

***Multifunctional control and surveillance device  
GSM Sensor Control V1.7.31-E***



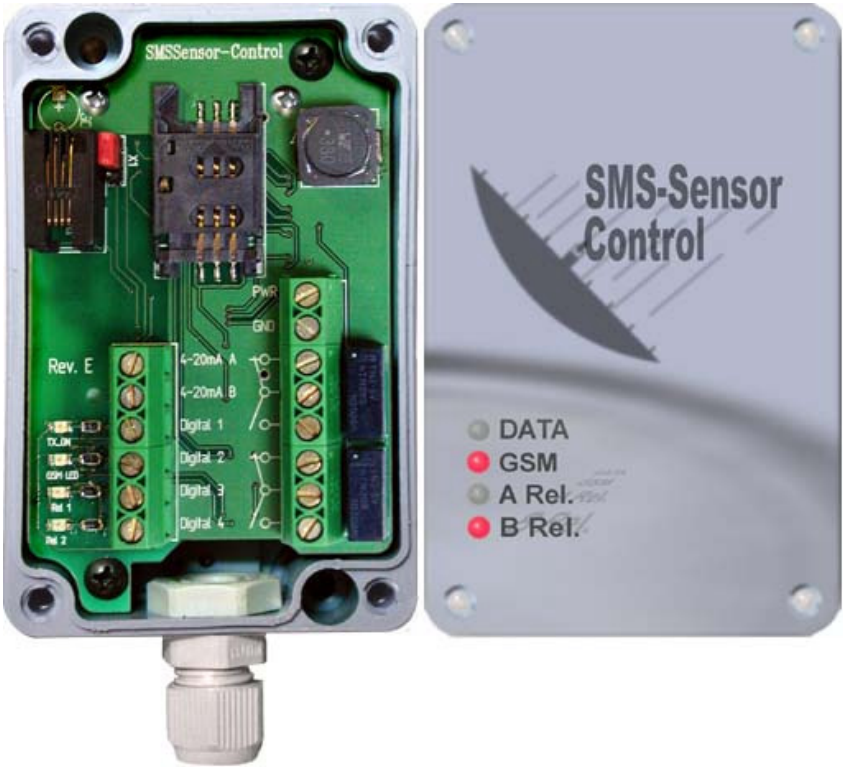
***Operating Manual***

Preliminary Operating Manual Rev. 20061031,  
details are subject to change without notice!

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# Contents:

	side
1. Safety notes .....	<b>3</b>
2. Warranties and software license .....	<b>4</b>
3. Using the device .....	<b>6</b>
3.1. Electrical connections and wiring .....	<b>7</b>
3.2. Plugging the SIM card .....	<b>9</b>
3.3. Installation of Software .....	<b>10</b>
3.4. Default SMS command quick reference .....	<b>10</b>
4. Using the software .....	<b>12</b>
4.1. System requirements .....	<b>12</b>
4.2. The main window .....	<b>13</b>
4.3. Defining a device name .....	<b>21</b>
4.4. Editing connector names and scales .....	<b>21</b>
4.5. Editing phone number list .....	<b>22</b>
4.6. Viewing current measurements .....	<b>23</b>
4.7. Editing SMS text .....	<b>23</b>
5. Technical data .....	<b>24</b>



## 1. Safety notes



# Attention!

- The MELTEC GSM Sensor Control Module and the software used thereby may not be used in applications, with which persons can be endangered or hurt. It may not be used also as emergency stop switches at plants and machines or within other safety-relevant ranges!
- Please note, that the GSM radio modem of the GSM sensor control must announce itself at a GSM Provider. In addition a SIM card and the associated PIN is necessary. The pin must be stored in the module, so that this can announce itself automatically at the Provider. If you enter a wrong PIN, and the module starts a third time with it, the SIM card becomes automatically locked. Adjust therefore the pin number always already before using the SIM card, so that the system cannot even announce itself with wrong PIN!
- Absolutely make sure that the GSM Sensor Control device is not connected to the power supply when inserting the SIM card. The device could be damaged otherwise when inserting the card caused by false tensions or short-circuits!
- The GSM Sensor Control device may not be operated within ranges, within which electromagnetic waves and/or radio signals can lead to serious disturbances with devices or plants.
- The usage of the GSM Sensor Control device within a GSM network causes additional costs depending on the provider and the usage endurance.
- With the application of the GSM Sensor Control device the respective laws of the country must be considered, in which the equipment is operated!
- You always must test the correct GSM Sensor Control function by some control calls before the equipment is finally used. Because the local radio conditions are not foreseeable and depending on GSM Provider and SMS service center, SMS transactions may need between one second and several minutes.
- The application software of the GSM Sensor Control device supports all of Windows reserved COM port names (COM1 to COM9). Unfortunately also sometimes when using USB to RS232 converters, COM port names with two digit numbers (e.g. "COM10"), which are no reserved Windows COM names, will be applied. You must assign a one-digit COM port name manually, using the system control center, in such a case.
- The relay outputs are switched either by instruction of the user by means of a SMS or due to an alarm condition. The response times depend thereby very strongly on the respective circumstances. While a GSM communication, the surveillance tasks may be delayed for some seconds. Normally the relays will react approx. 0.5 seconds after a event occurs. The SMS transaction time is not predictable, it exists also no feed warranty. Usually a SMS transaction needs between 5 and 90 seconds of time.
- The circuit of the GSM Sensor Control module can be damaged with inappropriate treatment by static unloading, short-circuits or over voltages. Work on the open equipment is to be accomplished therefore only with **largest care**. In particular with the connection of sensors or other external devices to the internal connectors, it never may come in contact with internal circuit parts.

