

Wireless module - FL BT EPA - 2692788

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Factoryline Wireless Bluetooth Ethernet port adapter; 2.4 GHz frequency band, 1 wireless interface, WLAN black channel list, LEM, country approvals, IP65, connections: M12 connection for 9 V DC ... 30 V DC, M12 for LAN, autocrossing, compatible with PROFINET and PROFIsafe

Product Description

Our Bluetooth modules can be used to easily, reliably, and cost-effectively integrate mobile or difficult to access automation devices or I/O modules into your Ethernet automation network.

With "black channel listing" and "low emission mode", Industrial Bluetooth can also be operated parallel to WLAN networks without any interference. Quick and straightforward startup with configuration via MODE button, web interface or directly from a controller is yet another feature of this solution.

Your advantages

- Integrated special antenna (EPA)
- Range* of up to 200 m
- Protocol-transparent communication on Layer 2
- IP65 protection class
- WLAN coexistence functions AFH, LEM, black channel listing



Bluetooth

Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356422413

Technical data

Dimensions

Width	66 mm
Height	91 mm
Depth	34 mm
Note on dimensions	Without M12 connections

Ambient conditions

Ambient temperature (operation)	-40 °C ... 65 °C
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Technical data

Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 90 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 90 % (non-condensing)
Air pressure (operation)	795 hPa ... 1080 hPa (up to 2000 m above sea level)
Degree of protection	IP65

Ethernet interface

Interface	Ethernet
Number	1
Connection method	M12 connectors (D-coded, female)

Wireless interface

Designation	Bluetooth
Wireless standard	Bluetooth 2.1 + EDR
Antenna connection method	(Internal)
Frequency range	2.402 GHz ... 2.48 GHz (ISM bandwidth)
Frequency band	2.4 GHz
Transmission power	max. 15 dBm (EIRP)
Number of wireless interfaces	1
Wireless modules that can be connected	1
Profiles supported	PAN

Wireless card

Number	1
Assembly instructions	Permanently installed

Antenna

Assembly instructions	Internal circularly polarized panel antenna
Number	1
Connection method	permanently installed

Power supply for module electronics

Connection method	M12 connector (A-coded, male)
Supply voltage	24 V DC
Supply voltage range	9 V DC ... 30 V DC
Supply current	46 mA (at 24 V DC)
Current consumption	46 mA (at 24 V DC)

Functions

Operating modes	Ethernet client adapter
Configuration	Web interface, MODE button, AT commands (TCP/IP), SSC
Automatic channel selection	FHSS, AFH
Quality of service (QoS)	Yes
Security	128-bit data encryption

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Technical data

Functions

	Authentication
	PIN
	Non-discoverable

Digital inputs

Number of inputs	1
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General

Mounting type	Wall mounting
Net weight	120 g
Wireless licenses	Europe, additional countries in the e-shop
Wireless licences	Belgium
	Bulgaria
	Denmark
	Germany
	Estonia
	Finland
	France
	Greece
	Great Britain
	Ireland
	Iceland
	Italy
	Japan
	Canada
	Latvia
	Liechtenstein
	Lithuania
	Luxembourg
	Malta
	Netherlands
	Norway
	Austria
	Poland
	Portugal
	Romania
	Sweden
	Switzerland
	Slovakia
	Slovenia
	Spain
	Czech Republic

