NEARFI PD 2A ETH R - Inductive coupler

1234225

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CRA-READY



NearFi remote, contactless power and real-time Ethernet coupler, 50 W (US), 100 Mbps, range ≤10 mm, M12 screw connection, IP65, can be combined with NEARFI PD 2A ETH B. Incompatible with NEARFI 2200 (new)

Product description

With the robust NEARFI-PD… NearFi couplers, you can transmit power (24 V DC / 2 A) and real-time Ethernet data (100 Mbps, full duplex) without contact across a distance in the centimeter range. Furthermore, the specially developed NearFi technology enables latency-free and protocol-independent Ethernet communication. At the same time, the limited wireless range of just a few centimeters also ensures security and permits parallel applications in the tightest of spaces. You can therefore replace wear-sensitive and maintenance-intensive connections and reduce downtimes in your systems.

Your advantages

- Contactless - and therefore no wear and no maintenance
- High power in a compact housing
- Protocol-independent, latency-free Ethernet real-time communication with 100 Mbps (full duplex)
- All-round visible diagnostics with light ring on the housing
- High degree of mounting freedom with flexible proximity options
- Plug and Play - as easy as a plug
- Degree of protection IP65

ELEKTROGERÄTE RÜCKNAHME

Commercial data

Item number	1234225
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN26
Product key	DNC691
GTIN	4063151337278
Weight per piece (including packing)	583.5 g
Weight per piece (excluding packing)	535 g
Customs tariff number	85176200
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.

Product properties

Product type	Inductive coupler
Product family	NearFi
Application	Ethernet
	Power
MTTF	115 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	60 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	27 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)

Insulation characteristics

Overvoltage category	II
Pollution degree	2

Electrical properties

Supply

Protective circuit	Short-circuit/overload protection

Output data

Output voltage	24 V DC ±5 %
Output current	≤ 2 A (typical)
	3.5 A (Peak, for 20 ms, with 5 mm spacing)

Connection data

Supply

Connection method	M12 female, A-coded

Interfaces

Data: Ethernet interface, 100Base-T(X) in accordance with IEEE 802.3

Transmission speed	100 Mbps
Connection method	M12 female, D-coded
Note on the connection method	Auto negotiation and autocrossing, fast startup (FSU, <500 ms)
	Typical bit error rate ≤10^{-12}

No. of channels	1
Transmission length	100 m (shielded twisted pair)
Transmission medium	Copper
Protocols supported	Protocol transparent: PROFINET, PROFINET IRT, PROFIsafe, EtherCAT®, Modbus/TCP, Powerlink, TSN, etc.

Inductive: Power transmission

Switch-on time	< 450 ms (ETH Full Duplex operating mode)
Range	min. 0 mm
	≤ 10 mm (at 55°C)
	≤ 12 mm (at 25 °C)
Center offset	± 5 mm
Wireless modules that can be connected	1 (Base coupler)
Frequency range	100 kHz ... 148.5 kHz (Power transmission)

Wireless

Wireless modules that can be connected	1 (Base coupler)
Frequency	60 GHz
Frequency range	57 GHz ... 64 GHz (Data transmission)
Transmission power	< 10 mW (EIRP)
Delay time	≤ 1 µs (typical)

Dimensions

Dimensional drawing	
Width	80 mm
Height	86 mm
Depth	39 mm

Material specifications

Color (Housing)	black (RAL 9005)
Material (Enclosure)	PBT
	Die-cast zinc
Flammability rating according to UL 94	V0

Cable/line

Other resistance	Resistant to welding splashes

Mechanical tests

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	Operation: 5 g per spatial direction, 10 Hz ... 150 Hz, amplitude ±0.34 mm
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Operation: 30 g, 11 ms duration, half-sine shock pulse, three shocks per spatial direction
Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27	Operation: 10 g, 16 ms duration, half-sine shock pulse, 1,000 shocks per spatial direction

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP65 (Manufacturer's declaration)
Impact strength	IK06
Ambient temperature (operation)	-20 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	2000 m
Permissible humidity (operation)	10 % ... 95 %
Permissible humidity (storage/transport)	10 % ... 95 %
Air pressure (operation)	80 kPa ... 108 kPa (up to 2000 m above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (up to 3500 m above sea level)

Test (Salt spray)

Test standard	IEC 60068-2-11
Test duration (Total)	96 h

Approvals

CE

Certificate	CE-compliant

Wireless approval, Europe

Note	RED 2014/53/EU

UL, USA

Identification	UL 61010 Recognized
	UL 61010-2-201, 2nd Edition
	UL 61010-1, 3rd Edition
Certificate	E238705

