MINI MCR-2-U-U-PT - Input signal conditioner

2902043

https://www.phoenixcontact.com/pc/products/2902043

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CRA-READY



3-way signal conditioner with plug-in connection technology for the electrical isolation of unipolar and bipolar analog signals. Input signal: 0 V ... 10 V/±10 V, output signal: 0 V ... 10 V/±10 V, push-in connection technology.

Product description

Standard signal 3-way signal conditioner with plug-in connection technology for the electrical isolation, conversion, amplification, and filtering of standard voltage signals. The measuring transducer supports fault monitoring and NFC communication.

Commercial data

Item number	2902043
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DK1121
GTIN	4046356652087
Weight per piece (including packing)	60.1 g
Weight per piece (excluding packing)	94 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Notes

Note on application

Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area

Product properties

Product type	Input signal conditioner
Product family	MINI Analog Pro
No. of channels	1

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Limit frequency (3 dB)	approx. 30 Hz
Protective circuit	Transient protection
Signal transmission behavior	In = Out
Step response (10-90%)	approx. 10 ms
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	0.01 %/K
Maximum transmission error	0.1 % (of final value)

Electrical isolation

Overvoltage category	II
Pollution degree	2

Electrical isolation Input/output/power supply IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V_{rms}
Test voltage	3 kV AC (50 Hz, 60 s)
Insulation	Reinforced insulation

Supply

Nominal supply voltage	24 V DC
Supply voltage range	9.6 V DC ... 30 V DC (The DIN rail connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, item no. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail in accordance with EN 60715)
Typical current consumption	25 mA (24 V DC)
	54 mA (12 V DC)

Power consumption	≤ 200 mW (at 9.6 V DC)

Input data

Signal: Voltage

Number of inputs	1
Configurable/programmable	no
Voltage input signal	0 V ... 10 V
	-10 V ... 10 V
	2 V ... 10 V
Input resistance of voltage input	approx. 1 MΩ

Output data

Signal: Voltage

Number of outputs	1
Configurable/programmable	no
Voltage output signal	0 V ... 10 V
	-10 V ... 10 V
Max. voltage output signal	11 V
Short-circuit current	< 15 mA
Load/output load voltage output	≥ 10 kΩ
Ripple	< 20 mV_{PP} (at 10 kΩ)

Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross-section rigid	0.2 mm² ... 2.5 mm² (with ferrule)
	0.14 mm² ... 2.5 mm² (without ferrule)
Conductor cross-section flexible	0.14 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 12 (flexible)

Ex data

Ex installation (EPL)	Gc
	Div. 2

Signaling

Status display	Green LED (supply voltage)

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)

Housing material	PBT
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

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant

ATEX

Identification	Ⓔx II 3 G Ex ec IIC T4 Gc
Certificate	BVS 19 ATEX E 047 X

IECEx

Identification	Ex ec IIC T4 Gc
Certificate	IECEx BVS 19.0041X

CCC / China-Ex

Identification	Ex ec IIC T4 Gc

UL, USA/Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC T6

Shipbuilding approval

Certificate	DNV GL TAA00002UA

EAC Ex

Identification	EAC Ex Ex ec IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00079

Shipbuilding data

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

Electromagnetic compatibility	Conformance with EMC directive
Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.

Noise emission

Standards/regulations	EN 61000-6-4

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.

Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6

Standards and regulations

Electrical isolation	3-way isolation

GB Standard

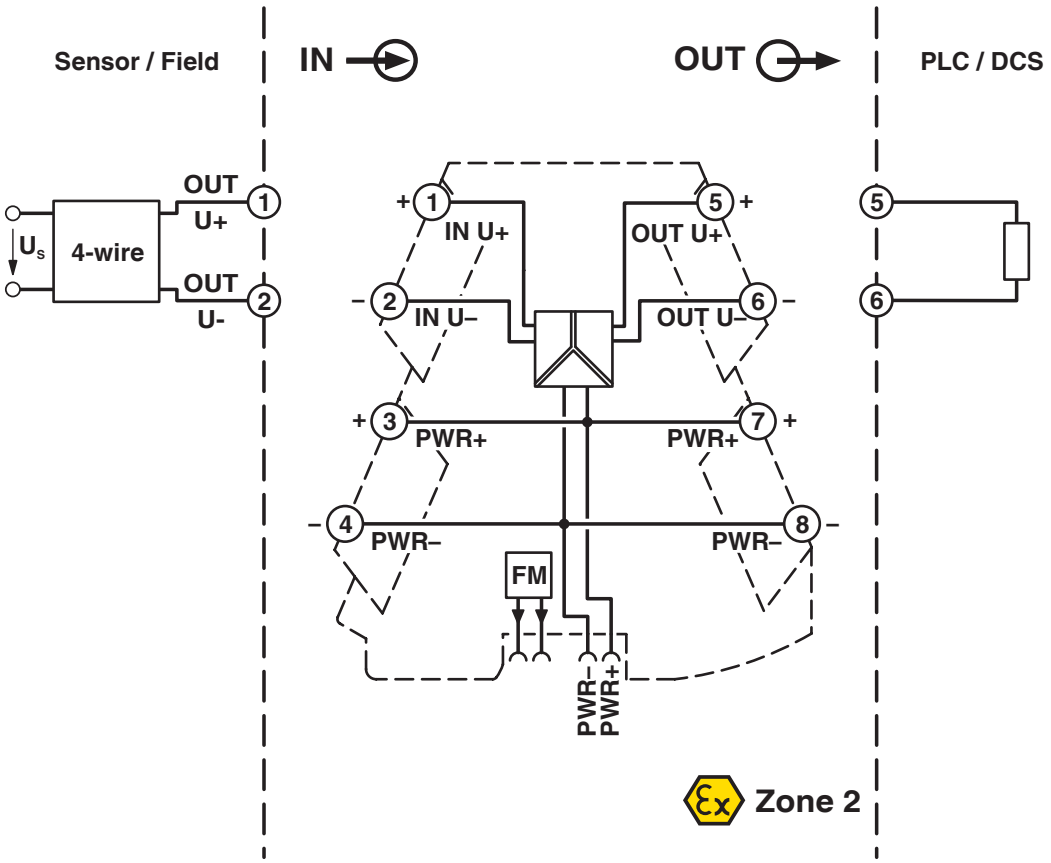
Standards/regulations	GB/T 3836.1
	GB/T 3836.3
	GB/T 3836.4

