

EAN code HRN-33: 8595188115636 HRN-34: 8595188115643 HRN-35: 8595188115650 HRN-37: 8595188130615 HRN-63: 8595188130639 HRN-67: 8595188130639

Technical parameters	HRN-33/ HRN-63	HRN-34/ HRN-64	HRN-35	HRN-37/ HRN-67	
Supply and measuring					
Terminals:	A1 - A2	A1 - A2	A1 - A2	A1 - A2	
Voltage range:	AC 48 - 276 V	DC 6 - 30 V	AC 48 - 276 V	AC 24-150 V	
	(50/60 Hz)		(50/60 Hz)	(50/60 Hz)	
Burden:	HRN-33 max. 26 VA	-	45\/A	HRN-37 max. 8 VA	
	HRN-63 max. 45 VA	-	max. 45 VA	HRN-67 max. 30 VA	
	max. 2 W	max. 0.5 W	max. 2 W	max. 2W	
Max. dissipated power					
(Un + terminals):	4 W	4 W	6 W	4 W	
Upper level (Umax):	AC 160 - 276 V	DC 18 - 30 V	AC 160 - 276 V	AC 80-150 V	
Bottom level (Umin):	30-95 % Umax	35 - 95 % Umax	30 - 95 % Umax	30-95 % Umax	
Max. permanent overload:	AC 276 V	DC 36 V	AC 276 V	AC 276 V	
Peak overload <1ms:	AC 290 V	DC 50 V	AC 290 V	AC 290 V	
Time delay	adjustable 0 - 10 s				
Accuracy					
Setting accuracy (mechanical):	5 %				
Repeat accuracy:	<1 %				
Dependance on temperature:	< 0.1 %/°C (°F)				
Tolerance of limit values:	5 %				
Hysteresis	2 - 6 % of adjusted value				
(from fault to normal):	(only HRN-33, HRN-34, HRN-35, HRN-37)				
Output	1x changeover				
Number of contacts:	SPDT (AgNi/	SPDT (AgNi/	for each level of	SPDT (AgNi/	
	Silver Alloy)	Silver Alloy)	voltage, (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/green LED				
Mechanical life:	30.000.000 operations				
Electrical life (AC1):	70.000 operations				
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)				
Dielectrical 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 (mm²):	solid wire max. 1x 2.5 or 2x 1.5,				
	with sleeve max. 1x 2.5 (AWG 12)				
Dimensions:	90	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")			
Weight:	62 g (2.2 oz.)	75 g (2.6 oz.)	86 g (3 oz.)	61 g (2.2 oz.)	
Standards:	EN 60255-1, EN 60255-26, EN 60255-27				

- It serves to control supply voltage for appliances sensitive to supply tolerance, protection of the device against under/over voltage.
- HRN-3x is band voltage relay, HRN-6x is over/under voltage relay. For difference - see graph of function.

# • HRN-33, HRN-63

- Monitors voltage in range AC 48 276 V.
- Umax and Umin can be monitored independently.

#### • HRN-34, HRN-64

- Like HRN-33, but voltage range is DC 6 30 V,
- Lonitoring of battery circuits (24 V).

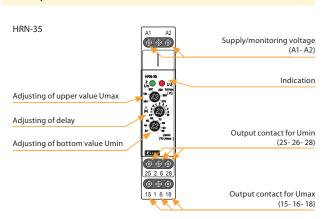
#### HRN-35

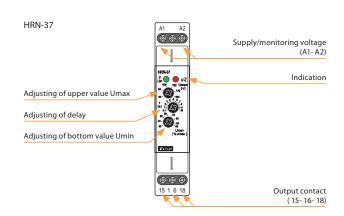
- Like HRN-33, but independent output relays for each voltage level,
- Switching of other loads possible.

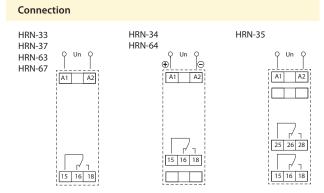
# • HRN-37, HRN-67

- Like HRN-33, monitors voltage in range AC 24-150 V,
- It is possible to monitor level of overvoltage and undervoltage independently.
- $\bullet$  Voltage Umin adjusted as % of Umax.
- 3-state indication LEDs indicating normal state and 2 fault states.

