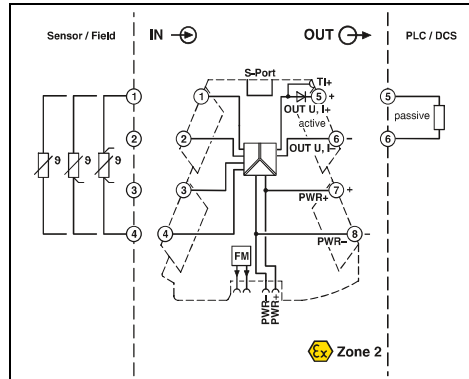
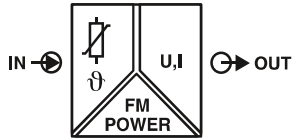


MINI Analog Pro – Highly compact signal conditioners with plug-in connection technology

Temperature  
Temperature transducers  
for resistance thermometers



Universal temperature transducer for resistance thermometers



Ex: Housing width 6,2 mm

- Universally configurable, highly compact temperature transducer for electrical isolation, conversion, amplification, and filtering of resistance thermometer and remote resistance-type sensor signals
- For 2, 3 or 4-conductor sensors in accordance with IEC 751, JIS, GOST
- 2-conductor resistance measurement, up to 4,000 Ω
- Plug-in connection system
- Safe 3-way isolation
- Standard signal combinations configurable via DIP switches
- Freely-configurable with software or smartphone app
- Power supply and fault monitoring possible via DIN rail connector
- Status and error indicator LEDs

Notes:
The configuration software can be downloaded from the Internet: <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a> .
Information on the programming adapters can be found on page 111
Information on MINI Analog Pro accessories can be found from page 107
To order a product with an order configuration, please enter the desired configuration by referring to the order key.

<b>Input data</b>
Input signal (can be configured using DIP switches)
Temperature range
<b>Measuring range span</b>
Linear resistance measuring range
<b>Output data</b>
Output signal (configurable via DIP switch or freely via software)
<b>Maximum output signal</b>
No-load voltage
Short-circuit current
Load $R_B$
Ripple
<b>General data</b>
Supply voltage range
Current consumption
Power consumption
<b>Transmission error</b>
Temperature coefficient
Step response (0 - 99%)
<b>Electrical isolation</b>
EMC note
<b>Conformance/approvals</b>
Conformance
ATEX
UL, USA/Canada
<b>DNV GL</b>

Technical data

Pt, Ni, Cu sensors : 2-, 3-, 4-conductor	
-200°C ... 850°C (range depends on sensor type, range can be set freely via software or in increments from -150°C to 850°C via DIP switches)	
≥20 K	
0 Ω ... 4,000 Ω (minimum measuring span: 10% of the selected measuring range)	
<b>U output</b>	<b>I output</b>
0 ... 5 V / 1 ... 5 V	0 ... 20 mA / 4 ... 20 mA
0 ... 10 V / 10 ... 0 V	20 ... 0 mA / 20 ... 4 mA
Approx. 12,3 V	24,6 mA
<31,5 mA	<17,5 V
≥10 kΩ	≤600 Ω (at 20 mA)
<10 mV <sub>rms</sub>	<10 mV <sub>rms</sub> (at 600 Ω)
9,6 V DC ... 30 V DC	
32 mA (24 V DC)	
≤850 mW (at I <sub>OUT</sub> = 20 mA, 9,6 V DC, 600 Ω load)	
0,1% * 350 K / set measuring range; 0,1% >350 K (Pt/Ni)	
0,3% * 200 K / set measuring range; 0,3% >200 K (Cu)	
0,01%/K	
Typically 200 ms (2-conductor)	
Typically 500 ms (3-conductor)	
Typically 500 ms (4-conductor)	
Reinforced insulation in accordance with IEC 61010-1	
Class A product, see page 583	
CE-compliant	
Ex II 3 G Ex nA IIC T4 Gc X	
UL 508 Listed	
Class I, Div. 2, Groups A, B, C, D T6	
Class I, Zone 2, Group IIC T6	
C, EMC2	

Ordering data

Type	Order No.	Pcs./Pkt.
MINI MCR-2-RTD-UI-PT	2902052	1
MINI MCR-2-RTD-UI	2902049	1
MINI MCR-2-RTD-UI-PT-C	2902051	1
MINI MCR-2-RTD-UI-C	2902048	1

Accessories

IFS-USB-PROG-ADAPTER	2811271	1
TWN4 MIFARE NFC USB ADAPTER	2909681	1
IFS-BT-PROG-ADAPTER	2905872	1

Description	
<b>Temperature transducers for resistance thermometers</b>	
Standard configuration	Push-in connection
Standard configuration	Screw connection
Order configuration	Push-in connection
Order configuration	Screw connection

<b>Programming adapter</b> for configuring modules with S-PORT interface
<b>USB programming adapter</b> for configuring modules with Windows software
<b>Bluetooth programming adapter</b> , with USB and S-PORT interface

MINI Analog Pro – Highly compact signal conditioners with plug-in connection technology

Order key for MINI MCR-2-RTD-UI(-PT)(-C) temperature transducers (standard configuration entered as example)

