











3.1 Multifunction Monitoring



Application	Types	Monitoring	Monitoring ratings	Output contacts	Design
Multifunction monitoring, AC 15 ... 60 Hz / DC single phase	MRM11	    	U, I, P, f, cosφ	1 CO	35 mm
Multifunction monitoring, AC 15 ... 60 Hz / DC three phase	MRM32	    	U, I, P, f, cosφ	2 CO	35 mm

MRM11

Multifunction monitoring relay AC/DC, single phase DIN Rail mounting according to DIN 43 880

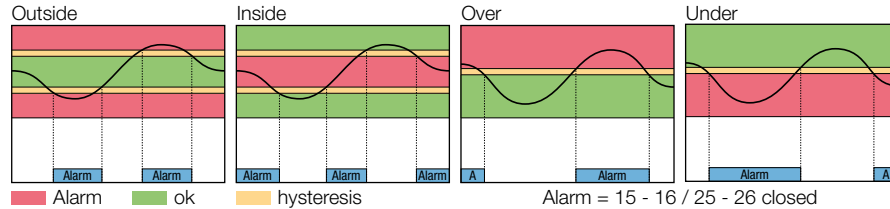


Type: MRM11/...V

Multifunctional monitoring relay for simultaneous measurement of current and voltage and monitoring of U, I, P, cosφ and f. Alarm delay setting. Alarm LED. Display for multimeter function, alarm signal and interactive parameter setting.

1 change-over alarm contact 5 A 250 V. Comfortable parameter setting.

Monitoring function



Measuring circuit data

Voltage setting ranges AC / DC	0.1 ... 480 V / ±0.1 ... 690 V
Current setting ranges AC / DC	0.1 ... 5 A
Frequency	AC 15 ... 150 Hz
Input resistance U / I	1 MΩ / 5 MΩ
Measured variables	U, I, f, P, S, cosφ

Time data

Voltage failure buffering	ca. 30 ms
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Alarm contacts

Type / Material	1 CO / AgNi 0.15
Rated operational current	6 A
Max. inrush current	15 A
Max. switching voltage	250 V
Max. AC load AC-1 (Fig.1)	1250 VA
Max. DC load DC-1, 24 V / 220 V (Fig.2)	120 W / 25 V
Recommended min. contact load	10 mA / 10 V
Alarm delay setting time	0.1 ... 999.9 s (factory adjustment = 0.0 s)
Reset time setting range	0.1 ... 999.9 s (factory adjustment = 0.0 s)

Power supply

	UC12-48V	UC110-240V
Nominal voltage AC/DC	12 ... 48 V	110 ... 240 V
Operating voltage range	10 ... 60 V	85 ... 250 V
AC frequency	16 ... 63 Hz	16 ... 63 Hz
Power consumption	1.6 W / 3.2 VA	1.5 W / 2.6 VA

Insulation

Measuring input – Measuring input	1.5 kV 1 minute
Measuring input – Supply	2.0 kV 1 minute
Measuring input – Contact	2.0 kV 1 minute
Supply – Contact	2.0 kV 1 minute
Contact set – Contact set	1.5 kV 1 minute

General specifications

Ambient temperature storage /operation	-40 ... +85 °C / -40 ... +60 °C
	LCD: -20 ... +60 °C
Mechanical life of contacts	30 x 10 ⁶ operations
Conductor cross section	Stranded wire 2.5 mm ² , 2 x 1.5 mm ²
Ingress protection degree	IP20, (electronics: IP40)
Max. screw torque	0.4 Nm
Housing material	Lexan EXL 9330
Weight	107 g

Standard types

AC/DC 12-48 V, 15...60 Hz	MRM11/UC12-48V
AC/DC 110-240 V, 15...60 Hz	MRM11/UC110-240V



Connection diagram

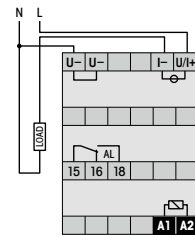


Fig.1 AC voltage endurance

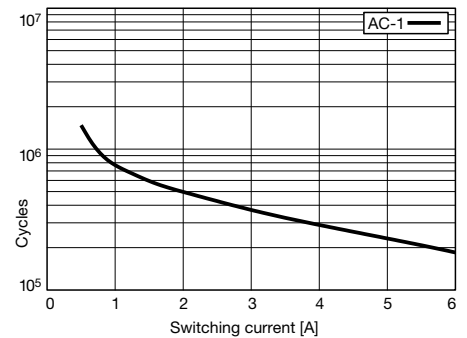
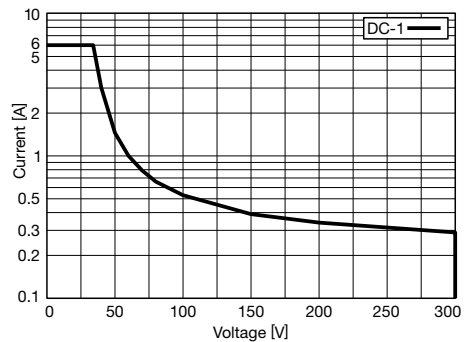
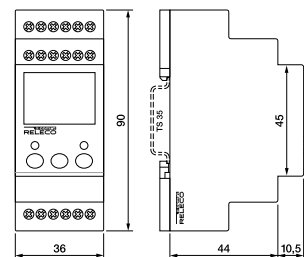