UL, Canada

Identification	cUL 61010 Recognized
	CSA C22.2 NO. 61010-2-201:18, 2nd Edition
	CSA C22.2 NO. 61010-1, 3rd Edition
Certificate	E238705

Wireless approval USA, FCC

Certificate	YG3PD2AETHR

Wireless approval Japan, MIC

Identification	006-001059

KC approval for South Korea

Certificate	R-R-PCK-1234232

CC-Link IE TSN

Identification	Class A

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Contact discharge	± 4 kV (Test Level 2)
Discharge in air	± 8 kV (Test Level 3)
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

Electromagnetic HF field

Frequency range	80 MHz ... 1 GHz (Test Level 3)
Field intensity	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4

Fast transients (burst)

Input	± 2 kV (Test Level 3 - asymmetrical)
Output	± 2 kV (Test Level 3 - asymmetrical)
Signal	± 2 kV (Test Level 3 - asymmetrical)
Comments	Criterion B

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Surge current load (surge)

Input	± 0.5 kV (Test Level 1 - symmetrical)
	± 1 kV (Test Level 2 - asymmetrical)
Output	± 1 kV (Test Level 2 - asymmetrical)
Signal	± 1 kV (Test Level 2 - asymmetrical)
Comments	Criterion B

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

Frequency range	0.15 MHz ... 80 MHz (Test Level 3 - asymmetrical)

Comments	Criterion A
Voltage	10 V (80% amplitude modulation with 1 kHz)

Emitted interference

Standards/regulations	EN 55016-2-3
Comments	Class A, industrial applications

Criteria

Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Standards and regulations

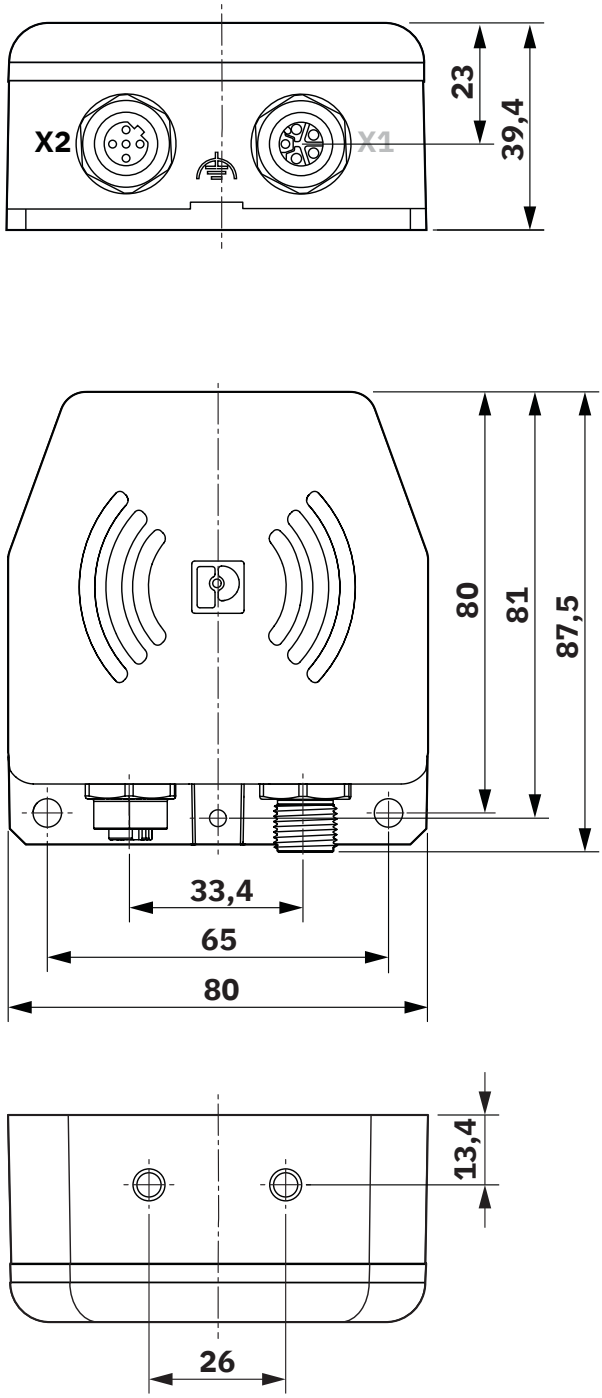
Free from substances that could impair the application of coating	VDMA 24364:2018-05
Other resistance	Resistant to welding splashes
Standards/regulations	EN 60204-1 (PELV)
Standard designation	Protective extra-low voltage