## 2. Warranties and software license

### Usage conditions:

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**MELTEC do not take over any liability for any consequences, which are due from or in connection with the use or function of this product.**

The product, all its components and the documentation are subject to change without notice at every time. MELTEC gives you the not exclusive right to use this software if you agree the regulations and conditions of the following Treaty:

### License treaty:

#### §1. Term explanation

- 1.1. "Software" means all application software programs included in the MELTEC product.
- 1.2. „Hardware“ means all devices, hardware equipments and accessory parts in any kind, developed by MELTEC.
- 1.3. „Firmware“ means the operating system and control software and micro programs, contained in any devices and equipments, developed by MELTEC.
- 1.4. "User documentation" means the user manual, associated to this MELTEC product.

#### §2. Usage conditions

- 2.1. You are permitted, to install this software on only one computer.
- 2.2. You are permitted, to male only on backup copy of the software.

#### §3. Limitations

- 3.1. You are not allowed, to copy or reproduce, completely or in excerpts, the software or any part of documentation without a permission of MELTEC.
- 3.2. If not differently indicated in the present Treaty or the user documentation, you are not allowed to generate a copy of the software without express permission of MELTEC.
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- 3.7. You are not allowed, to analyze, to back-develop, to decompile or to disassemble DLLs or any part of the software or of the firmware, or to combine or integrate it into other software or to print it.

**§4. Limited guarantee.** MELTEC guarantees you, for a period of 90 days after receiving the software or a product which contains the software, that every original storage medium used for the software is clear of substantial failures or damages, which may handicap the usage or function of the software. The liability of MELTEC is limited to the storage medium, which does not correspond to the conditions of the limited guarantee, if it was returned to MELTEC together with a copy of original invoice. MELTEC don't accept any liability for possible damages which may caused by the installation of the product (e.g. damages by viruses or data loss).

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- 5.1. Excluding the limited guarantee, With exception of the limited guarantee granted herein no further guarantee, neither expressly nor konkludent, exists, including but not limited to the guarantee for marketability and/or suitability for a certain purpose.
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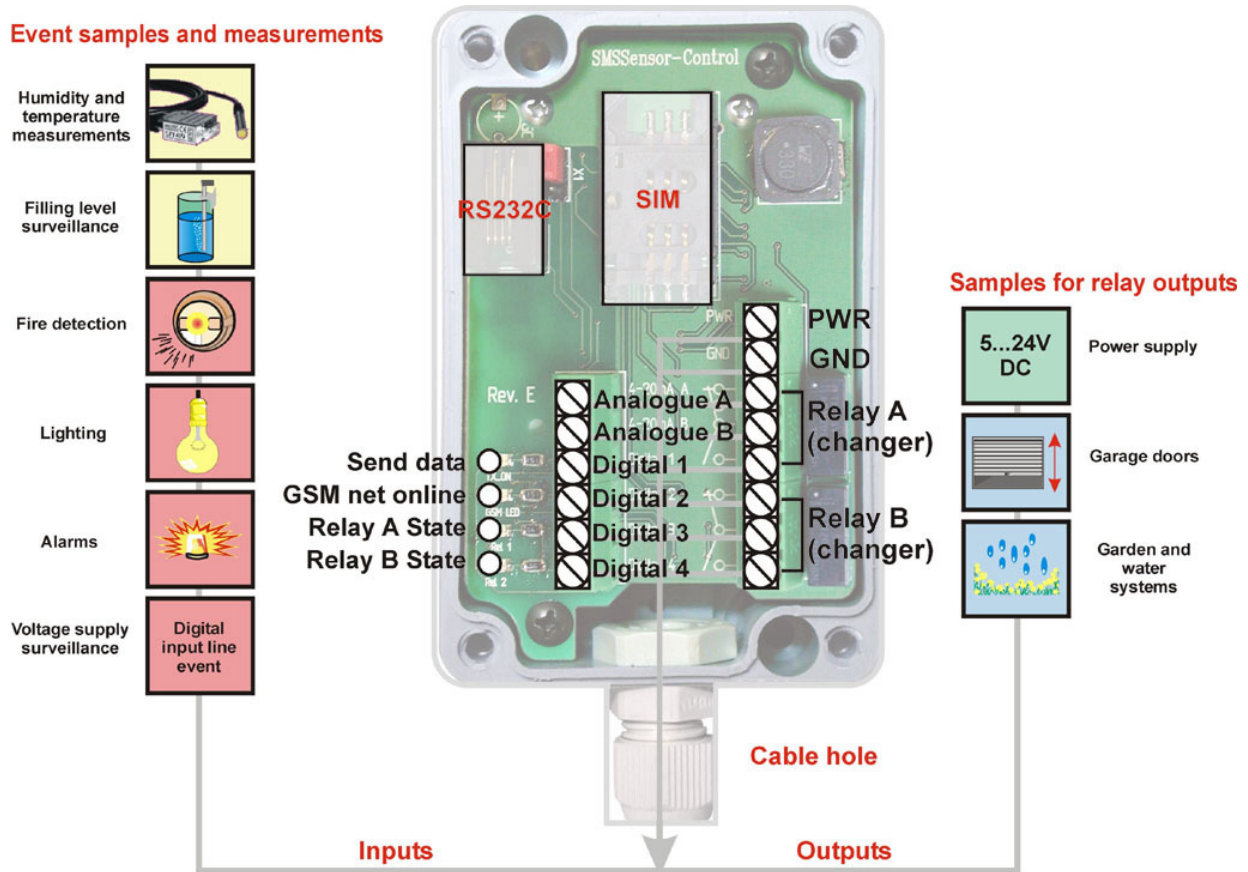
**§6. Effective validity period**

- 6.1. This license agreement is valid with receiving the product.
- 6.2. In case of breaking this treaty in any kind, it is quit an you are obligated to return this software to MELTEC immediately. In this case the purchase price is not returned.

