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1. SYSTEM DESCRIPTION

The unit is used for controlling relays and data/alarm- transmission via the GSM-network. It contains a power supply, a GSM-modem and a built-in antenna.

The unit can be set up with alarm texts of your own choice via SMS or via the PC COM-port and the enclosed "Quick-setup" program.

Extra equipment:

- External antenna with 2,5 m. cable (Profort no. 3690003)
- 9V rechargeable battery (Profort no. 300301)
- Temperature probe (Profort no. 007995)
- Advanced PC-program "Basic" for many settings on PC (Profort no. 900902)

Functions

8 digital inputs

- Make (NC) / break (NO)
- Gnd/24V DC

2 analog inputs

- 0-10 V
- 0-20 mA
- PT100
- Profort temperature probe
- as digital input

Activation of 4 relay-outputs

- Activate remotely with SMS and DTMF
- Activate as a function of input (from 10 sec. to 16 min. or follows input).

Forward alarms to max. 25 recipients

- as SMS messages
- as voice call with voice messages
- as voice call with DTMF-tones
- as e-mail (depending on the telephone company)

Calls 3 times in case of no response (voice message).

Acknowledgement of alarm by pressing # during the message (the call list will be interrupted).

Automatic alarm in case of sabotage and power failure (also in disconnected state).

Back-up in 30 min. in case of power failure with 9V ACCU.

Set clock:

- Time based connection/disconnection
- Time based status messages
- Time registration in the log
- Status with intervals of 15 minutes
- Status one time per day
- Status one time per week (Wednesday)

Commands in the text for inputs

Alarm from 8 zones

Log: 256 records

90 sec. voice memory

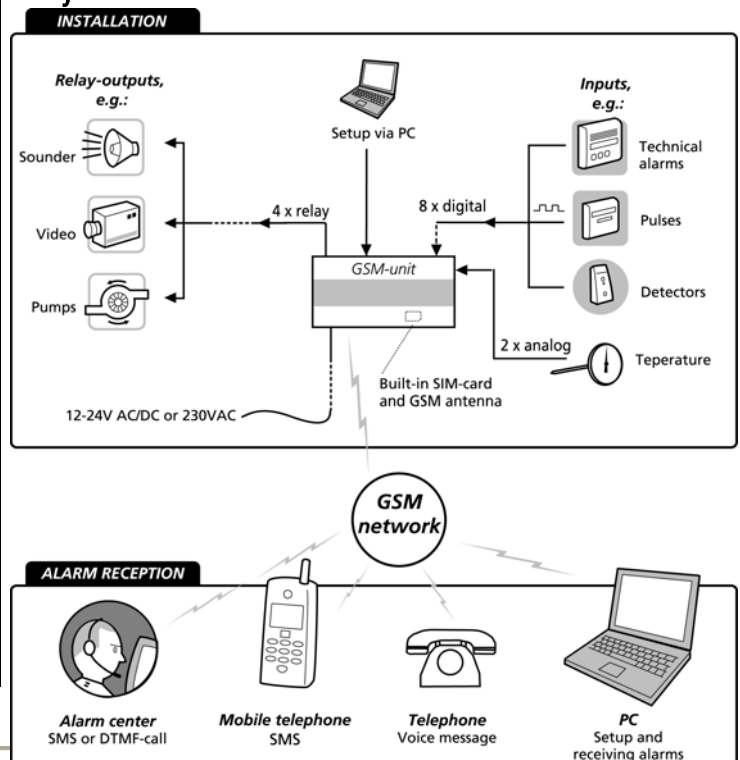
Data communication with PLC via RS 232

Variable filter time for inputs: 10 sec. to 30 min.

Delay alarms for 30 sec. when connecting /disconnecting the unit

Remote control of the unit with macros

System illustration





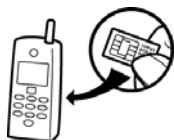
2. MOUNTING

The unit has a built-in GSM-modem. All types of SIM-cards can be used except from 3G cards. However it is recommended to use a SIM-card "Pay and go" instead of an ordinary SIM-card because the latter often has an expiry date after e.g. 6 months.

Prepare the central unit

1. Lift the front cover of the unit.
The unit must be turned off!
2. Connect all relay-outputs and inputs to the unit. Use at least 24 AWG – or stronger if possible.

Install SIM-card



3. Insert the SIM-card to be used into a GSM-mobile phone.
4. Check that the SIM-card's PIN code is set to 1234 (default for most telephone companies). If not, set the PIN code to 1234 or deactivate the PIN code.
5. Check if it is possible to call from the card, and send/receive SMS.
6. Remove the SIM-card from the GSM-mobile phone and insert it into the GSM-unit.

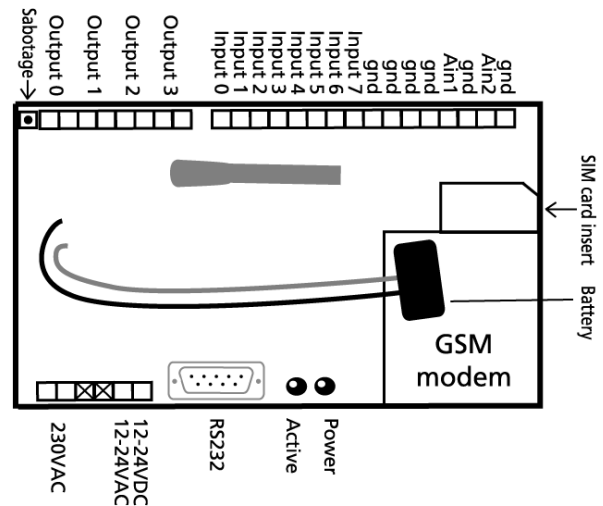


7. Check that any inputs and relay-outputs are properly connected and place the front cover onto the central unit again.
8. Connect the central unit to 230 VAC or 12-24 V AC/DC. Wait approx. 10 sec. while the GSM-modem makes contact to the GSM-network. When you hear 4 'beeps' and the red LED lights continuously for approx. 20 sec. the unit is ready.

9. Send, if necessary, a SMS with "1234 OK" to get the GSM signal strength. It must be higher than 25%.

Electric mounting

The unit can be mounted on a DIN-rail.



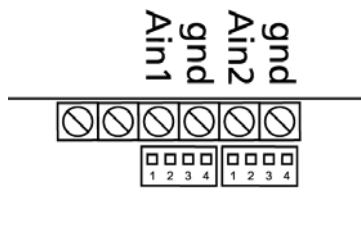
1. If the GSM-conditions are bad, replace the internal antenna by an external antenna.
2. Mount, if necessary, 9V rechargeable battery.
3. Connect outputs:
Relay-outputs are potential free relay contacts that break (**NO**) or make (**NC**) by means of instructions to the unit. As default all relay-outputs are open.
4. Connect digital inputs:
Digital inputs are optocouplers. The inputs are activated by 0V default (gnd) or 24 VDC on inputs (can be changed in the set-up program). If the supply is removed the inputs will deactivate. In both cases an alarm can be sent from the central unit.
NB! Input 0 can also be used for activating/deactivating the unit (toggle switch or bell switch).
Input 1 can be used for counting pulses. GND or 24V on inputs, selected as option in the PC-software.



5. Connect analog inputs:
As default the analog inputs function as ordinary digital inputs (all Dip - switches off). If the analog inputs are to be adapted to standard equipment: 0-10VDC, 0-20 mA or PT100 probe, the Dip-switches in the GSM-modem must be adjusted as illustrated below.

DIP switches for analog inputs

Digital: Dip-switch 1-4 off
0-10VDC: Dip-switch nr. 1 on (others off)
0-20mA: Dip switch nr. 2 on (others off)
PT100: Dip switch nr. 3 on (others off)
Profort probes: Dip switch nr. 4 on (others off)



Each analog input has 4 Dip-switches.
Equipment and probes must be connected between gnd and Ain1 or between gnd and Ain2.

Without SIM-card

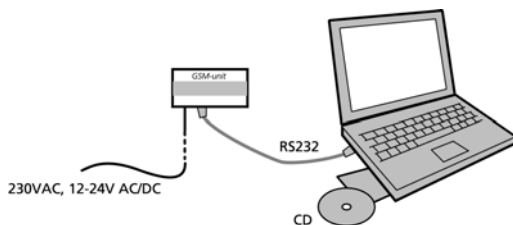
If the unit is connected without a SIM-card it is important to remove the front cover. Otherwise the unit will try to reach the GSM-net and any programming from a PC will be blocked.



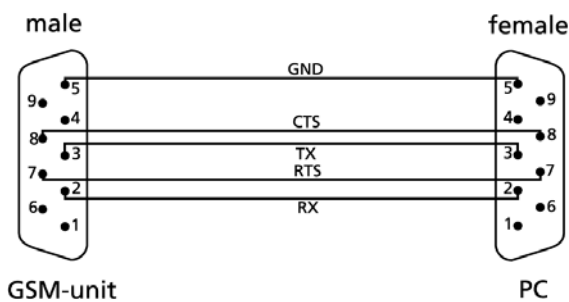
3. PREPARE PC

Start by connecting the serial converter and finding the COM-port number on the PC.

3.1 Connect PC



1. Connect the COM-port output of the unit to COM1 or the USB plug on the PC. Use a 9 pole serial cable or a USB to RS 232 serial converter. The illustration below shows the connections used in a RS232 cable.



