

MCR-C-UI-UI-(450)-DCI(-NC)

Configurable 3-Way Isolation Amplifier

1. Short Description

- Configurable inputs and outputs
- Signal conversion/amplification
- 3-way isolation
- Zero/span adjustment
- 17.5 mm ME housing

MCR 3-way isolation amplifiers are used to electrically isolate and convert analog signals. The modules provide electrical isolation of standard analog signals. The module input and output are supplied via integrated DC/DC converters, which are electrically isolated from the mains (3-way isolation, Fig. 1).

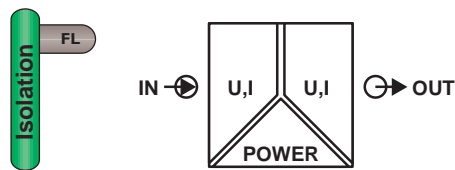


Fig. 1

The auxiliary voltage required is indicated by a green power LED. It is thus clearly visible whether or not the auxiliary voltage is available.

The MCR modules ensure the safe decoupling of a sensor circuit from the evaluation circuit and also prevent the negative effects of several sensor circuits connected with one another. 3-way isolation enables the universal use of modules both locally and close to the control system for signal conversion and electrical isolation as well as on the transmission path for jumpering high load resistors.

Two sealed potentiometers that can be accessed on the front of the module enable zero point (zero) adjustment and amplification (span) in order to carry out a measured distance adjustment.

The desired configuration to which the device is to be adjusted must be specified when placing an order (see order example and combination table). If no specification is given according to the specified order example, (page 4), the devices are supplied with the



Fig. 2

standard configuration (input signal 0...10 V, output signal 0...10 V).

DIP switches can be used to configure the inputs and outputs of the isolation amplifier so that more than 200 signal conversions can be set.

The analog signals are converted and electrically isolated using an inductive transmission method. In addition, a filter connected downstream of the transmitter minimizes interference.

MCR 3-way modules can be snapped onto symmetrical DIN rails according to EN 50 022. The signal lines are securely connected to the module via plug-in screw connections and are clearly labeled.

Configurable 3-Way Isolation Amplifier – MCR-C-UI-UI-...

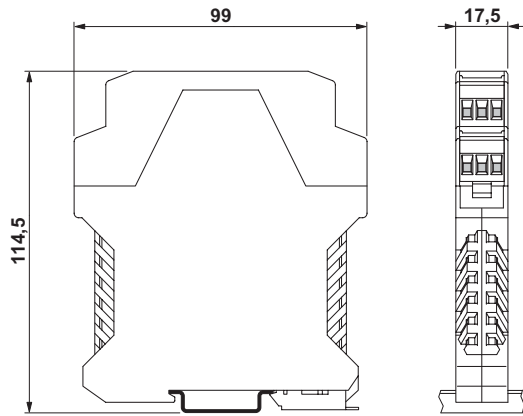


Fig. 3



Fig. 4

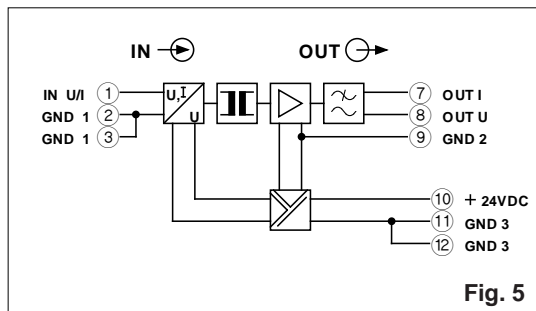


Fig. 5

MCR-C-UI-UI-DCI

with configurable input and output

UL vs (UL) vs (R) 2)

	Solid [mm ²]	Stranded [mm ²]	AWG
Connection data	0.2 - 2.5	0.2 - 2.5	25 - 14

2. Description

MCR 3-way isolator, for the electrical isolation of analog signals

MCR 3-way isolator, as above, but with limit frequency (3 dB) 450 Hz

2.1. Technical Data

Input

Input signal
Possible adjustment: Offset Amplification
Maximum input signal
Input resistance

Output

Output signal
Maximum output signal
Load

Type	Order No.	Pcs. Pkt.
MCR-C-UI-UI-DCI ¹⁾	28 10 91 3	1
MCR-C-UI-UI-DCI-NC	28 10 93 9	1
MCR-C-UI-UI-450-DCI ¹⁾	28 10 88 7	1

0...10 V, please specify other setting when placing an order
±2%
±2%
30 V or 50 mA
1 MΩ at U input
50 Ω at I input

0...10 V, please specify other setting when placing an order
15 V or 30 mA
≥ 10 kΩ at U output
≤ 500 Ω at I output

