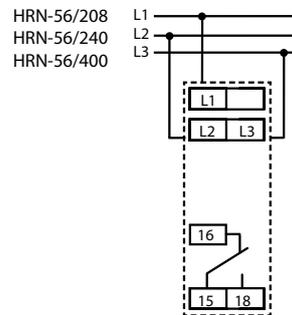
HRN-56/575 - 3 x 575 V

- fixed time delay T1 (500 ms) and adjustable time delay T2 (0 - 10 s)
- faulty state is indicated by LED and by opening of output relay contact
- output contact 1x changeover / SPDT 8 A / 250V AC1
- 1-MODULE / 3- MODULE, DIN rail mounting

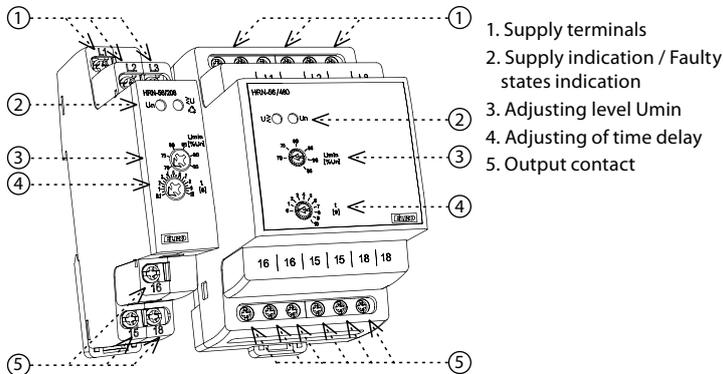
### Symbol



### Connection



### Description



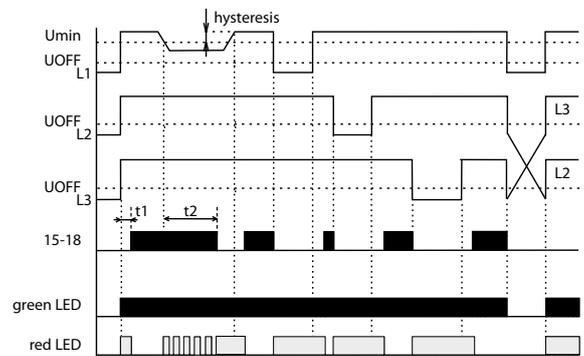
1. Supply terminals
2. Supply indication / Faulty states indication
3. Adjusting level  $U_{min}$
4. Adjusting of time delay
5. Output contact

Type of load	$\cos \varphi \geq 0.95$								
Mat. contacts AgNi, contact 8A	250V / 8A	250V / 3A	250V / 2A	230V / 1.5A (345VA)	x	300W	x	250V / 1A	250V / 1A
Type of load									
Mat. contacts AgNi, contact 8A	x	250V / 3A	250V / 3A	24V / 8A	24V / 3A	24V / 2A	24V / 8A	24V / 2A	x

## Technical parameters

	208	240	400	480	575
Supply and measuring:	L1, L2, L3				
Supply terminals:	L1, L2, L3				
Supply / measured voltage:	3 x 208V / 50-60 Hz	3 x 240V / 50-60 Hz	3 x 400V / 50-60 Hz	3 x 480V / 50-60 Hz	3 x 575V / 50-60 Hz
Consumption:	max. 2 VA / 1 W				
Max. dissipated power (Un + terminals):	2 W				
Level Umin:	adjustable 70 - 95 % Un				
Level Uoff:	60% Un				
Hysteresis:	2%				
Max. permanent voltage:	AC 3x 276 V	AC 3x 460 V	AC 3x 550 V	AC 3x 660 V	AC 3x 660 V
Peak overload < 1s:	AC 3x 300 V	AC 3x 500 V	AC 3x 600 V	AC 3x 700 V	AC 3x 700 V
Time delay t1:	max. 500 ms				
Time delay t2:	adjustable 0 - 10 s				
<b>Output</b>					
Number of contacts:	1x changeover / SPDT (AgNi / Silver Alloy)				
Rated current:	8 A / AC1				
Switching capacity:	2000 VA / AC1, 240 W / DC				
Inrush current:	10 A				
Switching voltage:	250 V AC / 24 V DC				
Indication of output:	red LED				
Mechanical life:	1x10 <sup>7</sup>		3x10 <sup>7</sup>		
Electrical life (AC1):	1x10 <sup>5</sup>				
<b>Other information</b>					
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 IP10 terminals	IP40 from front panel IP20 terminals			
Overvoltage category:	III.				
Pollution degree:	2				
Max. cable size (mm <sup>2</sup> ):	solid wire max. 2x 2.5, max. 1x 4 / with sleeve 1x 2.5, max. 2x 1.5 (AWG 12)		max. 1x 2.5, max. 2x 1.5 / with sl. max. 1x 1.5 (AWG12)		
Dimensions:	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")		90x52x65 mm (3.5x2x2.6")		
Weight:	65 g (2.3 oz)	65 g (2.3 oz)	66 g (2.3 oz)	110 g (3.9 oz)	110g (3.9 oz)
Standards:	EN 60255-1, EN 60255-26, EN 6255-27				

## Function



Relay in 3-phase main monitors correct phase sequence and phase failure. Green LED illuminates permanently and indicates energization. In case of phase failure red LED flashes and relay turns off. When changing to faulty state, time delay applies - delay setting is done by potentiometer on the front panel of the device. In case of incorrect phase sequence, red LED shines permanently and relay is open. In case supply voltage falls below 60% Un (U<sub>OFF</sub> lower level) relay immediately opens with no delay and faulty state is indicate by red LED.

**HRN-56:** Thanks to supply from all phases, relay is functional also in case of one phase failure.

## Warning

The device is constructed to be connected into 3-phase main and must be installed in accordance with regulations and norms applicable in a particular country. Installation, connection and setting can be done only by a person with an adequate electro-technical qualification which has read and understood this instruction manual and product functions. The device contains protections against over-voltage peaks and disturbing elements in the supply main. Too ensure correct function of these protection elements it is necessary to front-end other protective elements of higher degree (A, B, C) and screening of disturbances of switched devices (contactors, motors, inductive load etc.) as it is stated in a standard. Before you start with installation, make sure that the device is not energized and that the main switch is OFF. Do not install the device to the sources of excessive electromagnetic disturbances. By correct installation, ensure good air circulation so the maximal allowed operational temperature is not exceeded in case of permanent operation and higher ambient temperature. While installing the device use screwdriver width approx. 2 mm. Keep in mind that this device is fully electronic while installing. Correct function of the device is also depended on transportation, storing and handling. In case you notice any signs of damage, deformation, malfunction or missing piece, do not install this device and claim it at the seller. After operational life treat the product as electronic waste.

### DECLARATION OF CONFORMITY

ELKO EP declares that the **HRN-56** type of equipment complies with Directives 2014/30/EU, 2011/65/EU, 2015/863/EU and 2014/35/EU. The full EU Declaration of Conformity is available at: [www.elkoep.com/monitoring-voltage-relay-hrn-56](http://www.elkoep.com/monitoring-voltage-relay-hrn-56)