

1-phase current monitoring relay

EMR SI230, SI23P



EMR SI230



EMR SI23P

- ac current monitoring in 1-phase mains
- Measuring range 1A / 5A ac
- Multifunction
- Error Memory (Latch)
- 2 change-over contacts

Functions

ac current monitoring in 1-phase mains with adjustable thresholds, timing for start-up suppression and tripping delay separately adjustable and the following functions (selectable by means of rotary switch)

- Overcurrent monitoring
- Overcurrent monitoring with error memory
- Undercurrent monitoring
- Undercurrent monitoring with error memory
- Monitoring the window between Min and Max
- Monitoring the window between Min and Max with error memory

Time ranges

Start-up suppression time: Adjustment range 0 ... 10 s
Tripping delay: Adjustment range 0.1 ... 10 s

Indicators

Green LED ON: indication of supply voltage
Green LED flashing: indication of start-up suppression time
Yellow LED ON/OFF: indication of relay output
Red LED ON/OFF: indication of failure of the corresponding threshold
Red LED flashing: indication of tripping delay 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

230 Vac, -15% ... +10% (galvanically separated)
100% duration of operation

Reference data

Selectron® EMR	Article no.
EMR SI230 1A	41230015
EMR SI23 P 5A	41230016

(Order data see chapter 1)

1-phase current monitoring relay

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Technical data	
Nominal voltage	8 VA / 1 W
Nominal frequency	48 ... 63 Hz
Wave form ac	sine
Drop-out voltage	>20% of the supply voltage
Base accuracy	±5% (of maximum nominal value)
Adjustment accuracy	≤5% (of maximum nominal value)
Repetition accuracy	≤2%
Temperature influence	≤0.1% / °C
Frequency response	-
Recovery time	500 ms
Measuring circuit: Input:	
1 A / 5 A ac	terminals 6 (21) and 7 (24)
Overload capacity:	
1 A ac	10 A
5 A ac	10 A
Input resistance:	
1 A ac	< 10 mΩ
5 A ac	< 10 mΩ
Switching threshold:	
Max:	10% ... 100% of I_N
Min:	5% ... 95% of I_N

Type key

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

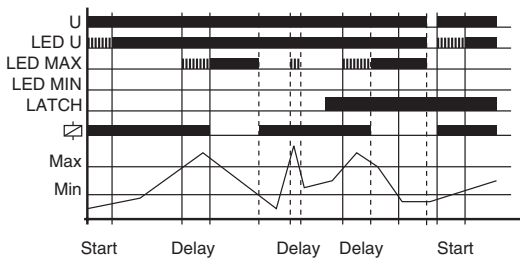
1-phase current monitoring relay

EMR SI230, SI23P

Function description

When the supply voltage U is applied, the output relays switch into on-position (yellow LED illuminated) and the set interval of the start-up suppression (START) begins (green LED U flashes). Changes of the measured current during this period do not affect the state of the output relay. After the interval has expired the green LED is illuminated steadily.

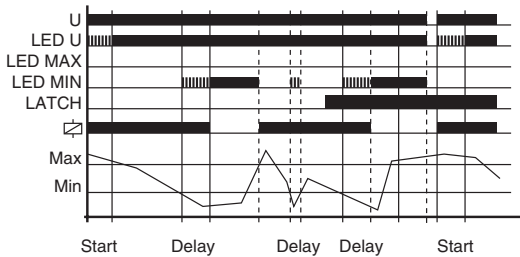
For all the functions the LEDs MIN and MAX are flashing alternating, when the minimum value for the measured current was chosen to be greater than the maximum value.



Overcurrent monitoring (OVER, OVER+LATCH)

When the measured current exceeds the value adjusted at the MAX-regulator, the set interval of the tripping delay (DELAY) begins (red LED MAX flashes). After the interval has expired (red LED MAX illuminated), 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 current falls below the value adjusted at the MIN-regulator (red LED MAX not illuminated).