2.2. General Data

Supply voltage
Current consumption (without load)
Transmission error
Temperature coefficient
Limit frequency (3 dB)
Response time (10 - 90%)
Test voltage: Input/output Auxiliary voltage/signal
Protective circuit
Ambient operating temperature range
Connection method
Mounting position/mounting
Dimensions (W x H x D)
Cable cross section
Housing material

MCR-C-UI-UI-DCI(-NC)	MCR-C-UI-UI-450-DCI
18...30 V	18...30 V
< 30 mA	< 30 mA
0.1% of the final value	0.1% of the final value
0.0075%/K	0.0075%/K
30 Hz	450 Hz
11 ms	0.8 ms
1.5 kV, 50 Hz, 1 min.	1.5 kV, 50 Hz, 1 min.
1 kV, 50 Hz, 1 min.	1 kV, 50 Hz, 1 min.
Transient protection -20°C to +65°C	Transient protection -20°C to +65°C
Plug-in COMBICON screw terminal block	Plug-in COMBICON screw terminal block
Any (17.5 x 99 x 114.5) mm	Any (17.5 x 99 x 114.5) mm
0.2 - 2.5 mm ² (25 - 14 AWG)	0.2 - 2.5 mm ² (25 - 14 AWG)
Polyamide PA, not reinforced	Polyamide PA, not reinforced

Approvals

UL vs (UL) vs (R) 2)
Germanischer Lloyd No. 12112-98HH, environmental category D, H

¹⁾ If you have not made any other specifications for the configuration, the device is supplied in the standard configuration (see order key, page 4).

²⁾ Only MCR-C-UI-UI-DCI Order No. 28 10 91 3

Configurable 3-Way Isolation Amplifier – MCR-C-UI-UI-...

2.3. EMC Electromagnetic Compatibility



Conformance With EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC

Noise Immunity According to 50082-2

• Electrostatic discharge (ESD)	EN 61000-4-2	Criterion B 8 kV air discharge
• Electromagnetic HF field: Amplitude modulation Pulse modulation	EN 61000-4-3	Criterion A 10 V/m 10 V/m
• Fast transients (burst)	EN 61000-4-4	Criterion B I/O/S ¹⁾ : 2 kV/5 kHz
• Surge current loads (surge)	EN 61000-4-5	Criterion B I/O ¹⁾ : 2 kV/42 Ω
• Conducted interference	EN 61000-4-6	Criterion A I/O/S ¹⁾ : 10 V
• Noise emission according to EN50081	EN 55011	Class A

EN 61000 corresponds to IEC 1000
EN 55011 corresponds to CISPR11

¹⁾ I ≙ Input/O ≙ Output/S ≙ Supply

Criterion A: Normal operating characteristics within the specified limits.

Criterion B: Temporary adverse effects on the operating characteristics which the device corrects automatically.

Class A: Industrial application, without special installation measures.

2.4. Approval

	PROCESS CONTROL EQUIPMENT FOR HAZARDOUS LOCATIONS 31ZN LISTED
Cl. I, Zn. 2, AEx nC IIC T6 / Ex nC IIC T6 Cl. I Div. 2, Groups A, B, C and D A) This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D or non-hazardous locations only. B) Warning - explosion hazard - substitution of components may impair suitability for Class 1, Division 2. C) Warning - explosion hazard - do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.	

2.5. Connection Diagram MCR 3-Way Isolation Amplifier, Configurable

- ① Plug-in screw terminal blocks (power supply, signal output)
- ② ZERO/SPAN potentiometer
- ③ Plug-in screw terminal block (signal input)
- ④ Upper housing part, can be removed to set DIP switches
- ⑤ Metal lock for fastening on the DIN rail

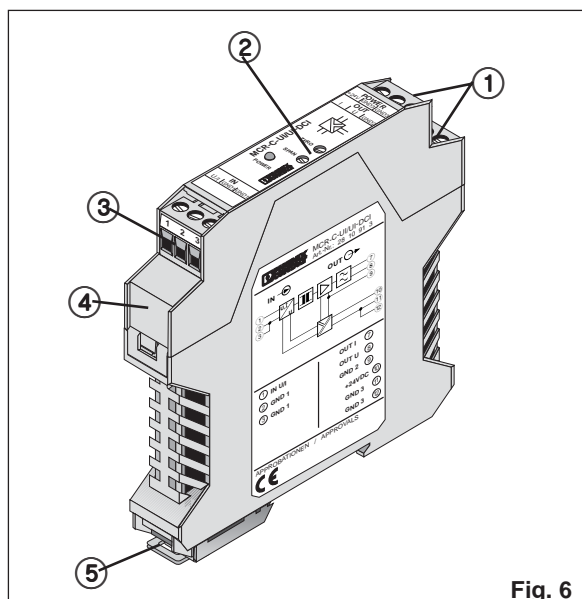


Fig. 6

Configurable 3-Way Isolation Amplifier – MCR-C-UI-UI-...

