Manual for *SMS-Module-PAB*

Please read the following instructions carefully.

Non-observance may cause the loss of warranty!

Dear customer,

You have purchased a high-quality product which has been checked several times regarding proper function during production. If the *SMS-Module-PAB* should not work properly despite our quality end check, we ask you for the following:

- In case of a claim please contact your retailer immediately

- Please don't try to repair the damage by yourself

- You should use the original package to avoid damage during transport

Please read these instructions carefully to avoid damage and to be able to use the *SMS-module-PAB* optimally.

1   Included in delivery

These parts must be included in the shipment:

- SMS-Module-PAB

- Antenna

- AC/DC adaptor

- RS232-connection cable

PAB-cables are not included in delivery.
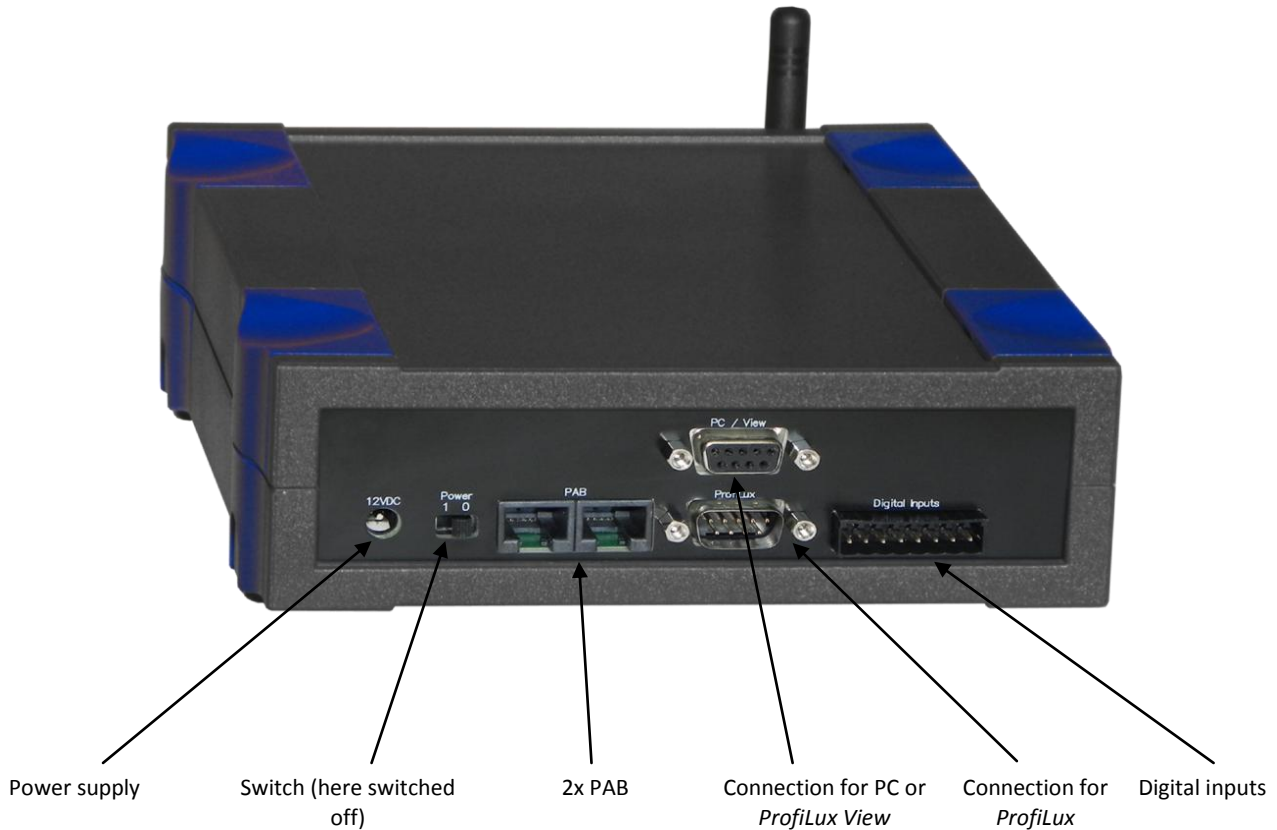
2   Characteristics

This *SMS-Module-PAB* can inform you about the state of your *ProfiLux* controller by sending SMS messages. The sending of a SMS message can be initiated by remote inquiry or a certain event (e.g. alarm or power cut). Up to 30 phone numbers and events can be predefined. The *SMS-Module-PAB* disposes of a lithium-ion-battery with built-in charge controller, for this reason it is able to send a message even during a power cut. The *SMS-Module-PAB* can be connected to the *ProfiLux* via RS232 or via PAB (*ProfiLux Aquatic Bus*). The additional RS232-port allows the connection of a PC or a *ProfiLux View* at the same time. Four digital inputs for monitoring other devices complete the functional range.

