

Relay for monitoring phase sequence and failure HRN-55, HRN-55N

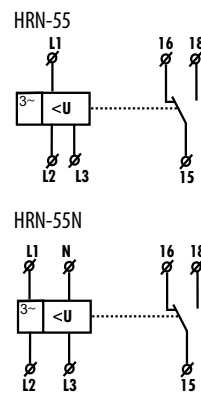
1M



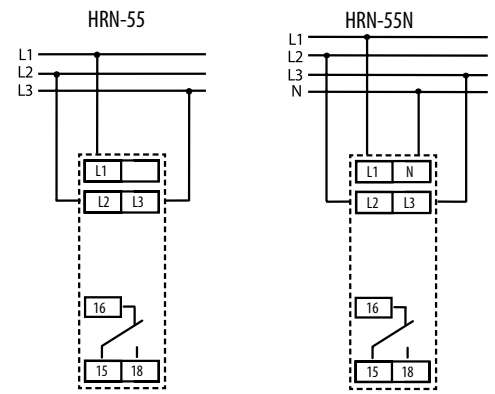
- replacement for HRN-51 and HRN-51N
- relay monitors phase sequence and failure (e.g monitoring of correct motor winding etc.)in 3 phase main
- **HRN-55** - supply from all phases, which means that function of relay is applicable also if one phase fails
- **HRN-55N** - supply L1-N, it means that relay also monitors break of neutral point
- fixed delay T1 (500ms) and adjustable delay T2 (0.5-10s)
- faulty state is indicated by LED and output contact of relay is OFF.
- output contact: 1x changeover 16 A / 250 V AC1
- 1-MODULE, DIN rail mounting

Technical parameters	HRN-55	HRN-55N
Monitoring terminals:	L1, L2, L3	L1, L2, L3, N
Supply terminals:	L1, L2, L3	L1, N
Voltage:	3x400	3x400 V/230 V
Level Umin:	75% Un	
Consumption:	max. 2 VA	
Hysteresis:	5%	
Max. permanent:	AC 3x460 V	AC 3x265 V
Peak overload <1ms:	AC 3x500 V	AC 3x288 V
Time delay T1:	max. 500 ms	
Time delay T2:	adjustable 0.1-10 s	
Output		
Number of contacts:	1x changeover (AgNi)	
Rated current:	8 A / AC1	
Breaking capacity:	2500 VA / AC1, 240 W / DC	
Inrush current:	10 A	
Switching voltage:	250 V AC1 / 24 V DC	
Min. breaking capacity DC:	500 mW	
Output indication:	red LED	
Mechanical life:	1x10 ⁷	
Electrical life (AC1):	1x10 ⁵	
Other information		
Operating temperature:	-20.. +55 °C	
Storage temperature:	-30.. +70 °C	
Electrical strength:	4 kV (supply - output)	
Operating position:	any	
Mounting:	DIN rail EN 60715	
Protection degree:	IP 40 from front panel	
Overvoltage category:	III.	
Pollution degree:	2	
Max. cable size (mm ²):	solid wire max. 2x2.5 or 1x4 with sleeve max. 1x2.5 or 2x1.5	
Dimensions:	90 x 52 x 65 mm, see page 90-92	
Weight:	67 g	66 g
Standards:	ČSN EN 60255-6, ČSN EN 61010-1	