Mounting

Mounting type	Panel mounting
Assembly note	Observe derating
Mounting position	any

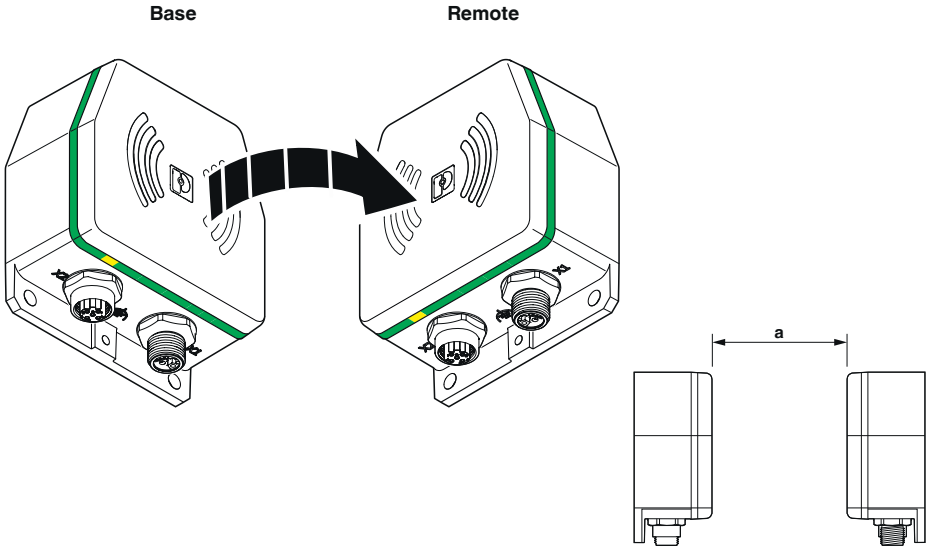
Drawings

Dimensional drawing



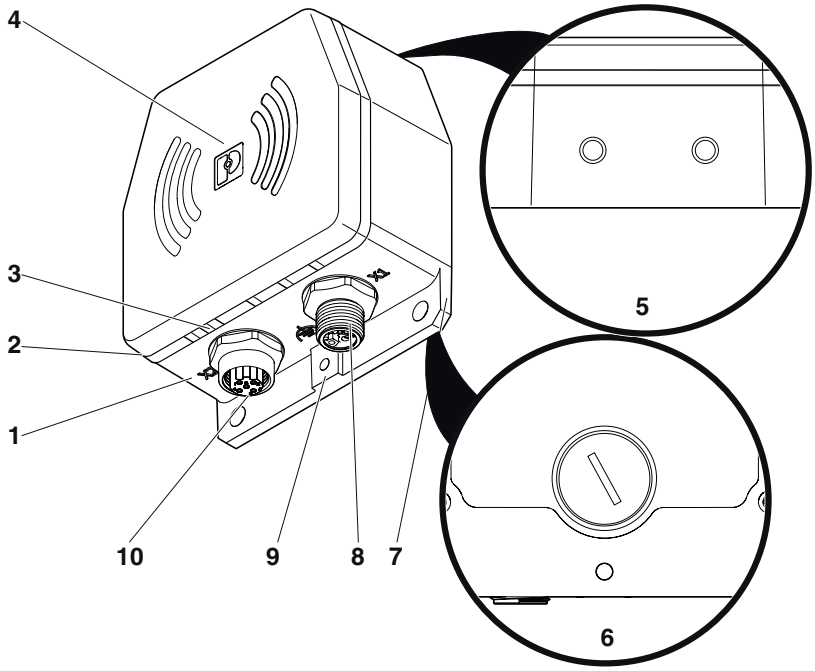
Dimensional drawing

Schematic diagram



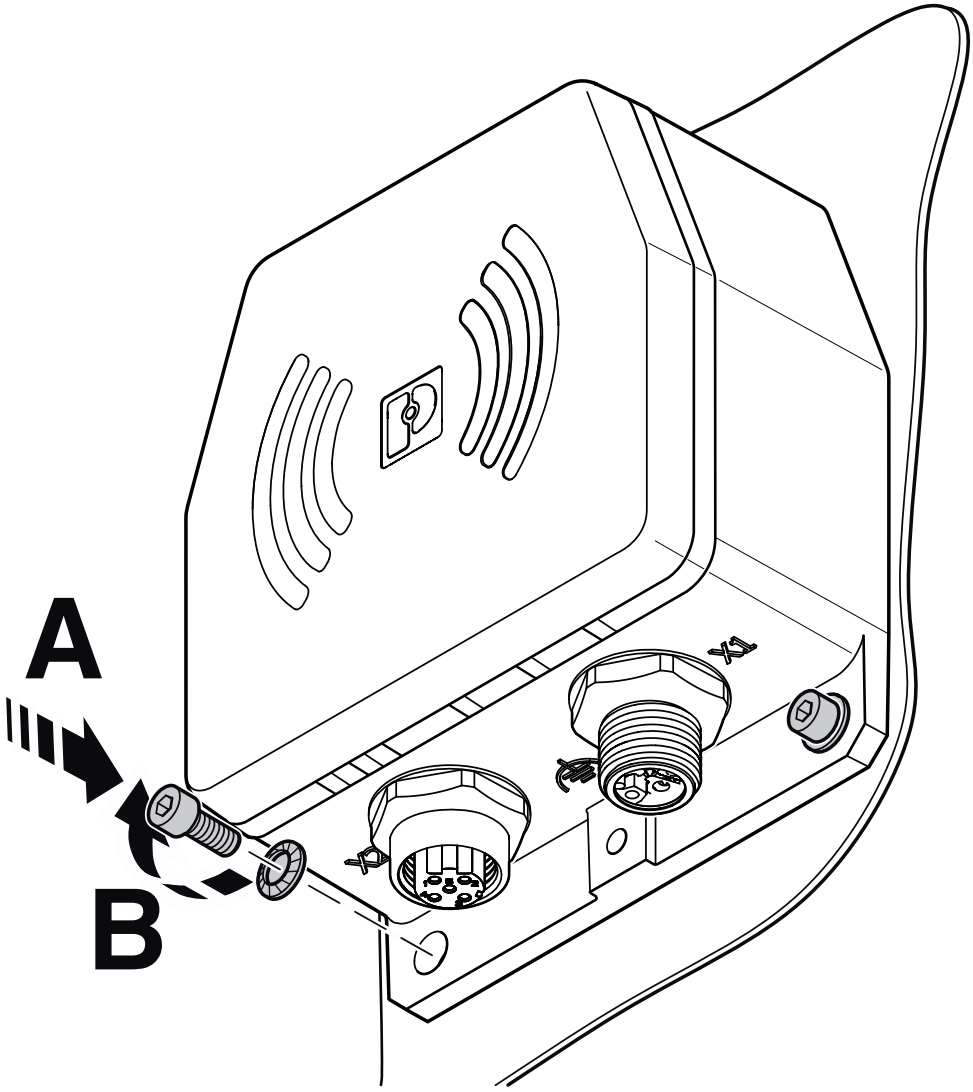