3   Preconditions

Via RS232 *ProfiLux II* or *ProfiLux 3* can be connected, the firmware of *ProfiLux* has to be at least 4.04, *ProfiLuxControl* has to be at least version 4.0.4.0.

Via PAB you can connect *ProfiLux 3*, the firmware of *ProfiLux* has to be at least 5.09, *ProfiLuxControl* has to be at least version 5.0.9.0.

4   Connections

| Power supply | Switch (here switched off) | 2x PAB | Connection for PC or *ProfiLux View* | Connection for *ProfiLux* | Digital inputs |

Due to transport reasons, the antenna is shipped demounted. Screw the antenna onto the provided socket at the front side.

Insert the plug of the AC/DC adaptor (12 VDC, polarity: inside +, outside -) into the power supply socket of the device, the power cable of the power supply into a wall socket.

You can either connect the *SMS-Module-PAB* via RS232 or via PAB with the *ProfiLux*:

a) RS232

If a serial connection cable is connected at your *ProfiLux* to the PC, then remove it from *ProfiLux* and plug it into the port **PC/View** of the *SMS-Module*.

If *ProfiLux View* is connected to the *ProfiLux* then remove it from the *ProfiLux* and plug it into the port **PC/View** of the *SMS-Module*.

Connect the RS232-socket of the *ProfiLux* with the RS232-plug **ProfiLux** of the *SMS-module*. Use for this purpose the shipped cable.

b) PAB

Connect the *SMS-Module* with the PAB-port of *ProfiLux* or of another PAB-device, the second port is for the connection of further PAB-devices. Details regarding the connection and configuration of PAB you can read in the instruction „Description of ProfiLux Aquatic Bus (PAB)" (can be found in the download section on www.aquariumcomputer.com).
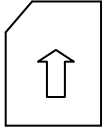
Important hints if you connect via RS232:

- **You may not swap the serial cables! The shipped cable can only be used for the connection of the *ProfiLux* with the *SMS-module*. A standard serial connection cable that is possibly already present must be used between *SMS-module* and PC!**

- **The connected *ProfiLux* must have at least firmware 4.04!**

- **If the communication with the PC is made with a communication card (*PLM-USB*, *PLM-LAN*, *PLM-WLAN* or *PLM-RS485*) and your *ProfiLux* has a firmware <u>below</u> 4.06 then in *ProfiLux* the "router"-function must be enabled (see *ProfiLux* manual, section "communication") in order to be able to communicate with the *SMS-module*. From firmware 4.06 on the router function is always enabled.**

- **During a firmware update via RS232 the *ProfiLux* must be connected to the PC directly – the *SMS-module* must not be between them!**

Important hints if you connect via PAB:

- **The connected *ProfiLux* must have at least firmware 5.09!**

5 Operation

First you should insert the SIM-card (see left). The card must be pushed in firmly until it locks. If you want to remove the card again later you have to push the card until it unlocks and it will jump out. Don't remove the SIM-card during operation!

To switch on the *SMS-Module*, the slide switch on the rear must be shifted to the left. Now the device will start, the state is indicated by these LEDs:

GSM (red) – shows the state of the GSM module:

- Fast flashing (1s-period): Is searching for a radio network, not registered on the net yet

- Slow flashing (3s-period): Is registered in the radio network

Supply (green) – indicates that the external power supply is present

Power (green) – indicates that the internal power supply is OK

Status (yellow) – displays the current operational state of the *SMS-Module*:

- Permanent off: Device is booting and initializing

- 1x Flash: Entering PIN is required

- 2x Flash: Entering PUK is required

- 3x Flash: Entering SMS service center number is required

- 4x Flash: No (valid) SIM-card present

- 5x Flash: Hardware defective

- Permanent on: Ready, normal operation

PAB-Comm (yellow) – indicates communication via PAB (only relevant when connected via PAB)

PAB-State (green) – indicates state of PAB (only relevant when connected via PAB)

