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HRN-54 HRN-54N

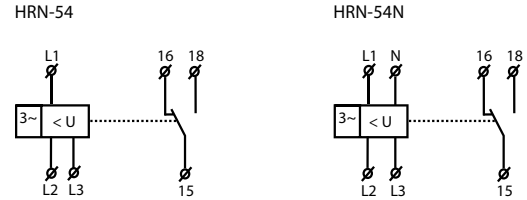
Relay for monitoring phase sequence, failure, over / under voltage in 3 phase mains



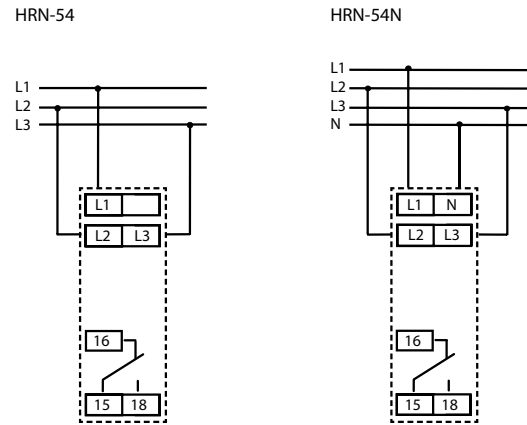
Characteristics

- it serves to monitor voltage, phase failure and sequence in switchboards, protection of devices in 3-phase mains
- it is possible to set upper and lower level of monitoring voltage
- adjustable time delay eliminates short voltage peaks and failures in the main
- supplied from monitored voltage
- faulty state is indicated by red LED and by breaking output relay contact
- output contact 1x changeover / SPDT 8 A /250 V AC1
- in case supply voltage falls below 60 %Un (U_{OFF} lower level) relay immediately opens without delay
- HRN-54: supply from all phases which means that relay is functional also in case when one phase is faulty
- HRN-54N: supply L1-N, means that relay monitors also failure of neutral wire
- 1-MODULE, DIN rail mounting

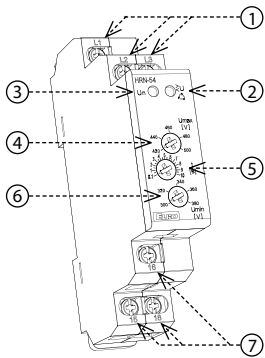
Symbol



Connection



Description



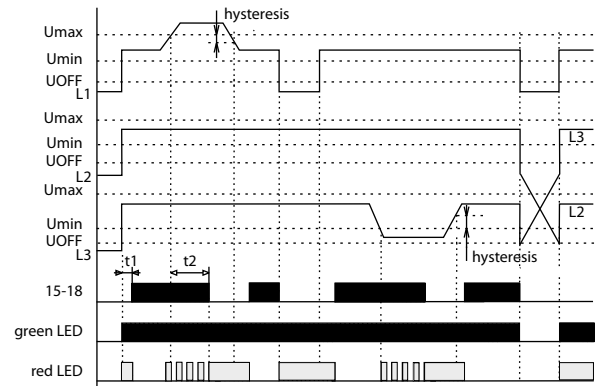
1. Supply / monitoring terminals
2. Faulty state indication
3. Supply indication
4. Adjusting upper value U_{max}
(in range HRN-54: 420 - 500 V,
HRN-54N: 242 - 288 V)
5. Adjusting of time delay T_2 in range 0.1 - 10 s
6. Adjusting bottom value U_{min}
(in range HRN-54: 300 - 380 V,
HRN-54N: 173 - 219 V)
7. Output contacts

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

	HRN-54	HRN-54N
Monitoring terminals:	L1, L2, L3	L1, L2, L3, N
Supply terminals:	L1, L2, L3	L1, L2, L3, N
Supply / measured voltage Un:	3x 400 V / 50-60 Hz	3x 400 V / 230 V / 50-60 Hz
Level Umax:	105 - 125 % Un	
Level Umin:	75 - 95 % Un	
Power input:	max. 2 VA	
Hysteresis:	2 %	
Max. permanent overload:	AC 3x 460 V	AC 3x 265 V
Peak overload < 1 ms:	AC 3x 500 V	AC 3x 288 V
Time delay T1:	max. 500 ms	
Time delay T2:	adjustable 0.1 - 10 s	
Output		
Number of contacts:	1x changeover / SPDT (AgNi / Silver Alloy)	
Current rating:	8 A / AC1	
Breaking capacity:	2000 VA / AC1, 240 W / DC	
Inrush current:	10 A	
Switching voltage:	250 V AC1 / 24 V DC	
Output indication:	red LED	
Mechanical life:	1x10 ⁷	
Electrical life (AC1):	1x10 ⁵	
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 / IP10 terminals	
Overvoltage category:	III.	
Pollution degree:	2	
Max. cable size (mm ²):	solid wire max. 2x 2.5 or 1x 4 / with sleeve max. 1x 2.5 or 2x 1.5 (AWG 12)	
Dimensions:	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	
Weight:	69 g (2.43 oz.)	67 g (2.36 oz.)
Standards:	EN 60255-6, EN 61010-1	

Function



Relay in 3-phase main monitors size of phase voltage. It is possible to set two independent voltage levels and thus it is possible to set two independent voltage levels and monitor e.g. undervoltage and overvoltage independently. In normal state when voltage is within set levels, output relay is closed and red LED shines. In case voltage exceeds or falls below the set levels, output relay breaks and red LED shines (LED indicates faulty state - flashes when timing). In case of In case supply voltage falls below 60 % Un (U_{OFF} lower level) relay immediately breaks without delay and faulty state is indicated by red LED. In case timing is progress and faulty state is indicated, timing is immediately stopped.

Warning

Device is constructed for connection in 3-phase 400 / 230V 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 disturbances 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 disturbances 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.