



Dear Customer,

please read the manual carefully. In case of further problems you could contact us via E-Mail.

support@coniugo.com

- **When / Where purchased?**
- **Version number (apperas on restart on the screen of the terminal software)**
- **Which problems appears?**
- **Which Stepps was done before?**
- **What should be supervised and reported?**

Declaration of Conformity

Congratulations on your purchase of the ConiuGo® module. This product was built according to the latest technology. This Module is a micro-controlled interface device for long-distance data transfer using GSM functionality.

Manufacturer:
ConiuGo® GmbH
16540 Hohen Neuendorf
Berliner Strasse 4a

This product is labelled with the CE-mark according to following standards:

EU-guidelines 73/23/EWG of February 19th 1973

EU-guidelines 89/336/EWG of May 3rd 1989 (EMV-guideline) changed by EU-guidelines 91/263/EWG, 92/31/EWG, 93/68/EWG

EU-guidelines 89/392/EWG of June 14th 1989 changed by EU-guidelines 91/368/EWG, 93/44/EWG, 93/68/EWG

DIN EN 50081-2 German basic standard for RF-immission for industrial application

DIN EN 50082 –2 German basic standard for RF-immission for industrial application

This product is manufactured according to the quality standard DIN EN ISO 9001.

This product includes a GSM transceiver unit from a third-party manufacturer. It is CE-certified by it's own manufacturer.



To ensure a safe operation of the Module, please read this manual carefully before taking it into operation

Hohen Neuendorf, 2007

Table of Contents

Table of Contents	3
1. Limited Warranty / Limitation of Liability	4
2. Use as agreed	4
3. Safety warnings	5
4. Performance description	6
5. Description of Interfaces	7
6. Operation	9
6.1 Electrical installation	10
7. Connection of the accumulator.....	10
8. Basic Instructions	11
9. Parameter programming.....	12
10. Configuration mode	17
11. Password check	18
12. Menüeingabe und Erklärung	18
12.1 S<Y>stem Settings.....	18
12.2 <I>nput Settings	22
12.3 <A>ction Settings.....	30
12.4 <C>onnection Settings	36
12.5 Change connection settings	43
12.6 <S>ave Changes.....	44
12.7 <Q>uit Configuration Mode	44
13. Service / Handling	45
14. GPS Function (only Advanced GSM Modul)	46
15. SMS features (depends on local provider).....	47
16. Maintenance and waste disposal.....	48
17. Troubleshooting	48
18. Diagrams.....	49

1. Limited Warranty / Limitation of Liability

ConiuGo® GmbH warrants its product to be free from defects in materials and workmanship under normal use and service for a period of one year from the date of delivery, if no other agreement is settled. The warranty is limited to the repair or replacement, at ConiuGo's sole option. The costs of parts and labour are covered in the case of a repair. Costs for mounting and de-mounting, as well as for return transport to ConiuGo are not covered.

This limited warranty will apply only to ConiuGo's products that exhibit normal use and service and will not cover any damages resulting from any misuse, modification, disassembly or alteration.

Proof of purchase must accompany the product returned for consideration under this warranty.

Any use of the module is carried out at your own risk. In no event shall ConiuGo be liable for incidental or consequential damages, including, without limitation, loss to property other than the ConiuGo product, loss of the use of the ConiuGo product or other property, or other economic loss.



Damages resulting from neglect of this manual are not covered by the warranty. ConiuGo is not liable for any consequential damage.



ConiuGo is not liable for damages to property or personal injuries resulting from improper use or neglect of the safety warnings. Such events are not covered by the warranty.

2. Use as agreed

The module is designed for use in Germany and the European Community. According to the rules of CE-conformity, it is not allowed to distribute this device without a manual in the national language. The manual has to be authorised by the manufacturer. Any distributor has to make sure that the user of the device is capable to understand the manual as regards the content and the language.



The module has to be installed and put into operation by competent technicians.

All notes and information from this manual have to be read carefully and followed strictly. In case of doubt, don't put the device into operation but consult the manufacturer or your authorised distribution agent.

- The ambient operating temperature range for this product is $-30\text{ }^{\circ}\text{C}$ up to $+60\text{ }^{\circ}\text{C}$.
- This product is designed for indoor use only. Do not expose to excessive humidity (above 70% rel. H).
- A data/SMS ready SIM-card is needed to put the Module into operation.

If power requirements and connections are ignored or misunderstood, this could lead to damage of this product. Furthermore, this could lead to other dangers e.g. short circuit, fire, or electric damage. The unit contains no user-serviceable parts. Do not modify, disassemble or alterate this product.



Safety notes must be regarded!

3. Safety warnings

The module corresponds to broadly valid GSM standards. At the use of a GSM transceiver for the mobile communication, certain safety precautions have to be made.



GSM products can ignite explosive or inflammable gases.

The use of the module in an environment with a potential for these conditions must be definitely excluded.



The system must be switched off in airplanes or hospitals.

The use of the module in these areas must be avoided.



Before connecting the product, possible interference of the GSM Module on your existing technical equipment has to be inquired.

The manufacturer provides a product for integration in a technical assembly. The product is tested carefully according to the CE- certification to meet the standards mentioned in the Declaration of Conformity.

Nevertheless, the electromagnetic behaviour of the module is depending on the conditions of mounting and environment.



The electromagnetic behaviour of the module depends on the environmental not controlled by the manufacturer. Any liability for eventual electronic misbehaviour is excluded.



Because of the RF-radiation of the GSM unit the module has to be used with a suitable GSM antenna for the RF band, depending on the type of the chosen GSM network). The antenna cable has to be free from any damages.

4. Performance description

The module is a GSM transceiving module for transfer of data from analog and digital measurements. It serves to protect and supervise plants, buildings, vehicles, etc. by SMS (**S**hort **M**essage **S**ervices) in GSM networks (**G**lobal **S**ystem for **M**obile communication).

As soon as an incident happens, the Module responds with the corresponding message from its settings. It can trigger one or several actions, upon the first signal, or if the signal persists a specific period. Responses include SMS message to one or more devices, and/or trigger other connected devices into/out-of operation.



Depending on the GSM provider, SMS messages may be delayed relevantly. Check with your provider what the regular delivery times are.



Depending on utilisation of the processor, all actions may be delayed some seconds until executed.

All system settings are entered via serial interface connection with the use of a terminal software. This allows the Module to be system-independent, meaning it can be programmed from virtually any computer platform.

For programming, there is a firmware integrated into the Module with a simple, user-friendly surface, working on any terminal software.



The operation of the module in the GSM network causes telephone costs. If telephone numbers are entered incorrectly, it may result in high expenses. ConiuGo® accepts no responsibility for those costs but advises to test the programmed Module thoroughly.

5. Description of Interfaces

Connection for power supply

As written in the system manual delivered with your GSM module.

Connection for accumulator (Advanced GSM Module only)

Input for accumulator (optional accessory). The accumulator will be charged in the standard use by the normal power supply. When connecting, please make sure that the polarity is correct!

RS 232 interface of D Sub 9

D Sub 9 interface for the connection to the serial interface of a computer during configuration.

Ground

Connections for the internal ground.

Digital inputs

The digital inputs are dedicated to simple sensors which support the module with a contact indicating a logic level (high “1” or low “0”). Those sensors activate an internal switch (e.g. relay contact of a motion tracker) or are a switch itself (door and window contacts). The digital inputs have to be used by a potential free contact to “ground”. **The status of the input then changes from “1” to “0”.** The contacts of the switch resp. the relay will be sourced by the GSM Module input with 5 V, 15 mA. The contacts should be able to switch a minimum load of 10 V, 50 mA.