Minimum requirements, PC:

Windows 95, 32 Mbyte RAM
Monitor, 800x600 screen
COM-port or USB-port

3.2 Set-up via USB-RS232 serial converter

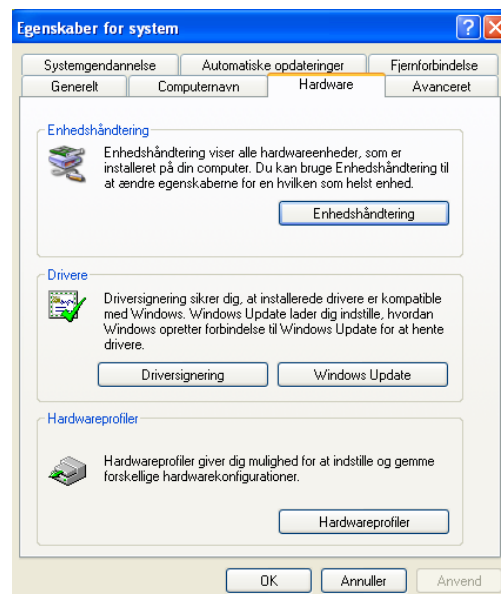
When the USB cable is connected to the USB plug on the PC Windows provides the PC with a COM-number. A PC can have more than one COM-port, and the actual COM-number provided by Windows depends on which COM-port is used for setting up the unit. Therefore it is necessary to check which COM-number Windows has given to the selected COM-port.

1. Install the driver enclosed with the USB-converter and follow the instructions for this product.
2. Connect the USB-cable to the USB-plug on the PC.

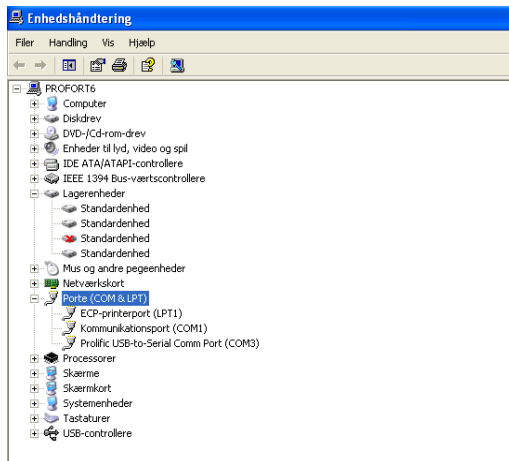
Notice that the next time you connect the USB-cable to either the same or another COM-port the given COM-number can have been changed.

3.3 Find Com-number

3. Select the menu START on your PC.
4. Select Control panel > System.
5. Select Hardware > and the first button just below.



6. Select Ports.



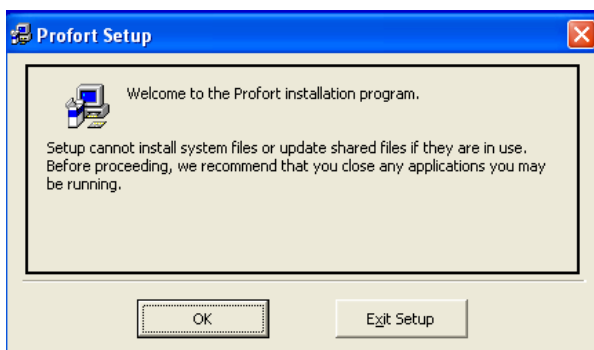
7. Read the USB-to-Serial COM-Port.

4. INSTALLATION OF PC-PROGRAM

When the COM-no. is identified start the PC-program for setting up the unit.

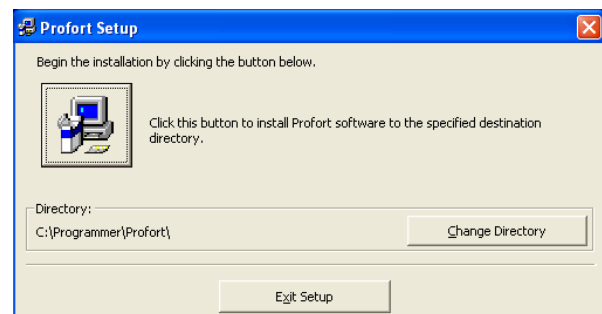
Install the set-up program on the PC:

1. Check that the COM-port output of the unit is connected to COM1 or the USB plug on your PC.
2. Insert CD-ROM in PC and click OK.

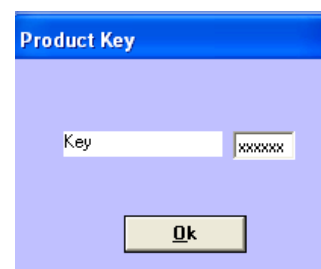


Windows suggests to install the setup-program in C:\Programmes\Profort
To change this location, press Change Directory and select the required folder.

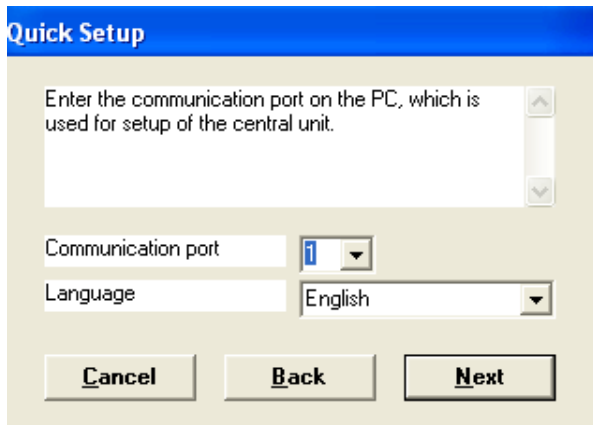
3. Click the button in the upper left corner in order to start the installation.
The installation runs automatically and takes about 20 sec.



4. Start the setup-program on the PC. If the text "Version conflict" appears select the latest version.
5. Enter the product key in the window 'Product key' which is automatically displayed: The product key is written on the cover of the CD-ROM.



If you have entered a product key to access Quick-setup the screen below will be displayed:



6. Select the number of the COM-port to which the unit is connected. If a correct COM-port is selected the text "Connection to multiGuard" in the bottom left corner will appear.

NB! If the text "No Connection" appears either a wrong COM-port is selected, the unit is turned off or the RS232 cable is defect.

If the text 'Connection to multiGuard' doesn't appear, you have to **check if the correct COM-port has been selected.**

7. Click the 'Back' button. Select Communication port, only available communications ports are listed.
8. Click the 'Next' button and you will be guided step by step through 4 setting windows (see Setting up with Quick-setup).



5. SETTING UP WITH "QUICK-SETUP"

Start Quick set-up on the PC and follow the set-up instructions through the 4 windows. The settings will be stored in unit's 'flash memory' and can be recovered in case of power failure. If the unit is coded without a SIM-card the front cover must be removed.

Window 1: Modem

Quick Setup

Welcome to the Quick Setup version 4.01.02.

The Setup program is used for setup of the central unit through a serial cable. When the program is started, it tries to establish a connection to the central unit. At the bottom of the window the status line shows if the connection is established. If there is no connection check the communication port entered, check if serial cable is mounted correctly and the unit is started. If you want to change the com.port setting click the button <Back> and the window to setup the port is shown.

When setting up a unit a number of parameters are entered. The password of the unit is entered in the field "Present password". The first time setting up the unit 1234 is used. Remember that the pincode on the simcard should be 1234 the first time. In the field GSM number the number on the simcard in the unit is entered. If entered a new password of four digits and an ID number of 1 to 32 characters is used. The password is used when sending commands to the unit and the ID is used when the unit transmits alarms. If no ID is entered the unit transmits the password instead.

When the fields are entered, click the <Next> button.

Central unit

| Present Password | GSM number | New Password | ID |
|------------------|------------|--------------|----|
| 1234 | 3 | | |

Present password: The password of the unit. When starting set-up the default password 1234 must be applied. Remember that the PIN-code of the SIM-card in the unit also has to be 1234 when starting set-up.

GSM-number: Here the telephone number of the SIM-card in the unit is entered (optional unless the clock-function is applied).

New password: Only numbers – not letters (4 digits). Here a new password, if required, is entered. The PIN-code of the SIM-card will be changed similarly. If the password must be deactivated the new password must be: 0000.

ID: Numbers or letters. Here an ID of the unit (max. 32 digits), if required, is entered. Can be sent with all alarms.

NB! The password is applied for sending commands to the unit. The ID is transmitted from the unit in case of alarm. If no ID is entered the password will also be the ID.



Window 2: Receiver(s)

Quick Setup 2

Enter the telephone number of the receivers (max. 25) of alarms from the central unit. In the field next to the telephone number it is stated how the alarm must be transmitted. If SMS is checked a SMS-message is transmitted, if Voice is checked an analogue voice call is made, if DTMF is checked an analogue telephone call with DTMF is made and if Email is checked an email address (max 48 characters) is written an email is transmitted. If Approve is checked the unit will only accept SMS og voice calls from this number. At last you can define a zone (0-7, where default is 0). Only alarms from this zone are sent to this telephone number.

| Receivers | | SMS | Voice | DTMF | Email | Approve | Zone |
|---------------|----------------------|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------------------|
| Telephone no. | | | | | | | |
| 1 | <input type="text"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> |
| 2 | <input type="text"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> |
| 3 | <input type="text"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> |
| 4 | <input type="text"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> |
| 5 | <input type="text"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> |
| 6 | <input type="text"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> |
| 7 | <input type="text"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> |
| 8 | <input type="text"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> |
| 9 | <input type="text"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> |

It is possible to encode max. 25 receivers/ telephone numbers.

Forward alarms

Alarm messages can be forwarded as SMS, Voice, DTMF or E-mail. If you wish to receive both a SMS and an analog voice message it is necessary to set up the same telephone number twice. A phone number can be of max. 15 digits. An E-mail address can be of max. 48 characters.