3. Order Key

3.1. Combination Table for Input and Output Signals

Input	Output								
	0 - 10 V	±10 V	0 - 5 V	±5 V	1 - 5 V	0 - 5 mA	0 - 10 mA	0 - 20 mA	4 - 20 mA
0 - 60 mV	x	x	x	x	x	x	x	x	x
0 - 100 mV	x	x	x	x	x	x	x	x	x
0 - 200 mV	x	x	x	x	x	x	x	x	x
0 - 300 mV	x	x	x	x	x	x	x	x	x
0 - 500 mV	x	x	x	x	x	x	x	x	x
0 - 1 V	x	x	x	x	x	x	x	x	x
0 - 2 V	x	x	x	x	x	x	x	x	x
0 - 2.5 V	x	x	x	x	x	x	x	x	x
0 - 5 V	x	x	x	x	x	x	x	x	x
0 - 10 V	x	x	x	x	x	x	x	x	x
0 - 20 V	x	x	x	x	x	x	x	x	x
±60 mV	x	x	x	x			x	x	
±100 mV	x	x	x	x			x	x	
±200 mV	x	x	x	x			x	x	
±300 mV	x	x	x	x			x	x	
±500 mV	x	x	x	x			x	x	
±1 V	x	x	x	x			x	x	
±2 V	x	x	x	x			x	x	
±2.5 V	x	x	x	x			x	x	
±5 V	x	x	x	x			x	x	
±10 V	x	x	x	x			x	x	
±20 V	x	x	x	x			x	x	
0 - 5 mA	x	x	x	x	x	x	x	x	x
0 - 10 mA	x	x	x	x	x	x	x	x	x
0 - 20 mA	x	x	x	x	x	x	x	x	x
±5 mA	x	x	x	x			x	x	
±10 mA	x	x	x	x			x	x	
±20 mA	x	x	x	x			x	x	
1 - 5 V	x	x	x	x	x		x	x	x
4 - 20 mA	x	x	x	x	x		x	x	x

Additional ranges can be provided on request.

3.2. Order Key for MCR-C-UI-UI-...

Order No.	Input Signal	Output Signal
28 10 91 3	IN03	OUT03
	IN0 ≅ 0...20 mA	OUT0 ≅ 0...20 mA
	IN0 ≅ 4...20 mA	OUT0 ≅ 4...20 mA
	IN0 ≅ 0...10 V	OUT0 ≅ 0...10 V
	IN0 ≅ 0...5 V	OUT0 ≅ 0...5 V
	IN0 ≅ 1...5 V	OUT0 ≅ 1...5 V
	IN1 ≅ -	OUT1 ≅ -5...+5 V
	IN1 ≅ -100...+100	OUT1 ≅ -10...+10 V
	IN1 ≅ -200...+200	OUT1 ≅ 0...5 mA
	IN1 ≅ -300...+300	OUT1 ≅ 0...10 mA
	IN1 ≅ -500...+500	
	IN1 ≅ -1...+1 V	
	IN1 ≅ -2...+2 V	
	IN2 ≅ -2.5...+2.5 V	
	IN2 ≅ -5...+5 V	
	IN2 ≅ -10...+10 V	
	IN2 ≅ -20...+20 V	
	IN2 ≅ 0...60 mV	
	IN2 ≅ 0...100 mV	
	IN2 ≅ 0...200 mV	
	IN2 ≅ 0...300 mV	
	IN2 ≅ 0...500 mV	
	IN2 ≅ 0...1 V	
	IN3 ≅ 0...2 V	
	IN3 ≅ 0...2.5 V	
	IN3 ≅ 0...20 V	
	IN3 ≅ -5...+5 mA	
	IN3 ≅ -10...+10 mA	
	IN3 ≅ -20...+20 mA	
	IN3 ≅ 0...5 mA	
	IN3 ≅ 0...10 mA	

3.3 Order Example for MCR-C-UI-UI-450-DCI

Order No.	Input Signal	Output Signal
28 10 88 7	IN03	OUT03

The standard configuration will be supplied if customer order details are incorrect or not provided (provided in the order key as an example).

Configurable 3-Way Isolation Amplifier – MCR-C-UI-UI-...