The digital inputs are only suitable for potential free contacts. You are not allowed to connect them with voltage.

Analog inputs

The analog inputs are dedicated for measurements and are 10 Bit inputs. This could be measurement of different kinds (e.g. temperature, weight, air damp, etc.). The modul reacts, depending on the kind of equipment on the sensor, on input current or input voltage. The incoming signals are converted by the module into the measures that correspond with the settings of the user. The signals that are measured permanently are supervised by the module regarding to the range that is defined by the two valued “Min.” and “Max.”.

Integrated in the Module is an analog signal conditioning which consist of 4 current inputs of 0/4 - 20 mA resp. 0 – 15 V in the basic series. All minus input poles are connected internal to the “ground” of the module. The input voltage must not exceed 15 V DC.

The analogous inputs don't have any potential separation. Therefore it has to be taken care on the correct grounding of all devices that are connected to the analogous inputs of the module!

If you need analogous inputs that are conditioned to special sensors this should be announced with your order. Any change in the signal conditioning later has to be done by the manufacturer and the whole device has to be returned to the producer. The will cause costs of 30,- € plus delivery cost,.



The inputs must be used strictly within the parameters of the technical specification. Do not connect the GSM- module to any other device that is capable of dangerous voltage or exceeds the maximum input!

Digital relay outputs

The digital outputs have changeover contacts that are switched by an event pre-defined in the configuration of the GSM module. Possible applications are e.g. sirens, visual signal (distress signals, etc.) but as well complex equipment like plants, machines, radiators. Regarding switched devices it has to be taken into account that they might be operated by heavy current and so generally **are not allowed not to be switched directly by the module**. In that case additional components are needed to switch the load (e.g. heavy current connecting relay etc.).

The changeover contacts of the relay are named as follows:

- C ("common")
- NC ("normally closed")
- [NO] ("normally open").

Keep in mind these names to make a correct wiring of your application.

With any digital output set to "1" the related crossover contacts close between C <> NO and opens the contacts C <> NC

With any digital output set to "0" the related crossover contacts close between C <> NC and opens the contacts C <> NO



The contacts under no condition are able to be switched to mains voltage. The maximum electrical load for the relay contacts is 24 V, 1 A.

6. Operation

The module has to be installed in dry indoor areas only; the acceptable temperature range is $-30\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$. The general precautions for the safe operation of electrical equipment must be regarded.

6.1 Electrical installation

Connection of the inputs and outputs

Make sure that the GSM module is disconnected from any power supply. Then you can start to connect the device with your application and external devices.

The wiring of the analog inputs and digital inputs and outputs depends on the respective use. Please refer to chapter "**Description of the Interfaces**" for voltage limitations. Please contact the manufacturer if there are any questions or need for support regarding special solutions for your application.

Power supply

As power supply any DC source and AC/DC adapter **with regulated output** can be used. The rating during normal use is max. 300 mA (with emergency battery 1 A). The allowed **range of the power supply voltage** is indicated on the **type identification label**.

Serial interface

For the configuration of the module you need the serial cable that is delivered with the module. By connecting the device to the D Sub 9 connector of the COM- port of your computer you are able to do the configuration.

Installation with optimal electromagnetic compatibility (EMV)

It is recommended to ground the GSM module using the ground connector of the device. All inputs and outputs as well as the power supply should lead through a ferrite to suppress any electromagnetic influences.

7. Connection of the accumulator

The emergency accumulator has to be connected with the correct polarity.



Incorrect connection of the accumulator leads to a high risk of battery leakage of both gas and acid. As well the accu may be overheated and cause an ignition.



Please note: The accumulator must not be discarded or thrown into fire. Waste disposal advice should be followed.

8. Basic Instructions

To simplify the settings of the system we would explain the important functions of the alarm system itself:

Events (Actions which are recognized by the alarm system)

(with sensors on the inputs or about internal actions in the system)

Possible Events: Door-, Window contacts, motiontracker, smoke-, fire sensor, relais, temperature / preasure / air damp meassurements, etc.

Actions (functions which are triggered by the alarm system itself)

(triggered about internal functions and relais of the alarm system)

Possible actions: Sending of SMS, switching relais, send status reports, etc.

Connection settings (combines an event with an action)

(gives the possibility to combine actions with upcoming events)

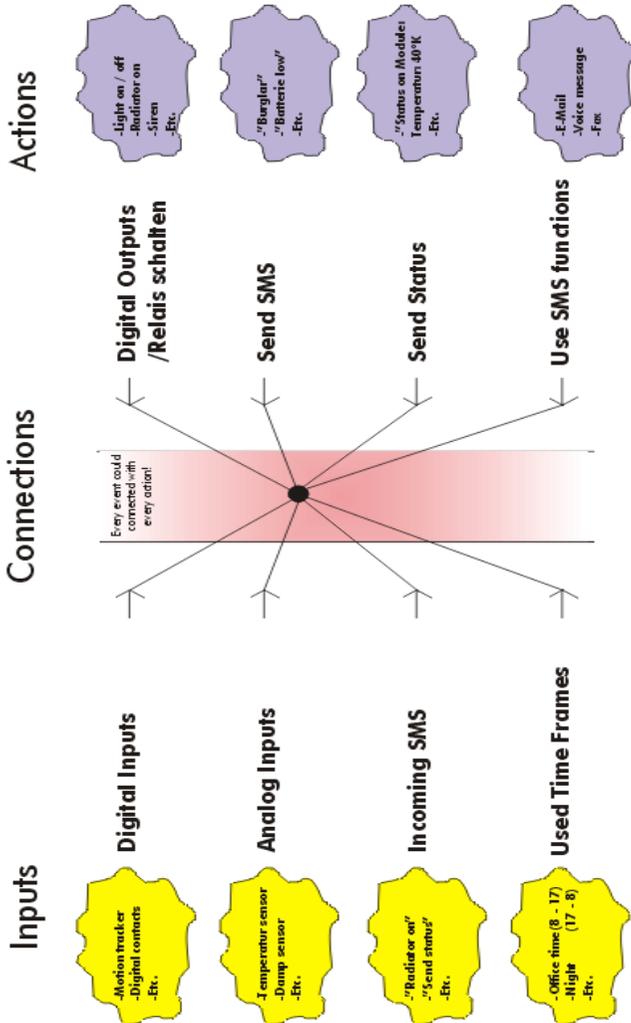
Possible connections (this depends on the application of the user and the used sensors and actors. Here you have a possible application:

1.) If a window was opened there will be opened also a contact (**Event**) and will be recognized over the digital input. Over the connection settings the user has definded that an SMS will send when the contact will be opened (**Action**).



The events will be connected with the events over the connection settings.

The system can perform a repertory of **actions**. This can be sending an SMS, switching on/off a heater or anything else. By a special combination of **input settings** (reaction of a motion tracker, a temperature becoming higher or lower than usual, etc.) the **acitons** are triggered. To determine these actions the combination tables are used:



9. Parameter programming

To configure the module you have to connect it via the serial cable to the COM- port of your computer. The computer should run a terminal program that is set to the 19200 baud, with a data frame of 8N1. Recommended by ConiuGo is the software is CommLite® (included).