Zone

In the field 'Zone' (optional) is indicated whether all alarm messages are to be forwarded to the entered telephone number or if this actual telephone number is to be called only in case of alarm from a specific zone (0-7). Only one zone can be entered. If the same telephone number is to be called in case of alarm from e.g. 2 zones the actual telephone number must be entered twice. If the field 'Zone' is empty, alarm from all zones will be received. The field 'Zone' disappears when the option 'Approve' is active.

Approve telephone numbers

If one or more telephone numbers are selected in the field 'Approve' the unit accepts SMS and analog calls only from these numbers.

NBI! If the approved telephone number is not correct it is necessary to connect a cable in order to contact the unit.



Window 3: Inputs

if the unit is not to be set up with user defined texts the unit will send the following standard messages in case of alarm:

- S0 . . . S7: Make/close on input 0 to 7.
- B0 . . . B7: Break/open on input 0 to 7..

If the unit is to be set up with user defined texts these can be encoded by means of the enclosed program "Quick-setup".

Enter **F1** in order to access the help menu for setting op the unit.

Quick Setup 3

When the state of the eight inputs are changed, the central unit transmits an alarm. You can define the text to be transmitted, when the input is opened and closed. A text can be max. 64 characters. In the text can be written one or more internal commands, e.g. <P0;S3>, which will be executed when the input is activated. After every text can be defined a zone (0-7) for the input (default is 0). At last you can define a filter for the input, that is the condition is constantly in the filter time before the alarm is transmitted.

Analoge inputs: In the type list you can select measuring kit, which will define the values in the scale (min max). The alarm text is sent when the value becomes less og bigger than the values definet in alarm (min max). E. g. 0 degrees in min and 30 degrees in max. The ok text is sent when the value again is between alarm min and max. Min and max must be between -999 and 999. Decimals are not allowed. (Remember DIP switch).

| Digital inputs | | Zone | Filter |
|----------------|---------------------------|--------------------------|--------------------------|
| | Text when input is opened | | |
| 0 | TEMPERATURE LOW | <input type="checkbox"/> | <input type="checkbox"/> |
| 1 | | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 | | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 | | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 | | <input type="checkbox"/> | <input type="checkbox"/> |

| Analog inputs | | | | | | |
|---------------|-----------------|-----------------|--------------|---------|--------------------------|--|
| Type | Scale (min max) | Alarm (min max) | Alarm text | Ok text | Zone | |
| 1 | 0-10V | 0 10 | TEMP FAILURE | TEMP OK | <input type="checkbox"/> | |
| 2 | | | | | <input type="checkbox"/> | |

Setup

Input 0 used for connecting/disconnecting Only send the alarm if text is entered ID+Text

Input 1 used for counting pulses Send different voice messages on open and close

Filter time 10 sec. Activate digital inputs GND

Buttons: Cancel, Back, Next

Text for inputs

In the window 'Inputs' the text (max. 64 characters) to be displayed when an input changes position is entered.

It is not necessary to enter a text also for closed position. That is if the activated relay is within a distance of where it is possible to go inspect the problem. But it can be helpful if you are far away from the activated relay and need a feedback on whether e.g. an irrigation plant has been inspected and again functions normally.

If an alarm is to be sent only from the inputs which have a text, select either 'ID + Text' (return ID an alarm text) or 'Text' (return only alarm text) in the field 'Only send the alarm if text is entered'. Thereby empty inputs will be filtered.

If 'Only send the alarm if text is entered' is empty all alarms will be sent whether a text is entered or not.



Zone

“Zone” is optional and can be used for locating alarms in categories, e.g. some alarms in zone 1 and other alarms in zone 2.

Filter

If “Filter” is selected, alarms will be sent only if the position of the input has been constant during the filter time. See description of filter time below.

Analog inputs

The central unit has 2 analog inputs to which technical equipment can be connected in order to measure an exact value, e.g. a temperature. In the field ‘Type’ select measuring equipment (0-10 V, 0-20 mA, PT 100, Profort 007995, Profort 007990). If the field ‘Type’ is empty the analog inputs function as digital inputs.

For 0-10V and 0-20mA the values for voltage and milliamp are optional for volt (fra -999 til +999). No decimals.

Example:

In Scale (min max) define the values for 0V and 10V. ‘Min’ corresponds to 0V and ‘Max’ corresponds to 10V (default setting). Define e.g. that -20°C corresponds to 0V and 60°C corresponds to 10V. For the other measuring equipment in the list the values are already entered but can be modified.

In Alarm (min max) define the allowed interval. Define e.g. that min. is 0°C and max. is 30°C.

If the value gets higher or lower than the values in the Alarm (min/max) interval an alarm text (max. 64 characters) will be sent. For instance if the temperature drops below 0°C or rises to 31°C. The message will be displayed in the inbox or on a mobile phone.

An Ok text (max. 64 characters) will be returned when the value is again between Alarm min. and max. If information on a value is required, e.g. the temperature in a room, a request can be sent to the unit either by SMS with the command `V1 R`

Set up inputs

‘Input 0 used for connecting/disconnecting’: Select how to change position on input. Either by using ‘Level’ (level control) or ‘Pulse’ (pulse control). If empty input 0 is a regular alarm input.

‘Input 1 used for counting pulses’: If selected input 1 is used for counting pulses. If empty input 1 is a regular alarm input.

‘Filter time’: Indicates a variable filter time for inputs. In the field ‘Filter’ for inputs is selected which inputs are going to use the entered filter time. Select 10 sec., 20 sec., 40 sec., 1 min., 2 min., 4 min., 8 min., 15 min. and 30 min.

‘Only send the alarm if text is entered’: If a text is entered for inputs and wireless detectors, the alarm will be sent. If there is no text, the alarm will not be sent. ‘ID + Text’: sends position, ID and text. ‘Text’: sends only text. The alarm text can be adapted to interface to pager systems or CCTV via the serial port.



'Send different voice messages': If the option is selected, a voice message for open input and another voice message for closed input can be sent. If empty the voice message is the same for open and closed state.

'Activate digital inputs': The inputs can be set to GND or 24 VDC mode. In GND mode the input is activated by a 0 VDC supply (GND) and input is closed. If the supply is removed inputs will open. In 24 VDC mode the input is activated by a 24 VDC supply and input will close. If the supply is removed the input will open.

All digital inputs are either gnd or 24 VDC mode.

Activating commands in the text field

It is possible to enter one or more commands in the text field for digital and analog inputs so that a SMS-message will be sent and at the same time a command will be carried out when the input changes it's position.

Commands in the beginning of the text field means that the command will be carried out also if the unit is disconnected. If the command is at the end of the text field the command will not be carried out when the unit is disconnected.

Example of a command in the text:

| Digital inputs | |
|-----------------------------------|---------------------------|
| Text when input is opened | Text when input is closed |
| 0 SEND GSM SIGNAL STRENGTH <OK> | |
| 1 | |

In this example the command OK means that the unit sends the actual GSM signal strength to all telephone numbers when input 0 is open, e.g. by pressing a button. The receiver gets a SMS with the signal strength in percent.

If no message is to be sent when input 0 shifts from open to closed position no text is to be entered in the field "Text when input is closed".

- Several commands must be separated by a semicolon.
- Commands start with < and ends with > ,
e.g.: <S1 ; S2 ; S3> will close relay 1, 2, and 3.

Example: time schedule

The Input index can also be applied for managing a time schedule. Initially it is necessary to register the list of phone numbers to be included in the time schedule:



| Receivers | | | | | |
|-----------|---------------|----------------------------------|----------------------------------|-----------------------|-----------------------|
| | Telephone no. | SMS | Voice | DTMF | Email |
| 1 | +4511111111 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2 | +4511111111 | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3 | +4522222222 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4 | +4522222222 | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5 | +4533333333 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6 | +4533333333 | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |

If the same person is to receive both a SMS and a voice call the same phone number must be entered twice in the call list, e.g. in a way that Peter has position 1+2 (+4511111111), Bob position 3+4 (+4522222222) and John position 5-6 (+4533333333).

The priority in the call list means that an alarm will be sent to Peter first as SMS and afterwards as voice call. Then to Bob as SMS followed by a voice call and finally to John as SMS/voice call.

At day 1 Peter and Bob have the shift. The second day Bob and John have the shift. The third day only John has the shift. The following is entered in the input index:

| Digital inputs | |
|----------------|---|
| | Text when input is opened / Text when input is closed |
| 0 | PETER BOB <NR 1256> |
| 1 | BOB JOHN <NR 3456> |
| 2 | PETER <NR 12> |
| 3 | |

By closing input 0 an alarm will be sent to receiver 1+2/ 5+6 (Peter/Bob). By closing input 1 an alarm will be sent to receiver 3+4/5+6 (Bob/John). By closing input 2 an alarm will be sent to receiver 1+2 (Peter). It is the latest closed input-action that is valid. For instance if input 1 is closed first and afterwards input 2, the alarm will be sent to NR 12 until another input is closed.

Example: connecting zones

In order to connect just one zone the following command is sent to the unit:

| Digital inputs | |
|----------------|---------------------------|
| | Text when input is opened |
| 0 | <ON Z1> |
| 1 | |

In the example zone 1 will be connected when input 0 is open. The command must start with the sign < and end with the sign >

In order to connect more zones at the same time enter the actual zones separated by a semicolon:

| Digital inputs | |
|----------------|---------------------------|
| | Text when input is opened |
| 0 | <ON Z1;ON Z2;ON Z3> |
| 1 | |

In the example the zones 1 and 3 will be connected when input 0 is open. It is necessary to repeat ON in front of each zone. Max. 7 zones (Z0 – Z7) can be connected.



