Operating Manual for FGSM14 Wireless GSM Module

for Eltako RS485 bus

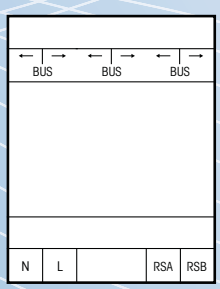
Contents:

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

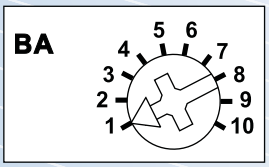
Temperature at mounting location: -20°C to +50°C.
Storage temperature: -25°C to +70°C.
Relative humidity: annual average <75%.

1. Overview of FGSM14 Wireless GSM Module

Wireless GSM module for the Eltako RS485 bus. Bidirectional. Standby loss only 0.9 watts. The GSM antenna is included in the scope of supply.
DIN rail mounted device for fitting on DIN-EN 60715 TH35 mounting rail.
3 pitch units = 54 mm wide, 58 mm deep.
Power loss during transmission and reception is approx. 2 watts.
The GSM module provides encrypted links from smartphones directly to the bus over the mobile radio network. This is an extremely simple solution to send encrypted addresses to up to 16 Series 14 switching points in the same RS485 bus using the Eltako app. Several actuators can be addressed at each switching point. The switching points signal their status back. In addition a further 8 status messages are possible, e.g. for temperature and fault messages. A status overview is displayed on the smartphone immediately after the app is activated.
Very simple and secure registration using **Eltako quickcon® technology.**
The associated apps are available for downloading free of charge from the Apple (iOS/Apple) and Google (Android/Google) online stores.
The FGSM14 is configured using the PCT14 PC Tool. Therefore this requires previous knowledge of how to handle the PCT14 PC Tool.
Power is supplied independent of the bus power supply by an integrated switch mode power supply unit. This requires a 230V supply voltage wired to L and N. If the GSM receiver is not installed at the same place in a distributor as Series 14 actuators, the bus is connected there to an FBA14 bus coupler by a 2-wire shielded bus line (e.g. telephone cable). Then it is wired to the RSA and RSB terminals.
The price comprises a 2-year data flat contract (not for the export version).
Only an application form need be completed and submitted to start up. The form is included in the packaging. On receipt of the form, activation takes place on the next working day. Line connection contracts are offered automatically. A SIM card is already inserted. Open the middle front panel to remove the SIM card and replace it with the SIM card of another provider.



Operating mode rotary switch



Standard ex works setting depicted.

GSM antenna with 250cm cable

2. Preparation

First of all, complete the M2M registration form and send it to our software partners BSC.

BSC then activates the SIM card in the FGSM14.
Always connect the GSM antenna before start-up, otherwise the internal modem may become damaged. After the power supply is switched on, the green LED under the optical fibre flashes at a steady rate (no GSM connection yet, or SIM card not activated) and the green LED under the rotary switch flashes at a rapid rate.

A GSM connection (SIM card activated) is indicated by the green LED under the optical fibre. It lights up briefly twice every 3 seconds and the green LED under the rotary switch goes out. In operation, the green LED under the rotary switch lights up briefly when a switch command is received from the app or a confirmation is sent to the app.
Connection to the Eltako RS485 bus. Cross-wired bus and power supply with jumper. The function of the FGSM14 GSM module requires that the FAM14 wireless antenna module or the FTS14KS issues a device address.

3. Configuration

Issue device address for the FGSM14:

Turn the rotary switch on the FAM14 or the FTS14KS to Pos.1. The lower LED lights up red. Turn the rotary switch of the FGSM14 to Pos.10. The green LED under the rotary switch of the FGSM14 flashes at a low rate. After the FAM14 or the FTS14KS issues the address, its lower LED lights up green for 5 seconds and the LED on the FGSM14 goes out.

Clear all IDs:

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

Clear all IDs and device address of FGSM14:

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

The FGSM14 is an 8-channel device. The app sends switch commands via the FGSM14 to the bus on receipt of a request from the FAM14 or the FTS14KS.
Depending on the FAM14 operating mode, the request may also be radioed.
The FAM14 or the FTS14KS must be operated in operating modes Position 2, 3, 5 or 6.

