



iks SMS Controller

Operating Manual



iks SMS Controller

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1. Versions

1.1. Operating manual

Version number	Author	Amendments
0.18.0	J. Kiefer	First version
0.19.0	J. Kiefer	Revised second version
0.19.1	J. Kiefer	„Time or Interval“; incompatible mobile phones
0.19.2	J. Kiefer	Upgrade of the fault table
0.22.3	J. Kiefer	Appendix A

1.2. SMS Controller Firmware

Versionsnummer	Autor	Veränderungen
00.18	J. Kiefer et al.	First version
00.19	J. Kiefer et al.	Second version
00.22	J. Kiefer et al.	(see Appendix A)

1.3. Software „SMS Controller Configurator“

Versionsnummer	Autor	Veränderungen
1.18.0	J. Kiefer	First version
1.18.1	J. Kiefer	Blank configuration lines
1.18.2	J. Kiefer	multilingual (DE-EN-IT)

2. Preliminary remarks

2.1. General

Thank you for choosing the SMS Controller.

This Operating Manual will provide you with all you need to know about operating the SMS Controller. Please read the manual very carefully to avoid operating errors and to make the most of your SMS Controller.

2.2. Explanation of symbols



Warning of possible safety risks.








Indication of important procedure information and advice.

2.3. Included components

Item	Number
SMS Controller basic unit	1
Power lead with AC/DC adapter with green control LED: FP Switching Power Supply Model: SAW12-05-1500; AC 100-240 V 50/60 Hz 300 mA	1
Serial data lead with 9-pole Sub-D plug /jack, 2 metres (Order No.: 3011)	1
Configuration plug, 9-pole Sub-D jack (grey or black)	1
iks aquastar data lead (Order No.: 3000)	1
Installation CD to install SMS-Controller Configurator software	1
Jumpers for the function of the 4 digital inputs	8
Socket panels (screw-on) for connection to the digital inputs	4
This Operating Manual	1

2.4. Technical data

Electrical parameters	
Power supply	DC 5 – 5.5 Volt
Current consumption approx.	150 mA
Storage battery	
4.7 V; 78 mAh ; Gold cap electrolytic condenser 1F	
Operating duration (to send up to 5 messages in the case of power failure)	approx. 3 s
Charging duration	Minimum 120 s
Interfaces	
 Sub-D 9-pin female (serial port of Personal Computer during configuration of the SMS Controller or aquastar data enquiry.	RS232 (RxD,TxD, GND) 9.6 kB / s
 Sub-D 9-pin male (for connection of iks aquastar or configuration plug during SMS Controller configuration process)	RS232 (RxD,TxD, GND-EXT) 9.6 kB / s
Com 1 and Com 2 form an electrically isolated interface between the iks aquastar and the PC	RxD,TxD, GN D
 Sub-D 9-pin male (for connection of the iks data/charge box for suitable Siemens mobile phones or a data lead for suitable mobile phones ¹⁾)	RS232 (RxD, TxD, RTS,CTS,DTR,GND) 19.6 kB / s
 Mini DIN 4-pole	Power supply connection
 Mini DIN 6-pole	iks external display
4 digital inputs via pin bars (to the right of power supply connection); configuration via jumpers	maker / breaker / 12 Volt / 5 Volt

¹ The mobile phone involved must possess an internal modem able to process AT commands at a serial data transfer rate of 19.6 kB/s.

Display	
LED status display (operating mode display)	green - yellow - red
4 LED displays (status display for the 4 digital inputs)	Yellow respectively off
Ambient temperature	
With power supply	5 °C to +40°C
Storage temperature	0°C to +50°C
General	
Dimensions in millimetres (L x W x H)	187 x 92 x 38
Weight	258 g
Fixing boreholes: diameter, distance apart (H x W) [mm]	4 ; 70.5 x 175
Accessories (not included)	iks Order Number
iks data/charge box (for connection and simultaneous charging of an appropriate Siemens mobile phone)	1016
Sub-D extension cable, 2 5 or 10 m (to extend the connection lead of the data/charge box or an appropriate data lead for mobile telephones; connection lead between PC and Com1 of SMS controller).	3011, 3012, 3013

3. Safety



To ensure safe and fault-free operation of the mobile phone used in conjunction with the SMS Controller please observe the safety instructions given in the operating manual of the mobile phone involved.

4. Technical Description

4.1. Structure and brief description

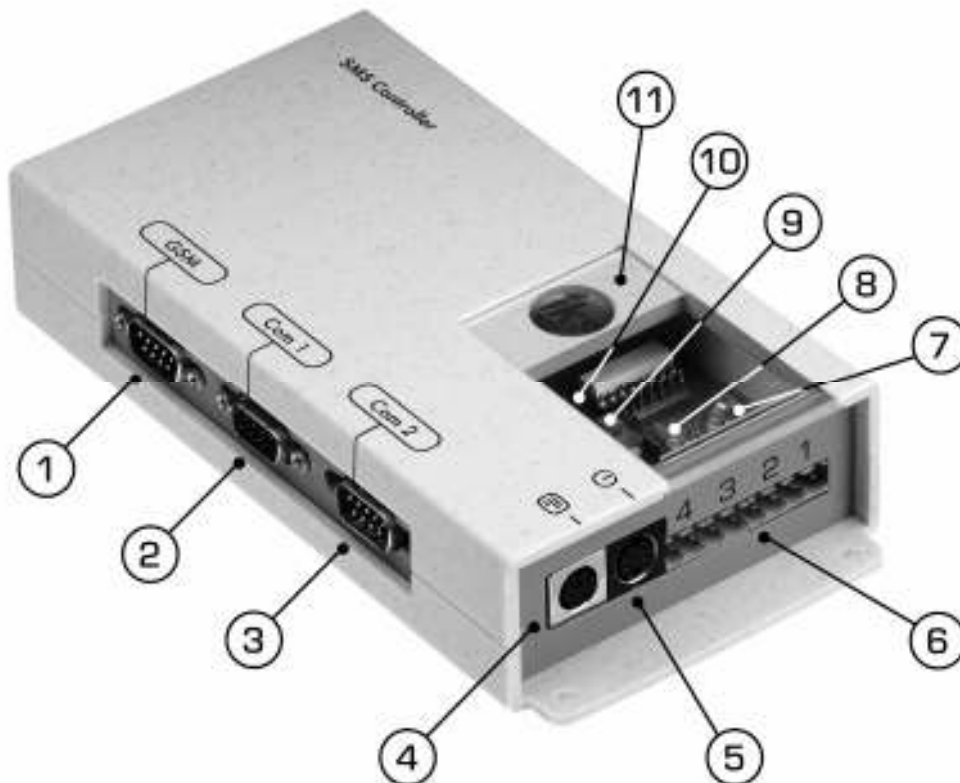


Fig. 1: iks SMS Controller

- | | |
|---|----------------------|
| ① Mobile phone jack (GSM) | ⑦ Jumpers |
| ② PC port (Com 1) | ⑧ LED displays |
| ③ iks aquastar or configuration plug socket (Com 2) | ⑨ Reset key |
| ④ External display jack | ⑩ LED status display |
| ⑤ Power supply jack | 11 Window |
| ⑥ Digital inputs 1 to 4 | |

