



# 3-phase voltage monitoring relays



→ 3-phase voltage supervision in AC networks

→ Datasheet

### → Under and over voltage supervision with EUW 3

- › Voltage monitoring per single phase
- › Switching thresholds adjustable
- › Monitoring for asymmetry, phase failure and phase sequence
- › Operation display and signal contacts designed as potential-free double changeover contacts

The EUW 3 supervises three-phase networks on under and overvoltage, in which both switching points can be independently adjusted by each other. Overranging has to be avoided. The supervision is separately carried out for every phase so that the actual asymmetry or even phase failure is recognized. In addition direction of rotation (phase sequence) and neutral wire break is monitored. Every error is shown by the corresponding red LED lighting up. In the normal operation the output relay is pulled on and the power light (green LED) lights up. In the fault case as well as at loss of the supply voltage the relay drops off and the operating light goes out. The inserted hysteresis prevents the permanent condition change by varying measuring voltage around a switching point. With the from each other separated adjustable response and release delays short net break downs or asymmetries can be avoided specific on switching on actions.

### → Technical data EUW 3

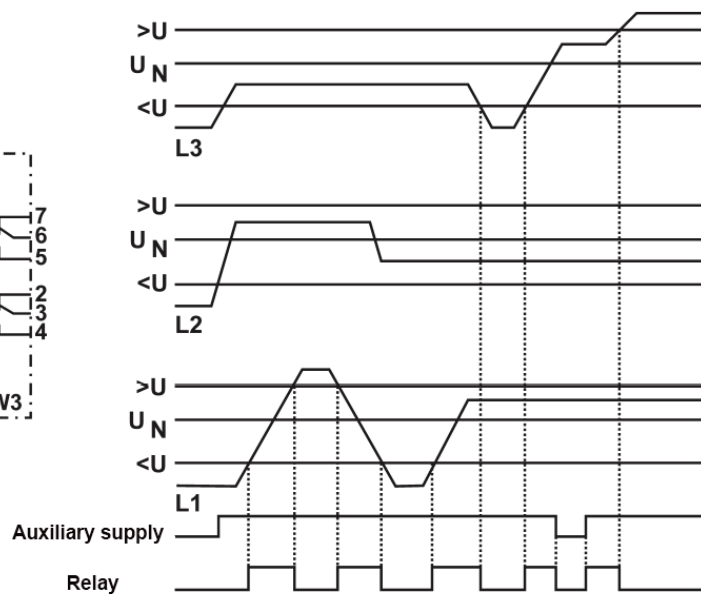
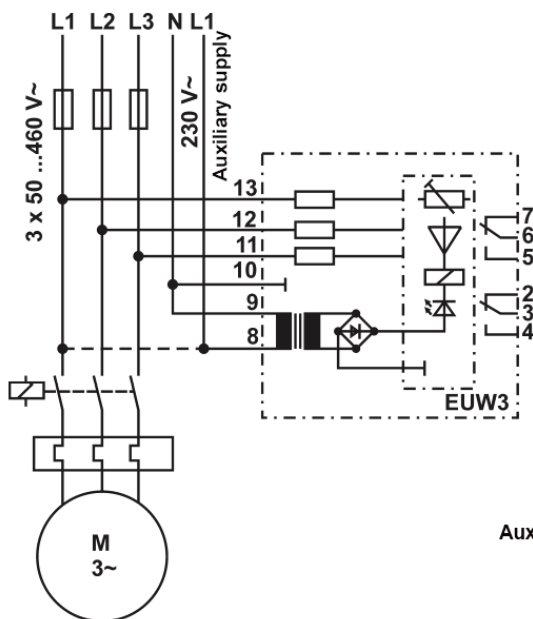
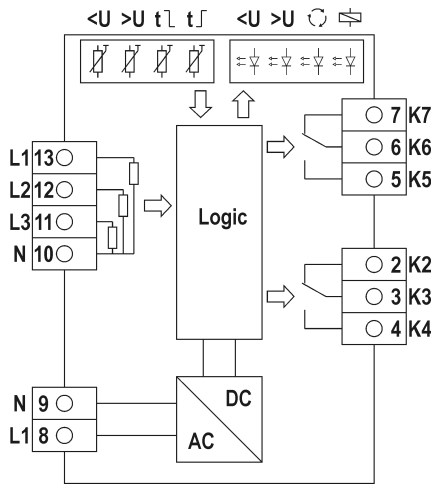
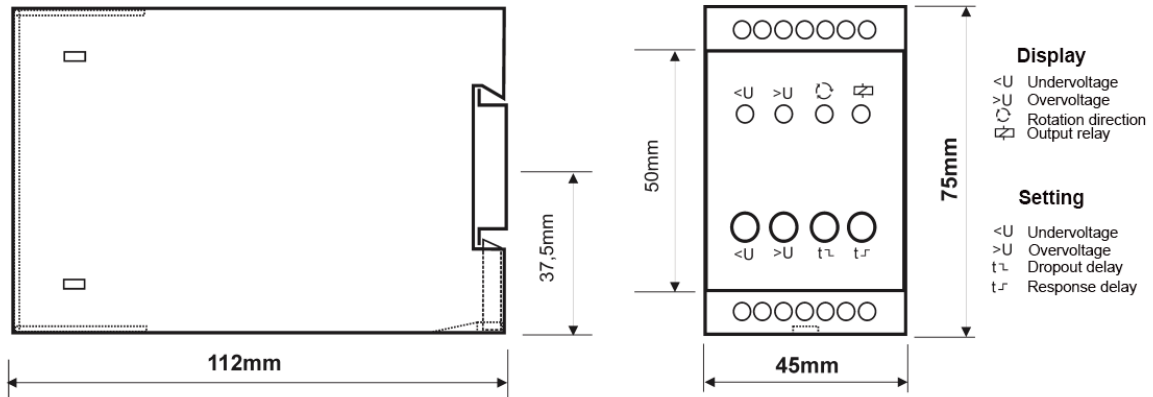
Article No.	11EUW3000U
Supply voltage	
Nominal voltage	230 V 50/60 Hz
Voltage range	195 ... 253 V
Power consumption	≤ 1,5 VA
Monitoring inputs	
Voltage range	50 ... 460 V 50/60 Hz, adjustable
Max. input current	≤ 0,5 mA
Switching hysteresis	≤ 6%
Switching accuracy	≤ 4%
Monitoring criterias	Under and overvoltage, phase failure, phase sequence
Relay outputs	
Voltage range	0 ... 250 V AC/DC
Max. load current	4 A @ 0 ... 250 V AC 50/60 Hz 4 A @ 0 ... 24 V DC
Response delay	0,2 ... 10 s, adjustable
Displaying elements	3 red LED's for <ul style="list-style-type: none"> <li>• Under voltage</li> <li>• Over voltage</li> <li>• Direction of rotation</li> </ul> 1 green LED for operation indication
Ambient conditions	
Operation temperature	-20°C ... +60°C non condensing
Max. rel. humidity	Maximum 75% average mean
Mechanical data	
Connection terminals	Screw terminals
Dimensions (H x W x D) [mm]	75 x 45 x 110
Mounting	on C-DIN rail nach = acc. to EN 50022-35
Weight	approx. 0,3 kg

