

1234225

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NearFi, remote coupler for contactless power and real-time Ethernet transmission in the centimeter range, 24 V DC, 2 A, 100 Mbps, full duplex, M12 connection technology, IP65 type of protection. A base coupler is required for operation.

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

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



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Technical data

Notes

Note or	application	
TACKE OF	application	

Note on application	Only for industrial use
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Product properties

Product type	Inductive coupler
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%)

Data management status

Article revision	02
Article revision	02

Insulation characteristics

Overvoltage category	II
Pollution degree	1

Electrical properties

Supply

Protective circuit	Short-circuit/overload protection

Connection data

Supply

Connection method M12 fer	male, A-coded
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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
No. of channels	1
Transmission length	100 m (shielded twisted pair)
Transmission medium	Copper

Inductive: Power transmission

Switch-on time	< 450 ms (ETH Full Duplex operating mode)
	min. 0 mm



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Range	typ. 10 mm (at 55°C)
	typ. 12 mm (at 25 °C)
Wireless modules that can be connected	1 (Base coupler)
Frequency range	100 kHz 148.5 kHz (Power transmission)
Vireless	
Wireless modules that can be connected	1 (Base coupler)
Frequency	60 GHz
Frequency range	57 GHz 64 GHz (Data transmission)
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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

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP65
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)



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Approvals

CE	
Certificate	CE-compliant
Wireless approval, Europe	
Note	RED 2014/53/EU
Wireless approval Japan, MIC	000 004050
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
Conducted noise emission	EN 55032 Class A, industrial applications
Electrostatic discharge	EN 01000 4.0
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



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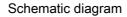
Surge current load (surge)	
Input	± 0.5 kV (Test Level 1 - symmetrical)
	± 1 kV (Test Level 2 - asymmetrical)
Output	± 1 kV (Test Level 2 - asymmetrical)
Signal	± 1 kV (Test Level 2 - asymmetrical)
Comments	Criterion B
Conducted interference	
Standards/regulations	EN 61000-4-6
Conducted interference	
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.
andards and regulations	
Free from substances that could impair the application of coating	Yes
Other resistance	Resistant to welding splashes
Standards/regulations	EN 60204-1 (PELV)
Standard designation	Protective extra-low voltage
unting	
Mounting type	Wall mounting
Assembly note	Observe derating
Mounting position	any

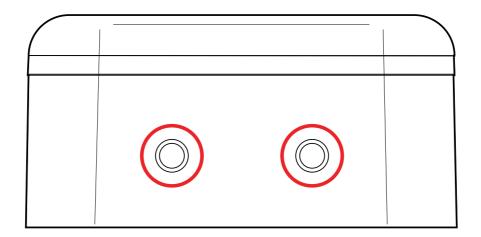


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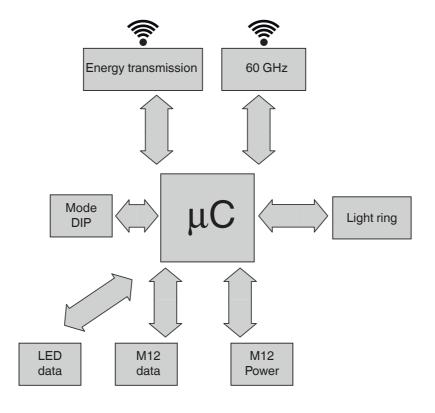
Drawings