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Technical data

General

	Hungary
	USA
	Cyprus (rep.)
Mounting type	Wall mounting

Standards and Regulations

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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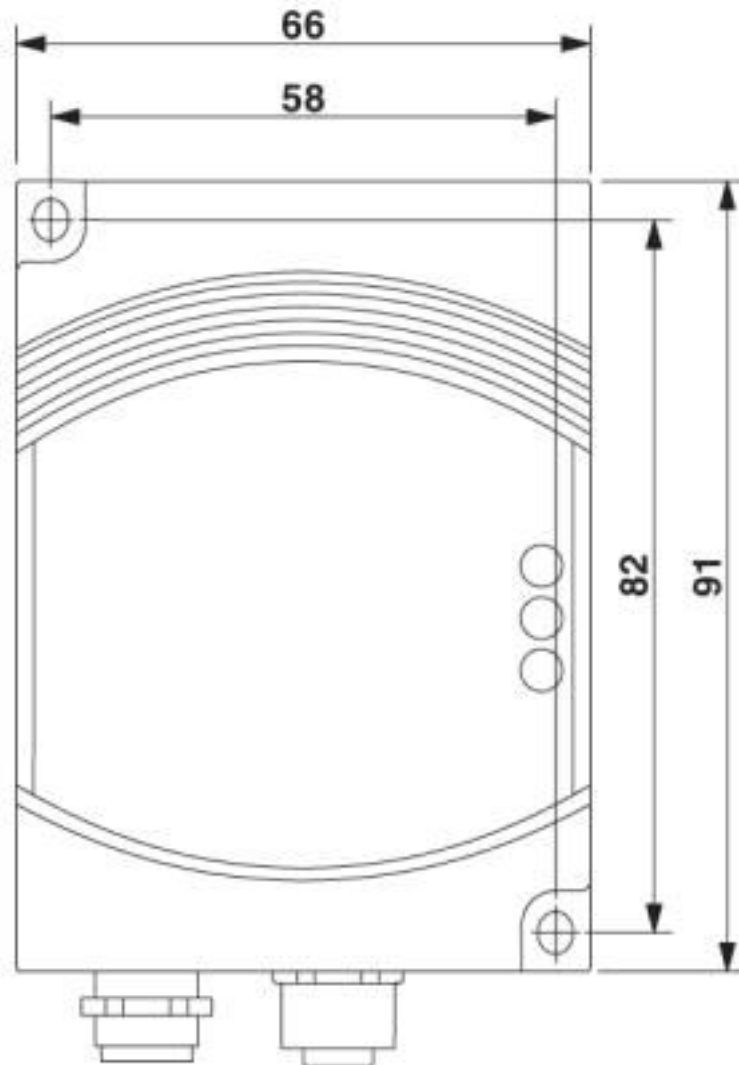
Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Drawings

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Dimensional drawing



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Schematic diagram



Status and diagnostic indicators PWR (green)

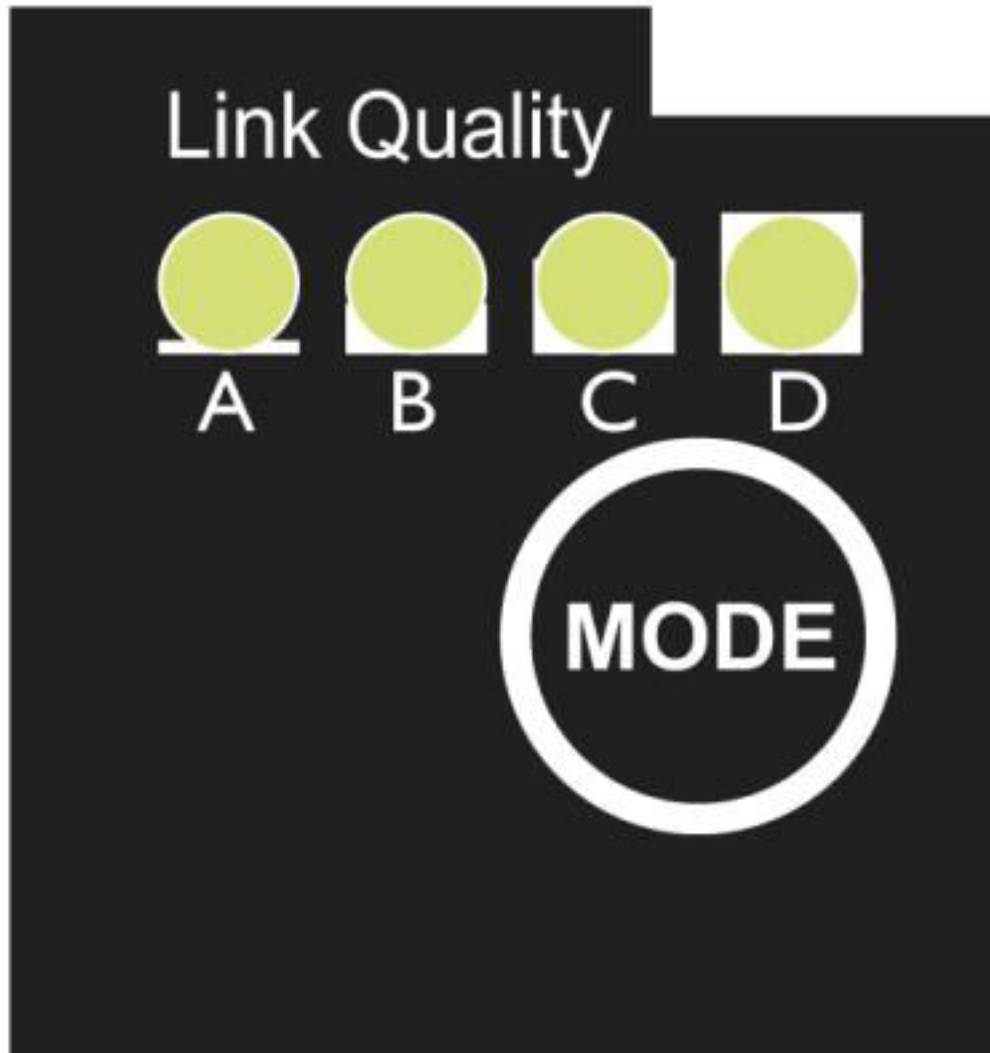
- Supply voltage is active))) (blue/blue flashing, pink, red)
- Status of the Bluetooth connection (blue)
- Data transmission (blue flashing)
- Connection establishment (pink)
- Error (red)