Symbol

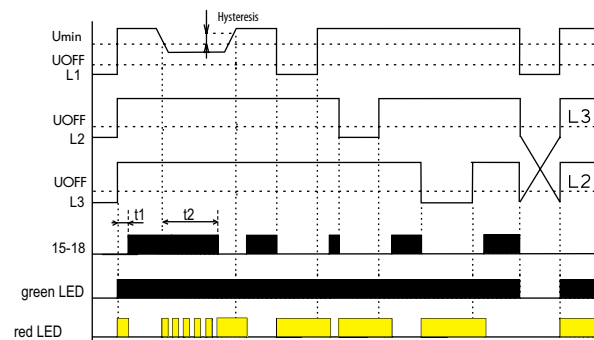


Connection

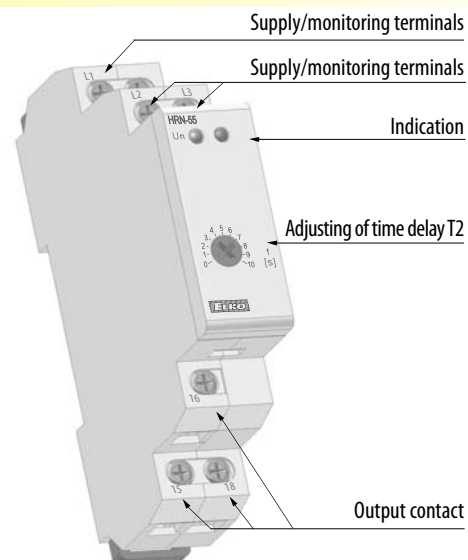


Function

HRN-55
HRN-55N



Description



Function description

Relay in 3-phase main monitors correct phase sequence and failure of any phase. Green LED is permanently ON and indicates presence of power supply voltage. In case of phase failure, red LED flashed and relay breaks. When changing to faulty state, time delay applies. Time delay setting is set by a potentiometer on 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 (OFF lower level) relay immediately opens with no delay and faulty state is indicated by red LED.

HRN-55: thanks to supply form all phases, this relay is able to stay operational also if one phase is out.

HRN-55N - supply L1-N, means that relay monitor also failure in neutral wire

Relay for monitoring over/undervoltage and phase failure HRN-57, HRN-57N

1M



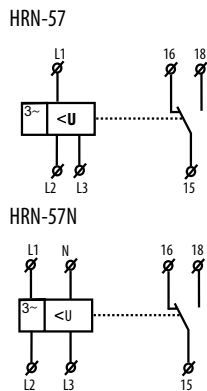
- serves to monitor voltage in a switchboard, protection of devices in 3-phase main
- monitors value of voltage in 3-phase main
- it is possible to set upper and lower level independently
- adjustable time delay eliminated short voltage peaks and failures in the main
- the device is supplied from monitored voltage
- faulty state is indicated by red LED and by breaking output relay contact
- output contact 1x changeover 8 A /250 V AC1
- relay doesn't monitor phase sequence
- in case supply voltage falls below 60 %Un (U off lower level) relay immediately switch OFF with no delay
- **HRN-57** – supply from all phases, means that relay is functional also in case of failure in one phase
- **HRN-57N** -supply L1-N, means that relay monitors also failure of neutral wire, replacement for HRN-52
- 1-MODULE, DIN rail mounting

Technical parameters	HRN-57	HRN-57N
Monitoring terminals:	L1, L2, L3	L1, L2, L3, N
Supply terminals:	L1, L2, L3	L1, N
Voltage:	3x400	3x400 V/230 V
Level Umin:	75% Un	
Consumption:	max. 2 VA	
Hysteresis:	5%	
Max. permanent overload:	AC 3x460 V	AC 3x265 V
Peak overload <1ms:	AC 3x500 V	AC 3x288 V
Time delay T1:	fix 500 ms	
Time delay T2:	adjustable 0.1-10 s	
Output		
Number of contacts:	1x changeover (AgNi)	
Rated current:	8 A / AC1	
Breaking capacity:	2500 VA / AC1, 240 W / DC	
Inrush current:	10 A	
Switching voltage:	250 V AC1 / 24 V DC	
Min. breaking capacity DC:	500 mW	
Output indication:	red LED	
Mechanical life:	1x10 ⁷	
Electrical life (AC1):	1x10 ⁵	
Other information		
Operating temperature:	-20.. +55 °C	
Storage temperature:	-30.. +70 °C	
Electrical strength:	4 kV (supply - output)	
Operating position:	any	
Mounting:	DIN rail EN 60715	
Protection degree:	IP 40 from front panel	
Overvoltage category:	III.	
Pollution degree:	2	
Max. cable size (mm ²):	solid wire max. 2x 2.5 or 1x4, with sleeve max. 1x2.5 or 2x1.5	
Dimensions:	90 x 17.6 x 64 mm, see page 90-92	
Weight:	68 g	66 g
Standards:	EN 60255-6, EN 61010-1	

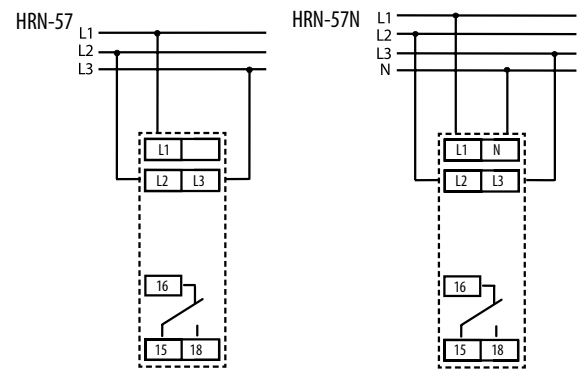
Function description

Relay in 3-phase main monitors size of phase voltage. It is possible to set two independant voltage levels and thus it is possible to set two independant voltage levels and monitor e.g. undervoltage and overvoltage independantly. 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 supply voltage falls below 60 %Un (UOFF 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.