After starting the terminal software, please do the following settings:

- 19200 baud rate (regular)
- 8 bit data
- 1 stop bit
- parity = none
- flow control = off
- echo off (recommended)

If the terminal program is started before the module is turned on you will see an initialisation page first. On start, the Module clock and all program tasks that work in parallel are started.

After approx. 10 seconds, you will see the following screen:

```
STATION-NAME
0h 0m 50s 1. 1. 2000

                                123456789ABC
DIGITAL INPUTS: 111111111111
DIGITAL OUTPUTS: 0000
TIME FRAMES: 000
                SMS: 00000000
ANALOG INPUTS: 0000
Analog measurement of 1: 0 NONE
Analog measurement of 2: 0 NONE
Analog measurement of 3: 0 NONE
Analog measurement of 4: 0 NONE
                Power: Sup.
                GSM: 1
                Operator: VODAFONE
Signal-quality: 22,0
SIM-card-status: #SIGNAL OK
Modem-status: OK
Modem-reset-status: 200,0
```

If the Module is in operation, an indication appears on the screen and will be refreshed every second. This is distinctive for the active Module that permanently checks the signal inputs for changes. The single parameters shown on the screen have the following meaning:

- **STATION NAME**

Here is shown the name of the module if you have changed it in the configuration. STATION-NAME is the default name.

- **0h 0m 0s / 1.1.2000**

Reports the current time and date. Not correct setted ex works.

- **123456789 ABC**

This is the numbering of the digital entrances. This is indicated in HEX code. Please note: A = input 10, B = input 11 and C = input 12.

- **DIGITAL INPUTS**

Here is reported the condition of the digital inputs. If unused or in rest they are on level "1". If by a sensor the input is pulled to ground the level jumps to a "0". These conditions also have to be taken into account for the settings in the connection settings.

Example:

If you need to trigger a reaction after an event occurring on a digital input, you have to enter a "0" for this digital inputs in the connections settings.

Please take into account that closing the switch or relay contact connected to a digital input will set this input to "0"!

- **DIGITAL OUTPUTS**

By the "connection settings" the digital outputs become corresponding to an "event" or a combination of several "events". If this happens the level of the digital output jumps from "0" to "1" and switches the corresponding relay output.

- **TIME FRAMES**

If a time frame is defined and is used in the connection settings, a "1" appears in the connection settings as long as this time period is active. A maximum of 3 time frames is possible to be defined.

- **INCOMING SMS**

If a SMS is coming in and is recognised by the module, the level indicating this SMS indication changes from "0" to "1".

- **ANALOG INPUTS**

In the settings for the analog inputs you are able to set a minimum and a maximum value to define a range in which the input signal indicates an event. That means that the GSM module supervises the input and has a

definition for an allowed or not allowed range of the signal. (e.g. by a temperature sensor). Is the signal within that range there is indicated a "1", if outside the range a "0".

- **Analog measurement 1 – 4**

As soon as the the sensors are connected to the module and the settings are done correctly the module will display the actual results of the parameter that is measured.

- **Power**

With this parameter the module displays at which power supply the module operates. *Sup.* Indicates the normal power supply, *Accu* shows that the module is working from a connected accumulator.

- **GSM**

Indicates whether the module is able to find a GSM network or not.

- **Operator**

By reset of the module here no provider is displayed. An "ERROR" appears. Only if the module has a succesfull booking into the GSM network the name of the provider will be shown.



Until the first entering of the PIN number it is not possible to connect to the provider which causes an „Operator: ERROR“.

- **Signal quality**

The signal quality is a very important criterion running the GSM module. For sending of SMS the signal quality should exceed a minimum of 16 to send the SMS. Otherwise a delay in sending SMS or no sending of SMS may occur. The maximum indication for signal quality is 31.

Possible answers:

#SIGNAL? The signal quality could not read out because the system is not booked in into the network of a GSM provider.

#BAD SIGNAL The signal quality is bad and smaller then 8.

#SIGNAL OK Signal is higher then 8 and is good for the use of SMS services.

#SIGNAL ERROR The checking of the send quality reports a failure; maybe a hardware defect or defect antenna.

- **SIM-card-status**

Here the status of the used SIM- card will be reported.

Possible answers:

#NO SIMCARD No SIM card is in the unit.

#PIN READY The PIN number which was entered is ok.

#SIM PUK The SIM card needs a master PIN because the card is blocked

#SIM PIN You have to enter the PIN number

#SIM ERROR PIN number request sends an unknown error

- **Modemstatus**

Shows the status of the internal GSM modem. Here will be shown possible restarts of the module or a reset of the modem.

Possible answers:

#RESET! The internal GSM modem will be resetted.

#NEUSTART The modem will be switched on.

#UNBEKANNT The internal modem is ready but is not tested right now.

#OK The modem is ready.

- **ModemResetStatus**

This value is a count-down for the communication between the controller and the modem. The modem will be restarted at end of this procedure. However, the modem even during this modem reset registers incoming events and will reports them when the device is booked into the GSM network.

No operator: Counts the timer down to zero, then the systems makes a reset

With operator: It shows zero

10. Configuration mode

To enter the configuration mode, you have to press the exclamation mark [!]. This normally will be found by pressing the [Shift] and the [1] key at the same time. If [!] is not available on your keyboard keep pressed the [Alt] key and type in 33. This selects the ASCII- character 33 as code for the [!].

When you have entered the [!] you will be asked if you want to change to the configuration mode. If you enter [y] and [↵] for “yes”, all active applications of the Module will be suspended until you exit the configuration mode.



No menu settings are case-sensitive. All inputs that are made on the keyboard have to be completed with return [↵].



All changed settings will only come into effect if the <S>ave Changes function is executed BEFORE leaving the configuration mode!



When the screen shows wrong signes in the terminal software CommLite you have the following options to change that:

- **Press ALT button when the status screen is open**
Turns the curser off and shows after the prozess all informations.
- **Press Space button when the status screen is open**
After pressing the space button the screen was build up a second time.

11. Password check

To prevent unauthorised access the configuration mode is protected by a password. This is “**CONIUGO**” as default. You can change the password in the S<y>stem Settings. With a valid password you will enter the Main Menu.

12. Menüeingabe und Erklärung

Main <M>enu

```

Main<M>enu
-----
S<Y>ystem Settings
<I>nput Settings
<A>ction Settings
<C>onnection settings
<S>ave Changes
<R>eset to Default Settings

<Q>uit Configuration Mode

Your selection:

```

In the following sections you will learn how to set the parameters for each menu item.

12.1 S<Y>stem Settings

```

System Settings
-----
<1> Enter PIN_PUK
<2> Change the SIM-PIN
<3> Change Password
<4> Time and Date
<5> Station Name
<6> Service Provider and Operating Mode
<7> Band switch

<0> Main <M>enu
<Q>uit Configuration Mode

Your selection:

```

<1> Enter PIN_PUK:

Enter the PIN-number if you put a new SIM-card into the Module or the PIN-number of the SIM-card has changed. It is also possible to unlock the card by entering the PUK (Pin-Unblock) code.



Please note that, when you insert a new SIM card, you also need another PIN. Please change after starting the system immediately to the basic settings to change the PIN. If you don't do this it could be that the false number was send to the new SIM card and the card could be blocked.

<2> Change the SIM-PIN:

This function is not available in the current firmware version.

