

## Current monitoring relay PRI-51



### Advantages

- To monitor heating of rods in shunts, heating of cables, to indicate current flowing, to monitor consumption of one-phase electrical loads
- 1-phase, 1-module, DIN rail mounting
- Universal supply voltage AC 24 V - 240 V and DC 24 V
- Output contact: 1 x changeover 8 A/AC1
  
- Supply is not galvanically separated from measured current, it must be in the same phase
- Adjustable delay 0,5 - 10 s to eliminate short current peaks
- Fluent adjusting actuating current via potentiometer, choice of 5 ranges: AC 0.1-1 A, AC 0.2-2 A, AC 0.5-5 A, AC 0.8-8 A, AC 1.6-16 A

**Current monitoring relay PRI-51**

Type	$I_n$ [A]	Code No.	Weight [g]	Packaging [pcs]
PRI - 51/1	1	002471816	58	1/10
PRI - 51/2	2	002471817	58	1/10
PRI - 51/5	5	002471818	58	1/10
PRI - 51/8	8	002471819	58	1/10
PRI - 51/16	16	002470019	58	1/10

## Voltage monitoring relay HRN-33, HRN-34, HRN-35



### Advantages

- Serves to control/monitor supply voltage for appliances sensitive to supply tolerance, protects devices against under/over voltage
- 1-module, DIN rail mounting, 1-phase monitoring
- Supply from monitored voltage (monitors level of its own supply)
- 3-state indication - LEDs indicating normal state and 2 fault states
- Adjustable time delay for all types is 0 - 10 s (to eliminate short voltage drops or peaks) voltage  $U_{min}$  adjusted as % of  $U_{max}$
- Time delay and voltage adjusted via potentiometer
- **HRN-33**
  - monitors voltage in range AC 48 - 276 V
  - $U_{max}$  and  $U_{min}$  can be monitored independently
- **HRN-34**
  - like HRN-33, but voltage range is DC 6 - 30 V
  - monitoring of battery circuits (12, 24 V)
- **HRN-35**
  - like HRN-33, but independent output relays for each voltage level
  - switching of other loads possible

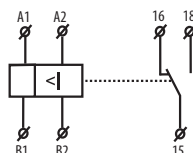
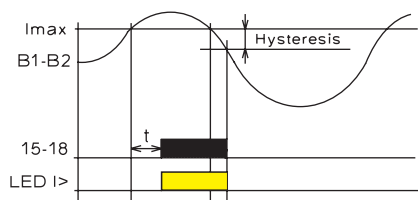
**Voltage monitoring relay HRN-33, HRN-34, HRN-35**

Type	$I_n$ [A]	Code No.	Weight [g]	Packaging [pcs]
HRN-33	16	002470015	73	1/10
HRN-34	16	002471400	73	1/10
HRN-35	16	002471401	85	1/10

# Current monitoring relay PRI-51

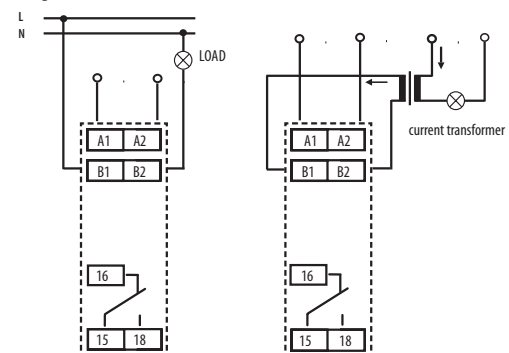
Technical data		PRI-51				
<b>Supply circuit</b>						
Supply	A1-A2					
Universal supply	24-240V AC / 24V DC (50-60 Hz AC)					
Consumption	max 1,5 VA					
Supply voltage tolerance	-15% - +10%					
<b>Measuring circuit</b>						
Load	between B1 - B2					
Current ranges	PRI51/1	PRI51/2	PRI51/5	PRI51/8	PRI51/16	
	AC 0.1-1 A	AC 0.2-2 A	AC 0.5-5 A	AC 0.8-8 A	AC 1.6-16 A	
Inrush overload <1ms	100 A					
Max. permanent current	1A	2A	5A	8A	16A	
Time setting	potentiometer					
Time ranges	0.5 s-10 s.					
Setting accuracy - mechanical	5%					
Time deviation	< 1 %					
Limit values tolerance	5%					
Temperature coefficient	< 0.1 % / °C					
Hysteresis	5%					
<b>Output</b>						
Number of contacts	1 x changeover (AgNi)					
Rated current	8 A / AC1					
Breaking capacity	2500 VA / AC1, 240W / DC					
Output indication	green / red LED					
<b>Controlling</b>						
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	2.5 mm <sup>2</sup>					
Dimensions	90 x 17,6 x 64 mm					
Standards	EN 60255-6, EN 61010-1					

