

# MINI MCR-2-UI-REL - Limit value switch



2902033

<https://www.phoenixcontact.com/us/products/2902033>

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Universally configurable threshold value switch with changeover contact relay output and plug-in connection technology for switching analog limit values. Configurable via DIP switch or software. Screw connection technology, standard configuration.

## Product Description

Universally configurable threshold value switch with changeover contact relay output and plug-in connection technology for switching analog limit values. On the input side, current signals between 0 mA ... 24 mA and voltage signals between 0 V ... 12 V can be processed. A relay with changeover contact is available on the output side. It is then possible to switch loads up to 250 V / 6 A AC and 30 V / 4 A DC. You can configure the device using one of the free software solutions. Default settings can also easily be made directly on the device via DIP switches (see configuration table). The measuring transducer supports fault monitoring and NFC communication.

## Commercial Data

Item number	2902033
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	C404
Product Key	CK1443
Catalog Page	Page 94 (C-5-2019)
GTIN	4046356652056
Weight per Piece (including packing)	128.5 g
Weight per Piece (excluding packing)	128.5 g
Customs tariff number	85437090
Country of origin	DE

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## Technical Data

### Notes

#### Utilization restriction

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

Product type	Limit value switch
Product family	MINI Analog Pro
No. of channels	1
Type	Signal conditioner
Configuration	DIP switches
	Software
	App

#### Insulation characteristics: GB Standard

Overvoltage category	II
Pollution degree	2

### System properties

#### Functionality

Configuration	DIP switches
	Software
	App

### Electrical properties

No. of channels	1
Electrical isolation between input and output	yes
Switching point accuracy	< 0.1 %
Step response (0–99%)	140 ms (can be set via software)
Maximum temperature coefficient	0.01 %/K
Maximum transmission error	0.1 % (of final value)

#### Electrical isolation Input/output/power supply

Rated insulation voltage	300 V <sub>rms</sub>
Test voltage	3 kV AC (50 Hz, 60 s)
Insulation	Reinforced insulation according to IEC/EN 61010-1

#### 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)

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Typical current consumption	40 mA (12 V DC)
	20 mA (24 V DC)
Power consumption	≤ 0.5 W

## Input data

Signal: Voltage/current

Configurable/programmable	Yes
Voltage input signal	0 V ... 10 V (via DIP switch)
	0 V ... 12 V (can be set via software)
Max. voltage input signal	12 V
Current input signal	0 mA ... 20 mA (via DIP switch)
	0 mA ... 24 mA (can be set via software)
Max. current input signal	24 mA
Input resistance of voltage input	> 120 kΩ
Input resistance current input	50 Ω (+0.7 V for test diode)
Specification of the switching point	Can be set via software or in steps via DIP switches

## Output data

Switching: Relay

Contact switching type	1 changeover contact
Contact material	AgSnO <sub>2</sub> , hard gold-plated
Maximum switching voltage	250 V AC
	30 V DC
	240 V AC (UL)
Limiting continuous current	6 A AC
	4 A DC
Min. switching current	100 mA (12 V DC)
Max. switching current	6 A AC (250 V AC)
	4 A DC (30 V DC)
Mechanical service life	2x 10 <sup>7</sup> cycles
Setting range of the response delay	0 s ... 10 s (can be set freely via software)
Internal hysteresis	can be set freely via software

## Connection data

Connection method	Screw connection
Stripping length	10 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (with ferrule)
	0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> (without ferrule)
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12 (flexible)
Tightening torque	0.5 Nm ... 0.6 Nm

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## Ex data

Ex installation (EPL)	Gc
	Div. 2

## Interfaces

Data: IFS interface

Connection method	Micro USB type B
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## Signaling

Status display	Green LED (supply voltage)
	Yellow LED (switching output)
Error indication	Red LED

## Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

## Material specifications

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
Housing material	PBT

## 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
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ATEX

Identification	Ⓜ II 3G Ex ec ic nC IIC T4 Gc
Certificate	BVS 18 ATEX E 071 X

UKCA Ex (UKEX)

Identification	Ⓜ II 3 G Ex ec ic IIC T4 Gc
Certificate	PxCIF21UKEX2905632X

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## IECEX

Identification	Ex ec ic nC IIC T4 Gc
Certificate	IECEX BVS 18.0060X

## CCC / China-Ex

Identification	Ex ic nA nC IIC T4 Gc
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## UL, USA/Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T4A
	Class I, Zone 2, Group IIC T4A