Using the iks SMS Controller, which can be connected to the iks aquastar and iks aquastar midi measuring and regulation systems, in conjunction with a GSM mobile telephone ², readings such as pH, °C, mV, O₂, mS, Rx, mbar and fill-level can be sent daily and worldwide ³ by SMS (Short Message Service) to a mobile telephone or **fax machine** ⁴.

Remote alarms can also be triggered by SMS and remote enquiry carried out by telephone call.

The following functions are available after connection and configuration of the SMS Controller:

Daily reporting:

- Messages several times daily of current sensor values (daily info)

Remote alarm:

- Alarm activated when corresponding threshold values are reached (alarm)
- Alarm activated as a result of SMS Controller power failure (power failure)
- Alarm activated by iks aquastar remaining in operating mode (no control)
- Alarm activated through a system fault or iks aquastar power failure (fault)
- Alarm activated by switch contact at Digital Input 1 (input 1)
- Alarm activated by switch contact at Digital Input 2 (input 2)
- Alarm activated by switch contact at Digital Input 3 (input 3)
- Alarm activated by switch contact at Digital Input 4 (input 4)

Remote enquiry:

- Information on current sensor values in response to telephone call of a SMS compatible mobile phone or a fixed network telephone (call info)

The "GSM" serial port is connected to the mobile telephone via the data/charge box. The "Com 2" serial port is connected to the iks aquastar via the iks aquastar data lead. An iks external display unit can be connected using the "External Display" socket.

The SMS Controller is powered via the power input socket.

Following a power failure the internal storage battery permits a maximum period of operation of 5 seconds ⁵ with a minimum charging duration of 2 minutes. This is sufficient to send 4 – 5 SMS alarm messages in the case of power failure (e. g. SMS sent to 4 – 5 different call numbers in case of power

² The mobile phone must possess an internal modem able to process AT commands at a serial data transfer rate of 19.6 kB/s.

³ Depending on the area covered by the various mobile phone network providers

⁴ Up to now iks has only successfully tested the function "SMS to fax" in Germany with D1 and D2. More up-to-date information on the "SMS to fax" function provided by other mobile phone network operators (also outside Germany) can be found on our website and in the appendix of this Operating Manual.

⁵ When an iks data/charge box is used. If a standard data lead for mobile telephones is used, we cannot guarantee sufficient operating time to send an SMS message after a power failure.

failure). The storage battery is only charged via the AC/DC adapter when connected to a power supply.

The LED status display informs you of the current operating mode of the SMS Controller. The 4 yellow LED lights indicate the respective switching status of the switch contacts connected at digital inputs 1 to 4. The relevant LED lights up as soon as the switch is closed and does not do so when the switch is open.

The “SMS Controller Configurator” software on the included “iks SMS Controller” installation CD is required to configure the SMS Controller (sending alarm or fault messages by SMS).

5. Start-up

5.1. Pre-installation for configuration of SMS Controller

Before SMS messages can be configured using the supplied program “SMS Controller Configurator”, install the SMS Controller as follows:

1. End Microsoft Windows 98 SE, Windows 2000 with Service Pack 4 or Windows XP and switch the computer off.
2. Connect the serial data lead to the computer's 9-pole serial port 1 or 2 (depending on available COM-ports). Connect the other end of the data lead to the SMS Controller's **Com 1** serial port.
3. Insert the black configuration plug into the **Com 2** serial port on the SMS Controller.
4. Connect the mains cable to the SMS Controller power supply socket and connect the power supply via the AC/DC adapter. The LED status display then flashes successively yellow – green – red, and then changes to a constant green. The SMS Controller does not possess an on/off switch. Start the computer (PC) .

5.2. “SMS Controller Configurator” program installation

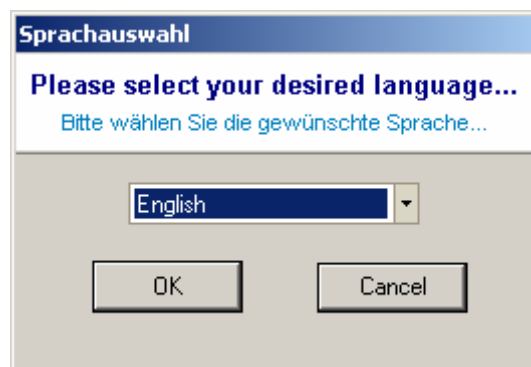
5.2.1. Minimum system requirements

- Intel Pentium or AMD processor, 133 MHz minimum
- At least 32 MB RAM
- Microsoft Windows 98 SE, Windows 2000 with Service Pack 4 minimum, Windows XP
- 1 free serial port

