



Monitoring relays - ENYA series

Multifunction

2 change over contacts

Width 35 mm

Installation design



Technical data

1. Functions

AC/DC current monitoring in 1-phase mains with adjustable thresholds (Min and Max), timing for start-up suppression and tripping delay separately adjustable and the following functions which are selectable by means of rotary switch:

OVER	Overcurrent monitoring
UNDER	Undercurrent monitoring
WIN	Monitoring the window between Min and Max
OVER+Latch	Overcurrent monitoring with fault latch
UNDER+Latch	Undercurrent monitoring with fault latch
WIN+Latch	Monitoring the window between Min and Max with fault latch

2. Time ranges

Start-up suppression time (Start):	Adjustment range
Tripping delay (Delay):	0s to 10s 0,1s to 10s

3. Indicators

Green LED U/t ON/OFF:	indication of supply voltage
Green LED U/t flashes:	indication of start-up suppression time
Red min/max LED ON/OFF:	indication of failure of the corresponding threshold
Red min/max LED flashes:	indication of tripping delay of the corresponding threshold
Yellow LED ON/OFF:	indication of relay output

4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40
 Mounted on DIN-rail TS 35 according to EN 60715
 Mounting position: any
 Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20
 Tightening torque: max. 1Nm
 Terminal capacity:
 1 x 0.5 to 2.5mm² with/without multicore cable end
 1 x 4mm² without multicore cable end
 2 x 0.5 to 1.5mm² with/without multicore cable end
 2 x 2.5mm² flexible without multicore cable end

5. Input circuit

Supply voltage:	230V AC
Terminals:	A1-A2
Tolerance:	-15% to +15% of UN
Rated consumption:	2VA (1.2W)
Rated frequency:	AC 48 of 63Hz
Duration of operation:	100%
Reset time:	500ms
Wave form:	Sinus
Hold-up time:	-
Drop-out voltage:	>20% of the supply voltage
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

6. Output circuit

2 potential free change over contacts	
Rated voltage:	250V AC
Switching capacity:	1250VA (5A / 250V AC)
Fusing:	5A fast acting
Mechanical life:	20 x 10 ⁶ operations
Electrical life:	2 x 10 ⁵ operations at 1000VA resistive load
Switching frequency:	max. 6/min at 1000VA resistive load (in accordance with IEC 60947-5-1)
Overvoltage capacity:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

7. Measuring circuit

Measured variable:	DC or AC Sinus (16.6 to 400Hz)
Measuring input:	
100mA AC/DC	terminals K-1(+)
1A AC/DC	terminals K-12(+)
10A AC/DC	terminals K-13(+)
Overload capacity:	
100mA AC/DC	800mA
1A AC/DC	3A
10A AC/DC	12A
Input resistance:	
100mA AC/DC	470mΩ
1A AC/DC	47mΩ
10A AC/DC	5mΩ
Switching thresholds:	
Max:	10% to 100% of IN
Min:	5% to 95% of IN
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

8. Accuracy

Base accuracy:	≤5% (of nominal value)
Frequency response:	-10% to +5% (16.6 to 400Hz)
Adjustment accuracy:	≤5% (of maximum scale value)
Repetition accuracy:	≤2%
Voltage influence:	-
Temperature influence:	≤0.05% / °C

9. Ambient conditions

Ambient temperature:	-25 to +55°C
Storage temperature:	-25 to +70°C
Transport temperature:	-25 to +70°C
Relative humidity:	15% to 85% (in accordance with IEC 60721-3-3 class 3K3)
Pollution degree:	2, if built in 3 (in accordance with IEC 60664-1)

10. Weight

Single packing:	140g
-----------------	------

Functions

Overcurrent monitoring (OVER, OVER+Latch)

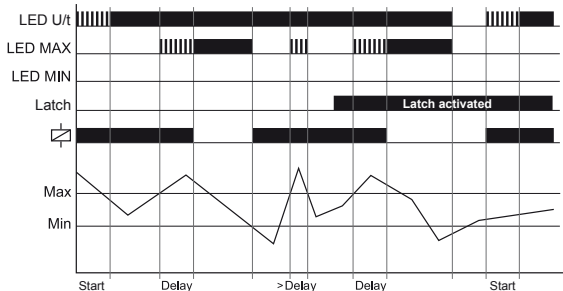
When the supply voltage U is applied, the output relay R switches into on-position and the set interval of the start-up suppression time (Start) begins. During this period, changes of the measured current don't affect the state of the output relay R. When the measured current exceeds the Max-value, the output relay R switches into off-position after the interval of the tripping delay (Delay) has expired.

OVER:

The output relay R switches into on-position again, as soon as the current falls below the Min-value.

OVER+Latch:

The output relay R switches only into on-position again by interrupting and re-applying the supply voltage, provided that the measured current is below the Max-value after the interval of the start-up suppression time has expired.