4. Connection Notes

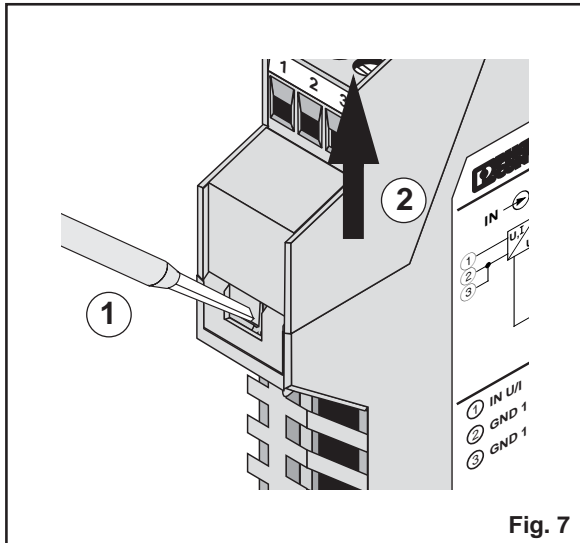
4.1. Default:

The 3-way isolation amplifier is set and supplied with sealed potentiometers. The set configuration is handwritten on the label on the side.

4.2. Configuration

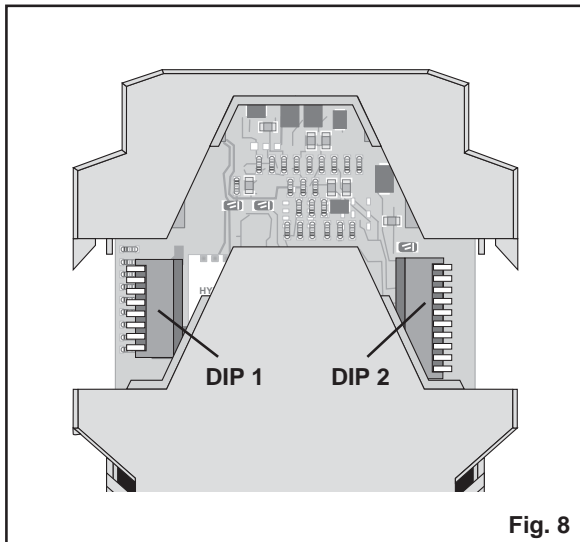
4.2.1. Opening the Device (Fig. 7)

The fastenings on both sides of the upper housing part can be released using a screwdriver ①. The upper housing part and the electronics can now be pulled out about 3 cm.



4.2.2. Changing the Configuration

Set the desired **input** range with DIP switch **DIP 1** and the **output** range with DIP switch **DIP 2** (see Fig. 8) using the relevant table.



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4.3. Specifying the Signal Ranges

4.3.1. Input Signal Range (DIP 1)

Select one of the possible input signal ranges by appropriately configuring DIP switch DIP 1 according to Table 1.

Exception: Bipolar input signals are not permitted for output signal ranges 4...20 mA and 1...5 V (see Tables 4/6, pages 9/10).

Input	1	2	3	4	5	6	7	8
0...60 mV		ON				ON	ON	ON
0...100 mV		ON					ON	ON
0...200 mV			ON				ON	
0...300 mV			ON			ON		ON
0...500 mV		ON				ON		
0...1 V			ON			ON		
0...2 V				ON		ON		
0...2.5 V		ON						
0...5 V			ON					
0...10 V				ON				
0...20 V					ON			
±60 mV		ON				ON	ON	ON
±100 mV		ON					ON	ON
±200 mV			ON				ON	
±300 mV			ON			ON		ON
±500 mV		ON				ON		
±1 V			ON			ON		
±2 V				ON		ON		
±2.5 V		ON						
±5 V			ON					
±10 V				ON				
±20 V					ON			
0...5 mA	ON			ON		ON	ON	ON
0...10 mA	ON	ON				ON		
0...20 mA	ON		ON			ON		
±5 mA	ON			ON		ON	ON	ON
±10 mA	ON	ON				ON		
±20 mA	ON		ON			ON		
1...5 V			ON					
4...20 mA	ON		ON			ON		

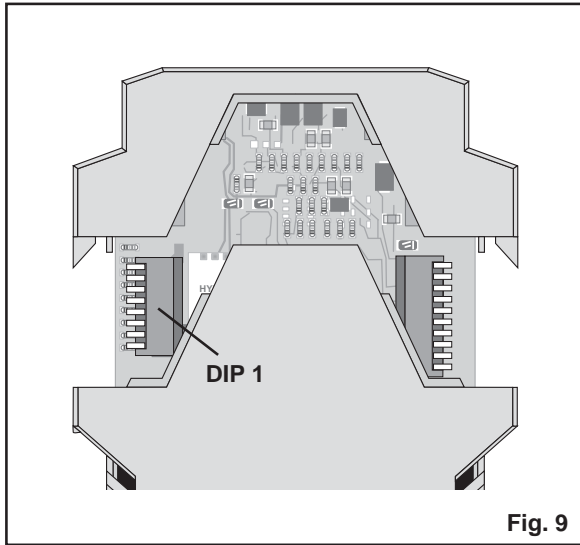


Fig. 9

Configurable 3-Way Isolation Amplifier – MCR-C-UI-UI-...