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities



MRM32

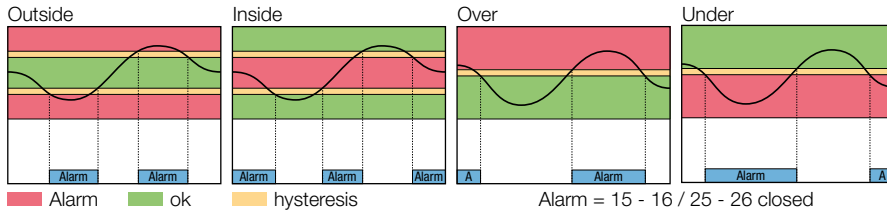
Multifunction monitoring relay AC/DC, three phase DIN Rail mounting according to DIN 43 880

Type: MRM32/...V

Multifunctional monitoring relay for simultaneous measurement of current and voltage and monitoring of U, I, P, cosφ and f and Δφ. Alarm delay setting. Alarm LED. Display for multimeter function, alarm signal and interactive parameter setting.

2 change-over alarm contacts 5 A 250 V. Comfortable parameter setting.

Monitoring function



Measuring circuit data

Voltage setting ranges AC / DC	0.1 ... 480 V / ±0.1 ... 690 V
Current setting ranges AC / DC	0.1 ... 5 A
Frequency	AC 15 ... 150 Hz
Input resistance U / I	1 MΩ / 5 MΩ
Measured variables	U, I, f, P, S, cosφ und Δφ (phase sequence)

Time data

Voltage failure buffering	ca. 30 ms
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Contacts

Type / Material	2 CO / AgNi 0.15
Rated operational current	6 A
Max. inrush current	15 A
Max. switching voltage	250 V
Max. AC load AC-1 (Fig.1)	1250 VA
Max. DC load DC-1, 24 V / 220 V (Fig.2)	120 W / 25 W
Recommended min. contact load	10 mA / 10 V
Alarm delay setting time	0.1 ... 999.9 s (factory adjustment = 0.0 s)
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Power supply

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Nominal voltage AC/DC	12 ... 48 V	110 ... 240 V
Operating voltage range	10 ... 60 V	85 ... 250 V
AC frequency	16 ... 63 Hz	16 ... 63 Hz
Power consumption	1.6 W / 3.2 VA	1.5 W / 2.6 VA

Insulation

Measuring input – Measuring input	1.5 kV 1 minute
Measuring input – Supply	2.0 kV 1 minute
Measuring input – Contact	2.0 kV 1 minute
Supply – Contact	2.0 kV 1 minute
Contact set – Contact set	1.5 kV 1 minute

General specifications

Ambient temperature storage /operation	-40 ... +85 °C / -40 ... +60 °C
	LCD: -20 ... +60 °C
Mechanical life of contacts	30 x 10 ⁶ operations
Conductor cross section	Stranded wire 2.5 mm ² , 2 x 1.5 mm ²
Ingress protection degree	IP20, (electronics: IP40)
Max. screw torque	0.4 Nm
Housing material	Lexan EXL 9330
Weight	125 g

Standard types

AC/DC 12-48 V, 15...60 Hz	MRM32/UC12-48V
AC/DC 110-240 V, 15...60 Hz	MRM32/UC110-240V



Connection diagram

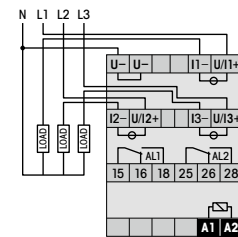


Fig.1 AC voltage endurance

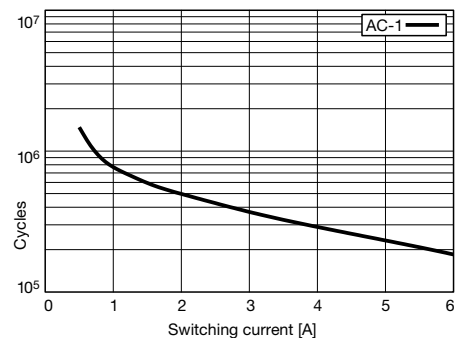
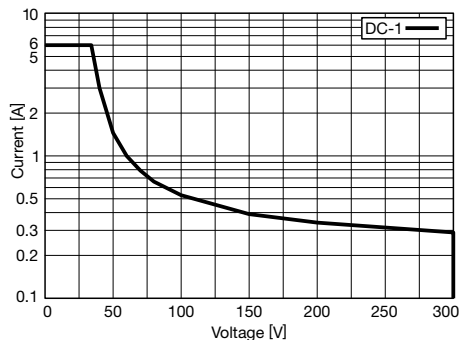
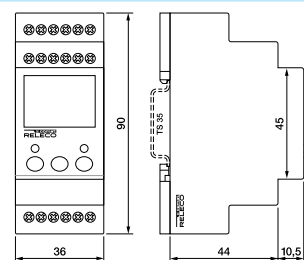


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