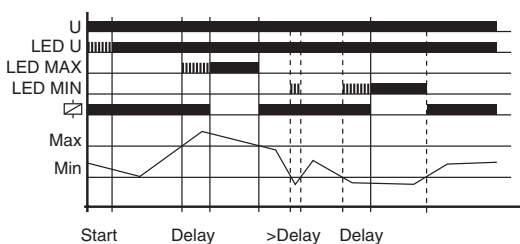
If the error memory is activated (OVER+LATCH) and the measured current remains above the MAX-value longer than the set interval of the tripping delay, the output relays remain in the off-position even if the measured current falls below the value adjusted at the MIN-regulator. After resetting the failure (interrupting and re-applying the supply voltage), the output relays switch into on-position and a new measuring cycle begins with the set interval of the start-up suppression (START).



Undercurrent monitoring (UNDER, UNDER+LATCH)

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

If the error memory is activated (UNDER+LATCH) and the measured current remains below the MIN-value longer than the set interval of the tripping delay, the output relays remain in the off-position even if the measured current exceeds the value adjusted at the MAX-regulator. After resetting the failure (interrupting and re-applying the supply voltage), the output relays switch into on-position and a new measuring cycle begins with the set interval of the start-up suppression (START).



Window function (WIN, WIN+LATCH)

The output relays switch into on-position (yellow LED illuminated) when the measured current exceeds the value adjusted at the MIN-regulator. When the measured current exceeds the value adjusted at the MAX-regulator, the set interval of the tripping delay (DELAY) begins (red LED MAX flashes). After the interval has expired (red LED MAX illuminated), 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 current falls below the value adjusted at the MAX-regulator (red LED MAX not

1-phase direct-current voltage monitoring relay

EMR SU21I, SU21J, SU21K, SU21L



EMR SU21I

- dc voltage monitoring in 1-phase mains
- Measuring range 12/24/36/48 Vdc
- Multifunction
- 2 change-over contacts

Functions

dc 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



EMR SU21J

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: 250Vac
- Switching capacity: 1250 VA (5 A / 250 Vac)
- Fusing: 5A fast acting



EMR SU21K

Connecting voltages

- 12/24/36/48 Vdc (= Measuring voltage)
- 100% duration of operation

Reference data

Selectron®	EMR	Article no.
SU21I	12 Vdc	41230009
SU21J	24 Vdc	41230010
SU21K	36 Vdc	41230011
SU21L	48 Vdc	41230012

(Order data see chapter 1)



EMR SU21L

1-phase direct-current voltage monitoring relay

EMR SU21I, SU21J, SU21K, SU21L

Technical data		
Nominal voltage		2 W
Ripple at dc		10%
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	dc or ac sine (16.6 ... 400 Hz)
	Input:	
	12/24/36/48 Vdc	terminals 2 (A1) and 10 (A2)
	Overload capacity:	
	12/24/36/48 Vdc	-25% ... +30%
	Input resistance:	
	12/24/36/48 Vdc	according to nominal voltage 2 W
	Switching threshold:	
	Max:	80% ... 130% von U_N
	Min:	75% ... 125% von U_N

Type key

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

1-phase direct-current voltage monitoring relay

EMR SU21I, SU21J, SU21K, SU21L

Function description

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

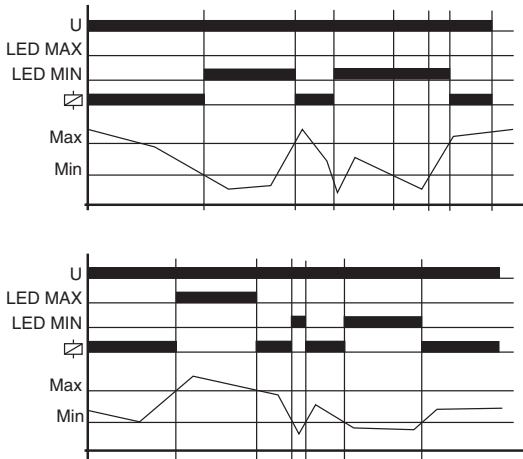
If a failure already exists when the device is activated, the output relays remain in off-position and the LED for the corresponding threshold is illuminated.

Under voltage monitoring (UNDER)

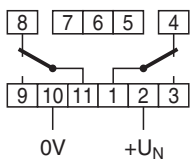
When the measured voltage falls below the value adjusted at the MIN-regulator, the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated), when the measured voltage exceeds the value adjusted at the MAX-regulator.

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 12, 24, 36 or 48 Vdc
Supply voltage = measuring range

Dimensions

