

FBG132-FTL EnOcean System Gateway

Application

EnOcean system gateway for direct integration of up to 32 radio partners into the DDC4000 automation system for building automation and control.

The system gateway supports the non-proprietary EnOcean radio protocol.

It transmits the wireless data straight to the communication structure of the DDC4000 automation system and the building management system.



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Änderungen vorbehalten - Contents subject to change - Sous réserve de modifications - Reservado el derecho a modificación - Wijzigingen voorbehouden - Con riserva di modifiche - Innehåll som skall ändras - Změny vyhrazeny - Zmiany zastrzeżone - Возможны изменения - A változtatások jogát fenntartjuk - 保留未经通知而改动的权力

Important Information Regarding Product Safety

Safety Instructions

This data sheet contains information on installing and commissioning the product "FBG132-FTL". Each person who carries out work on this product must have read and understood this data sheet. If you have any questions that are not resolved by this data sheet, you can obtain further information from the supplier or manufacturer.

If the product is not used in accordance with this data sheet, the protection provided will be impaired.

Applicable regulations must be observed when installing and using the device. Within the EU, these include regulations regarding occupational safety and accident prevention as well as those from the VDE (Association for Electrical, Electronic & Information Technologies). If the device is used in other countries, it is the responsibility of the system installer or operator to comply with local regulations.

Mounting, installation and commissioning work on the devices may only be carried out by qualified technicians. Qualified technicians are persons who are familiar with the described product and who can assess given tasks and recognize possible dangers due to technical training, knowledge and experience as well as knowledge of the appropriate regulations.

Legend



WARNING

Indicates a hazard of medium risk which can result in death or severe bodily injury if it is not avoided.



CAUTION

Indicates a hazard of low risk which can result in minor or medium bodily injury if it is not avoided.



NOTICE

Indicates a hazard of medium risk which can result in material damage or malfunctions if it is not avoided.



NOTE

Indicates additional information that can simplify the work with the product for you.

Notes on Disposal

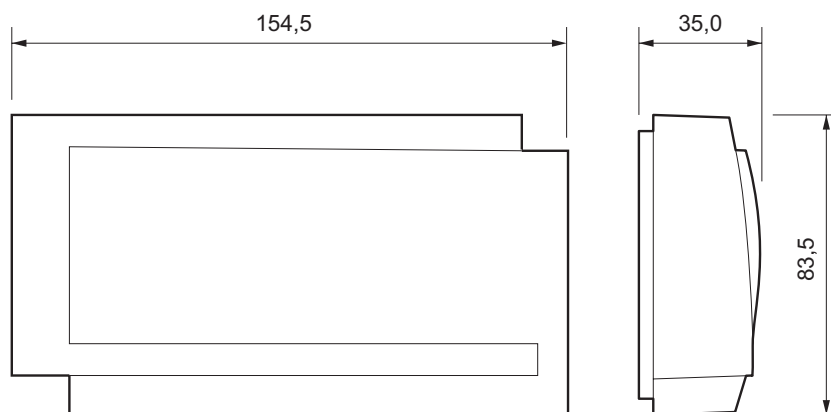
For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

Product Description**FBG132-FTL EnOcean System Gateway****Item**

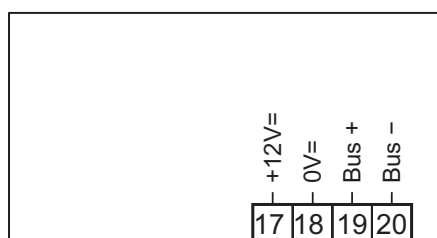
FBG132-FTL	EnOcean system gateway for direct integration of up to 32 technoLink® field devices, en:key components and other radio partners based on the EnOcean radio standard (ISO/IEC 14543-3-10). Integration of the radio parameters into the DDC4000 automation system and suitable building management systems.
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Technical Data

Nominal voltage	DC 12 V $\pm 20\%$; 1 W
Interfaces	EnOcean® radio interface: ■ Radiogram: EnOcean radiogram, bidirectional ■ Frequency: 868.3 MHz ■ Range: approx. 30 m in buildings (depending on building structure) ■ Duty cycle: < 1 %
Bus connection	Fieldbus, max. 2000 m
Address switch	Addressing 01..63 by means of 2 rotary switches in the housing
Display elements	■ 2 LEDs - Green "Data" LED: Flashes during fieldbus data transmission. - Red "Error" LED: Lights up when there is a fieldbus error.
Housing	Plastic housing, color RAL 9010 (pure white)
Degree of protection	IP30
Ambient temperature	0°C..45°C
Ambient humidity	20%.. 80 % r.h., non-condensing
Installation	Mounted on wall or on flush-mounted box
Weight	0.14 kg
Dimensions	WxHxD in mm: 154x83.5x35

Dimensions

Connection



Wireless Interface

Depending on the radio partner, radio communication with radio partners (e.g. TCF23, en:key RPW301-FTL room sensor, etc.) is cyclical, bidirectional and uses the EEP or MSC process.



