

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



2909886

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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, order 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	2909886
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	C490
Product key	DK1127
Weight per piece (including packing)	126.5 g
Weight per piece (excluding packing)	110 g
Customs tariff number	85437090
Country of origin	DE

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## Technical data

### Product properties

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

### System properties

#### Functionality

Configuration	DIP switches
	Software
	App

### Electrical properties

Electrical isolation	3-way isolation
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

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 <sub>rms</sub>
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	40 mA (12 V DC)
	20 mA (24 V DC)
Power consumption (I output)	≤ 0.5 W

### Input data

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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

## Ex data

Ex installation (EPL)	Gc Div. 2
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## Interfaces

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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

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
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ATEX

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

IECEX

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

UL, USA/Canada

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

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## 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

## 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
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## Standards and regulations

Electrical isolation	3-way isolation
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## GB Standard

Standards/regulations	GB/T 3836.1
	GB/T 3836.3
	GB/T 3836.4
	GB/T 3836.8

## 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

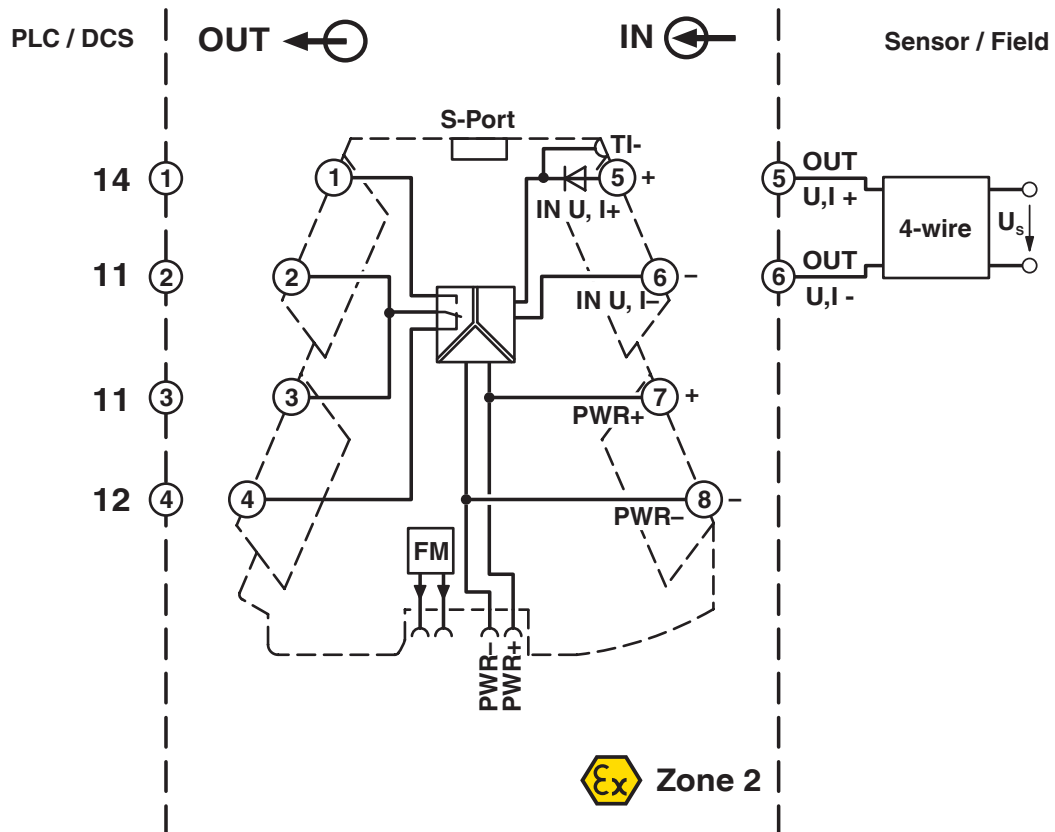
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## Drawings

Block diagram



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## Classifications

### ECLASS

ECLASS-13.0

27210120

### UNSPSC

UNSPSC 21.0

39121000

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## 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)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)

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