<3> Change Password

If you like to change the password, you have to enter it a second time for confirmation. Note: The new password will only come into effect if you execute the function **<S>ave Changes** in the main menu before leaving the configuration mode.



For safety reasons not even the manufacturer has any access to a forgotten or unknown password. If a password has become unknown the GSM module has to be sent to the manufacturer in order to load a new firmware.

<4> Time and Date:

Choose between "Manual Input" or use of the "SMS Clock" to set the internal clock of the GSM module. Setting the time is recommended if you have to watch events, which begin or end at a previously defined time.

If you select "Manual Input", the display shows the current settings of time and date (e.g.: 12h 24m 3s / 14. 6. 2001). Enter the requested parameters in sequence.

Please note that the settings for the system clock get lost when the power supply (power supply from mains and emergency accu) is lost. The modul then will start again with the basic time. A real- time clock that is buffered by an internal battery is available on request.

If you choose the "SMS Clock", the module will adjust time and day automatically by a procedure, that is patented by ConiuGo. To activate this kind of time setting the SMS Clock has to be set to "ON".



With the next step you have to enter the phone number of that SIM- card that is inserted in your GSM module!!!

With “Day of setting“, you select a day of the month on which a new adjustment of the SMS Clock will be performed.

The module then will adjust the time and date by SMS on every start (reset, off / on) and additionally at the pre-set day every month. In order to limit the GSM fees in case of any wrong or incomplete adjustment a maximum of 10 SMS will be sent. Normally the setting of the SMS Clock will not need more that only one SMS.

Please note: Your GSM provider will bill you for every setting of the SMS Clock for one SMS.

```
SMS Clock
-----

Status:           OFF
Phone number:
Day of setting:   31

<1> Status
<2> Phone number
<3> Day of setting

<0> Back

Your selection:
```



The operation of the module in the GSM network causes telephone costs. High charges may arise through incorrect entry of phone numbers. The manufacturer accepts no responsibility for this and advises to test the configuration and operation of the Module carefully.

<5> Station Name:

Here you can enter a name for the station the GSM module is installed. This allows simple identification from which module you did receive a message.

<6> Service Provider and Operating Mode:

Here you have the option to enter the service center number of your choosen provider. The standard setting is 00 which is working in most times and

needs no change. Only when you wish to use another provider as the provider where you get your SIM card, it is necessary to enter another number.

```

Service Provider and Operating Mode
-----

SMS service number:00
Operating mode: UbiCom Triband

<1> Choose SMS Service Number
<2> Enter SMS Service Number
<3> Change Operating Mode

<0> Back

Your choice:

```



With a SIM-card inserted the GSM module tries to find out the matching GSM provider. If the GSM module does not recognise a service provider this will be indicated by "ERROR" in the second line. Select the service provider, which corresponds to the used SIM-card and put in a correct PIN code to make the module able to be booked into the GSM network.

<6a> Choose Service Provider

This is important if you wish to choose another provider as the one which your IM card is from. Normally the system finds the service provider without any change here.

<6b> Change Operating Mode

There is no need to change this parameters. This function is for special versions of the alarms system which has no effect to the standard version.



Changes of the operating modem causes abnormal functions of the module. Basicly the module is setted right ex work!!

<6c> Change Name of Service Provider

If necessary you are able to define a new provider. This maybe is necessary if you use the GSM module in foreign countries. If you fail in creating a new GSM provider maybe the name that is used by the provider to indicate his network is not correct. In that case please simplify the name of the GSM provider to just one typical character

(e.g. for MaxMobile to x). If this does not lead to a success please contact the manufacturer or the service team of the GSM provider.

<6d> Change SMS Service Number

Here you are able to change the SMS service numbers of the GSM service provider listed on the screen. This is important when you would like to use a GSM provider which is not in the list.



Please check with your GSM service provider if you are unsure of the providers name (normally as displayed on a mobile phone) and the SMS service centre number.

<7> Change Band

Here you could change the GSM band from 900 MHz & 1800 MHz to 1900 MHz. This makes sin in countrys which has another GSM structure.

12.2 <l>nput Settings

```
Input Settings
-----
<1> Time Frames
<2> Digital Inputs
<3> Analog Inputs
<4> Incoming SMS

<0> Main <M>enu
<Q>uit Configuration Mode

Your selection:
```

<1> Time Frames:

This command is used to define time frames. Therefore you have 3 different time frames which you can adapt to your needs. The frames are needed if the GSM module has to execute tasks at pre-defined times (e.g the supervision of the office at night time but not during the day when persons are working).

The screen displays the settings of all time frames:

```

Modify Time Frame
-----
                                DAY    MONTH    YEAR    HOUR    MINUTE
Name: TIME_ 1                Start:  X      X      X      X      X
                                End:    X      X      X      X      X
Weekdays:  MON X   TUE X   WED X   THU X   FRI X   SAT X   SUN X

<1> Name
<2> Day
<3> Month
<4> Year
<5> Hour
<6> Minute
<7> Weekdays

<0> Back

Your choice:

```

On every change you have to set a starting time (Start) and an ending time (End). "X" always indicates "don't care", meaning that this parameter is deliberately.

If just one parameter ("Start" or "End") is defined by a "X" the system automatically will set the other parameter to "X" as well.

If both parameters are set to the same value, the action starts exactly at this time (e.g. Start = 10 and End = 10 starts the action exactly at 10 o'clock).

Example:

A measurements is required during office hours; start 09:00 (a.m.) finish 17:00 (5:00 p.m.) during Monday to Friday.

```

Number: 3
Name: OFFICE                DAY    MONTH    YEAR    HOUR    MINUTE
                                Start:  X      X      X      09      X
                                End:    X      X      X      17      X
Weekdays:  MON 1   TUE 1   WED 1   THU 1   FRI 1   SAT X   SUN X

```

<2> Digital Inputs:

Here you enter the basic informations and settings for the digital inputs. The number of shown inputs in the software could be different to the real existing inputs on the module itself. This depends on the software which is created also for extended versions of the module. If you have the standard configuration with 4 digital inputs there are also the first 4 inputs important for you which are shown in the list.

If you choose now one of this inputs you could see the following screen:

```

Modify Digital Input
-----
Name: INPIN_1
Hold time:(seconds) X

<1> Name
<2> Hold time

<0> Back

Your choice:

```

Here you can give a name to the dedicated input (max. 10 characters). This gives you a better identification if you combine this input later with an action (see combination of actions and events).

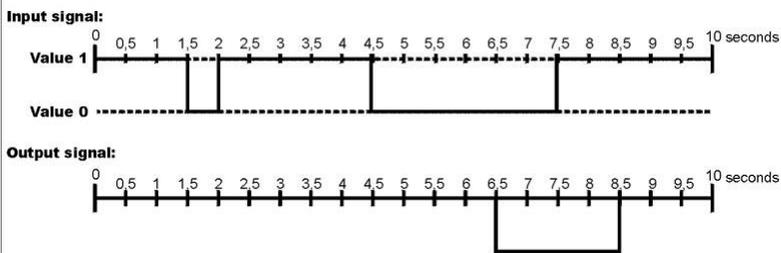
E.g.: If you have a switching contact connected to the first digital input which supervised a window, so it makes sin to name the input „WINDOW“.

The digital inputs could use in combination with a hold time. The function of the hold time depends on the signal which is connected to this input (0 if the digital input is pulled to ground, 1 if the digital input is not connected to ground).