Method of operation

Schematic diagram



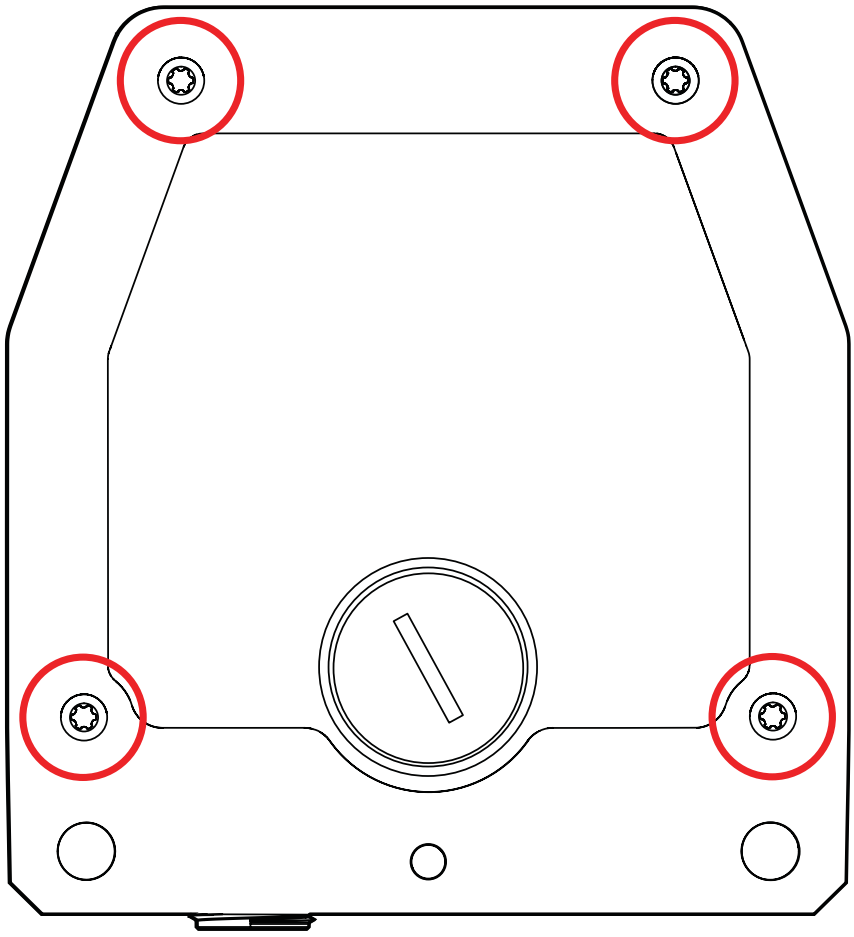
Function elements

Schematic diagram



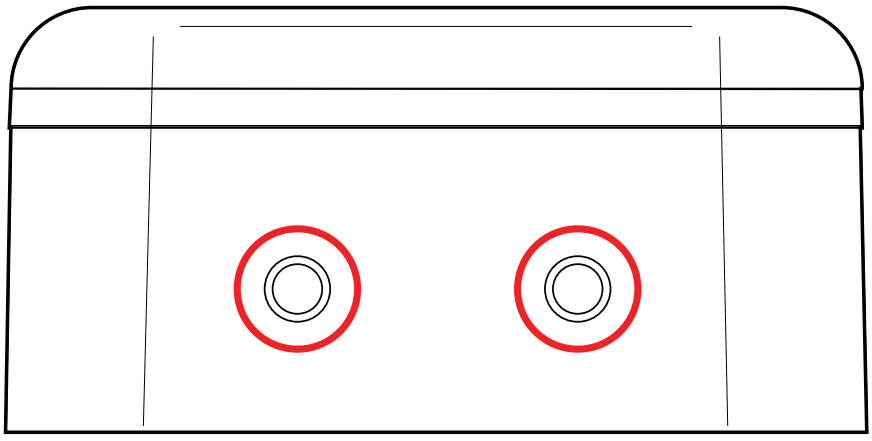
Mounting with two screws

Schematic diagram



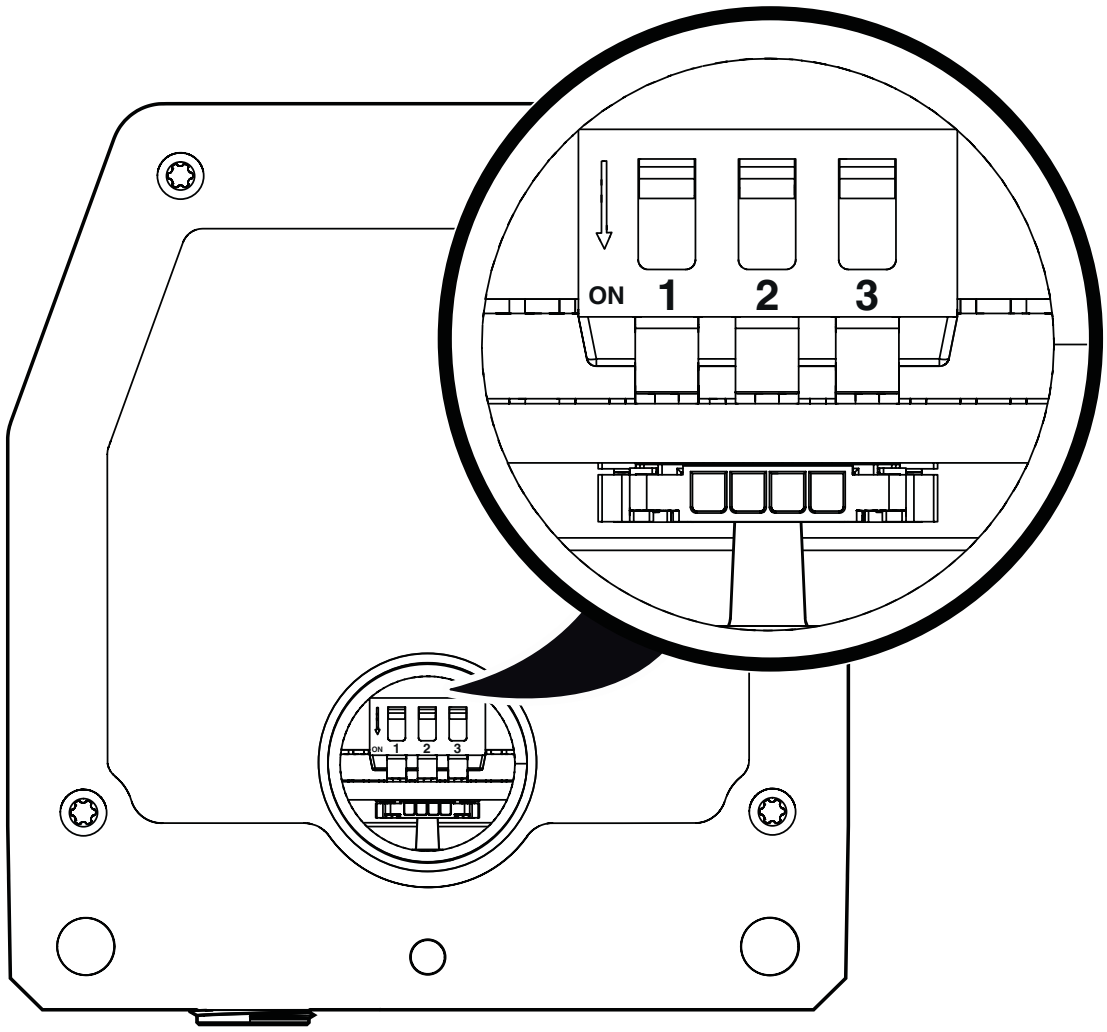
