**Eltako**
ELECTRONICS

RS485 bus gateway
FGW14-USB  $\mathsf{C}\mathsf{E}$

**Only skilled electricians may install this electrical equipment otherwise there is the risk of fire or electric shock!**

Temperature at mounting location:
-20°C up to +50°C.
Storage temperature: -25°C up to +70°C.
Relative humidity:
annual average value <75%.

**valid for devices from production week 47/16** (see bottom side of housing)

Gateway with USB-A connection.
Bidirectional. Only 0.3 watt standby loss.
Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

The gateway is only 1 module wide but has multiple uses: To connect a GFVS-Safe II or PC via a USB interface, to couple up to three FEM devices, for connection to the bus components of the older Series 12 or as a bus connector of two RS485 buses of Series 14.

**Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper. Operation in conjunction with FAM14 or FTS14KS.**

The Hold terminal is connected to the FAM14 or the FTS14KS.

The PC is connected via a USB interface running at 9600 baud or 58 kbaud.

A maximum of 3 radio receiver modules FEM can be connected to a FGW14. However, several FGW14 can be connected to an FEM. Only at a FGW14 the external terminating resistor must be present. For further FGW14 it must be removed.

Wireless receiver modules FEM are connected in parallel to the sub-bus terminals RSA2 and RSB2 as well as the power supply terminals GND and +12 V.

Up to 10 pushbutton input modules FTS12EM can possibly be connected in series to the sub-bus terminals RSA2 and RSB2, or possibly in series with wireless receiver modules FEM.

The GFVS-Safe II or PC connection is via USB interface.

Series 12 actuators are connected to the sub-bus terminals RSA2 and RSB2. There is no hold connection here.
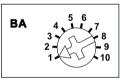
A second series 14 bus is fed into the terminals RSA2/RSB2.

If an FAM14 is fitted, the FTS12EMs are connected to the power supply by the GND and +12 V terminals of the FGW14. The hold-terminal of FGW14 is connected to the hold terminal of the FAM14.

If no FAM14 is fitted, all devices are powered by a 12 V switch mode power supply unit FSNT12 or SNT12. The hold-terminal of the FGW14 is connected to the +12 V terminal with a resistance of 10 kΩ.

**Operating mode rotary switch**



**Pos. 1: Bus12 -> Bus14**
All telegrams in BR12 format (FTS12EM, FAM12, FEM which are applied to terminals RSA2/RSB2 are output to the BR14 bus. The Hold output of the FGW14 must then be linked to the Hold input of the FAM14 to ensure troublefree bus operation.
It is also possible to operate the FGW14 on its own without FAM14 if, for example, only FTS12EM is used to activate the BR14 actuators. A 12 V DC voltage must then be applied to the 12 V terminals of the FGW14. The IDs of the FTS12EM telegrams are increased by 255 (0x100) by the FGW14 before output to the BR14 Bus since the replies of the BR14 actuators occupy the ID range of 1-254.

**Pos. 2: Bus12 -> Bus14 with ID filter**
Same as Pos. 1 but the telegram IDs which are to be decoupled in the BR14 bus must first be taught-in. Up to 120 IDs can be taught-in either using learning position 8 or with the PCT14.

**Pos. 3: Bus14 -> Bus12**
All wireless telegrams of the FAM14 of the BR14 actuators are output in BR12 format to the terminals RSA2/RSB2. This activates BR12 actuators.

**Pos. 4: Bus14 at RSA2/RSB2 -> Bus14 with ID filter**
Bus telegrams (58 Kbaud) of a second BR14 bus which is decoupled by an FBA14 and fed via terminals RSA2/RSB2 are output to the first BR14 bus. The Hold output of the FGW14 must then be linked to the Hold input of the FAM14 to ensure troublefree bus operation.
The IDs of the telegrams which are to be coupled into the BR14 bus must first be entered in the FGW14 by the PC tool PCT14. There is no teach-in on Pos. 8 since this is only possible at 9600 Baud.