LAN (yellow)

- Link display (yellow)
- Data transmission (yellow flashing)

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Schematic diagram



MODE button

The mode button helps in configuration.

Pay attention to the function in the data sheet and the manual.

The LEDs 'A' to 'D' help in status display.

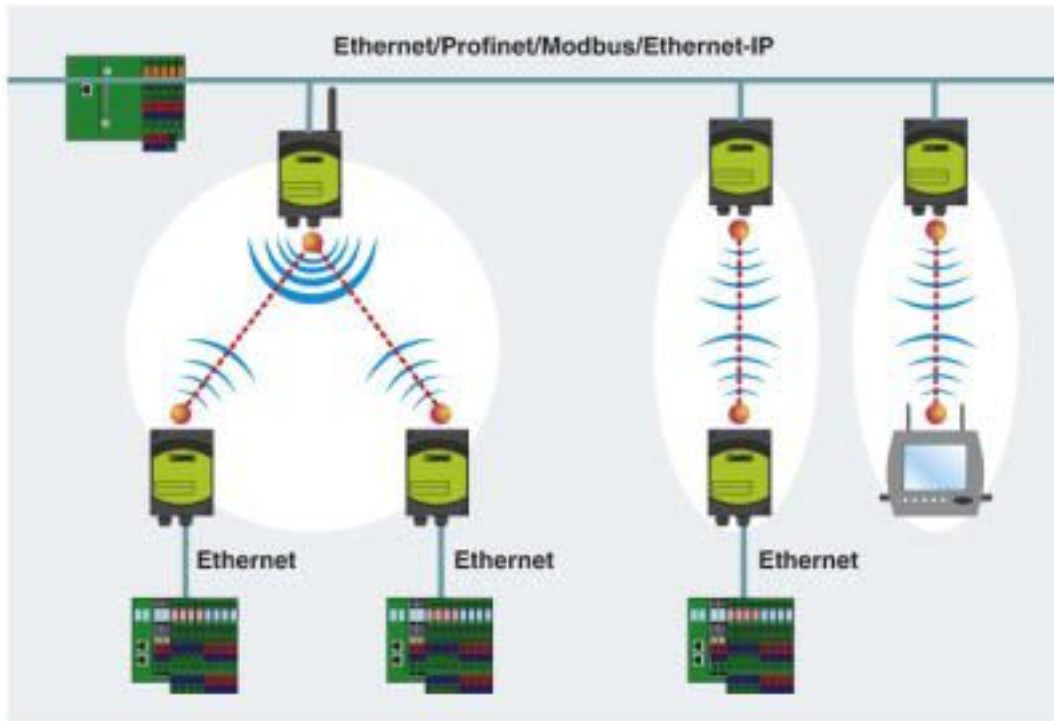
Link Quality display (during operation)