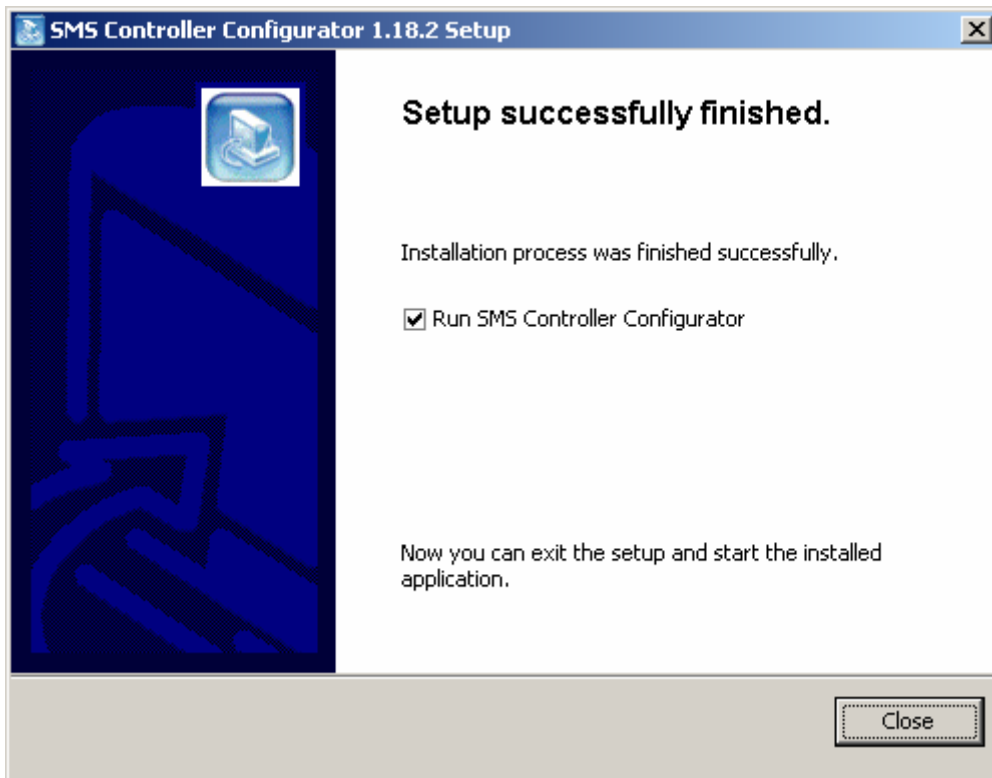
Please check the computer hardware requirements before installing the software.

Now install the “SMS Controller Configurator” configuration user software for the SMS Controller.

1. Close all open applications.
2. If you installed the version 1.18.0 or 1.18.1 before, uninstall these first.
Instruction: Start – Settings – System – Software - iks SMS Controller Configurator - "remove"
3. Possibly delete the directory “C:\Programme\SMSControllerConfigurator”
4. Insert the installation CD into the CD drive. Double-click setupSMSControllerEN.exe in the file folder English\SMSController\SmsControllerConfiguratorV1.18.2
5. Select the desired language and follow the instructions at the screen.



....



6. When the individual files have been copied, iks SMS Controller 1.18.2 set-up can be successfully concluded. Click the **[Close]** button

When the user software for the SMS Controller has been successfully installed, the program symbol

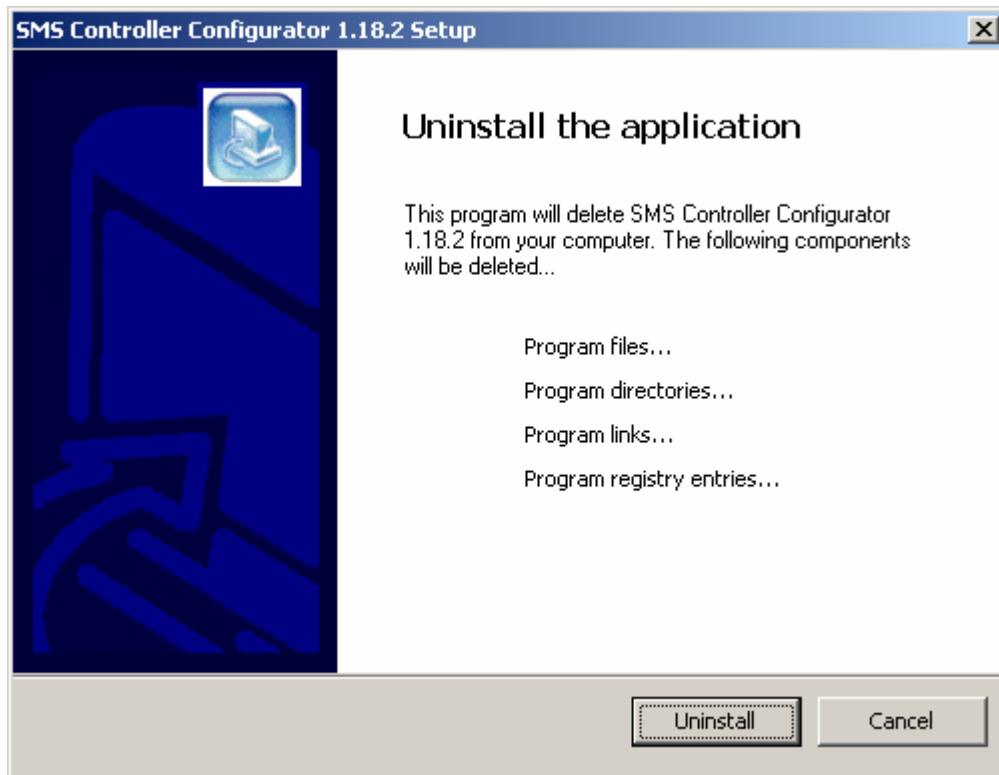


appears under "Start -> Programs -> SMS Controller"

5.3. Uninstall “SMS Controller Configurator”

To uninstall the SMS Controller Configurator you proceed as follows :

Instruction: Start – Programs - SMS Controller – Click „Unst“



Press the operating knob "Uninstall" and the SMS Controller Configurator are uninstalled.

5.4. Configuration with “SMS Controller Configurator”

1. Start the configuration program “SMS Controller Configurator V1.18.2” under “Start → Programs -> SMS Controller”. The following program window appears:



7. Select a suitable language The following program window appears:

iks SMS Controller Configurator V1.18.2

File Configuration . . . ?

SMS controller firmware version : ?? . ??

Configure SMS message PC Com interface : 3

No.	Call number	Number of message centre	SMS message text	Cause	Digital Input	Time or Interval
2				Off	None	hours 0 min. 0

SMS message to configuration table Submit

SMS message from configuration table Delete

Configuration table

No.	Call number	Number of message centre	SMS message text	Cause	Digital Input	Time [hh:mm]	No.
1				Off	None	00:00	1
2				Off	None	00:00	2
3				Off	None	00:00	3
4				Off	None	00:00	4
5				Off	None	00:00	5
6				Off	None	00:00	6
7				Off	None	00:00	7
8				Off	None	00:00	8
9				Off	None	00:00	9
10				Off	None	00:00	10
11				Off	None	00:00	11
12				Off	None	00:00	12
13				Off	None	00:00	13
14				Off	None	00:00	14
15				Off	None	00:00	15
16				Off	None	00:00	16
17				Off	None	00:00	17
18				Off	None	00:00	18
19				Off	None	00:00	19
20				Off	None	00:00	20

25.04.2005 11:17:25

2. Check that the SMS Controller LED status display shows constant green. If not, please refer to Chapter 8.1 "Fault table" to rectify the problem. Ensure that the SMS Controller is connected correctly in accordance with Chapter 5.1 "**Pre-installation for configuration of SMS Controller**".



