Monitoring relays

MRM



Monitoring relays MRM

- Monitoring of common electrical values as voltage, current, power (AC/DC), frequency, phase sequence or power factor cosϕ
- Applicable in all low power installations due to its wide measuring range
- Various monitoring functions: Notifies when measurement value exceeds or falls below a pre-defined threshold or leaves the pre-defined monitoring range.
- Power supply UC 12–48 V or UC 110–240 V

The MRM series devices have been developed for the reliable monitoring of AC and DC signals in 1- and 3-phase electrical systems.

They measure current, voltage and other electrical quantities with true root mean square (TRMS) values, ensuring reliable and signal-form-independent detection even with non-sinusoidal waveforms.
The measuring range is selected automatically to achieve optimum measurement resolution at all times.
The MRM has a permanent self-diagnostic function to ensure a high level of operational reliability. Internal errors or malfunctions always trigger a defined alarm status, ensuring reliable signalling even in the event of a fault.

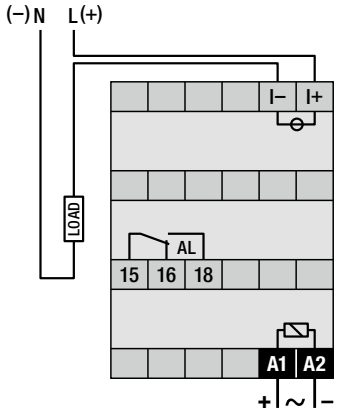
The current measured value, user parameters and the operating and alarm status are clearly shown on the integrated display.

Parameterisation is carried out directly on the device using a clearly structured three-button operating menu.

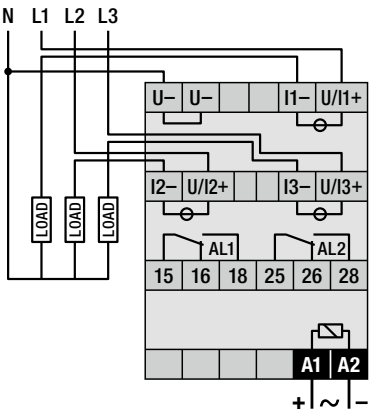


Wiring diagram

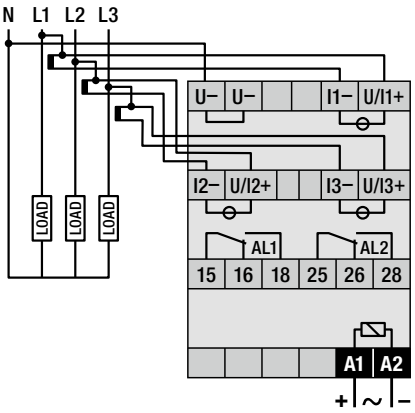
MRM11 (Single phase)



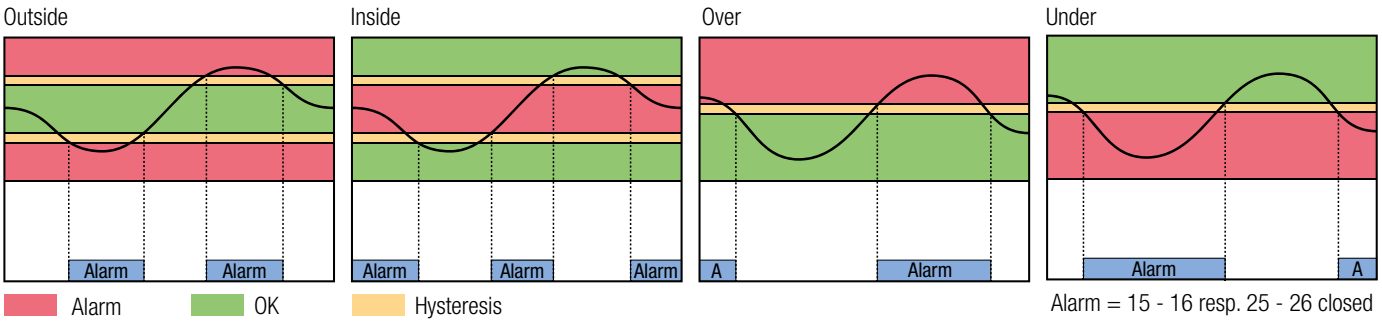
MRM32 (Three phase)



MRM with current transformer



Monitoring functions



Alarm = 15 - 16 resp. 25 - 26 closed

The MRM supports threshold and window monitoring. The **Over** and **Under** functions trigger an alarm when an upper or lower limit value is exceeded or undercut.

