

Signal conditioner - MINI MCR-2-UNI-UI-UIRO-PT - 2902028

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Universally configurable 4-way signal conditioner, with switching output and plug-in connection technology for the electrical isolation of analog signals. Configurable via DIP switch or software. Push-in connection technology, standard configuration.

Article description

Configurable, freely adjustable 4-way signal conditioner with switching output and plug-in connection technology for the electrical isolation, conversion, amplification, and filtering of standard signals. Current signals between 0 mA ... 24 mA and voltage signals between 0 V ... 12 V can be processed on the input side. Signals between 0 mA ... 21 mA and 0 V ... 10.5 V are possible on the output side. The minimum measuring span is 1 mA and 0.5 V. Full accuracy is maintained with a measuring span greater than 10 mA and 5 V. You can configure the device using one of the free software solutions. Default settings can also be made directly on the device by simply using the DIP switches (see configuration table). The measuring transducer supports fault monitoring and NFC communication.



Key commercial data

package_quantity	1
GTIN	4046356649698

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Width	6.2 mm
Height	110.5 mm
Depth	120.5 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C

Input data

Number of inputs	1
Configurable/programmable	Yes
Voltage input signal	0 V ... 10 V (via DIP switch)
Voltage input signal	2 V ... 10 V (via DIP switch)
Voltage input signal	0 V ... 5 V (via DIP switch)

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Technical data

Input data

Voltage input signal	1 V ... 5 V (via DIP switch)
Voltage input signal	10 V ... 0 V (via DIP switch)
Voltage input signal	10 V ... 2 V (via DIP switch)
Voltage input signal	5 V ... 0 V (via DIP switch)
Voltage input signal	5 V ... 1 V (via DIP switch)
Voltage input signal	0 V ... 12 V (Can be set via software)
Current input signal	0 mA ... 20 mA (via DIP switch)
Current input signal	4 mA ... 20 mA (via DIP switch)
Current input signal	0 mA ... 10 mA (via DIP switch)
Current input signal	2 mA ... 10 mA (via DIP switch)
Current input signal	20 mA ... 0 mA (via DIP switch)
Current input signal	20 mA ... 4 mA (via DIP switch)
Current input signal	10 mA ... 0 mA (via DIP switch)
Current input signal	10 mA ... 2 mA (via DIP switch)
Current input signal	0 mA ... 24 mA (Can be set via software)
Max. input voltage	12 V
Max. input current	24 mA
Input resistance of voltage input	> 120 kΩ
Input resistance current input	approx. 50 Ω (+ 0.7 V for test diode)

Output data

Number of outputs	1
Configurable/programmable	Yes
Voltage output signal	0 V ... 10 V (via DIP switch)
Voltage output signal	2 V ... 10 V (via DIP switch)
Voltage output signal	0 V ... 5 V (via DIP switch)
Voltage output signal	1 V ... 5 V (via DIP switch)
Voltage output signal	0 V ... 10.5 V (Can be set via software)
Current output signal	0 mA ... 20 mA (via DIP switch)
Current output signal	4 mA ... 20 mA (via DIP switch)
Current output signal	0 mA ... 10 mA (via DIP switch)
Current output signal	2 mA ... 10 mA (via DIP switch)
Current output signal	0 mA ... 21 mA (Can be set via software)
Max. output voltage	approx. 12.3 V
Max. output current	24.6 mA
Load/output load voltage output	≥ 10 kΩ
Load/output load current output	≤ 600 Ω (at 20 mA)
Ripple	< 20 mV _{PP} (at 600 Ω)
Ripple	< 20 mV _{PP} (at 600 Ω)

Switching output

Output name	Switching output
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Technical data

Switching output

Number of outputs	1
Contact type	1 N/O contact
Minimum switching voltage	1 V
Maximum switching voltage	30 V DC
Min. switching current	100 µA
Max. switching current	100 mA (at 30 V)

Power supply

Nominal supply voltage	24 V DC
Supply voltage range	9.6 V DC ... 30 V DC (The DIN rail bus connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, Order No. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715))
Typical current consumption	32 mA (24 V DC)
Typical current consumption	63 mA (12 V DC)
Power consumption	≤ 1 W (at I _{OUT} = 20 mA, 9.6 V DC, 600 Ω load)

Connection data

Connection method	Push-in connection
Single conductor/terminal point, solid, with ferrule, min.	0.14 mm ²
Single conductor/terminal point, solid, with ferrule, max.	2.5 mm ²
Single conductor/terminal point, solid, without ferrule, min.	0.14 mm ²
Single conductor/terminal point, solid, without ferrule, max.	2.5 mm ²
Conductor cross section flexible min.	0.14 mm ²
Conductor cross section flexible max.	2.5 mm ²
Min. AWG conductor cross section, flexible	24
Max. AWG conductor cross section, flexible	12
Stripping length	10 mm