Window function (WIN, WIN+Latch)

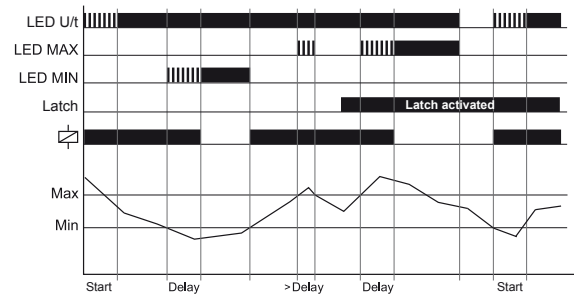
When the supply voltage U is applied, the output relay R switches into on-position and the set interval of the start-up suppression time (Start) begins. During this period, changes of the measured current don't affect the state of the output relay R. When the measured current leaves the window between Min and Max, the output relay R switches into off-position after the interval of the tripping delay (Delay) has expired.

WIN:

The output relay R switches into on-position again, as soon as the measured current reenter the adjusted window.

WIN+Latch:

The output relay R switches only into on-position again by interrupting and re-applying the supply voltage, provided that the measured current is within the threshold values after the interval of the start-up suppression time has expired.



Undercurrent monitoring (UNDER, UNDER+Latch)

When the supply voltage U is applied, the output relay R switches into on-position and the set interval of the start-up suppression time (Start) begins. During this period, changes of the measured current don't affect the state of the output relay R.

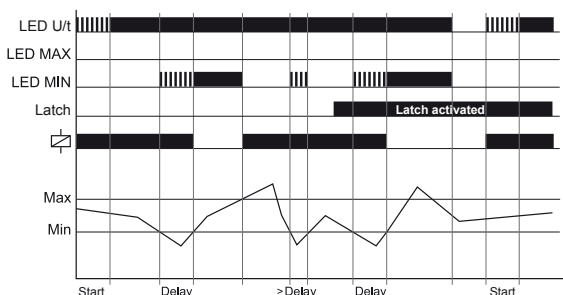
When the measured current falls below the Min-value, the output relay R switches into off-position after the interval of the tripping delay (Delay) has expired.

UNDER:

The output relay R switches into on-position again, as soon as the current exceeds the Max-value.

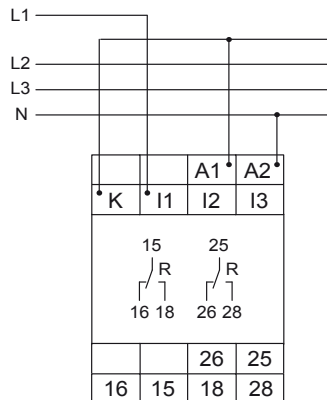
UNDER+Latch:

The output relay R switches only into on-position again by interrupting and re-applying the supply voltage, provided that the measured current is beyond the Min-value after the interval of the start-up suppression time has expired.

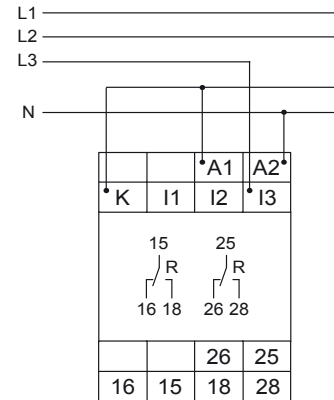


Connections

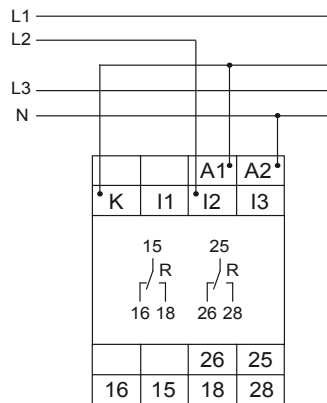
Measuring range 100mA, supply voltage 230V AC



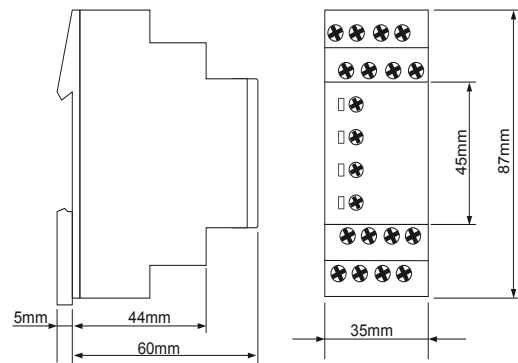
Measuring range 10A, supply voltage 230V AC



Measuring range 1A, supply voltage 230V AC



Dimensions



Ordering Informations

Types	Rated voltage U_N	Functions	Switching thresholds I_s	Part. No.
E3IM10AL20	230V	O, U, W O+L, U+L, W+L	Max. 10% to 100% of I_N Min. 5% to 95% of I_N	1341200

RELEASE 2009/07

Subject to alterations and errors