VEO

MONITORING RELAY / 1-PHASE CURRENT

V2IM10AL10

Art.Nr.: 2100400

V2IM10AL10P

Art.Nr.: 2100410

- AC/DC current monitoring
- Multifunction
- Supply voltage 24-240V DC or 110-240V AC
- 1 change-over contact
- Width 22,5 mm

Control element

- Tripping delay
- Maximum threshold
- Minimum threshold
- Function selector

Status indication

- LED U: Supply voltage
- LED Max: Overcurrent
- LED Min: Undercurrent
- LED R: Relay status



TECHNICAL DATA

SUPPLY CIRCUIT		
Terminals		Li-N
Supply voltage	AC	110 ... 240 V
	DC	24 ... 240 V
Supply voltage tolerance	AC	-15 / +15 %
	DC	-30 / +30 %
Rated frequency		16,6 ... 400 Hz or DC
Rated frequency tolerance		16,0 ... 420 Hz
Rated consumption	230 V AC	0,37 W / 1,3 VA
	24 V DC	0,25 W / 0,25 VA
Duty-cycle		100 %
Backup power time		< 140 ms
Recovery time		> 200 ms
Drop-out voltage		≥ 6 V

MEASURING CIRCUIT		
Terminals		Li-Lk
Measurand		current 1-phase
Measuring method		True RMS
Monitoring function		underurrent (U), overcurrent (O), window (W)
Measuring range		10 A AC/DC

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MEASURING CIRCUIT

Frequency		16 ... 400 Hz or DC
Input resistance		2 mΩ
Overload capacity	permanent load	15 A
	pulse load < 1 s	50 A
	pulse load < 100 ms	150 A
Thresholds	Max	10 ... 100 %
	Min	5 ... 95 %
Hysteresis		1 %

TIMING CIRCUIT

Start-up delay	fixed	approx. 300 ms
Tripping delay	adjustable	0,1 ... 10 s
Start-up suppression		-

RANGE OF FUNCTIONS

Functions	6	O, U, W, O+L, U+L, W+L

STATUS INDICATION

Supply voltage	LED U (green) on	supply voltage applied
Relay status	LED R (yellow) on	output relay energized
Current monitor	LED Max (red) on	indication of overcurrent
	LED Max (red) flashes	indication of tripping delay for overcurrent
	LED Min (red) on	indication of undercurrent
	LED Min (red) flashes	indication of tripping delay for undercurrent

OUTPUT CIRCUIT

Terminals		15-16-18
Kind of output		Relay
Number of contacts	change-over contact	1
Contact material		AgNi
Rated voltage (IEC 60947-1)		250 V
Maximum switching voltage		400 V AC
Minimum switching voltage / switching current		12 V / 10 mA

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OUTPUT CIRCUIT

Rated current (IEC 60947-5-1)	AC-1	8 A / 250 V
	AC-15	1,5 A / 240 V (B300)
	DC-12	8 A / 24 V
	DC-13	0,1 A / 250 V
Endurance	mechanical	30 x 10^6 switching cycles
	electrical (AC-1)	100 x 10^3 switching cycles
Rated frequency of operation	with load	6/min
	without load	1200/min
Fuse rating		8 A fast acting

ACCURACY

Base accuracy		< 2,5 %
Setting accuracy		< 5 % (of full scale)
Repeat accuracy		< 1 %
Temperature influence		< 0,05 % / °C
Voltage influence		-
Frequency influence		-

ENVIRONMENTAL CONDITIONS

Ambient temperature	operation	-25 ... +60°C
	storage	-40 ... +70°C
Relative humidity		5 ... 95 %
Vibration	EN 60947-1	2 ... 13,2 Hz: 1 mm; 13,2 ... 100 Hz: 7 m/s^2
Shock	EN 60947-1	150 m/s^2 11 ms

GENERAL DATA

Dimensions	W × H × D	22,5 x 67 x 76 mm
Mounting		DIN rail (EN60715)
Mounting positions		any
Housing material		PA 66, self-extinguishing plastic, class V-0
Degree of protection	housing	IP40
	terminals	IP20
Electrical connection	V2IM...10	Screw terminal
Wire size	flexible with wire end ferrule	0,5 ... 2,5 mm^2 (20 AWG ... 13 AWG)
	flexible without wire end ferrule	0,5 ... 4 mm^2 (20 AWG ... 12 AWG)
	rigid	0,5 ... 4 mm^2 (20 AWG ... 12 AWG)
Stripping length		8 mm

