

## MCR-SL-S-...00-U(I)-(LP)

### Current Measuring Transducer for Sinusoidal and Non-Sinusoidal Alternating Currents



#### INTERFACE

Data Sheet

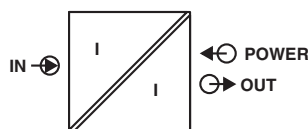
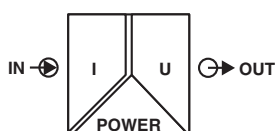
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#### Description

The **MCR-SL-S-...** current measuring transducers provide the user with the opportunity of retrofitting the current measuring transducer in an existing system without interruption. This is made possible by an open up coil that functions on the Rogowski principle. Insulated conductors on the primary side with a diameter of up to 18.5 mm can be embraced. The current measuring transducers are electrically isolated from one another on the input and output side.

The **MCR-SL-S-...-U** current measuring transducers convert sinusoidal and non-sinusoidal alternating currents up to 400 A into analog standard signals of 0...5 V or 0...10 V. The measuring ranges for input and output can be selected via a switch.

The **MCR-SL-S-...-I-LP** current measuring transducers convert sinusoidal and non-sinusoidal alternating currents up to 400 A into the analog standard signal of 4...20 mA. The measuring range at the output is set with a switch. On the output side, the current measuring transducers are operated in a 4...20 mA current loop, which simultaneously provides the power supply for the modules, which is necessary for signal conversion.



Make sure you always use the latest documentation.  
It can be downloaded at [www.download.phoenixcontact.com](http://www.download.phoenixcontact.com).  
A conversion table is available on the Internet at  
[www.download.phoenixcontact.com/general/7000\\_en\\_00.pdf](http://www.download.phoenixcontact.com/general/7000_en_00.pdf).



This data sheet is valid for all products listed on the following page:

## Ordering Data

| Description   | Type              | Order No. | Pcs./Pkt |
|---|-------------------|-----------|----------|
| MCR current measuring transducer, for measuring sinusoidal and non-sinusoidal alternating currents, input current 0...100 A, output voltage 0...(5) 10 V        | MCR-SL-S-100-U    | 2813457   | 1        |
| MCR current measuring transducer, for measuring sinusoidal and non-sinusoidal alternating currents, input current 0...200 A, output voltage 0...(5) 10 V        | MCR-SL-S-200-U    | 2813460   | 1        |
| MCR current measuring transducer, for measuring sinusoidal and non-sinusoidal alternating currents, input current 0...400 A, output voltage 0...(5) 10 V        | MCR-SL-S-400-U    | 2813473   | 1        |
| MCR current measuring transducer, for measuring sinusoidal and non-sinusoidal alternating currents, input current 0...100 A, loop-powered output with 4...20 mA | MCR-SL-S-100-I-LP | 2813486   | 1        |
| MCR current measuring transducer, for measuring sinusoidal and non-sinusoidal alternating currents, input current 0...200 A, loop-powered output with 4...20 mA | MCR-SL-S-200-I-LP | 2813499   | 1        |
| MCR current measuring transducer, for measuring sinusoidal and non-sinusoidal alternating currents, input current 0...400 A, loop-powered output with 4...20 mA | MCR-SL-S-400-I-LP | 2813509   | 1        |