### 3. Starting the device

Normally the device is ready for use after switching on the power supply. Depending on usage, first some important setup should be made.

**Note:** The device output named as “Relay A” is also named as “Relay 1” or “R1” by the software or in this operating manual, “Relay B” is also named as “Relay 2” or “R2” in the same way.



#### 3.1. Electrical connections, wiring

#### 3.2. Inserting a SIM card

#### 3.3. Usage of application software

## 3.1. Electrical connections and wiring



- 1 RS232 Interface Anschluss zur Parametrierung
- 2 SIM Karten Halterung
- 3 Status LEDs
- 4 Klemmleiste der Signaleingänge
- 5 Klemmleiste der Ausgänge und für die Spannungsversorgung
- 6 Durchführung der Anschlusskabel

**Note:** The device output named as **“Relay A”** is also named as **“Relay 1”** or **“R1”** by the software or in this operating manual, **“Relay B”** is also named as **“Relay 2”** or **“R2”** in the same way.

Fig. Open GSM Sensor Control device

- 1 RS232 Interface for connection to a PC

The GSM Sensor Control module contains a standard RS232 compatible interface for connection to a PC. It needs no control lines.

- 2 SIM card slot

For the use of the SMS interface of the GSM Sensor Control device this first must login itself at a GSM service Provider. Therefore a SIM card is need, which must be inserted into this card mounting plate. Each standard cell phone SIM card can be used.

- 3 State LEDs

The GSM Sensor Control device contains 4 state LEDs, which have the following functions:

- GSM transmission signal.
- Power supply LED. The LED is off, if no power is connected. If power is connected, but no GSM login was performed, LED is permanently on. After GSM login, LED is flashing.
- Relay 1 switch state LED. LED is on, after Relay 1 was switched on.
- Relay 2 switch state LED. LED is on, after Relay 2 was switched on.

- 4 Input signal connector

The left connector contains the pins for the 6 signal input lines. This lines are defined as followed described:

- Analog input line A
- Analog input line B
- Digital input line 1
- Digital input line 2
- Digital input line 3
- Digital input line 4

### 5 Outputs and power supply connector

The right connector contains the pins for the relay output lines and the power supply. It is defined as followed described:

- +24V DC supply voltage
- Ground
- Relay 1 pins (3 pins)
- Relay 2 pins (3 pins)

### 6 Cable hole

This hole is used to lead the connection cables out of the housing.

### Notes:

- With the analogue inputs it must be paid attention to the fact that during a supply voltage under 16V the assigned sensor can supply 20 mA.
- The Relay outputs are switched either by instruction of the user by means of a SMS or due to an alarm condition. The response times depending thereby very strongly on the respective circumstances. While a GSM communication the surveillance tasks may be delayed for some seconds, normally a relay reacts approx. 0.5 seconds after an alarm event occurs. The SMS transaction time is not predictable, it exists also no feed warranty. Normally a SMS transaction needs between 5 and 90 seconds of time.

## 3.2. Inserting a SIM card

The SIM card is needed for login the radio module at your GSM provider. You can use a standard GSM cell phone card of any Provider. Since the GSM module wants to login itself, after inserting the SIM card, at the local GSM network, a valid pin must already be stored in the module memory. Therefore proceed as follows:

- Connect the GSM Sensor Control device, **still without a SIM card**, with the PC and switch it on. After this, start the application software program.
- Enter your PIN number into the main window PIN edit control and click to "Write parameters" button to write the modified data. The PIN number is now stored in the device memory. It is recommended, to make all other settings at this time too, so that unnecessary and possibly expensive GSM access is avoided.
- Now switch the GSM device off and disconnect it from the PC.
- Open the housing for inserting the SIM card into the SIM card slot. Insert the SIM card and close the housing.
- **After this**, the GSM sensor control device can be reconnected with power supply and PC and can switched on again. It logs itself automatically to the local GSM network after some seconds and begins with the defined tasks of monitoring. The correct registration at the GSM network is shown by the flashing state LED. The device may need approx. 30 seconds to restart all functions.

**Attention:** You always must test the correct GSM Sensor Control function by some control calls, before the device is finally used. Because the local radio conditions are not foreseeable and depending on GSM Provider and SMS service center, SMS transactions may need between one second and several minutes.

### **3.3. Installation of the application software**

The application program for the module is designed as Windows 32 compatible application for Windows XP or Windows 2000 and needs no further installation. Simply copy the program to your PC hard disk or start it directly it CD ROM. No further settings for installation are needed by the user.

The applications program begins immediately after startup with the device searching procedure. During this procedure automatically all available RS232 interfaces of the PC, including auxiliary interfaces e.g. USB to RS232 converter, between COM1 and COM9 are tested for connected devices. Naturally equipment can only be recognized if it is connected with the PC and power is switched on.

The search procedure takes always nearly exactly 5 seconds. Afterwards either equipment was found and the program begins automatically to read the parameters, or main window dialogue indicates that no device was found width all dialog elements are deactivated.

It may happen, in rare cases, that connected devices cannot react once fast enough, e.g. if it receives a SMS straight in this moment or is in otherwise busy. If connected devices are not be detected directly, you should repeat the device search procedure some seconds later.

If more than one devices were found, you can select the device you want to access by using the rider of the tab control. You can always connect as many devices at the same time as RS232 interfaces are available. At present thus are max. 9 devices.

### 3.4. Default SMS command quick reference

You can send SMS command messages to the GSM Sensor Control device, on which the device will react. You can define this command strings by yourself. The GSM Sensor Control device may interpret until five user defined commands, which results in execution of the defined functions. Therefore every incoming SMS text string will be searched for one of the defined keywords. If a keyword is found, the assigned function is executed.

