

Wireless module - FL BT EPA - 2692788

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Factoryline Wireless Bluetooth Ethernet Port Adapter; Bluetooth V2.0; 2.4 GHz frequency band; 1 wireless interface; WLAN-BlackChannelList; country approvals; IP67, connections: M12 for 9 - 30 V DC, M12 for LAN; Autocrossing; PROFINET & Profisafe-compatible

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.

Product Features

- ✓ 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



Key commercial data

Packing unit	1 PCE
GTIN	 4 046356 422413
Custom tariff number	85176200
Country of origin	SWEDEN

Technical data

Dimensions

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

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Technical data

Ethernet interface

Interface	Ethernet
Number	1
Connection method	M 12 plug-in connectors (D-coded, female)

Wireless interface

Name	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 plug-in 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)
Current consumption	46 mA ((at 24 V DC, typical))

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
Security	Authentication
Security	PIN

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Technical data

Functions

Security	Non-discoverable
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Digital inputs

Number of inputs	1
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General

Weight	120 g
Mounting type	Wall mounting
Ambient temperature (operation)	-40 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 90 % (no condensation)
Permissible humidity (storage/transport)	5 % ... 90 % (no condensation)
Air pressure (operation)	795 hPa ... 1080 hPa (up to 2000 m above mean sea level)
Degree of protection	IP65
Protection class	III, IEC 61140, EN 61140, VDE 0140-1
Conformance with EMC directives	Noise immunity test in accordance with EN 61000-6-2 EN 61000-6-4
Wireless licences	Belgium
Wireless licences	Bulgaria
Wireless licences	Denmark
Wireless licences	Germany
Wireless licences	Estonia
Wireless licences	Finland
Wireless licences	France
Wireless licences	Greece
Wireless licences	Great Britain
Wireless licences	Ireland
Wireless licences	Iceland
Wireless licences	Italy
Wireless licences	Canada
Wireless licences	Latvia
Wireless licences	Liechtenstein
Wireless licences	Lithuania
Wireless licences	Luxembourg
Wireless licences	Malta
Wireless licences	The Netherlands
Wireless licences	Norway
Wireless licences	Austria
Wireless licences	Poland

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Technical data

General

Wireless licences	Portugal
Wireless licences	Romania
Wireless licences	Sweden
Wireless licences	Switzerland
Wireless licences	Slovakia
Wireless licences	Slovenia
Wireless licences	Spain
Wireless licences	Czech Republic
Wireless licences	Hungary
Wireless licences	USA
Wireless licences	Cyprus (rep.)

Classifications

eCl@ss

eCl@ss 4.0	27240409
eCl@ss 4.1	27240409
eCl@ss 5.0	27242215
eCl@ss 5.1	27250501
eCl@ss 6.0	27242208
eCl@ss 7.0	27242208

ETIM

ETIM 2.0	EC001423
ETIM 3.0	EC001423
ETIM 4.0	EC000515
ETIM 5.0	EC000515

UNSPSC

UNSPSC 6.01	20142601
UNSPSC 7.0901	20142601
UNSPSC 11	20142601
UNSPSC 12.01	20142601
UNSPSC 13.2	20142601

Approvals

Approvals

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Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

Ex Approvals

UL Recognized / cUL Recognized / cULus Recognized

Approvals submitted

Approval details

UL Listed



cUL Listed



cULus Listed



Accessories

Accessories

Assembly

DIN rail adapter - FL EPA RMS - 2701133

Set for mounting devices with EPA design on a DIN rail



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Accessories

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

Cable/conductor

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



Bus system cable, Ethernet, 4-position, PUR halogen-free, water blue RAL 5021, shielded, Plug straight M12, D-coded, on Free cable end, Cable length: 2 m

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



Bus system cable, Ethernet, 4-position, PUR halogen-free, water blue RAL 5021, shielded, Plug straight M12, D-coded, on Free cable end, Cable length: 5 m

Network cable - VS-MSD-IP20-93E/1,0 - 1403498



Assembled Ethernet cable, CAT5e, shielded, 2-pair, AWG 26, stranded (7-wire), RAL 5021 (aqua blue), M12 plug to RJ45 plug/IP20, line, length 1 m

Network cable - VS-M12MS-IP20-93E-LI/2,0 - 1406056



Assembled Ethernet cable, CAT5e, shielded, 2-pair, AWG 26 stranded (7-wire), RAL 5021 (water blue), M12 plug on RJ45 plug/IP20, line, length 2 m

