

# MCR-S-1-5-UI-DCI-NC - Current measuring transducer



2814715

<https://www.phoenixcontact.com/us/products/2814715>

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MCR current transducer, programmable and configurable, for measuring direct, alternating and distorted currents, input current 0...0.2 to 0...11 A, unconfigured

## Your advantages

- True r.m.s. value measurement
- Device can be set via DIP switches or MCR/PI-CONF-WIN configuration software
- 3-way isolation

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2814715       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | C444          |
| Product key                          | CMMA33        |
| GTIN                                 | 4017918169275 |
| Weight per piece (including packing) | 185.5 g       |
| Weight per piece (excluding packing) | 180 g         |
| Customs tariff number                | 85437090      |
| Country of origin                    | DE            |

## Technical data

### Product properties

|                            |                              |
|----------------------------|------------------------------|
| Product type               | Current measuring transducer |
| Insulation characteristics |                              |
| Overvoltage category       | III                          |
| Pollution degree           | 2                            |

### Electrical properties

|                                                 |                                                           |
|-------------------------------------------------|-----------------------------------------------------------|
| Total error                                     | ≤ 1.5 % (Temperature range)                               |
| Maximum power dissipation for nominal condition | 2.2 W                                                     |
| Measuring category                              | III                                                       |
| Test voltage output/power supply                | 500 V AC (50 Hz, 60 s)                                    |
| Test voltage input/output                       | 4 kV AC (50 Hz, 60 s)                                     |
| Test voltage input/power supply                 | 4 kV AC (50 Hz, 60 s)                                     |
| Protective circuit                              | Surge protection; 33 V suppressor diode                   |
| Step response (10-90%)                          | 330 ms (AC)                                               |
|                                                 | 40 ms (DC)                                                |
| Temperature coefficient, typical                | < 0.025 %/K                                               |
| Maximum transmission error                      | < 0.5 % (of nominal range value under nominal conditions) |
| Rated insulation voltage                        | 300 V AC (to earth)                                       |

### Supply

|                          |                        |
|--------------------------|------------------------|
| Supply voltage range     | 20 V DC ... 30 V DC    |
| Max. current consumption | < 40 mA (without load) |

### Input data

#### Measurement

|                                      |                                                                |
|--------------------------------------|----------------------------------------------------------------|
| Number of inputs                     | 3                                                              |
| Configurable/programmable            | Yes, unconfigured                                              |
| Input current range                  | 0 A AC/DC ... 11 A AC/DC (Permitted continuous overload: 120%) |
| Measuring range                      | 0 A AC/DC ... 1 A AC/DC                                        |
|                                      | 0 A AC/DC ... 5 A AC/DC                                        |
|                                      | 0 A AC/DC ... 10 A AC/DC                                       |
| Setting range for min. input current | 0 mA AC/DC ... 200 mA AC/DC                                    |
| Setting range for max. input current | 0 A AC/DC ... 11 A AC/DC                                       |
| LSB: Current                         | 1 µA (1 A)                                                     |
|                                      | 2 µA (2 A)                                                     |
|                                      | 5 µA (5 A)                                                     |
|                                      | 10 µA (10 A)                                                   |
|                                      | 50 µA (50 A)                                                   |
|                                      | 100 µA (100 A)                                                 |

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|                           |                                                 |
|---------------------------|-------------------------------------------------|
| Overload capacity         | $2 \times I_N$ (continuous)                     |
| Surge strength            | $20 \times I_N$ (1 s)                           |
| Frequency measuring range | 15 Hz ... 400 Hz                                |
| Curve type                | AC, DC or distorted currents                    |
| Operate threshold         | 2 % (of measuring range nominal value 1/5/10 A) |

## Output data

Signal: Voltage/current

|                                 |                   |
|---------------------------------|-------------------|
| Configurable/programmable       | Yes, unconfigured |
| Voltage output signal           | 0 V ... 5 V       |
|                                 | 1 V ... 5 V       |
|                                 | 0 V ... 10 V      |
|                                 | 2 V ... 10 V      |
|                                 | -5 V ... 5 V      |
|                                 | -10 V ... 10 V    |
|                                 | 10 V ... 0 V      |
|                                 | 10 V ... 2 V      |
|                                 | 10 V ... -10 V    |
|                                 | 5 V ... 0 V       |
|                                 | 5 V ... 1 V       |
|                                 | 5 V ... -5 V      |
| Current output signal           | 0 mA ... 20 mA    |
|                                 | 4 mA ... 20 mA    |
|                                 | 20 mA ... 0 mA    |
|                                 | 20 mA ... 4 mA    |
| Load/output load voltage output | > 10 k $\Omega$   |
| Load/output load current output | < 500 $\Omega$    |

## Connection data

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Screw connection                            |
| Stripping length                 | 8 mm                                        |
| Screw thread                     | M3                                          |
| 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                                   |

## Signaling

|                |             |
|----------------|-------------|
| Status display | LED (green) |
|----------------|-------------|

## Dimensions

Item dimensions

|        |         |
|--------|---------|
| Width  | 22.5 mm |
| Height | 99 mm   |

