Monitoring relays - ENYA series
Multifunction


## 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 <br> WIN+Latch |
|  | Monitoring the window between Min and Max with <br> fault latch |

## 2. Time ranges

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

## Adjustment range

0 s to 10 s
$0,1 \mathrm{~s}$ to 10 s

## 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:
indication of supply voltage indication of start-up suppression time indication of failure of the corresponding threshold indication of tripping delay of the corresponding threshold 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:
$1 \times 0.5$ to $2.5 \mathrm{~mm}^{2}$ with/without multicore cable end
$1 \times 4 \mathrm{~mm}^{2}$ without multicore cable end
$2 \times 0.5$ to $1.5 \mathrm{~mm}^{2}$ with/without multicore cable end
$2 \times 2.5 \mathrm{~mm}^{2}$ 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:
230 V AC
A1-A2
$-15 \%$ to $+15 \%$ of UN
2VA (1.2W)
AC 48 of 63 Hz
100\%
500 ms
Sinus
$>20 \%$ of the supply voltage
III (in accordance with IEC 60664-1)
4 kV
6. Output circuit

2 potential free change over contacts
Rated voltage: $\quad 250 \mathrm{~V}$ AC
Switching capacity: $\quad$ 1250VA (5A / 250V AC)
Fusing:
Mechanical life:
Electrical life:
Switching frequency:
(in accordance wit IEC 60947-5-1)
III (in accordance with IEC 60664-1)
7. Measuring circuit

Measured variable: DC or AC Sinus (16.6 to 400Hz)
Measuring input:
100mAAC/DC terminals K-I1(+)
1AAC/DC
10AAC/DC
Overload capacity:
100mA AC/DC
1AAC/DC
10AAC/DC
Input resistance:
$100 \mathrm{mAAC} / \mathrm{DC}$
1AAC/DC
10A AC/DC
47 me
witching thresholds:
Max:
Min:
Overvoltage category:
$10 \%$ to $100 \%$ of $\operatorname{IN}$
$5 \%$ to $95 \%$ of IN
Rated surge voltage: 4 kV

## 8. Accuracy

Base accuracy:
Frequency response:
Adjustment accuracy:
Repetition accuracy:
Voltage influence:
Temperature influence: $\leq 0.05 \% /{ }^{\circ} \mathrm{C}$
9. Ambient conditions

Ambient temperature: -25 to $+55^{\circ} \mathrm{C}$
Storage temperature: $\quad-25$ to $+70^{\circ} \mathrm{C}$
Transport temperature: -25 to $+70^{\circ} \mathrm{C}$
Relative humidity: $\quad 15 \%$ 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: $\quad 140 \mathrm{~g}$

## 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 offposition 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 100 mA , supply voltage 230 V AC


Measuring range 1 A , supply voltage 230 V AC


Measuring range 10A, supply voltage 230 V AC


## Dimensions



## Ordering Informations

| Types | Rated voltage $U_{N}$ | Functions | Switching thresholds $I_{s}$ | Part. No. |
| :--- | :--- | :--- | :--- | :--- |
| E3IM10AL20 | 230 V | $\mathrm{O}, \mathrm{U}, \mathrm{W}$ | Max. $10 \%$ to $100 \%$ ofl | 1341200 |
|  |  | O+L, U+L, W+L | Min. $5 \%$ to $95 \%$ of $\mathrm{I}_{\mathrm{N}}$ |  |