If not indicated differently, the data refer to a sinusoidal alternating voltage with a frequency of 50/60 hz.

Custom-built models and special voltage on enquiry.



→ Dimensional drawing, terminal assignment and application of the EUW3



## → Sub-voltage supervision with EUW 4

- › Voltage monitoring per single phase
- › Switching thresholds adjustable or optionally fixed
- › Monitoring for asymmetry, phase failure and neutral conductor breakage
- › Operating display and signal contacts designed as potential-free double changeover contacts

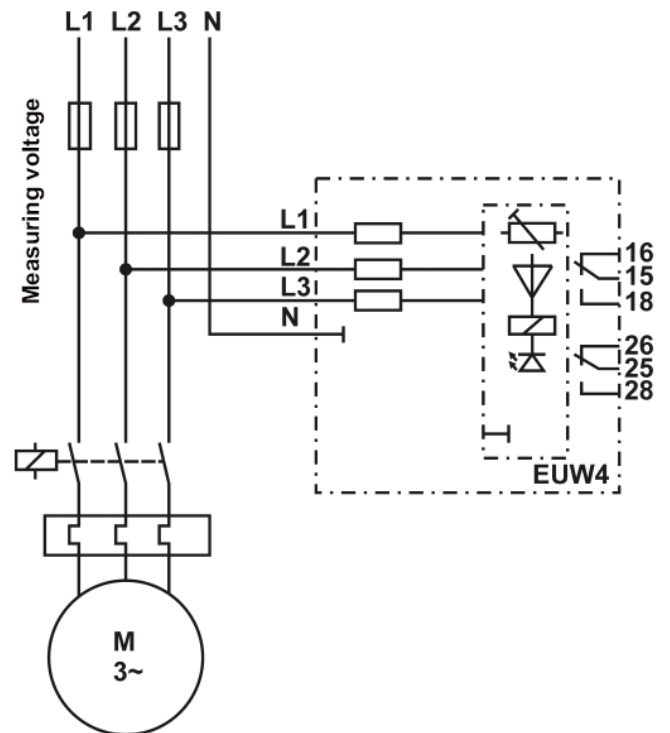
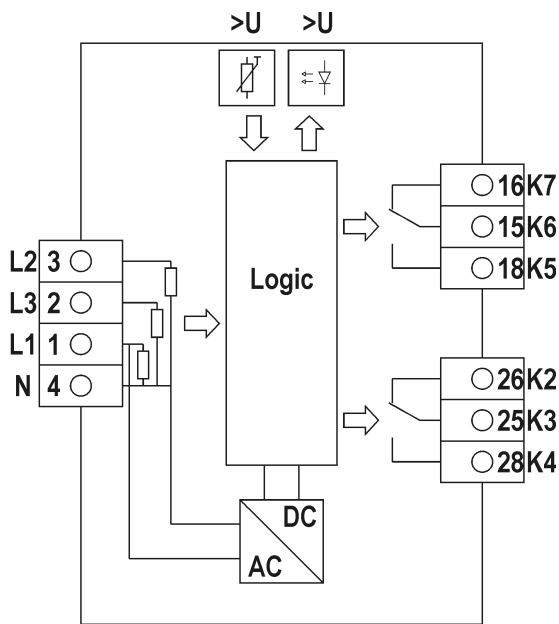
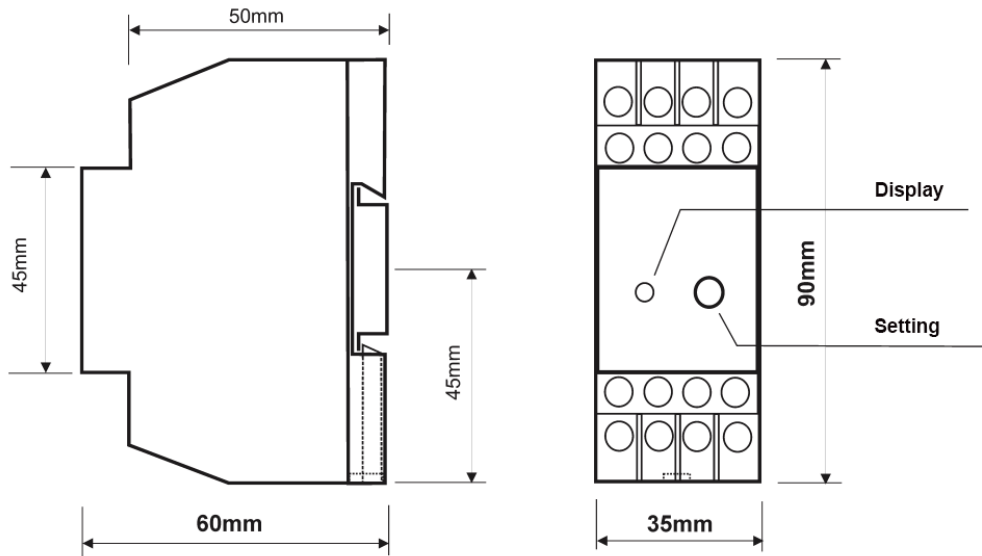
The EUW 4 supervises three-phase networks on undervoltage. The supervision isn't carried out only for the mean average value of the voltage but for every phase separately. By this means an asymmetry of the phases or even phase failures become recognized. The switching threshold is, depending on design variant either fixed or by a frontal potentiometer adjustable. In addition the neutral wire is supervised on wire breakage. At measuring voltages above the switching point the output relay is pulled in with 2 change-over contacts and the operating light (green LED) shines. When one or several phase voltages sink below the switching point, the relay drops off and the operating light goes out. The inserted hysteresis prevents the permanent condition change by varying measuring voltage around the switching point.

