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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



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

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



#### INTERFACE

Data Sheet

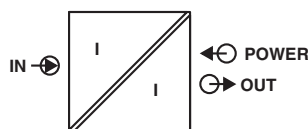
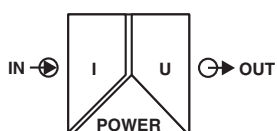
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#### Description

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

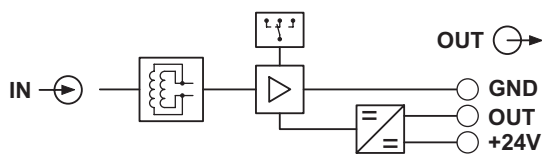
General Data	MCR-SL-S-...-U	MCR-SL-S-...-I-LP	
Supply voltage	20 V DC ... 30 V DC		
Current consumption	< 30 mA	-	
Transmission error	< ±1% of end value		
Cable position error	< 0.63%		
Temperature coefficient	< 0.035%/K	< 0.025%/K	
Step response (10% ... 90%)	< 340 ms		
Degree of protection	IP20		
Test 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		
<b>Input</b>	<b>MCR-SL-S-100...</b>	<b>MCR-SL-S-200...</b>	<b>MCR-SL-S-400...</b>
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 ∅ (insulated conductor)		
<b>Output</b>	<b>MCR-SL-S-...-U</b>	<b>MCR-SL-S-...-I-LP</b>	
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	
<b>Approvals</b>			
UL/C-UL Listed UL 508	Yes		
UL/C-UL Listed UL 1604 Class I, Division 2	In preparation		

## Features

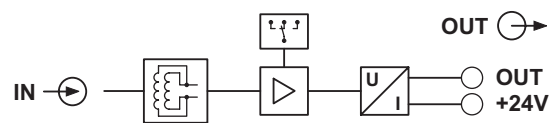
- Can be retrofitted with the open up Rogowski coil
- Choice of voltage or current output
- Measuring range selection with slide switch
- True r.m.s. value measurement from 30 Hz ... 6000 Hz
- Clamp-on cable design for 18.5 mm  $\varnothing$  (insulated conductor)

## Block Diagrams

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



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



## Current Measurement

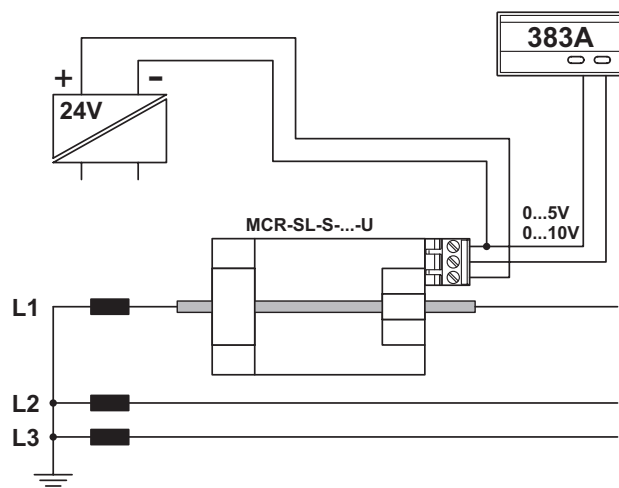


Figure 1 Current measurement

## Current Monitoring

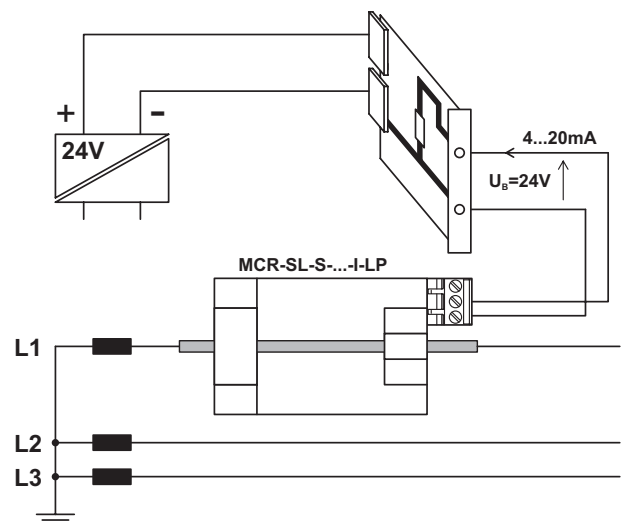


Figure 2 Current monitoring