Rotary switch function on FGSM14:

Position 1: The app switch commands are sent once to the bus by the FGSM14.
Position 2: The app switch commands are sent twice to the bus by the FGSM14.
Position 3: The app switch commands are sent three times to the bus by the FGSM14.

Configure FGSM14 using PCT14

The following functions can be configured using the PCT14 PC Tool:

- Issue or clear device address
- Enter IDs (= device addresses of actuators)
- Enter IDs of sensors

Create a link to the FAM14 or the FTS14KS using the PCT14 PC Tool.

Select options *Update device list and read out device memory.*

Device addresses are displayed in decimals in the left field of the device list in the PCT14. When you enter them in the ID section, convert them to 'Hex' using the conversion table on page 10.

ID entries in the switching actuators must correspond to the device addresses of the FGSM14.

Example: The FGSM14 has device addresses Add. 5 – 12.
In the actuator ID section, enter 05 for Add. 5, 06 for Add. 6, 07 for Add. 7, 08 for Add. 8, 09 for Add. 9, 0A for Add. 10, 0B for Add. 11 and 0C for Add. 12.

Then select option *Add data and transfer to device:*

The app can generate 16 different switch commands.

Group 1 (= buttons nos. 1 to 8) with *top right* and *bottom right*

Group 2 (= buttons nos. 9 to 16) with *top left* and *bottom left*

Basically, all switch commands from the FGSM14 are entered as central commands in the ID section of the actuators as *Central On* and *Central OFF* for every button.

Also select *Change data* for the required ID line. Then enter the following:

Example 1: ID = 05, Function = *Central On*, Button = *top left*, Channel 1
ID = 05, Function = *Central Off*, Button = *bottom right*, Channel 1

Then select the option *Add data and transfer to device.*

Example 2: ID = 0C, Function = *Central On*, Button = *top left*, Channel 2
ID = 0C, Function = *Central Off*, Button = *bottom right*, Channel 2

Then select the option *Add data and transfer to device*.

Enter an ID for the confirmation telegram in the configuration section of the FGSM14 for every app button which generates switch commands. The ID corresponds to the device address of the actuator from which the confirmation telegram comes.

Example: The FSR14-4x actuator has device addresses Add. 13 – 16.
In the configuration section of the FGSM14, enter 0D for Add. 13 in line no. 1 in the ID table for Button 1 of the app, 0E for Add. 14 in line no. 4 for Button 4 of the app, 0F for Add. 14, 0F for Add. 15 in line no. 9 for Button 9 of the app, and 10 for Add. 16 in line 16 for Button 16 of the app.

Then select the option *Add data and transfer to device*.

Caution: Do not forget to press 'Disconnect from FAM14 or FTS14KS' in the PC-Tool PCT14. While the PC Tool remains connected to the FAM14 or the FTS14KS, no wireless commands can be executed.

After all entries with the PCT14 are completed and transferred to the devices, we advise you to reboot the bus installation by Voltage OFF and Voltage ON.

When the bus installation is rebooted, all actuator statuses are always requested and they are stored temporarily in the FGSM14. All updated actuator statuses are then available as soon as the app connects to the FGSM14.

4. Eltako quickcon® Technology

This is a simple method to connect the Eltako FGSM14 to the Eltako FGSM14 App without any knowledge of how to handle IP address conversions (e.g. DynDNS) or port blocks.

Caution: When the app is in use, data traffic is generated and may incur additional costs depending on the mobile phone contract.

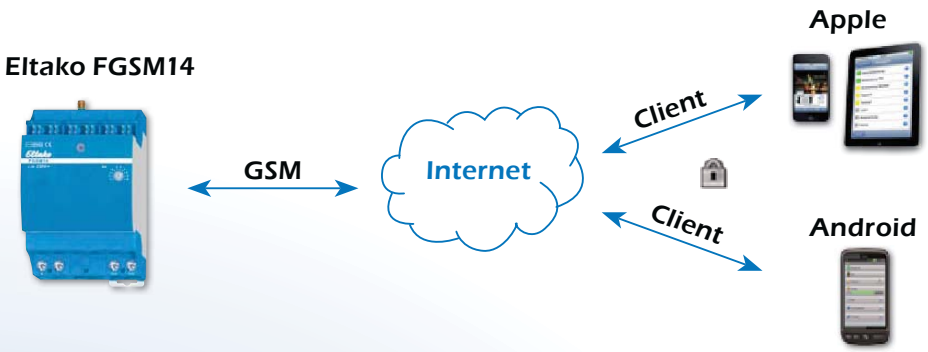


Figure 1: Using encrypted links without port blocking or IP address conversion

Download the Eltako FGSM14 App from the App Shop of your operating system provider (iPhone → iTunes, Android → Google Play) and install it. The associated apps are available for downloading free of charge from the Apple (iOS/Apple) and Google (Android/Google) online stores.
Start the Eltako App 'FGSM14':

Figure 2: Starting the app

Optionen (options) give you access to Setup.