A = sufficient, B = good

C = optimum, D = excellent

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Application drawing

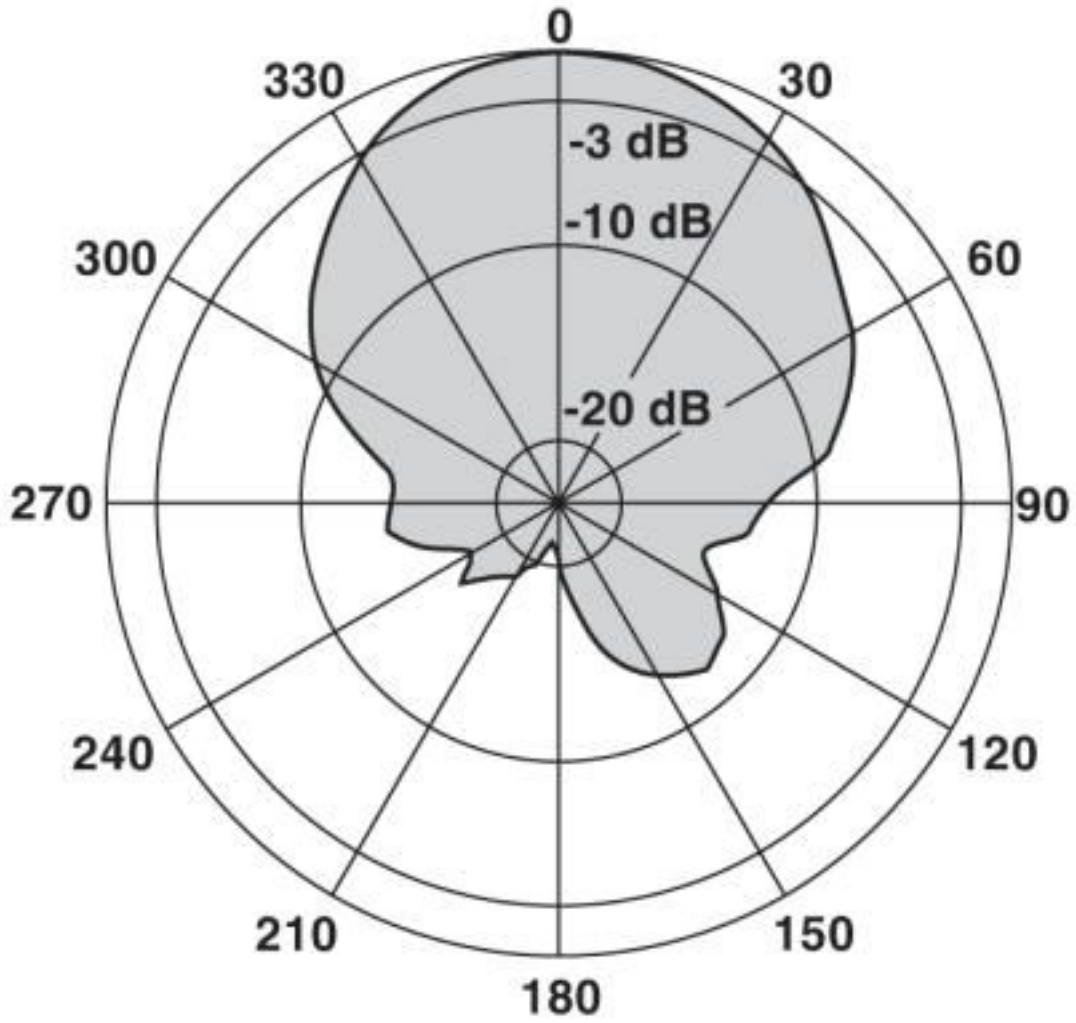


FL BT EPA devices help you to transmit industrial Ethernet protocols from one automation device to another via Bluetooth: for Modbus TCP, Ethernet/IP, TCP/IP or demanding PROFINET or PROFI-safe applications.