Window 4: Output

Quick Setup 4

In the setup frame you can send some special commands to the central unit. Here you can define if outputs are activated (closed) by alarms and for how long. If you want the outputs to open by alarms click closed in the frame outputs. Outputs can only reflect the corresponding inputs, if a text is defined. If outputs reflect connected/disconnected state they are open when the unit is disconnected, and closed when it is connected. If you want the outputs to be closed when disconnected click closed in the frame outputs.

In the state field it is stated when the unit must send status messages. When "Every week" (Wednesday) and "Every day" is used use format HHMM, e.g. 1615. When "Number of 15 minutes" is stated, e.g. 0004 is every hour.

When using the "timer" the time for an automatic on/off of the unit is defined using format HHMM.

It is possible to create 10 macros in the unit. The name of the macro can be up to 16 characters long. The command field can contain one or more commands. Commands are separated by semicolon. E.g. S0,PS 5;B0

At last click the <Execute> button and the setup will be transferred to the unit. This operation takes about 1 minute.

| Setup | | State | | Relay outputs | |
|--|--------------------------|----------------------|----------------------|---------------|---|
| Activate relay output on alarms | <input type="text"/> | Interval | Time | 0 | <input type="radio"/> Opened <input type="radio"/> Closed |
| Relay outputs reflect connected/disconnected state | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | 1 | <input type="radio"/> <input type="radio"/> |
| Send message to receivers on connect/disconnect | <input type="checkbox"/> | Timer | | 2 | <input type="radio"/> <input type="radio"/> |
| Return command | <input type="checkbox"/> | Connect | Disconn. | 3 | <input type="radio"/> <input type="radio"/> |
| Send also sabotage alarm when unit is disconnected | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | 4 | <input type="radio"/> <input type="radio"/> |
| Send power alarm immediately | <input type="checkbox"/> | | | 5 | <input type="radio"/> <input type="radio"/> |
| Macros | | | | 6 | <input type="radio"/> <input type="radio"/> |
| Macro name | Commands | | | 7 | <input type="radio"/> <input type="radio"/> |
| 0 | <input type="text"/> | | | | |
| 1 | <input type="text"/> | | | | |

Setting up outputs

'Activate relay outputs on alarms': Indicates if output must activate (close) in case of alarm and for how long. 10 sec., 20 sec., 40 sec., 1 min., 2 min., 4 min., 8 min., 15 min., Infinitely, Reflect inputs. 0 indicates that outputs don't activate. 'Reflect inputs' indicates that outputs reflect the corresponding inputs, if a text is entered.

'Relay outputs reflect connected/disconnected': If selected outputs will be closed when the unit is disconnected and open when the unit is connected. If the field is not completed the relay functions as usual.

'Send message to receivers': If selected an alarm message will be sent to approved receivers/phone numbers in the list when connecting or disconnecting the unit. If not selected no message will be sent when connecting or disconnecting the unit.

'Return command': If selected the unit returns the command to approved receivers/ telephone numbers in the call list when the unit is connected/disconnected. If not selected the unit doesn't return a command.

'Send also sabotage alarm...': If selected a sabotage alarm will be sent also when the unit is disconnected. If not selected no sabotage alarm will be sent when the unit is disconnected.

'Send power alarm immediately': If selected the unit sends the text 'Power alarm' immediately in case that the external power supply fails. Afterwards the unit runs for 30 min., where after it shuts down. If the power returns, within 30 min., the default text 'Power Ok' will be sent. If not selected: the unit runs for 30 min. waiting for the power to return. If the power doesn't return



the unit sends the same power alarm as before after 30 min. and then shuts down. When the power returns the unit sends the standard text 'Power Ok'.

Status

'Interval': Select either 'Every week', 'Every day', or 'Number of 15 min' for how often the unit must send a status message from inputs. If the status function is active the unit sends a status message also when it is disconnected. The function is available for analog and digital inputs with a text. Can show closed/open state, an analog value or number of pulses. If there is a command in a text field for the actual input the command will be carried out at the same time.

'Time': Indicates the time for sending a status message about the position of inputs. Use TTMM for 'Every week' (always Wednesday) and 'Every day'. For 'Number of 15 min' indicate the interval between status messages, e.g. 0004 for each hour.

'Timer': Indicates the time for automatic disconnection/connection of the unit. If only automatic connection is needed, the option 'Disconnect' must be empty. Use the format TTMM.

Outputs

'Open': Indicates normal position of relays. If outputs must *close* by activation of alarm, select the option 'Open'. Outputs will be open when starting the set-up.

'Closed': Indicates normal position of relays. If outputs must *open* by activation of alarm, select the option 'Closed'. Outputs will be closed when starting the set-up.

Macros

'Macro name': Here a command of free choice is entered by using a text of up to 16 characters, e.g. 'Start pump'. This macro text replaces the system command and is to be sent to the unit as SMS or instruction in stead of an ordinary command.

'Commands': Here enter the command or more commands to be attached to the selected macro name. Several commands must be separated by semicolon, e.g. S0; PS 5; B0 for closing relay 0, pause for 5 sec. and then open relay 0.

Max. 10 macros can be registered (M0-M9).

When the set-up procedure is conducted press the button '**Execute**'. Remember that there has to be a serial connection to the unit (or a modem). The text "Connection to Modem" will appear in the bottom left corner. During the transmission of the settings the unit 'beeps' several times.



6. SETTING UP WITH SMS

The unit can be set up with SMS from a GSM-mobile phone. The set-up will then be transferred as SMS-commands.

Commands consists of the following:

- Password of 4 digits *
- space *
- Command of 2 characters
- space
- parameter as text

max. 64 characters.

*) only omitted if the password is deactivated.

Example:

```
1234 A0 PUMP OFF
```

NBI! Each part of the command must be separated by a semicolon. The text can be of max. 64 characters. Spaces count as a character.

When starting the set-up use the password of the unit as PIN-code when the SIM-card is taken in use.

The PIN-code of the SIM-card must always be 1234 the first time the unit is installed or a new SIM-card is installed.

If you don't know the password the unit can always be restarted by changing the PIN-code to 1234 in a mobile phone, if necessary enter PUK-code and reinstall the SIM-card.

Password will now be 1234

The following commands for setting up the unit can be sent by SMS.

Shift PIN-code

```
1234 N0 99999999 yyyy
```

(99999999 = mobile nr. of the unit. Y = new password of 4 digits).

Changing the PIN-code is optional but protects against unauthorized use. If the clock-function is

activated it is necessary to encode own telephone number. Otherwise the information is not applied.

Lost password

If you have lost the password do the following:

1. Remove the power from the unit, incl. back-up battery.
2. Insert the SIM-card in a mobile phone and change the PIN-code to 1234 (PUK code can be necessary).
3. Mount the SIM-card in the unit and connect the power.

The password for setting up the unit by SMS is now 1234

Deactivate password

```
1234 N0 99999999 0000
```

If deactivated 1234 is omitted when sending commands.

Setting up receiver(s)

If the unit is supposed to send alarms it is necessary to set up receivers. Max. 25 receivers named 1..9 and A..P can be set up. Alarms can be received as:

1. SMS
2. voice call
3. DTMF (IBS protocol)
4. e-mail (service depends on the telephone company)

Example:

```
1234 N1 99999999
```

Sets up receiver nr. 1: SMS.
(99999999 = telephone nr.)

Example:

```
1234 N2 99999999 #
```

Sets up receiver nr. 2: voice call.

If the person who receives a voice call presses the # button the call will not be forwarded to other receivers, if any. The unit ends the call immediately.



Example:

1234 N4 200 aaaa@bb.dk

Sets up receiver nr. 4: e-mail (200= Telephone company's e-mail service). The E-mail address = max. 48 characters.

N5..N9 and NA..NP address the other 21 receivers in the call list.

Delete receiver

1234 Nz

Deletes receiver on position z. (z=1..9, A..P).

Setting up zone for receiver

Receivers can be connected to certain zones so that certain alarms will be sent to certain receivers. Requires that inputs are put into zones (see "Setting up alarm in zone").

1234 Zn 99999999

Z=zone 0..7, n=receiver 1-9, A-P, 99999999= telephone nr.

Example:

13 = zone 1 on receiver no. 3

41 = zone 4 on receiver no. 1 etc.

Approve telephone numbers

If only certain telephone numbers are allowed to contact the unit send the following command:

1234 Nz 99999999 +

z = available receiver position: 1..9, A..P.

Only telephone nr. 99999999 can contact the unit. Other numbers are rejected.

If more telephone numbers should be approved send one more command with a telephone nr. In order to cancel the approval it is necessary to delete the receiver.

Change the priority of receivers

The order of alarm calls can be changed with just one SMS. This is used for instance in order to change duty rosters so that one week alarms will be directed to nr. 1, 2 and 3, the following week to nr. 4, 5 and 6. It is only necessary to

send one SMS at the start of the week e.g. '1234 NR 123'.

1234 RN nnn... (n=0..9, A..P).

Calls are executed only to selected positions and in the listed order.

1234 RN

The calling sequence is restored to normal: from the first to the last receiver.



6.1 SETTING UP DIGITAL INPUTS

In stead of default texts it is possible to set up user defined texts which are displayed when inputs changes their position. The text can be defined for open and for closed position. The following commands are sent by SMS:

Set up text

1234 Ax TEXT

Sets up text for input x (x=0..7) which will be shown on open/break.