First select the appropriate PC Com interface connecting your computer with the SMS Controller.

3. In the pull-down menu "?" select the item "Read SMS Controller Version". The Firmware Version is then selected and appears with the progress display in the status line "The SMS Controller is busy". At the same time the LED status display flashes yellow.

iks SMS Controller Configurator V1.18.2

File Configuration... ?

Information about SMS Configurator ...
Read SMS Controller Version
Language

firmware version : 00.22

Configure SMS message : 3

No. Call number Number of message centre SMS message text Cause Digital Input Time or Interval

2 [] [] [] Off None hours 0 min. 0

SMS message to configuration table SMS message from configuration table

Submit Delete

Configuration table

No.	Call number	Number of message centre	SMS message text	Cause	Digital Input	Time [hh:mm]	No.
1				Off	None	00:00	1
2				Off	None	00:00	2
3				Off	None	00:00	3
4				Off	None	00:00	4
5				Off	None	00:00	5
6				Off	None	00:00	6
7				Off	None	00:00	7
8				Off	None	00:00	8
9				Off	None	00:00	9
10				Off	None	00:00	10
11				Off	None	00:00	11
12				Off	None	00:00	12
13				Off	None	00:00	13
14				Off	None	00:00	14
15				Off	None	00:00	15
16				Off	None	00:00	16
17				Off	None	00:00	17
18				Off	None	00:00	18
19				Off	None	00:00	19
20				Off	None	00:00	20

25.04.2005 11:48:40

4. At the time this manual went to press the SMS Controller Firmware Version was 00.22 .
5. Before configuring one or more SMS messages in the program, there are some details you should know about the user interface:



Configuration table:

You can configure up to 30 different SMS messages. These are displayed **clearly** in the configuration table. The number of the SMS message to be configured can be selected in the table by clicking on the appropriate line. The SMS message cannot be edited here, however. The selected no. of the SMS message is displayed higher up at "Configure SMS message" where it can be edited.



Configure SMS message:

The parameters of the individual SMS messages are entered in the white frames. These are call number, number of the message centre, SMS message text, reason for the SMS message, digital input and time or interval. The individual parameters are explained later on. Please note that you should always begin with No. 1.



"Submit" SMS message to configuration table:

When you have finished configuring an SMS message it must be transferred to the configuration table. This is done by pressing the **"Submit"** button. Pressing this button simultaneously causes the SMS message with the next-highest number to be displayed for editing. Should you wish to switch back to a previous SMS message, click on the appropriate line in the configuration table. **Please take care to edit the desired SMS message with the suitable number and to transfer it to the table.**

**“Delete” SMS message from configuration table :**

Should you wish to delete the configuration of an SMS message, click on the line of the SMS message concerned in the configuration table and press the **“Delete”** button. The entry is then deleted from the table. To be on the safe side, pressing this button does not automatically cause the SMS message with the next-highest number to appear. If you wish to delete several consecutive SMS messages, you must first select the appropriate line in the configuration table and then press **“Delete”**.

**Save SMS message configuration in file:**

Finished configurations may be saved on the computer under pull-down menu **“File – Save under...”** in a configuration file with file extension *.cfg.



“Open” SMS message configuration file: Configurations saved on the computer can be opened under pull-down menu **“File – Open ...”**.

**Submit configuration to SMS Controller:**

Finished configurations can be loaded in the SMS Controller under the pull-down menu **“Submit configuration ... to SMS Controller”**. There is no check that the SMS message is correct.

**Load configuration from SMS Controller:**

The configuration saved in the SMS Controller can be loaded in the configuration table under the pull-down menu **“Load configuration ... from SMS Controller ”**.

6. In the white frames for an SMS message under **“Configure SMS message”** you can now determine **to whom, what, why** and **how long** SMS notification is to be sent.

Rapid configuration of remote alarm and remote enquiry:

Should you wish to set up a simple remote alarm and simple remote enquiry configuration, make your entries as shown in the example below and transfer the configuration to the SMS Controller. Now all that remains is to install it in accordance with the instructions in **Chapter 5.5 “Installation for standard SMS Controller operation”**. And that's it!

iks SMS Controller Configurator V1.18.2

File Configuration . . . ?

SMS controller firmware version : 00.22

Configure SMS message PC Com interface : 3

No.	Call number	Number of message centre	SMS message text	Cause	Digital Input	Time or Interval
3	+491756602455		remote enquiry	Call Info	None	hours 0 min. 0

SMS message to configuration table SMS message from configuration table

Configuration table

No.	Call number	Number of message centre	SMS message text	Cause	Digital Input	Time [hh:mm]	No.
1				Off	None	00:00	1
2	+491756602455		remote alarm	Alarm	None	00:00	2
3	+491756602455		remote enquiry	Call Info	None	00:00	3

Who ? (telephone number)

Enter the mobile phone number or fax number of the person who is to be notified, e.g. your own, your partner's or perhaps the number of a local dealer. Be sure to enter the number with the international dialling code in the following form:

+497202941140 (+49 for Germany, omit the “0” in the local dialling code!)

+491756602455 (+49 for Germany, omit the “0” in the number of the mobile phone network provider (0175)!)



The call recipient's international dialling code is indispensable if the SMS Controller is to react to a **confirmation call** from the recipient (receipt confirmation). For the mobile phone service “SMS to fax” the international dialling code must not be given in the case of German mobile telephone network providers. An acknowledgement call as confirmation of receipt is therefore not possible for an SMS to fax message. Further special aspects apply for the mobile telephone service “SMS to fax” and are to be found in the Chapter “Information on cellular service “SMS to fax”.

Message Centre Number (SMS centre number)

The call number of the service centre can be obtained from your mobile phone network provider. Please check that you have been notified of the correct SMS centre number if you have a mobile phone contract with free SMS. If the correct number is stored on your mobile phone's SIM card, you do not need to make an entry here.

Exception: Should you wish to send an SMS-to-fax message to a fax machine within Germany, you must specify a suitable number for the message centre in the user program if your network provider is D2-vodafone. The SMS centre number stored on the SIM card is not replaced when this number is used. The SMS centre numbers for SMS-to-fax for D2-vodafone are listed in the Chapter “Summary of message centre numbers for SMS to fax messages”.