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GENERAL DATA

Tightening torque		max. 1Nm
Electrical connection	V2IM...10P	Push-in terminal
Wire size	flexible with wire end ferrule	0,25 ... 1,5 mm² (24 AWG ... 16 AWG)
	flexible with plastic ferrule	0,25 ... 0,75 mm² (24 AWG ... 19 AWG)
	flexible without wire end ferrule	0,2 ... 1,5 mm² (24 AWG ... 16 AWG)
	rigid	0,2 ... 1,5 mm² (24 AWG ... 16 AWG)
Stripping length		8 mm
MTTF		-
Weight		70 g

ISOLATION DATA

Pollution degree (IEC 60947-5-1)		2
Overvoltage category (IEC 60947-5-1)		III
Rated insulation voltage (IEC 60947-1)	supply circuit / output circuit	300 V
	measuring circuit / output circuit	300 V
Rated impulse withstanding voltage (IEC 60947-1)	supply circuit / output circuit	6 kV
	measuring circuit / output circuit	6 kV
Insulation test voltage (IEC 60947-1)	supply circuit / output circuit	3780 V
	measuring circuit / output circuit	3780 V
Degree of protection	supply circuit / output circuit	protective seperation
	measuring circuit / output circuit	protective seperation

STANDARDS

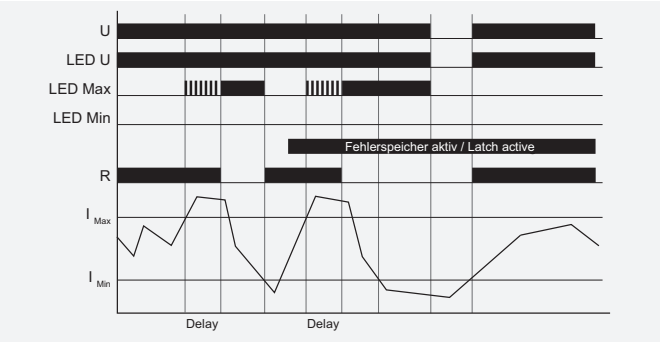
Product standard	IEC 60947-5-1
Interference immunity	IEC 61000-6-2
Interference emmision	IEC 61000-6-4
Approvals	

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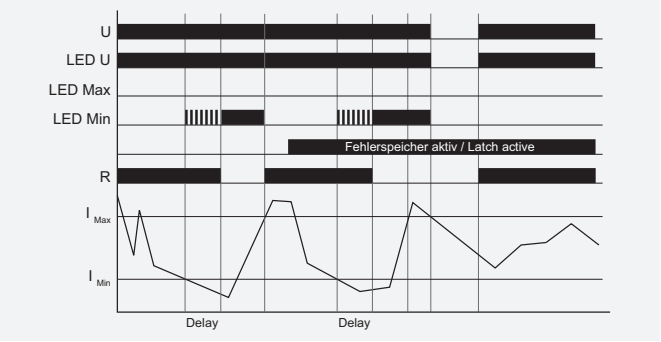
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FUNCTIONS

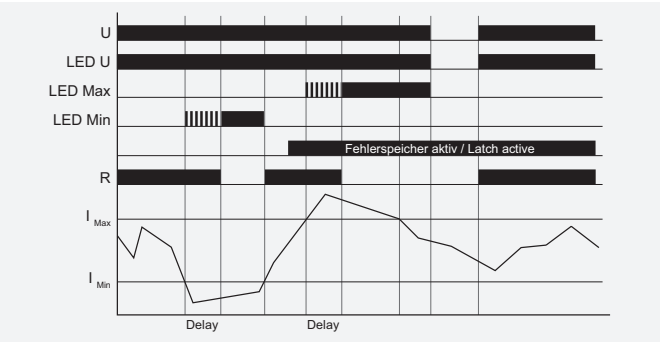
Overcurrent monitoring (O)
When the supply voltage U is applied, the output relay R switches into on-position if the measured current is below the adjusted threshold I_{Max}. When the measured current exceeds the adjusted threshold I_{Max}, the set interval of the tripping delay (DELAY) begins. After the interval has expired, the output relay R switches into off-position. The output relay R switches into on-position again, as soon as the measured current falls below the adjusted threshold I_{Min}.