In order to shut off the device the slide switch on the rear must be moved to the right (then the green LED *Supply* will turn off). It is not sufficient to shut off the external power supply because the device has an internal lithium-ion-battery.
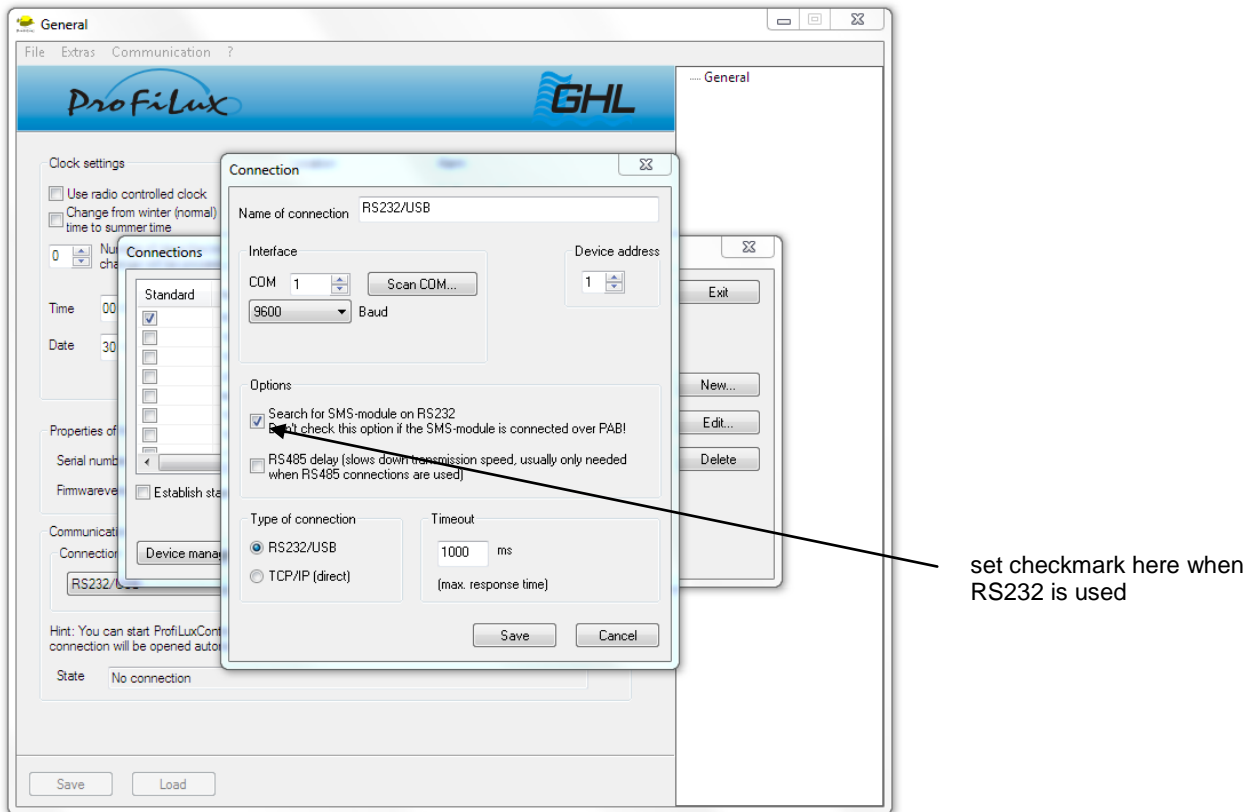
6 Adjust the SMS-Module

All settings are done by using a PC and our program *ProfiLuxControl*. The latest version can be downloaded from our homepage. To save settings to the *SMS-module-PAB* you have to click *Save*.

6.1 Establish a connection

Only if the *SMS-Module-PAB* is connected via RS232 with the *ProfiLux*: In order that *ProfiLuxControl* will search for the *SMS-Module* while the connection is established, you have to set the checkmark at *Search for SMS-module* in the connection settings.

If the *SMS-Module-PAB* is connected via PAB with the *ProfiLux,* the checkmark may not be set!