5. Set up connection using Eltako quickcon®

Enter the IMEI of the Eltako FGSM14 in the field *Ziel IMEI* (destination IMEI).
You will find it on the sticker affixed to the housing of the FGSM14 and on an additional sticker in the packaging.
Transfer the password from the sticker to the field *Password*.
Note: Storing the IMEI and password ensures that no external device can be connected.

Figure 3: Options for FGSM14 App

Then press *Speichern und Verbinden (Save and connect)*. The status overview then appears.

6. Control and visualise using the app

The app has 4 screen pages which are selectable by tabs along the upper border: *Gruppe 1 (Group 1), Gruppe 2 (Group 2)* and *Infos.*

The padlock in the top right corner indicates that the connection is encrypted. Press the button with the two round arrows to update the view. Press the slider button to access the Options dialog.

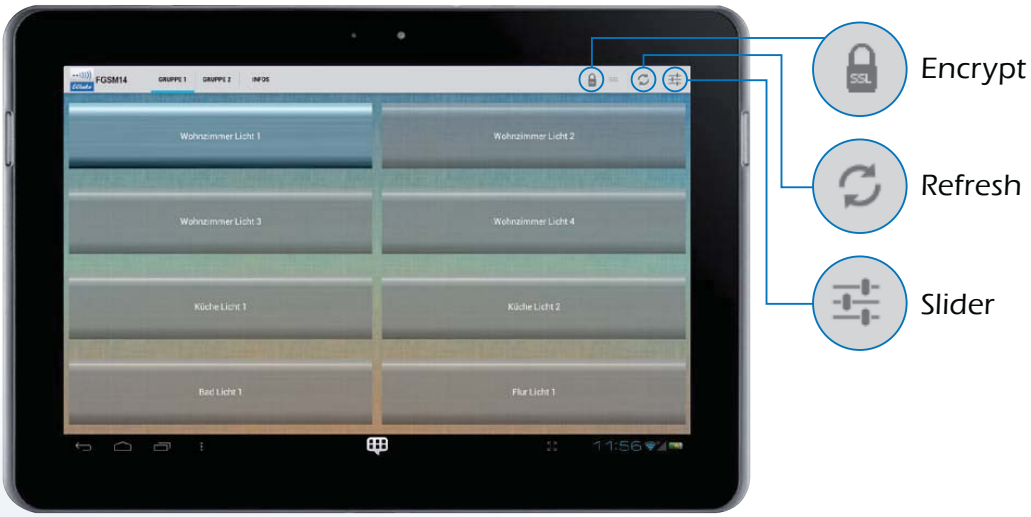


Figure 4: Display of Group 1

Figure 5: *OFF* switching state

Figure 6: *Inactive* button

Figure 7: Wait for feedback

Figure 8: *ON* switching state

Gruppe 1 (Group 1) and Gruppe 2 (Group 2) each comprise 8 buttons which can send switch commands and change colour with a confirmation is received.

Switch commands can only be sent when the button has already received a confirmation. Otherwise the button is greyed and inactive. A confirmation is only indicated when a valid ID is entered in the configuration section Nos. 1–8 (Group 1) and Nos. 9–16 (Group 2) of the FGSM14. Once a new confirmation is received by the app, the current status is displayed in the button:

Blue means a confirmation for Off (0x50) with the roller shutters Down.

Green-yellow means a confirmation for On (0x70) with the roller shutters Up.

White is an indefinite position (0x00, 0x01, 0x02) and can so far only be generated by the FSB14 when no end stop is reached.

When pressed, a button always sends the opposite switch command, i.e. if it indicates Off, it sends an On command and vice versa.