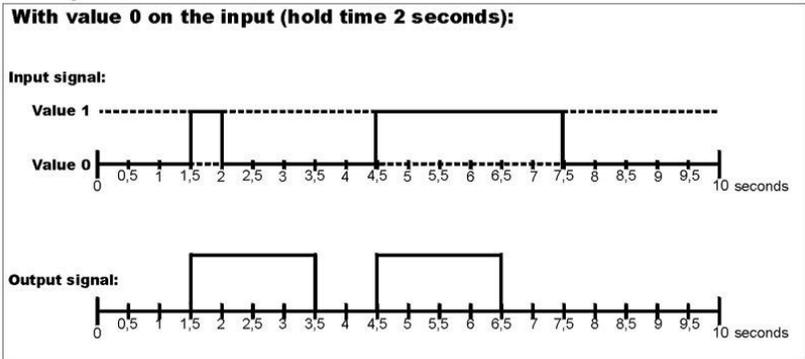
Here the function is shown in the pictures below:

Example A:

With value 1 on the input (hold time 2 seconds):



In this case there is entered a hold time of 2 seconds. In case of an event the contact will be connected to ground. In this constellation the hold time works that only input signals will be recognized which have a contact time of 2 seconds or longer. Short signals will be ignored.

Example B:**With value 0 on the input (hold time 2 seconds):**

Also in this case is a hold time entered of 2 seconds. In case of an event the contact will disconnected from ground. In this constellation the hold time works that every input signal will be recognized and get a time expansion to 2 seconds. Short signals will be recognized.

In this constellation the hold time works that every input signal will be recognized and will be stretched to 2 seconds. So the module register also short events on the input.



You must enter a hold time of minimum 2 seconds. Please be sure which picture fits to your application.



Do NOT enter a 0 as hold time because then no incoming event will be recognized.

<3> Analog Inputs:

Here you can see a list of the changeble analog inputs. The number of shown inputs in the software could be different to the real existing inputs on the module itself. This depends on the software which is created also for extended versions of the module. If you have the standard configuration with 4 analog inputs there are also the first 4 inputs important for you which are shown in the list.

Modify Analog Input

Name: ANALOG_1	Dimension: NONE
Lower limit value: 0	Upper limit value: 255
Suppressed measurement: 0%	
Min: 50%	Max: 100%
Hysteresis:	

<1> Name
 <2> Dimension
 <3> Lower limit value
 <4> Upper limit value
 <5> Supressed measurement
 <6> Min
 <7> Max
 <8> Hysteresis

<0> Back

Your choice:

<3a> Name

This is the name of the input given by the user.

<3b> Min & Max

By using “Min” and “Max” you define the range of the measurement in which the module gives a “1” to indicate that the input is in a pre-set range for OK. Both parameters “Min” and “Max” are entered in % of a full range of 100%.

Example:

If the measurement range of the input is 0 -10 Volts and if “Min” is set to on 20% and “Max” to 50%, any measurement between 2 V and 5 V is “in frame” and the module has recognises a result of “1”. If the value is out of the pre-set “frame” (less that 2 V or more than 5 V), a “0” is the result. Of course you can set “Min” to 1% or “Max” to 100% in order to avoid a range that is lower resp. higher than the pre-set “frame”.

<3c> Dimension

Here you can define the unit which the meassure input should give out. In most cases you need not the data of V or mA but prefer to get indicated e.g. grams, or deg. F.

<3d> Suppressed measurement

Here you have the opportunity to define a suppressed measurement range. This sometimes is needed for any meters which do not start their measurement range

with 0 V or mA. If you define a suppressed measurement with 20%, then the value 0 will be set until the current exceeds 4 mA (if a module with 0- 20 mA input is used).

Please note: Using a suppressed measurement range only the indication of the measurement is changed. However, there is no repercussion to the values of "Min" and "Max". This definition lasts unchanged.

<3e> Lower limit value & Upper limit value

As an additional feature it is possible to put the values of 0% and 100% of the measurement range (as example 0- 10 Volts) on deliberate numerical values. to adapt your sensor to the initial voltage range. Now – as an example – you can define 0% as 0 of and 100% as 500 of any unit you had chosen.

Please note: The upper limit value is possible up to a worth of 1.000.000. You have to enter the worth WITHOUT the dots.

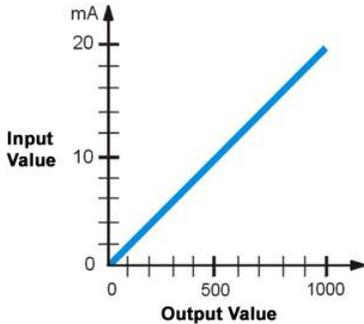
Example:

Let's assume, the chosen unit would be deg. Centigrade and the input of your GSM module would range from 0- 100 % resp. 0- 10 Volts. By using the upper and lower value to 0 and 500 the resulting indication of the measurement would range from 0 to 500 deg. Centigrade. With choosing 20% and 50% for "Min" and "Max" the frame for "1" would range from 2 to 5 Volts resp. 100 to 250 deg. Centigrade.



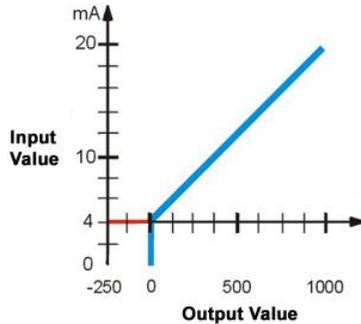
The software does not accept invalid combinations of Min and Max or upper and lower value.

Since a part of the measure range can be suppressed, you can vary the output values from the same input signal as shown below:

Example : 0 - 20 mA

Settings of Example 0 - 20 mA:

Dimension = mA,
 Suppressed value = 0%,
 Lower limit value = 0,
 Upper limit value = 1000.

Example : 4 - 20 mA

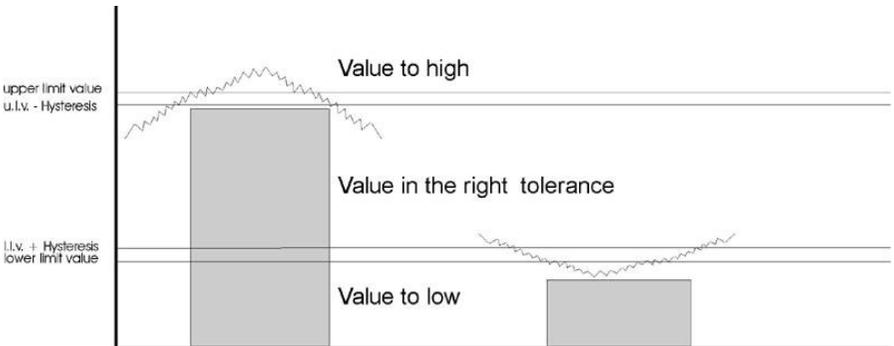
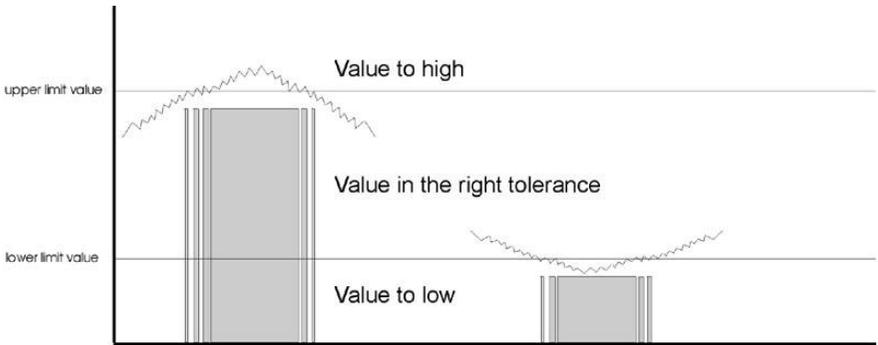
Settings of Example 4 - 20 mA:

Dimension = mA,
 Suppressed Value = 20%,
 Lower limit value = 0,
 Upper limit value = 1000.

