

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.

Product 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

| | |
|--------------------------------------|---------------|
| Packing unit | 1 STK |
| GTIN | |
| GTIN | 4046356649698 |
| Weight per Piece (excluding packing) | 100.000 g |
| Custom tariff number | 85437090 |
| Country of origin | Germany |

Technical data

Note

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

Dimensions

| | |
|-------|--------|
| Width | 6.2 mm |
|-------|--------|

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Dimensions

| | |
|--------|----------|
| 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 |
| Degree of protection | IP20 |

Input data

| | |
|-----------------------------------|--|
| Number of inputs | 1 |
| Configurable/programmable | Yes |
| Voltage input signal | 0 V ... 10 V (via DIP switch) |
| | 2 V ... 10 V (via DIP switch) |
| | 0 V ... 5 V (via DIP switch) |
| | 1 V ... 5 V (via DIP switch) |
| | 10 V ... 0 V (via DIP switch) |
| | 10 V ... 2 V (via DIP switch) |
| | 5 V ... 0 V (via DIP switch) |
| | 5 V ... 1 V (via DIP switch) |
| | 0 V ... 12 V (Can be set via software) |
| Current input signal | 0 mA ... 20 mA (via DIP switch) |
| | 4 mA ... 20 mA (via DIP switch) |
| | 0 mA ... 10 mA (via DIP switch) |
| | 2 mA ... 10 mA (via DIP switch) |
| | 20 mA ... 0 mA (via DIP switch) |
| | 20 mA ... 4 mA (via DIP switch) |
| | 10 mA ... 0 mA (via DIP switch) |
| | 10 mA ... 2 mA (via DIP switch) |
| | 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) |
| | 2 V ... 10 V (via DIP switch) |

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Output data

| | |
|---------------------------------|---|
| | 0 V ... 5 V (via DIP switch) |
| | 1 V ... 5 V (via DIP switch) |
| | 0 V ... 10.5 V (Can be set via software) |
| Current output signal | 0 mA ... 20 mA (via DIP switch) |
| | 4 mA ... 20 mA (via DIP switch) |
| | 0 mA ... 10 mA (via DIP switch) |
| | 2 mA ... 10 mA (via DIP switch) |
| | 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 | $\geq 10 \text{ k}\Omega$ |
| Load/output load current output | $\leq 600 \Omega$ (at 20 mA) |
| Ripple | $< 20 \text{ mV}_{PP}$ (at 600 Ω) |
| | $< 20 \text{ mV}_{PP}$ (at 600 Ω) |

Switching output

| | |
|---------------------------|-------------------|
| Output name | 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) |
| | 63 mA (12 V DC) |
| Power consumption | $\leq 1 \text{ W}$ (at $I_{OUT} = 20 \text{ mA}$, 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 |

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Connection data

| | |
|--|----------------------|
| 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) |
| | approx. 45 ms (60 Hz sample rate) |
| | 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 |
| 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. |

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 |

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Technical data

EMC data

| | |
|--|-------|
| Typical deviation from the measuring range final value | 2.8 % |
|--|-------|

Standards and Regulations

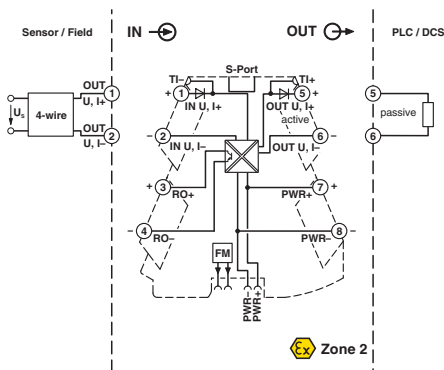
| | |
|-------------------------------|--|
| Electromagnetic compatibility | Conformance with EMC directive |
| Noise emission | EN 61000-6-4 |
| Standards/regulations | EN 61000-4-2 |
| Designation | Electromagnetic RF field |
| Standards/regulations | EN 61000-4-3 |
| | EN 61000-4-4 |
| | EN 61000-4-5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

Environmental Product Compliance

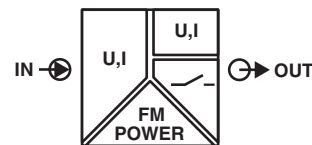
| | |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50 |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

Drawings

Block diagram



Pictogram



Approvals

Approvals

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Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

Ex Approvals

UL Listed / cUL Listed / ATEX / cULus Listed

Approval details

| | | | |
|-----------|--|---|---------------|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 238705 |
|-----------|--|---|---------------|

| | | | |
|------------|--|---|---------------|
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 238705 |
|------------|--|---|---------------|

| | | | |
|--------------|--|--|--|
| cULus Listed | | | |
|--------------|--|--|--|

Accessories

Accessories

Communication module

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



Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a Modbus/RTU network via a communication adapter.

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



Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a Modbus/TCP network via a communication adapter.

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Accessories

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



Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a PROFIBUS DP network via a communication adapter.