What ? (SMS message text)

Here you can enter a text for an SMS message. The text should refer to the cause (Why?) to enable you to identify the reason why the SMS message you have received was sent.



For our customers in Switzerland (swisscom mobile):

Should you wish to send an SMS message as a fax, simply enter *FAX# before your text and send the SMS to the desired fax number. Always enter the local dialling code. More information on this point can be found on the Internet at: <http://www.swisscom-mobile.ch/sp/GDAAAAAA-de.html> or in the appendix to this Operating Manual.

Why? (Cause)

Here, select the physical reason for the SMS message being sent:

- Alarm:** An SMS message is sent if an alarm value of a setting on the iks aquastar is reached. The SMS text automatically contains the current values recorded by all connected sensors. The sensor values are represented in the same format as you are accustomed to from your external display unit. The sensor value which triggered the alarm is represented with an asterisk in brackets. Example: (Te*). **Consider also the reference in the appendix A !**
- No control:** An SMS is dispatched if no keys are pressed on the iks aquastar within 7 minutes while it is in operating mode,. This function prevents you unintentionally leaving the iks aquastar unattended in operating mode for a significant period. If you want to leave the iks aquastar in operating mode for some time without an SMS message being sent informing you of the problem, simply remove the serial lead from the SMS Controller "GSM" jack. Do not forget to reconnect the lead at a suitable point in time.

ℓ This function only applies for iks aquastar Firmware Versions from 2.20 on and from 2.2 for iks aquastar midi.

- Daily info:** By means of the entry of a time in the "Time or Interval" frame you can determine the time when a daily SMS message is sent with the current sensor values. The stated time refers to the time on the iks aquastar. The sensor values are represented in the same format as you are accustomed to from your external display unit.

ℓ If 8 sensors are connected to the iks aquastar, and "Display duration of external display" is set at 4 seconds in the menu "Value settings – display", under certain circumstances the iks aquastar may not issue the current time to the serial interface every minute. For this reason, an SMS message with the cause "Daily info" is also sent ONCE if the current time lies within the 12-hour period AFTER the time entry in the frame "Time or Interval". If you have configured this cause, you should therefore only switch on the SMS Controller if required during this 12-hour period with the serial lead disconnected from the SMS Controller's "GSM" jack. As soon as the SMS Controller is switched on and is in operating mode you can reconnect the serial lead. When the procedure is reversed the configuration can be used to perform an SMS Controller function test during the above 12-hour period. An SMS message will then be sent with the "Daily info" when the unit is switched on.

- **Call info:** Select this cause if you wish to use your mobile phone to perform a remote enquiry of the current sensor values when you are away from home. In a normal situation, when a call is made from your “mobile” cellular phone its number will appear in the display of the cellular phone called (in this case the stationary cellular phone connected to the SMS Controller); this depends on the network provider of the phone which is called. The call number display function **must not be suppressed** on your mobile phone unit.



Enter the number of the mobile cellular phone in the “Call number” frame in the form +491756602455. (+49 for Germany, and remember to omit the “0” in the number of the mobile phone network provider (0175))

- **Input 1:** Select this cause if you have connected a potential-free switch contact as a maker or breaker at Digital Input 1.
- **Input 2:** Select this cause if you have connected a potential-free switch contact as a maker or breaker at Digital Input 2.
- **Input 3:** Select this cause if you have connected a potential-free switch contact as a maker or breaker at Digital Input 3.
- **Input 4:** Select this cause if you have connected a potential-free switch contact as a maker or breaker at Digital Input 4.



The switch contacts (makers/breakers) can be connected to the respective digital inputs via the 4 socket panels supplied. You can obtain more information about connection options regarding the 4 digital inputs on the Internet at our website: <http://www.iks-aqua.com>

- **Fault :** Select this cause if an SMS message should be sent in the case of an iks aquastar system fault. An SMS message is also sent if the iks aquastar is switched off or the serial connection between the iks aquastar (PC port) and the SMS Controller (port Com 2) is interrupted.



If the iks aquastar is accidentally switched off or the connection unintentionally interrupted the “Fault” cause does not immediately trigger an SMS message. An SMS notification is only sent after at least 7 minutes have passed. **Note:** If your aquarium’s electrical equipment is secured via 2 separate fuses for reasons of safety, you can obtain an SMS power failure warning by tripping one of the two fuses. This only works if iks aquastar and SMS Controller are not electronically secured via the same fuse (phase).

- **Power failure :** Select this cause if you wish to be informed of an SMS Controller power failure. In this case an SMS is dispatched **immediately** ⁶ if the power failure lasts longer than approx. 1 - 2 seconds. Very short power cuts of up to approx. 2 seconds are not detected when the original SMS Controller mains adapter is used.



Connect the SMS Controller to the same mains plug socket as your entire electrical aquarium equipment to be notified **immediately** in the case of a power failure. The internal storage battery permits a maximum operating time of 5 seconds ⁷ following a power failure. This is sufficient to send 4 – 5 configured SMS alarm messages should there be a power cut (e.g. SMS sent to 4 – 5 different numbers in the case of power failure).

⁶ We have no influence on any delays caused by the mobile phone network provider involved

⁷ When the iks data/charge box is used. If a standard data lead for mobile telephones is used, we cannot guarantee sufficient operating time to send an SMS message after a power failure.

Digital input

When you have configured an SMS message with cause **Input 1**, **Input 2**, **Input 3** or **Input 4**, enter the type of switch contact connected. The following are available:

- **Maker:** the SMS message configured is sent when the switch contact is made.
- **Breaker:** the SMS message configured is sent when the switch contact is broken.
- **Maker or breaker:** the configured SMS message is sent when the switch contact is made or broken. If the switch contact is made and then broken at short intervals, 2 SMS messages will be sent.



The 8 jumpers supplied are correctly positioned at the factory for making and breaking the 4 digital inputs.



When all 8 jumpers are fitted at the factory the digital inputs of the SMS Controller are not potential free. This means you must not connect any electrical voltages at the inputs. Information about the connection options involving d.c. voltages til 12 volt can be found on the Internet at our website: <http://www.iks-aqua.com>

How long? (Time or Interval)

An entry in the hour and minute frames has various meanings in connection with the different selection options for the cause of an SMS message being dispatched.

Cause:

- **“Power failure”, “Call info”:**

Time or interval entry is not possible here!

- **Repeated dispatch of an SMS message with receipt confirmation for “Alarm”, “No control”, “Input 1” to “Input 4”, “Fault”:**

If the hour and minute entries are left at “0”, a single SMS message is sent immediately should one of the previously-mentioned causes arise. In this case, receipt of the SMS message does **not** have to be acknowledged by the recipient by a return call.