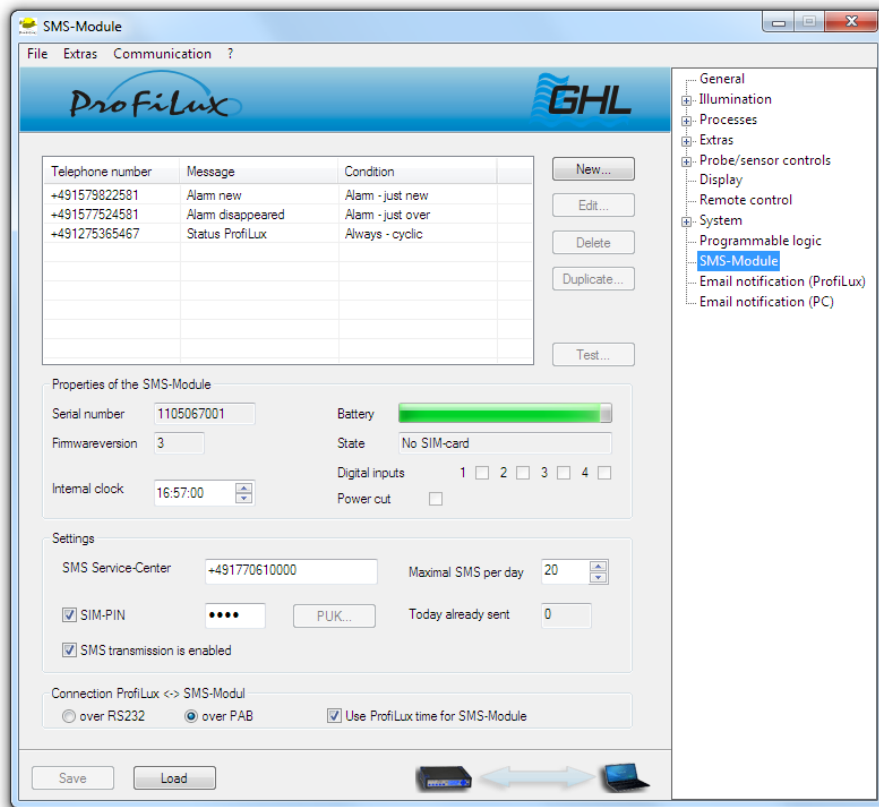set checkmark here when RS232 is used

Picture 1 – Example for connection settings

Hints for connection via RS232:

- If no *SMS-module* is present, you should remove the checkmark, otherwise the connecting to *ProfiLux* will take longer.

- A *ProfiLux* must be connected; otherwise it is not possible to establish a connection.

- The baud rate of the connected *ProfiLux* and in *ProfiLuxControl* must be set to 9600.

6.2 General settings

After clicking onto **Connect** the entry **SMS-module** will appear in the navigation tree (assuming it is connected and switched on).
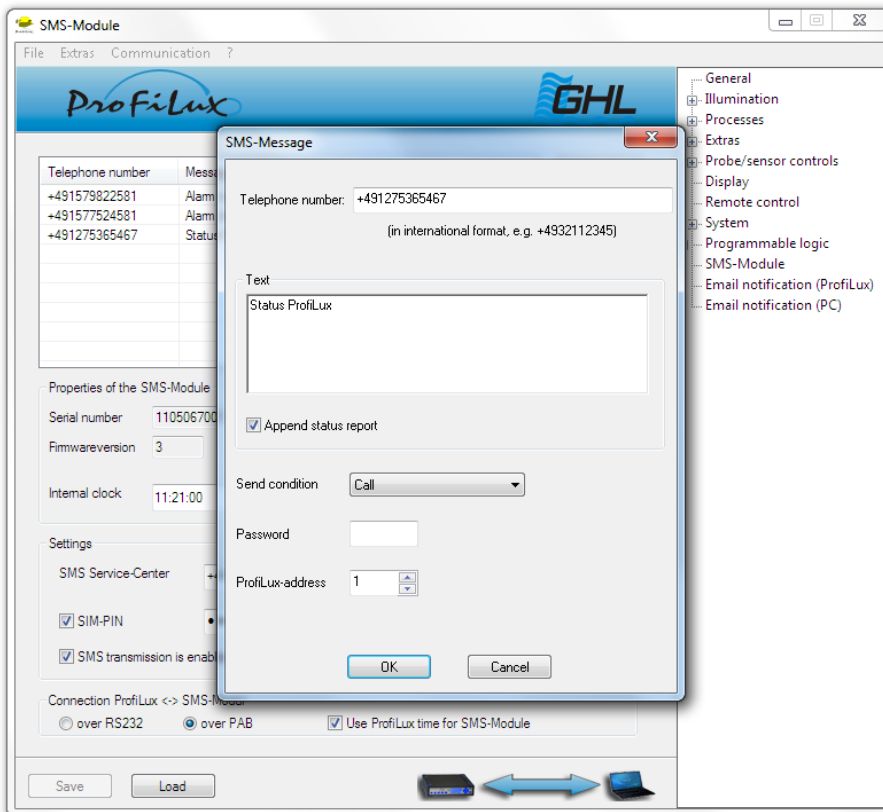
Picture 2 – Overview