The FL BT EPA AIR SET is a "ready to use" package. Unpack, connect, press the mode button and the wireless path is ready to work in just a few seconds! The FL BT EPA AIR SET can be used to set up an extremely solid and reliable wireless transmission path.

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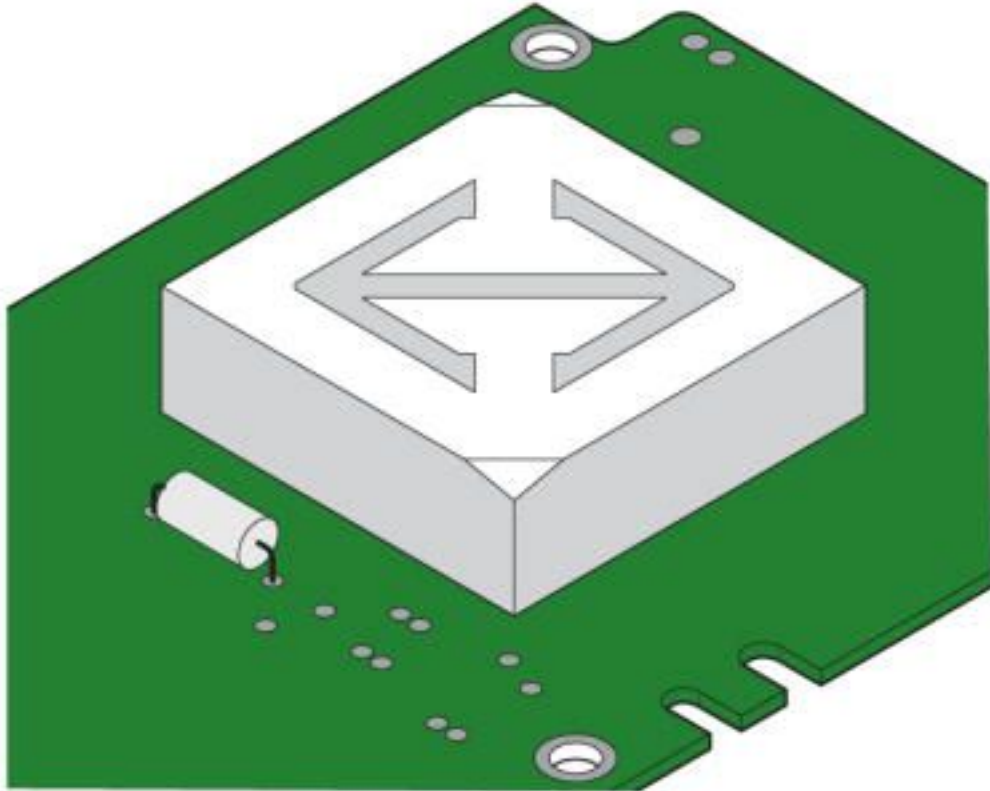
Diagram



Antenna adjustment diagram
HP - Horizontal polarization
VP - Vertical polarization

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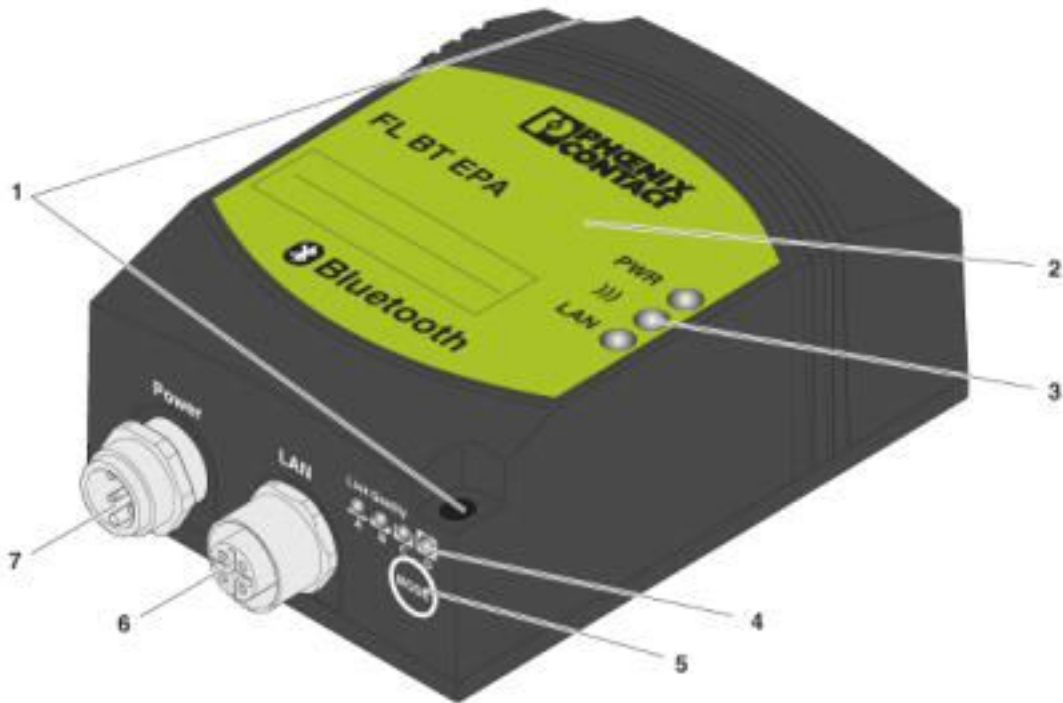
Functional drawing