<3f> Hysteresis

With the hysteresis function you are able to ignore short changes in the input signals of the analog inputs. This makes sense when you have temperature measuring applications and you don't want the module to react to short changes of the temperature.

The following picture shows the function of the hysteresis. The shredded line shows the input signal on the analog input. Because of the irregular signals there occur short values which are not in the tolerance but are critical for the application. To avoid irregular events you are able to work with the hysteresis as a buffer:



<4> Incoming SMS:

This are SMS messages which could send from any mobile phone to the alarm system to trigger an action. Code is the content of the message itself. The folwing settings has to be entered:

- **Hold time**

If an incoming SMS is recognized (and the internal procedure has checked the content to be valid) the system now gets a positive level "1" (Incoming SMS). In order to connected this "event" in the "combinations" with an "action" the level has to be hold must for a longer time. A setting of 5 seconds (5 – 5999) as a hold time is more than sufficient. Please note that you do never enter a 0 as thehold time, because no event will be recognized!

- **NAME**

The name of the incoming SMS is for your orientation.

- **TEXT**

Here you define which content has to be written in the incoming SMS in order to activate the GSM module. Carefully pay attention that to the use of small initial letters and the use of capitals. **The text of the incoming SMS and the text of the stored SMS content in the module has to be absolutely the same!**

The GSM module will compare the text of the SMS with the stored SMS character by character. The texts must agree completely, otherwise the command will not be executed!



Please take into account that depending on the GSM provider the SMS delivery may be delayed relevantly.

12.3 <A>ction Settings

```

Action Settings
-----

<1> Send System Status
<2> Voice/Modem Connection
<3> Digital Outputs
<4> Outgoing SMS

<0> Main <M>enu
<Q>uit Configuration Mode

Your selection:

```



Depending on the utilisation of the Processor, all actions may have some seconds delay until executed.

<1> Send System status:

When you choose this point a screen appears with all possible sending settings (send status 1 – 5). Choose one of the status to change the settings

of it. Here you will find different possibilities to customize the current settings and you can enter in which format the current System Status will be sent to which phone number. Inputs which has no name will not be sended in this status SMS!

This function allows the system to send the actual system status of the inputs as result of an event like incoming SMS or special times.

If you choose this option you will see a list of possible sending settings.

Choose one of the settings which you will customize to your needs. The new screen shows you the different options to modify the status message. Here you could set in which kind the message will be send to the predefined number.

```

Send System Status
-----
Name:                               Send Status 0
Telefonnummer:                       +49177.....
E-Mail:

Long Sms:                             Yes
Digital Inputs:                         No
Analog Inputs:                          Yes
Incoming Sms:                           No
Gsm Network:                             No
Power Status:                            Yes
Time frames:                             No

<1> Name
<2> Phone number
<3> Send condition
<4> Email

Your selection:

```

<1a> Name

Here you can change the standard name of the status to handle it easier in further settings.

<1b> Phone number

You are able to set a target number for the message which transfers the system status.

<1d> Send condition

You can choose between sending long or short SMS. As well it is possible to select the data that will be transfered in the message. By sending "long SMS" the status data and names are transmitted as numbers. Using "short SMS" only the status of

the inputs and outputs are transmitted as 0 or 1. Following this selection you can decide which data are relevant for you to appear in the message. This makes you able to adjust the length of a status report to optimise your costs for sending SMS.

<1c> E-Mail

Here you can enter the target e-mail address, where the SMS has to send for. Please note that the address will be settled before the alarm text of the sended SMS. This function use the services of the local GSM provider (e.g. Vodafone, O2, etc.). Please be sure that you know the details about using this functions. Normaly you will find the details on the hompage of the provider.

<2> Voice- / Data Connection

This feature provides three possibilities:

- The establishing of a voice connection from the modul to an external number. For this the module has to be equipped with an audio interface.
- The establishing of a modem connection in order to transfer data or commands into an application that is connected to the GSM module.
- The establishing of a modem connection in order to do a remote programming of the GSM module.

```
Voice/Modem Connection
-----

Phone number:
Dialing time:          30 seconds
Call duration:         10 minutes
Connection type:       modem connection

What shall be changed?

(1=phone number, 2=dialing time, 3=call duration, 4=connection type, 0=back)
```

It is possible to establish either a voice connection **or** a modem connection, but not both at the same time. **Setting up a connection solely can be activated by the GSM module. This is to make sure that no access to the in-built GSM modem – whether by mistake or unallowed – is possible. This might block the messaging function of the GSM module.**

Difference between the connections are:

- **Voice connection:**

The GSM module calls the target number, so that the service technician is able to get information from the maintenance center of his company.

- **Modem connection:**

The module establishes a modem connection to the target number. Then the current connection is handed over to a deliberately application that is connected to the serial port of the GSM module. Now this connection can be used for the prefixed time to communicate with this application.

Basically there are three different baud rates to send the data in the data:

- **2400 Baud**
- **4800 Baud**
- **9600 Baud**

- **Teleprogramming:**

With the feature of teleprogramming the user is able to dial into the module by a modem connection. By this connection you have direct access to the settings of the GSM module. The connection is built up by the GSM module (e.g. triggered by the event of an incoming SMS). The user has to accept the call by running a terminal software on his PC and sending the command ATA when the "ring" is coming in.



Please note that you have to save the changes in the configuration of the GSM module and end the programming mode before you hang up the data connection. If this hint is not followed the module might stay in the programming mode and cannot go back into the running mode! As well important: If the connection was disturbed or cutted (by fluctuation of the GSM network) the modem as well will stay in the programming mode and no remote access is possible.

The "dial time" for all three kinds of connections (voice connection, modem connection and teleprogramming) has to be entered in seconds. This time will set the time in

which the GSM module stays in the connection after it is established. After that the dial time is over the module will hang up automatically. If – during a modem connection is active – a voice or data connection is activated again the GSM module at first will end the connection that currently is active. Additionally you have the feature to limit the time for the voice or modem connection.

<3> Digital Outputs:

These are the relais contacts on the module. With this option you could change the name of the contact. This is really helpful later when you combine the events with the actions. You get an overview about all 4 digital outputs and their names.



Please note that it could be dangerous to trigger connected units (e.g. heaters or coolers) because of the possible lost of the connection to the GSM networks.

<4> Outgoing SMS:

When you choose this function you see the list of all outgoing SMS. Here you configure those SMS that have to be sent at a defined event. Select the outgoing SMS you wish to set up or change. So you can define the accompanying parameters.

```
Modify Outgoing SMS
-----
NAME:          SMS_1
TEXT:          Test Sms
Phone number 1:
Phone number 2:
Phone number 3:
Phone number 4:
Receipt: 0      Maintenance: 0      Multi call: inactiv

<1> Name
<2> Text
<3> Phone number
<4> Receipt
<5> Maintenance
<6> Multi call status

<0> Back

Your selection:
```

<4a> Name

The name of the outgoing SMS makes you able to identify different messages.

