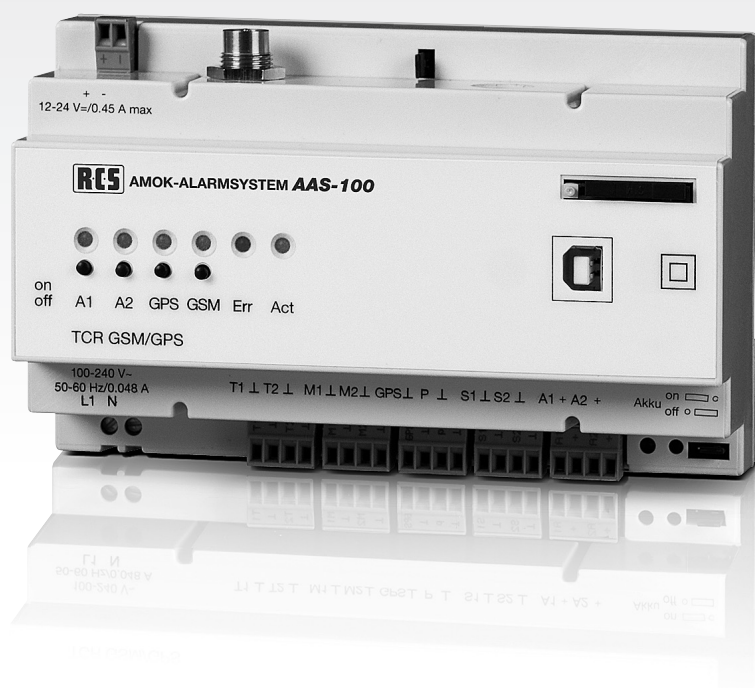


AAS-100 A

GSM AMOK-ALARM SYSTEM

RCS[®]
AUDIO-SYSTEMS



OPERATING INSTRUCTIONS / BEDIENUNGSANLEITUNG

- ENGLISH

Overview

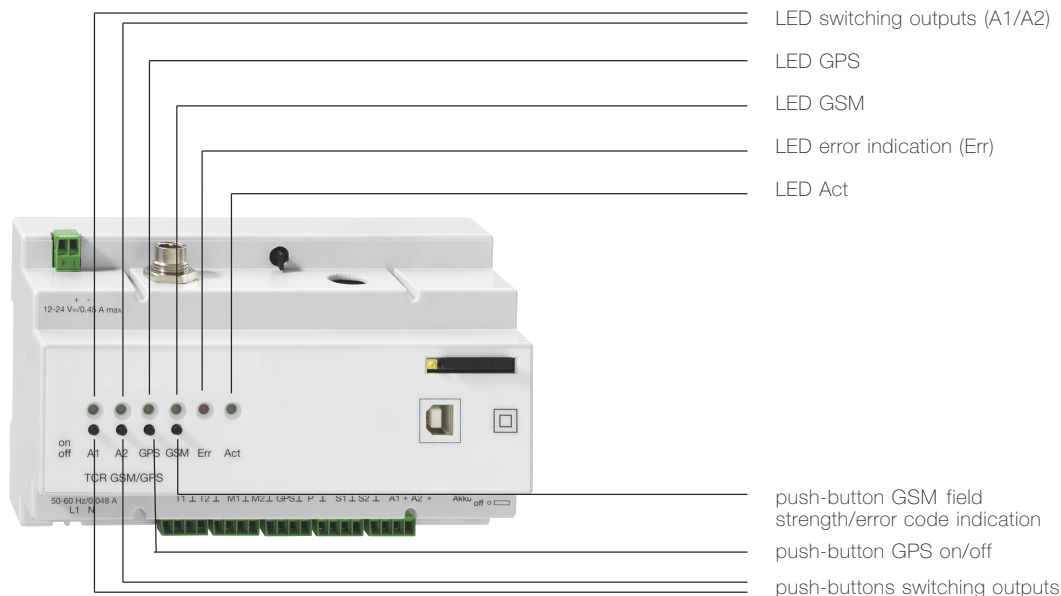


Figure 1

Scope of Delivery

- CD with configuration software and operating instructions
- USB cable (type A-plug - type B-plug; 1.8 m)
- Magnetic mount antenna with FME-connector, 3 m

Accessory (optional)

- | | |
|--------------------|-------------|
| Temperature sensor | 700 802 201 |
| GPS receiver | 700 902 601 |

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General

Hint: This operating instruction is valid from software-version 1.0.2.0.

The TCR GSM/GPS – from now on known as TCR – is an alarming and remote switching device for the mobile network in a surface mounting housing.

The TCR has two switching outputs, two alarm inputs and two analog inputs for the connection of temperature sensors. In changing of state at the inputs, the TCR automatically sends short messages (SMS) via mobile network to up to four phone numbers.

The programming of the device can be done with

- a telephone call,
- with SMS,
- via the USB-interface of a PC or
- from a distance from a PC with GSM-modem.

The controlling takes place with a telephone call, SMS or with push-buttons at the device.

Without any programming knowledge an easy configuration is possible. For easy applications the device can be configured with a telephone call.

Individual user data can be easily set with SMS or via the USB-interface from a PC.

Temperature sensors can be connected at two analog inputs, which can be requested with a SMS. An alarm SMS can be initiated at certain temperature levels.

The switching outputs are equipped with relays, at which devices with low-voltages up to 48 V can be connected.

The switching of the outputs can be done with SMS or with push-buttons (s. figure 10) and will be indicated at two LEDs. The outputs can be switched on for a programmable time (impulse operation). Switching output 1 can be activated with a free of charge telephone call (CLIP-function). Here the phone num-

ber of the caller is recognized by the TCR and the switching output 1 is activated without the incoming call being accepted (the call is free of charge).

The duration of the switching impulses can be set at both outputs. The impulse time can be set between 1 second and 23 hours and 59 seconds.

All activities – accept from the configuration call – are saved by a 4-digit code number.

At the PS2-receptacle an external GPS-receiver (optional) can be activated by push-button at the device for the surveillance of position. If tracking is activated, the position data of the TCR will be sent with SMS. The time span between the short messages is programmable. The GPS-receiver can only be de-/activated by push-button.

The switching states of the outputs and the settings are saved at a power failure and will be re-stored, when the power returns.

The power supply is monitored, so when switching on power a SMS will be sent to up to four phone numbers.

Also power failures will be reported by SMS. The accumulator buffering allows the sending and reception of SMS for a longer period of time.

For operation an activated SIM-card of any service provider is needed. With prepaid cards the TCR will send a notification per SMS if a programmable minimum credit level has been reached.

⚠ Hints for the user

- Depending on the workload of the internal processor, delays of a few seconds can occur when processing settings and entries.
- Depending on the netload of the GSM-provider, SMS can be transmitted with considerable delays during times with intensive traffic.
- A permanent stay of less than 50 cm from the device is not recommended.

Functional Principle

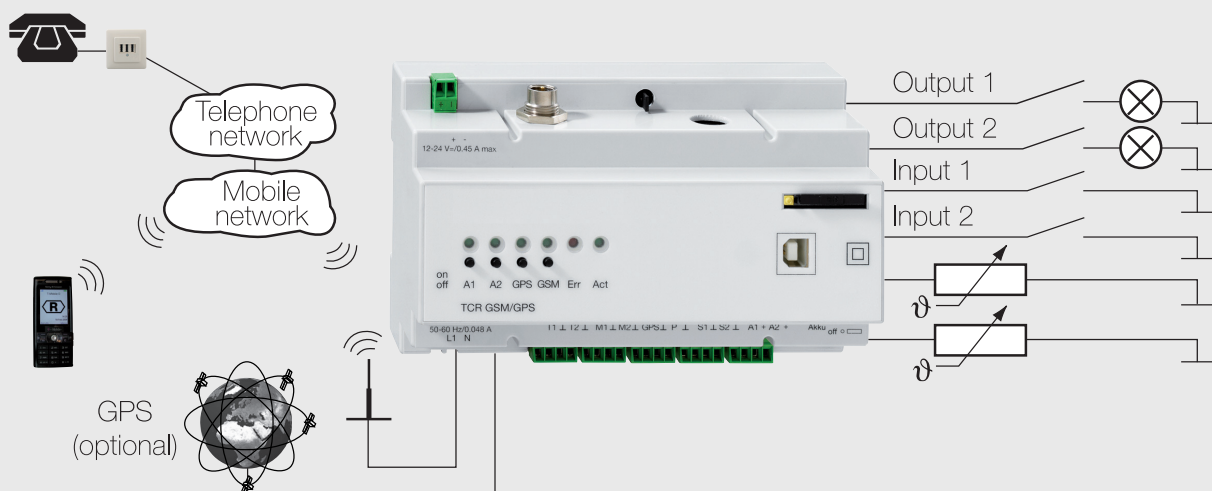


Figure 2

Installation

Mounting

⚠ Work on the 230-V-supply may only be carried out by authorized electricians.