Circular polarized antenna

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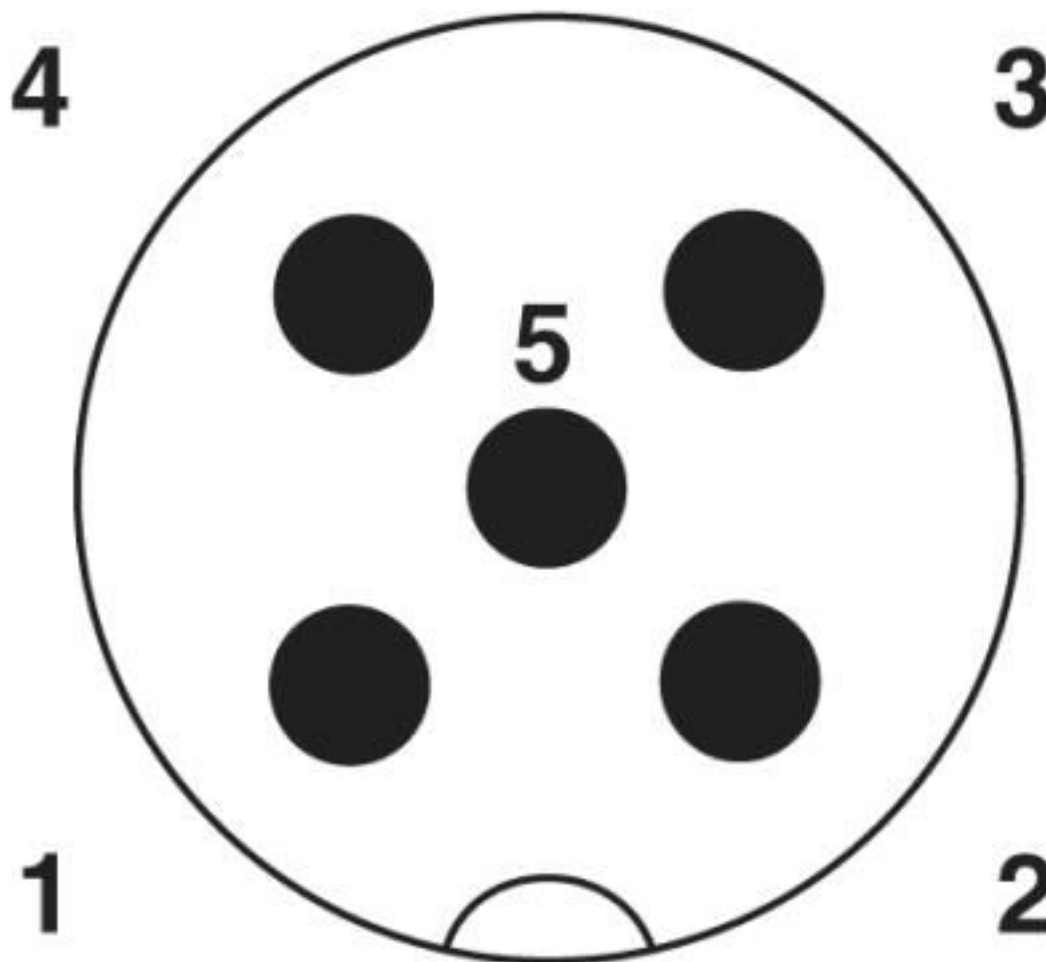
Product drawing