After initialization of GSM Sensor Control device, or reset to default values, following SMS command strings are defined:

SMS Kommando	Beispiele	Funktion
<b>STATUS</b>	„ <b>STATUS</b> “	The device sends back its current state to SMS sender.
<b>R1</b>	„ <b>R1 ON</b> “	The device switches relay 1 explicit on and <b>locks</b> it for internal event functionality, e.g. threshold events.
	„ <b>R1 EIN</b> “	
	„ <b>R1 OFF</b> “	The device switches relay 1 explicit off and <b>locks</b> it for internal event functionality, e.g. threshold events.
	„ <b>R1 AUS</b> “	
	„ <b>R1 AUTO</b> “	Relay 1 will become unlocked and free for usage width internal events.
<b>R2</b>	„ <b>R2 ON</b> “	The device switches relay 2 explicit on and <b>locks</b> it for internal event functionality, e.g. threshold events.
	„ <b>R2 EIN</b> “	
	„ <b>R2 OFF</b> “	The device switches relay 2 explicit off and <b>locks</b> it for internal event functionality, e.g. threshold events.
	„ <b>R2 AUS</b> “	
	„ <b>R2 AUTO</b> “	Relay 2 will become unlocked and free for usage width internal events.
<b>MSMS</b>	„ <b>MSMS ON</b> “	Sending of automatic generated event SMS (alarm events, interval events) to all defined destinations is enabled.
	„ <b>MSMS EIN</b> “	
	„ <b>MSMS OFF</b> “	Sending of automatic generated event SMS (alarm events, interval events) to all defined destinations is disabled.
	„ <b>MSMS AUS</b> “	
<b>ISMS</b>	„ <b>ISMS ON</b> “	Sending of interval Event SMS to all defined destinations is enabled.
	„ <b>ISMS EIN</b> “	
	„ <b>ISMS OFF</b> “	Sending of interval Event SMS to all defined destinations is disabled.
	„ <b>ISMS AUS</b> “	

## Common rules for SMS command strings:

- You can use a free defined keyword, extensions, such as ON or OFF are predefined by software.
- Interpretation of keywords and extensions is not case sensitive.
- The keyword search works as a full text search in SMS string. In this case a particularly command string may not be used as an other command string, e.g. a command string "R1" does not work together with a command string "R1A", because "R1" already was found as command before "R1A". The application software checks inputs for this case.
- Extensions always starts with an space character, but it must not be placed directly after the command string. The interpreter first scans a command string and after this the string was searched for extensions of the found command.

A confirmation SMS for commands is always send back to command SMS sender, regardless of any phone number list entries.

Command string samples (**the command „R1“ is used**):

<b>SMS command string:</b>	<b>Device reaction:</b>
„R1 ON“	The Relay is turned on.
„R1 OFF“	The Relay is turned off.
„R1 AUTO“	The relay is unlocked again.
„Do something with width R1“	Error, no extension string defined.
„R1 should switched ON“	The Relay is turned on.

Avoid entering of multiple keywords into one SMS command string. If you enter a command string like "Do R1 ON or R2 OFF" will result only in switching relay 1 on, but not in switching relay 2 off, because only the first keyword and the first extension string will be interpreted.

## 4. Working with application software program

### 4.1. System requirements

### 4.2. The main window dialogue

### 4.3. Entering a device name

### 4.4. Editing connector names and scales

### 4.5. Editing phone number list

### 4.6. Viewing current measurement values and state information

## 4.1. System requirements

The application software for configuring the GSM Sensor Control device was designed as a Windows 32 compatible application program for usage **with Windows XP** and **Windows 2000** systems. The software only uses standard Windows operating system functions for accessing devices, like RS232 communications functions.

Maybe, you can use older Windows operating systems like Windows ME, Windows'98 or Windows'95, but correct function of the software is not guaranteed using such an operating system.

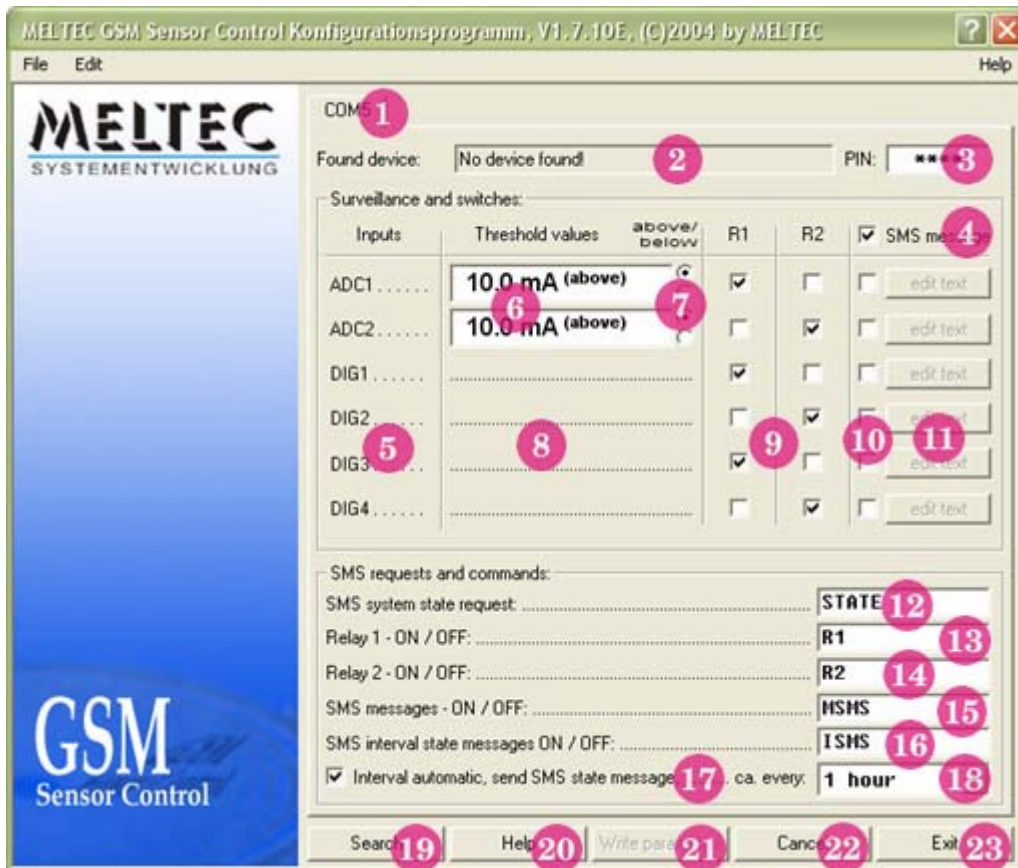
DOS or Windows 3.x based systems **are not suited!**