Mounting

Mounting type	DIN rail mounting
Assembly note	The DIN rail connector can be used for bridging the supply voltage. It can be snapped onto a 35 mm EN 60715 DIN rail.
Mounting position	any

Drawings

Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/pc/products/2902043

UL Listed
Approval ID: FILE E 238705

cUL Listed
Approval ID: FILE E 238705

DNV
Approval ID: TAA00002UA

IECEx
Approval ID: IECEx BVS 19.0041X

cUL Listed
Approval ID: E196811

UL Listed
Approval ID: E196811

ATEX
Approval ID: BVS 19 ATEX E 047 X

CCC
Approval ID: 2022122310115961

Classifications

ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120

ETIM

ETIM 10.0	EC002653

UNSPSC

UNSPSC 21.0	39121000

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

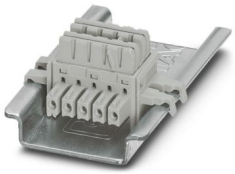
REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	76557b93-51af-4e12-96f6-ca3f529c36df

Accessories

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

2695439

https://www.phoenixcontact.com/pc/products/2695439

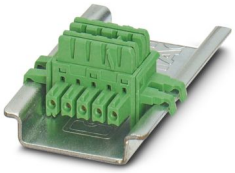


DIN rail bus connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rail in accordance with EN 60715

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

2869728

https://www.phoenixcontact.com/pc/products/2869728



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

MCR-DP - Divider plate

1430594

https://www.phoenixcontact.com/pc/products/1430594



The divider plate is used to maintain Ex i isolating distances when Ex i and non-Ex i devices are mounted side by side on a DIN rail.

TC-D37SUB-ADIO16-MP-P-UNI - Module carrier

2906639

https://www.phoenixcontact.com/pc/products/2906639

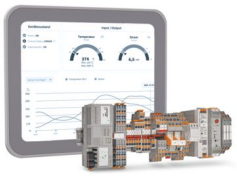


Universal Termination Carrier for connecting 16 MINI Analog Pro signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection)

CLIPX ENGINEER DEVICE PARAMETERIZATION - Software

1371665

https://www.phoenixcontact.com/pc/products/1371665



Parameterization software for Phoenix Contact devices. It includes online monitoring of current device process values, adjustment of device parameters, and logging of parameter changes. Windows installation version with online update.

CLIPX ENGINEER DEVICE PARAMETERIZATION P - Software

1371666

https://www.phoenixcontact.com/pc/products/1371666



Parameterization software for Phoenix Contact devices. It includes online monitoring of current device process values, adjustment of device parameters, and logging of parameter changes. Windows version can be used straight away without online update.

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

2901993

https://www.phoenixcontact.com/pc/products/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.

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

2905634

https://www.phoenixcontact.com/pc/products/2905634



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

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

2905635

https://www.phoenixcontact.com/pc/products/2905635



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

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

2905636

https://www.phoenixcontact.com/pc/products/2905636



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

MINI MCR-2-V8-PN - Communication module

2905637

https://www.phoenixcontact.com/pc/products/2905637



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

FASTCON PRO-SET - Connector set

2906227

https://www.phoenixcontact.com/pc/products/2906227



FASTCON Pro plug set consisting of four plugs with screw connection, one for each position on the module. Suitable for all MINI Analog Pro modules.

FASTCON PRO-SET-PT - Connector set

2906228

https://www.phoenixcontact.com/pc/products/2906228



FASTCON Pro plug set consisting of four plugs with push-in connection, one for each position on the module. Suitable for all MINI Analog Pro modules.