It is displayed:

- Table with all already defined SMS messages

- **Battery** – charge state of the lithium-ion-battery

- **Status** – operational state

- State of the 4 **digital inputs** – if a voltage is present a checkmark will be indicated

- **Power cut** – if no mains power supply is present a checkmark will be indicated

- **Today already sent** – the amount of SMS messages which have been sent today so far

- **Firmwareversion** and **serial number**
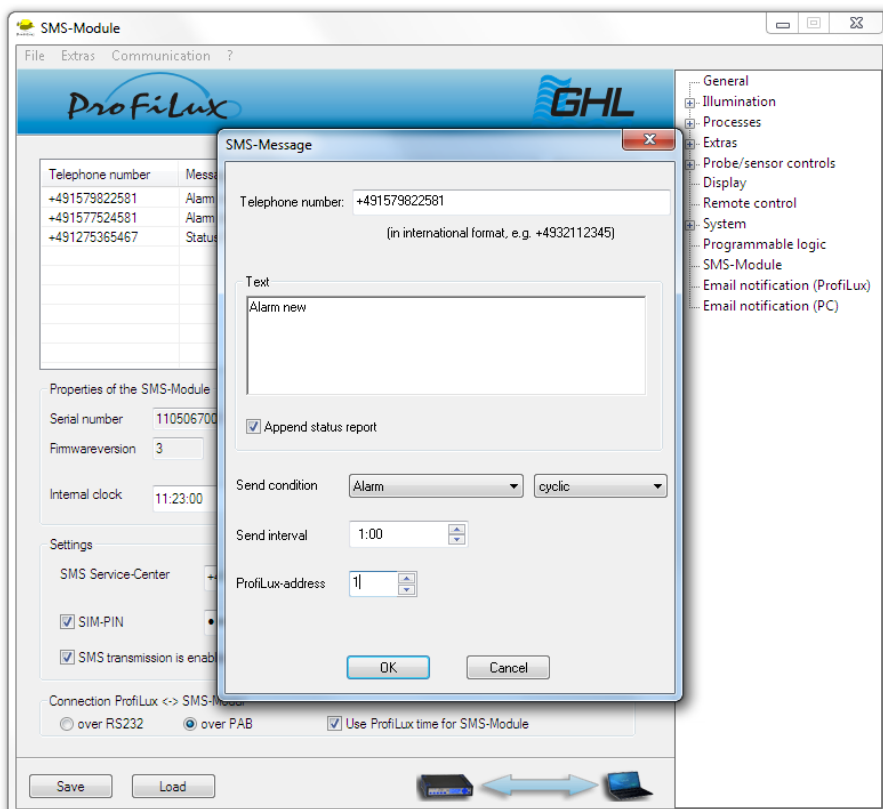
These settings can be adjusted:

- **Internal clock** – the time in the *SMS-module*

- **SMS Service-Center** – this phone number is used to send SMS messages; this field can be left empty if an appropriate number is already stored on the SIM-card; this number must be entered in international format (e.g. +4912300000123)

- **SIM-PIN** – the PIN for the SIM-card, if the SIM-card doesn't require a PIN the checkmark must be removed

- **SMS transmission is enabled** – if the checkmark is set the *SMS-module* is allowed to send SMS messages automatically

- **Maximal SMS per day** – this amount determines how many SMS messages may be sent in one day maximal; after reaching this amount the SMS transmission will be disabled for this day; this function protects you against unlimited transmission of SMS messages, e.g. when an alarm occurs and disappears again shortly afterwards

- **Connection ProfiLux<->SMS-Module** – here you can set if *ProfiLux* is connected via RS232 or PAB with the *SMS-Module*, in the case of a PAB-connection you can choose if the time of *ProfiLux* shall be used to set the clock automatically in the *SMS-Module*.

6.3   SMS Message

Up to 30 different SMS messages which will be sent after a specific event can be defined. In order to define a new SMS message please click **New…**, an existing SMS message can be edited, deleted or duplicated if you select the corresponding table line and by clicking **Edit…** , **Delete…** or **Duplicate…**.