## Functions



## Connection

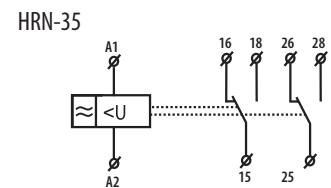
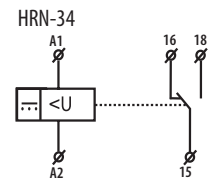
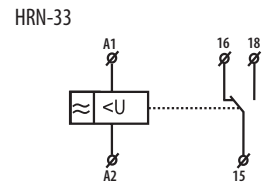
Example connection: PRI-51 with current transformer for current range increase



## Voltage monitoring relay HRN-33, HRN-34, HRN-35

Technical data			
	HRN-33, HRN-34, HRN-35		
Type	HRN-33	HRN-34	HRN-35
Supply	A1-A2	A1-A2	A1-A2
Universal supply	monitoring voltage range	monitoring voltage range	monitoring voltage range
Consumption	max. 1,2 VA AC / DC	max. 1,2 VA AC / DC	max. 1,2 VA AC / DC
Upper level U <sub>max</sub>	160-276 V AC	18-30 V DC	160-276 V AC
Bottom level U <sub>min</sub>	30-99% U <sub>max</sub>	30-99% U <sub>max</sub>	30-99% U <sub>max</sub>
Time delay	0 - 10 s.	0 - 10 s.	0 - 10 s.
Setting accuracy (mechanical)	5 %	5 %	5 %
Repeat accuracy	< 1 %	< 1 %	< 1 %
Temperature coefficient	< 0,1% / °C	< 0,1% / °C	< 0,1% / °C
Hysteresis	2-6 % of adjusted value	2-6 % of adjusted value	2-6 % of adjusted value
<b>Output</b>			
Number of contacts	1 x changeover (AgNi)	1 x changeover (AgNi)	1 x changeover (AgNi) for each voltage level
Rated current	16 A / AC1	16 A / AC1	16 A / AC1
Breaking capacity	4000VA / AC1, 384W / DC	4000VA / AC1, 384W / DC	4000VA / AC1, 384W / DC
Inrush current	30 / < 3s.	30 / < 3s.	30 / < 3s.
Switching voltage	max. 250 V AC1 / 24V DC	max. 250 V AC1 / 24V DC	max. 250 V AC1 / 24V DC
Min. breaking capacity DC	500mW	500mW	500mW
Output indication	green / red LED	green / red LED	green / red LED
Mechanical life	3x10 <sup>7</sup>	3x10 <sup>7</sup>	3x10 <sup>7</sup>
Electrical life	0.7x10 <sup>5</sup>	0.7x10 <sup>5</sup>	0.7x10 <sup>5</sup>
<b>Controlling</b>			
Operating temperature		-20...+55 °C	
Storage temperature		-30...+70 °C	
Electrical strength		4 kV	
Operating position		any	
Mounting		DIN rail EN 60715	
Protection degree		IP 40 from front panel	
Overtoltage category		III.	
Pollution degree		2	
Max. cable size		2.5 mm <sup>2</sup>	
Dimensions		90 x 17,6 x 64 mm	
Standards		EN 60255-6, EN 61010-1	

### Symbols



### Functions

#### Legend:

U<sub>max</sub> - upper adjustable level of voltage

U<sub>n</sub> - measured voltage

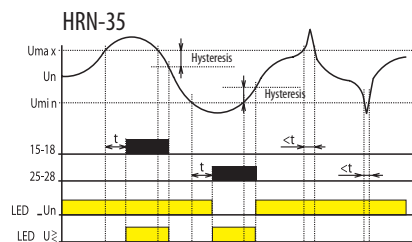
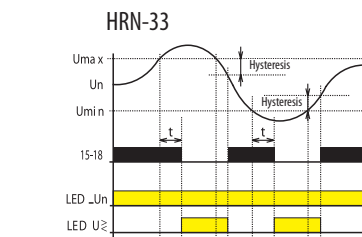
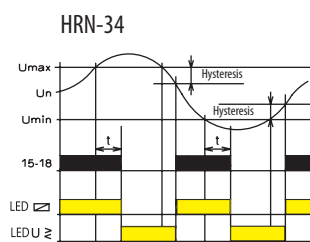
U<sub>min</sub> - bottom adjustable level of voltage

15-18 - switching contact of output relay No.1

25-28 - switching contact of output relay No. 2

LED ≥ U<sub>n</sub> - indication green

LED U ≤ - indication red



### Connection