<4b> Text

As reaction on an event this text will be sent as short message (SMS) to the designated target phone number. This text length is limited to 50 characters.

<4c> Phone number

Four target phone numbers could be stored for outgoing SMS. International numbers must to be entered with a +. 00 in the countrycode does`nt work.

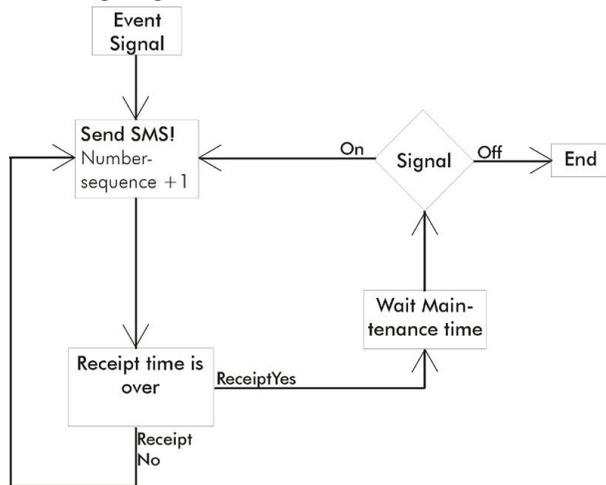
E.g.:

Right +441234567890

False 00441234567890

<4d> Receipt

If an event occurs triggering the sending of an SMS this will be sent in the time order which is entered in the configuration (e.g. every 60 seconds). In this case the module will send the SMS up to 4 target numbers (telephone number cascade) until an acknowledgement comes in. The order of the 4 target numbers will be passed again and again until the acknowledgement is arrived. The principle of the acknowledgement is, that an expert person has to be informed. If this feature is not wanted it can be deactivated when configuring the GSM module.



If an acknowledgement comes in, the event is regarded as reported and further SMS are not sent. Now the modul will wait the time set for maintenance time. If the reason for the event is solved before the maintenance time is over, the event is not longer

valid. So the complete event is finished. However, if the event is still active after the maintenance time (the reason for the event persists) the number sequence is started again. If the triggering event falls but immediately appears again, this is registered as a new event which once more triggers the action and expects an acknowledgement.

<4e> Maintenance

The function "maintenance" does not occur before an event was acknowledged. This is because it would make no sense that an event is reported by both an acknowledgement and a call for maintenance. The function "maintenance" is not dedicated to inform anybody but to call a well-informed person that is able to clear the situation directly at the locality. Sending SMS for maintenance permanently reminds the person for this. If the call for maintenance via SMS is active it can only be stopped if the triggering condition (event) is not active any longer. However, the module cannot detect whether an event was stopped by a maintenance person or due to any action of the module (e.g. switching on a device solving the problem).



The use of the system without acknowledgement is possible only if the time for acknowledgement and for maintenance are set to zero.

<4f> Multi call

If the function "Multi call" is activated on an event SMS will be sent to all 4 numbers in the telephone number list at nearly the same time. So it is possible to inform several persons or locations at the same time (e.g. service technician, repair shop, security service). The SMS will be sent one after the other in short sequence of a few seconds ("quasi parallel").

12.4 <C>onnection Settings

Here you have the option to combine possible events with actions.

The connection settings are splitted in 4 areas:

- Outgoing SMS
- Digital outputs
- Voice / modem connection
- Send systems status

For every part there are tables in which you can combine every action with one or more events. In every line you have one action which you could customize. At the end of the line you could see the name which you have predefined in the "Action Settings". So you can see for which action you change the settings. You could change now when an action will be triggered, that means when the input values changes. Basically all settings have the value X. Possible values are:

- X: This input will be ignored
- 0: For a triggering of these action, the input value must be 0
- 1: For a triggering of these action, the input value must be 1

This values are generated by different events from internal processes or connected peripherals (sensors, time frames, incoming SMS). The actual values you could see online on the terminal screen which will be refreshed after every second after the module is powered with energy. This values (0 or 1 or in case of the analog inputs the measured dimension) are important for the triggering of an action:

```

STATION-NAME
0h 0m 50s  1. 1. 2000

                123456789ABC
DIGITAL INPUTS: 111111111111
DIGITAL OUTPUTS: 0000
TIME FRAMES: 000
                SMS: 00000000
ANALOG INPUTS: 0000
Analog measurement of 1: 0 NONE
Analog measurement of 2: 0 NONE
Analog measurement of 3: 0 NONE
Analog measurement of 4: 0 NONE
                Power: Sup.
                GSM: 1
                Operator: VODAFONE
                Signal-quality: 22,0
                SIM-card-status: #SIGNAL OK
                Modem-status: OK
                Modem-reset-status: 200,0

```

In the connection settings you will find the menus to combine events and actions. In the first line (over the XXXX) you will find the short names (in this case in Outgoing SMS, SMS No. 1):

No.	D_In	PP	A_In	Time	GSM	SMS	HTime	R	NAME
-----	------	----	------	------	-----	-----	-------	---	------

1. XXXXXXXXXXXXX X XXXX XXX X XXXXXXXX ---- - SMS_ 1

- No.:** Shows the number of the chosen action in this part of the connection settings. All settings (1 or 0 or X) beside this number in the same line are dedicated for this action.
- PP:** Means „Power Pin“. Here you can choose whether the system should react on the change of the current powering mode (power supply or accumulator).
- 1 : *Powerd by regular power supply***
0 : *Powered over the accumulator(e.g. in case of power loss)*
X : *The value will be ignored and is not necessary for this action*
- D_In:** Means the digital inputs. In the row you have the input 1 up to 12. If you have versions with only 4 digital inputs on the hardware side, only settings of the first 4 digital are necessary for you. Please ignore the other setting possibilities of the last 8 inputs (value X).
- 1 : *The input is not pulled to ground***
0 : *The input is pulled to ground*
X : *The value will be ignored and is not necessary for this action*
- A_In:** This means the analoge inputs.
- 1 : *Measurement is inside the right tolerance***
0 : *Measurement is outside the right tolerance(above or under)*
X : *The value will be ignored and is not necessary for this action*
- Zeit:** This means the 3 possible time frames.
- 1 : *The setted time frame is important for this action***
0 : *The setted time frame is not important for this action*
X : *The time frame will be ignored and is not necessary for this action*
- GSM:** This means the connection to the chosen provider.
- 1 : *The value is important for the action***
0 : *The value is not important for the action*
X : *The value will be ignored and is not necessary for this action*

SMS: This means the incoming SMS which will be sended from an external mobile phone to the module.

1 : Incoming SMS is important for this action

0 : Incoming SMS is not important for this action

X : The incoming SMS will be ignored and is not necessary for this action

HZeit: This is only important for the digital outputs (relais contacts) and shows whether there is an hold time activated. The hold time defines the time how long (1 – 9999 seconds) the output will be triggered in case of this action. Also possible is permanent switching of the output because of the integrated bistable relais.



Please note that in case of switching on or off of devices it is possible that you could not connect the module in case of the loss of the GSM network. You must be sure that no dangerous working parameter of this devices could occure in the time of the lost of the GSM network.

R: This means the retrigger mode. If an event is activ and an action will be triggered on the digital outputs (relais contacts), the ralsi is so long activ as it is given in the predefined hold time (e.g. 60 seconds). Is there a further incoming signal on the input, the hold time will automatically retriggered up to 60 seconds.

