# MACX MCR-VAC-PT - Voltage measuring transducers

2906244

https://www.phoenixcontact.com/us/products/2906244

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MACX MCR voltage transducer, for AC voltages from 0 V ... 20 V AC to 0 ... 660 V AC, output signal: 0 V ... 10 V/0(4) ... 20 mA

## Product description

MACX MCR voltage measuring transducers capture DC or AC voltages and convert them into standard analog signals. The MACX MCR-VAC voltage measuring transducer captures sinusoidal AC voltages from 0 V AC to 660 V AC. Eight finely graded voltage measuring ranges provide optimum measuring accuracy. The 3-way electrical isolation ensures high operational safety.

## Your advantages

- Adjustable voltage ranges
- Bidirectional output signals
- 3-way isolation
- ZERO/SPAN adjustment ±20 %
- Tool-free parameterization of measured values
- Teach-in configuration of the measured value range

## Commercial data

| | |
|---|---|
| Item number | 2906244 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | C445 |
| Product key | CMMB11 |
| GTIN | 4055626050911 |
| Weight per piece (including packing) | 153 g |
| Weight per piece (excluding packing) | 153.6 g |
| Customs tariff number | 85437090 |
| Country of origin | DE |

# Technical data

## Product properties

| | |
|---|---|
| Product type | Voltage transducer |

## Electrical properties

| | |
|---|---|
| Alignment span | ± 20 % |
| Alignment zero | ± 20 % |
| Protective circuit | Surge protection; 33 V suppressor diode |
| Step response (10-90%) | < 180 ms |
| Maximum temperature coefficient | < 0.015 %/K |
| Maximum transmission error | < 1 % (from an upper range value, 15 Hz ... 65 Hz) |
| | < 1.3 % (from an upper range value, 65 Hz ... 405 Hz) |

Electrical isolation

| | |
|---|---|
| Pollution degree | 2 |

Electrical isolation Measuring circuit to supply circuit and output IEC 61010-2-030

| | |
|---|---|
| Standards/regulations | IEC 61010-2-030 |
| Test voltage | 5.3 kV AC (50 Hz, 60 s) |
| Measuring category | II (1000 V) |
| | III (600 V) |
| | IV (300 V) |
| Insulation | Reinforced insulation |

Electrical isolation Supply circuit to output circuit IEC 61010-1

| | |
|---|---|
| Standards/regulations | IEC 61010-1 |
| Test voltage | 2.2 kV AC (50 Hz, 60 s) |
| Overvoltage category | III (300 V) |
| | IV (150 V) |
| Insulation | Basic insulation |

Supply

| | |
|---|---|
| Nominal supply voltage | 24 V DC (-20 % ... +25 %) |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Max. current consumption | < 45 mA |

## Input data

Measurement

| | |
|---|---|
| Configurable/programmable | Yes |
| Input voltage range | 0 V AC ... 550 V AC |
| Maximum input voltage | + 660 V AC |
| Frequency range | 15 Hz ... 405 Hz |
| Input resistance of voltage input | 5500 kΩ |
| Impulse form | AC voltage |

Measurement

| | |
|---|---|
| Input voltage range | 0 V AC ... 370 V AC |
| Input resistance of voltage input | 3700 kΩ |

Measurement

| | |
|---|---|
| Input voltage range | 0 V AC ... 250 V AC |
| Input resistance of voltage input | 2500 kΩ |

Measurement

| | |
|---|---|
| Input voltage range | 0 V AC ... 170 V AC |
| Input resistance of voltage input | 1700 kΩ |

Measurement

| | |
|---|---|
| Input voltage range | 0 V AC ... 120 V AC |
| Input resistance of voltage input | 1200 kΩ |

Measurement

| | |
|---|---|
| Input voltage range | 0 V AC ... 80 V AC |
| Input resistance of voltage input | 800 kΩ |

Measurement

| | |
|---|---|
| Input voltage range | 0 V AC ... 54 V AC |
| Input resistance of voltage input | 800 kΩ |

Measurement

| | |
|---|---|
| Input voltage range | 0 V AC ... 36 V AC |
| Input resistance of voltage input | 800 kΩ |

Measurement

| | |
|---|---|
| Input voltage range | 0 V AC ... 24 V AC |
| Input resistance of voltage input | 240 kΩ |

## Output data

Signal: Voltage

| | |
|---|---|
| Voltage output signal | 0 V ... 10 V |
| | 2 V ... 10 V |
| Max. voltage output signal | ≤ 11 V |
| Load/output load voltage output | > 10 kΩ |
| Ripple | 50 mV |