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Accessories

Network cable - VS-MSD-IP20-93E/5,0 - 1403500



Assembled Ethernet cable, CAT5e, shielded, 2-pair, 26 AWG, stranded (7-wire), RAL 5021 (aqua blue), M12 plug to RJ45 plug/IP20, line, length 5 m

Sensor/Actuator cable - SAC-4P- 1,0-PUR/M12FS - 1400420



Sensor/Actuator cable, 4-position, PUR halogen-free, Black-gray RAL 7021, Free cable end, on Socket straight M12, A-coded, Cable length: 1 m

Sensor/Actuator cable - SAC-4P- 2,0-PUR/M12FS - 1533576



Sensor/Actuator cable, 4-position, PUR halogen-free, Black-gray RAL 7021, Free cable end, on Socket straight M12, A-coded, Cable length: 2 m

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, A-coded, 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, A-coded, Cable length: 5 m

Plug/Adapter

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Accessories

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



RJ45 plug-in connector, IP20, CAT5e, 8-pos., with QUICKON fast connection technology, for 26 ... 23 AWG 1-wire and 7-wire conductors, for 4.5 mm ... 8.0 mm cable diameter, labeling: TIA 568 B, color: gray

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.

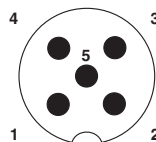
Software - FL WST BASIC - 2692254



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.

Drawings

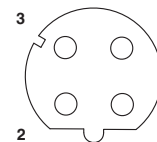
Schematic diagram



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.

Schematic diagram

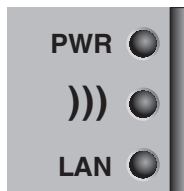


Assignment of the LAN socket

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

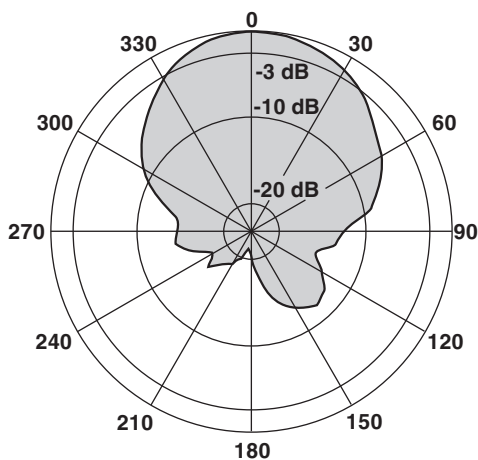
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Schematic diagram



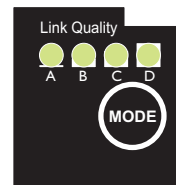
- Status and diagnostic indicators PWR (green)
- Supply voltage is active))) (blue/blue flashing, pink, red)
 - Status of the Bluetooth connection (blue)
 - Data transmission (blue flashing)
 - Connection establishment (pink)
 - Error (red)
 - LAN (yellow)
 - Link display (yellow)
 - Data transmission (yellow flashing)

Diagram



Antenna adjustment diagram
HP - Horizontal polarization
VP - Vertical polarization

Schematic diagram



MODE button

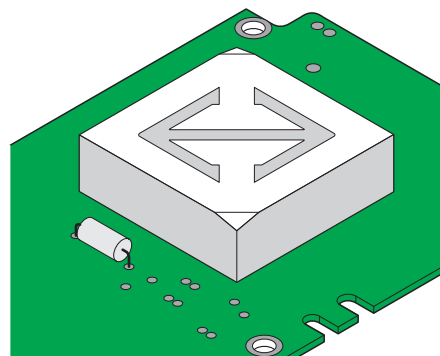
The mode button helps in configuration.
Pay attention to the function in the data sheet and the manual.

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

Link Quality display (during operation)