## Shipbuilding approval

Certificate	DNV GL TAA000021E Rev. 1
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## EAC Ex

Identification	Ex ec ic nC IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00081

## DNV GL 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

Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

## Standards and regulations

### GB Standard

Standards/regulations	GB 3836.1
	GB 3836.4
	GB 3836.8

## Mounting

Mounting type	DIN rail mounting
Assembly instructions	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

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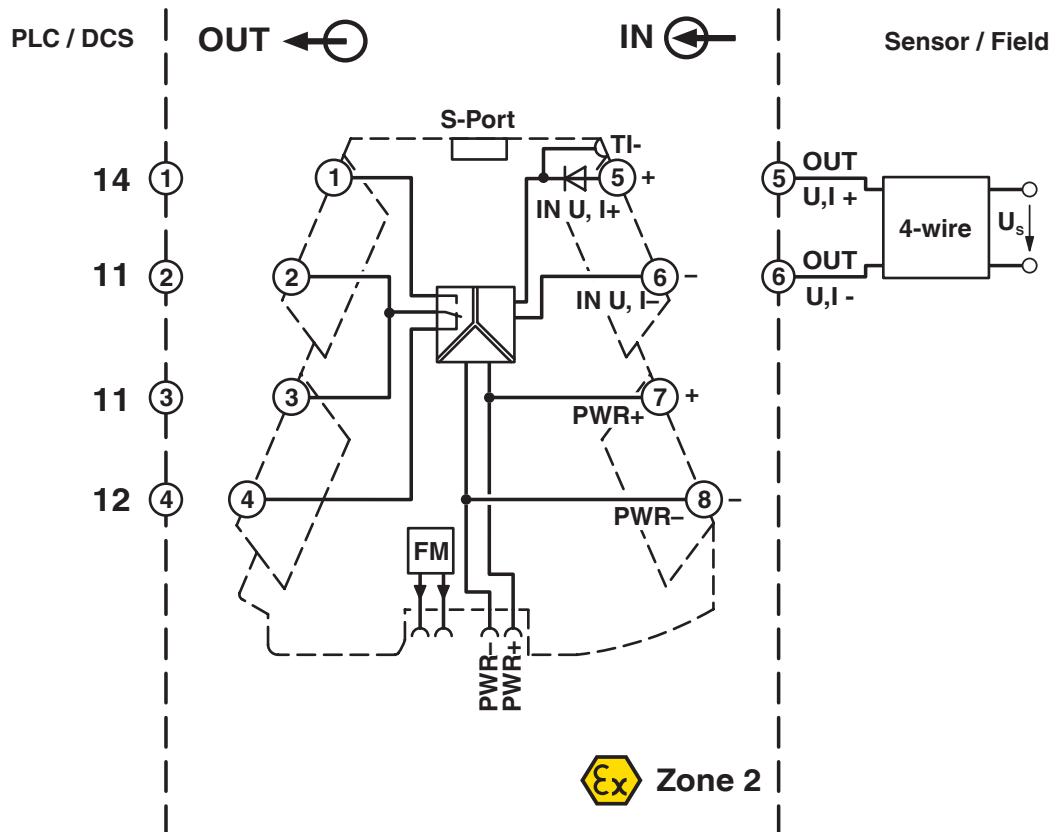


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## Drawings

Block diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2902033>



**EAC**

Approval ID: TR\_TS\_D\_00573\_c



**DNV GL**

Approval ID: TAA000021E



**EAC**

Approval ID: RU\*C-DE.\*08.B.00010



**UL Listed**

Approval ID: FILE E 238705



**CCC**

Approval ID: 2021322304003825



**cUL Listed**

Approval ID: FILE E 238705



**IECEx**

Approval ID: IECEx BVS 18.0060X



**cUL Listed**

Approval ID: FILE E 196811



**UL Listed**

Approval ID: FILE E 196811



**ATEX**

Approval ID: BVS 18 ATEX E 071 X



**NEPSI-EX**

Approval ID: GYJ20.1319X

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**cULus Listed**

**cULus Listed**



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## Classifications

### ECLASS

ECLASS-11.0	27210120
ECLASS-12.0	27210120
ECLASS-13.0	27210120

### ETIM

ETIM 8.0	EC002653
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### UNSPSC

UNSPSC 21.0	39121000
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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

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

2695439

<https://www.phoenixcontact.com/us/products/2695439>



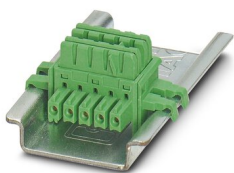
DIN rail connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rail in accordance with EN 60715