General

No. of channels	1
Maximum transmission error	0.1 % (of final value)
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	0.01 %/K
Step response (10-90%)	approx. 140 ms (15 Hz sample rate)
Step response (10-90%)	approx. 45 ms (60 Hz sample rate)
Step response (10-90%)	approx. 25 ms (240 Hz sample rate)
Status display	Yellow LED (switching output)
Electrical isolation	Reinforced insulation in accordance with IEC 61010-1
Overvoltage category	II
Degree of pollution	2
Rated insulation voltage	300 V (effective)
Test voltage, input/output/supply	3 kV (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC directive

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Technical data

General

Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Color	gray
Housing material	PBT
Mounting position	any
Assembly instructions	The T connector can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715.
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2

EMC data

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	0.2 %
Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	0.1 %
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	2.8 %

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Standards/regulations	EN 61000-4-2
Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Standards/regulations	EN 61000-4-4
Standards/regulations	EN 61000-4-5
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Electrical isolation	Reinforced insulation in accordance with IEC 61010-1

Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
China RoHS	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Classifications

eCl@ss

eCl@ss 4.0	27210120
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Classifications

eCl@ss

eCl@ss 4.1	27210120
eCl@ss 5.0	27210120
eCl@ss 5.1	27210120
eCl@ss 6.0	27210120
eCl@ss 7.0	27210120
eCl@ss 8.0	27210120
eCl@ss 9.0	27210120

ETIM

ETIM 4.0	EC002653
ETIM 5.0	EC002653
ETIM 6.0	EC002653

UNSPSC

UNSPSC 6.01	30211502
UNSPSC 7.0901	39121004
UNSPSC 11	39121004
UNSPSC 12.01	39121004
UNSPSC 13.2	39121008

Approvals

UL Listed / cUL Listed / ATEX / cULus Listed / UL Listed / cUL Listed / cULus Listed /

Approval details

- UL Listed** 
- cUL Listed** 
- ATEX** 
- cULus Listed** 
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Accessories

DIN rail connector

ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - 2869728



Power module

MINI MCR-2-PTB - 2902066



MINI MCR-2-PTB-PT - 2902067



Evaluation unit

MINI MCR-2-FM-RC - 2904504



MINI MCR-2-FM-RC-PT - 2904508



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Accessories

Power supply

MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



MINI-PS-100-240AC/24DC/1.5/EX - 2866653



Programming adapter

IFS-BT-PROG-ADAPTER - 2905872



IFS-USB-PROG-ADAPTER - 2811271



NFC-USB-PROG-ADAPTER - 2900013



System adapter

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Accessories

MINI MCR-2-V8-FLK 16 - 2901993



Communication module

MINI MCR-2-V8-MOD-RTU - 2905634



MINI MCR-2-V8-MOD-TCP - 2905635



MINI MCR-2-V8-PB-DP - 2905636



Device marking

UCT-EM (30X5) - 0801505



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Accessories

UCT-EM (30X5) YE - 0830340



UC-EMLP (15X5) - 0819301



UC-EMLP (15X5) YE - 0822615



UC-EMLP (15X5) SR - 0828095



US-EMLP (15X5) - 0828790



US-EMLP (15X5) YE - 0828873



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Accessories

US-EMLP (15X5) SR - 0828874



Labeled device marker

UCT-EM (30X5) CUS - 0801589



UCT-EM (30X5) YE CUS - 0830348



UC-EMLP (15X5) CUS - 0824550



UC-EMLP (15X5) YE CUS - 0824551



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Accessories

UC-EMLP (15X5) SR CUS - 0828099



US-EMLP (15X5) CUS - 0830076



US-EMLP (15X5) YE CUS - 0830077



US-EMLP (15X5) SR CUS - 0830078



Terminal marking

SK 5,0 WH:REEL - 0805221



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Accessories

ME 6,2 TBUS-2 1,5/5-ST-3,81 GY - 2695439



UC-EMLP (15X5)L - 0820138



UC-EMLP (15X5)L CUS - 0824552

UC-EMLP (15X5)L YE - 0825325

UC-EMLP (15X5)L YE CUS - 0826680

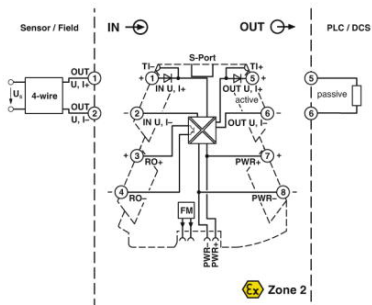
UC-EMLP (15X5)L SR - 0828103

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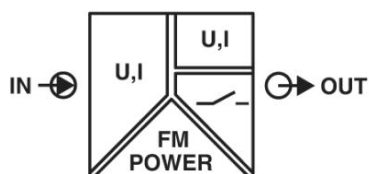
Accessories

Drawings

Block diagram



Pictogram



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