In order to support an optimal program execution, following system requirements are recommended:

- ⇒ X86 compatible standard PC with a supported 32-Bit Windows operating system, e.g. Windows 2000 or Windows XP.
- ⇒ 256 MB RAM or enough memory for correct operating system function.
- ⇒ Enough available hard disk memory for optimal operating system function.
- ⇒ A minimum screen resolution of 1024 by 768 pixels with 64K color depth. It is also possible to use a smaller screen (e.g. at notebook computers), but maybe you can not view all dialogue contents at a time.
- ⇒ One free RS232 communication port to connect the GSM Sensor Control device to the PC. Therefore you can also use auxiliary com ports like USB to RS232 adapters too, if it supports a windows compatible com port device driver. The application software supports all of Windows reserved COM port names (COM1 to COM9). Unfortunately, also sometimes when using USB to RS232 converters, COM port names with two digit numbers (e.g. "COM10"), which are not reserved Windows COM names, will be applied. You must reassign a one-digit COM port name manually, using the system control center, in such a case.

## 4.2. The main windows dialogue

The application software of MELTEC GSM Sensor Control device is based on one main dialogue window, which contains items for most of all functions and options of the device. Most of necessary parameters of a device can be handed by the contents of the windows tab control, whereby the device itself is selected by the tab control rider **1**. If more than one device is connected, you will see the corresponding number of tab control riders with the com port number of the connections.



### Description of dialogue items:

**1** Windows tab control width rider button to select the specified GSM Sensor Control device.

Most parameters of currently accessed device will be shown on the tab control surface. It uses the main part of the dialogue.

The rider selection defines the GSM Sensor Control device, which is currently accessed. If more than one device is connected, you can select the currently accessed device by selecting the correspondent tab control rider. Changing the device, the software will first write old modified data back and than it closes the old connection. It turns to new selection, opens the access and reads the new parameters from the new selected device.

The rider contains the com port name of the connection path.

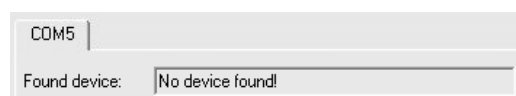


Fig. Tab control rider, one device over COM5 port.

2 View of name and access path of the selected GSM Sensor Control device.

In the line „found device“ you can see, which device is currently accessed. If you set a device name, it is also used for display. A device name definition simplifies the identification of a device, if more than one are connected at same time or are used in a plant. The device name is used too in first line of SMS state messages from the device.

The device name is followed by the com port connection parameters.

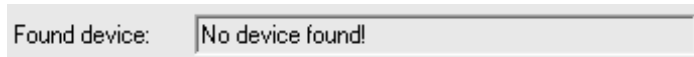


Fig. Display of device „Testus“ connected by COM5.

3 Edit control for GSM phone card PIN input. Input is hidden.

In order to login at a GSM network, a PIN protected phone (SIM) card is required. The PIN must be stored in the GSM Sensor Control device memory for automatic login at the GSM network. This edit control enables you to enter or modify the required PIN.

**Note: If you type a wrong PIN three times, the SIM card may be locked. Therefore it is useful to enter the PIN number before inserting the SIM card. The device will automatically change the PIN to “0000” if login procedure will deny the access to the network. This is an invalid PIN and the device will take no further tries to login with this number.**

The module will not login itself into a GSM network if “0000” PIN is set. In this case also nothing will happen if you insert a SIM card, but there is no possibility to read a PIN code back.

If GSM status LED will start to flash a few seconds after powering up the device, it means that system has logged on to a GSM service provider and is online now.



Fig. Edit control with hidden PIN code.

4 Enable checkbox for all automatically generated event SMS messages.

In case that sending SMS messages causes additional costs depending on the provider and the usage endurance, you have the possibility to disable/enable all automatically generated event messages from the device.

The checkbox views the current state of global SMS enable switch and makes you possible to change the current state.

The corresponding dialogue items are automatically enabled or disabled by changing current state of the checkbox.

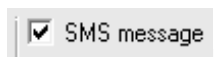


Fig. SMS messages now enabled.

5 Column width list of input lines of GSM Sensor Control device.

You can name all 6 available input lines (2 analogue inputs, 4 digital inputs) for better identifying. The input line names also will be shown in parameter dialog and are used in SMS messages. All items right of it in same line are corresponding to this input pin and its events.

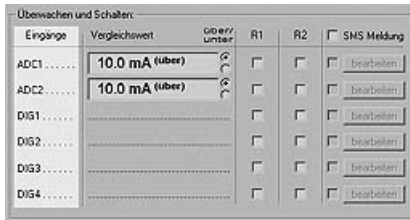


Fig. Column with available inputs.



