

AC/DC current monitoring in 1-phase mains

E3IM10AL20

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	ch Monitoring the window between Min and Max wi		
	fault latch		

Adjustment range

indication of start-up suppression time

indication of tripping delay of the

0s to 10s

0.1s to 10s

indication of supply voltage

indication of failure of the

corresponding threshold

corresponding threshold

indication of relay output

2. Time ranges

Start-up suppression time (Start): Tripping delay (Delay):

3. Indicators

Green LED U/t ON/OFF: Green LED U/t flashes: Red min/max LED ON/OFF:

Red min/max LED flashes:

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:
Terminals:
Tolerance:
Rated consumption:
Rated frequency:
Duration of operation:
Reset time:
Wave form:
Hold-up time:
Drop-out voltage:
Overvoltage category:
Rated surge voltage:

230V AC A1-A2 -15% to +15% of UN 2VA (1.2W) AC 48 of 63Hz 100% 500ms Sinus >20% of the supply voltage

III (in accordance with IEC 60664-1) 4kV

6. Output circuit 2 potential free change over contacts Rated voltage: Switching capacity: Fusing: Mechanical life: Electrical life: Switching frequency: Overvoltage capacitiy: Rated surge voltage: 7. Measuring circuit Measured variable: Measuring input: 100mA AC/DC 1A AC/DC 10A AC/DC Overload capacity: 100mAAC/DC

1A AC/DC 10A AC/DC Input resistance: 100mA AC/DC 1AAC/DC 10A AC/DC Switching thresholds: Max: Min: Overvoltage category: Rated surge voltage:

8. Accuracy

Base accuracy: Frequency response: Adjustment accuracy: Repetition accuracy: Voltage influence: Temperature influence:

9. Ambient conditions

Ambient temperature: Storage temperature: Transport temperature: Relative humidity:

Pollution degree:

10. Weight Single packing:

140g

250V AC 1250VA (5A / 250V AC) 5A fast acting 20 x 10⁶ operations 2 x 10⁵ operations at 1000VA resistive load max. 6/min at 1000VA resistive load (in accordance with IEC 60947-5-1) III (in accordance with IEC 60664-1) 4kV

DC or AC Sinus (16.6 to 400Hz)

terminals K-I1(+) terminals K-I2(+) terminals K-I3(+)

3A 12A 470mΩ 47mΩ 5mΩ

800mA

10% to 100% of IN 5% to 95% of IN III (in accordance with IEC 60664-1) 4kV

≤5% (of nominal value) -10% to +5% (16.6 to 400Hz) ≤5% (of maximum scale value) ≤2% ≤0.05% / °C

-25 to +55°C

-25 to +70°C -25 to +70°C 15% to 85% (in accordance with IEC 60721-3-3 class 3K3) 2. if built in 3 (in accordance with IEC 60664-1)

E3IM10AL20

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 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.



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Connections

Measuring range 100mA, supply voltage 230V AC



Measuring range 1A, supply voltage 230V AC



Measuring range 10A, 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 _N	1341200



Subject to alterations and errors

