



EAN code
HRN3-70: 8595188137218
PMR3-70: 8595188137201

Technical parameters	HRN3-70	PMR3-70
Supply terminals:	L1-L2-L3	3-4-5
Supply/measured voltage:	AC 3× 190 – 500 V (50-60 Hz)	
Consumption (max.):	2 VA/1 W	
Level U _{max} :	110 % U _n	
Level U _{min} :	80 – 95 % U _n	
Hysteresis:	5 %	
Asymmetry:	adjustable, 2–10 % U _n + OFF	
Max. permanent overload:	AC 3× 550 V	
Peak overload <1ms:	NA	
Time delay t ₀ :	2 s	
Time delay t ₁ :	adjustable, 1-300 s	
Time delay t ₂ :	adjustable, 0,3-30 s	
Output		
Number of contacts:	2× changeover (AgNi)	1× changeover (AgNi)
Current rating:	16 A/AC1	
Breaking capacity:	4000 A/AC1, 384 W/DC1	
Switching voltage:	250 V AC/24 V DC	
Power dissipation (max.):	2.4 W	1.2 W
Mechanical life:	10.000.000 ops.	
Electrical life (AC1):	100.000 ops.	
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:		
supply – output 1	4 kV AC	2.5 kV AC
supply – output 2	4 kV AC	-
output 1 – output 2	4 kV AC	-
Operating position:	any	
Mounting:	DIN lišta EN 60715	do patice (8-pin)
Protection degree:	IP40 from front panel/IP10 terminals	
Oversvoltage category:	III.	
Pollution degree:	2	
Cross-wire section – solid/ stranded with ferrule (mm ²):	max. 1× 2.5, 2× 1.5/ max. 1× 2.5 (AWG 12)	max. 1× 4, 2× 2.5/ max. 1× 4 (AWG 12)
Dimensions:	90 × 52 × 66 mm	48 × 48 × 79 mm
Weight:	NA g	100 g (3.53 oz)
Standards:	EN 60255-1, EN 60255-26, EN 60255-27	

Range switching-over (U_n)

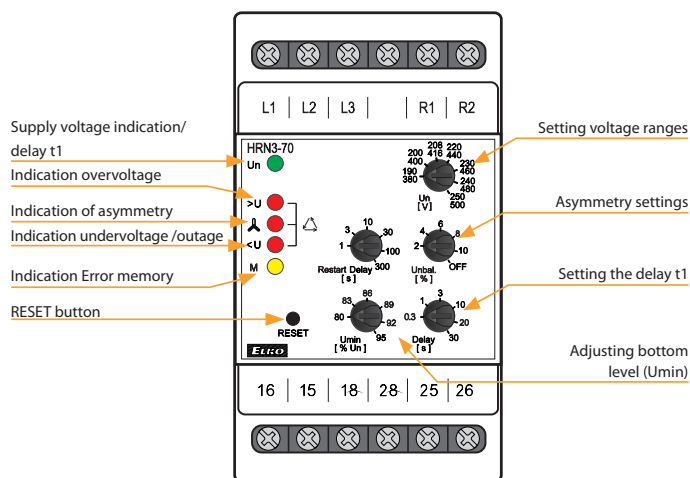
The range change-over switch has two ranges of inter-phase voltage values: lower (190 to 250V) and higher (380 to 500V).

After connection to power supply, the instrument evaluates the supply voltage value and selects the corresponding range.

The green LED U_n always flashes shortly when switching to the particular positions within the selected range.

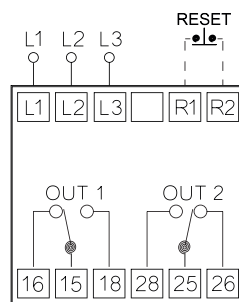
- It is used for monitoring of voltage, power failure, sequence and asymmetry of phases in a 3-phase voltage system.
- Wide range of the monitored voltage with automatic selection of a lower/higher range.
- It measures actual voltage effective value - TRUE RMS.
- Fixed overvoltage level (U_{max}), adjustable undervoltage level (U_{min}).
- Adjustable time delay (t₂) for elimination of short-time voltage peaks.
- Adjustable time delay (t₁) after switching on or with a return from the faulty state.
- Adjustable asymmetry level with optional switching off.
- Reset of the error in the memory using a pushbutton on the panel or external opening contact.