Only in very few cases are dispatched SMS messages lost in the SMS centres of the mobile phone network providers. If you nevertheless wish to be on the safe side, stipulate an interval period in the “Minutes” and/or “Hours” frames. The SMS message concerned will then be sent to the telephone number entered as many as five times separated by the interval specified. This sequence of SMS messages can be interrupted and terminated if the recipient makes a return call (with the number specified). To do this the call number display on your mobile phone unit must **not be suppressed**. When making the return call, 3 to 4 dialling tones are sufficient to interrupt the SMS message sequence.



The SMS text of messages 2, 3, 4 and 5 of a sequence differs from the first message through the addition of an asterisk “*” at the end of the text concerned.



If dispatched SMS messages 1, 2, 3 and 4 of a sequence are not acknowledged the LED code for operating mode “Message dispatch imminent” appears on the LED status display of the SMS Controller.

- **Specification of time in “Daily info”:**

At the time specified in hours and minutes (24-hour format) a single SMS message with the current sensor values is sent to the telephone number entered in the “Call number” frame. Confirmation of receipt by return call is not required. See also “Daily info” in previous section “Why? (Cause)”



Note: Should you wish to be notified automatically twice per day of your aquarium's current sensor values, simply configure 2 SMS messages with the dispatch reason “Daily info”, but with differing time specifications.

7. You have the option of configuring up to 30 different SMS messages. You may, for instance, configure 4 SMS messages with the same cause, but to be sent to four different call numbers. The possibilities are boundless.

8. Have you completed the required SMS messages in full? You can use the clear configuration table to check again that you haven't forgotten any important entries.



The user program can draw your attention to some wrong entries in the frames “**Call number**” and “**Message centre no.**”. The user program is not able to draw attention to wrong entries in the remaining frames.

9. You can load your finished configuration on the SMS Controller under the pull-down menu “Submit configuration ... to SMS Controller.”. The status line indicates to what percentage the data has been submitted to the SMS Controller. During the submission process the SMS Controller is in configuration mode. At the same time the LED status display **flashes yellow**. When the data has been transferred, the SMS Controller remains occupied for a further 5 seconds.

10. Your finished configuration can be saved on the computer under pull-down menu “File – save as...” using a configuration file with file name extension *.cfg

11. The configuration in the SMS Controller can be loaded in the user program's configuration table under pull-down menu “Load configuration ... from SMS Controller “.



This replaces the current entries in the configuration table.

12. When you have configured the SMS Controller you have to install it as described in **Chapter 5.4 “Installation for standard SMS Controller operation”**.

5.5. Installation for standard SMS Controller operation

The computer (PC) is not required for standard SMS Controller operation. For standard operation the SMS Controller is installed as follows:

1. Cut the SMS Controller's power supply via the AC/DC adapter.(Disconnect the mains plug)
2. End Microsoft Windows 98 SE, Windows 2000 with Service Pack 4 or Windows XP and switch the computer off.
3. Disconnect the serial data lead from the computer's 9-pole serial ports 1 or 2 (depending on COM sockets available). Disconnect the other end of the data lead from the SMS Controller's **Com 1** serial port.
4. Disconnect the black configuration plug from the SMS Controller's **Com 2** serial port.
5. The SMS Controller should now only be connected to the power supply lead at the power supply jack.
6. Connect the data/charge box plug at the appropriate small jack on the bottom of your mobile telephone ⁸.
7. Connect the plug of the charger supplied with your mobile phone to the appropriate jack on the data/charge box.
8. Switch your mobile telephone on.
9. Plug the charging unit into a mains plug socket (do not exceed the specified voltage).The charging status indication in the mobile telephone's display now begins to change. The charger becomes warm after a while. ⁹
10. Switch your iks aquastar off. Connect the round end of the iks aquastar data lead to your iks aquastar's "PC" jack. Connect the other end of the data lead to the SMS Controller's **Com 2** serial port, using a screwdriver to make the securing-screws finger-tight. Switch your iks aquastar on. Start the iks aquastar's working mode (control mode).
11. Connect the serial data lead to the 9-pole serial port of the data/charge box, using a screwdriver to make the securing-screws finger-tight. Connect the other end of the data lead to the SMS Controller's **GSM** serial port, again using a screwdriver to make the securing-screws finger-tight.
12. Connect the SMS Controller to the power supply via the AC/DC adapter.
13. As soon as the SMS Controller is supplied with power the LED status display consecutively flashes yellow – green – red and then switches to a constant green.



If you have configured an SMS message with the cause "Daily info" in the configuration program, an SMS message may be dispatched, depending on the iks aquastar's current time. To avoid this SMS message being sent, you should carry out the procedure described in section 12 **before** Point 11!

The SMS Controller is now ready for operation, the LED status display remaining a constant green for standard operation. While an SMS message is being sent the LED status display briefly flashes red. If at least one SMS message (with specification of the time interval) is about to be sent or has not yet been acknowledged, the LED status display flashes alternately red – green.

⁸ The data/charge box plug fits mobile phone models Siemens S25, C35, C35i, M35i S35i,C45,ME45,S45,SL42, SL45. A data/charge box for Siemens mobile phone models M55,S55,SL55, MC60,SX1 and U1 is planned.

⁹ Please see the information supplied in the operating manual of your mobile telephone in the Chapter "Start-up – charge storage battery"

5.6. SMS Controller function test

When setting up the SMS Controller a message should always be configured with the cause "Alarm". If you have set temperature regulation on your aquastar you can test the functioning of the SMS Controller very simply. Disconnect the BNC plug of the appropriate temperature sensor at the converter. The 50°C temperature now simulated should exceed the alarm value threshold you have set. Observe the SMS Controller's LED status display after disconnection of the BNC plug. Within approx. 3 to 36 seconds this should **briefly** light up **red** and then return to constant green. The appropriate SMS message will have been sent with the cause "Alarm" and will arrive in a few seconds on your second mobile telephone with the call number specified in the configuration program.



The period of time that passes before an SMS message is sent with the cause "Alarm" depends on the number of sensors connected and "Duration of external display" in the menu "Measurement settings – display" of your iks aquastar. In extreme cases the period can be as long as 36 seconds.



Should the function test fail, please refer to Chapter 7 "SMS Controller troubleshooting" to identify the cause of the fault.



