Data Sheet for Article: UR5U3M11--

Voltage monitoring relay 3-ph. against N, adjustable min/max

Schrack Info

- Voltage monitoring in 3-phase and 1-phase systems
- Monitoring of phase failure and phase sequence (selectable)
- Adjustable MIN/MAX switching thresholds and adjustable trigger delay
- Connection of neutral wire optional

Technical Data

Min. ambient temperature (°C)	-25
Max. ambient temperature (°C)	55
Series	UR5
Product standard	EN 61000-6-2:2005 EN 61000-6-3:2007 + A1:2011 EN 50178:1997
Module units	1 (17,5 mm)
Version	DIN-rail
IP Rating	IP40 (housing), IP20 (connections)
Mounting position	any
Rated voltage	250V/400V-AC (=Mesuring input)
Supply voltage AC (V)	230V/400V-AC

Technical Data - continued

Terminal labeling	(N)-L1-L2-L3
Tolerance	-30% to +30% of Un
Rated consumption	8VA (1W)
Frequency range	48 to 63Hz
Duty factor (% DF)	100%
Recovery time	500ms
Drop-out voltage AC	>20% of supply voltage
Output	
Switching contacts	1 CO
Switching capacity (kW)	1250VA (5A / 250V)
Rated voltage [Resistive load]	250V - AC
Fusing	5A flink
Lifespan, mechanical	20 x 10^6 operations
Lifetime, electric	200000 operations at 1000VA resistive load
Switching capacity [Resistive]	max. 6/ min (1000VA) - IEC 60947-5-1
Measurand	3(N)~, sinus, 48 to 63Hz
Overload limiting	-30% to +30% of Un
Switching threshold	Min: Us= (70% - 120%)Un Max: Us=(80% - 130%)Un
Accuracy	Base accuracy: ≤5% of nominal value Adjustment accuracy: ≤5% of maximum scale value Repetition accuracy: ≤2%
Temperature influence (°C)	≤0,05% / °C
Temperature range - Operation (°C)	-25 to +55
Temperature range - Transport/storage (°C)	-25 to +70
Humidity (%)	15% bis 85% (in accordance with IEC 60721-3-3 class 3K3)
Pollution degree	(in accordance with IEC 60664-1)
Overvoltage category	III (IEC 60664-1)
Rated impulse withsand voltage [Uimp] (V)	4 kV

Functions

UNDER	Undervoltage monitoring
UNDER+SEQ	Undervoltage monitoring and monitoring of phase sequence
WIN	Monitoring the window between Min and Max
WIN+SEQ	Monitoring the window between Min and Max and monitoring of phase sequence