Order No.	Sensor type	Connection technology	Measuring unit	Measuring range		Output		
				Start	End	Output signal	Start	End
2902048	PT100	3	C	-50	150	I	4.0	20.0
2902048 ≙ MINI MCR-2-RTD-UI-C	PT100 ≙ Pt 100 IEC751 PT200 ≙ Pt 200 IEC751 PT500 ≙ Pt 500 IEC751 PT1000 ≙ Pt 1000 IEC751	2 ≙ 2-conductor 3 ≙ 3-conductor 4 ≙ 4-conductor	C ≙ °C F ≙ °F	Freely selectable between -200°C ... 850°C (measuring range limits depend on sensor type)	Freely selectable between -200°C ... 850°C (measuring range limits depend on sensor type)	I ≙ I U ≙ U	0.0 ≙ 0 mA I: freely selectable between 0.0 ... 21 mA U: freely selectable between 0.0 ... 10.5 V	20.0 ≙ 20 mA I: freely selectable between 0.0 ... 21 mA U: freely selectable between 0.0 ... 10.5 V
2902051 ≙ MINI MCR-2-RTD-UI-PT-C	PT100G ≙ Pt 100 GOST 6651-2009 (α = 0.00394) PT1000G ≙ Pt 1000 GOST 6651-2009 (α = 0.00394) PT100J ≙ Pt 100 JIS C1604/1997 PT1000J ≙ Pt 1000 JIS C1604/1997 NI100 ≙ Ni 100 DIN 43760 NI1000 ≙ Ni 1000 DIN 43760 CU50 ≙ Cu 50 GOST 6651-2009 (α = 0.00428) CU100 ≙ Cu 100 GOST 6651-2009 (α = 0.00428) CU53 ≙ Cu 53 GOST 6651-2009 (α = 0.00426)							

Minimum measuring span 20 K

Output signal span at least 0.5 V / 1 mA  
Increment 0.1 V / 0.1 mA

Failure information

Behavior in the event of an error

Open circuit

Short circuit

Measuring value over-range

Measured value under-range

Factory calibration certificate

NE43DO	0.0	0.0	0.0	0.0	0.0	None
FD ≙ Freely definable	0.0 ≙ 0 mA I: freely selectable between 0.0 ... 21.5 mA U: freely selectable between 0.0 ... 11 V (signal type corresponds to selected output signal)	0.0 ≙ 0 mA I: freely selectable between 0.0 ... 21.5 mA U: freely selectable between 0.0 ... 11 V (signal type corresponds to selected output signal)	0.0 ≙ 0 mA I: freely selectable between 0.0 ... 21.5 mA U: freely selectable between 0.0 ... 11 V (signal type corresponds to selected output signal)	0.0 ≙ 0 mA I: freely selectable between 0.0 ... 21.5 mA U: freely selectable between 0.0 ... 11 V (signal type corresponds to selected output signal)	0.0 ≙ 0 mA I: freely selectable between 0.0 ... 21.5 mA U: freely selectable between 0.0 ... 11 V (signal type corresponds to selected output signal)	None ≙ no factory calibration certificate  Yes ≙ certificate but no test data  YesPlus ≙ certificate with test data
NE43UP ≙ NE 43 upscale NE43DO ≙ NE 43 downscale NE430 ≙ NE 43 0 mA NE43UD ≙ NE 43 upscale/downscale	21.5 mA 3.5 mA 0 mA 3.5 mA	21.5 mA 3.5 mA 0 mA 3.5 mA	21.5 mA 3.5 mA 0 mA 3.5 mA	21.5 mA 3.5 mA 0 mA 21.5 mA	21.5 mA 3.5 mA 0 mA 21.5 mA	

Note: Failure information in accordance with NE 43 can only be selected for 4 ... 20 mA output

Sensor types and measuring ranges for MINI MCR-2-RTD-UI(-PT)(-C) temperature transducers

Sensor type	Standard	Measuring range	Smallest measuring span	Adjustable using:
Pt 100	IEC 751 = GOST 6651-2009 (α = 0.00385)	-200°C ... +850°C	20 K	DIP switch
Pt 200	IEC 751 = GOST 6651-2009 (α = 0.00385)	-200°C ... +850°C	20 K	DIP switch
Pt 500	IEC 751 = GOST 6651-2009 (α = 0.00385)	-200°C ... +850°C	20 K	Software or smartphone app
Pt 1000	IEC 751 = GOST 6651-2009 (α = 0.00385)	-200°C ... +850°C	20 K	Software or smartphone app
Pt 100	GOST 6651-2009 (α = 0.00391)	-200°C ... +850°C	20 K	Software or smartphone app
Pt 1000	GOST 6651-2009 (α = 0.00391)	-200°C ... +850°C	20 K	Software or smartphone app
Pt 100	JIS C1604-1997	-200°C ... +850°C	20 K	Software or smartphone app
Pt 1000	JIS C1604-1997	-200°C ... +850°C	20 K	Software or smartphone app
Ni100	DIN 43760	-60°C ... +250°C	20 K	Software or smartphone app
Ni 1000	DIN 43760	-60°C ... +250°C	20 K	Software or smartphone app
Cu50	GOST 6651-2009 (α = 0.0428)	-180°C ... +200°C	20 K	Software or smartphone app
Cu100	GOST 6651-2009 (α = 0.0428)	-180°C ... +200°C	20 K	Software or smartphone app
Cu53	GOST 6651-2009 (α = 0.0426)	-50°C ... +180°C	20 K	Software or smartphone app
Customer-specific characteristic curves		-200°C ... +850°C	20 K	Software or smartphone app