



AC/DC current monitoring in 1-phase mains

Monitoring relays - ENYA series

Multifunction

2 change over contacts

Width 35 mm

Installation design



Technical data

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:

Overcurrent monitoring **OVER UNDER** Undercurrent monitoring

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

Monitoring the window between Min and Max with WIN+Latch

fault latch

2. Time ranges

Adjustment range Start-up suppression time (Start): 0s to 10s

Tripping delay (Delay):

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

indication of relay output

Yellow LED ON/OFF: 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) AC 48 of 63Hz Rated frequency: 100% Duration of operation:

Reset time: 500ms Wave form: Sinus

Hold-up time: >20% of the supply voltage Drop-out voltage: III (in accordance with IEC 60664-1) Overvoltage category:

Rated surge voltage:

6. Output circuit

2 potential free change over contacts 250V AC Rated voltage:

1250VA (5A / 250V AC) Switching capacity: 5A fast acting Fusing: Mechanical life: 20 x 106 operations Electrical life: 2 x 10⁵ operations

at 1000VA resistive load Switching frequency:

max. 6/min at 1000VA resistive load (in accordance with IEC 60947-5-1) III (in accordance with IEC 60664-1)

Rated surge voltage: 4kV

7. Measuring circuit

Overvoltage capacitiy:

Measured variable: DC or AC Sinus (16.6 to 400Hz)

Measuring input:

100mA AC/DC terminals K-I1(+) 1A AC/DC terminals K-I2(+) 10A AC/DC terminals K-I3(+)

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 5% to 95% of IN Min:

Overvoltage category: III (in accordance with IEC 60664-1)

Rated surge voltage:

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

140g Single packing:

Functions

Overcurrent monitoring (OVER, OVER+Latch)

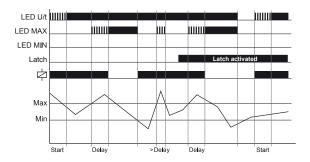
When the supply voltage U is applied, the output relay R switches into on-position and the set interval of the start-up suppression time (Start) begins. During this period, changes of the measured current don't affect the state of the output relay R. When the measured current exceeds the Max-value, the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



Undercurrent monitoring (UNDER, UNDER+Latch)

When the supply voltage \bar{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.

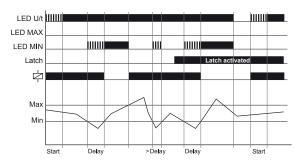
When the measured current falls below the Min-value, the output relay R switches into off-position after the interval of the tripping delay (Delay) has expired.

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.



Window function (WIN, WIN+Latch)

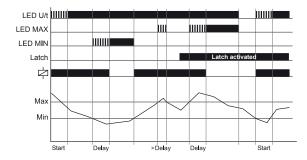
When the supply voltage U is applied, the output relay R switches into on-position and the set interval of the start-up suppression time (Start) begins. During this period, changes of the measured current don't affect the state of the output relay R. When the measured current leaves the window between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

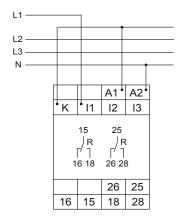
WIN+Latch:

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.

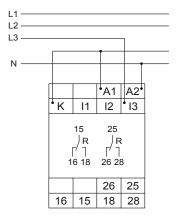


Connections

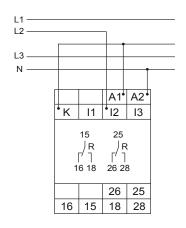
Measuring range 100mA, supply voltage 230V AC



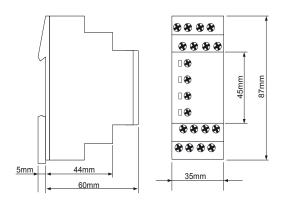
Measuring range 10A, supply voltage 230V AC



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% ofl _N Min. 5% to 95% of I _M	1341200

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Subject to alterations and errors

