BrunataNet BoxGPRS

for Brunata RS485 network

User and installation manual

Brunata

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1. Introduction

1.1 GPRS-box, ID and tel. no

The GPRS-box has the following ID and telephone number:

GPRS-box ID	
Telephone no.	

1.2 Components in at Brunata RS485net

- GPRS-box with a RM485FM-radio receiver.
- Power-supply
- RM485FM-radio receiver.
- Brunata RS485-net cable.
- Connection box

1.3 Tools

It is recommended to use a KRONE LSA Terminal Tool (Brunata number 06-1040-C) to install the cables into the LSA-connectors.

1.4 Text message commands

There are several commands to the GPRS-box, which can be sent to the GPRS-box by text message. The text message must consist of the following 3 parameters divided by a space:

<Password> <Text message command> <value>

If you leave out <value> GPRS-box will reply with the value it is programmed with.

More than one command can be sent in the same text message, you only have to write <password> in the first line of commands:

<Password> <Text message command> <value>
<Text message command> <value>
<Text message command> <value>

<Password> has the default setting **dokfaw**.

Text message command	Description
uploadnow	The GPRS-box begins to collect new data from the receivers and thereafter sends data to WebMon via GPRS
reboot	Reboots the GPRS-box
uptime	Minutes the GPRS-box has run
units	A list of receivers which the GPRS-box has found
module_id	The GPRS-box serial number.
meters	A list of the meters the GPRS-box has found
gprs_apn	Parameters for the installation determine which apn the GPRZ-box uses when it is transmitting data.
gprs_username	
gprs_password	

The table below shows an example of a SMS-command

SMS-command	SMS-answer
Dokfaw module_id	20999

1.5 Status diodes and ON/OFF button

At one end of the GPRS-box there are two status diodes which show the status of the GPRS-box. To the right of the 2 status diodes there is a little push-button which can be activated by a pencil.

Diodes Push-button ON/OFF
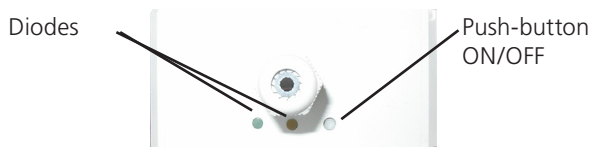
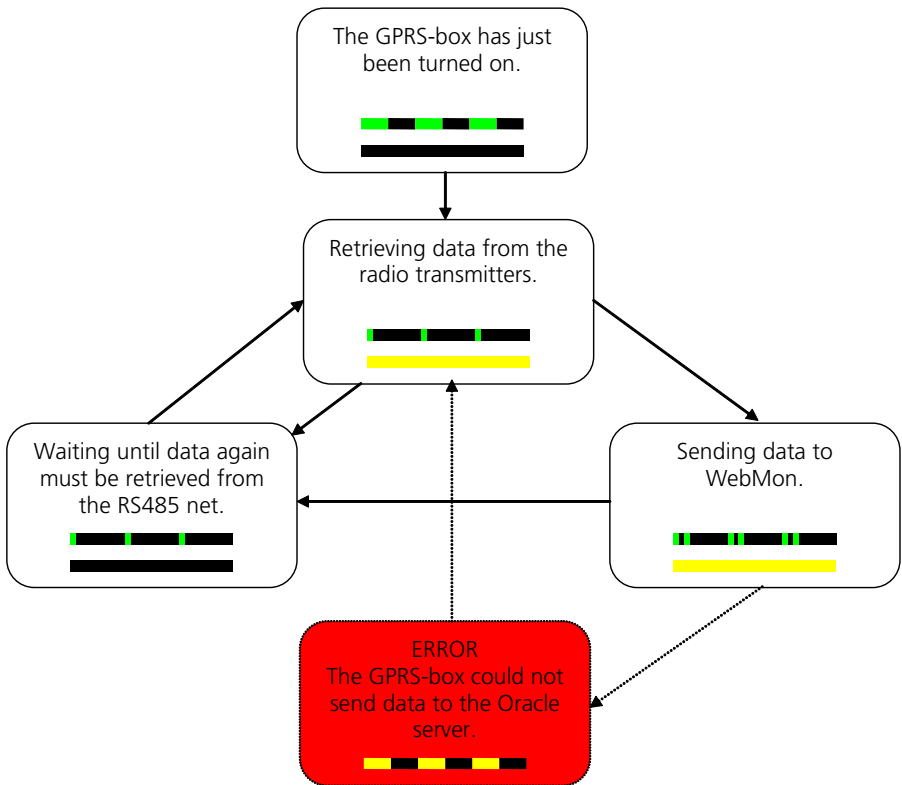| Status-diodes	Button	Description
Turned off	Short push	If the GPRS-box is in sleep-mode the green diode start to flash
	Long push	Turns on the GPRS-box
Turned on	Long push	Turns off the GPRS-box