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

0801505

https://www.phoenixcontact.com/pc/products/0801505



Marker for end clamp, Card, white (RAL 9010), unmarked, can be labeled with: BLUEMARK E.CARD, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME 2.0, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, TOPMARK NEO, TOPMARK LASER, mounting type: latching, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm

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

0801589

https://www.phoenixcontact.com/pc/products/0801589



Marker for end clamp, Card, can be ordered: by sheet, white (RAL 9010), labeled according to customer specifications, mounting type: snapped into marker carrier, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm

SK 5,0 WH:REEL - Marker strip

0805221

https://www.phoenixcontact.com/pc/products/0805221



Marker strip, Roll, white (RAL 9010), unmarked, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 90000 mm

UC-EMLP (15X5) - Plastic label

0819301

https://www.phoenixcontact.com/pc/products/0819301

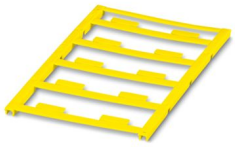


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UC-EMLP (15X5) YE - Plastic label

0822615

https://www.phoenixcontact.com/pc/products/0822615



Plastic label, Card, yellow (RAL 1018), unmarked, can be labeled with: BLUEMARK E.CARD, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

UC-EMLP (15X5) CUS - Plastic label

0824550

https://www.phoenixcontact.com/pc/products/0824550

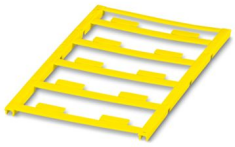


Plastic label, can be ordered: by sheet, white (RAL 9010), labeled according to customer specifications, mounting type: adhesive, text field height: 5 mm, text field width: 15 mm

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

0824551

https://www.phoenixcontact.com/pc/products/0824551



Plastic label, can be ordered: by sheet, yellow (RAL 1018), labeled according to customer specifications, mounting type: adhesive, text field height: 5 mm, text field width: 15 mm

UC-EMLP (15X5) SR - Plastic label

0828095

https://www.phoenixcontact.com/pc/products/0828095



Plastic label, Card, unmarked, can be labeled with: BLUEMARK E.CARD, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

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

0828099

https://www.phoenixcontact.com/pc/products/0828099



Plastic label, can be ordered: by sheet, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

US-EMLP (15X5) - Plastic label

0828790

https://www.phoenixcontact.com/pc/products/0828790



Plastic label, Card, white (RAL 9010), unmarked, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, THERMOMARK PRIME 2.0, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

US-EMLP (15X5) YE - Plastic label

0828873

https://www.phoenixcontact.com/pc/products/0828873



Plastic label, Card, yellow (RAL 1018), unmarked, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, THERMOMARK PRIME 2.0, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

US-EMLP (15X5) SR - Plastic label

0828874

https://www.phoenixcontact.com/pc/products/0828874



Plastic label, Card, unmarked, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, THERMOMARK PRIME 2.0, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

US-EMLP (15X5) CUS - Plastic label

0830076

https://www.phoenixcontact.com/pc/products/0830076



Plastic label, Card, can be ordered: by card, white (RAL 9010), labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

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

0830077

https://www.phoenixcontact.com/pc/products/0830077



Plastic label, Card, can be ordered: by card, yellow (RAL 1018), labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

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

0830078

https://www.phoenixcontact.com/pc/products/0830078



Plastic label, Card, can be ordered: by card, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

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

0830340

https://www.phoenixcontact.com/pc/products/0830340



Marker for end clamp, Card, yellow (RAL 1018), unmarked, can be labeled with: BLUEMARK E.CARD, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME 2.0, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, TOPMARK NEO, TOPMARK LASER, mounting type: latching, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm

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

0830348

https://www.phoenixcontact.com/pc/products/0830348



Marker for end clamp, Card, can be ordered: by sheet, yellow (RAL 1018), labeled according to customer specifications, mounting type: snapped into marker carrier, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm

MINI MCR-2-PTB - Power terminal block

2902066

https://www.phoenixcontact.com/pc/products/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

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

2902067

https://www.phoenixcontact.com/pc/products/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

QUINT4-SYS-PS/1AC/24DC/2.5/SC - Power supply

2904614

https://www.phoenixcontact.com/pc/products/2904614



Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

MINI MCR-2-FM-RC - Monitoring block

2904504

https://www.phoenixcontact.com/pc/products/2904504

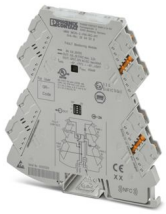


Fault monitoring module with plug-in connection technology for evaluating and reporting group errors from the FM system and for monitoring the supply voltages. Error message via N/C contact. Screw connection technology, standard configuration

MINI MCR-2-FM-RC-PT - Monitoring block

2904508

https://www.phoenixcontact.com/pc/products/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

SZS 0,6X3,5 - Screwdriver

1205053

https://www.phoenixcontact.com/pc/products/1205053



Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

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