Voltage monitoring in 3-phase mains with VDE 0126-1-1

E3YF400VFAL02

Monitoring relays - ENYA series

Quick net error recognition

Supply voltage = measured voltage

2 change over contacts

Width 35mm

Installation design

Technical data

1. Functions
Voltage monitoring in 3-phase mains in accordance with VDE 0126-1-1 with fixed tripping delay, fixed threshold, adjustable 10-minutes-average and selectable fault latch by means of rotary switch.

WIN	Monitoring the fixed adjusted range
WIN+Latch	Monitoring the fixed adjusted range with fault latch

2. Time ranges

	Adjustment range
Tripping delay (ON-Delay):	fixed, 30s
Switch-off delay:	
U ≤ 80% of UN	< 200ms
U ≥ 115% of UN	< 200ms
phase failure	< 20ms

3. Indicators

Green LED ON/OFF:	indication of supply voltage
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 50022
Mounting position: any
Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20
Tightening torque: max. 1Nm
Terminals 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:	(= measured voltage)
Terminals:	(N)-L1-L2-L3
Rated voltage UN:	see table ordering information or printing on the unit
Tolerance:	-30% to +30% of UN
Rated consumption:	11VA (1,2W)
Rated frequency:	AC 48 to 63Hz
Duty cycle:	100%
Reset time:	500ms
Hold-up time:	-
Drop-out voltage:	determined by measuring function (see measuring circuit)
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 AC1 B300/P300 (in accordance with IEC 60947-5-1) therm. constant current 5A
Fusing:	5A fast acting
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)
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

7. Measuring circuit

Measured variable:	3(N)~, sinus, 48 to 63Hz
Measured input:	(= supply voltage)
Terminals:	(N)-L1-L2-L3
Overload capacity:	determined by tolerance specified for supply voltage
Input resistance:	-
Switching threshold Us:	see table ordering information or printing on the unit
10-minutes-average:	see table ordering information or printing on the unit
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

8. Accuracy

Base accuracy:	≤5% (of nominal value)
Adjustment accuracy:	-
Repetition accuracy:	≤2%
Voltage influence:	-
Temperature influence:	≤0,05% / °C

9. Ambient conditions

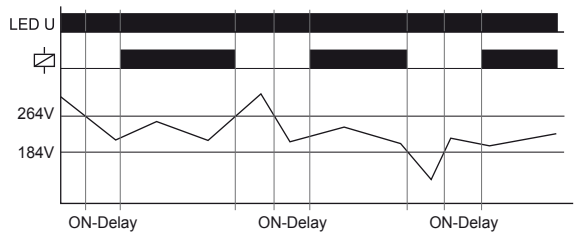
Ambient temperature:	-25 to +55°C
Storage temperature:	-25 to +70°C
Transport temperature:	-25 to +70°C
Relative humidity:	15% to 85% (in accordance with IEC 60721-3-3 class 3K3)
Pollution degree:	2, if built in 3 (in accordance with IEC 60664-1)

10. Weight

Single packing:	94g

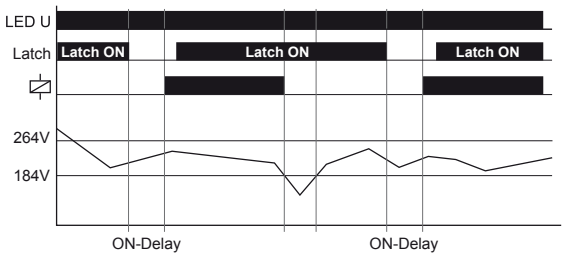
Functions

Window function WIN:
When the supply voltage U is applied, the output relay R switches into on-position after the set interval of the tripping delay (ON-Delay) has expired and if the measured voltage is within the fixed adjusted window. When the measured voltage leaves the window between the fixed adjusted range, the output relay R switches into off-position
If the voltage reenter the adjusted window, the output relay R switches into on-position after the set interval of the tripping delay (ON-Delay) has expired.

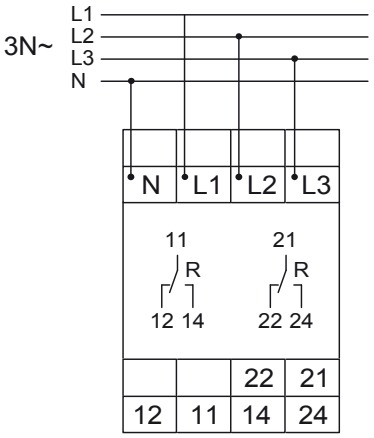


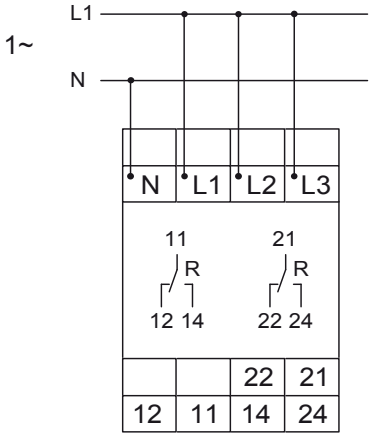
10-minute-average
The 10-minute average functions as a monitoring of the voltage quality. A floating average over 10 minutes will be measured at each input voltage. The output relay R switches into off if the floating average is exceeded.

WIN+Latch:
When the supply voltage U is applied, the output relay R **doesn't switch** into on-position indepentend of the measured voltage!
The fault latch must be deactivated (turn the function selection switch to the left = Latch OFF), so that the output relay switches into on-position. When the measured voltage is within the fixed adjusted window, the output relay R switches into on-position after the set interval of the tripping delay (ON-Delay) has expired. As soon as the output relay R is into on-position, the fault latch can be activated (turn the function selection switch to the right = Latch ON). Now the unit is in the monitoring mode with restart lockout.

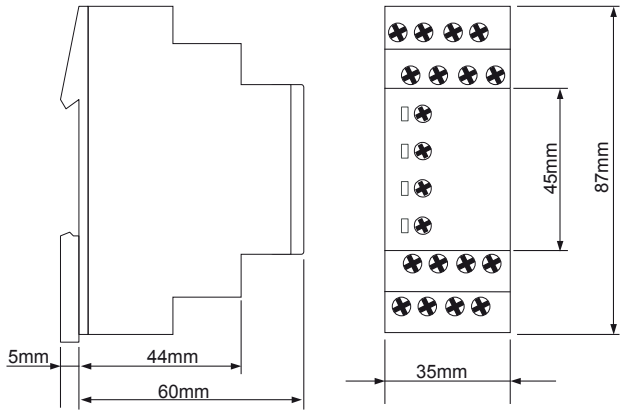


Connections





Dimensions



Ordering Informations

Types	Rated voltage U_N	Switching thresholds U_S	10-minutes-average	Part. No.
E3YF400VFAL02	3(N)-400/230V	fixed 0,8 x U_N (164V) fixed 1,15 x U_N (264V)	1,1 x U_N to 1,15 x U_N (253V to 264V)	1341400

RELEASE 2009/07