

# MACX-MR-3V-690 - Monitoring relay



1336410

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3-phase voltage monitoring relay, with overvoltage, undervoltage, window monitoring as well as phase sequence, phase loss failure, asymmetry (adjustable asymmetry) and neutral monitoring functions. 24 V AC/DC ... 240 V AC/DC wide range power supply, with adjustable threshold values, response delay, and supporting failure record storage and NFC communication. True RMS value test.

## Commercial data

Item number	1336410
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C443
Product key	CK4711
GTIN	4063151636289
Weight per piece (including packing)	208 g
Weight per piece (excluding packing)	195 g
Customs tariff number	85364900
Country of origin	CN

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## Technical data

### Product properties

Product type	Voltage monitoring relay
Operating mode	Closed circuit or wire break

### Insulation characteristics: Railway standard

Overvoltage category	III
Pollution degree	3

### Electrical properties

Service life electrical	approx. $1 \times 10^5$ cycles, resistive load 2000 V A
Maximum power dissipation for nominal condition	15 W
Mains type	3-phase

### Railway standard

Rated insulation voltage	690 V (Between the measuring circuit and other circuits)
	600 V (Between other circuits)

### Electrical isolation

Electrical isolation	300 V
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### Supply

Supply voltage range	24 V AC ... 240 V AC -15 % ... +10 %
	24 V DC ... 240 V DC -25 % ... +30 %
	24 V ... 240 V AC (Railway application)
	48 V ... 110 V DC (Railway application)
Nominal power consumption	15 VA (1.5 W)

### Input data

Input name	Measuring input
Measured value	AC sine (48 Hz ... 63 Hz)
Input resistance of voltage input	0.75 M $\Omega$
Frequency range	48 Hz ... 400 Hz
Maximum temperature coefficient	0.05 %/K
Setting range for response delay	0 s ... 99.9 s
Min setting range of the voltage threshold value	160 V
Max. setting range of the voltage threshold value	690 V
Function	Undervoltage
	Overvoltage
	Window
	Asymmetry
	Phase sequence
	Phase failure
	Neutral conductor break

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Basic accuracy	1 %
Repeat accuracy	0.5 %
Voltage influence	0.5 %
Recovery time	200 ms

## Output data

### Switching

Contact switching type	2 floating changeover contacts
Contact material	AgSnO
Maximum switching voltage	250 V AC
Interrupting rating (ohmic load) max.	2000 VA (8 A/250 V AC)
Output fuse	10 A (fast-blow)

## Connection data

Connection method	Screw connection
Stripping length	10 mm
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm (5 lb in ... 7 lb in)

## Dimensions

Width	22.5 mm
Height	109 mm
Depth	114 mm

## Material specifications

Flammability rating according to UL 94	V0
Housing insulation material	PBT

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP40 (Housing) IP20 (Connection terminal blocks)
Ambient temperature (operation)	-25 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	2000 m
Permissible humidity (operation)	10 % ... 95 %

## Approvals

### CE/UKCA

Identification	EN 62311, EN 300 330, EN 301 489-1, EN 301 489-3, EN/IEC 63000
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## UL, USA/Canada

Identification	UL/C-UL Listed UL 508
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## CCC

Identification	GB/T 14048.5
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## Electronic devices in rail vehicles

Operating temperature class	OT4
Class of extended operating temperature upon activation	ST2
Temperature change class	H1
Interruption of the power supply/supply changeover	S2
	S3/C1
	C2
Hazard levels	HL1
	HL2
	HL3
Protective coating	PC2
Shock (operation)	Category 1
Vibration (operation)	Class B

## EMC data

Low Voltage Directive	Conformance with Low Voltage Directive
Noise immunity	EN 61000-6-2
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

## Standards and regulations

### Railway standard

Standard designation	EN 50155, GB/T 25119
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## Mounting

Assembly instructions	on standard DIN rail NS 35 in accordance with EN 60715
Mounting position	any