## Technical Data

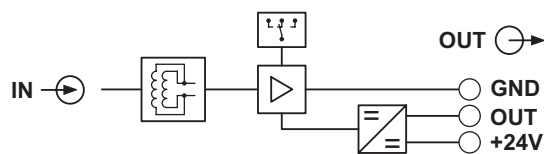
| General Data                               | MCR-SL-S-...-U  | MCR-SL-S-...-I-LP               |                       |
|--|---|---------------------------------|-----------------------|
| Supply voltage                             | 20 V DC ... 30 V DC                                       |                                 |                       |
| Current consumption                        | < 30 mA   | –                               |                       |
| Transmission error                         | < ±1% of end value  |                                 |                       |
| Cable position error                       | < 0.63%   |                                 |                       |
| Temperature coefficient                    | < 0.035%/K  | < 0.025%/K                      |                       |
| Step response (10% ... 90%)                | < 340 ms  |                                 |                       |
| Degree of protection                       | IP20  |                                 |                       |
| Test voltage                               | 5 kV, 50 Hz, 1 min.                                       |                                 |                       |
| Ambient temperature range                  | -20°C ... +60°C   |                                 |                       |
| Dimensions (W x H x D)                     | 55 mm x 67 mm x 85 mm                                     |                                 |                       |
| Conductor cross section                    | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>               |                                 |                       |
| Housing design                             | Polyamide PA non-reinforced, green                        |                                 |                       |
| Electromagnetic compatibility              | CE compliant  |                                 |                       |
| Input                                      | MCR-SL-S-100...   | MCR-SL-S-200...                 | MCR-SL-S-400...       |
| Input current                              | 0 A AC ... 100 A AC                                       | 0 A AC ... 200 A AC             | 0 A AC ... 400 A AC   |
| Measuring range                            | 0 A ... 50/75/100 A                                       | 0 A ... 100/150/200 A           | 0 A ... 200/300/400 A |
| Response threshold                         | 1% of end value   |                                 |                       |
| Frequency range                            | 30 Hz ... 6000 Hz   |                                 |                       |
| Curve type                                 | Sinusoidal and non-sinusoidal                             |                                 |                       |
| Overload capacity (continuous)             | No limitation   |                                 |                       |
| Surge strength (for 1 s)                   | No limitation   |                                 |                       |
| Connection method                          | Clamp-on cable design for 18.5 mm Ø (insulated conductor) |                                 |                       |
| Output                                     | MCR-SL-S-...-U  | MCR-SL-S-...-I-LP               |                       |
| Output signal                              | 0 V ... (5)10 V   | 4 mA ... 20 mA                  |                       |
| Max. output signal                         | 7 V (0...5 V); 14 V (0...10 V)                            | 25 mA                           |                       |
| Load                                       | ≥ 10 kΩ   | (U <sub>B</sub> - 12 V) / 20 mA |                       |
| Approvals                                  |   |                                 |                       |
| UL/C-UL Listed UL 508                      | Yes   |                                 |                       |
| UL/C-UL Listed UL 1604 Class I, Division 2 | In preparation  |                                 |                       |

## Features

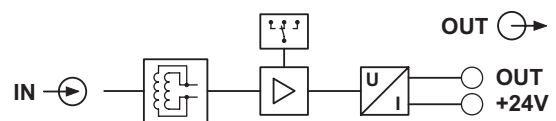
- Can be retrofitted with the open up Rogowski coil
- Choice of voltage or current output
- Measuring range selection with slide switch
- True r.m.s. value measurement from 30 Hz ... 6000 Hz
- Clamp-on cable design for 18.5 mm  $\varnothing$  (insulated conductor)

## Block Diagrams

MCR-SL-S-...00-U



MCR-SL-S-...00-I-LP



## Current Measurement

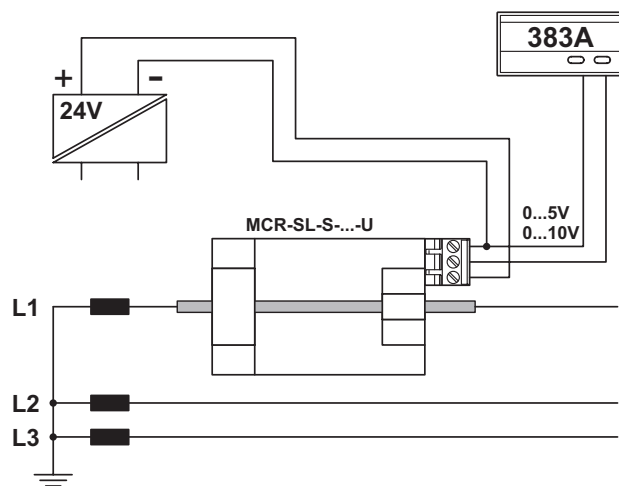


Figure 1 Current measurement

## Current Monitoring

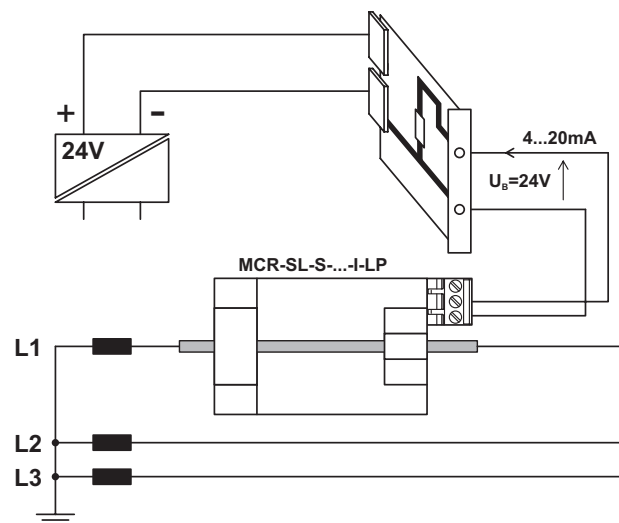


Figure 2 Current monitoring



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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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