Mounting option

Block diagram

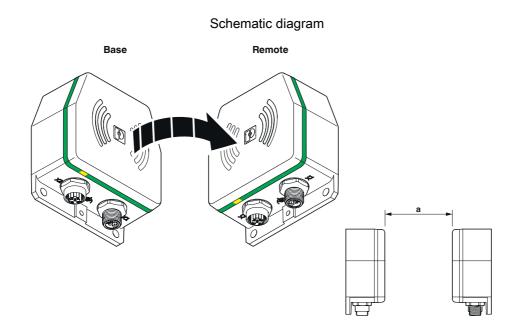


Basic circuit diagram



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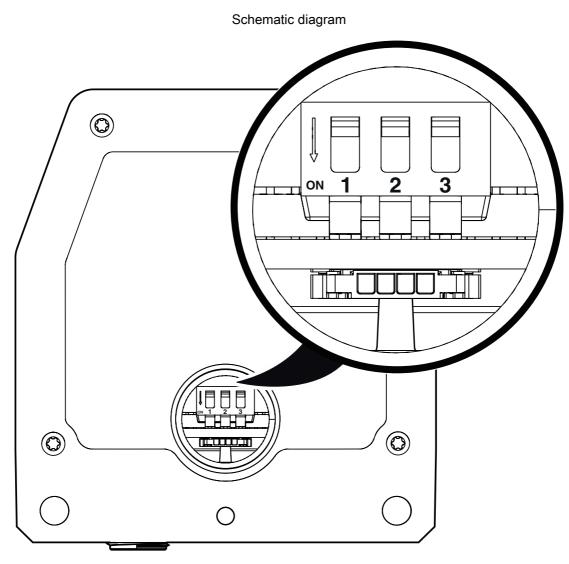


Method of operation



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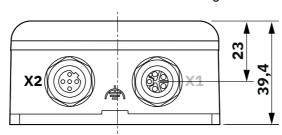
DIP switches

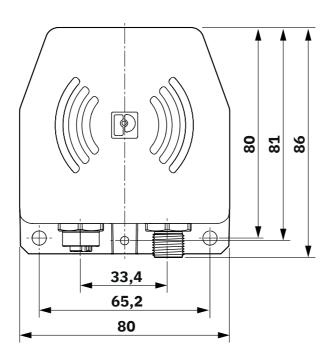


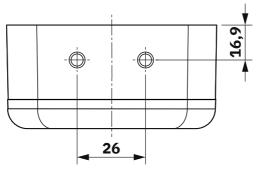
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Dimensional drawing





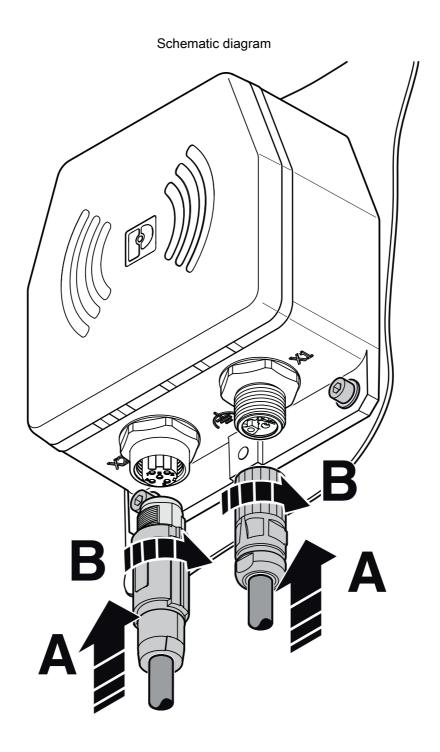


Dimensional drawing



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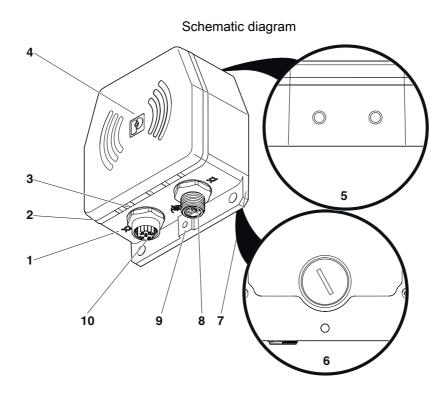