⚡ **Danger for life!**
Disconnect the main voltage at first for all mounting works.

Pay attention to the actual norms, in order to fulfill the general safety requirements for telecommunication systems and to avoid disturbing interferences. A physical separation or suitable

partition wall must be provided (clearance or shielding). Pay attention to the shock-proof protection of the heavy-current part in combined plants. The shock-proof protection must also be guaranteed, when you have removed the common covering (this is not always given for old installations). Take care that the minimum distance of 10 mm between data-/telecommunication cables and

heavy-current cables are strictly observed during the erection of combined plants. Working in existing data networks require – if necessary – the assent of the respective person in charge of network and data as well as a preceding data security. Please also observe the permitted operating temperature, do not place the switching system

directly beside devices with high heat evolution (e.g. dimmer). ⚠ Before installing the TCR check the GSM signal strength at the location with a mobile phone (signal strengths on display).

Insertion of the SIM-Card

An activated SIM-card of a GSM-provider is needed, where the **PIN** is set to "1234". You can use a normal mobile phone to set the PIN. For changing the PIN see the operating instructions of the mobile phone. If a SIM-card with a different PIN

is inserted, the TCR will use a wrong PIN-number at powering up. The PIN will be locked from the SIM-card after the third attempt. In this case, you must unlock your SIM card with the PUK number (personal unlocking key). You can also insert a SIM-card

without a PIN. the TCR recognizes this and will not test the PIN. Switch off any call diversions. Please read the operating instructions of your mobile phone for setting the PIN, unlocking a

blocked PIN with PUK or switching off call diversions.



Figure 4

Please make sure that the TCR is disconnected from power (plug power supply and accumulator). Connect the antenna to the appropriate receptacle.

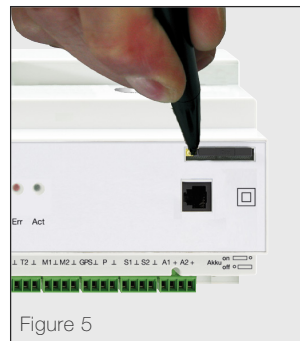


Figure 5

Release the SIM card holder (figure 2) on the front of your TCR by pushing the release knob with a ballpoint pen and pull it out.



Figure 6

Insert the SIM card into the lid in such a way that the contact surfaces are visible and that the bevelled corner points to the upper right corner.

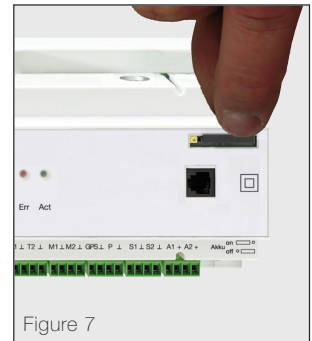


Figure 7

Push the SIM card holder back in the device.

Installation

Connection to the Networks

Connect the screw terminas L1 and N to the power supply. For the configuration with a PC, connect the PC-cable at the USB-port.

The jumper for the accumulator must be set to the left position in order to activate the integrated accumulator. The both LEDs next to the jumper s indicate the state in accumulator mode. The left LED lights up, if the accumulator is not available or can not to be charged. The right LED lights up during charging.

¹ The TCR works alternatively with an external 12-V- or 24-V- power supply. The connection of voltages > 30 V will destroy the TCR.

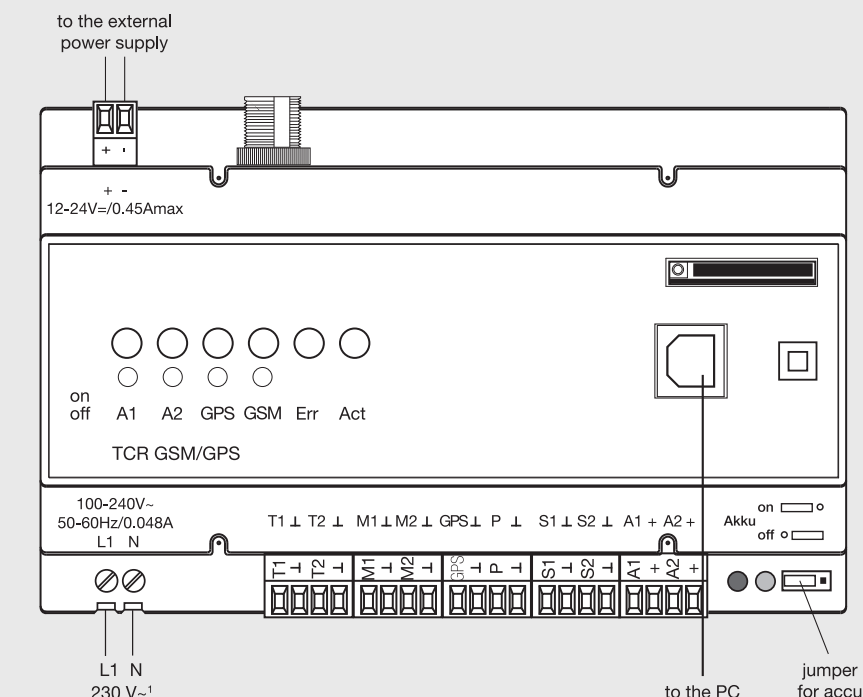


Figure 8

Connection of the Inputs

Connect the devices at the alarm inputs M1/M2 and the temperature sensors (optional) at T1/T2 as shown in figure 9.

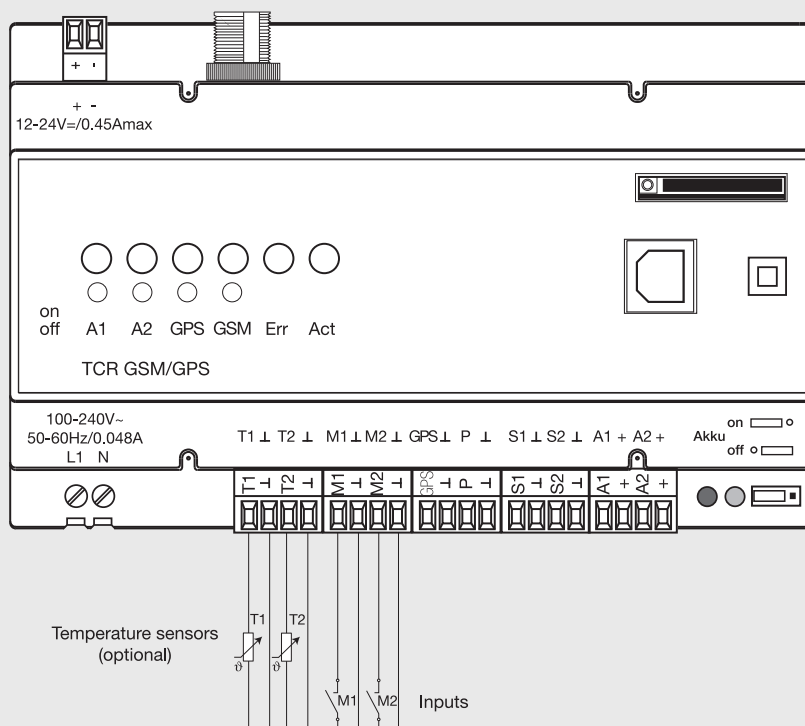


Figure 9

Installation

Connection of the Switching Outputs

Connect the external push-buttons as desired. They are – except of the P push-button – electrically parallel to the integrated push-buttons. With the push-button GPS you can de-/activate the GPS-receiver.

To avoid unnecessary costs when one is present, that outputs are being switched via SMS or that SMS are being sent off, a presence (P) switch can be installed as shown in figure 10.

Connect the devices which should be switched. The outputs A1 and A2 contain relay contacts with a load capacity of 48 V/24 V AC/DC at 2 Amps.