You can only press again after a new confirmation is received. The waiting time is indicated by a circle in the button.

On the *Infos* screen page, up to 8 status messages can be displayed and they are entered in memory locations using the PCT14 starting at memory location no. 17.

Location 17 is reserved for a temperature display with FTR55H, FTR55D or FTF55.
Location 18 is reserved for a brightness display with FAH60, FAH63 or FIH63.
There IDs must all be entered.

Locations 19 to 22 are marked as Status 1 to 4, and Locations 23 and 24 as Fault 1 and 2. This is where you can enter the IDs of sensors and actuators which send button telegrams. They include window/door contacts (WDC), HOPPE window handles, wireless transmitter modules, wireless pushbuttons and acknowledgement telegrams from actuators.

All Info designations can be changed by holding your finger down on the texts.

The status indications are displayed in colour:

- Window closed (handle and WDC) is displayed as a blue dot; window open or tilted is displayed as a yellow dot.
- Confirmation On or Top is displayed as a yellow dot.
- Confirmation Off or Down is displayed as a blue dot.
- Card switch inserted is displayed as a yellow dot.
- Card switch removed is displayed as a white dot.
- Telegram for top right button pressed (Hex 0x70) or bottom left button pressed (Hex 0x10) is displayed as a yellow dot.
- Telegram for bottom right button pressed (Hex 0x50) is displayed as a blue dot.
- Release button telegram (Hex 0x00) is displayed as a white dot.

7. Replace the SIM card

Remove the front panel of the middle section to insert or exchange the SIM card. Remove the panel by pressing the bottom lip upwards and pulling the panel to the front.

The PIN request of the SIM card must be deactivated.

A list of providers which automatically recognise APN is provided on the back cover.

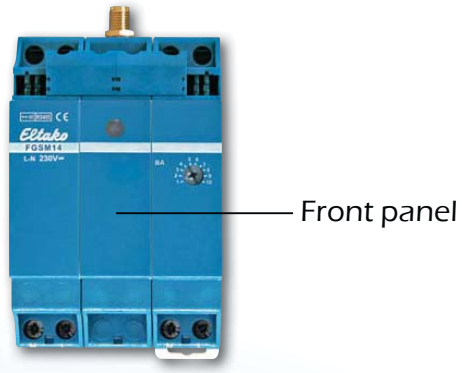


Figure 9: Eltako FGSM14

Figure 10: Eltako FGSM14 open

8. Scope of supply

The special packaging contains a Wireless GSM Module FGSM14, a GSM antenna with 250 cm cable, 1 jumper of one pitch unit, 2 dummy panels, a sticker with the device IMEI and these operating instructions.

The German version also contains an application form for the 2-year data flat contract included in the price.

EC DECLARATION OF CONFORMITY

File name	FQKF071
Product	**Wireless GSM Module**
Type designation	**FGSM14** **(Cinterion Wireless Module TC65i)**

ELTAKO GmbH, D - 70736 Fellbach, declares in its sole responsibility that the designated product to which this declaration refers meets the following harmonised standards or normative documents.

EN 50581 : 2013-02
EN 60950-1 : 2006 +A11 : 2009
EN 301489-1 : V1.8.1 EN 301489-7 : V1.3.1
GCF-CC : V3.42.2 EN 301511 : V9.0.2

and the following Directives of the European Parliament and Council of Ministers (in the valid version):

2006 / 95 / EC	Electrical Equipment (Low-Voltage Directive)
2004 / 108 / EC	Electromagnetic Compatibility (EMC Directive)
1999 / 5 / EC	Directive on Radio and Telecommunication Terminal Equipment (R&TTE)
2011 / 65 / EU	Restriction of the use of certain hazardous substances (RoHS)

Issuer	ELTAKO GmbH Hofener Straße 54, D-70736 Fellbach
Place, Date	Fellbach, 24. September 2013
signed	Ulrich Ziegler, General Manager

This declaration assures conformity with the standards and directives cited, but does not represent any guarantee of characteristics. Please refer to the safety instructions of the supplied product documentation.