## → Technical data EUW 4

Article No.	11EUW4000Q	11EUW4000U	11EUW4000U2	11EUW4SA0S
Supply voltage	The supply voltage of the monitoring relays is carried out of the measuring voltage. An auxiliary voltage is not necessary.			
Monitoring inputs				
Measuring voltage	Phase - phase	Phase - phase	Phase - phase	Phase - neutral wire
Voltage range	3 x 80 ... 120 V*	3 x 270 ... 420 V*	3 x 185 ... 345 V*	3 x 100 ... 115 V*
Switching threshold	3 x 70 ... 105 V*	3 x 240 ... 400 V*	3 x 160 ... 300 V*	fixed 3 x 30 V*
max. power consumption	< 1,3 VA	< 2,3 VA @ 350 V** < 3,5 VA @ 460 V**	< 2,3 VA @ 265 V** < 3,8 VA @ 345 V**	approx. 1,4 VA**
Switching hysteresis	≤ 7 %	≤ 7 %	≤ 8 %	approx. 4 %
Switching accuracy	< 8 %	< 3 %	< 3 %	approx. 2 %
Monitoring criteria	Undervoltage, phase failure			
Relay drops at	Undervoltage or failure of <u>one</u> phase		Undervoltage or failure of <u>all 3</u> phases	
Response delay	(phase failure / neutral wire brake) 50 ms (Asymmetry of one phase about 20%) 150 ms			
Displaying elements	green LED for operation indication			
Operating conditions	- for 3-Phase mains with neutral wire or star-wiring - suitable for automatic switching on safety lighting acc. to VDE 0108			
Ambient conditions				
Operating temperature	-20°C ... +50°C non condensing			
Max. rel. humidity	Maximum 75% average mean			
Load on relays contacts	4 A @ 0 ... 250 V AC* and 0 ... 24 V DC 1 A @ 60 V DC 0,3 A @ 110 V DC 0,1 A @ 250 V DC			
Alternating dielectric strength between measuring inputs and relay contacts as well as between neighboring relay contacts	2,5 KV <sub>eff</sub> 50 Hz 1 min			
Alternating dielectric strength of open relays contacts	1,0 KV <sub>eff</sub> 50 Hz 1 min			
Mechanical data				
Connection terminals	Screw terminals			
Dimensions (H x W x D) [mm]	90 x 35 x 58			
Mounting	On C-DIN rail acc. to EN 50022-35; suitable for mounting in distribution cabinet			
Weight	approx. 0,2 kg			



→ Dimensional drawing, terminal assignment and application of the EUW4



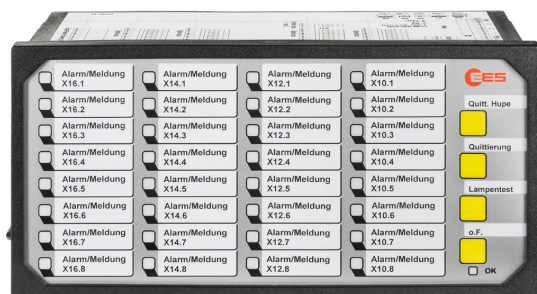
Dimensions in mm  
Subject to technical changes  
without prior notice.

### → Ordering code

#### Voltage monitoring relays

Article number	Short description
11EUW33000U	Under- and overvoltage 50 ... 460 V 50/60 Hz, switching points adjustable
11EUW400Q	Undervoltage 80 ... 120 V 50/60 Hz, switching point adjustable
11EUW4000U	Undervoltage 270 ... 420 V 50/60 Hz, switching point adjustable
11EUW400U2	Undervoltage 185 ... 345 V 50/60 Hz, switching point adjustable
11EUWSA0S	Undervoltage 100 ... 115 V 50/60 Hz, switching point 30 V

### → Are you already familiar with our fault annunciating systems?



- Panel mounting housing with low depth
- Versions with 8, 16, 32 and 48 signal inputs
- Closed front surface, protection class IP 54
- Integrated buttons, function inputs and relay outputs
- Self-monitoring
- Optional DIN rail modules for ZLT contacts
- Optional software parameterization via PC
- Realization of all common signalling sequences
- Signaling and operating voltage ranges 12 V ... 250 V AC/DC
- Extremely bright LEDs with large reading angle and in many colors
- Pluggable screw terminals
- Insertion pockets for individual labeling of LEDs and buttons

### → Contact

Elektra Elektronik GmbH & Co Störcontroller KG | Hummelbühl 7-9 | 71522 Backnang | Germany  
Tel. +49 (0) 7191.182-0 | Fax. +49 (0) 7191.182-200 | info@ees-online.de | www.ees-online.de