Connecting the cables



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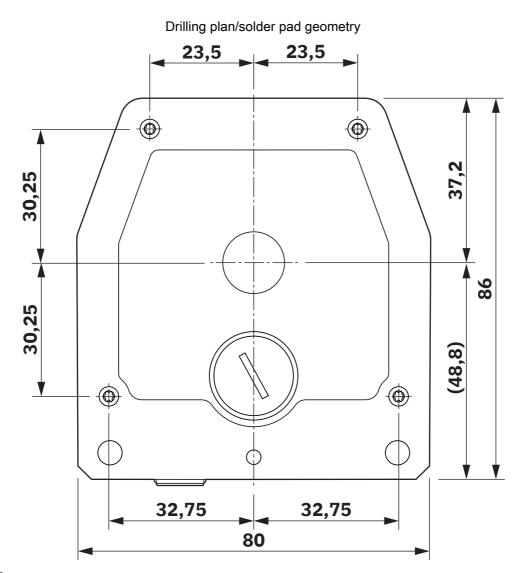


Function elements



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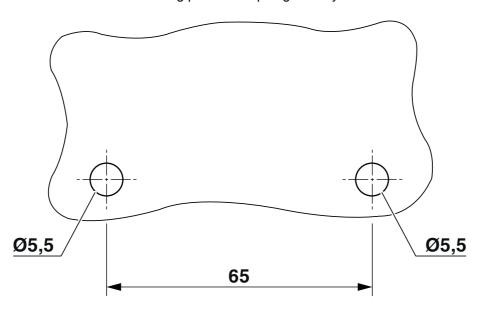
Centering template



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Drilling plan/solder pad geometry



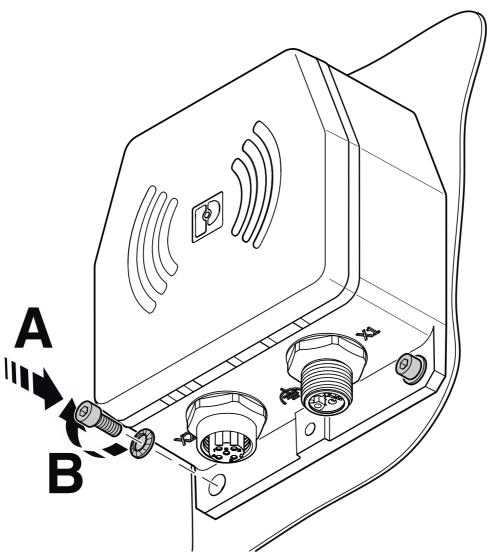
Drilling diagram



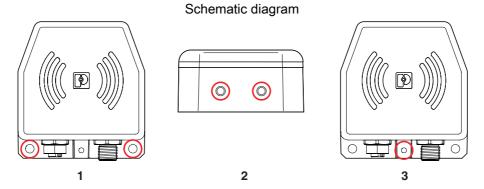
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Mounting with two screws



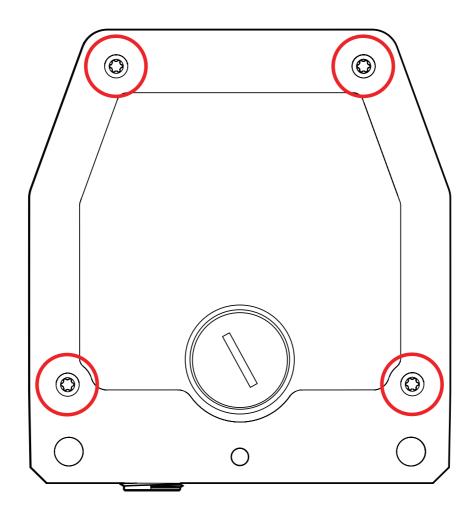
Options for functional grounding



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Schematic diagram



Mounting with four screws



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Approvals

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cUL RecognizedApproval ID: E238705



UL RecognizedApproval ID: E238705



MIC

Approval ID: 006-001059

cULus Recognized



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Classifications

UNSPSC 21.0

ECLASS

ECLASS-11.0	27040701
ECLASS-12.0	27040701
ECLASS-13.0	27040701
ETIM	
ETIM 9.0	EC002540
UNSPSC	

39121000



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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c)
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
EU REACH SVHC	
REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	0bc4976f-6d82-4dbe-9f02-2cb510a9e30a



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Mandatory accessories

NEARFI PD 2A ETH B - Inductive coupler

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NearFi, base coupler for contactless power and real-time Ethernet transmission in the centimeter range, 24 V DC, 2 A, 100 Mbps, full duplex, M12 connection technology, IP65 type of protection. A remote coupler is required for operation.