Signal: Current

| | |
|---|---|
| Current output signal | 0 mA ... 20 mA |
| | 4 mA ... 20 mA |
| Max. current output signal | ≤ 22 mA |
| Load/output load current output | < 500 Ω |
| Max. capacitive load | < 1000 pF |
| Max. inductive load | < 1 mH |

## Connection data

| | |
|---|---|
| Connection method | Push-in connection |
| Stripping length | 8 mm |
| Conductor cross-section rigid | 0.2 mm² ... 1.5 mm² |
| Conductor cross-section flexible | 0.2 mm² ... 1.5 mm² |
| Conductor cross-section AWG | 24 ... 16 |

## Dimensions

| | |
|---|---|
| Width | 22.5 mm |
| Height | 118 mm |
| Depth | 114 mm |

## Material specifications

| | |
|---|---|
| Color | gray (RAL 7042) |

## Environmental and real-life conditions

### Ambient conditions

| | |
|---|---|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C (non-condensing) |
| Altitude | ≤ 2000 m |
| Permissible humidity (operation) | 10 % ... 95 % (non-condensing) |

## Approvals

### CE

| | |
|---|---|
| Certificate | CE-compliant |

### UL, USA/Canada

| | |
|---|---|
| Identification | UL 61010 Listed |

## EMC data

| | |
|---|---|
| Electromagnetic compatibility | Conformance with EMC directive |
| Low Voltage Directive | Conformance with Low Voltage Directive |
| Noise immunity | EN 61000-6-2 |
| Note | When being exposed to interference, there may be minimal deviations. |

### Noise emission

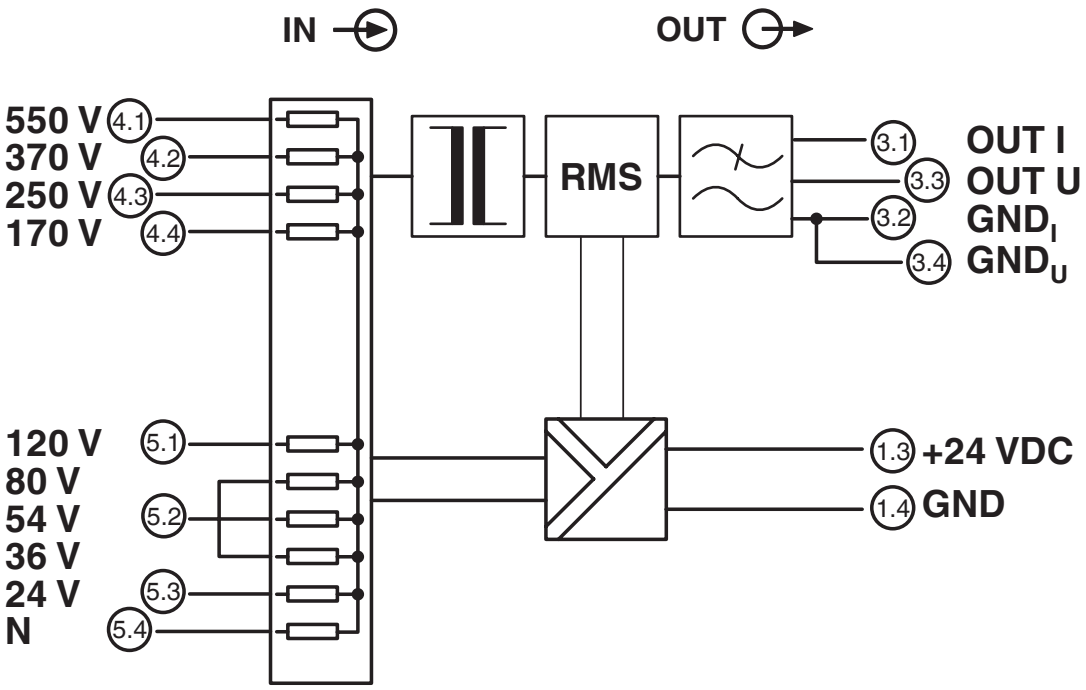
| | |
|---|---|
| Standards/regulations | EN 61000-6-4 |

## Mounting

| | |
|---|---|
| Mounting type | DIN rail mounting |
| Assembly note | can be aligned with spacing = 10 mm |
| Mounting position | any |

## Drawings

Block diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2906244

**UL Listed**
Approval ID: E330267

**cUL Listed**
Approval ID: FILE E 330267

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27210125 |
| ECLASS-15.0 | 27210125 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC002477 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 39121000 |

## 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 | c7e36447-54cd-4d1f-b581-2b41388250bc |

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