Green status-diode	Description
Flashing	Searching for GSM-net
1 short flash followed by a long pause	Has found GSM-net
2 short flash followed by a long pause	Transferring data via GPRS
Turned off	The module is either turned off or in sleep-mode

Yellow status-diode	Description
Turned on	Data is send to WebMon
Flashing	Has not found any receivers or it has not been possible to send data to WebMon
Turned off	The module is either turned off, in sleep-mode or waiting for the next program run

After 3 – 5 minutes the GPRS-box will turn off the status diodes partly to save power and partly to avoid drawing attention to the box if it is installed at a public place. With a short pressure (under 1 sec.) at the button right to the status diodes you can reactivate the diodes, and the status of the GPRS-box will be shown again. If the short pressure does not reactivate on the status diodes, it means that the GPRS-box is turned off or that there is no power to the box.

The GPRS-box will automatically start up when power is connected.

1.6 An example of a program flow In the GPRS-box

The GPRS-box has just
been turned on.

Retrieving data from the
radio transmitters.

Waiting until data again
must be retrieved from
the RS485 net.

Sending data to
WebMon.

ERROR
The GPRS-box could not
send data to the Oracle
server.

2. SIM-card

2.1 Demands to the SIM-card

The SIM-card must uphold the following standards: GSM/GPRS/SMS. The PIN-code must be switched off.

Attention: If using Danish SIM-card abroad, then make sure that the country's telephone operator supports GPRS-roaming.

2.2 Installation of SIM-card

The GPRS unit can be order with the SIM-card installed at delivery. Please control that the card is installed.

Brunata a/s can not be held liable for theft and misuse of the SIM-card.

If the unit is delivered without a SIM-card, the SIM-card must be installed before the unit is used. The GPRS-box is opened by removing the four screws from the lid. Hereafter the SIM-card is inserted with the "cut-off" corner in the upper right-hand side and the chip facing down towards the print.

Remember to write down the telephone number in the table "Telephone number" (see paragraph 1.1).

When the SIM-card is installed and the GPRS-box is closed the power is turned on (see paragraph 1.3) Check the green diode, if it is flashing, the GPRS-box is connected with the GSM-net.
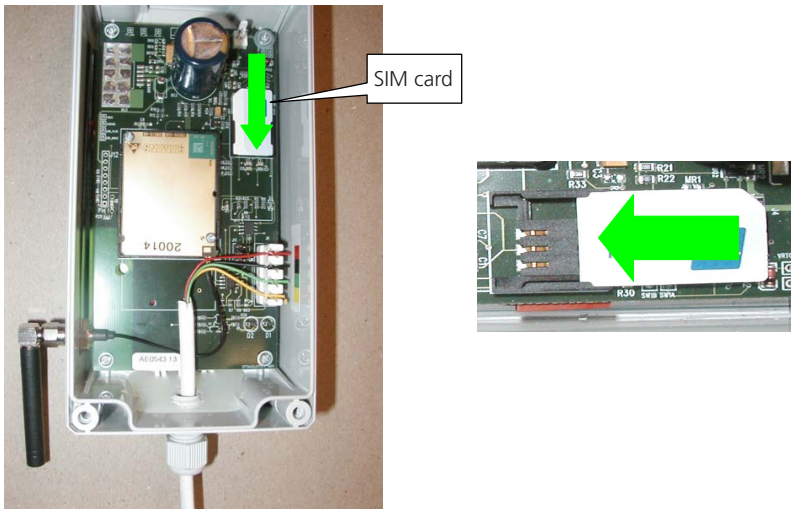
SIM card

When the GPRS-box is on, the APN, log-in and pass-word must be installed so it corresponds with the operator of the SIM-card.

It is done by sending a text massage to the GPRS-box. Below is shown an example from the Netherlands.

Text message command:

Command	SMS-answer
dokfaw gprs_apn office.vodafone.nl	
gprs_username Vodafone	ok
gprs_password Vodafone	

Getting the GPRS-box to send data to the Brunata server by following SMS-command:
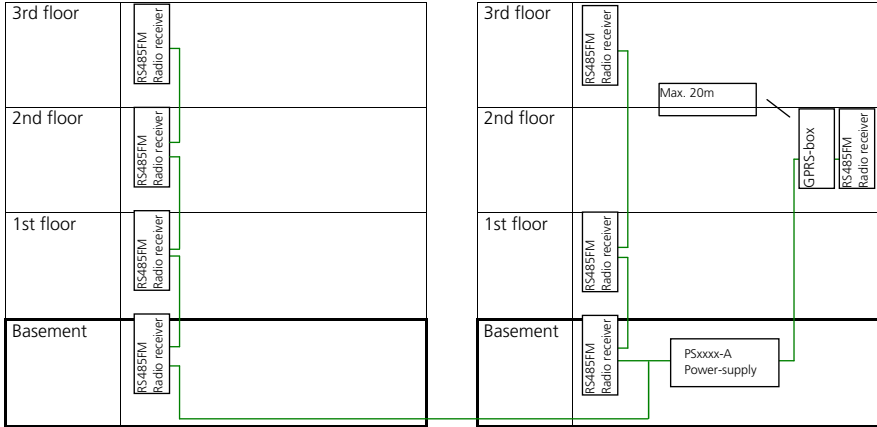
SMS-commando	SMS-answer
dokfaw uploadnow	ok

When the GPRS-box has send data to the server please control, that the GPRS components are received in WebMon.

