

## MONITORING RELAY MMR, 5SV8



MMR-U3-001-A230



MMR-X3-001-A230

### Voltage monitoring relays MMR-U3

- For overvoltage, undervoltage, phase failure monitoring.
- The relay is equipped with an output make-and-break contact 8 A.
- It can be also used for one-phase circuits.
- Overvoltage and undervoltage monitoring can be switched off separately. Then the relay reacts only to phase failure only.
- Adjustable time delay  $0 \div 10$  s.
- Light indication of presence of supply voltage (green LED).
- Closing of contact 15-18 (red LED).

Type	Order code	Number of modules	Weight [kg]	Package [pcs]
MMR-U3-001-A230	OEZ:43244	1	0.091	1

### Voltage monitoring relays MMR-X3

- For overvoltage, undervoltage, phase failure, phase sequence and asymmetry monitoring.
- The relay is equipped with an output make-and-break contact 8 A.
- Overvoltage, undervoltage and asymmetry monitoring can be switched off separately. Then the relay reacts only to phase sequence and phase failure only.
- Adjustable time delay  $0 \div 10$  s.
- Light indication of presence of supply voltage (green LED).
- Closing of contact 15-18 (red LED).

Type	Order code	Number of modules	Weight [kg]	Package [pcs]
MMR-X3-001-A230	OEZ:43245	1	0.091	1

## MONITORING RELAY MMR, 5SV8

### Description of MMR-U3

#### Indication of presence of supply voltage

- Supply voltage presence is indicated by continuously lighting green LED.

#### Error indication

- Red LED.
- 1 blink... error in phase 1.
- 2 blinks... error in phase 2.
- 3 blinks... error in phase 3.

#### Terminals L1, L2, L3 and N for connection of the monitored voltage

- $U_c$ : AC 230/400 V.
- In 1-phase application, connect the terminals L1, L2 and L3.

#### Overtolerance level setting

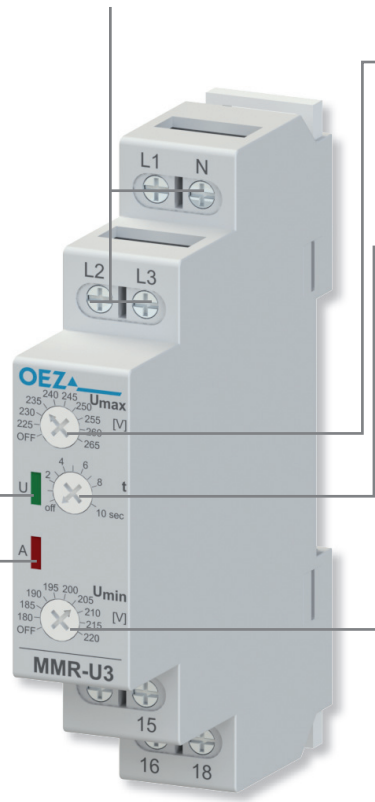
- Range AC 225 ÷ 265 V step 5 V.
- It can be switched off.

#### Setting of delay of reaction to error

- Range 0 ÷ 10 s step 1 s.
- It can be switched off.

#### Undervoltage level setting

- Range AC 180 ÷ 220 V step 5 V.
- It can be switched off.



### Description of MMR-X3

#### Indication of presence of supply voltage

- Supply voltage presence is indicated by continuously lighting green LED.

#### Error indication

- Red LED.
- 1 blink... error in phase 1.
- 2 blinks... error in phase 2.
- 3 blinks... error in phase 3.

#### Undervoltage level setting

- Range AC 180 ÷ 220 V step 5 V.
- It can be switched off.

#### Terminals L1, L2, L3 and N for connection of the monitored voltage

- $U_c$ : AC 230/400 V.

