

# MRS13R/UC12-48V

1 phase | 1 NO + 1 NC forcibly guided | Overcurrent protection



## Power supply

Nominal voltage	12 ... 48 V AC / DC
Operating voltage range	10 ... 60 V AC / DC
Power consumption AC / DC	3.2 VA / 1.6 W
Frequency range	0; 16 ... 63 Hz

## Measuring circuit

Measured parameters	I (Load current)
Min. setting step, resolution	0.1 A
Monitoring functions	Overcurrent detection
Rated measurement current	5 A
Measurement current range	-5 ... 5 A
Overcurrent threshold $I_{th}$ setting range	0.1 ... 5 A, default = 3.0 A
Saturation current threshold $I_{max}$	$\pm 5$ A
Maximum pulse current	See extended datasheet
Alarm switch-on delay $T_{Don}$	0 ... 999.9 s, default = 0.0 s
Alarm switch-off delay $T_{Doff}$	0.1 ... 999.9 s, default = 3.0 s
Hysteresis	3% ... 50%, default = 5%
Scaling factor	0.1 ... 1000, default = 400
Minimum overcurrent detection time	4.5 ms
Minimum saturation current detection time	3.1 ms
Response time in case of overcurrent or saturation current event	See extended datasheet

## Main circuit

Number of forcibly guided contacts	1 NO + 1 NC (Type A)
Available contact materials	⚡ AgCuNi + 0.2 ... 0.4 $\mu$ Au
Rated voltage	240 V AC
Rated current	6 A
Minimum load	3 mA, 15 V (40mW)
Inrush current	30 A, 20 ms
Rated load DC	fig. 3
Rated load AC-1	1,500 VA
Mechanical endurance (cycles)	10 000 000
Electrical endurance at rated load AC-1 (cycles)	fig. 2

## Test/Diagnostic input

Maximal voltage digital inputs	160 V DC
Logic level "1"	$\geq 14$ V
Logic level "0"	$\leq 5$ V
Sampling Rate	667 Hz

## Insulation

Rated test voltage current loop / diagnostic input	3.0 kV / 1 Min.
Rated test voltage power supply / current loop	3.0 kV / 1 Min.
Rated test voltage power supply / diagnostic input	3.0 kV / 1 Min.
Rated test voltage power supply / relay NO	3.0 kV / 1 Min.
Rated test voltage power supply / relay NC	3.0 kV / 1 Min.
Rated test voltage current loop / relay NO	3.0 kV / 1 Min.
Rated test voltage diagnostic input / relay NO	2.0 kV / 1 Min.
Rated test voltage diagnosis input / relay NC	2.0 kV / 1 Min.
Rated test voltage current loop / relay NC	3.0 kV / 1 Min.
Rated test voltage relay NO / relay NC	2.5 kV / 1 Min.
Pollution degree	2
Overvoltage category	III

## Housing and environmental conditions

Storage temperature (no ice)	-40 ... 85 °C
Operation temperature	-40 ... 70 °C (display -20 ... 70 °C)
Relative humidity, no condensation	10 - 95 %
Vibration resistance	NO: 7g / NC: 3g
Shock resistance	NO: 17g / NC: 10g
Ingress Protection	IP 20
Weight	107 gr
Housing material	PA
Operation Altitude	max. 2 000 m above sea level (without derating)
Mounting	DIN-Rail (IEC 60715)
Operation Position	any
Dimensions	fig. 4



fig. 1. Wiring diagram

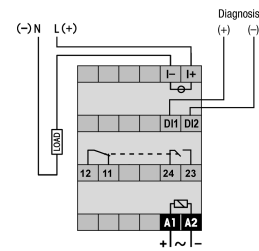


fig. 2. AC voltage endurance

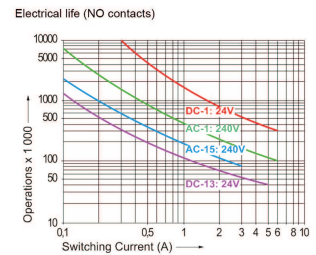


fig. 3. DC load limit curve

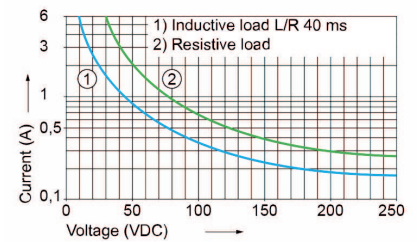
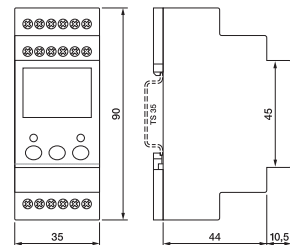


fig. 4. Dimensions (mm)



## Technical approvals, conformities

Standards IEC 61810-3 (Type A)  
 Railway EN 50155; EN 45545-2; EN 61373  
 Approvals

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## Wiring

Contact type control / main circuit	screw terminal
Conductor cross section control / main circuit	2.5 mm <sup>2</sup> , AWG14 (stranded) / 4mm <sup>2</sup> , AWG12 (wire) Only copper conductors must be used
Stripping Length control / main circuit	6 ... 7.5 mm / 0.24 ... 0.3"
Nominal screw torque control / main circuit	0.5 Nm / 4.425 lbf in
Screwdrive control / main circuit	M3, PZ2
Max. wire count control / main circuit	2
Dual sleeve control / main circuit	1



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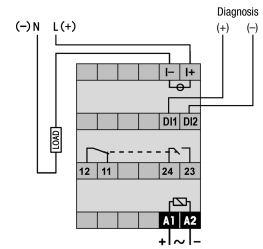


fig. 2. AC voltage endurance

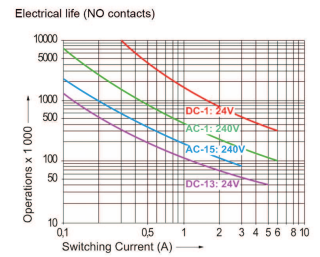


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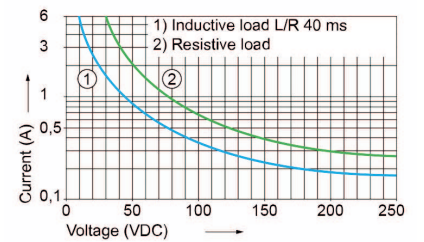
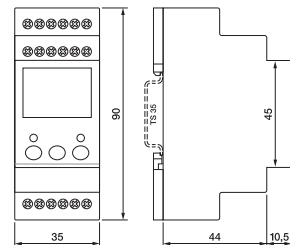


fig. 4. Dimensions (mm)



## Technical approvals, conformities

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Railway EN 50155; EN 45545-2; EN 61373

Approvals