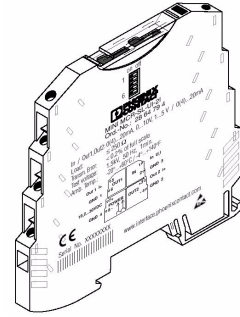


MINI MCR-SL-UI-2I(-SP)(-NC)

Configurable Signal Duplicator



Data Sheet

03/2005

Product Description

Configurable signal duplicator
MINI MCR-SL-UI-2I(-SP)(-NC) is used to electrically isolate, condition, amplify, and filter analog standard signals.

On the input side, the analog standard signals 0...20 mA, 4...20 mA, 0...10 V or 1...5 V can be selected, on the output side there are two current outputs that can be set independently of one another with a 0...20 mA-, or 4...20 mA signal, electrically isolated (4-way isolation).

The DIP switch accessible on the side of the housing allows the configuration of the input and output signal ranges.

The voltage supply (19.2...30 V DC) can either be provided via connecting terminal blocks "7"/"8" of the modules, or together, via the DIN rail bus connector (see Figure 6 on page 7). Please also observe "Power Supply" on page 2.

Features

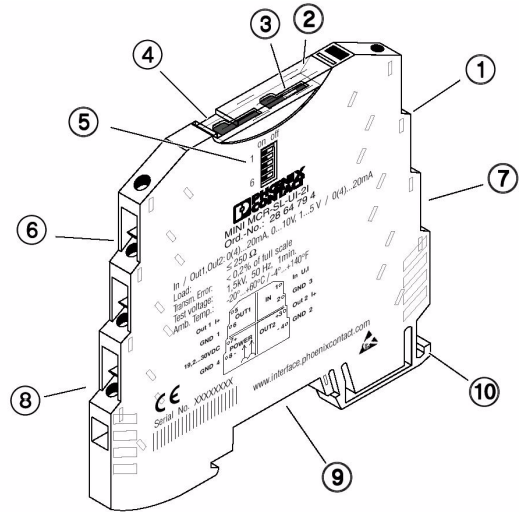







Figure 1 Features

- 1 Input: Standard signals
- 2 Transparent cover
- 3 Red LED
- 4 Groove for ZBF 6 Zack marker strip
- 5 DIP switch S1
- 6 Output 1: Current signals
- 7 Output 2: Current signals
- 8 Supply voltage
- 9 Connection option for DIN rail bus connector
- 10 Universal snap on foot for EN mounting rails

Technical Data

General Data	
Supply voltage	19,2...30 V DC
Current consumption	< 30 mA
Power consumption	< 600 mW
Transmission error of end value typ.	< 0,2 % < 0,1 %
Temperature coefficient max. typ.	< 0,01 %/K < 0,004 %/K
Cut-off frequency	approx. 35 Hz
Step response (10...90 %)	approx. 10 ms
Test voltage (input / output 1 / output 2 / supply)	1,5 kV, 50 Hz, 1 min.
Ambient temperature range Operation Storage	-20 °C...+60 °C -40 °C...+85 °C
Dimensions (W x H x D)	6,2 mm x 93,1 mm x 102,5 mm
Conductor cross section	0,2...2,5 mm ² (AWG 24...12)
Stripping length Screw connection Spring-cage connection	12 mm 8 mm
Housing design	Polybutylenterephthalate PBT, green
Tests / Approvals	 (c  us c  us Listed) planned, 
Conformity according to EN 60079-15	 II 3 G Ex nA II T4 X

Input (see Figure 1, detail 1)	I _{IN}	U _{IN}
Input signal range (configurable)	0...20 mA, 4...20 mA	0...10 V, 1...5 V
Max. input signal	50 mA	30 V
Input resistance	approx. 50 Ω	approx. 100 kΩ

Output (see Figure 1, detail 6)	I _{OUT}
Output signal range (two current outputs, configurable)	0...20 mA, 4...20 mA
Load	≤ 250 Ω
Ripple	< 20 mV _{SS} (250 Ω)
Max. output signal	22 mA