**Pos. 5: Bus14 <-> RS232 9600 Baud**
A PC can be connected to the USB plug via a USB interfaces running at 9600 baud (BR12 format). Telegrams from the PC are coupled into the BR14 bus, and FAM14 telegrams and reply telegrams from BR14 actuators are decoupled. The Hold output of the FGW14 must then be linked to the Hold input of the FAM14 to ensure troublefree bus operation.

**Pos. 6: Bus14 <-> RS232 58K Baud**
Same as Pos. 5 but at 58 Kbaud (BR14 format).

**Pos. 7: CLR ID 9600 Baud**
Previously taught-in IDs of BR12 telegrams can be cleared from the ID filter here. The green LED flashes at a high rate. Press the sensor to be cleared. The LED goes out.

**Pos. 8: LRN ID 9600 Baud**
IDs of BR12 telegrams can be taught-in here into the ID filter for later operation in Pos. 2. The green LED flashes at a low rate. Press the sensor to be taught-in. The LED goes out.

**Pos. 9: PCT14 communication**
When the connection is made between PCT14 and FAM14, switchover from operating modes Positions 1 to 6 is automatic. The green LED on the FAM14 and the green LEDs on the FGW14 light up constantly.
After the link is disconnected, the green LEDs go out.
In case of faults, manual switchover to Pos. 9 is recommended.

## Pos. 10: Address reception

After turning to Pos. 10, the FGW14 is ready for a period of 60 seconds to receive a device address from FAM14 or PCT14.

## Operation with FEM:

After a device address is assigned for the FGW14, 'read device memory and update device list' has to be run with the PC tool PCT14 in the context menu. This prevents confirmation telegrams of Series 14 actuators of being coupled back into the bus via a FEM.

## Issue device address for the FGW14:

Turn the rotary switch on the FAM14 to Pos. 1 and its lower LED lights up red. Turn the rotary switch of the FGW14 to Pos. 10.

The green LED of the FGW14 flashes at a low rate. After the address of the FAM14 is issued, its lower LED lights up green for 5 seconds and the LED of the FGW14 goes out.

## Clear all filter IDs:

Within 10 seconds, turn the rotary switch five times to right stop (turn clockwise) and away again. The green LED lights up for 10 seconds and goes out. All filter IDs are cleared.

## Delete all Filter IDs and the device address of the FGW14:

Within 10 seconds, turn the rotary switch eight times to the right stop (turn clockwise) and then turn back away from the stop. The green LED lights up for 10 seconds and goes out. All Filter IDs and the device address have been deleted.

## Configure FGW14:

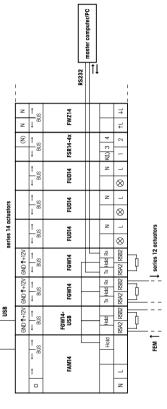The following points can be configured using the PC tool:

■ Teach in buttons with single or double click

■ Issue or clear device address

■ Enter or clear sensors

Caution: Do not forget the 'Disconnect link to FAM' in the PC Tool. No wireless commands are executed while there is a link between the PC Tool and the FAM14.

⚠ The maximal allowed USB cable length is 4.5 m.
For a safe communication at longer distance, an USB hub must be used.

## Typical connections:

master computer/PC

RS232

series 14 actuators

FWZ14

FSR14-4x

FUD14

FUD14

FUD14

FGW14

FGW14

FGW14-USB

FAM14

GFVS-Safe II server

USB

antenna

series 12 actuators

FEM

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**Must be kept for later use!**
We recommend the housing for operating instructions GBA14.

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# Eltako GmbH

D-70736 Fellbach

**Technical Support English:**

☎ Michael Thünte +49 176 13582514
✉ thuente@eltako.de

☎ Marc Peter +49 173 3180368
✉ marc.peter@eltako.de

eltako.com