

# 1-phase voltage monitoring relay

## EMR SU21M, SU21N



EMR SU21M



EMR SU21N

- ac voltage monitoring in 1-phase mains
- Measuring range 110/230 Vac
- Multifunction
- 2 change-over contacts

### Functions

ac voltage monitoring in 1-phase mains with adjustable thresholds, and the following functions (selectable by means of rotary switch)

- Undervoltage monitoring
- Monitoring the window between Min and Max

### Indicators

- Green LED ON: indication of supply voltage
- Yellow LED ON/OFF: indication of relay output
- Red LED ON/OFF: indication of failure of the corresponding threshold

### Output relay

- 2 potential free change-over contacts
- Rated voltage: 250 Vac
- Switching capacity: 1250 VA (5 A / 250 Vac)
- Fusing: 5A fast acting

### Connecting voltages

- 110/230 Vac (= Measuring voltage)
- 100% duration of operation

### Reference data

Selectron® EMR	Article no.
SU21M 110 Vac	41230013
SU21N 230 Vac	41230014
(Order data see chapter 1)	

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Technical data		
Nominal consumption		110 V, 4 VA (1 W)
		230 V, 8 VA (1 W)
Nominal frequency		48 ... 63 Hz
Drop-out voltage		according to switching threshold
Base accuracy		±5% (of maximum nominal value)
Adjustment accuracy ±5% (of maximum nominal value)		
Repetition accuracy		≤2% (of maximum nominal value)
Temperature influence		<0.1% / °C
Recovery time		500 ms
Measuring circuit:	Measured variable	ac sine (48 ... 63 Hz)
	Input:	
	110/230 Vac	terminals 2 (A1) and 10 (A2)
	Overload capacity:	
	110/230 Vac	-30% ... +20%
	Input resistance:	
	110 Vac	according to nominal voltage 4 VA / 1 W
	230 Vac	according to nominal voltage 8 VA / 1 W
	Switching threshold:	
	Max:	80% ... 120% of $U_N$
	Min:	70% ... 110% of $U_N$

## Type key

EMR S U 2 1 M ...	
<b>Construction</b>	<b>Special functions</b>
<b>D</b> Industrial design 22.5 mm	1 = Additional asymmetry monitoring
<b>S</b> pluggable 11 poles	
<b>Function</b>	<b>Measuring circuit</b>
<b>U</b> Voltage	<b>A</b> No measuring circuit
<b>I</b> Current	<b>B</b> 3(N)~115/66 Vac
<b>P</b> CosPhi	<b>C</b> 3(N)~230/132 Vac
<b>T</b> Temperature	<b>D</b> 3(N)~400/230 Vac
<b>S</b> Star-Delta	<b>E</b> 1≅ 30/60/300 Vac/dc
	<b>F</b> 1≅ 100mA/1A/10A ac/dc
	<b>G</b> PTC
	<b>H</b> CosPhi
<b>Output</b>	<b>Connecting voltage</b>
<b>1</b> 1 changer	<b>1</b> Measuring circuit
<b>2</b> 2 changers	<b>2</b> 24...240 Vac/dc
<b>3</b> 1 NC contact / 1 NO contact	<b>3</b> 230 Vac
	<b>I</b> 12 Vdc
	<b>J</b> 24 Vdc
	<b>K</b> 36 Vdc
	<b>L</b> 48 Vdc
	<b>M</b> 1~110 Vac
	<b>N</b> 1~230 Vac
	<b>O</b> 1 A
	<b>P</b> 5 A

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## Function description

For all the functions the LEDs MIN and MAX are flashing alternating, when the minimum value for the measured voltage was chosen to be greater than the maximum value.

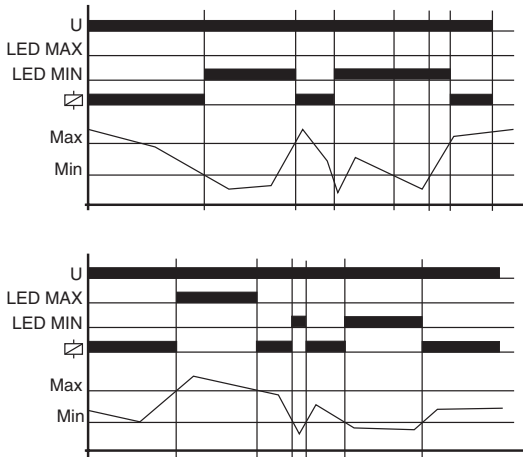
If a failure already exists when the device is activated, the output relays remain in off-position and the LED for the corresponding threshold is illuminated.

### Under voltage monitoring (UNDER)

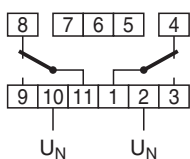
When the measured voltage falls below the value adjusted at the MIN-regulator, the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated), when the measured voltage exceeds the value adjusted at the MAX-regulator.

### Window function (WIN)

The output relays switch into on-position (yellow LED illuminated) when the measured voltage exceeds the value adjusted at the MIN-regulator. When the measured voltage exceeds the value adjusted at the MAX-regulator, the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (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 falls below the value adjusted at the MIN-regulator, the output relays switch into off-position (yellow LED not illuminated).



## Connection



Measuring range 110 or 230 Vac  
Supply voltage = measuring range

## Dimensions