Conformance With EMC Guideline 89/336/EEC And Low Voltage Directive 73/23/EEC		
Immunity to Interference According to EN 61000-6-2¹		
Discharge of static electricity (ESD)	EN 61000-4-2	Criterion B ²
Electromagnetic HF field	EN 61000-4-3	Criterion A ³
Fast transients (Burst)	EN 61000-4-4	Criterion B ²
Surge voltage capacities (Surge)	EN 61000-4-5	Criterion B ²
Conducted disturbance	EN 61000-4-6	Criterion A ³
Noise Emission According to EN 50081-2		
Noise emission of housing	EN 55011 ⁴	Class A ⁵

¹ EN 61000 corresponds to IEC 61000

² Criterion B: Temporary impairment to operational behavior that is corrected by the device itself.

³ Criterion A: Normal operating behavior within the defined limits.

⁴ EN 55011 corresponds to CISPR11

⁵ Class A: Area of application industry.

Ordering Data

Description	Order Designation	Order No.
Configurable Signal Duplicator Screw terminal block, preconfigured (see "Data Type Key" on page 5)	MINI MCR-SL-UI-2I	28 64 79 4
Configurable Signal Duplicator Screw terminal block, standard configuration (see "Standard Configuration" on page 8)	MINI MCR-SL-UI-2I-NC	28 64 17 6
Configurable Signal Duplicator Spring-cage terminal block, preconfigured (see "Data Type Key" on page 5)	MINI MCR-SL-UI-2I-SP	28 64 80 4
Configurable Signal Duplicator Spring-cage terminal block, standard configuration (see "Standard Configuration" on page 8)	MINI MCR-SL-UI-2I-SP-NC	28 64 18 9

Accessories

Description	Order Designation	Order No.
DIN rail bus connectors	ME 6,2 TBUS-2 1,5/5-ST-3,81 GN	28 69 72 8
Power terminal block with screw connection	MINI MCR-SL-PTB	28 64 13 4
Power terminal block with spring-cage connection	MINI MCR-SL-PTB-SP	28 64 14 7
System power supply	MINI-SYS-PS-100-240AC/24DC/1,5	28 66 98 3

Data Type Key

Order No.	Input range	Output combination (see below)	Behavior of the analog outputs (see Figure 2)	Manufacturer's Calibration Certificate WKZ
28 64 79 4 28 64 80 4	IN03	A	0	NONE
(see „Ordering Data“)	IN01 $\hat{=}$ 0...20 mA IN02 $\hat{=}$ 4...20 mA IN03 $\hat{=}$ 0...10 V IN06 $\hat{=}$ 1...5 V	A B C	0 $\hat{=}$ Analog behavior 1 $\hat{=}$ Limit	NONE $\hat{=}$ without WKZ YES $\hat{=}$ with WKZ (a charge will be made) YESPLUS $\hat{=}$ WKZ with 5 measuring points (a charge will be made)

Key for output combination:

	Output 1	Output 2
A	0...20 mA	0...20 mA
B	0...20 mA	4...20 mA
C	4...20 mA	4...20 mA

Behavior of the analog outputs:

Configuration example, input 1...5 V, output 4...20 mA

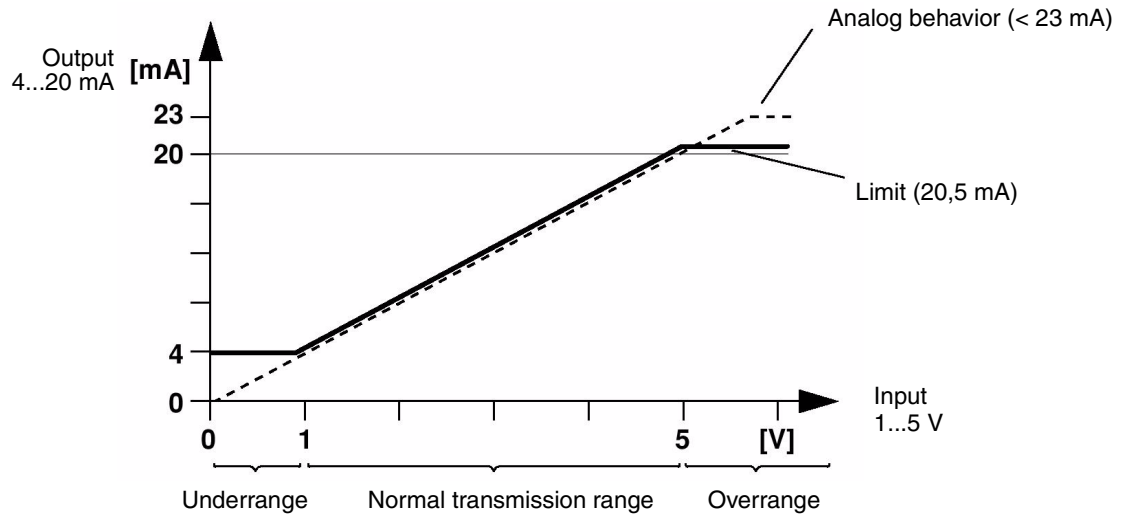


Figure 2 Behavior of the analog outputs

Screw Connection

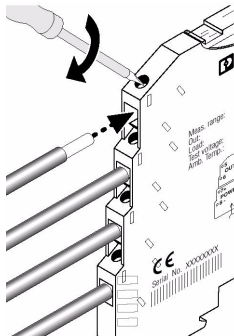


Figure 3 MINI MCR-SL-UI-2I
MINI MCR-SL-UI-2I-NC

Spring-Cage Connection

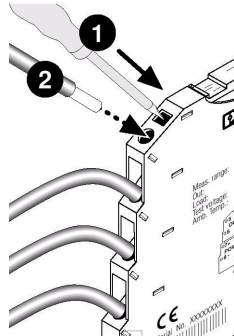


Figure 4 MINI MCR-SL-UI-2I-SP
MINI MCR-SL-UI-2I-SP-NC

Installation



The device may only be installed and put into operation by qualified personnel. The corresponding national regulations (e.g. VDE, DIN) must be observed.

The assignment of the connecting terminal blocks is shown in Figure 5.

Block Diagram

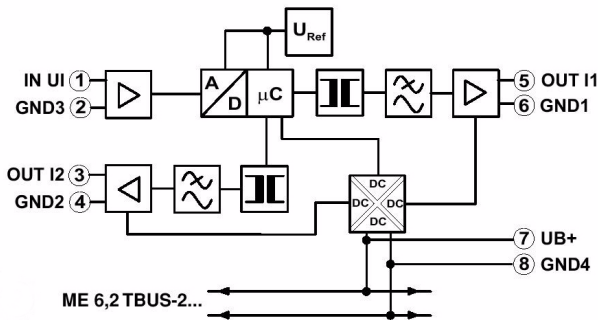


Figure 5 Block Diagram

The MINI Analog module can be snapped onto all 35 mm DIN rails corresponding to EN 60715.

Using DIN rail bus connector ME 6,2 TBUS-2 1,5/5-ST-3,81 GN (Order No.: 28 69 72 8)



Please also pay particular attention to the direction of the MINI Analog module and DIN rail bus connector when snapping into position:

Snap-on foot (Figure 6, detail D 10) **below** and **plug** (Figure 6, detail C 11) **left!**

- First position the DIN rail bus connector in the DIN rail to bridge the voltage supply (see Figure 6).