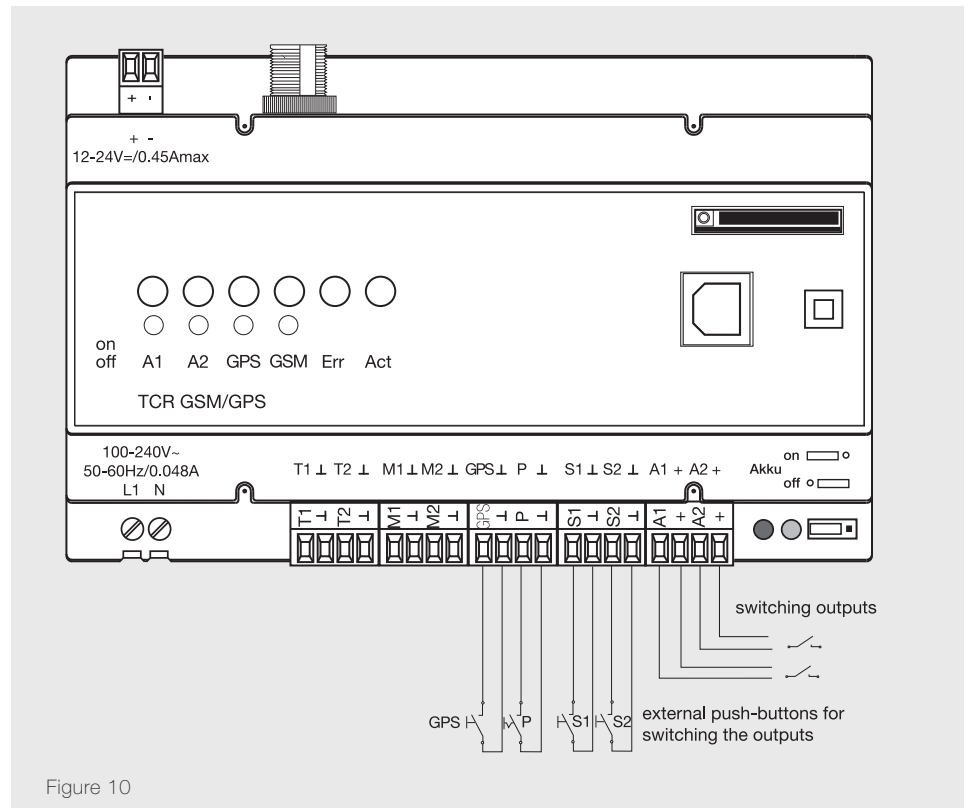


Figure 10

Putting into Operation

After installation switch on the power supply. The device connects within a minute to the GSM network, the Act-LED will flicker from time to time. During the powering-up procedure the Err-LED lights up.

Depending on the reception quality, the powering-up procedure will be finished after about 1 minute and the GSM-LED lights up. The Err-LED will go off and the TCR is ready for use.

Operating Elements

Push-buttons

A1/A2: Switches the devices connected at **A1** and **A2** on, respectively, off.

GPS: Activate the GPS-receiver with a short keystroke, the de-activation has to be done with a long keystroke. If the GPS-receiver is already activated, a short keystroke will display the number of received satellites (see following table).

GSM: If the Err-LED is not lit up, a keystroke will display the field strength of the GSM-network (see following table). If the Err-LED is lit up, confirm Error messages with a keystroke. At the same time, an error code will be displayed (see following table).

LEDs

The LEDs **A1**, **A2**, **GPS**, **GSM**, **Err** and **Act** have different meanings. Depending on the pressed push-button different information will be displayed. The functions are shown in the following table.

Installation

Operating Elements



Function/LED	A1	A2	GPS	GSM	Err	Act
A1 switched on	lights up	-	-	-	-	-
A2 switched on	-	lights up	-	-	-	-
Searching satellite			flashes		-	-
Satellite reception	-	-	lights up	-	-	-
GSM-network available	-	-	-	lights up	-	-
GSM-network active (Call establishment, Incoming call or SMS transmission)	-	-	-	-	-	flickers
Error indication (see below)	-	-	-	-	lights up	-
Field strength indication when pressing push-button GSM						
Field strength insufficient	-	-	-	-	-	-
Field strength sufficient	lights up	-	-	-	-	-
Field strength satisfactory	lights up	lights up	-	-	-	-
Field strength good	lights up	lights up	lights up	-	-	-
Field strength very good	lights up	lights up	lights up	lights up	-	-
Satellite indication by pressing push-button GPS						
Number of satellites	SMS text (field strength)					
≤4 satellites	<4	-	-	-	-	-
≥4 satellites	≤10	lights up	-	-	-	-
≥6 satellites	≤16	lights up	lights up	-	-	-
≥9 satellites	≤24	lights up	lights up	lights up	-	-
≥12 satellites	>24	lights up	lights up	lights up	lights up	-
Error indication at lit up Err-LED and pressing push-button GSM						
Malfunction in GSM-network, SIM card error	-	-	-	lights up	lights up*	-
not enough satellites/ GPS Error	-	-	lights up	-	lights up*	-
Battery operation	-	lights up	-	-	lights up*	-
Error while sending SMS	lights up	-	-	-	lights up*	-

* lights up until push-button GSM is pressed

Factory Settings

The TCR will be delivered with factory settings, which you can substitute for individual ones. There are two methods to reconstruct them.

At the TCR GSM/GPS

Disconnect the device from the power supply (also accumulator). During the insertion of the plug power supply press the push-buttons "GSM" and "GPS" until both LEDs start blinking. After blinking, the powering up procedure begins. Depending on the reception quality, this procedure will be finished within 1 minute.

From the distance

To use the function from the distance, the corresponding SMS must be sent to the TCR. In the annex (see page 20) is an overview with all factory settings. The right column can be used to note your own settings.

Configuration

Easy Configuration with a Telephone Call

The configuration call sets the telephone numbers which will be called as phone number 1 for all alarming events; that means, that a SMS will be sent to phone number 1, if the alarm input 1 or 2 has been activated. At power failures, respectively, return of power, deviation from the set temperature level and at activated Alive-function, a SMS will also be sent to phone number 1.

Preconditions:

- The easy configuration can only be done with the factory settings, i. e. the TCR has not yet been configured. If necessary, reset the TCR with its factory settings.
- Make sure that your telephone and provider transmits the phone number.

At the configuration proceed as follows:

- 1 Connect the TCR to the power supply.
The device connects within a minute to the GSM network.
- 2 If the GSM LED lights up, call the TCR within 5 minutes.
The Act-LED will flicker during the call.
- 3 A busy tone will be heard.

- 4 After the next incoming call the output 1 will be switched on for 3 seconds.

Configuration with PC program

We recommend to use the PC-configuration program on the CD for setting individual data at the TCR.

- 1 For the installation of the PC program, start the file "Setup.exe" in subdirectory "program files".
- 2 Follow the instructions on your screen.

Connect the device and the PC with the shipped USB-cable.

System requirements:

- Intel Pentium Processor or higher
- Windows NT 4.0, Windows 2000, Windows XP Professional, Windows 2003
- 128 MB RAM
- graphic resolution min. 1024 x 768
- all colors