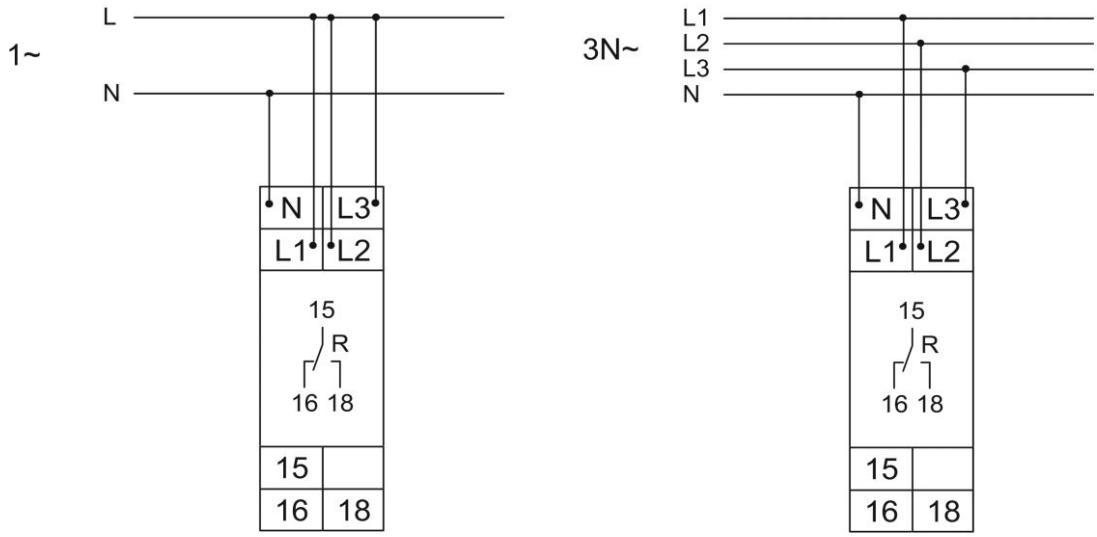
Indicators

Red LED ON/OFF	Indication of failure of the corresponding threshold
Red LED flashes	Indication of tripping delay of theorresponding threshold
Yellow LED ON/OFF	Indication of relay output

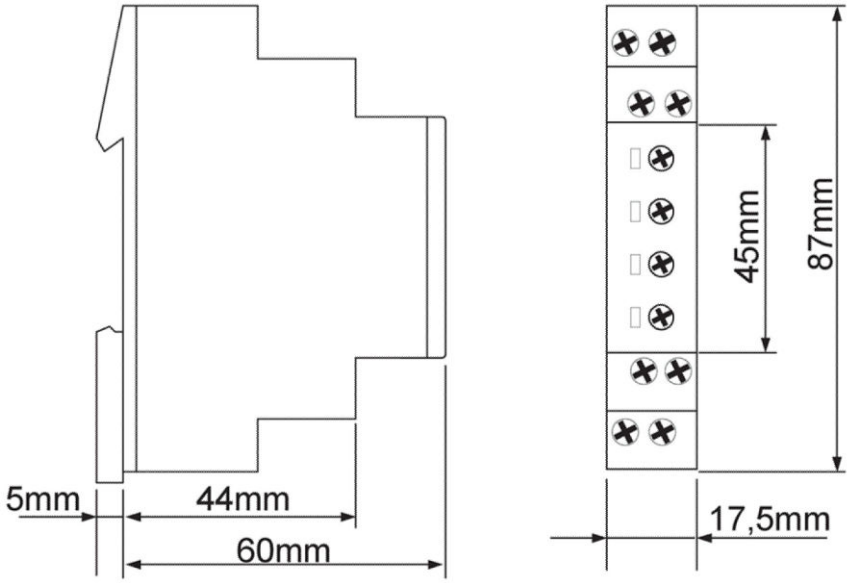
Terminals capacity

1 x 0.5 bis 2.5mm²	with/without multicore cable end
1 x 4mm²	without multicore cable end
2 x 0.5 bis 1.5mm²	with/without multicore cable end
2 x 2.5mm²	flexible without multicore cable end
Tightening torque:: max. 1Nm	
Shockproof terminal connection according to VBG 4 (PZ1 required)	