4.3.2. Output (DIP 2) With Easy Adjustment (0...5 V/0...10 V Output)

Set the output range via DIP switch DIP 2. Observe the selected input range. Specify a start value and final value for the input signal with a calibration source. Adjust the corresponding output value using a digital multimeter (see Table 2).

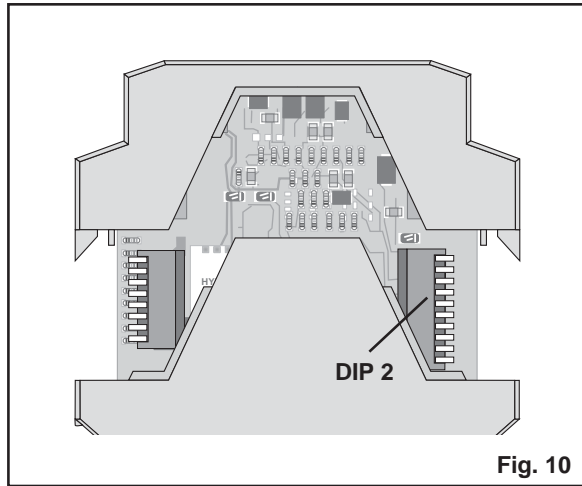


Fig. 10

Table 2

Input	Output 0...5 V DIP Switch DIP 2									
	1	2	3	4	5	6	7	8	9	10
0...60 mV			ON			ON				
0...100 mV			ON			ON				
0...200 mV			ON			ON				
0...300 mV			ON			ON				
0...500 mV			ON			ON				
0...1 V			ON			ON				
0...2 V			ON			ON				
0...2.5 V			ON			ON				
0...5 V			ON			ON				
0...10 V			ON			ON				
0...20 V			ON			ON				
±60 mV		ON		ON			ON			
±100 mV		ON		ON			ON			
±200 mV		ON		ON			ON			
±300 mV		ON		ON			ON			
±500 mV		ON		ON			ON			
±1 V		ON		ON			ON			
±2 V		ON		ON			ON			
±2.5 V		ON		ON			ON			
±5 V		ON		ON			ON			
±10 V		ON		ON			ON			
±20 V		ON		ON			ON			
0...5 mA			ON			ON				
0...10 mA			ON			ON				
0...20 mA			ON			ON				
±5 mA		ON		ON			ON			
±10 mA		ON		ON			ON			
±20 mA		ON		ON			ON			
1...5 V								ON		
4...20 mA								ON		

Input	Output 0...10 V DIP Switch DIP 2									
	1	2	3	4	5	6	7	8	9	10
0...60 mV			ON		ON	ON				
0...100 mV			ON		ON	ON				
0...200 mV			ON		ON	ON				
0...300 mV			ON		ON	ON				
0...500 mV			ON		ON	ON				
0...1 V			ON		ON	ON				
0...2 V			ON		ON	ON				
0...2.5 V			ON		ON	ON				
0...5 V			ON		ON	ON				
0...10 V			ON		ON	ON				
0...20 V			ON		ON	ON				
±60 mV		ON		ON	ON		ON			
±100 mV		ON		ON	ON		ON			
±200 mV		ON		ON	ON		ON			
±300 mV		ON		ON	ON		ON			
±500 mV		ON		ON	ON		ON			
±1 V		ON		ON	ON		ON			
±2 V		ON		ON	ON		ON			
±2.5 V		ON		ON	ON		ON			
±5 V		ON		ON	ON		ON			
±10 V		ON		ON	ON		ON			
±20 V		ON		ON	ON		ON			
0...5 mA			ON		ON	ON				
0...10 mA			ON		ON	ON				
0...20 mA			ON		ON	ON				
±5 mA		ON		ON	ON		ON			
±10 mA		ON		ON	ON		ON			
±20 mA		ON		ON	ON		ON			
1...5 V					ON			ON		
4...20 mA					ON			ON		

Adjustment
Following
Specification of the
Start Value and Final
Value on:

	Output 0...5 V	Output 0...10 V
ZERO potentiometer	0 V ±0.5 mV	0 V ±0.5 mV
SPAN potentiometer	5 V ±0.5 mV	10 V ±0.5 mV

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4.3.3. Output with Adjustment Point Calculation ($\pm 5\text{ V}/\pm 10\text{ V}/1\dots 5\text{ V}/0\dots 5; 10; 20\text{ mA}/4\dots 20\text{ mA}$)

- Set the output range via DIP switch DIP 2. Observe the selected input range.
- Specify the start value and final value of the input signal with a calibration source.
- Record the measured output value using a digital multimeter.