Picture 3 – Example for sending condition call

Picture 4 - Example for sending condition alarm

Following settings can be defined for a SMS message:

- **Telephone number** – to this number (in international format) the SMS message will be sent
- **Text** – the recipient will be shown this text

- ***Append status report*** – if the checkmark is set here then the states of all probes from the monitored *ProfiLux* will be transmitted, too

- ***Send condition*** – determines under which condition a SMS message will be sent, see below

- ***Password*** – the *SMS-module* expects this password (4 alphanumerical characters) during an incoming call

- ***Send interval*** – the SMS messages will be sent repeatedly after this time period (in format HH:MM) (for sending condition ***cyclic***)

- ***Send time*** – at this time the SMS message will be sent (for sending condition ***at certain time***)

- ***ProfiLux-address*** – the address of ***ProfiLux*** which shall be monitored resp. whose sensor states shall be transmitted, usually ***1,*** **in the case of a PAB-connection this setting has no importance, since PAB-devices have already are already firmly assigned to a ProfiLux!**

6.3.1   Sending condition

First the preconditions for a SMS transmission must be set:

- ***Don't send automatically*** – this SMS message will not be sent automatically

- ***Call*** – the SMS message will be sent after a SMS message with the correct password has been received

- ***Always*** – the SMS message will always be sent

- ***ProfiLux doesn't reply*** – the SMS message will be sent in the case that *ProfiLux* doesn`t reply (e.g. after a defect or power cut)

- ***Alarm*** – the SMS message will be sent in the case of an alarm of the monitored *ProfiLux*

- ***Digital input 1…4*** – the SMS will be sent if a voltage is present on this input (see below)

- ***Power cut*** – the SMS message will be sent during a power cut

In most cases the sending condition must be concretized regarding time:

- ***cyclic*** – if the precondition is fulfilled (see above) then the SMS will be sent cyclically (repeatedly)

- ***at certain time*** - if the precondition is fulfilled then the SMS will be sent at a certain time

- ***just new*** – if the precondition has just been newly fulfilled then the SMS will be sent once (example: alarm occurred just newly)

- ***just over*** – if the precondition is just over then the SMS will be sent once (example: power cut is just over)

6.3.2   Test SMS

In order to send a SMS message for test purposes you have to mark the according table line and then click onto ***Test…***, thereafter the SMS will be sent immediately.

Hint: The ***Test…***-button is enabled only if no settings have been changed previously, in this case click ***Save*** before the SMS transmission can be tested.

7   Remote access

7.1   Call back

The definition of an appropriate sending condition (*Call* and *password*) is required. If you send a SMS message with the correct password to the *SMS-module* then the *SMS-module* will send a reply to the preset phone number.
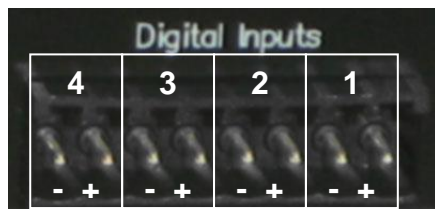
7.2   Enable/disable SMS transmission

You can disable the SMS transmission if you send a SMS message with the text ***SMSOFF***. If you send ***SMSON*** the SMS transmission will be enabled.

8   Location

Important hint: The SMS-module must be protected against water splashes and high humidity! (Salt-) water or too high humidity (which can occur nearby a sump) will destroy the device! This deletes all warranty claims!

9   Digital inputs

The SMS-module has 4 digital and optically isolated inputs.

Picture 5 – Digital inputs

On these digital inputs a DC-voltage between 5V – 24V (left contact is minus, right contact is plus) can be connected. All inputs are electrically insulated. Pay attention to correct voltage and polarity!

10 Security hints

Incorrect programming or a technical defect could cause an expensive mass-sending of SMS messages! For this reason we strongly recommend to use a prepaid SIM-card and to chose the setting **Maximum SMS per day** not too high! Then your costs will be limited.

11 Warranty

GHL GmbH & Co. KG grants a warranty of 24 month beginning with the date of purchase for all processing or material defects. The original bill is your warranty certificate.

The rechargeable battery is a wear part, therefore the rechargeable battery is not covered by a warranty. It is normal and it can't be avoided that the performance of a rechargeable battery becomes lower after a certain time of use, if necessary the rechargeable battery is available as a spare part from GHL.

12 Disclaimer of liability

The manufacturer excludes liability for any (consequential) damages or charges caused by the use of this device.