- 1 Fixing holes
- 2 Internal circular polarized antenna
- 3 Status and diagnostic indicators
- 4 Link quality and configuration / status indicator
- 5 Mode configuration button
- 6 LAN interface
- 7 Supply voltage connection

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Schematic diagram



Connection of the trigger input DI and the supply voltage

PIN 1 Vin + (9-30 V DC)

PIN 2 External Trigger Ground

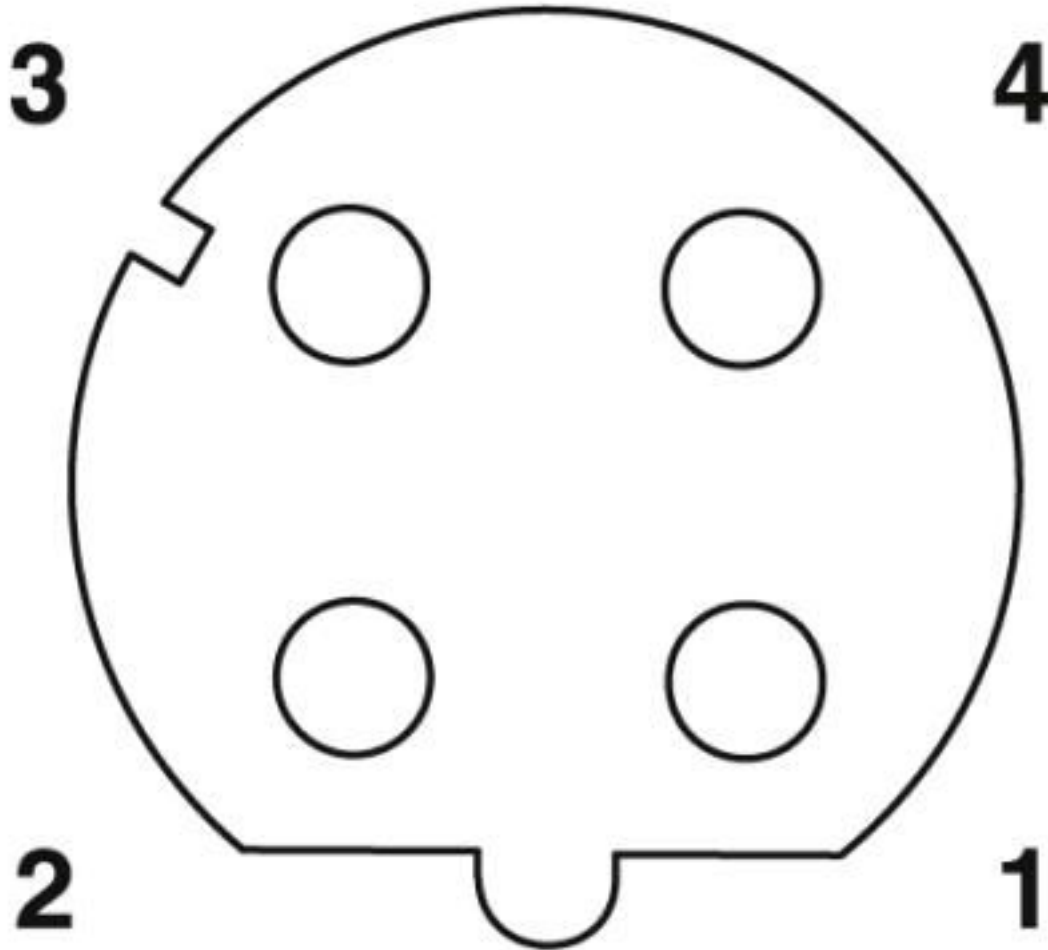
Pin 3 Vin GND (0 V)

Pin 4 External Triggerr + (9-30 V DC)

Pin 5 n.c.