Device description

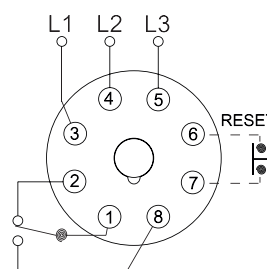


Connection

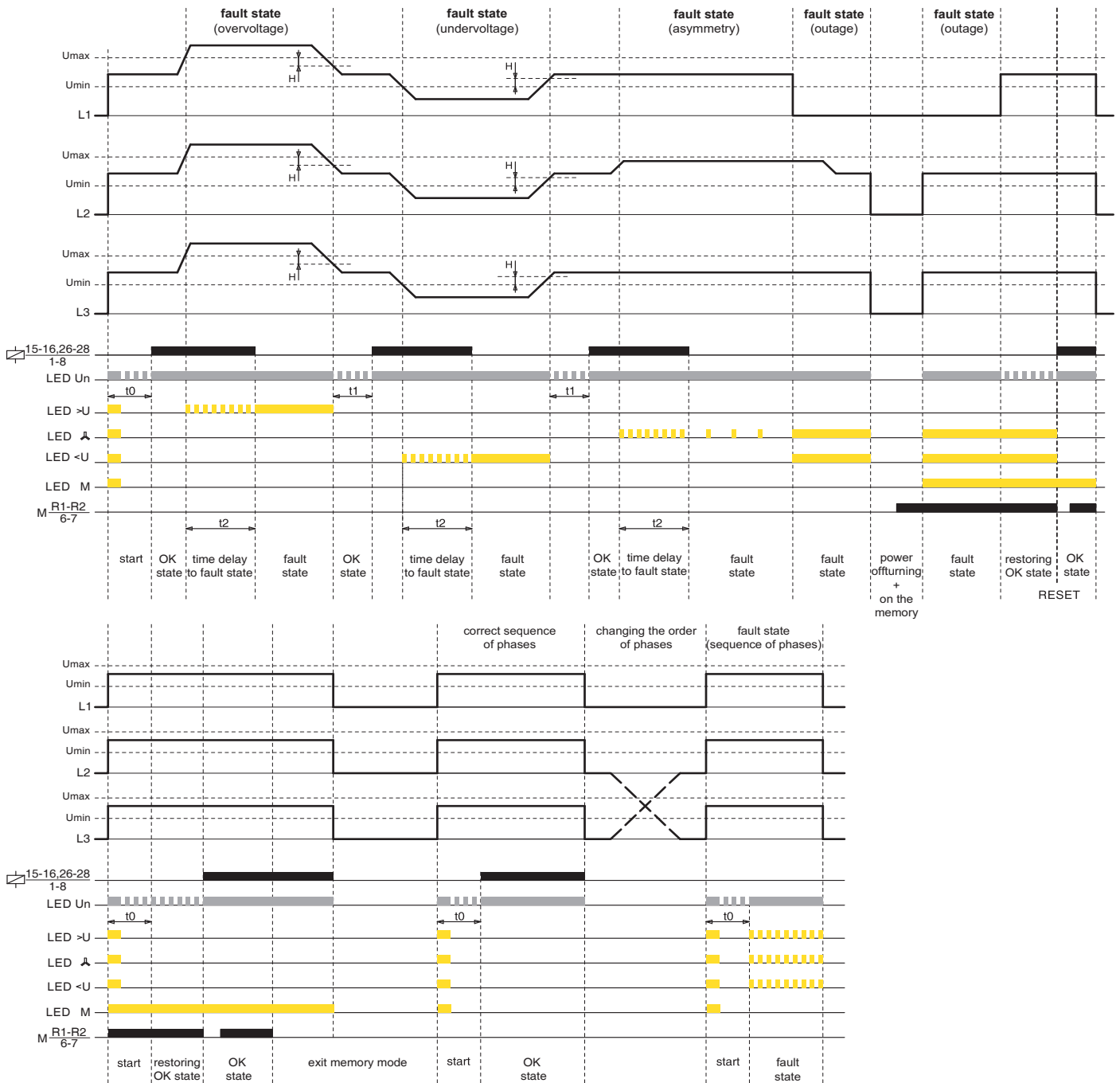
HRN3-70



PMR3-70



Function



Description of the function

All LEDs flash shortly always after connecting the instrument to the supply voltage.

In case a 3-phase voltage is connected to the monitoring relay and all conditions (voltage value within the U_{min} - U_{max} range, correct sequence of the phases and asymmetry of the phases lower than the preset value) are complied, the output contact closes after the time delay t₀ is elapsed. The green LED Un flashes during the delay and it is permanently on after the delay is elapsed.

In case the sequence of phases is found to be incorrect after the power supply is switched on, the green LED is on and all 3 red LEDs Δ flash together after the time delay t₀ is elapsed. The output contact opens and the green LED Un flashes during the delay.

When the voltage exceeds U_{max} or drops under U_{min}, the instrument changes over to the faulty state (after the time delay t₂ is elapsed). The corresponding red LED flashes during the delay and after the delay is elapsed, the output contact opens and the red LED Δ is permanently on.

When the preset asymmetry of phases is exceeded (after the time delay t₂ is elapsed), the red LED Δ flashes shortly and the output contact opens.

In case of a phase failure, the faulty state is activated without any delay – the output contact opens and the red LED Δ is permanently on.

When returning from the faulty state to the OK state, the time delay t₁ is always applied. The green LED Un flashes during the time delay.

Faulty state memory

Connection of the R1-R2 terminals or socket pins 6-7 through an external pushbutton with a disconnecting contact (RESET) activates the faulty state memory.

After the power supply is on, the yellow LED M lights up on the panel. In case a faulty state is detected, it is saved into the memory. The red LED indicates the faulty state in the same way as in the mode without memory.

In case the voltage values return to the respective range, the corresponding red LED is permanently on and the green LED Un flashes at the same time. Now the faulty memory can be reset and the instrument returns to the OK state (the output contact closes and the red LEDs become off).

The faulty memory can be reset either using an external pushbutton RESET or the pushbutton RESET on the instrument panel.