Configuration

Configuration with SMS-Messages

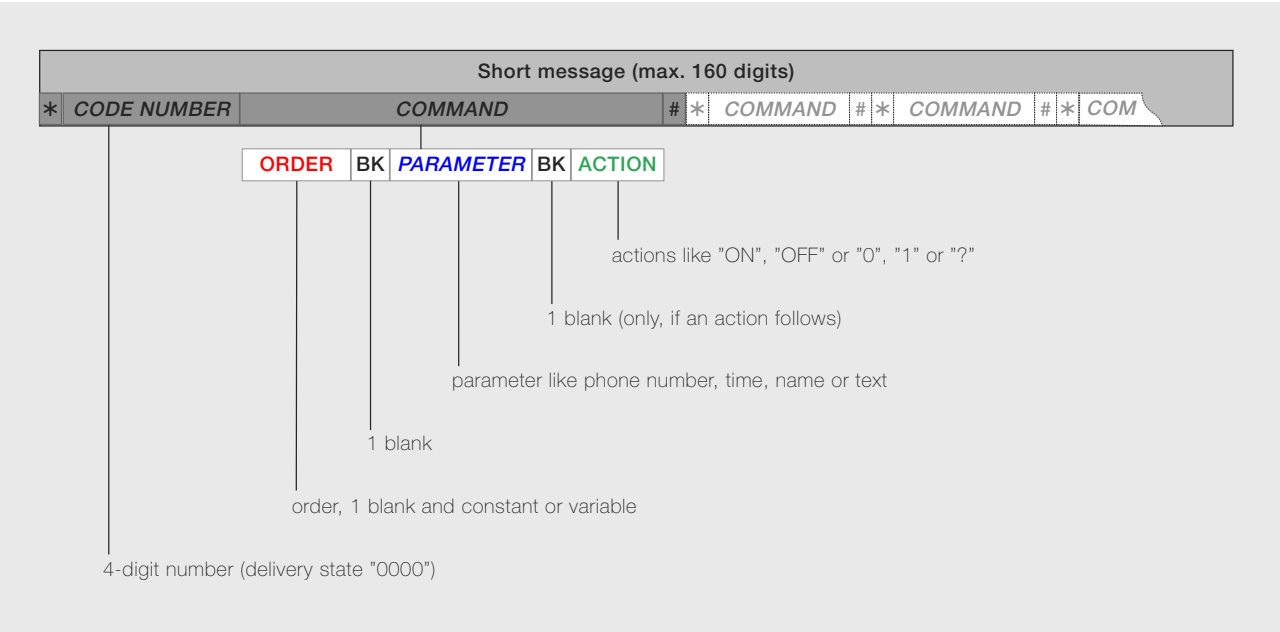
After the easy configuration with the configuration call the TCR is ready to use. In addition, the TCR consists of numerous features which can individually be activated by sending SMS – commands to the TCR. For easier understanding we divided the additional configuration possibilities into "Basic Settings" and "Expert Settings".

After a brief description of the respective features, there follows a table with the exact syntax of the settings. With a corresponding short message to the TCR, you can program the TCR as well as check the state of the connected devices or change the state of the outputs("ON/OFF"). The command is the main part of the short message. The command is embedded in „*“ and „#“. A SMS can consist of more than one command. At the first command the „*“ is followed by a 4-digit code number. The following commands within a SMS will be appended without code number. The command will be added to the code number without a space. Each command is composed as

shown below, whereas the parts of a command (order, parameter, action) alternatively can be used. Requests are marked with a "?" as action. Individual parts of an entry are illustrated in italics. All commands can be entered in upper case- and/or lower case letters.

Hint: It is recommended, to save the most used short messages in your mobile phone as a template.

 Pay attention to the mandatory spaces when composing a short message!



Example 1:

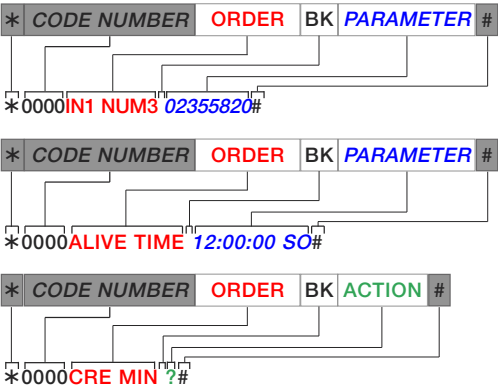
Setting of phone number 3 (02355820) for alarm input 1:

Example 2:

Setting of time (each sunday 12.00 h) for ALIVE-SMS:

Example 3:

Request of the programmed minimum credit level:



Configuration

Basic Settings

You can increase the safety of the TC and expand its applications with the described functions in this chapter, without having any complicated detail knowledge.

Changing the code number

The default code number of the factory settings (0000) should be changed. It must consist of 4 digits.

Setting of phone numbers

For all alarming functions individual phone numbers can be programmed, to receive a SMS in case of an alarm. The following alarming functions are available:

- Alarm message from the alarm inputs
- Deviation of temperature (only with connected temperature sensors)
- Tracking functions (only with connected GPS-receiver)
- Alive SMS
- Exceeding the limit of remaining balance with prepaid cards
- Power failure
- Power return

The four phone numbers for each event will be entered according to a common procedure (see page 9 and page 11). They can be up to 20 digits long and can be checked and set with SMS.

Behavior in case of power failure

The TC has been designed as a power-saving device with accumulator operation in order to enable mobile use. The charging state of the accumulator can be checked at any time. The capacity of the accumulator will be stated, if the device had a power failure and is accumulator mode. If the capacity falls below 10% the TC sends the SMS "power failure" a second time. At a power failure a short message can be sent to up to four phone numbers.

All settings and the actual switching states are permanently stored and are therefore, available after a power return. After return of power, a SMS will be sent to the four stored phone numbers.

If a power failure occurs during the transmission of a SMS, the short message will be sent again after return of power. The maximal four stored phone numbers can be checked with a SMS.

Time

The actual date and time is relevant for the setting of an Alive-SMS. They can be stored in the TC and checked at any time. The time of the device can be cyclically adjusted with the time of the provider. The pulsing (monthly, quarterly or half-yearly) can be set for this reason. Furthermore, the phone number of the TC must be entered for the synchronization. This function can be switched on, respectively, switched-off.

Alive-SMS

At predetermined times the active TC can send a status SMS, which contains the state of all inputs and outputs and the position, if a GPS-receiver is connected.

The four phone numbers can be set and checked. The time interval between the message can be selected between daily, weekly and monthly at certain times. The Alive-function can be activated with a corresponding SMS.

Switching outputs

With a SMS you can switch the outputs on and off, or you can check the state of the output.

Alarm inputs

The TC has two alarm inputs at which alarm contacts can be connected. At activation of a contact, a SMS will be sent to the programmed phone numbers.

The state of the alarm inputs can be checked. The phone numbers can be programmed and checked.

Management of remaining balance with prepaid cards

If a prepaid card is being used, it can be programmed in such a way, so that after falling below a critical value of the remaining balance, up to four phone numbers will be informed with a SMS. The limit and the phone numbers can be programmed. The value can be entered with three digits before the comma, and two digits behind the comma. The feature will be activated when entering the value and can be switched off with a SMS.

The actual remaining balance as well as the programmed limit and the stored phone numbers can be checked.