Accessories

SAC-5P-MS/ 2,0-186 SCO - Sensor/actuator cable

1518326

https://www.phoenixcontact.com/us/products/1518326



Sensor/actuator cable, 5-position, PUR, black-gray RAL 7021, Plug straight M12 SPEEDCON, coding: A, on free cable end, cable length: $2\ m$



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SAC-5P-MS/ 5,0-186 SCO - Sensor/actuator cable

1518339

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Sensor/actuator cable, 5-position, PUR, black-gray RAL 7021, Plug straight M12 SPEEDCON, coding: A, on free cable end, cable length: 5 m

SAC-5P-MS/10,0-186 SCO - Sensor/actuator cable

1518342

https://www.phoenixcontact.com/us/products/1518342



Sensor/actuator cable, 5-position, PUR, black-gray RAL 7021, Plug straight M12 SPEEDCON, coding: A, on free cable end, cable length: 10 m



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SAC-5P-MS/15,0-186 SCO - Sensor/actuator cable

1518355

https://www.phoenixcontact.com/us/products/1518355



Sensor/actuator cable, 5-position, PUR, black-gray RAL 7021, Plug straight M12 SPEEDCON, coding: A, on free cable end, cable length: 15 m

SAC-5P-MS/ 1,0-186/FS SCO - Sensor/actuator cable

1518423

https://www.phoenixcontact.com/us/products/1518423



Sensor/actuator cable, 5-position, PUR, black-gray RAL 7021, Plug straight M12 SPEEDCON, coding: A, on Socket straight M12 SPEEDCON, coding: A, cable length: 1 m



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SAC-5P-MS/ 2,0-186/FS SCO - Sensor/actuator cable

1518436

https://www.phoenixcontact.com/us/products/1518436



Sensor/actuator cable, 5-position, PUR, black-gray RAL 7021, Plug straight M12 SPEEDCON, coding: A, on Socket straight M12 SPEEDCON, coding: A, cable length: 2 m

SACC-M12MR-5CON-PG11-M PWR - Power connector

1408992

https://www.phoenixcontact.com/us/products/1408992



Power connector, 5-position, Plug angled M12, coding: A, Screw connection, knurl material: Zinc die-cast, nickel-plated, cable gland Pg11, external cable diameter 8 mm ... 10 mm



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SACC-M12MS-5CON-PG11-M PWR - Power connector

1404417

https://www.phoenixcontact.com/us/products/1404417



Power connector, 5-position, Plug straight M12, coding: A, Screw connection, knurl material: Zinc die-cast, nickel-plated, cable gland Pg11, external cable diameter 8 mm ... 10 mm

SACC-M12MS-5CON-PG 9-M - Connector

1681460

https://www.phoenixcontact.com/us/products/1681460



Connector, Universal, 5-position, Plug straight M12, coding: A, Screw connection, knurl material: Zinc die-cast, nickel-plated, cable gland Pg9, external cable diameter 6 mm ... 8 mm



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SACC-M12MR-5CON-PG9-M - Connector

1681473

https://www.phoenixcontact.com/us/products/1681473



Connector, Universal, 5-position, Plug angled M12, coding: A, Screw connection, knurl material: Zinc die-cast, nickel-plated, cable gland Pg9, external cable diameter 6 mm ... 8 mm

NBC-M12MSD/.../... - Network cable

1408713

https://www.phoenixcontact.com/us/products/1408713



Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on free cable end, cable length: Free input (0.2 ... 40.0 m)



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NBC-M12MSD-M12MSD/.../... - Network cable

1408706

https://www.phoenixcontact.com/us/products/1408706



Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight M12, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