Symbol

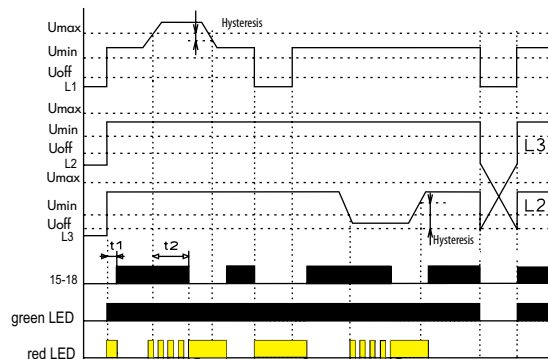


Connection

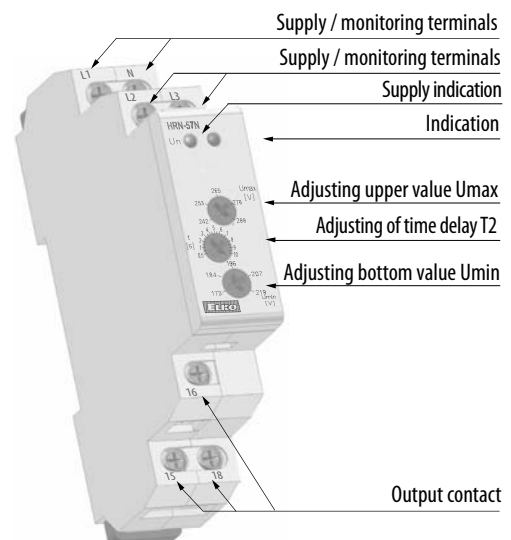


Function

HRN-57
HRN-57N



Description



Relay for monitoring over/under voltage, phase sequence and failure HRN-54, HRN-54N

1M

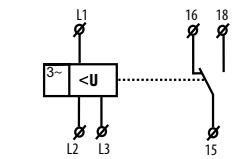


- serves to monitor voltage, phase failure and sequence in switchboards, protection of devices in 3-phase mains
- it is possible to set upper and lower level of monitoring voltage
- adjustable time delay eliminates short voltage peaks and failures in the main
- supply is done from monitored voltage
- faulty state is indicated by red LED and by breaking output relay contact
- output contact 1x changeover 8 A / 250 V AC1
- in case supply voltage falls below 60 %Un (Uoff lower level) relay immediately breaks with no 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

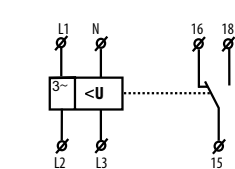
Technical parameters	HRN-54	HRN-54N
Supply and measuring	L1, L2, L3	L1, L2, L3, N
Supply terminals:	L1, L2, L3	L1, N
Supply/measured voltage:	3x400 V	3x400 V/230 V
Bottom level Umin:	75 % Un	
Consumption:	max. 2 VA	
Hysteresis:	5%	
Max. permanent overload:	AC 3x460 V	AC 3x265 V
Peak overload <1ms:	AC 3x500 V	AC 3x288 V
Time delay T1:	max. 500 ms	
Time delay T2:	adjustable 0.1-10 s	
Output		
Number of contacts:	1x changeover (AgNi)	
Rated current:	8 A / AC1	
Breaking capacity:	2500 VA / AC1, 240 W / DC	
Inrush current:	10 A	
Switching voltage:	250 V AC1 / 24 V DC	
Min. breaking capacity DC:	500 mW	
Indication of state:	red LED	
Mechanical life:	1x10 ⁷	
Electrical life (AC1):	1x10 ⁵	
Other information		
Operating temperature:	-20.. +55 °C	
Storage temperature:	-30.. +70 °C	
Electrical strength:	4 kV (supply - output)	
Operating position:	any	
Mounting:	DIN rail EN 60715	
Protection degree:	IP 40 from front panel	
Overvoltage category:	III.	
Pollution degree:	2	
Max. cable size (mm ²):	solid wire max. 2x2.5 or 1x4, with sleeve max. 1x2.5 or 2x1.5	
Dimensions:	90 x 17.6 x 64 mm, see page 90-92	
Weight:	69 g	67g
Standards:	EN 60255-6, EN 61010-1	