Configuration

Basic Settings

Function	Short message	Parameter	Answer-SMS (if activated)
Basic settings			
Changing the code number	*XXXX CNR ZZZZ #	XXXX = old code ZZZZ = new code 4-digits code	*CNR= ZZZZ#
Setting of phone no. for powering up/power failure	*XXXX POWON NUMn number # *XXXX POWOFF NUMn number #	NUMn = phone no. 1-4 number = phone no.	*POWON NUMn= number# *POWOFF NUMn= number#
Request of phone no. for powering up/power failure	*XXXX POWON NUMn ?# *XXXX POWOFF NUMn ?#	n = 1-4 without „n“ = request of all no.	*POWON NUMn= number# *POWOFF NUMn= number#
Setting of date and time	*XXXX TIME DD.MM.YYYY hh:mm:ss #	DD = day, 2 digits MM = month, 2 digits YYYY = year, 4 digits hh = hours, 2 digits mm = minutes, 2 digits ss = seconds, 2 digits	*TIME= date and time#
Request of date and time	*XXXX TIME ?#		*TIME= date and time#
Setting of pulse for time synchronization	*XXXX TSYNC n #	n = 0, 1, 3, 6 0 = Off 1 = monthly 3 = quarterly 6 = every six months	*TSYNC= n#
Request of pulse for time synchronization	*XXXX TSYNC ?#		*TSYNC= n#
Setting of phone no. for time synchronization	*XXXX SIM NUM number #	number = phone no. of the TC	*SIM NUM= number#
Request of phone no. for time synchronization	*XXXX SIM NUM ?#		*SIM NUM= number#
Setting of phone no. for ALIVE-SMS	*XXXX ALIVE NUMn number #	n = 1-4	*ALIVE NUM= number# *ALIVE NUMn= number#
Request of phone no. for ALIVE-SMS	*XXXX ALIVE NUMn ?#	n = 1-4 without „n“ = request of phone no.	*ALIVE NUM= number# *ALIVE NUMn= number#
Switching on/off of ALIVE-SMS	*XXXX ALIVE TIME hh:mm # *XXXX ALIVE TIME hh:mm WT WT # *XXXX ALIVE TIME hh:mm MT # *XXXX ALIVE TIME OFF #	TIME = time WT = day of week (MO, TU etc.), selectable ≥1 MT = day of month (1-31) OFF = switch off ALIVE	*ALIVE TIME= time#
Request of ALIVE interval	*XXXX ALIVE TIME ?#		*ALIVE TIME= time#
Request of ALIVE settings	*XXXX ALIVE ?#	n = 1-4	*ALIVE TIME= time#*ALIVE NUMn= number#
Switching outputs			
Switching of switching outputs	*XXXX OUT1 0 # *XXXX OUT1 1 # *XXXX OUT2 0 # *XXXX OUT2 1 # *XXXX OUT 0 # *XXXX OUT 1 #	OFF/0= switch off output ON/1 = switch on output OUT1 = switching output 1 OUT2 = switching output 2 OUT = switching output 1 and 2	*OUT1= OFF# *OUT1= ON# *OUT2= OFF# *OUT2= ON# *OUT= OFF# *OUT= ON#
Request of switching outputs	*XXXX OUT1 ?# *XXXX OUT2 ?# *XXXX OUT ?#		e. g. request of OUT1: *OUT1= OFF#
Alarm inputs			
Request of alarm inputs	*XXXX IN1 ?# *XXXX IN2 ?# *XXXX IN ?#	IN1 = alarm input 1 IN2 = alarm input 2 IN = alarm input 1 and 2	e. g. request of IN2: *IN2= ON#
Setting of phone no. for alarm or temperature inputs	*XXXX IN1 NUMn number # *XXXX IN2 NUMn number # *XXXX IN NUMn number # *XXXX TMP1 NUMn number # *XXXX TMP2 NUMn number # *XXXX TMP NUMn number #	TMP1 = temperature input 1 TMP2 = temperature input 2 TMP = temperature input 1 and 2	*IN1 NUMn= number# *IN2 NUMn= number# *IN NUMn= number# *TMP1 NUMn= number# *TMP2 NUMn= number# *TMP NUMn= number#
Request of programmed phone no.	*XXXX IN1 NUM ?# *XXXX IN2 NUM ?# *XXXX IN NUM ?# *XXXX TMP1 NUM ?# *XXXX TMP2 NUM ?# *XXXX TMP NUM ?#		*IN1 NUM= number# *IN2 NUM= number# *IN NUM= number# *TMP1 NUM= number# *TMP2 NUM= number# *TMP NUM= number#

Configuration

Basic Settings

Function	Short message	Parameter	Answer-SMS (if activated)
Alarm inputs			
Request of programmed phone no.	*XXXXIN1 NUM ?# *XXXXIN2 NUM ?# *XXXXIN NUM ?# *XXXXTMP1 NUM ?# *XXXXTMP2 NUM ?# *XXXXTMP NUM ?#		*IN1 NUM= number# *IN2 NUM= number# *IN NUM= number# *TMP1 NUM= number# *TMP2 NUM= number# *TMP NUM= number#
Management of credit level (at prepaid-cards)			
Setting of phone no. for falling below the min. remaining balance	*XXXXCRE NUMn number#	n = 1–4	*CRE NUMn= number#
Request of phone no. for falling below the min. remaining balance	*XXXXCRE NUM ?# *XXXXCRE NUMn ?#	n = 1–4	*CRE NUMn= number#
Setting specified value of the remaining balance	*XXXXCRE nnn,nn#	n = 0–9	*CRE= minimum credit level#
Request of min. value	*XXXXCRE MIN ?#		*CRE= minimum credit level#
Request of remaining balance	*XXXXCRE ?#		*CRE= actual credit value#

Configuration

Expert Settings

The expert settings offer the possibility to make full use of all performance features of the TC. All settings can be checked with a SMS.

Setting of answer-SMS

To make sure that values, respectively, states, programmed with a SMS have really been executed correctly, the TC can send a confirmation SMS. The feature can be activated or deactivated with a SMS.

GSM information

At the GSM request you will receive information about the actual field strength of the network and the operation mode of the SIM-card.

Product information

As general product information you will receive information about the version of the TC (V n.n.n.n.), the time, position and number of received satellites (if a GPS receiver is connected) and the state of the power supply.

State of battery

You can check the charging state of the accumulator. During a power failure the TC will state the accumulator capacity in percent, otherwise, it will state that the power supply is ok. If the capacity of the accumulator falls below 10 %, the TC will send again a SMS "power off" as a reminder, that the accumulator has to be charged.

Reset to delivery state

The TC can be reset to the factory settings. The CLIP numbers are not affected by this command since they are stored on the SIM card. The device will reboot.

Individual names for the inputs and outputs

For easier distinction, individual names can be chosen for the alarm inputs, temperature inputs and the switching outputs. The names can be up to 17 characters long.

Hint:

Consider when choosing a name, that the length of the name will influence the overall length of the alarming- and request SMS.

Input parameter

With the input parameter request you can check for one or both alarm inputs the type contact activation, activation time, delay time and phone numbers.

CLIP numbers

The CLIP numbers are stored on the SIM card. Since all stored phone numbers on the SIM card are entitled to perform the cost-free switching, check in advanced, if there are any service numbers etc. stored and eventually delete them. The CLIP numbers must not be longer than 20 digits.

- **Setting of CLIP numbers**
Up to 100 CLIP numbers can be stored for cost-free switching of output 1 (see "General").

Hint:

If you store 100 CLIP numbers and perform a request of CLIP numbers, you will receive about 25 SMS, since each SMS consists of 160 characters.

- **Activate CLIP function**
The CLIP function can be activated, respectively, deactivated and you can check the actual status of the CLIP function.

- **Delete CLIP numbers**
The CLIP numbers can be deleted individually or deleted all at once. Instead of using the phone number (number), you can delete the CLIP number by using the name (name).

Switching outputs

- **Switching time**
The impulse time activates the outputs for a programmable time (i.e. to activate the door opener or to switch on a pump for several hours). The range of the switching time is between 1 second and 24 hours. The entry must be done in the pattern hh:mm:ss, i.e. at 25 minutes you must enter 00:25:00.

Hint:

Should a power failure occur during a impulse switching of an output, the corresponding output will be switched off after return of power.

- **Activation of the alarm function**
If the output 1 is activated from a CLIP number, a SMS can be sent to up to four phone numbers. This function can be switched on, respectively, switched-off

The four phone numbers will be entered in a unified procedure (see page 9 and page 12). They can not be longer than 20 digits and can be checked and set via SMS.

Hint:

The alarm memory saves the last 50 switching actions of output 1, which have been initiated with the CLIP-function. The messages inform about the date, time, phone number and – if known – the name of the caller. They memory can be read with the PC-program.

Alarm inputs

- **Total settings**
The total settings can be checked for an input individually or for both inputs at once. If you have given your inputs names, you can enter them as constants.
- **Type of contact and activation time**
The functions for the inputs can be set individually or for both inputs at once (0=make contact, 1=break contact). The activation time (0 to 999) defines, after how many seconds an input is recognized as activated.
- **Delay time**
The delay time is the time between the activation of an alarm input and sending the alarm message. The maximum delay time is 999 seconds.

Temperature inputs

- **Temperature level**
If a temperature sensor is connected at the analog inputs, lower and/or higher temperature limits can be set. An alarm message will be sent to the programmed phone numbers if out of the permitted temperature range. Depending on the settings, an exceeding ("Max") and/or falling below ("Min") will result in an alarm message. For the entry of negative values a "-" sign has to be used as a prefix. The programmable temperature range is between -25 °C to 50 °C. The TC has a hysteresis of 3 °C, which means that at a programmed temperature limit of 25 °C an alarm will only be sent again, if the temperature has fallen below 22 °C. It is possible to deactivate one limit, if only the exceeding of a temperature or the falling below a temperature should be processed.

Hint:

The temperature value will be updated every minute by the TC.

• Actual temperature

For both temperature sensors the actual temperature can be checked.

GPS- and tracking-function

If a GPS-receiver is connected and activated, the actual position can be checked.

Furthermore, a tracking function can be activated. If the tracking function is activated and the position has been changed more than 200 m, the TC will start sending SMS with the actual position data in a defined time interval. The maximum interval time is 9999 minutes.

The tracking function can be checked and switched off.