• Calculation of FS Adjustment Point A

$$A = \frac{MW\ 2 \times \text{Constant}}{MW\ 2 - MW\ 1}$$



For the constant values, the output final value, and the adjustment tolerance, please refer to Tables 3 - 5, pages 8 - 9.

Output signal range:

$\pm 5\text{ V}, \pm 10\text{ V}, 1\dots 5\text{ V}, 4\dots 20\text{ mA}$		0...20 mA	
Default (Input)	Measured Value (Output)	Default (Input)	Measured Value (Output)
Start value	MW 1	Start value +10% MW 1 of the range	
Final value	MW 2	Final value	MW 2

Adjustment:

- Specify the final value of the input signal range with the calibration source.
- SPAN potentiometer: FS adjustment point A \pm adjustment tolerance
- ZERO potentiometer: Output final value \pm adjustment tolerance

Table 3

Input	Output $\pm 5\text{ V}$										Input	Output $\pm 10\text{ V}$									
	1	2	3	4	5	6	7	8	9	10		1	2	3	4	5	6	7	8	9	10
0...60 mV	ON		ON					ON	ON	ON	0...60 mV	ON		ON		ON			ON	ON	ON
0...100 mV	ON		ON					ON	ON	ON	0...100 mV	ON		ON		ON			ON	ON	ON
0...200 mV	ON		ON					ON	ON	ON	0...200 mV	ON		ON		ON			ON	ON	ON
0...300 mV	ON		ON					ON	ON	ON	0...300 mV	ON		ON		ON			ON	ON	ON
0...500 mV	ON		ON					ON	ON	ON	0...500 mV	ON		ON		ON			ON	ON	ON
0...1 V	ON		ON					ON	ON	ON	0...1 V	ON		ON		ON			ON	ON	ON
0...2 V	ON		ON					ON	ON	ON	0...2 V	ON		ON		ON			ON	ON	ON
0...2.5 V	ON		ON					ON	ON	ON	0...2.5 V	ON		ON		ON			ON	ON	ON
0...5 V	ON		ON					ON	ON	ON	0...5 V	ON		ON		ON			ON	ON	ON
0...10 V	ON		ON					ON	ON	ON	0...10 V	ON		ON		ON			ON	ON	ON
0...20 V	ON		ON					ON	ON	ON	0...20 V	ON		ON		ON			ON	ON	ON
$\pm 60\text{ mV}$			ON			ON					$\pm 60\text{ mV}$			ON		ON	ON				
$\pm 100\text{ mV}$			ON			ON					$\pm 100\text{ mV}$			ON		ON	ON				
$\pm 200\text{ mV}$			ON			ON					$\pm 200\text{ mV}$			ON		ON	ON				
$\pm 300\text{ mV}$			ON			ON					$\pm 300\text{ mV}$			ON		ON	ON				
$\pm 500\text{ mV}$			ON			ON					$\pm 500\text{ mV}$			ON		ON	ON				
$\pm 1\text{ V}$			ON			ON					$\pm 1\text{ V}$			ON		ON	ON				
$\pm 2\text{ V}$			ON			ON					$\pm 2\text{ V}$			ON		ON	ON				
$\pm 2.5\text{ V}$			ON			ON					$\pm 2.5\text{ V}$			ON		ON	ON				
$\pm 5\text{ V}$			ON			ON					$\pm 5\text{ V}$			ON		ON	ON				
$\pm 10\text{ V}$			ON			ON					$\pm 10\text{ V}$			ON		ON	ON				
$\pm 20\text{ V}$			ON			ON					$\pm 20\text{ V}$			ON		ON	ON				
0...5 mA	ON		ON					ON	ON	ON	0...5 mA	ON		ON		ON			ON	ON	ON
0...10 mA	ON		ON					ON	ON	ON	0...10 mA	ON		ON		ON			ON	ON	ON
0...20 mA	ON		ON					ON	ON	ON	0...20 mA	ON		ON		ON			ON	ON	ON
$\pm 5\text{ mA}$			ON			ON					$\pm 5\text{ mA}$			ON		ON	ON				
$\pm 10\text{ mA}$			ON			ON					$\pm 10\text{ mA}$			ON		ON	ON				
$\pm 20\text{ mA}$			ON			ON					$\pm 20\text{ mA}$			ON		ON	ON				
1...5 V	ON							ON	ON		1...5 V	ON				ON			ON	ON	
4...20 mA	ON							ON	ON		4...20 mA	ON				ON			ON	ON	

Configurable 3-Way Isolation Amplifier – MCR-C-UI-UI-...