Mounting with four screws

Schematic diagram



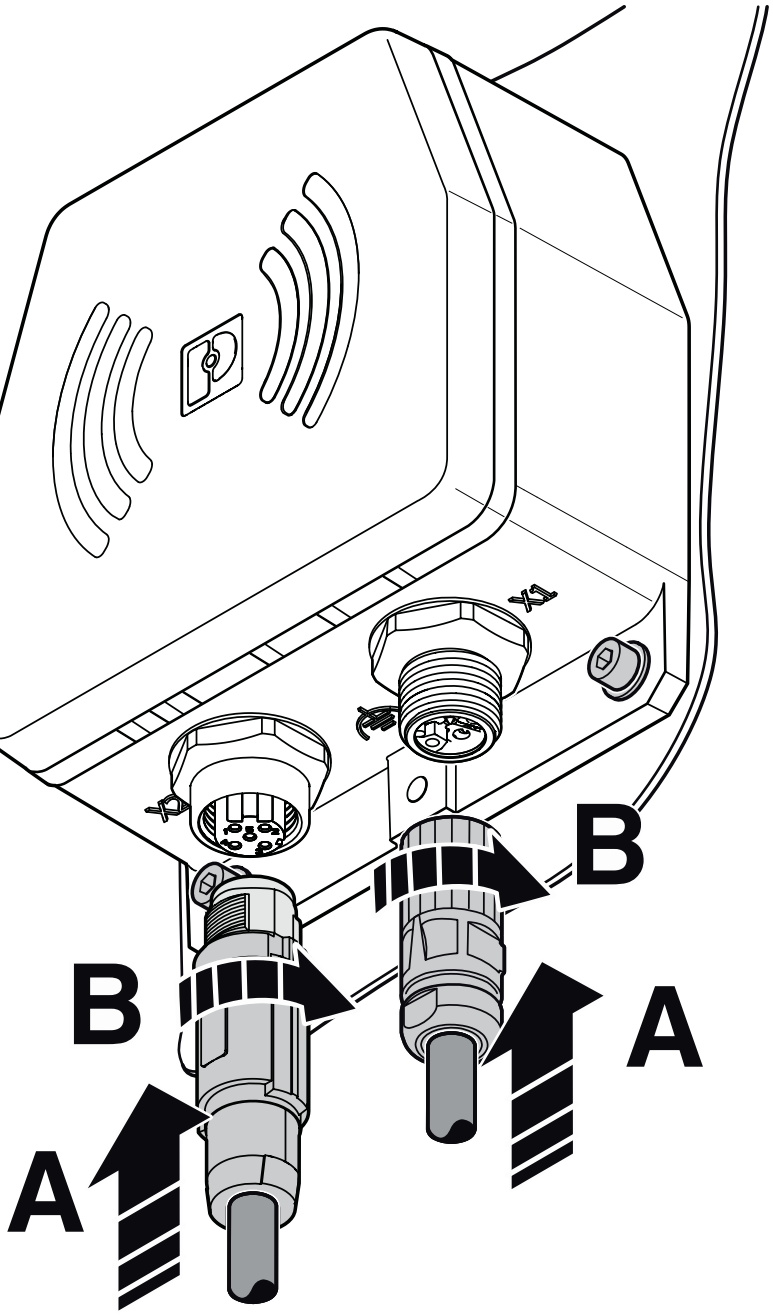
Mounting option

Schematic diagram



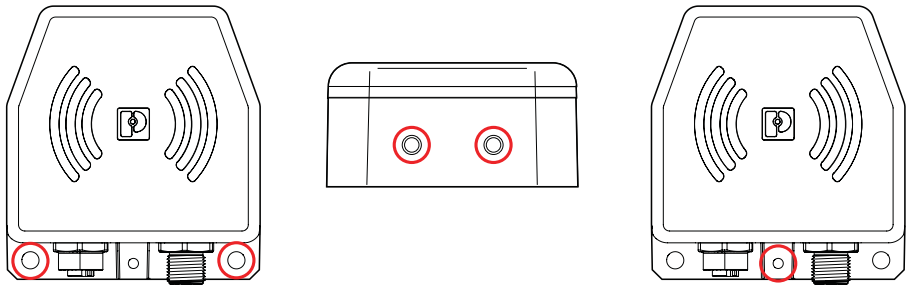
DIP switches

Schematic diagram



Connecting the cables

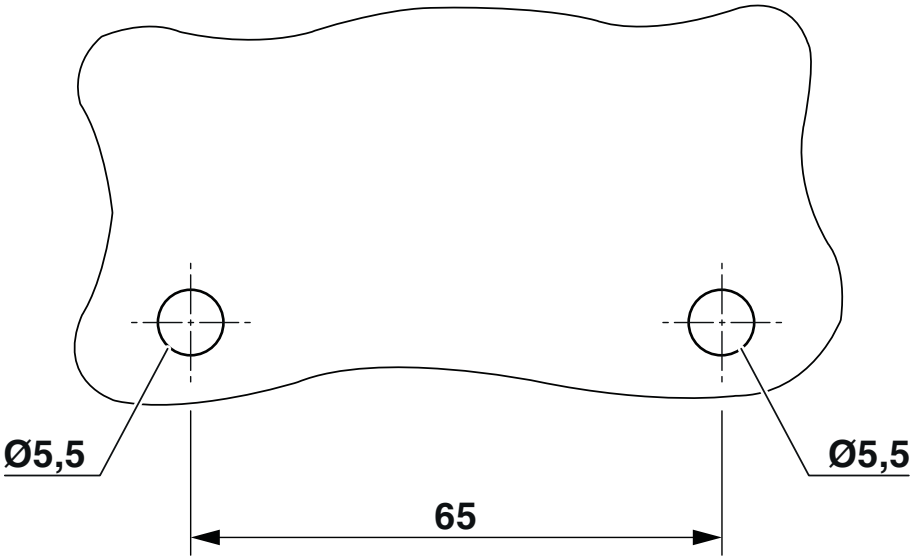
