Voltage monitoring in 3-phase mains

E3YF

Monitoring relays - ENYA series

Undervoltage monitoring

Supply voltage = measured voltage

2 change over contacts

Width 35 mm

Installation design



Technical data

1. Functions
Undervoltage monitoring in 3-phase mains (each phase against the neutral wire) with fixed adjustable threshold and fixed adjustable hysteresis.

2. Time ranges

	Adjustment range
Tripping delay:	fixed, approx. 200ms

3. Indicators
Type E3YF400V02 0.85:
Green LED ON/OFF: indication of supply voltage
Yellow LED ON/OFF: indication of relay output

Type E3YF400VT02 0.85:
Green LED L1 ON/OFF: indication of supply voltage L1-N
Green LED L2 ON/OFF: indication of supply voltage L2-N
Green LED L3 ON/OFF: indication of supply voltage L3-N
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:	(= measured voltage)
Terminals:	N-L1-L2-L3
Rated voltage U_N:	see table ordering information or printing on the unit
Tolerance:	-30% to +30% of U_N
Rated consumption:	11VA (1,2W)
Rated frequency:	a.c. 48 to 63Hz
Duty cycle:	100%
Reset time:	500ms
Hold-up time:	-
Drop out voltage:	determined by undervoltage detection (see measured circuit)
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	6kV

6. Output circuit
2 potential free change over contacts

Rated voltage:	250V a.c.
Switching capacity:	1250VA (5A / 250V)
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 category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	6kV

7. Measuring circuit

Measuring variable:	a.c. sinus, 48 to 63Hz
Measuring input:	(= supply voltage)
Terminals:	N-L1-L2-L3
Overload capacity:	determined by tolerance specified for supply voltage
Input resistance:	-
Switching threshold U_S:	fixed 195,5V
Hysteresis H:	approx. 5%
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	6kV

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 (in accordance with IEC 60664-1)

10. Weight

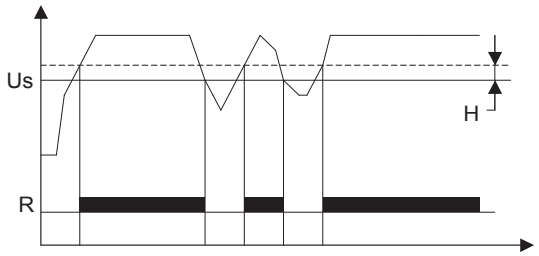
Single packing:	109g

Functions

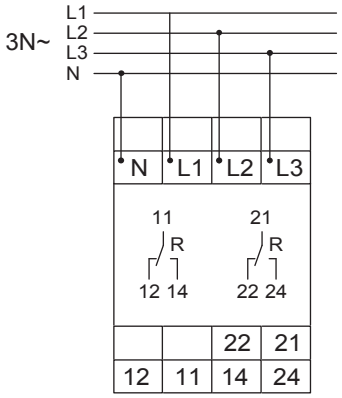
Undervoltage monitoring for 3-phase a.c. mains with fixed adjustable switching threshold and fixed adjustable hysteresis.
All measuring inputs (L1, L2 and L3) must be connected to phase voltage. If single or 2-phase monitoring is required, unused input terminals (L) must be connected to mains voltage to have proper L-N voltage on the terminals L1, L2 and L3. A phase failure can not be detected, if the reverse voltage coming from the load exceeds the threshold U_S.

Test function (optional)
The test function enables a manually disconnection of the output relay.

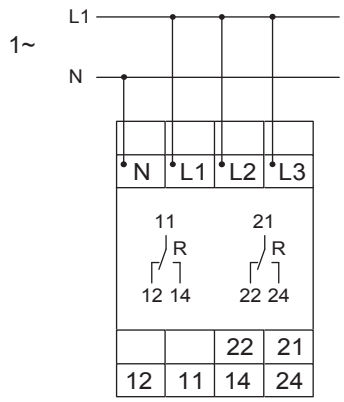
Undervoltage monitoring
The output relay R switches into on-position (yellow LED illuminated), when the measuring voltage of all connected phases exeeds the fixed threshold by more than the fixed hysteresis. When the voltage of one of the connected phases falls below the fixed threshold, the output relay R switches into off-position again (yellow LED not illuminated).



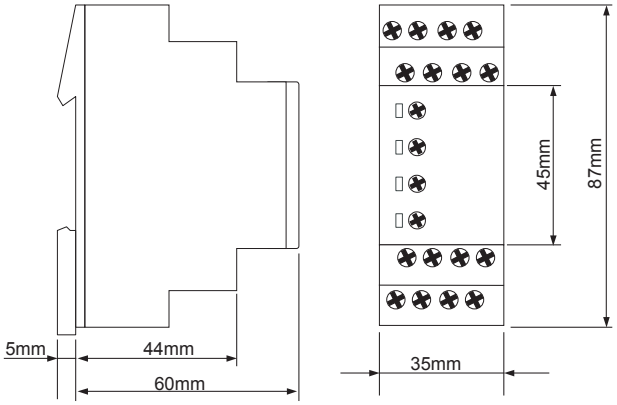
Connections



Connections



Dimensions



Ordering information

Types	Rated voltage U_N	Switching threshold U_S	Options	LEDs	Part No.
E3YF400V02 0.85	3(N)~400/230V in accordance with VDE 0108	fixed 195,5V (L-N)	-	U, Rel.	1341401
E3YF400VT02 0.85	3(N)~400/230V in accordance with VDE0 108	fixed 195,5V (L-N)	Test function	L1, L2, L3, Rel.	1341402

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Subject to alterations and errors