#### Overtolerance level setting

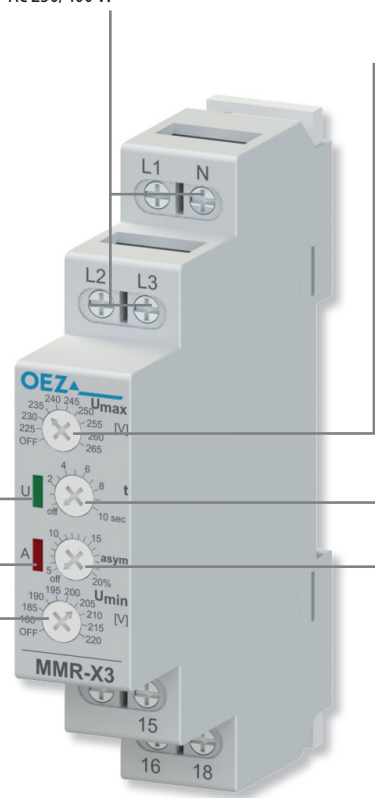
- Range AC 225 ÷ 265 V step 5 V.
- It can be switched off.

#### Setting of delay of reaction to error

- Range 0 ÷ 10 s step 1 s.
- It can be switched off.

#### Asymmetry size setting

- Range 5 ÷ 20 % step 1 %.
- It can be switched off.



# MONITORING RELAY MMR, 5SV8

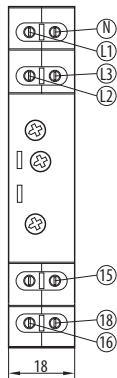
## Specifications

Type			MMR-U3	MMR-X3
Standards			EN 60255-1 IEC 60255-1	EN 60255-1 IEC 60255-1
Approval marks			<b>CE EAC</b>	<b>CE EAC</b>
<b>Main circuit (contact)</b>				
Arrangement of contacts <sup>1)</sup>			001	001
Rated operating voltage/proud	U <sub>e</sub> /I <sub>e</sub>	AC-1	250 V / 8 A	250 V / 8 A
Max. switched power	AC-1		2 000 VA	2 000 VA
	AC-3		200 W	200 W
	AC-5b		200 W	200 W
Max. switched voltage			AC 400 V	AC 400 V
Connection – conductor rigid and flexible			0.2 ÷ 2.5 mm <sup>2</sup>	0.2 ÷ 2.5 mm <sup>2</sup>
Torque			0.5 Nm	0.5 Nm
Mechanical endurance			3 000 000 operating cycles	3 000 000 operating cycles
Electrical endurance			10 000 operating cycles	10 000 operating cycles
<b>Supply circuit</b>				
Rated voltage	U <sub>c</sub>		AC 230 V	AC 230 V
Input power			max. 1.5 VA	max. 1.5 VA
Supply voltage indication			green LED	green LED
Rated frequency	f <sub>n</sub>		50 Hz	50 Hz
Connection – conductor rigid and flexible			0.2 ÷ 2.5 mm <sup>2</sup>	0.2 ÷ 2.5 mm <sup>2</sup>
Torque			0.5 Nm	0.5 Nm
<b>Measuring circuit</b>				
Monitored voltage			AC 230/400 V	AC 230/400 V
Error indication			red LED	red LED
Adjustable delay			0 s ÷ 10 s	0 s ÷ 10 s
Adjustable undervoltage level			180 ÷ 220 V	180 ÷ 220 V
Adjustable overvoltage level			225 ÷ 265 V	225 ÷ 265 V
Adjustable value of asymmetry			-	5 ÷ 20 %
Method of setting			control knobs on the front panel	control knobs on the front panel
Connection – conductor rigid and flexible			0.2 ÷ 2.5 mm <sup>2</sup>	0.2 ÷ 2.5 mm <sup>2</sup>
Torque			0.5 Nm	0.5 Nm
<b>Other data</b>				
Galvanic isolation	input/output		4 kV	4 kV
Mounting on "U" rail according to EN 60715 – type			TH35	TH35
Degree of protection			IP20	IP20
Ambient temperature			-20 ÷ +55 °C	-20 ÷ +55 °C
Working position			arbitrary	arbitrary

