

Overcurrent protection relay

MRS13R

NEW
Response time
< 20 ms



Overcurrent protection relay MRS13R

- Galvanically isolated current measurement input
- Measuring range -5 ... 5 A
- Forcibly guided contacts at the output (IEC 61810-3)
- Response time < 20 ms
- Galvanically isolated diagnostic input for function test
- Universally applicable due to galvanic isolation of all inputs and outputs
- Operating menus and parameter settings selectable via 3 buttons
- Current parameter settings are shown on the display
- LED operating status display
- Mains failure-proof stored application parameters

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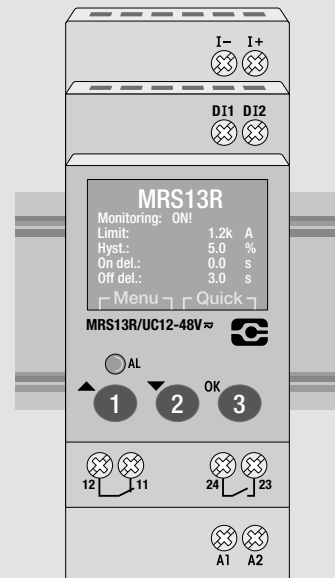
Overcurrent protection relays in combination with circuit-breakers are primarily used when conventional fuse solutions are not possible. They prevent electrical devices and systems from being damaged or destroyed in the event of short circuits or overload conditions.

Unlike many other conventional overcurrent protection solutions, the MRS13R can be configured with many parameters. In combination with circuit-breakers, currents in the kA range can be switched and the switching state of the overcurrent protection relay is reversible as soon as the cause of the fault has been eliminated.

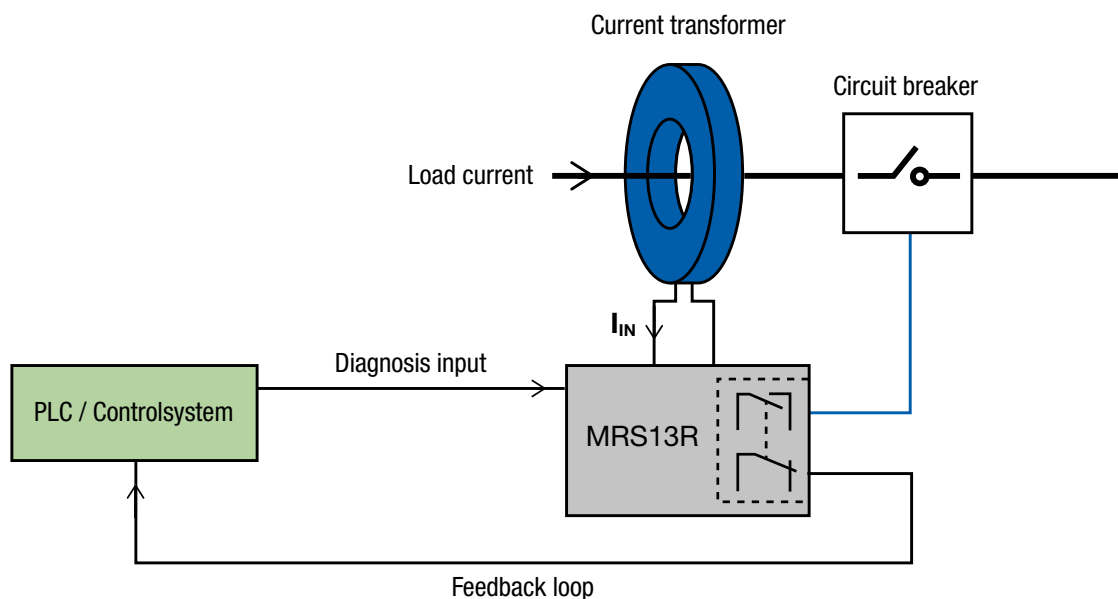
One normally open and one normally closed relay contact, which are positively driven, are available as outputs for 6 A, 240 V each. The single channel MSR13R overcurrent protection relay reacts when the current exceeds a preset threshold value for at least 4.5 ms and activates the forcibly guided relay. A circuit breaker can be triggered via the coupled normally open or normally closed contacts and feedback on tripping can be sent to a higher-level controller.

An LED lights up red when an overcurrent is detected.

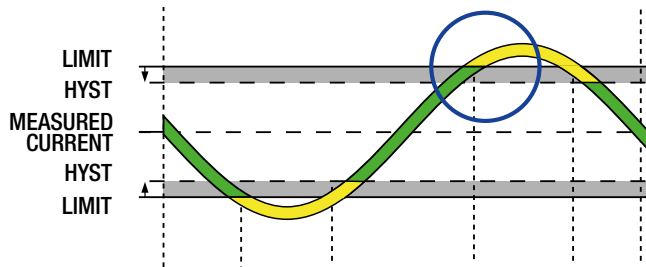
An overcurrent shutdown can also be forced via the diagnostic input without an overcurrent event occurring. This makes simple integration tests possible.