1234 Lx TEXT

Sets up text for input x (x=0..7) which will be shown on close/make.

Delete text

1234 Ax

Deletes text on input x (x=0..7) on open/break.

1234 Lx

Deletes text on input x (x=0..7) on close/make.

Send alarm only if text is entered

If an alarm is wanted only when input is open or closed enter a text only in the wanted position and send the following command:

1234 CT

Sets the unit to send only text from inputs which have a text.

1234 CN

Sets the unit to send position, ID and text from inputs which have a text.

1234 CF

Sets the unit to send alarm even if no text is entered.

Set up zone for digital input

Inputs can be put into zones in a way that alarms from certain inputs are directed to certain receivers. Zones can also be applied to prevent an input from sending alarm if there hasn't been entered any number for the actual zone (e.g. heat control).

1234 Ax Zy TEXT

Sets up text for input x (x=0..7) in zone y (y=0..7) on open/break.

1234 Lx Zy TEXT

Sets up text for input x (x=0..7) in zone y (y=0..7) on close/make.

Use input 0 for connection/disconnection

1234 RN

Sets up connection/disconnection by means of a level switch (toggle switch).

1234 RP

Sets up connection/disconnection by means of a pulse switch (call switch).

1234 RF

Deactivates connection/disconnection on input 0.

Set up delayed connection/disconnection

Alarms can be delayed for 30 sec., so that connection/disconnection can be done without activating alarm.

1234 Lx Wy TEXT

Sets up text for input x (x=0..7) on 'close/make' and delays the alarm for 30 sec. in zone y (y=0..7).

1234 Ax Wy TEXT

Sets up text for input x (x=0..7) on 'open/break' and delays the alarm for 30 sec. in zone y (y=0..7).

Set up filter on input

1234 Fx

Sets up filter time x on all inputs with filter (x=1..9). F1: 10 sec. (default). F2: 20 sec., F3: 30 sec., F4: 1 min., F5: 2 min., F6: 4 min., F7: 8 min., F8: 16 min. F9: 30 min.

1234 Ax Xy TEXT

Sets up text for input x (x=0..7) on 'open/break' with a filter in zone y (y=0..7).



1234 Lx Xy TEXT

Sets up text on input x (x=0..7) on 'close/make' with a filter in zone y (y=0..7).

Use input 1 for counting pulses

1234 UN

Activates pulse counting. Start value = 0.

1234 UN 999999

Activates pulse counting. 9 = start value between 0-999999, enter e.g. 50. The counting starts from 50 pulses.

1234 L1 999999

Sets a value limit and sends an alarm if the value is exceeded (1-999999). The counter is reset after alarm.

1234 A1 TEXT

Sets the unit to send an alarm text if the limit value is exceeded.

1234 UF

Deactivate pulse counting.

Set up different voice message for close open

1234 W2

Sets the unit to send a voice message (3 sec.) for open position and a voice message for closed position (3 sec.).

Delete different voice message for close open

1234 W1

Sets the unit to send one single voice message of 6 sec. for each input, open and closed state.

Set up delay on voice message/DTMF

Voice call and DTMF-sequence can be delayed for up to 10 sec. from "B-answer" to the message is played.

1234 Xx (x=0..9).

Sets up delay on message in x number of sec. (standard is 2 sec.).

Activate 24V

1234 WN

Sets inputs to activate by 24 V.

Deactivate 24V

1234 WF

Sets inputs to activate by GND.

Activate command in text field

It is possible to enter one or more commands in the text field for digital and analog inputs so that a SMS-message will be sent and at the same time a command will be carried out when the input changes it's position.

Example:

1234 SEND GSM SIGNAL STRENGTH
<OK>

Sends the current GSM signal strength to all phone numbers when input 0 is open, e.g. by pushing a switch. The receiver gets a SMS with the signal strength in percent.

Commands start with < and end with > More commands must be separated by a semicolon, e.g. <S1;S2;S3>

Commands in the beginning of a text means that the command will be carried out even if the unit is disconnected.

6.2 SET UP ANALOG INPUTS

The GSM-unit can read analog values on two analog inputs (Ain1 + Ain2) and, if required, control the outputs as a function of the reading:

The following information must be entered:

- Scale (min/max): limit values of the measuring equipment.
- Alarm (min/max): lower and upper limit for alarm.
- Alarm text: Message when the measuring goes from normal interval to alarm interval.



- **Ok text:** Message when measuring goes from alarm interval to normal interval.

Scale:

1234 Vx S min max

Sets up minimum and maximum scale for measuring equipment:

Vx (x=1..2), min (-999..999) and max (-999..999).

Alarm (min/max):

1234 Vx M min max

Sets up minimum and maximum for normal interval:

Vx (x=1..2), min (-999..999) and max (-999..999).

Alarm text:

1234 Vx A TEMPERATURE ALARM

Sets up text for input x (x=1..2) when outside normal interval.

Ok text:

1234 Vx L TEMPERATURE OK Sets up text for input x (x=1..2) when inside normal interval.

Set up zone for analog input

1234 Vx A Zy TEMPERATURE ALARM

Sets up text for input x (x=1..2) in zone y (y=0..7) for alarm interval.

1234 Vx L Zy TEMPERATURE NORMAL

Sets up text for input x (x=1..2) in zone y (y=0..7) for normal interval.

6.3 SETTING UP OUTPUTS

Relay-outputs can be activated when the inputs changes their position.

The outputs are deactivated as default. They can be activated as follows:

1. From 10 sec. to 15 min. or constant. Output 0-3 follows zone 0-3.
2. Output follows input. Output 0-3 follows input 0-3 incl. Ain1 and Ain2 but only for inputs where a text is entered. **This set-up excludes "show connection/disconnection"**.
3. Output shows connection/disconnection. Output 0..3 shows connection/disconnection on zone 0..3.
4. Combined alarm and connection/disconnection. Output 0..1 follows zone 0..1. Output 2..3 shows connection/disconnection on zone 0..1.
5. Disconnection in case of alarm.

Activate output in case of alarm

1234 Gx

x=1: 10 sec., =2: 20 sec., =3: 30 sec., =4: 1 min., =5: 2 min., =6: 4 min., =7: 8 min., =8: 16 min., =9: constant.

Sets relay-outputs to activate in case of alarm on inputs.

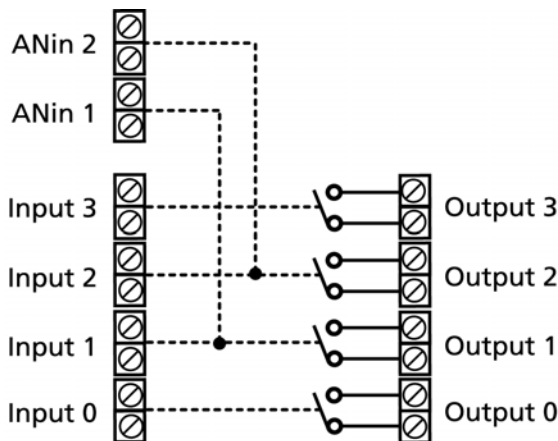
Output follows input

1234 GA

Sets output to reflect position on inputs. Only inputs with a text will reflect outputs. Alarm on input 1 activates output 1. etc.

NB! If there is a text for both analog and digital inputs, analog inputs have priority. This command can not be applied together with "shows connection/disconnection" 1234 QN

NB! "Send alarm only if a text is entered" must be active 1234 CN or 1234 CT



No activation of outputs

`1234 G0`

Sets relay-outputs to not activate by alarm on inputs.

Outputs show connection/disconnection

`1234 QN`

Sets outputs to show position of zones. Output 0 will close when the unit is connected and break when the unit is disconnected (default).

If there is no "zone" entered in the set-up, only output 0 will be activated.

If output 0 must be open when the unit is connected send first `1234 S0`

The same is actual for other outputs `S1 ; S2 ; S3`.

Delete outputs show connection/disconnection

`1234 QF`

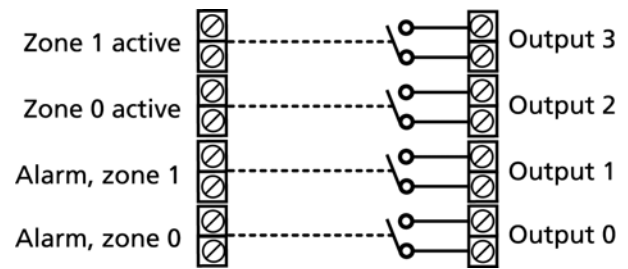
Sets outputs to not show state of zones.

Combine alarm and connection/disconnection

`1234 Gx` and `1234 QN`

`x=1: 10 sec., =2: 20 sec., =3: 30 sec., =4: 1 min., =5: 2 min., =6: 4 min., =7: 8 min., =8: 16 min., =9: constant.`

Combines activating outputs by alarm on zones with show connection/disconnection.



Set up macro

By a macro it is possible to gather one or more commands in a "super command" named after your own choice. The macro can be activated by the selected name in a SMS or with a telephone call and DTMF. Max. 10 macros can be set up.

`1234 Mx TEXT <command...>`

`x=0-9`. Sets up a macro with the name TEXT (max. 16 characters) and activates one or more commands listed in `<...>` and separated by ;

Commands in macro:

| | |
|-------------------|------------------|
| <code>Sx</code> | Closes output x |
| <code>PS x</code> | Pauses in x sec. |
| <code>Bx</code> | Breaks output x |
| <code>xx</code> | Other commands |

Example:

`1234 M0 PULSE5 <S0;PS 5;B0>`

Sets up macro nr. 0 with the name "PULSE5" which pulls output 0 for 5 sec.