Converting decimal numbers to hexadecimal numbers

DEC	HEX	DEC	HEX	DEC	HEX	DEC	HEX
1	01	33	21	65	41	97	61
2	02	34	22	66	42	98	62
3	03	35	23	67	43	99	63
4	04	36	24	68	44	100	64
5	05	37	25	69	45	101	65
6	06	38	26	70	46	102	66
7	07	39	27	71	47	103	67
8	08	40	28	72	48	104	68
9	09	41	29	73	49	105	69
10	0A	42	2A	74	4A	106	6A
11	0B	43	2B	75	4B	107	6B
12	0C	44	2C	76	4C	108	6C
13	0D	45	2D	77	4D	109	6D
14	0E	46	2E	78	4E	110	6E
15	0F	47	2F	79	4F	111	6F
16	10	48	30	80	50	112	70
17	11	49	31	81	51	113	71
18	12	50	32	82	52	114	72
19	13	51	33	83	53	115	73
20	14	52	34	84	54	116	74
21	15	53	35	85	55	117	75
22	16	54	36	86	56	118	76
23	17	55	37	87	57	119	77
24	18	56	38	88	58	120	78
25	19	57	39	89	59	121	79
26	1A	58	3A	90	5A	122	7A
27	1B	59	3B	91	5B	123	7B
28	1C	60	3C	92	5C	124	7C
29	1D	61	3D	93	5D	125	7D
30	1E	62	3E	94	5E	126	7E
31	1F	63	3F	95	5F	127	7F
32	20	64	40	96	60	128	80

European providers which detect the APN automatically

Austria
- A1
- T-Mobile
- Orange

Albania
- AMC
- Vodafone

Armenia
- Beeline

Belarus
- VELCOM

Belgium
- Proximus
- Mobistar
- BASE

Bosnia and Herzegovina
- Eronet Mobile Communications Ltd
- GSMBIH

Bulgaria
- M-TEL GSM BG
- BTC Mobile
- GloBul

Czech republic
- T-Mobile
- O2
- Vodafone

Croatia
- T-Mobile
- VIPnet

Denmark
- TDC Mobil
- SONOFON
- HI3G
- TELIA DK

Estonia
- EMT GSM
- Radiolinja Eesti
- TELE2

Finland
- Radiolinja Origo Oy
- Saunalahti
- Sonera

France
- Orange F
- SFR
- Bouygues Telecom

Germany
- T-Mobile D
- D2 Vodafone
- E-Plus
- O2

Greece
- Cosmote
- Vodafone
- WIND

Hungary
- Telenor
- T-Mobile
- Vodafone

Iceland
- Vodafone

Ireland
- Vodafone
- O2

Italy
- Telecom Italia Mobile
- Vodafone
- WIND
- H3G

Kazakhstan
- BeeLine GSM (former K-Mobile)
- K-Cell

Latvia
- LMT GSM
- TELE2
- Bite GSM

Liechtenstein
- Mobilkom

Lithuania
- OMNITEL
- Bite GSM
- TELE2

Luxembourg
- LUXGSM
- TANGO
- Orange

Malta
- Vodafone
- go mobile

Macedonia
- T-Mobile

Monaco
- Monaco Telecom

Netherlands
- Tele2 Mobiel
- Vodafone
- KPN
- Telfort
- T-Mobile

Norway
- Telenor Mobil
- NetCom GSM
- Teletopia
- Tele2 Norge

Poland
- Plus
- ERA GSM
- Orange

Portugal
- Vodafone
- OPTIMUS
- TMN

Romania
- Vodafone
- ORANGE

Russia
- Mobile Telesystems
- MegaFon
- Baykalwestcom
- Bee Line GSM
- Primtelefone

Serbia
- MOBTEL
- Mobilna Telefonija Srbije
- Vip mobile

Slovenia
- SiMobil-Vodafone
- MOBITEL

Slowakia
- Orange
- T-Mobile

Spain
- Vodafone
- Orange
- Movistar
- Simyo
- Jazztel

Sweden
- TELIA MOBILE
- Telenor
- COMVIQ
- Spring

Switzerland
- Swisscom
- Sunrise
- Orange

Turkey
- Turkcell
- Vodafone
- AVEA (Aria)

Ukraine
- MTS
- Beeline
- KYIVSTAR
- life:)

United Kingdom
- O2
- Vodafone
- T-Mobile UK
- Orange

Uzbekistan
- Daewoo Unitel
- Coscom
- Uzdunrobita GSM

Must be kept for later use!

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11/2013 Specifications subject to change.