Fig. Line with corresponding items.

6 Edit controls for the threshold values for surveillance of the analogue inputs lines.

**Note:** Analogue input based functions are only supported if analogue input channels are available.

The surveillance procedure currently tests the measurement values against the set threshold values and generates events if necessary. The items at the right side defines the reaction at alarm events. Switching one or more relays or sending event SMS messages are possible options. Please note too, that the threshold value check also pays regard on a set hysteresis value.

**Note:** An event SMS message is only send, if global enable for sending automatic generated SMS messages is set. Sending an SMS message may cause additional costs. A relay will only switch by an surveillance event if it is not blocked by user defined state settings (see SMS commands for setting relay state).



Fig. Threshold values for analogue inputs ADC1 and ADC2.

7 Radio buttons for defining the compare mode.

**Note:** Analogue input based functions are only supported if analogue input channels are available.

The measured values of the analogue inputs can be checked either on excess or on falling below the entered threshold value, whereby also the set hysteresis is considered. When occurring the appropriate event then the Relay can be switched alternatively or SMS messages be dispatched.

The attitude of the monitoring on under or excess takes place by means of the selection fields right apart from the threshold value input. In addition the current mode is indicated behind the threshold value in text form.



Abb. Threshold check mode for analogue inputs.

8 Defining events on digital input lines.

At this time there are no options to define events on digital input lines. An event is automatically generated, if input line state goes from low to high.

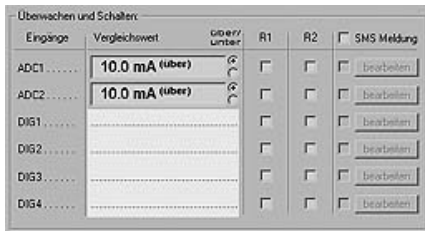


Fig. Digital line event settings.

9 Check boxes for relay assignments.

You can assign one or more relay outputs to a surveillance event. If an event occurs, the assigned relay will switch if it is not currently locked by user command. There are two relay outputs available. If one relay is assigned to more than one event, it switches if one of the assigned events occurs. You can assign threshold events or digital input events to a relay output.

**Please note, that a relay, which is locked by a direct SMS command from the user (set on or off), will not react on an surveillance event until it is unlocked again by another user SMS command (e.g. "R1 AUTO").**



Fig. Relay assignment check boxes.

10 Check boxes for alarm SMS assignments.

Additional to internal event actions, like switching relays, an alert event can be used to generate an event SMS message. These checkboxes are used to enable or disable this function. If an event occurs, the GSM Sensor Control device generates an event message and sends it (if connected to a GSM network) to all defined destinations (max. 4 phone numbers). After sending the SMS message, the alert state has to change first, until a new message can be generated. You can edit the SMS text string by clicking the button on the right side next to the checkbox.

Please note, that a SMS message is only sent, if the global enable for automatic generated SMS messages is set and sending of SMS messages may cause additional costs.



Fig. SMS assignment check boxes.

11 Button for opening the SMS text string editor dialogue.

If you have enabled sending SMS messages on events, you can edit the SMS message text string by clicking on one of this buttons.

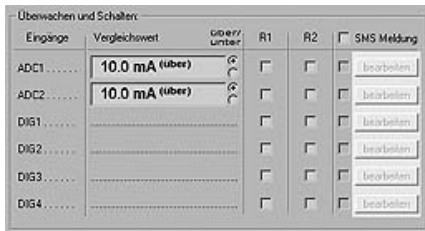


Fig. Buttons for opening SMS text editor dialogues.

12 Edit control for defining the state request SMS command string.

The keyword to request a common state SMS message is entered in this field. The state request command causes the GSM Sensor Control device to send a common state SMS back to sender. In status text, the user defined names of input lines and device name is used.

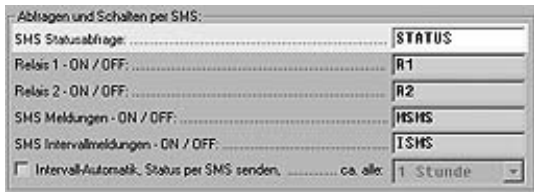


Fig. Edit control for state request command string.

Please pay attention to the rules for defining SMS keywords (see chapter 3.4.). The answer SMS is always send back to the sender address of incoming SMS and not depending on defined numbers in phone number list.

13 Edit control to enter a command string for relay 1 switch and relay 2 14 switch commands.

With this edit controls the command strings for switching relays are defined. There are three possibilities to switch a relay with one of these commands, which is depending on the used extension string. You either can turn a relay on, you can turn it off, or you can unlock it so that it can switch depending on internal events.

- If you add the extension string „**ON**“ to the command line, the relay is turned on and this state is locked against modifications caused by internal events until you send the command with the extension “**AUTO**” (or you will unlock it using application software functions).
- If you add the extension string „**OFF**“ to the command line, the relay is turned off and this state is locked against modifications caused by internal events until you send the command with the extension “**AUTO**” (or you will unlock it using application software functions).
- If you add the extension string „**AUTO**“ to the command line, the relay is unlocked and can be used for switching caused by internal surveillance events.

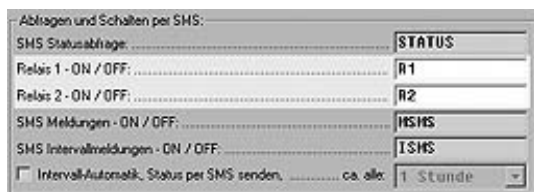


Fig. Relay R1 and R2 command strings.

Please pay attention to the rules for defining SMS keywords (see chapter 3.4.).