NOTICE

This product uses only EnOcean wireless telegrams.

Only devices that support the EnOcean radio standard can be used as radio partners.

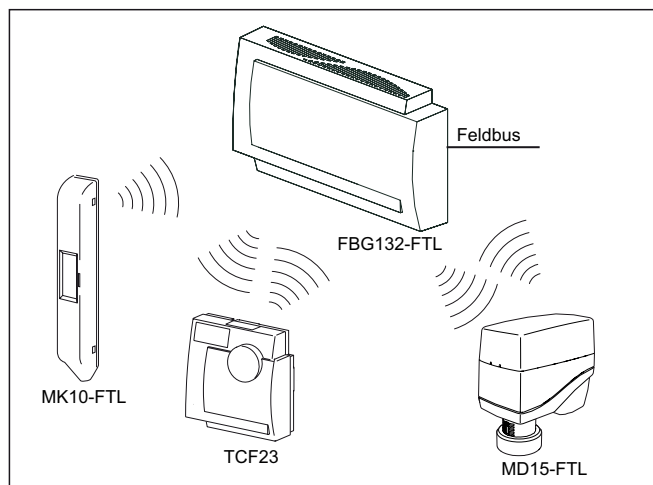
Overview of the supported EnOcean Equipment Profiles (EEP)

EnOcean Equipment Profiles (EEP)		Example devices
F6-02-01	Light and Blind Control Application Style 1	LT10x-FtL
A5-20-01	Battery Powered Actuator	MD10-FTL, MD15-FTL *1)
D5-00-01	Single Input Contact	MK10-FtL
MSC	Manufacturer Specific Communication	RBW322-FTL, RPW301-FTL
A5-02-05	Temperature Sensor, Range 0°C to +40°C	TC22
A5-10-03	Temperature Sensor, Setpoint Control	TCF22
A5-10-0C	Temperature Sensor and Occupancy Control	TC23
A5-10-05	Temperature Sensor, Setpoint and Occupancy Control	TCF23
A5-02-xx	Temperature Sensors	
A5-10-01 to A5-10-14	Room Operating Panel	
A5-20-01	Battery Powered Actuator (BI-DIR)	
A5-20-02	Basic Actuator (BI-DIR)	
A5-20-03	Line Powered Actuator (BI-DIR)	
A5-20-10	Generic HVAC Interface (BI-DIR)	
F6-02-xx	Rocker Switch, 2 Rockers	
F6-03-xx	Rocker Switch, 4 Rockers	
F6-04-xx	Position Switch, Home and Office Application	
F6-10-xx	Mechanical Handle	

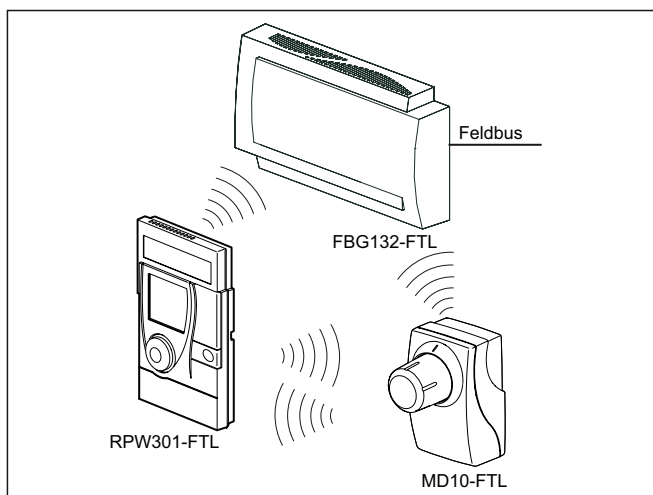
*1) Bidirectional communication

EEP/MSC radio communication mode

- FBG132-FTL with radio partners in EEP mode



- FBG132-FTL with radio partners in MSC mode



Installation



NOTICE

This product description describes specific settings and functions of the FBG132-FTL. In addition to these instructions, observe the product descriptions of other system components, such as DDC controller DDC4000.