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

2869728

<https://www.phoenixcontact.com/us/products/2869728>



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

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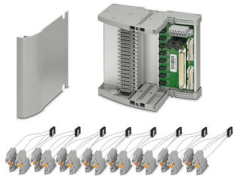
<https://www.phoenixcontact.com/us/products/2902033>



## TC-D37SUB-AIO16-MP-PS-UNI - Module carrier

2906640

<https://www.phoenixcontact.com/us/products/2906640>



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), with HART multiplexer connection

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

2906639

<https://www.phoenixcontact.com/us/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)

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## IFS-USB-PROG-ADAPTER - Programming adapter

2811271

<https://www.phoenixcontact.com/us/products/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.

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## IFS-BT-PROG-ADAPTER - Adapter

2905872

<https://www.phoenixcontact.com/us/products/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.

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## TWN4 MIFARE NFC USB ADAPTER - Programming adapter

2909681

<https://www.phoenixcontact.com/us/products/2909681>



Near Field Communication (NFC) programming adapter with USB interface for the wireless configuration of NFC-capable products from Phoenix Contact with software. A separate USB driver is not required.

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## FASTCON PRO-SET - Connector set

2906227

<https://www.phoenixcontact.com/us/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.

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## FASTCON PRO-SET-PT - Connector set

2906228

<https://www.phoenixcontact.com/us/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.

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

0801505

<https://www.phoenixcontact.com/us/products/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, lettering field size: 30 x 5 mm, Number of individual labels: 24

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

0801589

<https://www.phoenixcontact.com/us/products/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

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

0805221

<https://www.phoenixcontact.com/us/products/0805221>



Marker strip, Roll, white, unlabeled, 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, for terminal block width: 5 mm, lettering field size: continuous x 5 mm, Number of individual labels: 90000



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

0819301

<https://www.phoenixcontact.com/us/products/0819301>



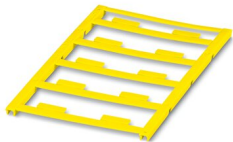
Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

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

0822615

<https://www.phoenixcontact.com/us/products/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

# MINI MCR-2-UI-REL - Limit value switch



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<https://www.phoenixcontact.com/us/products/2902033>

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

0824550

<https://www.phoenixcontact.com/us/products/0824550>

Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm



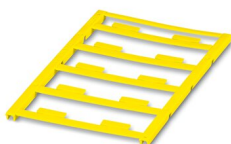
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## UC-EMLP (15X5) YE CUS - Plastic label

0824551

<https://www.phoenixcontact.com/us/products/0824551>

Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm



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<https://www.phoenixcontact.com/us/products/2902033>

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

0828095

<https://www.phoenixcontact.com/us/products/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

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

0828099

<https://www.phoenixcontact.com/us/products/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

# MINI MCR-2-UI-REL - Limit value switch



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

0828790

<https://www.phoenixcontact.com/us/products/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

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

0828873

<https://www.phoenixcontact.com/us/products/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

# MINI MCR-2-UI-REL - Limit value switch



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

0828874

<https://www.phoenixcontact.com/us/products/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

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

0830076

<https://www.phoenixcontact.com/us/products/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

# MINI MCR-2-UI-REL - Limit value switch



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<https://www.phoenixcontact.com/us/products/2902033>

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

0830077

<https://www.phoenixcontact.com/us/products/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



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

0830078

<https://www.phoenixcontact.com/us/products/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



# MINI MCR-2-UI-REL - Limit value switch



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

0830340

<https://www.phoenixcontact.com/us/products/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, lettering field size: 30 x 5 mm, Number of individual labels: 24

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

0830348

<https://www.phoenixcontact.com/us/products/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

# MINI MCR-2-UI-REL - Limit value switch

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

2902066

<https://www.phoenixcontact.com/us/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

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

2902067

<https://www.phoenixcontact.com/us/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



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

2904614

<https://www.phoenixcontact.com/us/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

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

2904504

<https://www.phoenixcontact.com/us/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

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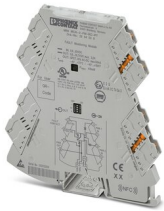
<https://www.phoenixcontact.com/us/products/2902033>



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

2904508

<https://www.phoenixcontact.com/us/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

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## SZS 0,6X3,5 - Screwdriver

1205053

<https://www.phoenixcontact.com/us/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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