Connection diagrams

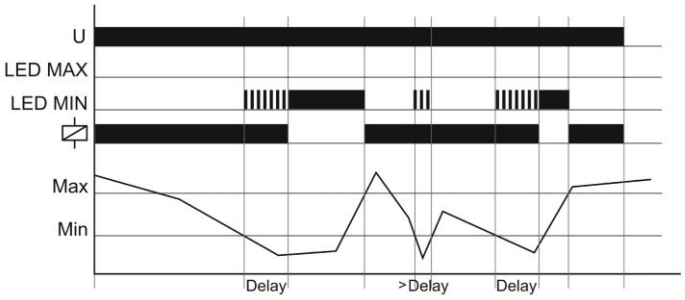


Dimensions

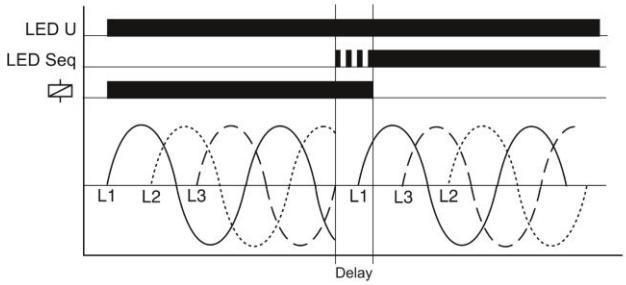


Functions - Diagrams

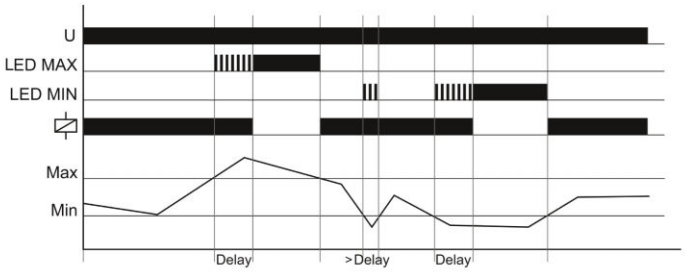
Undervoltage monitoring (UNDER, UNDER+SEQ)



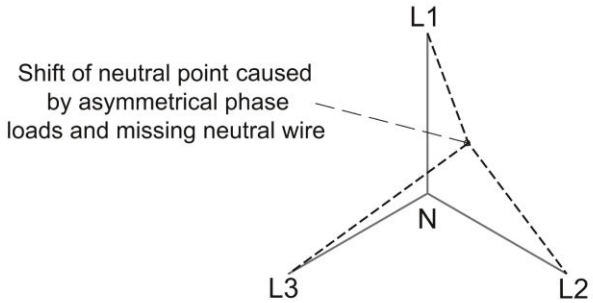
Phase sequence monitoring (SEQ)



Windowfunction (WIN, WIN+SEQ)



Neutral wire break



Functions - Description

For all functions the LED's Min and Max are flashing alternating (the relay is fallen off), when the minimum value for the measured voltage was chosen to be greater than the maximum value.If a failure already exists when the device is activated, the output relay remains in off-position and the LED for the corresponding threshold is illuminated.
The device includes seperately every phase voltage (L-N) and monitors it according to the selected function (UNDER or WINDOW).

Undervoltage monitoring (UNDER, UNDER+SEQ)

When the measured voltage (one of the phase voltages) falls below the value adjusted at the Min-regulator, the set interval of the tripping delay (Delay) begins (red LED Min flashes). After the interval has expired (red LED Min illuminated), the output relay R switches into off-position (yellow LED not illuminated). The output relay R switches into on position again (yellow LED illuminated), when the measured voltage (all phase voltages) exceeds the value adjusted at the Max-regulator

Windowfunction (WIN, WIN+SEQ)

The output relay R switches into on-position (yellow LED illuminated), when the measured voltage (all phase voltages) exceeds the value adjusted at the Min-regulator. When the measured voltage (one of the phase voltages) exceeds the value adjusted at the Max-regulator, the set interval of tripping delay (Delay) begins (red LED Max flashes).
After the interval has expired (red LED Max illuminated) the output relay R switches into off-position (yellow LED not illuminated). The output relay switches into on-position again (yellow LED illuminated) when the measured voltage falls below the value adjusted at the Max-regulator (red LED Max not illuminated). When the measured voltage (one of the phase voltage) falls below the value adjusted at the Min-regulator, the set interval of tripping delay (Delay) begins again (red LED Min flashes). After the interval has expired (red LED Min illuminated), the output relay R switches into off-positon (yellow LED not illuminated).

Phase sequence monitoring (SEQ)

Phase sequence monitoring is selectable for all functions. In single phase circuit, the phase sequence monitoring must be disconnected. If a change in phase sequence is detected (red LED SEQ illuminated), the output relay R switches into off-position after the set interval of tripping delay (Delay) has expired (yellow LED not illuminated).

Neutral wire break

The device monitors every phase (L1, L2 and L3) against the neutral wire N. A shift of neutral point occurs by an asymmetrical phase load if the neutral wire breaks in the power line. If one of the phase voltages exceeds the value adjusted at the trip point, the set interval of tripping delay (Delay) begins (red LED Min or Max flashes). After the interval has expired (red LED Min or Max illuminated), the output relay switches into off-position (yellow LED not illuminated).

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