The LED status display informs you of the SMS Controller's various operating modes. These are to be found in Chapter 8.2 "Status display LED codes".

6. Guarantee

The product is guaranteed for 2 years from the invoice date. It covers defects in materials and manufacturing faults.

We guarantee the supplied product corresponds with the specifications and that the product has no apparent faults in materials or construction. We accept no liability for the correctness of the operating instructions. Neither do we accept any liability for damage of any kind caused by incorrect operation or location or environment unsuitable for the instrument. Furthermore, where legally permitted, we accept no liability for direct damage, indirect damage, subsequent damage nor damage to third parties. We do not guarantee that the product package meets the purchaser's demands. The guarantee is void if the supplied original product is damaged or altered in any way.

7. SMS Controller troubleshooting

7.1. Fault identification procedure

You have now correctly configured the iks SMS Controller with the aid of the "SMS Controller Configurator" to suit your requirements. Has a fault nevertheless arisen while sending an SMS message or has an SMS message failed to be sent at all? This may be due to an equipment failure or the individual units may not be properly connected with each other. Please proceed as follows in order to identify the fault. Should a fault arise please refer to the Chapter 8.1 "Fault table" in this manual.

7.1.1. Disconnecting leads and mains plug

1. Disconnect the serial data lead from the SMS Controller's **GSM** port.
2. Cut the power supply to the SMS Controller via the AC/DC adapter (pull out the power plug). Cut the power supply to the mobile telephone (pull out the power plug).
3. Disconnect all connection leads from the SMS Controller, from the data/charge box and from the mobile telephone.

7.1.2. Connection steps observing LED status display

1. Connect the data/charge box plug using the small jack at the bottom of your mobile phone.
2. Connect the plug of the charging unit supplied with your mobile phone to the appropriate jack on the data/charge box.
3. Switch on your mobile phone, entering the PIN number if required.
4. Plug the charging unit into a mains plug socket (do not exceed the specified voltage).¹⁰

The charging status indicated in your mobile phone's display now begins to change.

5. Connect the mains power lead to the power jack of the SMS Controller and supply power via the AC/DC adapter. Press the Reset key on the SMS Controller.

¹⁰ Please refer to the information provided in the operating manual of your mobile telephone in the Chapter "Start-up – charge storage battery"

After 2-3 seconds the LED status display lights up a constant green!

6. Check that your iks aquastar is switched on and is in working mode (control mode). Connect the round end of the iks aquastar data lead to your iks aquastar's "PC" jack. Connect the other end of the data lead to the SMS Controller's **Com 2** serial port.

After 3 to 36 seconds the LED status display repeatedly and briefly flashes red, remaining a constant green between the short red flashes! This indicates that the SMS Controller is recording the iks aquastar's current sensor data. It also indicates that the SMS Controller is attempting to initialise a mobile telephone connected at the "GSM" interface after every complete sensor data batch. The repeated appearance of a briefly flashing red LED status signal shows that this is not succeeding at that particular moment.

7. Connect the serial data lead to the 9-pole serial port of the data/charge box. Connect the other end of the data lead to the SMS Controller's **GSM** port.

The LED status display must now light up a constant green and must not flash red within 3 to 36 seconds! This indicates that the SMS Controller is able to exchange data with the mobile telephone.

If you have successfully carried out the seven steps described above without a fault arising, your SMS Controller is ready for operation.

8. Miscellaneous























8.1. Fault table

The table below will assist you in solving any problems which might arise when using the iks SMS Controller.

Problem	Cause	Solution
LED status display does not light up.	<ul style="list-style-type: none"> Mains adapter is not connected Power cable not connected to SMS Controller power supply jack. 	<ul style="list-style-type: none"> Connect mains adapter (AC/DC adapter). Connect power cable to SMS Controller power jack
Mains adapter LED (AC/DC adapter) does not light up.	<ul style="list-style-type: none"> Mains adapter is not connected Mains power point not supplied with voltage. 	<ul style="list-style-type: none"> Connect mains adapter (AC/DC adapter). Provide mains power point with voltage.
After Step 4: Mobile phone charging display does not change.	<ul style="list-style-type: none"> Mobile telephone storage battery is already fully charged. No connection between mobile phone mains adapter, data/charge box and mobile phone Data/charge box defective 	<ul style="list-style-type: none"> Charging display indicates 100 % Make connection Call iks Hotline
After Step 5: LED status display is not a constant green, but flashes light and dark green.	<ul style="list-style-type: none"> Content of non-volatile memory (EEPROM) invalid 	<ul style="list-style-type: none"> Open "empty.cfg" file in "SMS Controller Configurator" user software, submit configuration to SMS Controller and then press Reset key.
After Step 6: LED status display does not briefly flash red.	<ul style="list-style-type: none"> iks aquastar not in control mode SMS Controller not connected with iks aquastar Serial interface of iks aquastar or SMS Controller (Com2) defective 	<ul style="list-style-type: none"> Switch iks aquastar to control mode Connect SMS Controller with iks aquastar. Call iks Hotline

After Step 7: LED status display briefly flashes red	<ul style="list-style-type: none"> No connection between mobile phone and SMS Controller (GSM) Serial data lead or data/charge box defective. SMS Controller (GSM) interface or mobile phone interface defective Mobile phone used cannot process AT commands at serial transfer rate of 19.6 kB/s. The Siemens mobile phone involved does not use GSM mobile phone standard GSM 07.07 	<ul style="list-style-type: none"> Use data/charge box or suitable data lead to connect mobile phone and SMS Controller. Replace serial data lead or data/charge box. Call iks Hotline Use Siemens mobile phone model S25, C35i, M35i, S35i. Call iks Hotline specifying mobile phone used.
LED status display lights up constant yellow.	<ul style="list-style-type: none"> SMS Controller in incorrect configuration mode status 	<ul style="list-style-type: none"> Remove mains cable from the power supply jack for approx. 10 minutes until the storage battery is unloaded. Briefly press reset key under the viewing window. Close viewing window.
My SMS message does not arrive.	<ul style="list-style-type: none"> Poor signal strength (Check mobile phone display) SMS Service Centre is overloaded 	<ul style="list-style-type: none"> Move to a location with better signal strength Receipt of SMS message significantly delayed.
"SMS Controller Configurator" reports "Connecting error"	<ul style="list-style-type: none"> No serial connection PC - SMS Controller Wrong connection to SMS Controller Configuration-plug not inserted. Wrong PC Com interface selected in user program. 	<ul style="list-style-type: none"> Make serial connection PC - SMS Controller Connect PC to Com 1 of SMS Controller Insert configuration-plug on Com 2 of SMS Controller. Select correct PC Com interface in user program.
"alarm" SMS or "call info" SMS functions, however" configured "daily info" SMS is not sent.	<ul style="list-style-type: none"> You made in the field "time/interval" no date not equal for 00:00 o'clock. After loading configuration to the SMS unit, you have not made a reset. 	<ul style="list-style-type: none"> Register in the field "time/interval" a time to not equal 0:00 o'clock. Press the reset key briefly after loading configuration to the SMS unit.