15 Edit control to enter a command string for enabling/disabling sending of automatic SMS messages.

Here you can enter a command string, which is used for global enabling or disabling sending of automatic generated SMS messages, like alarms or timer events.

- Add the extension string „**ON**“ to enable sending of automatic generated SMS messages.
- Add the extension string „**OFF**“ to disable sending of automatic generated SMS messages.



Fig. Enabling/disabling automatic SMS.

Please pay attention to the rules for defining SMS keywords (see chapter 3.4.).

- 16 Edit control to enter the SMS command string for enabling/disabling interval state messages.

Here you can enter the command string for enabling/disabling interval state messages. If the function is enabled, the GSM Sensor Control device will automatically send a state message, like on state request command, to all destinations stored in phone number list, at the defined time intervals.

- Add the extension string „**ON**“ for enabling interval function.
- Add the extension string „**OFF**“ for disabling interval function.

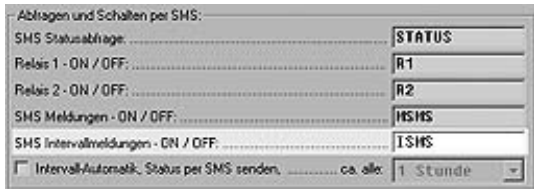


Fig. Interval SMS enabling/disabling string.

Please pay attention to the rules for defining SMS keywords (see chapter 3.4.).

- 17 Switch button for enabling/disabling of interval messages.

This switch is for enabling or disabling sending interval state messages. It is only valid, if global sending of SMS messages is enabled too. If function is enabled, the GSM Sensor Control device will generate a state message, like from state request command, every time interval, which is defined in combo box next on right hand side. The message is send to all destinations, which are defined in phone number list.



Fig. Enabling/disabling of interval state messages.

- 18 Combo box to select interval time for interval state messages.

This combo box item allows you to select the interval time for automatic interval state message generation. A state SMS message will be generated every time, interval was count down and a new interval will start automatically. The time interval is to be regarded as an approximate time interval. If GSM Sensor Control device is already busy, e.g. with handling incoming messages, sending of interval state messages can be delayed for some seconds. Depending on current circumstances, the need SMS transaction time may be very different too. Usually a SMS transaction time between 5 and 90 seconds is to be need, it exists also no feed warranty.

Please note, that global enable for automatic generated messages must be set too, for sending interval state messages.

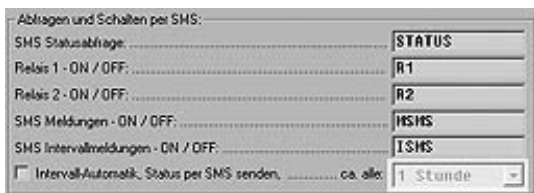


Fig. Interval time selection item.

**19** Button for new device detection

Press this button to start a new device search procedure. You must not set any communication parameters because the software is enabled to detect all connected and communication ready (powered up) devices automatically. This button starts a new search procedure.

You can use this function, if you have connected a new device to PC without restarting application software. Also it is useful, if a connected device was not found because it was busy. You can restart device searching every time as often as you want.

After starting a device search procedure, a message box is shown first if any data was modified and already not written back to current selected device. You can update current device first, if you need.

The device search procedure always need nearly exactly 5 seconds. It always scans the communication ports COM1 to COM9 (if existing and not used by an other device). The number of COM ports has no influence of need scanning time.

If one or more devices were found, parameters of first found device will be read and shown in main window dialogue. This needs an additional time of a view seconds.

**20** Button to open online help file.

Press this button to open online help file.

**21** Button to save modifications.

Pressing this button causes updating the GSM Sensor Control device width current parameters. This may need a view seconds of time.

**22** Button to abort application program execution.

Pressing this button causes the application program to terminate immediately without saving any changed parameters.

**23** Program termination button.

Pressing this button causes the application program software to terminate execution after current changes were saved. If modifications are detected, software will view a message box for update confirmation first. Updating device parameters may need a view seconds of time.

### 4.3. Defining a device name

The GSM Sensor Control device contains a memory to store a device name. This dialogue is used to enter or edit the device name string.

A device name may be very useful to identify a GSM Sensor Control Device, which has send an SMS message, if you use more than one device at time.

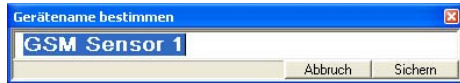


Fig. Device name edit dialogue.

You can call this dialogue box by selecting “**Edit**” menu entry followed by “**Device name**” sub entry. The device name may have up to 16 characters length. It is stored in common parameter set and can be written to device by pressing “**Write parameters**” button in main window dialogue.

### 4.4. Editing connector names

The GSM Sensor Control provides the possibility to define an interface name for every input and output. This may be a symbolic name of a connected sensor device. It is also used for SMS messages.

Additional to the interface names, you can define a hysteresis for the both analogue inputs (if they are available).



Fig. Dialogue image with interface names.

- 1 Input field for hysteresis
- 2 Names for the connector interfaces
- 3 Load defaults for all dialogue fields
- 4 Cancel dialogue, don't save changes
- 5 Save changes and close dialogue

The hysteresis value is used by the threshold value comparison and the generation of switching events. It is possible to define a value between 0% and 25%, using steps of ca. 0.4%. The hysteresis can suppress permanent switching events on low floating measurements near threshold level of the inputs.