The **Inside** and **Outside** functions form a window function that monitors a defined value range. Depending on the setting, the alarm is triggered when the measured value is within this window or when it leaves it. The monitoring function can be selected individually for each output.

MRM

Monitoring relays

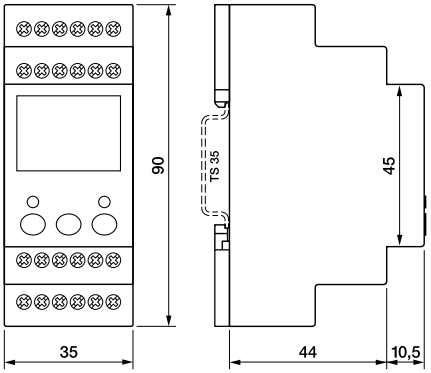
Technical data	MRM11	MRM32
Coil voltage range	110 ... 240 V AC / DC 12 ... 48 V AC / DC	
Frequency range	0;16 ... 63 Hz	
Measured parameters	U, I, P, S, f, cosϕ	U, I, P, S, f, cosϕ, Δϕ, phase sequence, phase failure
Number of measurement inputs	1	3
DC voltage measurement range	±0.1 ... ±690V	
AC voltage measurement range	0.1 ... 480 V	
AC/DC current measurement range	0.1 ... 5 A	
Switch-on/switch-off delay	Off; 0.5 ... 999.9 s	
Number of contacts	1 CO	2 CO
Minimum load	10 mA, 10 V	
Inrush current	10 A, 10 ms	

Depending on the device variant, one or two relays with changeover contacts up to 6 A at 250 V are available as **outputs**. The relays can be configured independently of each other, enabling flexible adaptation to different monitoring and shutdown concepts.

Switch-on and **switch-off delays** can be set for specific adaptation to the respective application. This allows short-term faults or settling processes to be reliably suppressed and unwanted switching operations to be avoided. If the delay is deactivated, the output switches immediately. The devices also have a latch function. If this is activated, the alarm state remains on and the outputs must be resetted manually in order to return to normal operation.

The current alarm state is clearly indicated by a red LED.

Dimensions



MRM devices are designed for installation in control cabinets. With an installation width of **only 35 mm** and DIN rail mounting, they can be integrated in a space-saving manner, even in compact or modular systems. The fully isolated measurement inputs support safe use in complex installations and contribute to robust system integration.

Approvals

Standards EN 60730-1; EN 60947-1;
EN 61000-6-2; EN 61000-6-3

Approvals

The **MRM series** complies with the relevant standards for low-voltage switchgear and electromagnetic compatibility. Specific variants are available for railway applications and comply with the relevant standards for railway vehicles, in particular EN 50155 and EN 45545-2.

Product key

MR M 3 2 [ ] / UC12-48V

Product family
MR = **M**onitoring **R**elay

Typ
M = Multifunction monitoring
S = Overcurrent monitoring

System
1 = 1-phase monitoring
3 = 3-phase monitoring

Contacts
1 = 1 change-over contact
2 = 2 change-over contacts

Area of application
None = Industry
R = Railway

Control voltage
AC = Alternating current
DC = Direct current
UC = AC/DC

Fast overcurrent and short-circuit protection with MRS13R



For applications with particularly high requirements in terms of response time and short-circuit protection, the **MRS13R** is a complementary overcurrent protection relay within the MR product family. The MRS13R is designed for rapid detection of overcurrent and short-circuit events and responds within **20 ms.**

This makes it particularly suitable for protecting downstream components in safety- and availability-critical systems. The MRS13R is available as a railway variant and is offered in the same compact DIN rail housing.

ComatReleco AG | Birchstrasse 24 | CH-3186 Düdingen | Phone +41 31 838 55 77 | Fax +41 31 838 55 99
comatreleco.com | info@comatreleco.com | WorldofRelays.com

55005-180-54-003