8.2. Status display LED codes

Operating mode	LED	Remarks
Standard mode	Green 	
Communication with mobile phone	Red 	Send SMS message or initialise mobile phone
Message dispatch imminent	Red-green     flashing alternately	If at least one SMS message (configured with interval) is ready for dispatch or has not yet been acknowledged. (Exception: Daily info)
Configuration mode	Yellow     flashing	User software "SMS Controller Configurator" active in configuration mode
Fault display	Red     Flashing briefly (number of flashing cycles = fault code)	Indication of fault in communication with mobile phone Fault code for SMS dispatch: 2 = mobile phone not ready 3 = no/negative response to SMS dispatch Initialisation of mobile phone: 1 = no/negative response from mobile phone
Fault display	Green         Light and dark green flashing alternately	Content of non-volatile memory (EEPROM) invalid. Open "empty.cfg" file in "SMS Controller Configurator" software, submit configuration to SMS Controller and then press Reset key

8.3. Mobile phones compatible with SMS Controller

Mobile phone: manufacturer, model	Data lead between SMS Controller and mobile phone	SMS Controller functions
Siemens S25,C35,C35i,M35i,S35i	iks data/charge box iks Order No. 1016	All functions: power supply and message a SMS at the same time, send up to 5 messages in the case of power failure.
Siemens M55,S55,SL55, MC60,SX1, U1	iks data/charge box (in planning)	All functions: (see above)
Bosch 909 Dual	Data lead available from retailers	Restricted: no simultaneous power supply and SMS-message; Text-message of SMS alarm messages during power failure not warranted; "call info" not possible.

8.4. Incompatible mobil phones

Mobile phone: manufacturer, model	Incompatible because....
Siemens A55 et al.	No built-in Data and FAX Modem
Siemens C45,ME45,S45,SL42, SL45	Due to different firmware designs on these mobile phones we do not recommend these models. An update of the SMS Controller firmware will make these models again compatible
Nokia 3310 et al.	It doesn't process modem AT-commands
Nokia of the series 61xx with integrated data fax modem	No availability of a iks data/charge box.

8.5. Information on mobile phone service “SMS to fax”

We accept no liability for the correctness and completeness of the following data. Further information is available on our website and is updated constantly.

8.5.1. Overview of SMS centres of German mobile phone network providers.

The following table contains a summary of the main mobile phone providers in Germany for dispatching SMS to fax messages within Germany ¹¹.

Land	Provider	Net	No. SMS Message Centre	Fax-Prefix	Fax Call Number Example	Fax Model
D	Vodafone D2	D2	+491722270333	99	99 07202 941141	Standard Fax German
D	Vodafone D2	D2	+491722270333	88 ¹²	88 07202 941141	Fax Ad German
D	T-Mobile	T-D1	+491710760000	99	99 07202 941141	Standard Fax German
D	T-Mobile	T-D1	+491710760000	98	98 07202 941141	Standard Fax English
D	E-Plus	E-Plus	+49 177 061 0000 +49 177 060 0000 +49 177 062 0000	1551	1551 07202 941141	Standard Fax
D	Viag Interkom	--	+49 176 0000 443	329	329 07202 941141	Standard Fax

8.5.2. Summary of SMS centres of Swiss mobile phone network providers.

Land	Provider	Net	No. SMS Message Centre	SMS Text for “SMS to Fax” Function	Fax Call Number Example
CH	Swisscom mobile	Swiss GSM	+41 79 499 900 0	*FAX#	“Dialling code” 567890
CH	Orange	Orange	+41 78 777 7070		“Dialling code” 567890
CH	TDC	sunrise	+41 76 598 0000		“Dialling code” 567890

¹¹ Information on costs for fax dispatch by SMS is provided by the respective mobile phone network provider

¹² This variant enables you to send SMS messages to fax machines in Germany even more cheaply. The printout of your fax message contains an advertisement.

8.6. Service

Should you have any questions concerning the operation of the SMS Controller please contact your local dealer or distributor.

For any questions regarding technical details or technical problems please first refer to Chapter 2.4 "Technical data" and Chapter 7 "SMS Controller troubleshooting" in this Operating Manual.

Further information is to be found at our website under FAQ (*Frequently Asked Questions*).

<http://www.iks-aqua.com/html/d/faq.htm>

Should you have any other questions, please contact iks ComputerSysteme GmbH.

We will be glad to answer your questions and receive any comments you may have with regard to this Operating Manual at our e-mail address: info@iks-aqua.com.

Contact **iks ComputerSysteme** GmbH Aquarientechnik via:

- **Internet address:** <http://www.iks-aqua.com>
- **E-mail :** info@iks-aqua.com
- **Telephone:** +49 (0) 72 02 / 94 11 40
- **Fax:** +49 (0) 72 02 / 94 11 41
- **Hotline:** +49 (0) 72 02 / 94 11 93

8.7. Notes

Appendix A

Changes in the SMS CONTROLLER firmware version 00.22.

1. At most 40 SMS per day for the causes "alarm", "no control", "error", "daily info".
2. A configured SMS with the cause "call info" is sent also if the call number of the calling will transfer in the national call number format.

e.g. : national : 01756602455

international : +491756602455

The call number in the configuration table must be registered however further in the international format. Concerning this matter, an error message in the SS Controller Configurator program version 1.18.2 appears.

Important note to the configuration of alarm SMS !

We guess to repeated dispatching of an alarm SMS message with a receipt confirmation. For this, you have to stipulate an interval period in the "Minutes" and/or "Hours" frames. The SMS message concerned will then be sent to the telephone number entered as many as five times separated by the interval specified. This sequence of SMS messages can be interrupted and terminated if the recipient makes a return call (with the number specified). To do this the display for call number on your mobile phone unit must not be suppressed. Also display for call number of your stationary phone unit must not be suppressed. This can occur with mobile phone network operators in individual cases. When making the return call, 3 to 4 dialling tones are sufficient to interrupt the SMS message sequence.