Symbol

HRN-54

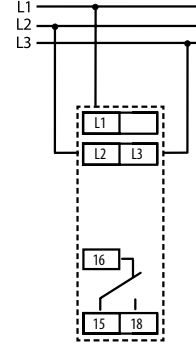


HRN-54N

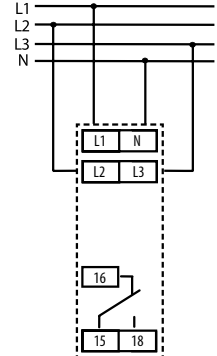


Connection

HRN-54

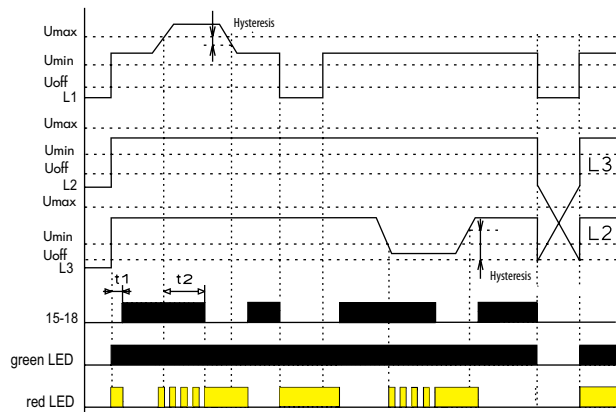


HRN-54N



Function

HRN-54
HRN-54N



Description

Function description

Relay in 3-phase main monitors size of phase voltage. It is possible to set two independant voltage levels and thus it is possible to set two independant voltage levels and monitor e.g. undervoltage and overvoltage independantly. 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 (UOFF 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.

Supply/monitoring terminals

Supply/monitoring terminals

Supply indication

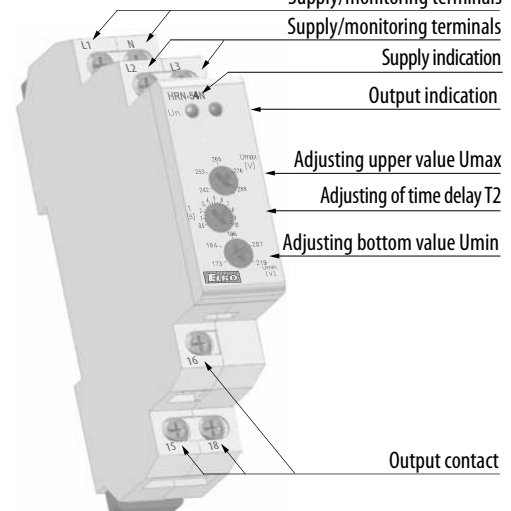
Output indication

Adjusting upper value Umax

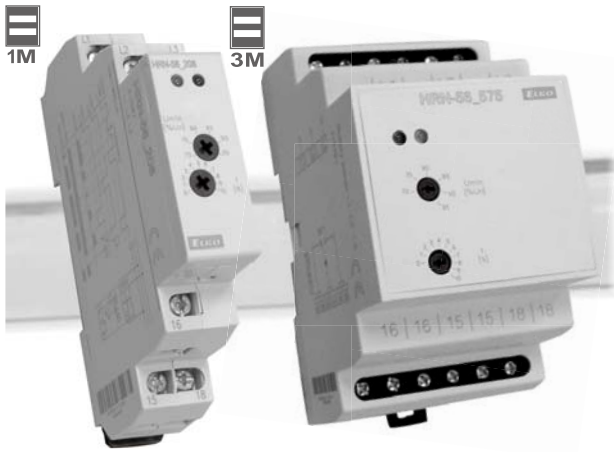
Adjusting of time delay T2

Adjusting bottom value Umin

Output contact



Relay for monitoring phase sequence and failure HRN-56

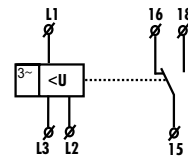


- relay monitors phase sequence and failure (e.g. control of correct motor winding etc.)
- relay designated for monitoring of 3-phase mains
- supply from all phases which means that relay is functional also in case of one phase failure
- supply and monitored supply Un:

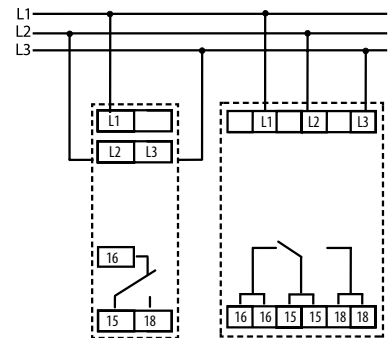
1-MODULE	3-MODULE
HRN-56/208 - 3x120V	HRN-56/480 - 3x480 V
HRN-56/208 - 3x208 V	HRN-56/575 - 3x575 V
HRN-56/240 - 3x240 V	
HRN-56/400 - 3x400 V	
- fixed time delay T1 (500ms) and adjustable time delay T2 (0 - 10s)
- faulty state is indicated by LED and breaking contact of output relay
- output contact 1x changeover 8 A / 250V AC1
- 1-MODULE, 3-MODULE, DIN rail mounting

Technical parameters	HRN-56					
	120	208	240	400	480	575
Monitoring terminals:	L1, L2, L3					
Supply terminals:	L1, L2, L3					
Supply/measured voltage:	3x120V	3x208V	3x240V	3x400V	3x480V	3x575V
Upper level Umin:	adjustable 70 - 95 % Un					
level Uoff:	60 % Un					
Consumption:	max. 2 VA					
Hysteresis:	5%					
Max. permanent overload:	AC 3x160V	AC 3x276V	AC 3x460V	AC 3x550V	AC 3x660V	AC 3x660V
Peak overload <1ms:	AC 3x180V	AC 3x300V	AC 3x500V	AC 3x600V	AC 3x700V	AC 3x700V
Time delay T1:	max. 500 ms					
Time delay T2:	adjustable 0 - 10 s					
Output						
Number of contacts:	1x changeover (AgNi)					
Rated current:	8 A / AC1					
Breaking capacity:	2500 VA / AC1, 240 W / DC					
Inrush current:	10 A					
Indication of state:	red LED					
Mechanical life:	1x10 ⁷					
Electrical life (AC1):	1x10 ⁵					
Other information						
Operating temperature:	-20.. +55 °C					
Storage temperature:	-30.. +70 °C					
Electrical strength:	4 kV (supply - output)					
Operating position:	any					
Mounting:	DIN rail EN 60715					
Protection degree:	IP 40 from front panel					
Overvoltage category:	III.					
Pollution degree:	2					
Max. cable size (mm ²):	solid wire max. 2x2.5 or 1x4, with sleeve max. 1x2.5 or 2x1.5			max.1x 2.5, max.2x1.5 with sleeve max. 1x1.5		
Dimensions:	90 x 17.6 x 64 mm, see page 90-92					90 x 52 x 65 mm
Weight:	66 g	66 g	66 g	67 g	108 g	108 g
Standards:	EN 60255-6, EN 61010-1					

Symbol

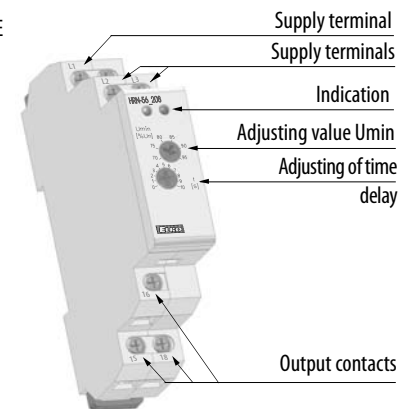


Connection

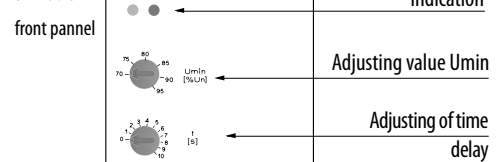


Description

1-MODULE

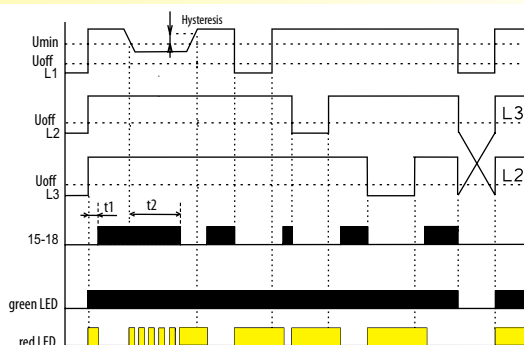


3-MODULE



Function

HRN-56



Function description

Relay in 3-phase main monitor correct phase sequence and phase failure. Green LED shines permanently and indicates energization. Red LED flashes and relay breaks in case of phase failure. 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 relays is open. In case supply voltage falls below 60%Un (Uoff lower level) relay immediately breaks 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 failure on in one phase.