	Output ±5 V	Output ±10 V
Constant	10 V	20 V
Output final value	5 V	10 V
Adjustment tolerance	±0.5 mV	±0.5 mV

Table 4 **Output 1...5 V**
DIP Switch DIP 2

Input	1	2	3	4	5	6	7	8	9	10
0...60 mV	ON			ON						
0...100 mV	ON			ON						
0...200 mV	ON			ON						
0...300 mV	ON			ON						
0...500 mV	ON			ON						
0...1 V	ON			ON						
0...2 V	ON			ON						
0...2.5 V	ON			ON						
0...5 V	ON			ON						
0...10 V	ON			ON						
0...20 V	ON			ON						
0...5 mA	ON			ON						
0...10 mA	ON			ON						
0...20 mA	ON			ON						
4...20 mA			ON			ON				
1...5 V			ON			ON				

Output 1...5 V

Constant	4 V
Output final value	5 V
Adjustment tolerance	±1 mV

Table 5 **Output 0...5 mA**
DIP Switch DIP 2

Input	1	2	3	4	5	6	7	8	9	10
0...60 mV		ON		ON		ON				
0...100 mV		ON		ON		ON				
0...200 mV		ON		ON		ON				
0...300 mV		ON		ON		ON				
0...500 mV		ON		ON		ON				
0...1 V		ON		ON		ON				
0...2 V		ON		ON		ON				
0...2.5 V		ON		ON		ON				
0...5 V		ON		ON		ON				
0...10 V		ON		ON		ON				
0...20 V		ON		ON		ON				
0...5 mA		ON		ON		ON				
0...10 mA		ON		ON		ON				
0...20 mA		ON		ON		ON				

Table 5 **Output 0...10 mA**
DIP Switch DIP 2

Input	1	2	3	4	5	6	7	8	9	10
0...60 mV			ON			ON				
0...100 mV			ON			ON				
0...200 mV			ON			ON				
0...300 mV			ON			ON				
0...500 mV			ON			ON				
0...1 V			ON			ON				
0...2 V			ON			ON				
0...2.5 V			ON			ON				
0...5 V			ON			ON				
0...10 V			ON			ON				
0...20 V			ON			ON				
±60 mV		ON		ON				ON		
±100 mV		ON		ON				ON		
±200 mV		ON		ON				ON		
±300 mV		ON		ON				ON		
±500 mV		ON		ON				ON		
±1 V		ON		ON				ON		
±2 V		ON		ON				ON		
±2.5 V		ON		ON				ON		
±5 V		ON		ON				ON		
±10 V		ON		ON				ON		
±20 V		ON		ON				ON		
0...5 mA			ON			ON				
0...10 mA			ON			ON				
0...20 mA			ON			ON				
±5 mA		ON		ON				ON		
±10 mA		ON		ON				ON		
±20 mA		ON		ON				ON		
1...5 V									ON	
4...20 mA									ON	

Configurable 3-Way Isolation Amplifier – MCR-C-UI-UI-...

Table 6

Input	Output 0...20 mA DIP Switch DIP 2										Input	Output 4...20 mA DIP Switch DIP 2									
	1	2	3	4	5	6	7	8	9	10		1	2	3	4	5	6	7	8	9	10
0...60 mV			ON		ON	ON					0...60 mV	ON			ON	ON					
0...100 mV			ON		ON	ON					0...100 mV	ON			ON	ON					
0...200 mV			ON		ON	ON					0...200 mV	ON			ON	ON					
0...300 mV			ON		ON	ON					0...300 mV	ON			ON	ON					
0...500 mV			ON		ON	ON					0...500 mV	ON			ON	ON					
0...1 V			ON		ON	ON					0...1 V	ON			ON	ON					
0...2 V			ON		ON	ON					0...2 V	ON			ON	ON					
0...2.5 V			ON		ON	ON					0...2.5 V	ON			ON	ON					
0...5 V			ON		ON	ON					0...5 V	ON			ON	ON					
0...10 V			ON		ON	ON					0...10 V	ON			ON	ON					
0...20 V			ON		ON	ON					0...20 V	ON			ON	ON					
±60 mV		ON		ON	ON		ON				±60 mV										
±100 mV		ON		ON	ON		ON				±100 mV										
±200 mV		ON		ON	ON		ON				±200 mV										
±300 mV		ON		ON	ON		ON				±300 mV										
±500 mV		ON		ON	ON		ON				±500 mV										
±1 V		ON		ON	ON		ON				±1 V										
±2 V		ON		ON	ON		ON				±2 V										
±2.5 V		ON		ON	ON		ON				±2.5 V										
±5 V		ON		ON	ON		ON				±5 V										
±10 V		ON		ON	ON		ON				±10 V										
±20 V		ON		ON	ON		ON				±20 V										
0...5 mA			ON		ON	ON					0...5 mA	ON			ON	ON					
0...10 mA			ON		ON	ON					0...10 mA	ON			ON	ON					
0...20 mA			ON		ON	ON					0...20 mA	ON			ON	ON					
±5 mA		ON		ON	ON		ON				±5 mA										
±10 mA		ON		ON	ON		ON				±10 mA										
±20 mA		ON		ON	ON		ON				±20 mA										
1...5 V					ON			ON			1...5 V			ON		ON	ON				
4...20 mA					ON			ON			4...20 mA			ON		ON	ON				