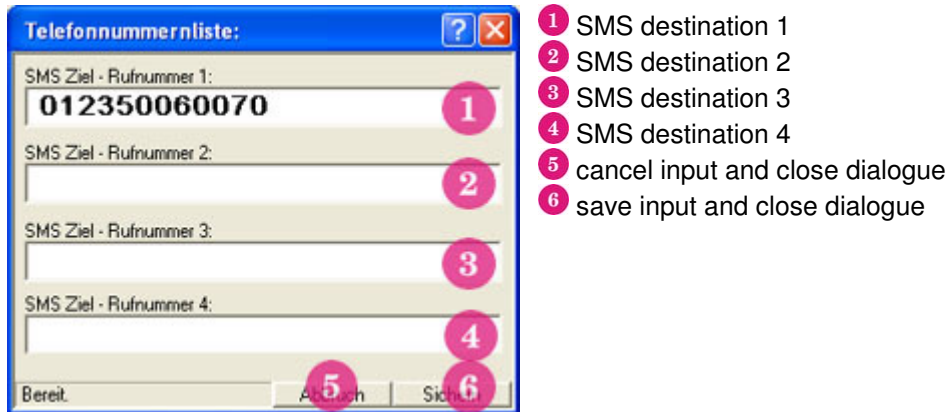
This parameters are part of direct device settings and are updated with them. Use the button “Write Parameters” in main window to update this settings in the device. Every device name can have a maximum length of 8 characters.

## 4.5. Editing phone number list

The GSM Sensor Control device is able to store up to 4 phone numbers, which are used as SMS destination addresses for automatic generated SMS messages, e.g. on alarm events or time interval state messages.

You can open the phone number dialogue by selecting “**Edit**” and “**SMS address list**” in main window menu bar.


Every number may have up to 24 characters length. They are interpreted as phone numbers in national or international format. Please note, that every phone number must be entered including the area code part, because of dialing in a GSM network.



Phone numbers are not part of the main device data set, so they are read or written separately from other data. After closing this dialogue, the data is transferred immediately to the device.

## 4.6. Viewing current measurements

As help option for setup of the device and for controlling functions, you can open a dialogue, which views current state and measurement values of a connected device. It is an online display which accesses the selected device permanently while dialogue is open. You can open the dialogue by selecting menu entries “**Edit**” and “**Measurements and states**”.



The screenshot shows a dialog box titled 'Gerätstatus:' with the following content and callouts:

- ADC1: 16.8 mA (1)
- ADC2: 0.0 mA (2)
- Relais 1: ON (3)
- Relais 2: ON (4)
- SIM/PIN Lock Status: Keine SIM eingelegt! (9)
- Letzte SMS Meldung: (10)
- Digital In 1: LO (5)
- Digital In 2: LO (6)
- Digital In 3: LO (7)
- Digital In 4: LO (8)
- Count: 20, 10 20 00 07 00 00 00 00 (12)

1 Measurement value of analogue input channel 1 by scaling information \*1  
 2 Measurement value of analogue input channel 2 by scaling information \*1  
 3 Current state of relay output 1  
 4 Current state of relay output 2  
 5 Current input level of digital input 1  
 6 Current input level of digital input 2  
 7 Current input level of digital input 3  
 8 Current input level of digital input 4  
 9 Current SIM card state  
 10 Button for reading text of last generated event SMS message  
 11 Display for last read SMS event message text  
 12 Close dialogue button

The display is updated ca. 3 times per second, if it is possible. While dialogue is open, no other access to the selected device is possible, because COM port is in use.

The analogue measurement values are formatted and displayed in same way, as defined in dialogue for connector names and scales.

The item to view last generated SMS text, view the content of the device SMS buffer only. This message must not have been send yet, e.g. if SMS sending is disabled.

## 4.7. Editing SMS text

To edit a SMS text string, you can click on edit button right next to SMS event enable check box. Because of the relative large size of the data, the SMS text string is read just when you click to the button. The SMS text strings are not part of the main device parameter set and are updated immediately with closing the dialogue. This I/O may need a view seconds of additional time. Every SMS text string may be up to 80 characters length.



- 1 Input edit control for SMS text string
- 2 State display, views current I/O state
- 3 Cancel button to close dialogue without writing data back
- 4 OK button to write data back and closing the dialogue

Please note, that SMS messages may not support all special characters and these often are displayed as different characters on cell phone displays. It is recommended to use clear and short messages.

## 5. Technical Data (preliminary data, technical modifications reserved)

### Power supply:

DC 8 ... 24 V                      Power supply DC 8 ... 24 V (+/-10%) regulated

### Input lines:

4 x digital                      Digital input lines, 5V ... 24V, 20mA over Opto couplers, alert reaction time ca. 500 ms. (\* see notes)

2 x analogue                      Analogue inputs 0 ... 20mA (\* see notes), +/- 2% typical 0.5%

### Output lines:

2 x Relay outputs                      Relay outputs 50V / 2A

### GSM Modem:

GSM                      Dual Band GSM/GPRS Modem for use in 900 und 1800 MHz GSM networks, command interpreter for controlling by SMS messages.

GSM900                      GSM class 4, up to 2 W output power (33 dBm)

GSM1800                      GSM class 1, up to 1 W output power (30 dBm)

Sensibility                      Receiver sensibility < -102 dBm

### \*Notes:

- Analogue inputs are not supported by all devices. You must pay attention, that a connected sensor device is really able to deliver up to 20 mA current output, if its power supply is sourced by less than 16 V only.
- Relay outputs are either set by user command or an internal event. Its reaction times are strongly dependent on current circumstances. If device is busy, e.g. during a SMS transaction, surveillance tasks may be delayed for some seconds. Normally relays will switch within 0.5 seconds after an event. SMS transaction times are not foreseeable and there is no feed guarantee. In most situations, you must calculate with 5 to 90 seconds SMS transaction time.
- The device output named as "**Relay A**" is also named as "**Relay 1**" or "**R1**" by the software or in this operating manual, "**Relay B**" is also named as "**Relay 2**" or "**R2**" in the same way.