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Schematic diagram



Assignment of the LAN socket

- Pin 1 Transmit +
- Pin 2 Receive +
- Pin 3 Transmit -
- Pin 4 Receive -

Classifications

eCl@ss

eCl@ss 4.0	27240409
eCl@ss 4.1	27240409
eCl@ss 5.0	27242215
eCl@ss 5.1	27250500
eCl@ss 6.0	19170100
eCl@ss 7.0	19170101
eCl@ss 8.0	19170101
eCl@ss 9.0	19170101

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Classifications

ETIM

ETIM 2.0	EC001423
ETIM 3.0	EC001423
ETIM 4.0	EC000515
ETIM 5.0	EC000515
ETIM 6.0	EC000515
ETIM 7.0	EC000515

UNSPSC

UNSPSC 6.01	20142601
UNSPSC 7.0901	20142601
UNSPSC 11	20142601
UNSPSC 12.01	20142601
UNSPSC 13.2	43201404
UNSPSC 19.0	43201404

Approvals

Approvals


Approvals


UL Listed / cUL Listed / EAC / cULus Listed

Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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EAC		EAC-Zulassung
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Approvals

cULus Listed



Accessories

Accessories

Assembly adapter

Assembly adapters - FL EPA WMS - 2701134



Set for mounting devices with EPA design to wall or mast, including mast clips for a diameter of 25 - 85 mm, can be moved on two axes for optimum alignment, stainless steel

Data cable preassembled

Bus system cable - SAC-4P-M12MSD/ 2,0-931 - 1569391



Bus system cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded, Plug straight M12, coding: D, on free cable end, cable length: 2 m

Bus system cable - SAC-4P-M12MSD/ 5,0-931 - 1569401



Bus system cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded, Plug straight M12, coding: D, on free cable end, cable length: 5 m

Network cable - NBC-MSD/ 1,0-93E/R4AC SCO - 1407360



Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR, water blue RAL 5021, shielded, Plug straight M12 SPEEDCON / IP67, coding: D, on Plug straight RJ45 / IP20, cable length: 1 m

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Accessories

Network cable - NBC-MSD/ 2,0-93E/R4AC SCO - 1407361



Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR, water blue RAL 5021, shielded, Plug straight M12 SPEEDCON / IP67, coding: D, on Plug straight RJ45 / IP20, cable length: 2 m

Network cable - NBC-MSD/ 5,0-93E/R4AC SCO - 1407362



Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR, water blue RAL 5021, shielded, Plug straight M12 SPEEDCON / IP67, coding: D, on Plug straight RJ45 / IP20, cable length: 5 m

Data plug

RJ45 connector - VS-08-RJ45-5-Q/IP20 - 1656725



RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: PA, connection method: IDC fast connection, connection cross section: AWG 26- 23, cable outlet: straight, color: traffic grey A RAL 7042

Mounting rail adapter

DIN rail adapter - FL EPA RMS - 2701133

Set for mounting devices with EPA design on a DIN rail



Sensor/actuator cable

Sensor/actuator cable - SAC-4P- 1,5-PUR/M12FS - 1668108



Sensor/actuator cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M12, coding: A, cable length: 1.5 m

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Accessories

Sensor/actuator cable - SAC-4P- 3,0-PUR/M12FS - 1668111



Sensor/actuator cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M12, coding: A, cable length: 3 m

Sensor/actuator cable - SAC-4P- 5,0-PUR/M12FS - 1668124



Sensor/actuator cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M12, coding: A, cable length: 5 m

Sensor/actuator cable - SAC-4P-10,0-PUR/M12FS - 1683002



Sensor/actuator cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M12, coding: A, cable length: 10 m

Simulation software

Software - FL WST BASIC DEMO - 2692377



Simulation software for supporting the planning of wireless systems in industrial environments. Their functionality is limited with regard to the memory options as compared with the full version FL WST BASIC.

Software - FL WST BASIC - 2692254



Simulation software for supporting the planning of wireless systems in industrial environments. Thus, the later number and position of wireless components can be estimated and the quality of the radio coverage simulated.

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