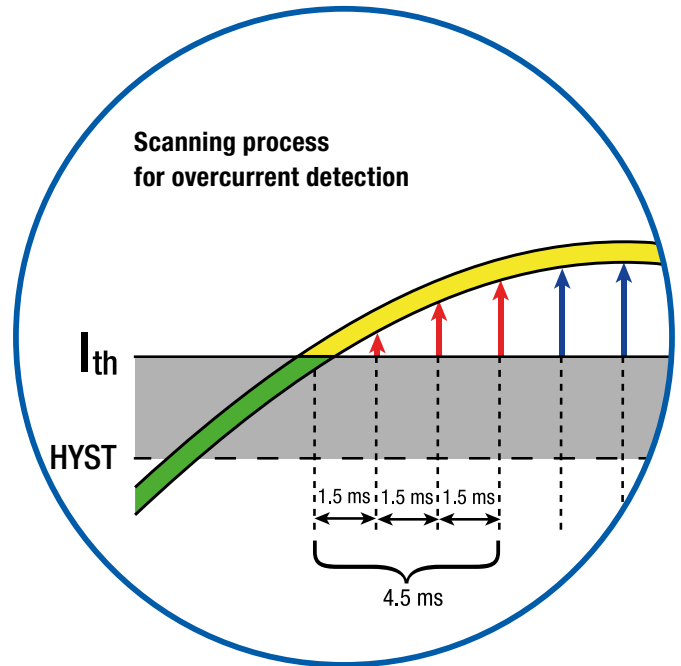
Block diagram for MRS13R overcurrent detection and load shutdown



Scanning process



Sampling rate: 667 Hz, sampling every 1.5 ms.
 Median filter for overcurrent detection: 3 out of 5 samples must exceed the preset overcurrent threshold I_{th} .
 Minimum overcurrent duration for detection: 4.5 ms

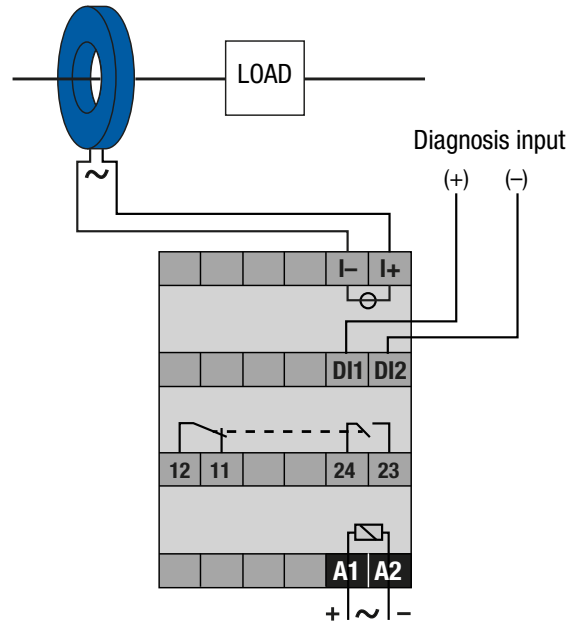
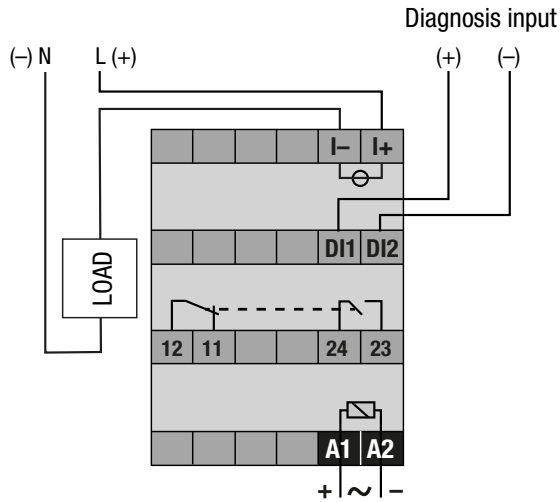


Power supply	
Nominal voltage	12 ... 48 V AC / DC
Power consumption AC / DC	3.2 VA / 1.6 W
Frequency range of the power supply	0; 16 ... 63 Hz
Main circuit	
Number of contacts*	1 NO + 1 NC
Available Contact Materials	AgCuNi + 0.2 ... 0.4 μ Au
Rated voltage	240 V AC
Rated current	6 A

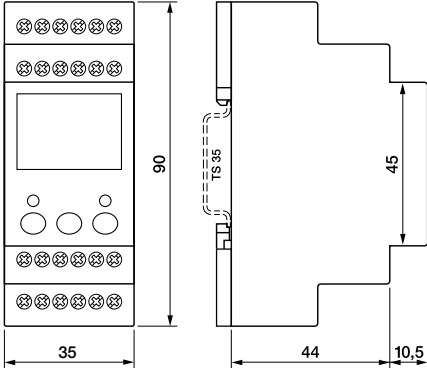
Measuring circuit	
Measuring current range	-5 ... 5 A
Measuring current frequency range	0; 16 ... 63 Hz
Overcurrent I_{th} adjustment range	0.1 ... 5 A
Alarm Switch-On Delay T_{Don}	0 ... 999.9 s
Alarm switch-off delay T_{Doff}	0; 0.5 ... 999.9 s
Scaling Factor $I_{th Load} / I_{th}$	0.1 ... 1000
Minimum overcurrent time for detection	4.5 ms
Minimum saturation current time for detection	3.1 ms

* 1 NO + 1 NC forcibly guided, complies with IEC 61810-3

Wiring diagrams



Dimensions



Order code

MR S 1 3 R / UC 12-48 V

Product family

MR = Monitoring relay

Type

U = Voltage monitoring
I = Current monitoring
M = Multi-function monitoring
S = Overcurrent and short circuit protection

Monitoring / protection

1 = 1-phase / 1 channel
3 = 3-phase / 3 channel

Rated voltage

12-48 V
110-240 V

Power supply

UC (Universal Current) = AC/DC

Options

None = Standard version
R = Railway version

Output

1 = One change over contact
2 = Two change over contacts
3 = One NO contact, one NC contact, forcibly guided

Approvals

