

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



1336412

<https://www.phoenixcontact.com/us/products/1336412>

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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                          | 1336412       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | C443          |
| Product key                          | CK4711        |
| GTIN                                 | 4063151636777 |
| Weight per piece (including packing) | 198.55 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 |

#### Data management status

|                  |    |
|------------------|----|
| Article revision | 01 |
|------------------|----|

#### Insulation characteristics: Railway standard

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree     | 3   |

### Electrical properties

|                                                 |                                                         |
|-------------------------------------------------|---------------------------------------------------------|
| Rated impulse withstand voltage                 | 8 kV (Between the measuring circuit and other circuits) |
| 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 | 600 V (Between the measuring circuit and other circuits) |
|                          | 600 V (Between other circuits)                           |

#### Electrical isolation

|                      |       |
|----------------------|-------|
| Electrical isolation | 300 V |
|----------------------|-------|

#### 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                 | 1 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                 |

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|                 |                         |
|-----------------|-------------------------|
|                 | Phase sequence          |
|                 | Phase failure           |
|                 | Neutral conductor break |
| Basic accuracy  | 1 %                     |
| Repeat accuracy | 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                           | 8 A (fast-blow)                |

## Connection data

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Push-in 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                                   |

## 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                  |
| Permissible humidity (operation)        | 10 % ... 95 %                     |

## Approvals

### CE

|                |              |
|----------------|--------------|
| Identification | CE-compliant |
|----------------|--------------|

UL, USA/Canada

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|                |                       |
|----------------|-----------------------|
| Identification | UL/C-UL Listed UL 508 |
|----------------|-----------------------|

## CCC

|                |              |
|----------------|--------------|
| Identification | GB/T 14048.5 |
|----------------|--------------|

## 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 |
|----------------------|----------------------|

## Mounting

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| Mounting type     | DIN rail mounting                                      |
| Thread type       | ()                                                     |
| Assembly note     | on standard DIN rail NS 35 in accordance with EN 60715 |
| Mounting position | any                                                    |

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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)                 |
| SCIP                                | dc43ab57-14e0-4484-918d-f518853ddcd0 |

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