Device marking

Marker for end clamp - UCT-EM (30X5) - 0801505



Marker for end clamp, Sheet, white, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, BLUEMARK CLED, BLUEMARK LED, TOPMARK LASER, Mounting type: snapped into marker carrier, Lettering field: 30 x 5 mm

Marker for end clamp - UCT-EM (30X5) YE - 0830340



Marker for end clamp, Sheet, yellow, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, BLUEMARK CLED, BLUEMARK LED, TOPMARK LASER, Mounting type: snapped into marker carrier, Lettering field: 30 x 5 mm

Plastic label - UC-EMLP (15X5) - 0819301



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK CLED, BLUEMARK LED, CMS-P1-PLOTTER, PLOTMARK, Mounting type: Adhesive, Lettering field: 15 x 5 mm

Plastic label - UC-EMLP (15X5) YE - 0822615



Plastic label, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK CLED, BLUEMARK LED, CMS-P1-PLOTTER, PLOTMARK, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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Accessories

Plastic label - UC-EMLP (15X5) SR - 0828095



Plastic label, Sheet, silver, unlabeled, can be labeled with: BLUEMARK CLED, BLUEMARK LED, CMS-P1-PLOTTER, PLOTMARK, Mounting type: Adhesive, Lettering field: 15 x 5 mm

Plastic label - US-EMLP (15X5) - 0828790



Plastic label, Card, white, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, Mounting type: Adhesive, Lettering field: 15 x 5 mm

Plastic label - US-EMLP (15X5) YE - 0828873



Plastic label, Card, yellow, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, Mounting type: Adhesive, Lettering field: 15 x 5 mm

Plastic label - US-EMLP (15X5) SR - 0828874



Plastic label, Card, silver, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, Mounting type: Adhesive, Lettering field: 15 x 5 mm

DIN rail connector

DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - 2869728



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

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Accessories

Evaluation unit

Monitoring module - MINI MCR-2-FM-RC - 2904504



Fault monitoring module with plug-in connection technology for evaluating and reporting group errors from the FM system and for monitoring the supply voltages. Error reporting via N/O contact. Screw connection technology, standard configuration

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



Fault monitoring module with plug-in connection technology for evaluating and reporting group errors from the FM system and for monitoring the supply voltages. Error reporting via N/O contact. Push-in connection technology, standard configuration

Labeled device marker

Marker for end clamp - UCT-EM (30X5) CUS - 0801589



Marker for end clamp, can be ordered: by sheet, white, labeled according to customer specifications, Mounting type: snapped into marker carrier, Lettering field: 30 x 5 mm

Marker for end clamp - UCT-EM (30X5) YE CUS - 0830348



Marker for end clamp, can be ordered: by sheet, yellow, labeled according to customer specifications, Mounting type: snapped into marker carrier, Lettering field: 30 x 5 mm

Plastic label - UC-EMLP (15X5) CUS - 0824550



Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

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Accessories

Plastic label - UC-EMLP (15X5) YE CUS - 0824551



Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

Plastic label - UC-EMLP (15X5) SR CUS - 0828099



Plastic label, can be ordered: by sheet, silver, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

Plastic label - US-EMLP (15X5) CUS - 0830076



Plastic label, can be ordered: By card, white, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

Plastic label - US-EMLP (15X5) YE CUS - 0830077



Plastic label, can be ordered: By card, yellow, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

Plastic label - US-EMLP (15X5) SR CUS - 0830078



Plastic label, can be ordered: By card, silver, labeled according to customer specifications, Mounting type: Adhesive, Lettering field: 15 x 5 mm

Power module

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Accessories

Power terminal block - MINI MCR-2-PTB - 2902066



Power terminal with plug-in connection technology for delivering the supply voltage to the DIN rail connector. Monitoring of the supply voltages in combination with the fault monitoring module. Screw connection technology

Power terminal block - MINI MCR-2-PTB-PT - 2902067



Power terminal with plug-in connection technology for delivering the supply voltage to the DIN rail connector. Monitoring of the supply voltages in combination with the fault monitoring module. Push-in connection technology

Power supply

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



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

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



Primary-switched power supply MINI POWER for DIN rail mounting, input: 1-phase, output: 24 V DC/1,5 A, for the potentially explosive area

Programming adapter

Programming adapter - IFS-BT-PROG-ADAPTER - 2905872



Bluetooth programming adapter with μ USB and S-PORT interface for wireless programming and monitoring. The driver is included in the software solutions for the products to be programmed, such as measuring transducers or motor managers.

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

Accessories

Programming adapter - IFS-USB-PROG-ADAPTER - 2811271



Programming adapter with USB interface, for programming with software. The USB driver is included in the software solutions for the products to be programmed, such as measuring transducers or motor managers.

Programming adapter - NFC-USB-PROG-ADAPTER - 2900013



Near Field Communication (NFC) programming adapter with USB interface for the wireless configuration of NFC-capable products from PHOENIX CONTACT with software. No separate USB driver is required.

System adapter

System adapter - MINI MCR-2-V8-FLK 16 - 2901993



Eight MINI Analog Pro signal conditioners and measuring transducers can be connected to a controller with minimal cabling effort and without any errors using system adapters and system cabling.

Terminal marking

Marker strip - SK 5,0 WH:REEL - 0805221



Marker strip, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK S1.1, Mounting type: Adhesive, Lettering field: continuous x 5 mm

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

Accessories

DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GY - 2695439



DIN rail connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rails according to EN 60715