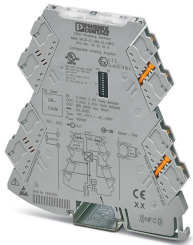


Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




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. Screw 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 pc |
| GTIN |  4 046356 649681 |
| GTIN | 4046356649681 |

Technical data

Note

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

Dimensions

| | |
|--------|-----------|
| Width | 6.2 mm |
| Height | 109.81 mm |
| Depth | 119.2 mm |

Ambient conditions

| | |
|-----------------------------------------|-------------------------------|
| Ambient temperature (operation) | -40 °C ... 70 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Maximum altitude | ≤ 2000 m |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Technical data

Ambient conditions

| | |
|----------------------|-----------------------------------------------------------------------------------|
| Degree of protection | IP20 (not assessed by UL) |
| Noise immunity | EN 61000-6-2 When being exposed to interference, there may be minimal deviations. |

Input data

| | |
|------------------------------------------|----------------------------------------|
| Designation | Voltage/current input |
| 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 |
| 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 | |
| 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

| | |
|---------------------------|------------------------------------------|
| Output name | Voltage output / current output |
| Number of outputs | 1 |
| Configurable/programmable | Yes |
| Voltage output 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) |
| | 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) |

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Technical data

Output data

| | |
|---------------------------------|-------------------------------------------|
| | 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 | Screw connection |
| Stripping length | 10 mm |
| Screw thread | M3 |
| Conductor cross section solid | 0.2 mm ² ... 1.5 mm ² (with ferrule) |
| | 0.14 mm ² ... 2.5 mm ² (without ferrule) |
| Conductor cross section flexible | 0.14 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 24 ... 12 (flexible) |
| Torque | 0.5 Nm ... 0.6 Nm |

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 |

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Technical data

General

| | |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 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. |
| 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 |
| | EN 61000-4-4 |
| | EN 61000-4-5 |
| Designation | Conducted interferences |
| Standards/regulations | EN 61000-4-6 |
| Designation | GB Standard |
| Standards/regulations | GB 3836.1 |

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Technical data

Standards and Regulations

| | |
|----------------------|------------------------------------------------------|
| | GB 3836.8 |
| Electrical isolation | Reinforced insulation in accordance with IEC 61010-1 |

Conformance/approvals

| | |
|----------------|-----------------------------------------------------------------------------------------|
| Designation | CE |
| Certificate | CE-compliant |
| Designation | ATEX |
| Identification | # II 3 G Ex ec IIC T4 Gc |
| Certificate | BVS 19 ATEX E 083 X |
| Designation | IECEX |
| Identification | Ex ec IIC T4 Gc |
| Certificate | IECEX BVS 19.0072X |
| Designation | CCC / China-Ex |
| Identification | Ex nA IIC T4 Gc |
| Certificate | NEPSI GYJ21.1123X |
| Designation | UL, USA / Canada |
| Identification | UL 508 Listed |
| | Class I, Div. 2, Groups A, B, C, D T6 |
| | Class I, Zone 2, Group IIC T6 |
| Designation | Shipbuilding approval |
| Certificate | DNV GL TAA000021E |
| Temperature | B |
| Humidity | B |
| Vibration | A |
| EMC | A |
| Enclosure | Required protection according to the Rules shall be provided upon installation on board |

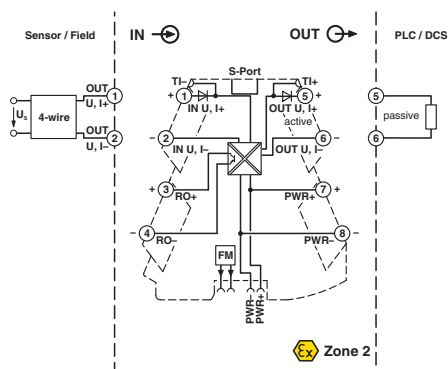
Environmental Product Compliance

| | |
|------------|-----------------------------------------------------------------------------------------------------|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

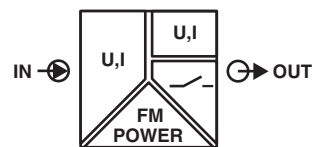
Drawings

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Block diagram



Pictogram



Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 27210120 |
| eCl@ss 11.0 | 27210120 |
| eCl@ss 4.0 | 27210100 |
| eCl@ss 4.1 | 27210100 |
| eCl@ss 5.0 | 27210100 |
| eCl@ss 5.1 | 27210100 |
| eCl@ss 6.0 | 27210100 |
| eCl@ss 7.0 | 27210120 |
| eCl@ss 9.0 | 27210120 |

ETIM

| | |
|----------|----------|
| ETIM 4.0 | EC002653 |
| ETIM 6.0 | EC002653 |
| ETIM 7.0 | EC002653 |

UNSPSC

| | |
|---------------|----------|
| UNSPSC 6.01 | 30211502 |
| UNSPSC 7.0901 | 39121004 |
| UNSPSC 11 | 39121004 |
| UNSPSC 12.01 | 39121004 |
| UNSPSC 13.2 | 39121008 |
| UNSPSC 18.0 | 39121008 |
| UNSPSC 19.0 | 39121008 |
| UNSPSC 20.0 | 39121008 |
| UNSPSC 21.0 | 39121008 |

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Approvals

Approvals

Approvals

UL Listed / cUL Listed / DNV GL / CCC / cULus Listed

Ex Approvals

UL Listed / cUL Listed / EAC Ex / ATEX / IECEx / 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 |
|------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

| | | | |
|--------|--|-----------------------------------------------------------------------------------|------------|
| DNV GL | | https://approvalfinder.dnvgl.com/ | TAA000021E |
|--------|--|-----------------------------------------------------------------------------------|------------|

| | | | |
|-----|--|--|------------------|
| CCC | | | 2021322310003877 |
|-----|--|--|------------------|

| | | | |
|--------------|--|--|--|
| 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.

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Accessories

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.

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: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm, Number of individual labels: 24

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



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

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



Plastic label, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Accessories

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



Plastic label, Sheet, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

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



Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

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



Plastic label, Card, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

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



Plastic label, Card, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

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



Marker for end clamp, Sheet, yellow, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm, Number of individual labels: 24

DIN rail connector

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

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

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.

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 message via N/C 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 message via N/C 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 size: 30 x 5 mm, Number of individual labels: 24

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Accessories

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 size: 15 x 5 mm

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 size: 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 size: 15 x 5 mm, Number of individual labels: 10

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 size: 15 x 5 mm, Number of individual labels: 189

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 size: 15 x 5 mm, Number of individual labels: 189

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

Accessories

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 size: 15 x 5 mm, Number of individual labels: 189

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 size: 30 x 5 mm, Number of individual labels: 24

Power module

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



Please use the following item in new systems: 2904614
Primary-switched MINI POWER power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Programming adapter

Signal conditioner - MINI MCR-2-UNI-UI-UIRO - 2902026

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.

Adapter - IFS-BT-PROG-ADAPTER - 2905872



Bluetooth adapter with micro USB and S-PORT interface for wireless communication with the MINI Analog, MINI Analog Pro, MACX Analog, INTERFACE system gateways, and PLC logic device series.

Programming adapter - TWN4 MIFARE NFC USB ADAPTER - 2909681



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 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: continuous x 5 mm, Number of individual labels: 90000

Phoenix Contact 2021 © - all rights reserved
<http://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstr. 8
32825 Blomberg
Germany
Tel. +49 5235 300
Fax +49 5235 3 41200
<http://www.phoenixcontact.com>