Setting of alarm texts

For the following alarming functions individual alarm texts can be entered, which will be sent in case of an alarm:

- alarm inputs
- power failure
- power return

The alarming functions:

- Temperature deviation
- Remaining balance with pre-paid cards

allow the integration of a variable in the individual text.

The text for the ALIVE-SMS can not be changed.

Configuration

Expert Settings

Function	Short message	Parameter	Answer-SMS (if activated)
Expert settings			
Setting of answer-SMS	*XXXXIND 0# *XXXXIND 1#		no answer *IND= ON#
Request of answer-SMS	*XXXXIND ?#		*IND= ON#
Request of GSM information	*XXXXGSM ?#		*GSM= nn SIM READY#
Request of product information	*XXXXINFO ?#		*INFO= Vn.n.n.n#*TIME= date and time#*GPS= position#*SAT= n#* POWER OK#
Request of battery state	*XXXXBAT ?#		battery operation: *BAT= nn%# mains operation: *POWER OK#
Reset to factory settings	*XXXXFAC#		*FAC= OK#
Setting of names for in- and outputs	*XXXXIN1 NAME abc# *XXXXIN2 NAME abc# *XXXXOUT1 NAME abc# *XXXXOUT2 NAME abc# *XXXXTMP1 NAME abc# *XXXXTMP2 NAME abc#	IN1 = alarm input 1 IN2 = alarm input 2 OUT1 = switching output1 OUT2 = switching output2 TMP1 = temperature input 1 TMP2 = temperature input 2 abc = individual name (max. 17 digits)	*IN1 NAME= abc# *IN2 NAME= abc# *OUT1 NAME= abc# *OUT2 NAME= abc# *TMP1 NAME= abc# *TMP2 NAME= abc#
Request of names for in- and outputs	*XXXXIN1 NAME ?# *XXXXIN2 NAME ?# *XXXXOUT1 NAME ?# *XXXXOUT2 NAME ?# *XXXXTMP1 NAME ?# *XXXXTMP2 NAME ?#		*IN1 NAME= abc# *IN2 NAME= abc# *OUT1 NAME= abc# *OUT2 NAME= abc# *TMP1 NAME= abc# *TMP2 NAME= abc#
Request of input parameters without alarm texts	*XXXXIN1 PARA ?# *XXXXIN2 PARA ?# *XXXXIN PARA ?# *XXXXTMP1 PARA ?# *XXXXTMP2 PARA ?# *XXXXTMP PARA ?#	IN = alarm input 1 and 2 TMP = temperature input 1 and 2	e. g. request of IN1: *IN1 NUM1= number# *IN1 NUM2= number#*IN1 NUM3= number#*IN1 NUM4= number#*IN1 CON= ssss 0#*IN1 DELAY = sss#
CLIP numbers			
Setting/request of CLIP numbers for switching output 1	*XXXXCLIP number name# *XXXXCLIP number# *XXXXCLIP ON# *XXXXCLIP OFF#	name = name ON = switch on CLIP OFF = switch off CLIP	*CLIP= number name# *CLIP= number# *CLIP= ON# *CLIP= OFF#
Request of CLIP numbers	*XXXXCLIP number ?#		*CLIP= number name# *CLIP= number#
Deleting CLIP numbers	*XXXXERASE number# *XXXXERASE name# *XXXXERASE ALL#		*ERASE= nummer# *ERASE= number name# *ERASE= all#
Request of CLIP function	*XXXXCLIP ?#		*CLIP= ON# *CLIP= OFF#
Switching outputs			
Setting of switching time	*XXXXOUT1 DUR hh:mm:ss# *XXXXOUT2 DUR hh:mm:ss# *XXXXOUT DUR hh:mm:ss#	hh:mm:ss = duration (1s bis 24 h)	*OUT1 DUR= hh:mm:ss# *OUT2 DUR= hh:mm:ss# *OUT DUR= hh:mm:ss#
Request of switching time	*XXXXOUT1 DUR ?# *XXXXOUT2 DUR ?# *XXXXOUT DUR ?#		*OUT1 DUR= hh:mm:ss# *OUT2 DUR= hh:mm:ss# *OUT DUR= hh:mm:ss#
Setting of alarm function for output 1	*XXXXCLIPFX ON# *XXXXCLIPFX OFF#	ON = Funktion einschalten OFF = Funktion ausschalten	*CLIPFX= ON# *CLIPFX= OFF#
Request of alarm function	*XXXXCLIPFX ?#		*CLIPFX= ON# *CLIPFX= OFF#
Setting of phone numbers for alarm function	*XXXXCLIPFX NUMn number# *XXXXCLIPFX number name#	NUMn = phone no. 1–4 number = phone no. name = name	*CLIPFX NUMn= number#
Request of phone numbers for alarm function	*XXXXCLIPFX NUMn ?#	n = 1–4 without „n“ = request of all no.	*CLIPFX NUMn= number#

Configuration

Expert Settings

Function	Short message	Parameter	Answer-SMS (if activated)
Expert settings			
Alarm inputs			
Setting of contact activation for alarm inputs	*XXXXIN1 CON ssss 0# *XXXXIN1 CON ssss 1# *XXXXIN2 CON ssss 0# *XXXXIN2 CON ssss 1# *XXXXIN CON ssss 0# *XXXXIN CON ssss 1#	0 = make 1 = break ssss = activation in seconds (max. 9999)	*IN1 CON= ssss 0# *IN1 CON= ssss 1# *IN2 CON= ssss 0# *IN2 CON= ssss 1# *IN CON= ssss 0# *IN CON= ssss 1#
Request of contact activation for alarm inputs	*XXXXIN1 CON ?# *XXXXIN2 CON ?# *XXXXIN CON ?#		e. g. request of IN2 with make contact: *IN2 CON= ssss 1#
Setting of delay time for alarm inputs	*XXXXIN1 DELAY sss# *XXXXIN2 DELAY sss# *XXXXIN DELAY sss#	sss = delay in seconds (max. 999)	*IN1 DELAY= sss# *IN2 DELAY= sss# *IN DELAY= sss#
Request of delay time for alarm inputs	*XXXXIN1 DELAY ?# *XXXXIN2 DELAY ?# *XXXXIN DELAY ?#		*IN1 DELAY= sss# *IN2 DELAY= sss# *IN1 DELAY= sss#*IN2 DELAY= sss#
Temperature inputs (with temperature sensors)			
Request of temperature level MIN	*XXXXTMP1 MIN ?# *XXXXTMP2 MIN ?# *XXXXTMP MIN ?#		*TMP1 MIN= nn# *TMP2 MIN= nn# *TMP1 MIN= nn#*TMP2 MIN= nn#
Switching on temperature level MIN	*XXXXTMP1 MIN nn# *XXXXTMP2 MIN nn# *XXXXTMP MIN nn#	nn = temperature level (max. 99+Vorzeichen)	*TMP1 MIN= nn# *TMP2 MIN= nn# *TMP1 MIN= nn#*TMP2 MIN= nn#
Switching off temperature level MIN	*XXXXTMP1 MIN OFF# *XXXXTMP2 MIN OFF# *XXXXTMP MIN OFF#	OFF = switch off	*TMP1 MIN= OFF# *TMP2 MIN= OFF# *TMP1 MIN= nn#*TMP2 MIN= nn#
Request of temperature level MAX	*XXXXTMP1 MAX ?# *XXXXTMP2 MAX ?# *XXXXTMP MAX ?#		*TMP1 MAX= nn# *TMP2 MAX= nn# *TMP1 MAX= nn#*TMP2 MAX= nn#
Switching on temperature level MAX	*XXXXTMP1 MAX nn# *XXXXTMP2 MAX nn# *XXXXTMP MAX nn#	nn = temperature level (max. 99+Vorzeichen)	*TMP1 MAX= nn# *TMP2 MAX= nn# *TMP1 MAX= nn#*TMP2 MAX= nn#
Switching off temperature level MAX	*XXXXTMP1 MAX OFF# *XXXXTMP2 MAX OFF# *XXXXTMP MAX OFF#	OFF = switch off	*TMP1 MAX= OFF# *TMP2 MAX= OFF# *TMP1 MAX= nn#*TMP2 MAX= nn#
Request of temperature level	*XXXXTMP1 MINMAX ?# *XXXXTMP2 MINMAX ?# *XXXXTMP MINMAX ?#		*TMP1 MAX= nn MIN= nn# *TMP2 MAX= nn MIN= nn# *TMP1 MIN= nn MAX= nn#*TMP2 MIN= nn MAX= nn#
Request of actual temperature	*XXXXTMP1 ?# *XXXXTMP2 ?# *XXXXTMP ?#		*TMP1 ACT= nn# *TMP2 ACT= nn# *TMP1 ACT= nn#*TMP2 ACT= nn#
GPS and tracking functions (with GPS receiver)			
Request of GPS-position data	*XXXXGPS ?#		*GPS= N/S ab xy.zzzz E/W ab xy.zzzz#
Setting of behavior for change of GPS-position (tracking)	*XXXXTRA 0# *XXXXTRA mmmm 1#	0 = tracking deactivated mmmm = time interval for sending of coordinates in minutes (max. 9999), tracking activated	*TRA= OFF# *TRA= mmmm ON#
Setting of phone no. for GPS-position messages	*XXXXTRA NUMn number#	NUMn = phone no. 1-4 number = phone no.	*TRA NUMn= number#