NBC-M12MSD-R4AC/.../... - Network cable

1408712

https://www.phoenixcontact.com/us/products/1408712



Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight RJ45 / IP20, cable length: Free input (0.2 ... 40.0 m)



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NBC-M12MSD/ 1,0-93B - Network cable

1407495

https://www.phoenixcontact.com/us/products/1407495



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on free cable end, cable length: 1 m

NBC-M12MSD/ 2,0-93B - Network cable

1407496

https://www.phoenixcontact.com/us/products/1407496



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on free cable end, cable length: $2\,\mathrm{m}$



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NBC-M12MSD/ 5,0-93B - Network cable

1407497

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on free cable end, cable length: 5 m

NBC-M12MSD/10,0-93B - Network cable

1407498

https://www.phoenixcontact.com/us/products/1407498



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on free cable end, cable length: 10 m $\,$



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NBC-M12MSD/ 1,0-93B/R4AC - Network cable

1407499

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight RJ45 / IP20, cable length: 1 m

NBC-M12MSD/ 2,0-93B/R4AC - Network cable

1407500

https://www.phoenixcontact.com/us/products/1407500



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight RJ45 / IP20, cable length: 2 m $\,$



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NBC-M12MSD/ 5,0-93B/R4AC - Network cable

1407501

https://www.phoenixcontact.com/us/products/1407501



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight RJ45 / IP20, cable length: 5 m $\,$

NBC-M12MSD/10,0-93B/R4AC - Network cable

1407502

https://www.phoenixcontact.com/us/products/1407502



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight RJ45 / IP20, cable length: 10 m $\,$



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NBC-M12MSD/ 1,0-93B/M12MSD - Network cable

1407524

https://www.phoenixcontact.com/us/products/1407524



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight M12, coding: D / IP67, cable length: 1 m

NBC-M12MSD/ 2,0-93B/M12MSD - Network cable

1407525

https://www.phoenixcontact.com/us/products/1407525



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight M12, coding: D / IP67, cable length: 2 m



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NBC-M12MSD/ 5,0-93B/M12MSD - Network cable

1407526

https://www.phoenixcontact.com/us/products/1407526



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight M12, coding: D / IP67, cable length: 5 m

NBC-M12MSD/10,0-93B/M12MSD - Network cable

1407527

https://www.phoenixcontact.com/us/products/1407527



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight M12, coding: D / IP67, cable length: 10 m



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SACC-M12MRD-4Q SH - Data connector

1553624

https://www.phoenixcontact.com/us/products/1553624



Data connector, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, coding: D, Insulation displacement connection, knurl material: Brass, nickel-plated, external cable diameter 4 mm ... 8 mm

SACC-M12MSD-4QO SH ETH - Data connector

1411066

https://www.phoenixcontact.com/us/products/1411066



Data connector, Ethernet CAT5 (100 Mbps), 4-position, halogen-free, shielded, Plug straight M12, coding: D, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm



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SACC-M12MSD-4QO SH PN - Data connector

1411068

https://www.phoenixcontact.com/us/products/1411068



Data connector, PROFINET CAT5 (100 Mbps), 4-position, halogen-free, shielded, Plug straight M12, coding: D, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

SACC-M12MRD-4Q SH PN - Data connector

1554539

https://www.phoenixcontact.com/us/products/1554539



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, coding: D, Insulation displacement connection, knurl material: Brass, nickel-plated, external cable diameter 4 mm ... 8 mm



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SACC-M12MRD-4PL SH PN - Connector

1424684

https://www.phoenixcontact.com/us/products/1424684



Connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, coding: D, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

VS-08-RJ45-5-Q/IP20 - RJ45 connector

1656725

https://www.phoenixcontact.com/us/products/1656725



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Plastic, connection method: Insulation displacement connection, connection cross section: AWG 26- 23, cable outlet: straight, color: traffic grey A RAL 7042, Ethernet



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PROT-M12 - Screw plug

1680539

https://www.phoenixcontact.com/us/products/1680539



An M12 screw plug for the unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors

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