## Description







# Function HRN-33, 34, 35, 37 (band voltage relay)

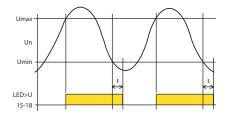
Hysteresis HRN-37 Ur lysteresis Umir LED ≥Ur LED U≥ HRN-34 Hysteresis Ur Ivsteresis Umir LED 🗷 LED U≥ HRN-35 Hysteresis Ur -lysteresis Umir 15-18 25-28 LED≥Ur LED U≷

Monitoring relay series HRN-3x monitors level of voltage in single - phase circuits. Monitored voltage serves also as supply voltage. It is possible to set two indipendent (all occurrences) levels of voltage, when exceeded the output is activated. HRN-33 and HRN-34 - in normal state the output relay is permanently switched. It switches off when there is a limit settings. This combination of linkage of the output relay is advantageous when the full failure of supply (monitored) voltage is considered to be a faulty state in the same way as a decrease of voltage within the set level. Output relay is in both situations always switched off.

Differently HRN-35 version uses indipendent relay for each level, in normal state it is switched off. If the upper level is exceeded (for example overvoltage) 1 relay switches on, when the bottom level (e.g. undervoltage) is exceeded 2 relay switches. It is thus possible to see the particular faulty state. To eliminate short peaks in the main the time delay, which is possible to be set in range 0 - 10 s, is used. It functions when changing from normal to faulty state and prevents unavailing pulsation of the output relay caused by parasitive peaks. Time delay doesn't apply when changing from faulty to normal state, but hysteresis (1 - 6 % depends on the voltage setting) apply. Thanks to changeover contacts it is possible to get other configurations and functions according to actual requirements of the application.

# Function HRN-63, 64, 67 (over/under voltage relay)

HRN-63, HRN-64, HRN-67



Legend:

Umax - upper adjustable level of voltage

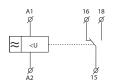
Un - measured voltage Umin - bottom adjustable level of voltage

15-18 - switching contact of output relay No.1 25-28 - switching contact of output relay No. 2 LED ≥ Un - green indicator light LED U ≥ - red indicator light LED U> - red indicator light

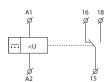
Monitoring relay line HRN-6x serves to monitor levels of voltage in singlephase or DC circuits. Monitored voltage is in the same time also supply voltage. It is possible to set two indipendent levels of voltage. When Umax is exceeded, output is activated. In case voltage level falls below Umin, output is deactivated. This combination is advantageous when full absence of supply voltage is understood as faulty state, as well as voltage drop within the set level. To eliminate short voltage peaks in the main there is time delay which can be set in a range of 0 - 10 sec. Such delay applies in case of going from overvoltage to undervoltage. In case of returning from undervoltage to overvoltage this delay doesn't apply. Thanks to changeover output contacts it is possible to reach various configurations and functions according to requirements or an application.

# Symbol

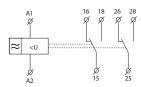




HRN-34 HRN-64



HRN-35



# Indication LED

HRN-33, HRN-37



Normal state Umin<Un<Umax Green LED = ON Red LED = OFF



Exceeded Umax (overvoltage) Drop below Umin (undervoltage) Un>Umax or Un<Umax Green LED = ON Red LED = ON





Normal state Umin<Un<Umax Green LED = ON Red LED = OFF



Exceeded Umax (overvoltage) Drop below Umin (undervoltage) Un>Umax or Un<Umax Green LED = OFF Red LED = ON

# HRN-63, HRN-67



Exceeded Umax (overvoltage) Un>Umax Green LED = ON Red LED = ON



**Drop below Umin** (undervoltage) Un<Umin Green LED = ON Red LED = OFF

# HRN-64



Exceeded Umax (overvoltage) Un>Umax Green LED = OFF Red LED = ON



**Drop below Umin** (undervoltage) Un<Umin Green LED = ON Red LED = OFF

HRN-35



Normal state Umin<Un<Umax Green LED = ON Red LED = OFF



Exceeded Umax (overvoltage) Un>Umax Green LED = ON Red LED = ON



Drop below Umin (undervoltage) Un<Umin Green LED = OFF Red LED = ON