# MACX MCR-VDC - Voltage measuring transducers

2906242

https://www.phoenixcontact.com/us/products/2906242

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MACX MCR voltage transducers for DC voltages of 0... (+/-) 20 V DC to 0.. .(+/-) 660 V DC, output signal (+/-) 10 V/ (+/-)20 mA

## Product description

MACX MCR voltage measuring transducers capture DC or AC voltages and convert them into standard analog signals. The MACX MCR-VDC voltage measuring transducer measures DC voltages within the range of 0 V DC to ±660 V DC. 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 | 2906242 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | C445 |
| Product key | CMMB21 |
| GTIN | 4055626050928 |
| Weight per piece (including packing) | 158 g |
| Weight per piece (excluding packing) | 211.7 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 % |
| Maximum power dissipation for nominal condition | 1.2 W |
| Protective circuit | Surge protection; 33 V suppressor diode |
| Step response (10-90%) | < 16 ms |
| Maximum temperature coefficient | < 0.015 %/K |
| Maximum transmission error | < 1 % (of measuring range end value) |

### 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 | < 60 mA |

## Input data

### Measurement

| | |
|---|---|
| Configurable/programmable | Yes |
| Input voltage range | -550 V DC ... 550 V DC |
| Maximum input voltage | ± 660 V DC |
| Input resistance of voltage input | 5500 kΩ |
| Impulse form | DC voltage |

Measurement

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

Measurement

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

Measurement

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

Measurement

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

Measurement

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

Measurement

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

Measurement

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

Measurement

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

## Output data

Signal: Voltage

| | |
|---|---|
| Voltage output signal | -10 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 | -20 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 | Screw connection |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Conductor cross-section rigid | 0.2 mm² ... 2.5 mm² |
| Conductor cross-section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross-section AWG | 24 ... 14 |

## Dimensions

| | |
|---|---|
| Width | 22.5 mm |
| Height | 113 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 |

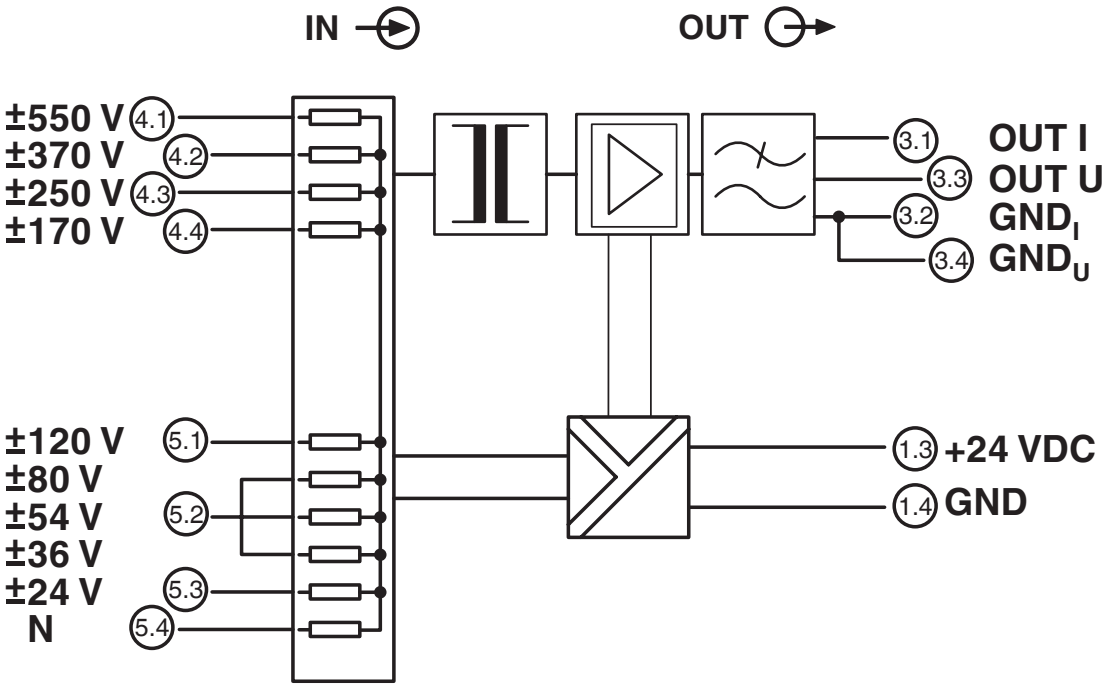
## Mounting

| | |
|---|---|
| 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/2906242

**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) |
| | 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7) |
| SCIP | 0c177365-d409-4fea-8a04-246924f8d587 |

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