A = sufficient, B = good
C = optimum, D = excellent

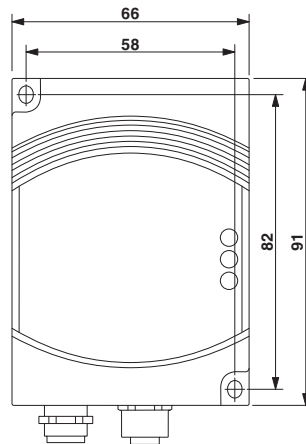
Functional drawing



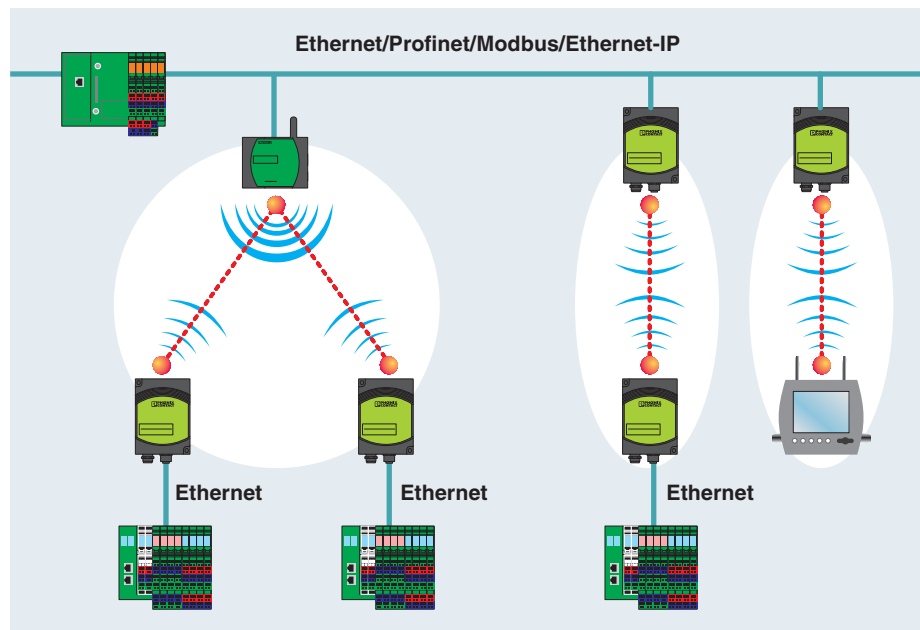
Circular polarized antenna

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Dimensioned drawing



Application drawing

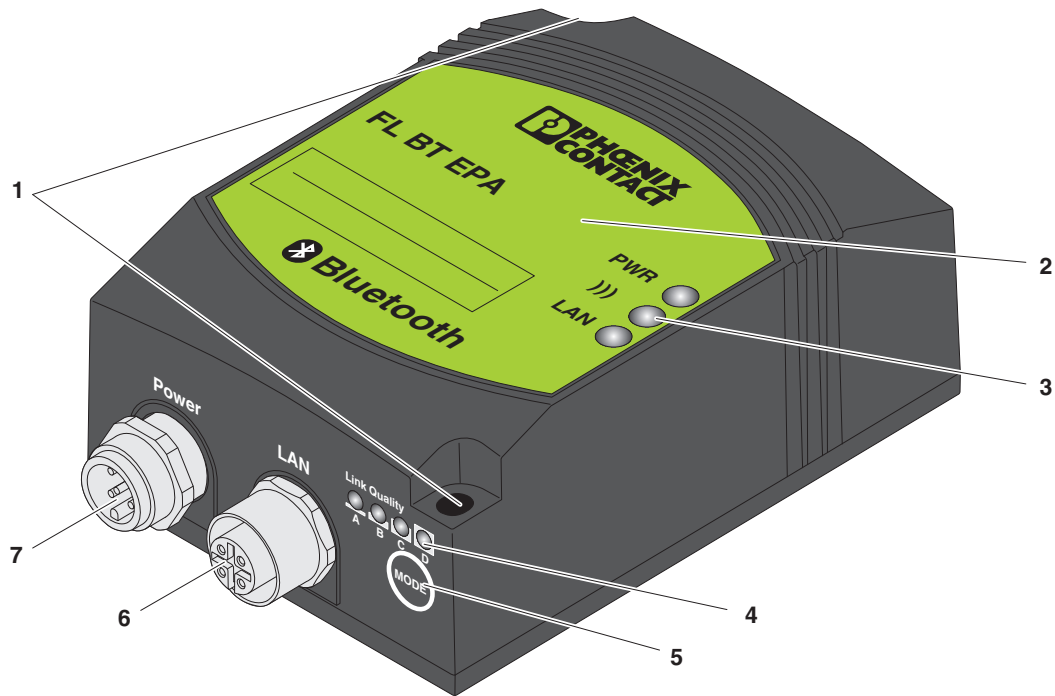


FL BT EPA devices help you to transmit industrial Ethernet protocols from one automation device to another via Bluetooth: for Modbus TCP, Ethernet/IP, TCP/IP or demanding PROFINET or PROFINET safe applications.

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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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