Configuration

Expert Settings

Function	Short message	Parameter	Answer-SMS (if activated)
Expert settings			
GPS and tracking functions (with GPS receiver)			
Request of phone no. for GPS-position messages	*XXXXTRA NUM ?# *XXXXTRA NUMn ?#	NUMn = phone no. 1-4	*TRA NUM1= number#*TRA NUM2= number#*TRA NUM3= number# *TRA NUM4= number# *TRA NUMn= number#
Request of behavior for change of GPS-position	*XXXXTRA ?#		*TRA= 0# *TRA= mmmm ON#
Alarm texts			
Setting of alarm texts	*XXXXIN1 TXT abc# *XXXXIN2 TXT abc# *XXXXIN TXT abc# *XXXXPOWON TXT abc# *XXXXPOWOFF TXT abc#	abc = alarm text	*IN1 TXT= abc# *IN2 TXT= abc# *IN TXT= abc# *POWON TXT= abc# *POWOFF TXT= abc#
Request of alarm texts	*XXXXIN1 TXT ?# *XXXXIN2 TXT ?# *XXXXIN TXT ?# *XXXXPOWON TXT ?# *XXXXPOWOFF TXT ?#		*IN1 TXT= alarm input 1 has been activated# *IN2 TXT= alarm input 2 has been activated# *IN1 TXT= alarm input 1 has been activated#*IN2 TXT= alarm input 2 has been acti- vated# *POWON TXT= power is switched on#*IN1= OFF# *IN2= ON#*OUT1= ON#* OUT2= OFF# *POWOFF TXT= power has been switched off#
Setting of alarm texts with variable value	*XXXXTMP1 TXT abcVALX# *XXXXTMP2 TXT abcVALX# *XXXXTMP TXT abcVALX# *XXXXCRE TXT abcVALX#	CRE = credit level abc = alarm text VALX = value	*TMP1 TXT= abcVALX# *TMP2 TXT= abcVALX# *TMP TXT= abcVALX# *CRE TXT= abcVALX#
Request of alarm texts with variable value	*XXXXTMP1 TXT ?# *XXXXTMP2 TXT ?# *XXXXTMP TXT ?# *XXXXCRE TXT ?#		*TMP1 TXT= temperature 1 is VALX degree# *TMP2 TXT= temperature 2 is VALX degree# *TMP1 TXT= temperature 1 is VALX degree#*TMP2 TXT= temperature 2 is VALX degree# *CRE TXT= the minimum credit level is VALX Euro#

GPS-Function

Connection to GPS

Insert the connector of the GPS-receiver in the PS2-receptacle and position the GPS-receiver with direct view to the sky (satellites).

Press the push-button **GPS** in order to activate the GPS-receiver. The **GPS**-LED flashes while the GPS-receiver is searching for the satellite signal. This procedure will be finished after about 2 minutes. As soon as the GPS-receiver found the satellite signal, the **GPS** LED lights up permanently. The GPS-receiver switches off, if no satellite signal was found.

An external push-button can be connected at the terminal GPS and "⏏" instead of using the integrated push-button. We recommend the PDA GPS receiver NL-303P from Navilock (art. no. 700 902 601).

The push-button **GPS** has to be pressed again shortly in order to see how many satellites are received. The number of received satellites is displayed at the LEDs (see table on page 7). If you want to turn off the GPS-receiver, you have to press the push-button GPS for more than 3 seconds. At a GPS request the coordinates of the actual position of the TCR will be sent in degrees and decimal minutes. With programs like Google Earth or similar you can visualize the position data and identify the actual location of the TCR.

If tracking has been activated, the TCR sends SMS with the position data in a programmable time interval, if the position of the TCR has been changed for more than 200 m.

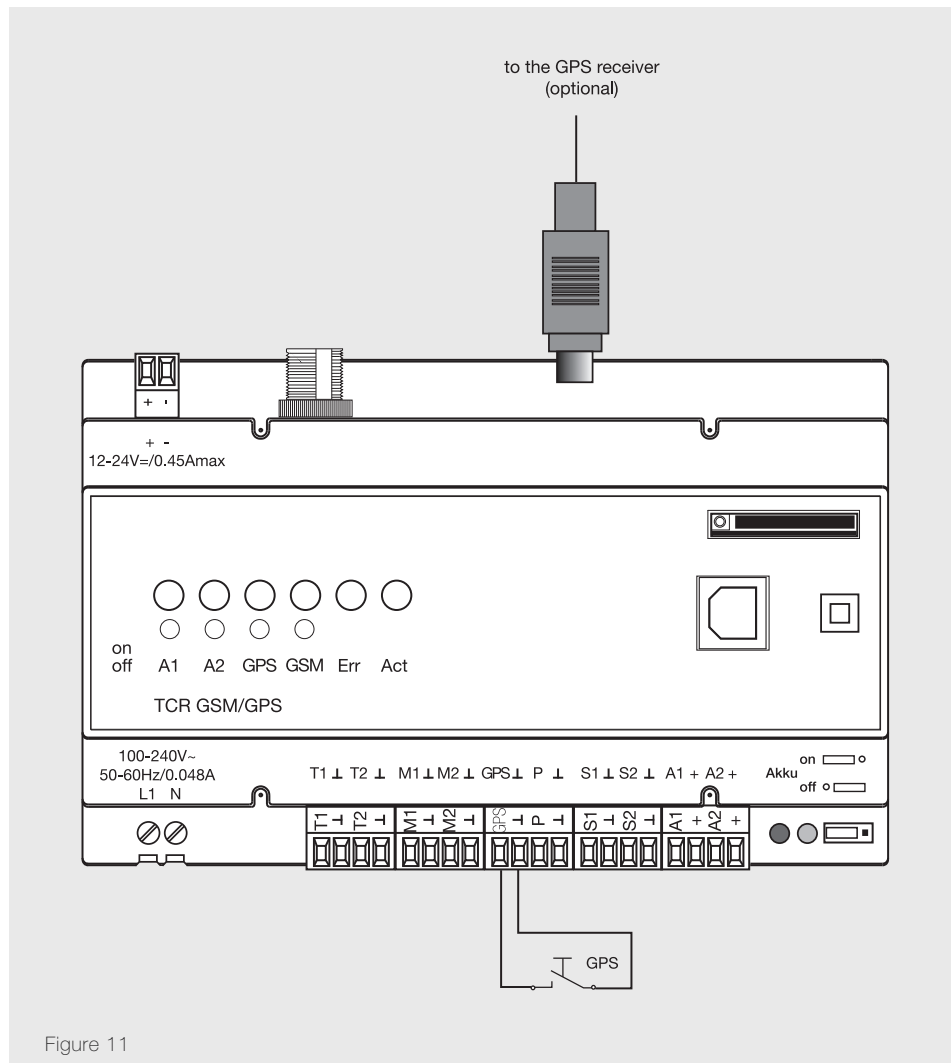


Figure 11

Technical Data

Dimensions L x W x H:	144 x 90 x 65 mm
Weight:	325 g
Color:	light grey, similar RAL 7035
Material:	PC
Temperature range	
Operation:	-20 to 55 °C
Storage:	-25 to 70 °C
Protection class:	IP30 according to EN 60529
Class:	II
Switching output 1 and 2:	potential free contacts, max. 48 V AC/DC at 2 Amps
Alarm input 1 and 2:	for potential free make-contacts (activation time > 50 ms)
voltage:	100–240 V AC/50–60 Hz
Current consumption:	48 mA to 21 mAmps
Power consumption (max.):	7 VAmps
Power supply:	12 V DC or 24 V DC with screw terminals (alternatively to 230 V power supply)