General radio installation instructions

It is not always possible to freely select the installation location of devices which communicate wirelessly, as radio data transmission is influenced to a greater or lesser extent by structural or spatial factors.

Before installation and assembly, the building structure must be analyzed and a series of measurements must be made to determine the specific ranges within the building.

In order to establish operational and reliable communication paths, the following aspects must be considered before and during planning:

- Structural factors restrict the transmission ranges which can be reached. Building materials and screening elements (e.g. suspended ceiling elements, installation shafts, fire doors, etc.) must be taken into consideration during planning.



NOTICE

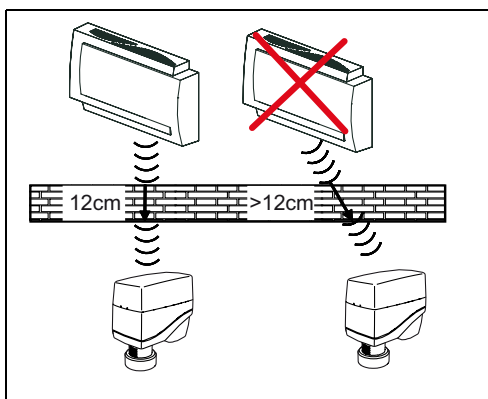
Elevated humidity increases natural signal damping.



NOTE

Recommendation: Plan radio paths **horizontally on a single level** with max. 30 m between the transmitting and receiving modules.

- Observe minimum distances to potential sources of interference.
 - Min. 0.5 m to high-frequency sources of interference (such as microwaves, transformers or computers)
 - Min. 3.0 m to transmitters of other radio systems (such as a cordless telephone or headphones)
 - Min. 0.1 m to metal and door frames
- Minimize the effect of wall thickness (for example partition walls or room dividers) by ensuring that the radio signal passes through the walls at as close to a right angle as possible.

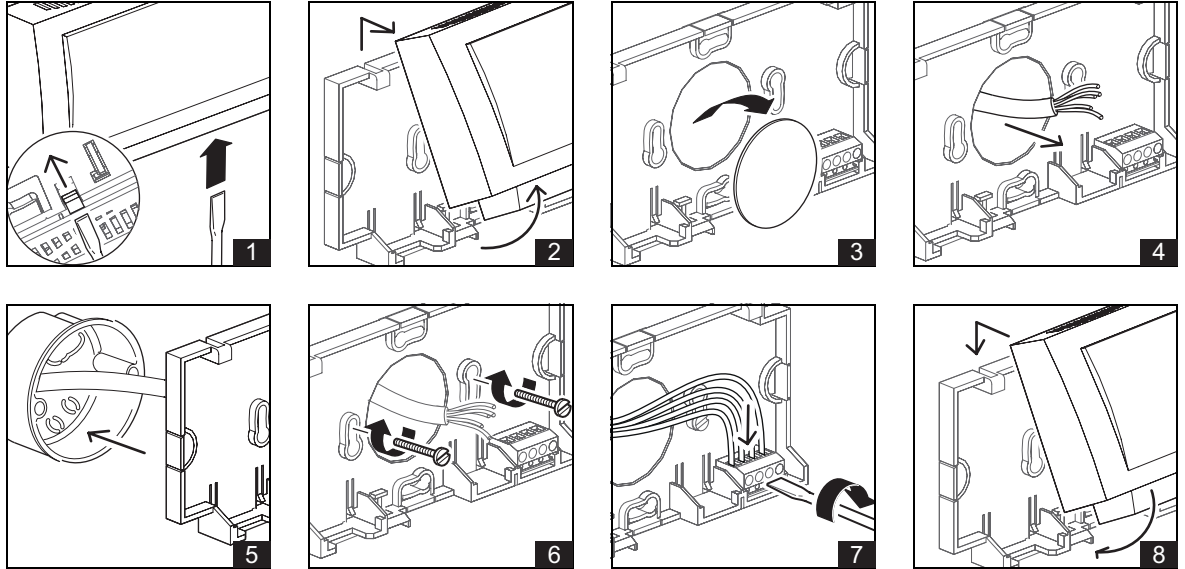
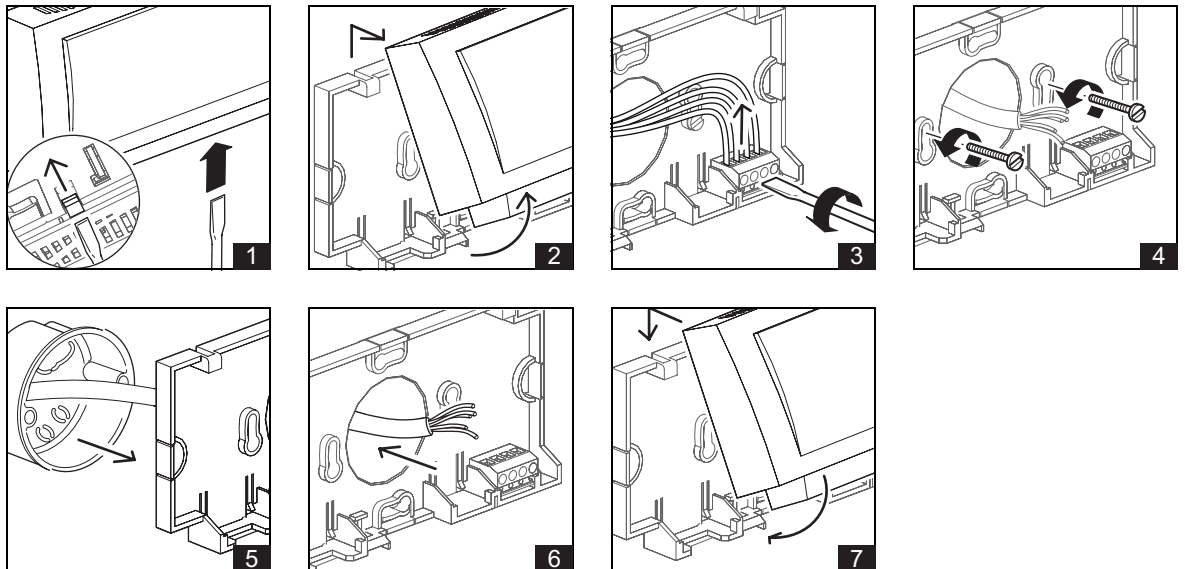