Afterwards the macro can be activated by SMS:

`1234 PULSE5` or with a call and DTMF:

`1234`

2 tones `*60` (see the chap. "Operating").

Example:

`1234 A0 SEND SIGNAL STRENGTH <OK>`

The command OK means that the unit will send the current GSM signal strength to all receivers when input 0 breaks. The receiver gets a SMS with the signal strength in percent.

- More commands must be separated by a semicolon.



- Commands start with < and ends with > ,e.g.: <S3;TP T 0001> (close output 0 and send STATUS every 15 min.).

Delete macro

1234 Mx

x=0-9. Deletes macro x.

6.4 SYSTEM MESSAGES AND ALARMS

The unit can be set up to send important system messages and -alarms.

Send message on connection/disconnection

SMS is sent to receivers in zone 0 on connection/disconnection with information on ID and which zones that are active or inactive (+ or -):

ON id ++++++++ or

OF id -----

1234 EN

Activates send message on connection/disconnection.

1234 EF

Deactivates send message on connection/disconnection.

Return command

The unit can return a command by means of OK>> command for known command, and ??>> command for unknown command. The command is returned to the receiver.

1234 KN

Activates return command.

Deactivate return command

1234 KF

Deactivates return command.

Send sabotage and power alarm when the unit is disconnected

1234 YN

Activates the function.

1234 YF

Deactivates the function.

Send alarm immediately on power failure

1234 JS

Sends alarm immediately in case of power failure (after ca. 30 sec.) 9V rechargeable battery must be installed.

1234 JF

Sets the unit to send alarm in case of power failure after approx. 30 min. (default). 9V rechargeable battery must be installed.

Send status message

1234 N0 99999999 YYYY

Sets the unit to automatically send status message to all receivers. Requires that GSM-nr (99999999) is known.

Every 15 minutes:

1234 TP T kkkk

Sends status message every 15 minutes kkkk=number of 15 minutes. (kl. :00, :15, :30 and :45).

Every day:

1234 TP D ttmm

Sends status message every day at: tt:mm

Every week:

1234 TP W ttmm

Sends status message every week (Wednesday) at: tt:mm

Deactivate send status message

1234 TP

Deactivate the function.

Set time in the unit

The clock-function is used for time registering in the log, automatic connection/disconnection and



sending of status messages. There are 2 ways to set the time:

- `1234 TM`

Sets the time from the GSM-net in the unit.

- `1234 TM`
`yy/mm/dd, tt:mm:ss`

Sets the time in the unit manually.

Delete time in the unit

`1234 TF`

Deletes time from the GSM-net in the unit.

Activate automatic timing of connection/disconnection of the unit

Requires that the time is set in the unit.

`1234 TI TTMM ttmm`

Activates automatic timing of connection/disconnection. The unit is connected with an interval from TT:MM to tt:mm

Deactivate automatic timing of connection/disconnection of the unit

`1234 TI`

Deactivates automatic timing of connection/disconnection.

Text to and from serial port (RS232)

The unit can work as a modem and send/ receive data from the serial port with the command

`1234 TX` (see the chap. Operating). In that way the unit can be used for controlling technical equipment, e.g. a PLC. The speed of the data transmission is 9600 baud.

Receive text from PLC

If an ASCII-text sequence from a PLC ends with CR+LF (max. 160 characters) the text will be sent as SMS to all receivers in zone 0.

Send text to PLC

`1234 TX TRANSFER THIS TEXT`

a text sequence "TRANSFER THIS TEXT" which ends with CR+LF will be transferred with 9600 baud to e.g. a PLC on RS232.

Data communication with PLC

With a GSM-modem connected to a PC the unit will be able to send and receive data from a PLC when the call is made as "data call". Can be used e.g. with the program Hyper Terminal.



6.5 COMMANDS FOR SET-UP

The code summary below joins all commands used for *setting up* the unit. These commands feeds the unit with information about what to do in case of alarm on an input, for instance who is supposed to receive the alarm.

With a password

Always start with the password of the unit (4 digits) followed by a space when sending commands to the unit. Commands always have the following syntax: Password [space] + command (2 characters) [space] + e.g. an additional text.

Without password

If the unit is set up to function without a password (set password to 0000) it is possible to start with the command followed by an additional text. From a mobile phone, enter e.g. only S0 (in stead of 1234 S0) in order to close relay-output 0.

| | |
|---|--|
| <p>Change password: 1234 N0 +4522222222 4488</p> | <p>Changes existing password of the unit. +4522222222 is the telephone number of the unit. 1234 is existing password; 4488 is new password. Password must be of 4 digits. If 0000 is entered as new password it will not be necessary to enter the password in front of the command.</p> |
| <p>Change ID-code: 1234 N0 +4522222222 4488 TEST</p> | <p>Sets up ID-code for the unit. ID will automatically be transmitted with alarms to the receiver. If no ID-code is entered, the ID code will be the same as the password. The ID-code, hier named TEST can be numbers or letters. The ID-code can be of max. 32 characters. E.g.: 1234 B8 TEST POWER FAILURE</p> |
| <p>Set up receiver, SMS: 1234 N1 +4577777777</p> | <p>Sets up alarm receiver nr. 1 for zone 0 = N1. Max. 25 receivers can be entered. +4577777777 is the telephone number of the alarm receiver. Same procedure for N1 to N9 and for NA to NP. Notice: The command for the first 9 receivers is N1 to N9. Receiver 10 to 25 is NA, NB, NC etc. up to NP.</p> |
| <p>Set up receiver, voice message: 1234 N1 +4577777777 #</p> | <p>Sets up alarm receiver nr. 1 to zone 0 = N1. Max. 25 receivers can be set up. +4577777777 is the telephone number of the alarm receiver. Same procedure for N1 to N9 and for NA to NP. Notice: The command for the first 9 receivers is N1 to N9. Receiver 10 to 25 is NA, NB, NC etc.</p> |



| | |
|---|--|
| | up to NP. |
| Set up receiver in a zone: | |
| 1234 12 +4577777777 | Sets up receiver 2 for zone 1 = 12. |
| 1234 13 +4577777777 | Sets up receiver 3 for zone 1 = 13. |
| 1234 41 +4577777777 | Sets up receiver 1 for zone 4 = 41. |
| 1234 34 +4577777777 | Sets up receiver 4 for zone 3 = 34. |
| 1234 NA +4577777777 | Sets up receiver A for zone 0 = NA. |
| 1234 1A +4577777777 | Sets up receiver A for zone 1 = 1A. |
| 1234 2B +4577777777 | Sets up receiver B for zone 2 = 2B. |
| Approve telephone nr.: | Approval of phone number. Only phone number |
| 1234 N1 +4599999999 + | +4599999999 can contact the unit. Same procedure for N2-N9 and for NA to NP. |
| Delete receiver 1: | Deletes alarm receiver 1. Same procedure for N2, |
| 1234 N1 | N3...N9, NA-NP. |
| Change order of numbers: | Changes the order of numbers in the receiver index. |
| 1234 NR 3421A | The central unit sends a message first to receiver no. 3, then no. 4,2,1, A. |
| Delete changed order of numbers: | Deletes changed order of numbers in the receiver |
| 1234 NR | index. The unit sends a message first to receiver nr. 1, then to nr. 2,3,4,5,6,7,8,9 and A, B, C, D...P (default setting). |
| Text, open: | Encodes the text displayed when input 0 is open. |
| 1234 A0 TEXT | Same procedure for input 1, 2, ...7. Max. 64 characters in the text for digital/analog inputs incl. spaces. |
| Text, closed: | Encodes the text displayed when input 0 is closed. |
| 1234 L0 TEXT | Same procedure for input 1, 2, ...7. Max. 64 characters in the text for digital/analog inputs incl. spaces. |
| Delete text, open: | Deletes text for input 0 in open position. |
| 1234 A0 | |
| Delete text, closed: | Deletes text for input 0 in closed position. |
| 1234 L0 | |
| Text, power failure: | Encodes the text to be displayed in case of power |
| 1234 A8 TEXT | failure. The standard text is 'POWER FAILURE' (max. 64 characters). |
| Text, power back: | Encodes the text to be displayed when the power is |
| 1234 L8 TEXT | back. The default text is 'POWER OK' (max. 64 characters). |
| Text, sabotage: | Encodes the text to be displayed in case of |



| | |
|---|---|
| 1234 L9 TEXT | sabotage on the unit (max. 64 characters). The default text is 'SABOTAGE'. |
| Zone on input: 1234 A0 Z2 TEXT | When coding the text for inputs it is possible to indicate that the input belongs to zone 2, by entering Z in front of the text. Same procedure for zone 0 to zone 7. The number of characters in the text with a zone is max. 61. |
| Filter: 1234 F1 | Indicates a filter on input (F1-F9). F1: 10 sec. (default). F2: 20 sec., F3: 30 sec., F4: 1 min., F5: 2 min., F6: 4 min., F7: 8 min., F8: 16 min. F9: 30 min. E.g. F1 indicates a filter on 10 sec. on the inputs with a filter. |
| Filter + text: 1234 A0 X0 TEXT | Entering X in front of the text indicates a filter on inputs. The position of the input must be constant in the filter time for an alarm to be sent. If the inputs are supposed to belong to zone 1, enter X1. Same procedure for zone 2 to zone 7. |
| Delay on alarm: 1234 A0 W1 TEXT | Entering W in front of the text indicates that the alarm from the input will be sent only after 30 sec. This gives the possibility to disconnect the unit before the alarm is sent. Same procedure for input 1 to 7. If the input must belong to zone 2, indicate W2. |
| Confirmation: 1234 KN | The unit sends a confirmation of each new command. Default setting. |
| No confirmation: 1234 KF | The unit sends no confirmation of each new command. |
| Connection/disconnection, level: 1234 RN | Sets input 0 in use for connection/disconnection of the unit (Level). Closed input indicates disconnection. |
| Connection/disconnection, pulse: 1234 RP | Sets input 0 in use for connection/disconnection of the unit (Pulse). |
| Input 0, alarm input: 1234 RF | Sets input 0 in use for ordinary alarm input. Default setting. |
| Pulse counting: 1234 UN 999999 | Sets input 1 in use for pulse counting. Max. 20Hz and max. 1 mill. pulses. By this instruction in indicated a start value between 0-999999, e.g. 50. This means that the pulse counter starts from 50 pulses. |
| Input 1, alarm input: 1234 UF | Sets input 1 to ordinary alarm input. Default setting. |
| Analog input, scale: | Setting up the scale (minimum maximum) for 0-10 |