Current consumption (at 12 VDC)	
idle mode, outputs and GPS	
switched off:	23 mAmps*
idle mode, outputs switched off,	
GPS switched on:	62 mAmps*

Accumulator

Type:	LiPo (Lithium Polymer)
Voltage:	3.7 V
Capacity:	1250 mAmp-hours

USB cable

Type:	type A plug - type B plug
Length:	1.8 m

GSM antenna

Type:	magnetic mount antenna with FME-connector, 3 m
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Temperature sensor (optional)

Article number:	700 802 201
Length:	600 mm
Extension:	up to max. 10 m
Temperature range:	-25–50 °C, resolution 1 °C
Temperature drift	
-25 °C:	86.4 kΩ
25 °C:	10 kΩ
50 °C:	4.1 kΩ

B value:	3435 K ±1%
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GPS receiver NL-303 P (optional)

Article number:	700 902 601
Length:	1.65 m

* for each set output the current consumption increases by 20 mA

Troubleshooting

After sending a faulty SMS to the TCR, you will receive an error message in the following form

nERR*XXX#

n= number of errors
XXX= incorrect part of the message

Each error will be place between * and #. Several errors will be subsequently added in an SMS and send.

Fault	Help/Measure
The TCR does not send a SMS	No remaining balance on SIM-card. Check the stored phone number. GSM reception is not sufficient.
The TCR does not send an answer-SMS	No remaining balance on SIM-card. Check, if the answer SMS is activated (IND=1). GSM reception is not sufficient.
The ALIVE-SMS is not sent at the predetermined times	No remaining balance on SIM-card. GSM reception is not sufficient. No power supply, accumulator not connected.
The Err-LED lights up	Press the push-button GSM and see table on page 7.
False temperature statement	Check the connection of the temperature sensors.
Temperature statement "99"	No temperature sensor connected.

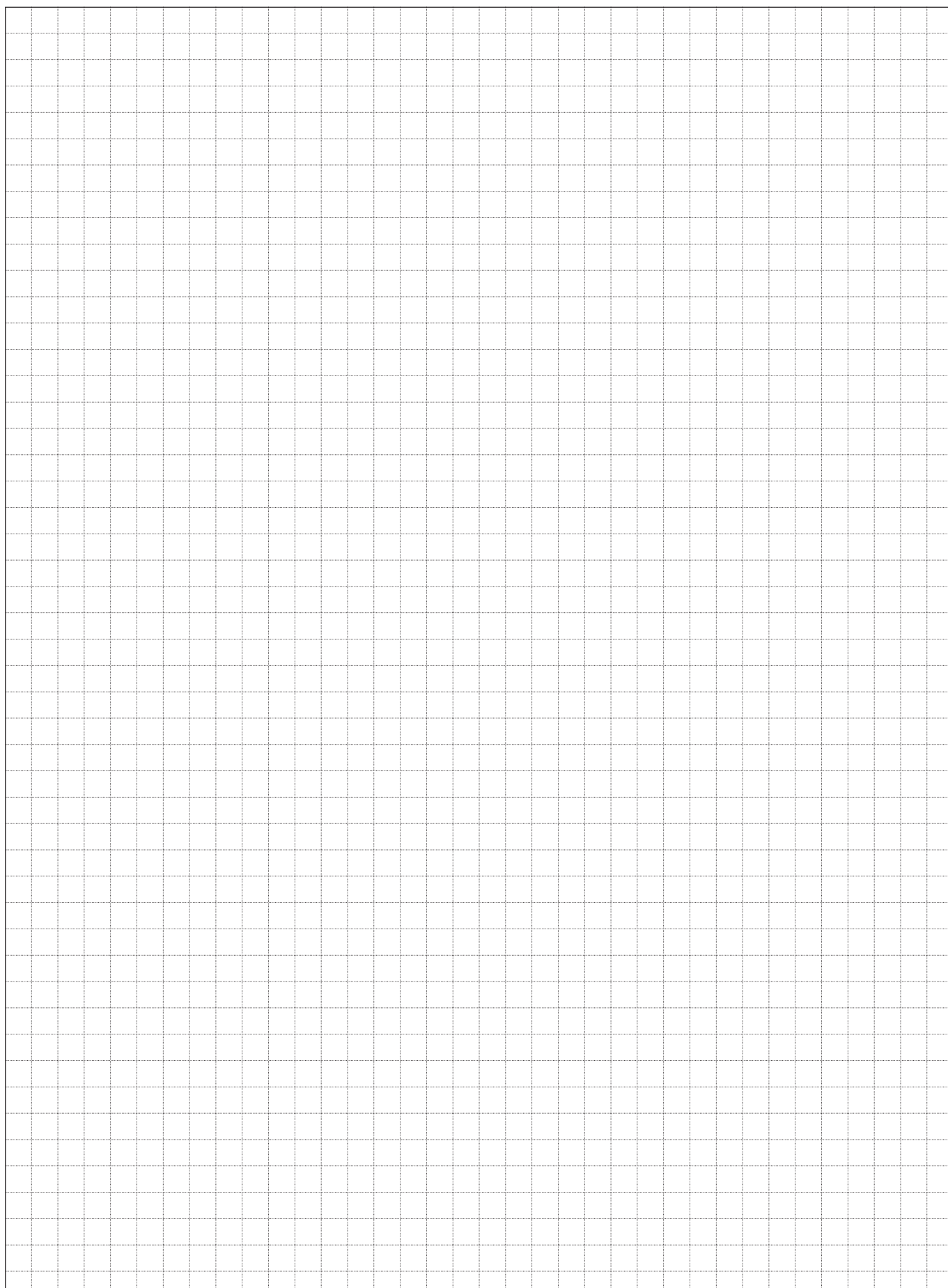
Annex

Factory Defaults

State of delivery:		Own settings:
Alarm input 1:		
Phone number 1*:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----
Phone number 4:	none	-----
Make/break:	make	-----
Switching-impulse time:	0	-----
Alarm delay:	0	-----
Alarm text:	Alarm input 1 has been activated.	-----
Alarm input 2:		
Phone number 1*:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----
Phone number 4:	none	-----
Make/break:	make	-----
Switching-impulse time:	0	-----
Alarm delay:	0	-----
Alarm text:	Alarm input 2 has been activated.	-----
Temperature input 1:		
Phone number 1*:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----
Phone number 4:	none	-----
Temperature level:	< 5 °C and >45 °C	-----
Alarm text:	Temperature 1 is VALX degree.	-----
Temperature input 2:		
Phone number 1*:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----
Phone number 4:	none	-----
Temperature level:	< 5 °C and > 45 °C	-----
Alarm text:	Temperature 2 is VALX degree.	-----
Remaining balance (only with prepaid-cards):		
Phone number 1*:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----
Phone number 4:	none	-----
Alarm at:	< 0 €	-----
Alarm text:	The credit level is VALX Euro.	-----
Switching output 1:		
State:	off	-----
Impulse time:	3 s	-----
CLIP number 1 to 100:	SIM-card	-----
Switching output 2:		
State:	off	-----
Impulse time:	0 s	-----
Alarm function:		
Phone number 1:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----
Phone number 4:	none	-----
Code number:		
0000		-----
Time synchronization:		
Pulsing:	0	-----
Phone number:	none	-----
Tracking:		
Time span:	0 min/OFF	-----
Phone number 1*:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----
Phone number 4:	none	-----
Power failure:		
Phone number 1*:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----
Phone number 4:	none	-----
Alarm text:	Power off.	-----
Powering up:		
Phone number 1*:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----

Phone number 4:	none	-----
Alarm text:	"Power on" and state of in-/outputs	-----
Alive-state:		
Phone number 1*:	none	-----
Phone number 2:	none	-----
Phone number 3:	none	-----
Phone number 4:	none	-----
Interval time:	0	-----

* will be set with configuration call		



This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form small squares across the entire surface. There are no margins, text, or other markings on the paper.



AMOK-ALARM SYSTEM AAS-100 A

Hardware and Software specifications subject to change without notice.
Technische Änderungen in Hardware und Software vorbehalten.

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