	Output 0...20 mA	Output 4...20 mA
Constant	18 mA	16 mA
Output final value	20 mA	20 mA
Adjustment tolerance	±1 µA	±1 µA

Configurable 3-Way Isolation Amplifier – MCR-C-UI-UI-...

4.4. Adjustment

Adjust the module using two potentiometers (see Fig. 11).

- ZERO potentiometer: Zero point adjustment
- SPAN potentiometer: Final value adjustment

 **Allow the module to warm up for two minutes**

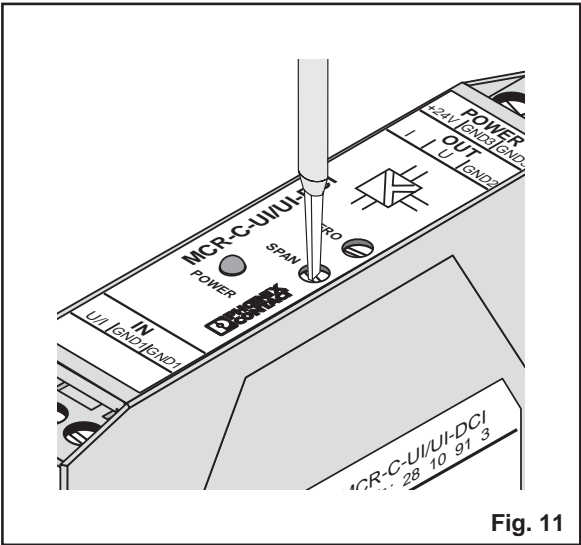


Fig. 11

5. Application Example:

PH measurement of a liquid (Fig. 12)

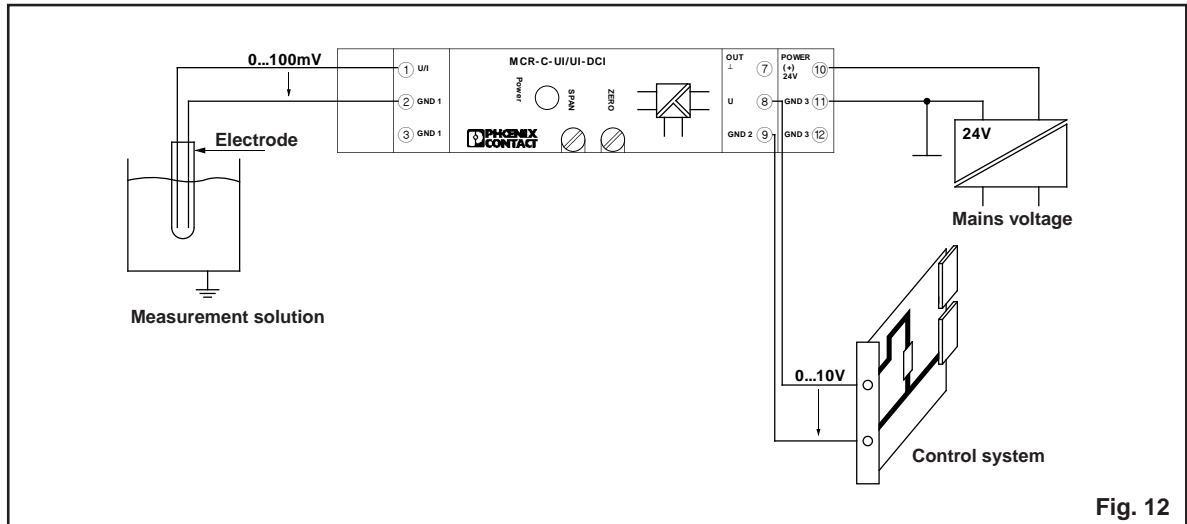


Fig. 12

<http://www.phoenixcontact.com>

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