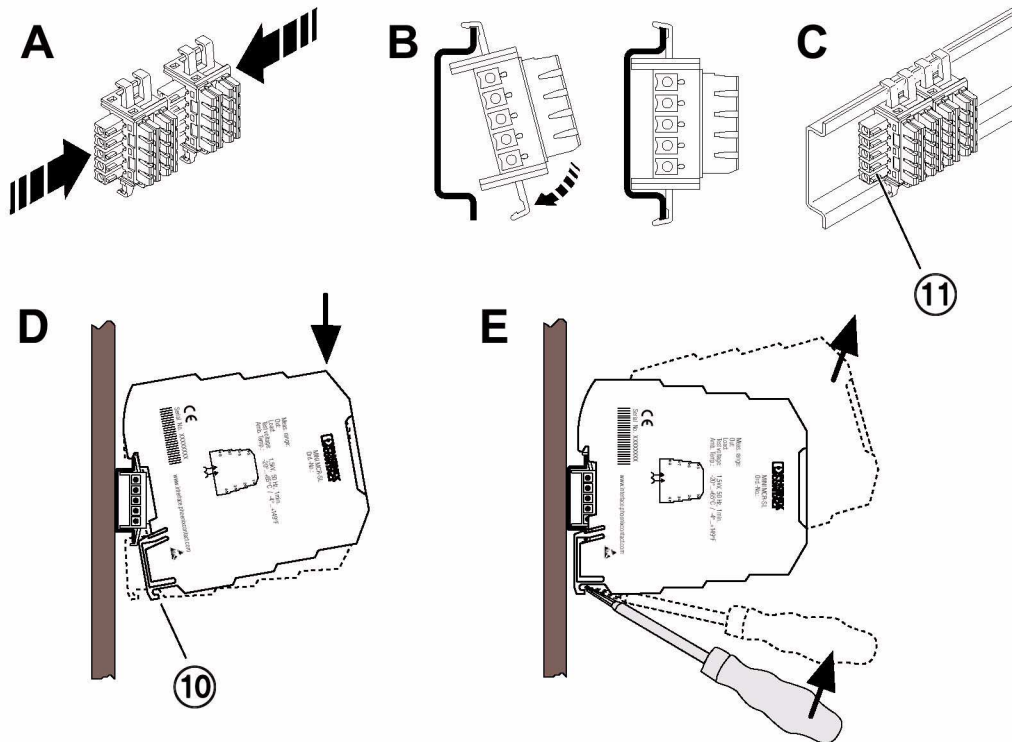


Figure 6 Mounting/Removing

Power Supply



Never connect the supply voltage directly to the DIN rail bus connector!

It is not permitted to draw power from the DIN rail bus connector or from individual MINI Analog modules!

Feeding in power via the MINI Analog module

Where the total current consumption of the aligned MINI Analog modules does not exceed 400 mA, the power can be fed in directly at the connecting terminal blocks of a MINI Analog module. We recommend connecting a 400 mA fuse upstream.

Feeding in power with a power terminal block

Power terminal block MINI MCR-SL-PTB (Order No.: 28 64 13 4) of the same shape, or MINI MCR-SL-PTB-SP (Order No.: 28 64 14 7) is used to feed in the supply voltage to the DIN rail bus connector. We recommend connecting a 2 A fuse upstream.

Feeding in the power with a system power supply unit

System power supply unit MINI-SYS-PS-... (Order No.: 28 66 98 3) with 1.5 A output current contacts the DIN rail bus connector with the supply voltage, allowing several MINI Analog modules to be supplied from the network.

Configuration



Electrostatic Discharge!

The module contains components that can be damaged or destroyed by electrostatic discharge. When handling the module, observe the necessary safety precautions against electrostatic discharge (ESD), in accordance with EN 61340-5-1 and EN 61340-5-2, as well as IEC 61340-5-1 and IEC 61340-5-2.

DIP switch S1 (see Figure 1, detail 5) is used to define the combination of input and output standard signal ranges (see "Configuration Table" on page 9).

Standard Configuration

If it is an "NC version" (MINI MCR-SL-UI-2I-NC or MINI MCR-SL-UI-2I-SP-NC), the device has the following standard configuration:

- Input: 0...10 V,
- output 1 and output 2: 0...20 mA

(all DIP switches in the "off" position).

Signaling

Under the transparent cover is a red LED (see Figure 1, detail 3), that signals overrange and under-range.



If the LED **flashes**, the fault is in the parameter memory. In this case, the device must be inspected in the factory!

Configuration Table

Input IN	DIP S1		
	1	2	3
0...10 V	off	off	off
1...5 V	off	ON	off
0...20 mA	ON	off	ON
4...20 mA	ON	ON	ON





Output	DIP S1
	4
Analog behavior	off
Limit	ON

Output OUT 1	Output OUT 2	DIP S1	
		5	6
0...20 mA	0...20 mA	off	off
0...20 mA	4...20 mA	ON	off
4...20 mA	4...20 mA	off	ON
intern	intern	ON	ON



Make sure you always use the latest documentation.
 It can be downloaded at www.download.phoenixcontact.com.
 A conversion table is available on the Internet at
www.download.phoenixcontact.com/general/7000_en_00.pdf.

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