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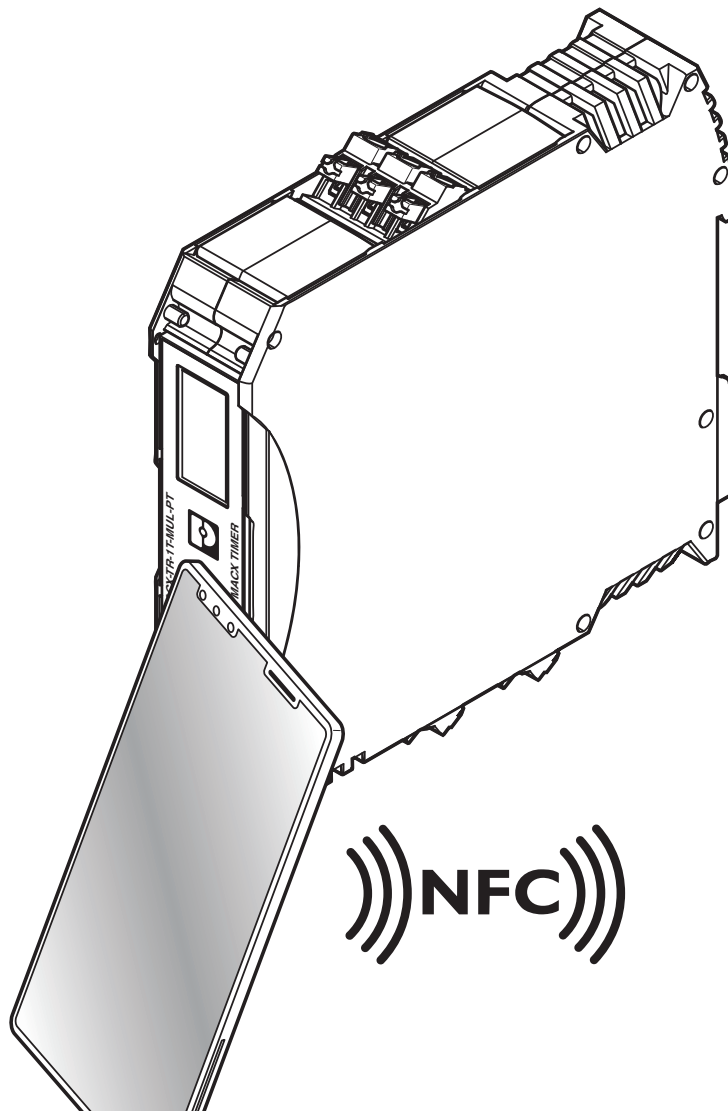
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## Drawings

Schematic diagram



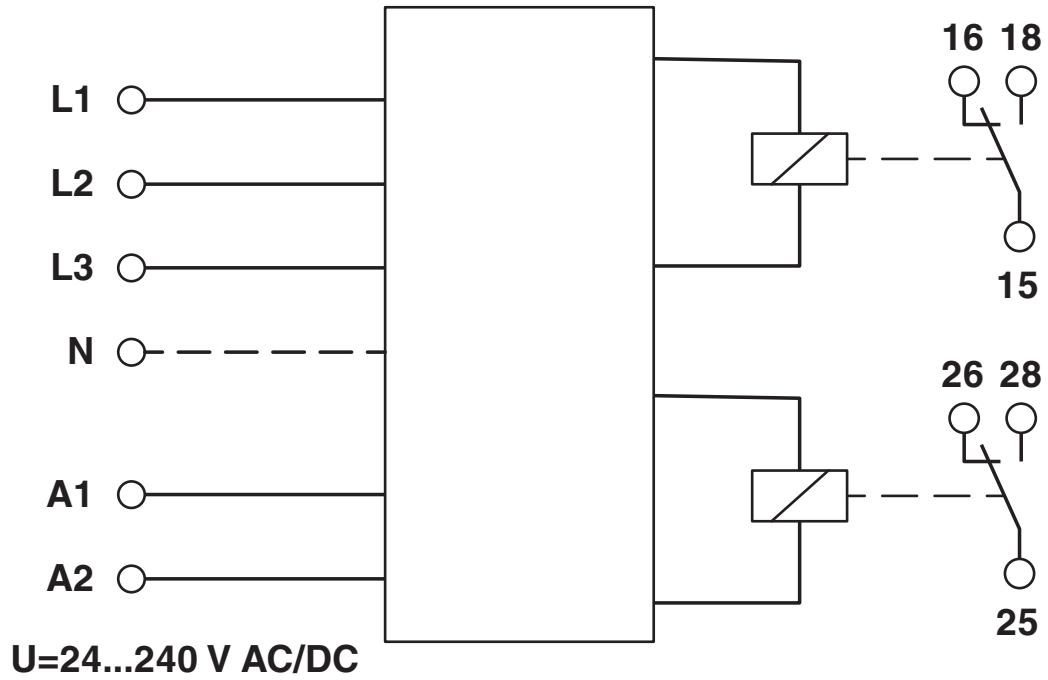
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Block diagram



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## Classifications

### ECLASS

ECLASS-11.0	27371801
ECLASS-13.0	27371801
ECLASS-12.0	27371801

### ETIM

ETIM 9.0	EC001438
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
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## Accessories

### MACX-BLUETOOTH-NFC - Adapter

1142259

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Bluetooth NFC adapter

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