Schematic diagram



1 2 3

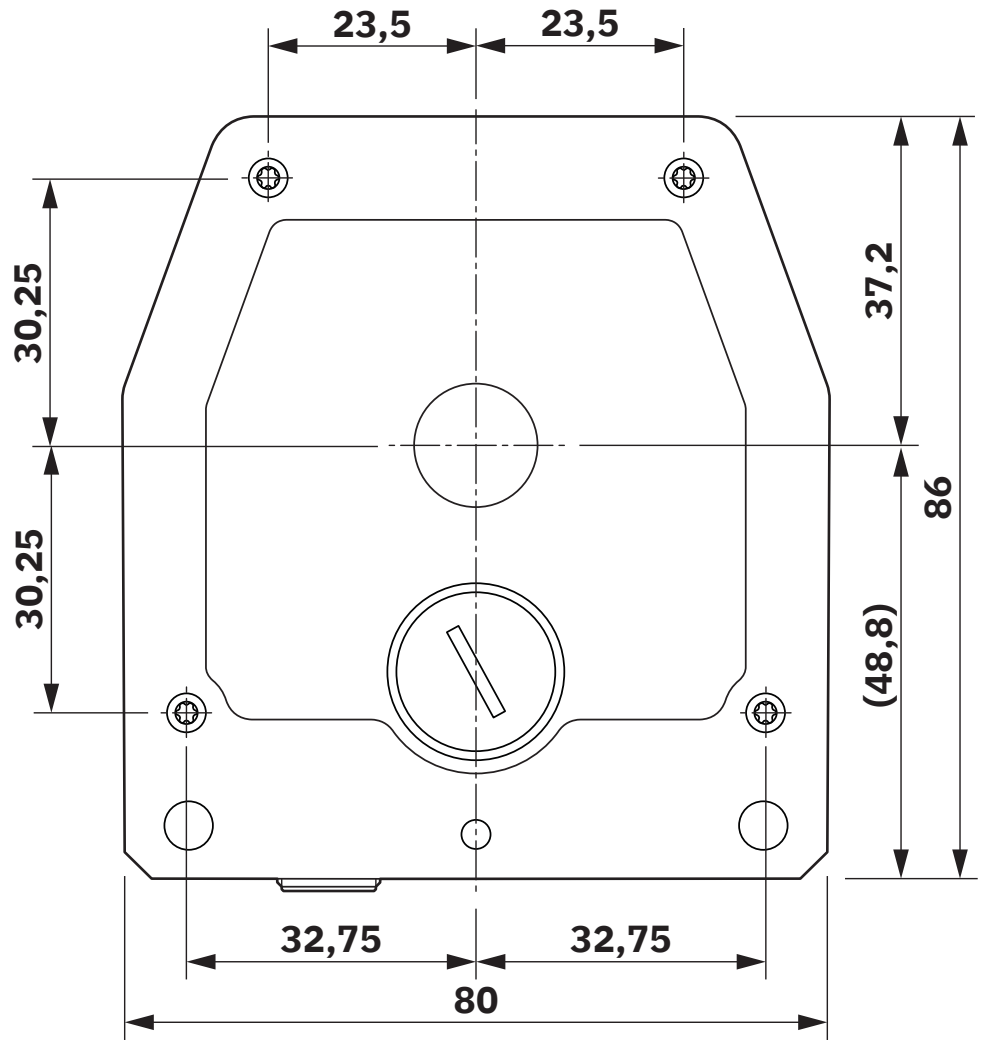
Options for functional grounding

Drilling plan/solder pad geometry



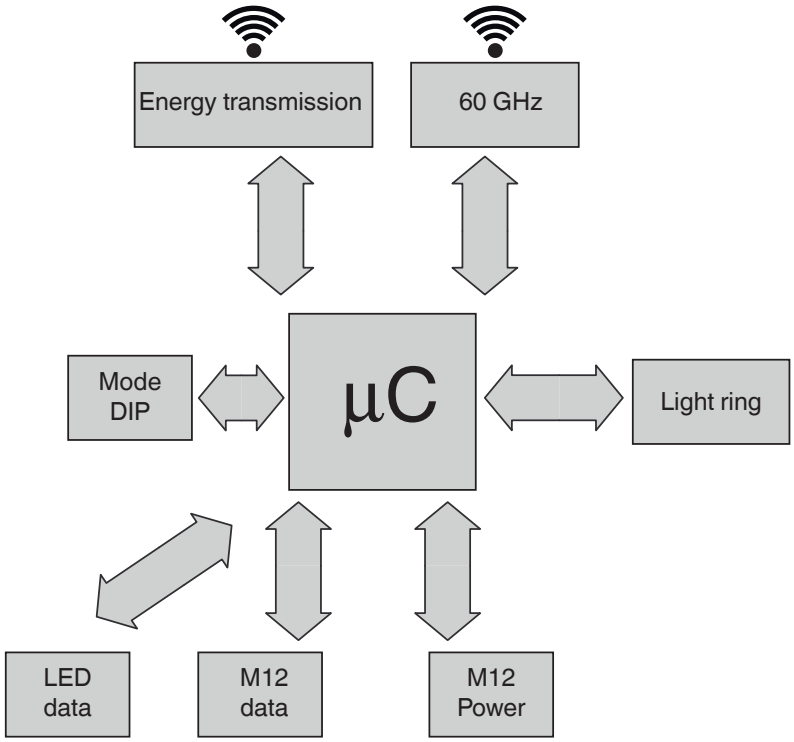
Drilling diagram

Drilling plan/solder pad geometry



Centering template

Block diagram



Basic circuit diagram

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1234225

MIC
Approval ID: 006-001059

cULus Recognized
Approval ID: E238705

FCC
Approval ID: YG3PD2AETHR

KC
Approval ID: R-R-PCK-1234232

Classifications

ECLASS

ECLASS-13.0	27040701
ECLASS-15.0	19170417

ETIM

ETIM 10.0	EC001467

UNSPSC

UNSPSC 21.0	39121000

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c)

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	0bc4976f-6d82-4dbe-9f02-2cb510a9e30a

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