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|       |          |
|-------|----------|
| Depth | 114.5 mm |
|-------|----------|

## Material specifications

|                  |                             |
|------------------|-----------------------------|
| Color            | green (RAL 6021)            |
| Housing material | Polyamide PA non-reinforced |

## Environmental and real-life conditions

### Ambient conditions

|                                         |                                |
|-----------------------------------------|--------------------------------|
| Degree of protection                    | IP20                           |
| Ambient temperature (operation)         | -20 °C ... 60 °C               |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C               |
| Altitude                                | < 2000 m                       |
| Permissible humidity (operation)        | 10 % ... 95 % (non-condensing) |

## Approvals

### CE

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

### UL, USA/Canada

|                |                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| Identification | Class I, Zone 2, AEx nA nC IIC T4, Ex nA nC IIC T4 Gc X<br>Class I, Div. 2, Groups A, B, C and D or Non-Hazardous Locations Only |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|

## EMC data

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

### Noise emission

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

## Standards and regulations

|                       |                 |
|-----------------------|-----------------|
| Standards/regulations | IEC 61010-2-030 |
|-----------------------|-----------------|

## Mounting

|                   |                   |
|-------------------|-------------------|
| Mounting type     | DIN rail mounting |
| Mounting position | any               |

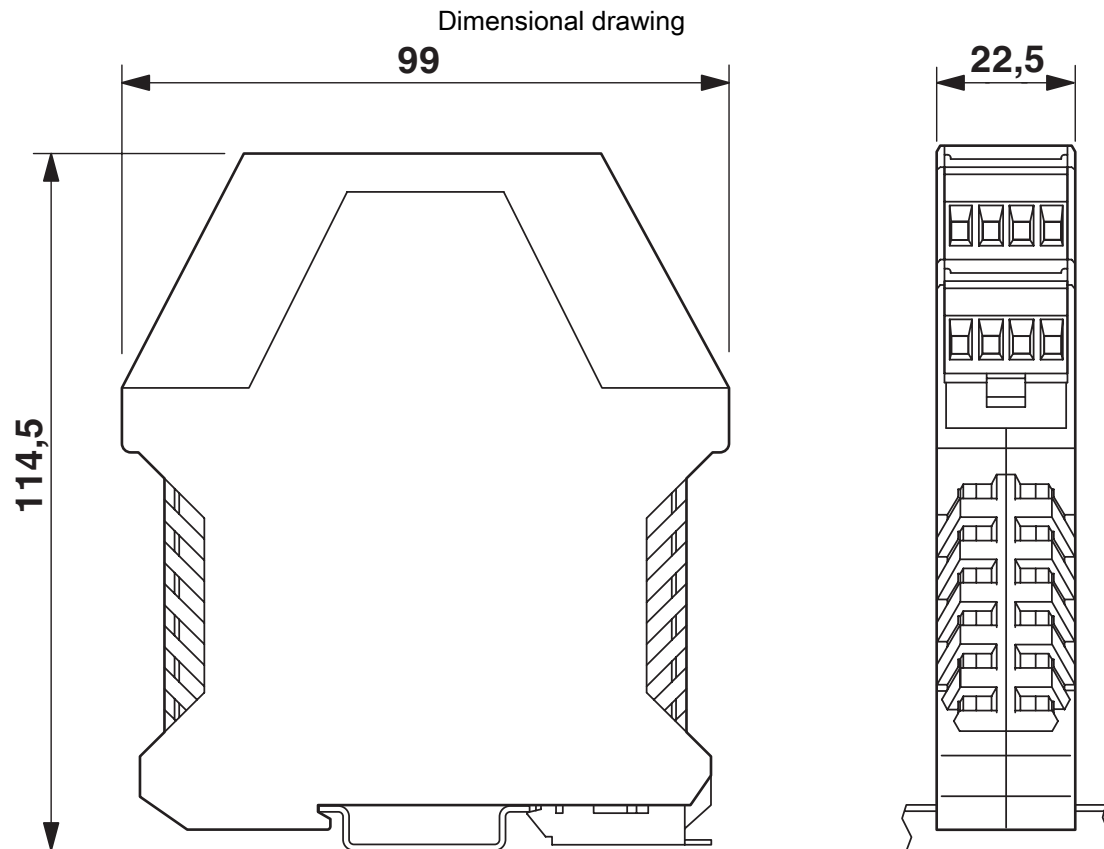
# MCR-S-1-5-UI-DCI-NC - Current measuring transducer