3. Brunata RS485-net installations

## 3.1 An example of a Brunata RS458-net with GPRS-box

The diagram below illustrates how a Brunata RS485-network with GPRS-box can be installed in two tree storeys high buildings.

3.2 Placement of the GPRS-box

The GPRS-box must be installed at place where there is at good connection to the GSM-net. This is achieved by observing the following rules:

- The box should always be placed as far away from a corner as possible. Never closer than 30 cm. There will be a significant improvement of reception conditions if the GPRS-box is moved from 30 cm to 50 cm away from the corner. If moved further than 50 cm the improvement in reception conditions will not be essentially better.

- Always install as high as possible.

- Never place it in a closed iron cabinet.

- The GPRS-box should never be placed next to a refrigerator or other cupboards with big iron surfaces, which can block the radio telegrams from the allocator.
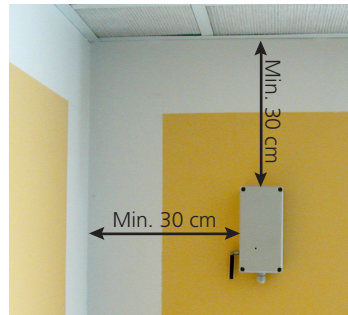
3.3 Placement of the RM485FM radio receivers

The radio receivers must be placed in a way so that they can receive radio telegrams in the best possible way. This is achieved by observing the following rules:

• The box should always be placed as far away from a corner as possible. Never closer than 30 cm. There will be a significant improvement of reception conditions if the radio receiver is moved from 30 cm to 50 cm away from the corner. If moved further than 50 cm the improvement in reception conditions will not be essentially better.

• Never place it in a closed iron cabinet.

• The GPRS-box should never be placed next to a refrigerator or other cupboards with big iron surfaces, which can block the radio telegrams from the allocator.

3.4 Fitting of cables

The Brunata RS485-net cable consist of 4 conductors with the colours: Red, black, green and yellow.

In all the components to the net, a label showing how to connect the different conductors is attached next to the LSA-connector.

The conductors have to be fitted to the LSA-connector so the conductor is turned towards the cutting edge on the LSA-connector.

Cutting edge
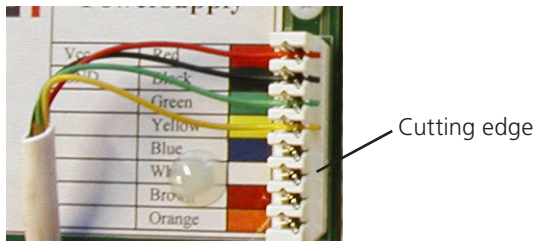
4. Control and registration installation

4.1 What does the control consist of?

After the network has been installed it is tested to se if it works. The test consists of two parts:

• Has the GPRS-box found its receivers?

• Can the GPRS-box send data to Brunata databases?

4.2 Has the GPRS-box found all the receivers?

By sending at text message command to the GPRS-box you can find out if the GPRS-box has found all the receivers in the network.

Text message command	Text message reply
dokfaw units	4167
	4105
	5623
	…etc.

4.3 Can the GPRS-box send data to the Brunata database?

The power to the power supply is turned off and on again. Control the status diodes, to see if they are flashing in the correct order, as shown in paragraphs 1.5 and 1.6.

If the yellow diode is flashing at the end of the program, the GPRS-box has not been able to send data to the Oracle-server at Brunata a/s. This can either be caused by the fact that the GPRS-box has no connection to the receivers, or because the GPRS-box can not connect to the GPRS Network.

4.4 Registration of components in the network.

In order to monitor the network it is **_very important_** to register all the components in the network. In the form "BrunataNet component list" the ID numbers of the GPRS-box, the receivers and where they are placed in the building are noted. At the back of the form, if necessary, a drawing of the composition of the network can be drawn.

The form is given to your local department and they will make sure that the component data are punched into WebMon.

5. Technical support

If you have any questions in regards with the points above you are more than welcome to contact TA Service at:

Tel.   +45 77 77 70 00

Fax   +45 77 77 70 01

E-mail   service@brunata.dk