Undercurrent monitoring (U)
When the supply voltage U is applied, the output relay R switches into on-position if the measured current is beyond the adjusted threshold I_{Max}. When the measured current falls below the adjusted threshold I_{Min}, the set interval of the tripping delay (DELAY) begins. After the interval has expired, the output relay R switches into off-position. The output relay R switches into on-position again, as soon as the measured current exceeds the adjusted threshold I_{Max}.



Window function (W)
When the supply voltage U is applied, the output relay R switches into on-position if the measured current is within the adjusted thresholds I_{Min} and I_{Max}. When the measured current falls below the adjusted threshold I_{Min}, the set interval of the tripping delay (DELAY) begins. After the interval has expired, the output relay R switches into off-position. The output relay R switches into on-position again, as soon as the measured current exceeds the adjusted threshold I_{Min}. When the measured current exceeds the adjusted threshold I_{Max}, the set interval of the tripping delay (DELAY) begins again. After the interval has expired, the output relay R switches into off-position. The output relay R switches into on-position again, as soon as the measured current falls below the adjusted threshold I_{Max}.

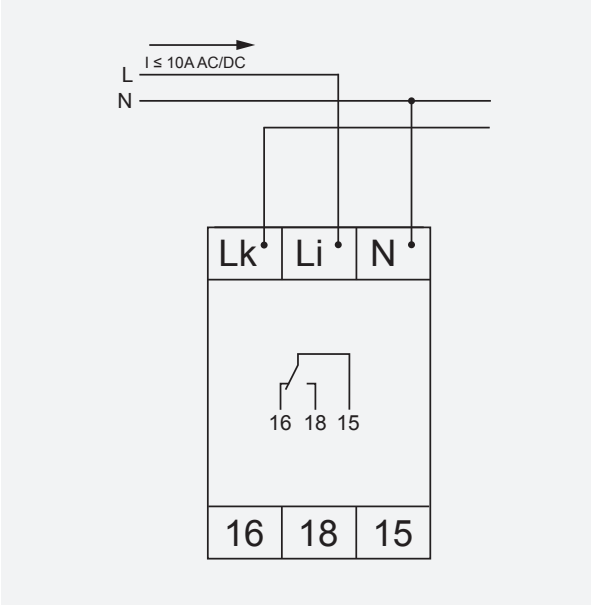


Fault latch
If the fault latch is activated and a failure has occurred, this failure is stored. The failure can only be reset by interrupting the supply voltage.

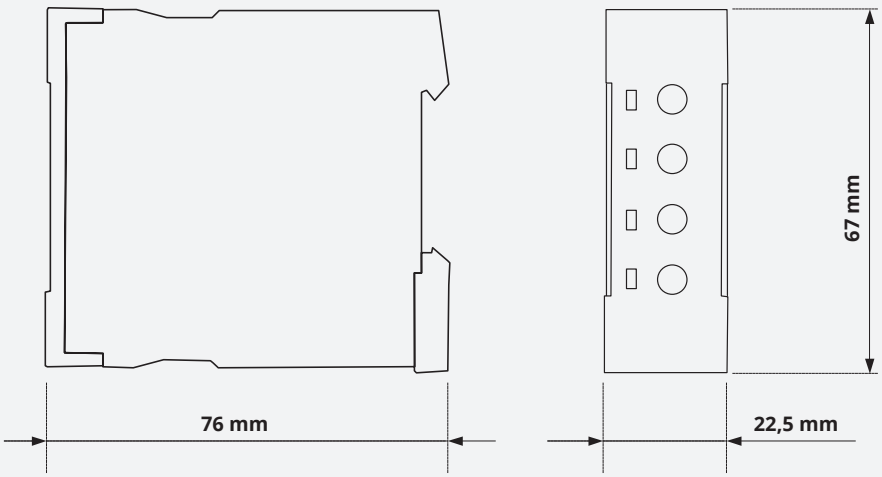
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CONNECTIONS



DIMENSIONS



CONTACT

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