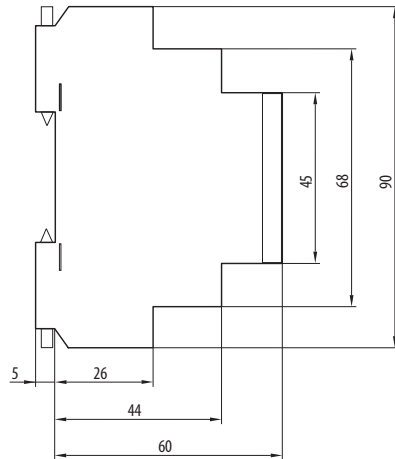
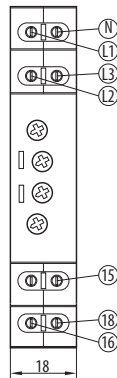
<sup>1)</sup> Each digit indicates successively the number of make and break contacts.

## Dimensions

MMR-U3-...

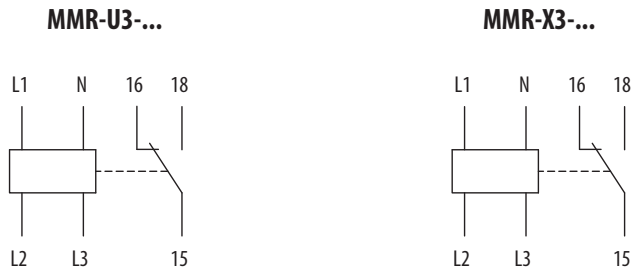


MMR-X3-...



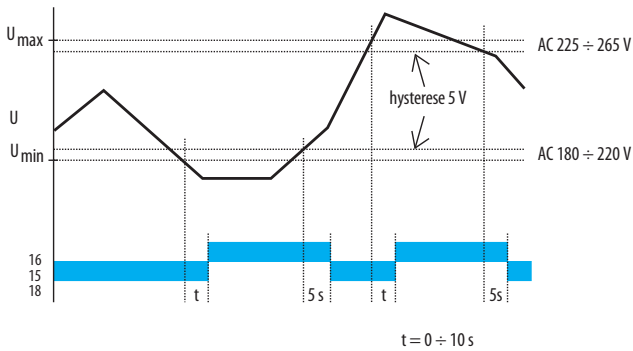
# MONITORING RELAY MMR, 5SV8

## Diagram

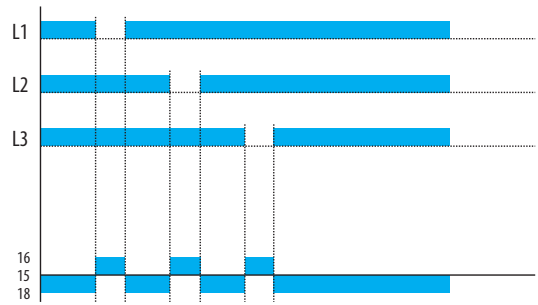


## Graph

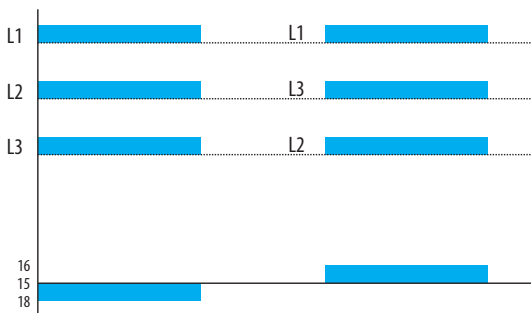
Monitoring of overvoltage and undervoltage MMR-U3, MMR-X3



Phases failure monitoring MMR-U3, MMR-X3



Monitoring of phase sequence MMR-X3



Asymmetry monitoring MMR-X3