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## Drawings



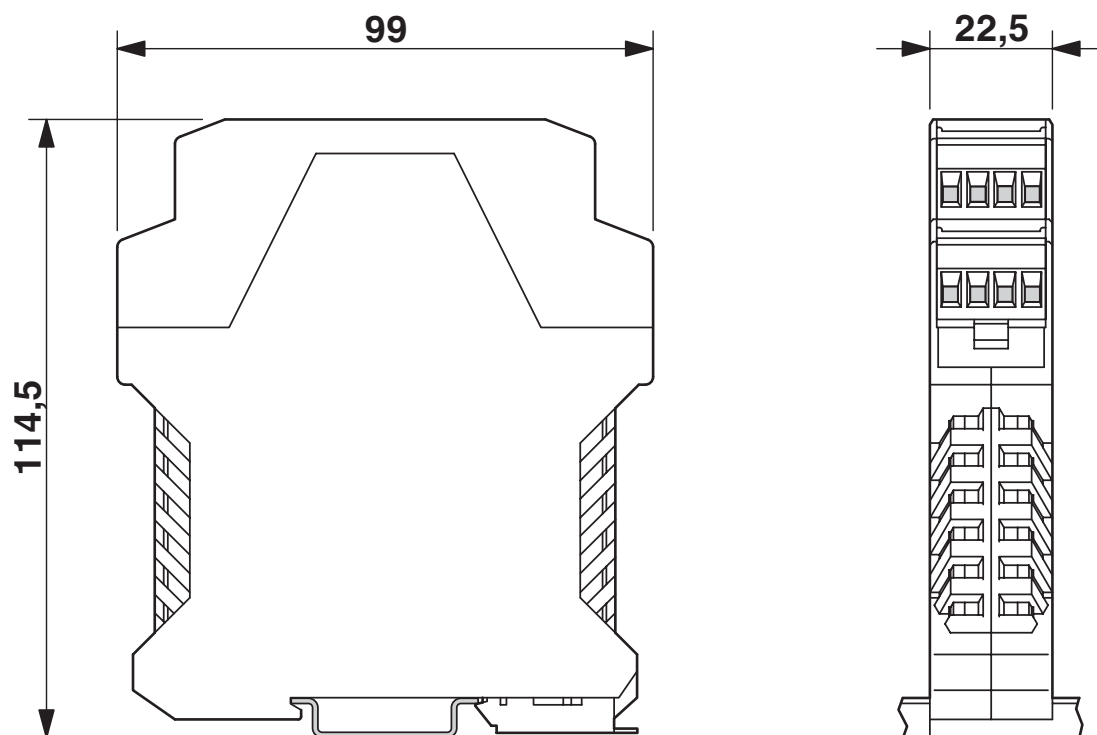
# MCR-S-1-5-UI-DCI-NC - Current measuring transducer



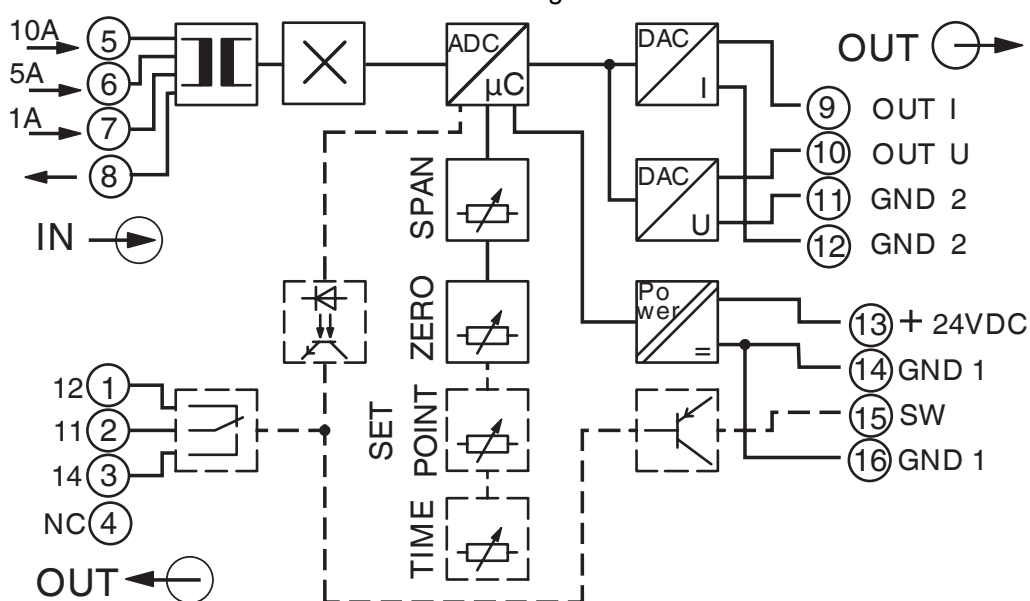
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Dimensional drawing



Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2814715>



**cUL Recognized**

Approval ID: E238705



**UL Recognized**

Approval ID: E238705



**EAC**

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



**cUL Listed**

Approval ID: FILE E 199827



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27210123 |
|-------------|----------|

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002475 |
|----------|----------|

### UNSPSC

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

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## Environmental product compliance

### EU RoHS

|                                         |                    |
|-----------------------------------------|--------------------|
| Fulfills EU RoHS substance requirements | Yes                |
| Exemption                               | 6(c), 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.) | Hexahydromethylphthalic anhydride(CAS: n/a)                    |
|                                     | Lead(CAS: 7439-92-1)                                           |
|                                     | 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7) |
| SCIP                                | 38c583fc-a97e-4912-9e18-8facc1ed1f15                           |

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