| | |
|---|---|
| 1234 V1 S FFFF TTTT | V and for 0-20 mA. Example: FFFF (min.) is the value for 0 V, and TTTT (max.) is the value for 10 V. Indicate for instance that -20 degrees in FFFF corresponds to 0 V, and 60 degrees in TTTT corresponding to 10 V. Min. and max. must be between -999 and 999. Decimals are not allowed. Same procedure for input 2. |
| Analog input, alarm: 1234 V1 M FFFF TTTT | Setting up the values for alarm (minimum maximum) on analog input 1. If the value on the input gets lower than FFFF (min) or higher than TTTT (max), an alarm will be sent. For instance 0 degrees in FFFF and 30 degrees in TTTT. Same procedure for input 2 (V2). |
| Analog input, alarm text: 1234 V1 A TEXT | Alarm text (max. 64 characters) which will be sent when the value gets lower or higher than the values entered in alarm min and max (V1 M min max). Same procedure for input 2 (V2). |
| Analog input, alarm text: 1234 V1 L TEXT | Ok text (max. 64 characters) which will be sent when the value is again between the values entered in alarm min and max (V1 M min max). Same procedure for input 2. |
| Message at connection/disconnection: 1234 EN | The unit sends a message to alarm receivers at connection/disconnection. Only zone "empty" will be returned ++++++++ |
| Message at connection/disconnection: 1234 EF | The unit doesn't send a message to alarm receivers at connection/disconnection. Default setting. |
| Sabotage, unit disconnected: 1234 YN | Sabotage/power-alarms will be sent also when the unit is disconnected. |
| Sabotage, unit disconnected: 1234 YF | Sabotage/power-alarms will not be sent when the unit is disconnected. Default setting. |
| Power alarm, after 30 min.: 1234 JM | In case of power failure a power alarm will be sent after 30 min. and afterwards the unit shuts down. Default setting. |
| Power alarm, immediately: 1234 JS | In case of power failure a power alarm will be sent immediately and the unit will be powered by battery for 30 min., where after the units shuts down. |
| Automatic activation of output in case of alarm: 1234 G1 | Activates (closes) relay-outputs automatically (by alarm on inputs) and the relay opens again for: G1: 10 sec., G2: 20 sec., G3: 30 sec., G4: 1 min., G5: 2 min., G6: 4 min., G7: 8 min., G8: 16. min. and G9: indefinitely. If relay-outputs must break the relays must first be |



| | |
|--|--|
| | <p>closed by activating with the command S0, S1, S2 etc.</p> <p>If there is no use of zones or... if alarm is connected to zone 0, relay 0 will be activated. if alarm is connected to zone 1, relay 1 will be activated ...etc.</p> |
| <p>Outputs follows inputs: 1234 GA</p> | <p>Indicates that outputs follow the corresponding inputs if a text is entered. Alarm on analog input 1 activates relay 1.</p> |
| <p>No activation of output in case of alarm: 1234 G0</p> | <p>Relay-output 0 will not be activated automatically in case of alarm. Default setting.</p> |
| <p>Zones: 1234 QN</p> | <p>Shows state of connection/disconnection. Activates (closes) relay-output 0 when the unit is connected and opens when the unit is disconnected. If relay-outputs must be open when the unit is connected first send the command S0....S3.</p> <p style="padding-left: 40px;">Relay-output 1 shows state on zone 1. Relay-output 2 shows state on zone 2. Relay-output 3 shows state on zone 3.</p> |
| <p>Zones: 1234 QF</p> | <p>Relays don't show state of zones. Default setting.</p> |
| <p>ID+Text: 1234 CN</p> | <p>Alarms will be sent only if a text on inputs is entered. The text which will be sent: State + ID + entered text.</p> |
| <p>Text: 1234 CT</p> | <p>Alarms will be sent only if a text on inputs is entered. Only the entered text will be sent.</p> |
| <p>Text: 1234 CF</p> | <p>Alarms will be sent even if no text is entered. Default setting.</p> |
| <p>Status: 1234 TP W TTMM</p> | <p>Defines when the unit is to sent a weekly status message: W is the code for weekly status message (each Wednesday). The required time is indicated in hours and minutes: TTMM. The unit flashes 3 times, if no N0.</p> |
| <p>Status: 1234 TP D TTMM</p> | <p>Defines when the unit is to sent a daily status message on inputs: D is the code for daily status message. The required time is indicated in hours and minutes: TTMM. The unit flashes 3 times, if no N0.</p> |

| | | | |
|--|---|--|-----------|
| multiGuard® Light Remote control and alarm via GSM |  | Code summary - Commands for set-up- | Ver. 2.02 |
|--|---|--|-----------|

| | |
|--|---|
| Status: 1234 TP T KKKK | Defines when the unit is to send a status message several times daily: KKKK indicates the number of 15 min. between each status message. Example: 0004 = each hour. All 4 digits must be used (max 0099). |
| Delete status: 1234 TP | Deletes previous status message settings. |
| Set up timer: 1234 TI TTMM TTMM | Sets up timer-function for disconnection/connection of the unit. The first parameter sets time for connection and the second parameter sets time for disconnection. Notice that setting a time for disconnection is optional. The unit flashes 3 times, if no N0. |
| Delete timer: 1234 TI | Deletes previous timer settings. |
| Set time, manually: 1234 TM YY/MM/DD, HH:MM:SS | Sets the time in the unit. The unit uses the entered time. |
| Set time, automatically: 1234 TM | Sets the time in the unit. The unit sends a SMS to itself and applies the current time. The unit flashes 3 times, if no N0. |
| Delete ur: 1234 TF | Deletes the time in the unit. |
| Voice message: 1234 W1 | Sets the unit to send a voice message consisting of one message of 6 sec. for each input. Default setting. |
| Voice message: 1234 W2 | Sets the unit to be able to send voice messages for both open and closed state. 3 sec. for open state and 3 sec. for closed state. |
| Voice message: 1234 X2 | Sets the number of sec. (from 0...9) from a phone connection is established until the first DTMF-tone or voice message is transmitted. Default setting = 2. If 0 sec. is indicated the unit waits for a confirmation before a DTMF-tone will be sent. |
| Voltage, inputs: 1234 WN | Sets inputs to activate by 24 V. |
| Voltage, inputs: 1234 WF | Sets inputs to activate by GND. Default setting |
| Set up macro: 1234 Mx MACROTEXT <COMMAND> | Sets up macro x (x=macro 0..9). Same procedure for macro 1 to 9 (M1....M9). |
| Delete macro: 1234 M0 | Deletes macro 0. Same procedure for macro 1 to 9 (M1....M9). |



7. RECORDING MESSAGES

The unit has a capacity of 90 sec. voice memory and will always start by playing the general message (8 sec.) followed by the actual alarm message (3 or 6 sec.).

If # is entered during the message the call list will be interrupted and the alarm will not be sent to further receivers in the list.

The unit calls three times to each number if no answer.

Call the unit and record the messages. It is possible to record a message for both digital and analog inputs and system alarms:

1. Call the unit
2. Wait for 1 tone
3. Enter password, if any (e.g. 1234)
4. Wait for 2 tones
5. Enter the nr. of the message to be recorded, e.g. #8 (for general message)
6. Wait for 1 tone
7. Record the message
8. Wait for 2 tones. The call can be ended or a new voice message can be recorded, e.g.:
9. Enter #x (opens for input x)
10. Wait for 1 tone
11. Record alarm message for input x
12. Repeat eventually step 8-10 for more messages
13. Hang up

If "send different voice message for close and open" (1234 W2) is selected, step 6+7 will be carried out twice.

By use of a wrong password the unit interrupts the connection.

Duration of voice messages

| | Sec. |
|----------------------------|------|
| #8 General message | 8 |
| <u>For digital inputs:</u> | |
| #0 for input 0 | 6 |
| #1 for input 1 | 6 |
| #2 for input 2 | 6 |
| #3 for input 3 | 6 |
| #4 for input 4 | 6 |
| #5 for input 5 | 6 |
| #6 for input 6 | 6 |
| #7 for input 7 | 6 |
| <u>For analog inputs:</u> | |
| #91: analog input 1 | 6 |
| #92: analog input 2 | 6 |
| <u>For system alarms:</u> | |
| #93: power failure | 3 |
| #94: power ok | 3 |
| #95: sabotage | 3 |
| #96: connection | 3 |
| #97: disconnection | 3 |



8. OPERATING

Operating covers the following:

- Connection/disconnection of the unit "here and now".
- Control relay-outputs.
- Interrupt further alarms.
- Requests to the unit.
- Restore default settings.

