



GSM Manual

- 10000W
- 12500W
- 15000W

Contents

1. Introduction	2
Introduction	2
2. Installation	3
Installation of the GSM Board	3
3. Setup	4
Setup	4
Troubleshooting GSM Modem	5

1. Introduction

1.1. Introduction

This manual describes the installation and setup of GSM modem and data warehouse services in the 10 kW, 12.5 kW and 15 kW transformerless inverter.

All persons installing and servicing inverters must be:

- trained and experienced in general safety rules for work on electrical equipment
- familiar with local requirements, rules and regulations for the installation

Have the following ready:

- GPRS kit
- Active SIM card (remember PIN code if applicable)
- GPRS connection information from the GPRS service provider (Access point name and user/password if applicable)
- User (Inverter serial number, e.g. of type 139F0001123402G210)
- Password for the data warehouse service if the GSM modem is used for upload to a data warehouse service.

Note: 

Ensure that time and date are set correctly in the inverter.
[Setup → Inverter details → Set date and time].

2. Installation

2

2.1. Installation of the GSM Board

Turn off PV and grid connection and wait until the inverter has completely discharged (see the inverter installation manual).

Installation procedure:

1. Insert the GPRS modem board into the holding mechanism (1) next to the Communication board (2). Align the notches in the GSM board with the red holding mechanisms. Push it down and let it slide up until it is fixed.
2. Fasten the GPRS modem board with the supplied screw (3).
3. Connect the GPRS modem board to the Communication board using the supplied ribbon cable (4).
4. At the bottom of the inverter, knock out the cutout for the GSM antenna, located next to the cable guard (6).
5. Fasten the antenna extension cable onto the female sma connector on the GSM board (7).
6. Push the male sma connector through the hole in the chassis and attach it from the outside with the washer and nut.
7. Screw on the antenna externally, at the base of the inverter (8).
8. Insert the SIM card into the GPRS modem board and secure it by moving the locking mechanism to the locked position.
9. Fasten all parts securely, then close the inverter. Ensure that the cover is correctly fastened.

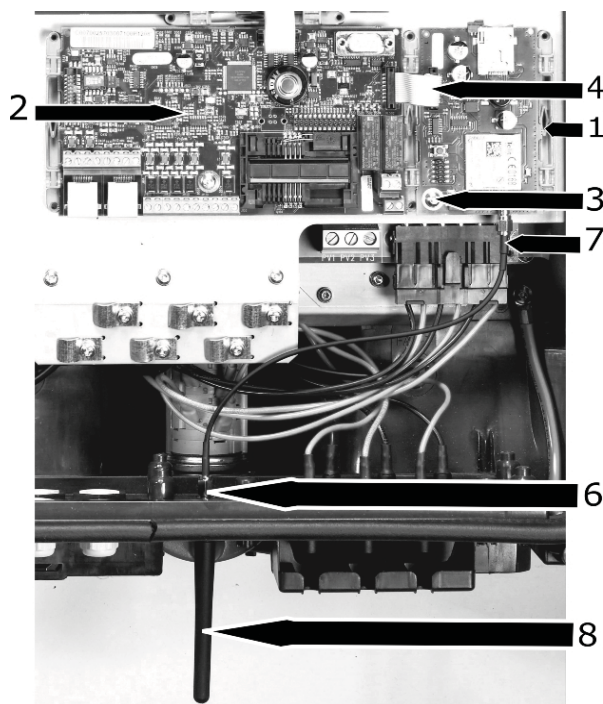


Illustration 2.1: Correctly mounted GSM board with external antenna

3. Setup

3.1. Setup

3

3.1.1. Setup

Configure the inverter by using the integrated display, or integrated web interface, if available:

1. Turn on AC to wake up inverter
2. Find menu GPRS connection setup under the menu Communications Setup [Setup → Communications Setup → GPRS connection setup]
3. Set up the following:
 - Enter PIN code (if applicable)
 - Enter Access point name
 - Enter User name (if applicable)
 - Enter Password (if applicable)
 - Roaming Support enabled/disabled (Note: Data roaming can be very expensive)
4. Enter the data. Press Back and use the arrows to find menu Data warehouse service under the menu Communications Setup [Setup → Communications Setup → Communication channel]*.
5. Set up the following:
 - Set Communication channel to "GSM" under the menu [Setup → Communications Setup → Data warehouse service]*.
 - Verify that the Data warehouse FTP server address is set. For example, "www.meteocontrol.de".
 - Verify that the Data warehouse server port is set to "21".
 - Verify that the FTP mode is set to "Active".
 - Verify that the inverter's serial number is entered as the Data warehouse server user name.
 - Enter the password supplied by e.g. MeteoControl.
 - Press Start log upload. Allow at least 10 min. of production time before data upload.
6. Press Status menu and use the arrows to find menu Modem under the menu Inverter [Status → Inverter → Upload status]*.
7. Verify the following:
 - Signal strength is preferably between 16 and 31.
 - GSM status changes from Initializing to Uploading/Idle.
 - The network provider of the SIM card is displayed.
 - Last upload is shown immediately after "Start log upload" has been pressed.

*) When accessing the inverter via web interface, this menu is only visible on plant level.

3.1.2. Troubleshooting GSM Modem

If the data upload is unsuccessful, despite following the installation procedure:

1. Find the event ID reported by the GSM modem
 - in the display, go to the "Status" menu (F2), "Inverter" submenu, "Upload status" submenu and find the "Last error" event ID [Status → Inverter* → Modem].
 - in the web interface at plant level, go to [Status → Upload status] and find the "Last error" event ID.
2. Refer to the table for recommended action.

Event ID	Description	Action
0	No error	-
4, 5, 19	SIM card error	Verify that the SIM card is inserted correctly. If this is the case, test the SIM card in a cell phone if possible.
11, 18	Provider's GSM network not available	If "GSM status" is: - "Denied" - contact the GSM provider and request activation of SIM card. - "Searching" or "Roaming" - Make sure there is sufficient signal strength (to a supported network) in the area where the antenna is installed.
14, 36, 43	Address, user name or password issue	Verify that the Address, user name and password are entered correctly. [Setup → Communications setup → Data warehouse service].
16, 17, 20	Upload error	Wait for 10 minutes and retry the upload.
25, 44	Incorrect SIM PIN code	Verify that the correct SIM PIN code has been entered. [Setup → Communications setup → GPRS connection setup].
26	SIM PUK code requested, the card may be locked	Test the SIM card in a cell phone and unlock it if it has been locked.
35	GPRS network error	Verify that the GPRS settings are correct. [Setup → Communications setup → GPRS connection setup]. Contact GSM provider to verify that GPRS is enabled for the SIM card.
41	Insufficient data to initiate upload	Allow at least 10 min. of production time before attempting an upload.
42	Time/date not set	Set the date and time. [Setup → Inverter details → Set date and time].
46, 47*	Failed to send e-mail or sms	Verify the message recipients settings and smtp settings [Plant level → Setup → Communication] and [Plant level → Setup → Messaging].
Other	-	Turn off both AC and DC power to the inverter and wait until the inverter has been discharged. Refit the cable connecting the modem to the communication board. Turn on AC and DC, wait 10 min., then retry uploading.

If the issue cannot be resolved by following the recommended action, call service.

*) Only for inverter types with web interface and master functionality.

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