- Do not select installation locations in the radio shadow of screening building parts/structures → No direct reception possible.
- Where the device is installed at the limits of reliability, change the position of the transmitter/ receiver slightly if possible (reduce overlapping effects of radio waves).

CAN bus installation notes

Lines for the mains supply and fieldbus are to be laid together in one shielded cable, cable type at least 0.8 mm in diameter, with the wires twisted together in pairs. Here, one stranded pair of wires is to be used for the mains supply and the other for the fieldbus.

At the end of the fieldbus (furthest point from the DDC controller, max. 2000 m), the two connection lines must be fitted with a terminating resistor of about 180 ohm (terminating resistor is included with the DDC controller).

Mounting**Removal**

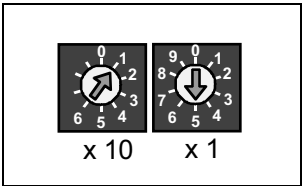
Settings and LED displays

Setting the fieldbus address

Permitted range for the fieldbus address: 01 to 63

The rotary switches for setting the fieldbus address are located inside the cover.

The example shows the address “15”.



LED Indicators



(1) One green and one red LED are located under the housing next to the rotary switches.

Green LED (1)	Red LED (2)	Meaning	Cause
Off	Off	Module not in operation	■ No operating voltage or operating voltage too low
On	On	Module in operation, but there is a bus error	■ Bus line short circuit (with respect to ground or each other) ■ Bus lines mixed up ■ Bus line(s) interrupted ■ Module not registered
Flickers	Flashes	Address error	■ Outside of address range (01–63) ■ Address assigned multiple times
Flickers	On	Module logging on	
Flickers	Off	Module OK, bus activity	

Commissioning



NOTICE

Commissioning by switching on the supply voltage may occur only after the commissioning technician/engineer has finished configuring the DDC and has set the fieldbus address.

- Configuration is described in the project planning documentation for the DDC4000 automation station.
- The DDC4000 automation station is configured and commissioned using the PS4000 planning system. You can find more information in the PS4000 manual.



NOTE

A button cannot be used for teaching in on the FBG132-FTL. The radio ID of the radio partner is entered into the configuration parameters in the PS4000 planning system.

The radio ID is specified on the devices' type plates.



NOTE

- A total of 16 FBG132-FTL units can be connected per DDC4000 automation station.
- The maximum number of radio units per DDC4000 automation station is 512.

Teaching in radio partners

- Unidirectional communication
 - ▶ Enter the radio ID and device type into the project planning.
 - ▶ Commission the FBG132-FTL.
- Bidirectional communication
 - ▶ Enter the radio ID and device type into the project planning.
 - ▶ Commission the FBG132-FTL.
 - ▶ Trigger a teach-in signal on the radio partner.