Connect/disconnect the unit

When disconnected the unit doesn't send alarm and outputs will not be activated as a result of activity on inputs.

| Connection/disconnection with SMS | |
|-----------------------------------|--|
| 1234 ON | Connects the unit. Alarms will be sent to receivers. 4 'beeps' from the unit and red LED flashes. At the same time resets all outputs. |
| 1234 OF | Disconnects the unit. Alarms will not be sent to receivers. 2 'beeps' from the unit and red LED stops. |
| 1234 ON Zx | (x= zone 0..9). Connects zone x. Alarms in zone x will be sent to receivers of zone x. 4 'beeps' from the unit and red LED flashes. |
| 1234 OF Zx | (x=zone 0..9). Disconnects zone x. 2 'beeps' from the unit and red LED stops. |

The unit acknowledges with a + or a – for each zone:

ON id ++++++++ or
OF id -----

Control relay-outputs

The 4 outputs are open as default and can be opened or closed with a command, by means of SMS or DTMF. Exceptions are:

1234 Gx which activates outputs with *alarm* (relay will change position in case of alarm).

1234 GA where output reflects input (relays will follow input 0-3).

| Control relay-outputs with SMS | |
|--------------------------------|--|
| 1234 Sx | Closes output x. (x= output 0..3). |
| 1234 Bx | Opens output x. |
| 1234 Sx P | Closes output x 1 for approx. 10 sec. (pulse). |
| 1234 Bx P | Breaks output x 1 for approx. 10 sec. (pulse). |
| 1234 Px | Output x shifts state (pulses) for approx. 10 sec. |
| 1234 Jx | Output x shifts state (toggle). |
| 1234 PS xx | Pause between commands (1-99 sec.). x = number of sec., e.g. 5 sec. |
| 1234 TX TEXT | Sends text to serial port. Text sequence to port will be ended by CR+LF. |

1. Call the unit
2. Wait for 1 tone
3. Enter password, if any (e.g. 1234)
4. Wait for 2 tones
5. Enter nr. of the command to be activated.

| Control relay-outputs with DTMF | |
|---------------------------------|--------------------------------------|
| *0x | Pulses output x for 10 sec. (x=0..3) |
| *1x | Opens output x (x=0..3) |
| *2x | Closes output x (x=0..3) |
| *3x | Closes output x for 10 sec. (x=0..3) |
| *4x | Closes output x for 10 sec. (x=0..3) |
| *5x | Shifts position of output x (x=0..3) |
| *6x | Activates macro x (x=0..9) |

6. Repeat, if necessary, step 4+5
7. Hang up.

Interrupt further alarms

Enter: # during the voice message. Other phone numbers in the calling list will not be alarmed.



Requests to the unit

Requests will be returned to the mobile which sends the request. Requests are used for getting information from the unit.

| Requests with SMS | |
|-------------------|---|
| 1234 OK | Returns the signal strength of the GSM-net. If the signal strength is less than 25% use external antenna. |
| 1234 OM | Returns the version number of the unit (model). |
| 1234 MO | Returns the position of all outputs. Only to the mobile which sends the request). |
| 1234 MR | Returns the status of inputs with entered text. Only to the mobile number which sends the request). |
| 1234 MA | Returns status and text of inputs with entered text. To all receivers. |
| 1234 PL | Returns the latest 10 events from the log. Incoming alarms/data and commands. |
| 1234 PL A | Returns all events from the log. (256 lines). Incoming alarms/ data and commands. |
| 1234 PL nnn | (n=001..256). Returns the latest nnn number of events from the log. Incoming alarms/ data and commands. |
| 1234 P& | Deletes the entire log. |
| 1234 PR | Returns all settings of the unit. Standard texts excepted. |
| 1234 PR O | Returns the settings of inputs and outputs in the central unit. Receivers and texts excepted. |
| 1234 PR N | Returns only the receiver list in the central unit. |

| | |
|-----------|--|
| 1234 PR T | Returns all texts of inputs in the unit. (digital/analog). Incl. standard texts. |
| 1234 UL | Returns the number of pulses. |
| 1234 Vx R | (x=analog input 1 or 2). Returns the value of measuring on analog inputs. |

Activate macros

A macro can be activated by SMS or by phone call and DTMF.

Example:

Macro nr. 0 is registered with the name "PULSE5" which pulls output 0 for 30 sec. The macro is registered with the following SMS content:

```
1234 M0 PULSE5 <S0;PS 5;B0>
```

Commands in the beginning of a text field means that the command will be carried out also if the unit is disconnected. Commands at the end of a text field means that the command will not be carried out when the unit is disconnected.

Activate macro by SMS:

```
1234 PULSE5
```

Activate macro by call and DTMF:

1. Call the unit
2. Enter password (e.g. 1234)
3. Wait for 2 tones
4. Enter *60 (star 6 for pulses)

Restore default settings

In case that it will be necessary to delete all settings and messages in the unit, use the following command:

```
1234 P!
```

Deletes all settings!



9. FREQUENTLY ASKED QUESTIONS

| Error description | Cause | Solution |
|--|---|---|
| At start up the central unit 'beeps' rapidly... | Wrong PIN-code for the SIM-card: | Set the PIN-code of the SIM-card to 1234 and restart the central unit. |
| The central unit 'beeps' about every 15 sec, why? | No connection to the SIM-card: | SIM-card is defect or not mounted correctly. |
| The red LED on the central unit flashes 3 times, why? | The central unit's telephone number is not correct: | Enter correct mobile number or remove status- or. timer functions. |
| After 4 beeps the unit flashes twice... | The SIM-card is not installed, or is not installed correctly in the unit: | Check that the SIM-card is installed correctly in the central unit. |
| The central unit can not forward alarms, why? | SIM-card doesn't work: | Insert the SIM-card in a mobile phone and check that SMS-messages can be both sent and received. |
| | No voltage on the unit: | Check if the green LED lights. If not then use correct power supply. |
| | Wrong alarm receiver phone number: | Check if the telephone number of the receiver is correct and if there has been used a mobile telephone number for SMS messages. |
| | Text definition: | Check if the central unit is set up to send alarms only if inputs are provided with a text. |
| | The unit is not connected: | Check if the red LED lights. If it doesn't the unit must be connected either by means of input #0 or SMS. |
| | No GSM-signal: | Connect the unit and the PC and send the command "OK" or see the below on the screen. The GSM signal-strength will be returned and must be higher than 25%. |
| | Inputs are divided in zones without entered text: | If zones are used always define a text for the applied inputs |
| Disconnection/connection of the central unit doesn't work from | Wrong setup: | If input 0 is intended to be applied for disconnection/ |



| | | |
|--|--|--|
| <p>input 0...</p> <p>The timer function doesn't work, why?</p> <p>The status-function doesn't work, why?</p> <p>Timetable for streetlight doesn't work, why?</p> <p>Power alarm is not sent by removal of the external power, why?</p> | <p>Wrong GSM-number:</p> <p>Wrong GSM-number:</p> <p>Wrong GSM-number:</p> <p>Battery doesn't work:</p> | <p>connection of the central unit, then use the command "RP" if input 0 is activated with a pulse. If input 0 is activated with a level, then use "RN".</p> <p>Enter the correct GSM-number of the SIM-card to the central unit.</p> <p>Same.</p> <p>Same.</p> <p>Notice that a 9V rechargeable battery must be applied. Either the battery is defect or it is not completely recharged. Test if necessary with SABOTAGE while running on battery.</p> |
| <p>No contact with the unit via PC-software, why?</p> | <p>The default text is "send power alarm after 30 minutes":</p> <p>RS232 connection between the PC and the unit is defect:</p> <p>The central unit doesn't answer setup:</p> <p>The unit is busy:</p> <p>LED lights and the SIM-card is not mounted.</p> | <p>Shift to "Send power alarm immediately" in the PC-program or SMS "1234 JS"</p> <p>Check if the connection between the unit and the PC is installed correctly.</p> <p>Check if the cable is intact and has connection in all 9 cords.</p> <p>Check if the PC-software use the correct com.port.</p> <p>Wrong password is used for the unit. Remove the SIM-card from the unit and change it in a GSM-mobile phone to 1234. Remember that the PIN-code must be active.</p> <p>Check if the red LED lights. If it does, the central unit is busy. Wait to the red LED stops or restart the central unit.</p> <p>Remove the front cover (make a sabotage) - the unit tries to reach the GSM-net but needs a SIM-card.</p> |

multiGuard® Light
Remote control and alarm via GSM



Frequently Asked Questions

Ver. 2.02



10. SPECIFICATIONS

Power supply:

Built in: 230V AC

External: 12-24V AC/DC min 0,5 A

Consumption:

Approx. 30 mA in standby (powered by 12 V)

Outputs:

Max. 6 A by 230 V AC

Max. 6 A by 35V DC

Inputs, digital:

Max. 1V, 2 mA (GND)

Min. 18V max 30 V (24V DC)

Inputs, analog:

0-20mA

0-10V DC

PT 100

Pulse counter:

Max 20Hz, max. 1 mio. counts

Dimensions:

9 DIN-modules

157x86x57 mm

Weight: 560 g.

Voice memory:

90 sec.

Pc-program Quick-setup:

Compatible with all versions of Windows.

The PC must have a COM-port (RS232) or a USB-RS232 adapter must be applied.

NB! Product key for PC program is indicated on the front cover of the CD-ROM.

Other PC-programs:

- "Basis set-up" for handling more setup possibilities.
- "Professional set-up" as alarm central on PC equipped with GSM-modem.

