

# MACX MCR-VDC - Voltage measuring transducers



2906242

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

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



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

## Your advantages

- Adjustable voltage ranges
- Bidirectional output signals
- 3-way isolation
- ZERO/SPAN adjustment  $\pm 20\%$
- 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) | 157 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             |

# MACX MCR-VDC - Voltage measuring transducers



2906242

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

## Measurement

|                                   |                        |
|-----------------------------------|------------------------|
| Input voltage range               | -370 V DC ... 370 V DC |
| Input resistance of voltage input | 3700 k $\Omega$        |

## Measurement

|                                   |                        |
|-----------------------------------|------------------------|
| Input voltage range               | -250 V DC ... 250 V DC |
| Input resistance of voltage input | 2500 k $\Omega$        |

## Measurement

|                                   |                        |
|-----------------------------------|------------------------|
| Input voltage range               | -170 V DC ... 170 V DC |
| Input resistance of voltage input | 1700 k $\Omega$        |

## Measurement

|                                   |                        |
|-----------------------------------|------------------------|
| Input voltage range               | -120 V DC ... 120 V DC |
| Input resistance of voltage input | 1200 k $\Omega$        |

## Measurement

|                                   |                      |
|-----------------------------------|----------------------|
| Input voltage range               | -80 V DC ... 80 V DC |
| Input resistance of voltage input | 800 k $\Omega$       |

## Measurement

|                                   |                      |
|-----------------------------------|----------------------|
| Input voltage range               | -54 V DC ... 54 V DC |
| Input resistance of voltage input | 800 k $\Omega$       |

## Measurement

|                                   |                      |
|-----------------------------------|----------------------|
| Input voltage range               | -36 V DC ... 36 V DC |
| Input resistance of voltage input | 800 k $\Omega$       |

## Measurement

|                                   |                      |
|-----------------------------------|----------------------|
| Input voltage range               | -24 V DC ... 24 V DC |
| Input resistance of voltage input | 240 k $\Omega$       |

## Output data

### Signal: Voltage

|                                 |                   |
|---------------------------------|-------------------|
| Voltage output signal           | -10 V ... 10 V    |
|                                 | 2 V ... 10 V      |
| Max. voltage output signal      | $\leq 11$ V       |
| Load/output load voltage output | $> 10$ k $\Omega$ |
| Ripple                          | 50 mV             |

### Signal: Current

|                                 |                  |
|---------------------------------|------------------|
| Current output signal           | -20 mA ... 20 mA |
|                                 | 4 mA ... 20 mA   |
| Max. current output signal      | $\leq 22$ mA     |
| Load/output load current output | $< 500$ $\Omega$ |
| Max. capacitive load            | $< 1000$ pF      |
| Max. inductive load             | $< 1$ mH         |

# MACX MCR-VDC - Voltage measuring transducers



2906242

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

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

### UKCA

|             |                |
|-------------|----------------|
| Certificate | UKCA-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

# MACX MCR-VDC - Voltage measuring transducers



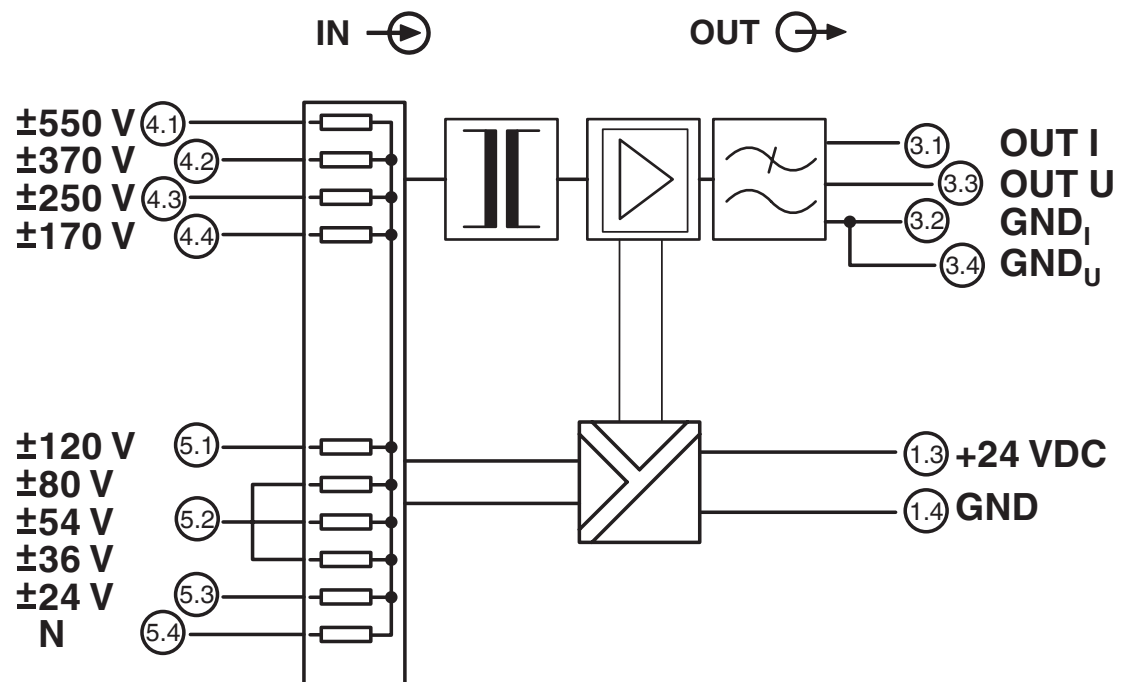
2906242

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

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

## Drawings

Block diagram



# MACX MCR-VDC - Voltage measuring transducers



2906242

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

## Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2906242>



**EAC**

Approval ID: RU\*DE.\*08.B.01852-19



**UL Listed**

Approval ID: E330267



**cUL Listed**

Approval ID: FILE E 330267

# MACX MCR-VDC - Voltage measuring transducers



2906242

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

## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | 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                           |