NAME: Shows the actual name of this connection. The name is taken from the settings which are pre defined in the “Input settings”.



Please set every input value which are not needed to X. Thies means the digital input as well as the analoge inputs, power good, time frames, GSM status and incoming SMS.

You must choose the number of the connection which you need to change. After this the systems ask you for every possible changing in the line of the choosen connection.

```

Change connection
-----

For 12 digital inputs:
For Power Pin:
For analog inputs:
For time inputs:
For GSM status:
For SMS input:
.....
.....
    
```

Here you are able to enter a 1 or 0 or an X. Please note that you have to enter serial the parameter for the inputs. That means that you e.g on the digital inputs XXXXXXXXXXXXX one after one has to be entered (or other possible combinations of X or 1 or 0). After the system leads you to the next parameter (Power Pin).



All connections are AND-connections. If you set on one of the digital inputs and an incoming SMS the value 1 the action will only triggered when both inputs has the same value at the same time.

<1> Outgoing SMS:

These are pre-defined SMS messages which will be sent on an event to the destination number:

Connection Settings - Outgoing SMS									

No.	D_In	PP	A_In	Time	GSM	SMS	HTime	R	NAME
1.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_1
2.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_2
3.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_3
4.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_4
5.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_5
6.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_6
7.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_1
8.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_2
9.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_3
10.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_4
11.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_5
12.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_6
13.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_1
14.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_2
15.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_3
16.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_4
17.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_5
18.	XXXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	SMS_6

Which connection shall be modified <0=back> ?

Example:

When unused or disconnected any digital input is in condition "1" and can be switched to "0" for simple tests by connecting it to the extended ground ("⊥") of the Module. In that case the "0" – as shown here on input no. 1 – has to be set in the combination table in order to trigger (switch on) outpin_1.

No.	D_In	PP	A_In	TIME	GSM	SMS	HTime	R	OUTPTNAME
1.	0XXXXXXXXXXXX	X	XXXX	XXX	X	XXXX	----	-	SMS_1

Running the program you now can watch how the output reacts on an impulse at the digital input.



Depending on the GSM provider you have chosen the transmission of SMS less or more can be delayed. To avoid an unacceptable delay of the SMS make sure to contract with a GSM provider which guarantees to you the transmission time that is necessary.



Please note that it could be dangerous to trigger connected units (e.g. heaters or coolers) because of the possible lost of the connection to the GSM networks.

<2> Digital Outputs:

These are the digital outputs (relay contacts). To switch them you must have to combine in the connection settings with the events on which they have to react (time, digital input, incoming SMS, etc.).

Connection Settings - Digital Outputs

No.	D_In	PP	A_In	Time	GSM	SMS	HTime	R	NAME
1.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	0	N	OUTPIN_1
2.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	0	N	OUTPIN_1
3.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	0	N	OUTPIN_1
4.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	0	N	OUTPIN_1
5.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	0	N	OUTPIN_2
6.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	0	N	OUTPIN_2
7.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	0	N	OUTPIN_2
8.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	0	N	OUTPIN_2
9.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	0	N	OUTPIN_3

10.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	0	N	OUTPIN_3
11.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	0	N	OUTPIN_3
12.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	0	N	OUTPIN_3
13.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	0	N	OUTPIN_4
14.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	0	N	OUTPIN_4
15.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	0	N	OUTPIN_4
16.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	0	N	OUTPIN_4
17.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	0	N	OUTPIN_4
18.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	0	N	OUTPIN_4

Which connection shall be modified <0=back> ?

Example:

When unused or disconnected any digital input is in condition "1" and can be switched to "0" for simple tests by connecting it to the extended ground ("⊥") of the Module. In that case the "0" – as shown here on input no. 1 – has to be set in the combination table in order to trigger (switch on) outpin_1.

No.	D_In	PP	A_In	Time	GSM	SMS	HTime	R	NAME
1.	0XXXXXXXXXXXX	X	XXXX	XXX	X	XXXX	0	N	OUTPIN_1

Running the program shows how the output reacts after an input impulse.



If you have connected a siren to the digital output of the GSM module you have to make sure that it only will work for a maximum of three minutes. This is given by laws and has to be paid with attention from your side.

<3> Voice / Data Connection

This voice or modem connection will be established by the modul itself. You are able to define by which event this action is started (e.g. by an incoming SMS).

Connection settings - Voice / Modem connection

Nr.	D_In	PP	A_In	TIME	GSM	SMS	HTime	R	Output	NAME
1.	XXXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXXXX	----	-	Voice communi.	

Example:

When disconnected, a digital input is in condition "1" and can be switched to "0" for simple tests by connecting it to the extended ground ("⊥") of the Ad module. The "0" shown here on input no. 1, would trigger the action on the combination table.

No.	D_In	PP	A_In	TIME	GSM	SMS	HTime	R	OUTPTNAME
1.	XXXXXXXXXXXX	X	XXXX	XXX	X	1XXX	----	-	Voice communi.

<4> Send System Status

By this connection you define the settings when the actual system status will sent.

Connection settings - Send System Status

Nr.	D_In	PP	A_In	ZEIT	GSM	SMS	Hzeit	R	NAME
1.	XXXXXXXXXXXX	X	XXXX	XXX	X	XXXXXXXX	----	-	STATUS S.

Example:

When disconnected, a digital input is in condition "1" and can be switched to "0" for simple tests by connecting it to the extended ground ("⊥") of the alarm system. The "0" shown here on input no. 1, would trigger the action on the combination table.

Nr.	D_In	PP	A_In	TIME	GSM	SMS	HTime	R	NAME
1.	XXXXXXXXXXXX	X	XXXX	XXX	X	1XXXXXXXX	----	-	STATUS S.

12.5 Change connection settings

Deliberately which connection setting is desired to be changed: You have to enter the number of the connection you want to be changed. Then the parameters can be modified step by step.

Change connection

```
-----
For 12 digital inputs:
For Power Pin:
For analog inputs:
For time inputs:
For GSM status:
For SMS input:
.....
.....
```

In this procedure you can select between the entries "1", "0" or "X". These entries mean:

"X": The triggering of the action is independent from this value.

- “0”: For triggering the action this value has to go to the level “0” (low).
 “1”: For triggering the action this value has to go to the level “1” (high).



Please set all values, which shall not have any function to “X”. This applies for digital inputs as well as analog in-puts, Power good, time frames, GSM status and incoming SMS..

12.6 <S>ave Changes

If you have entered all parameters, return to the main menu and select the menu item “Save Changes”. **Only by doing this, the new configuration will overwrite the previous set configuration.**



Only by executing the “Save Changes” command, any modifications will be stored in the GSM module!

12.7 <Q>uit Configuration Mode

After saving the changes, you can leave the programming using the command <Q>uit Configuration Mode. The Module performs a standard check of its tasks. When this check is completed it will switch to the normal RUN-mode (standard mode).

```
Your selection: Q
Initialisation of Tasks
Real Time Clock is installing
Task Dispatcher is starting
Task GSM Control is starting
Task Time Control is starting
Task Port Control is starting
Task Analog Control is starting
Task Incoming SMS is starting
Task Sending SMS is starting
Task Sending actual status is starting
Task Display is starting
Task Voice Connection is starting
```

13. Service / Handling

After the programming is completed, the Module works stand-alone. It executes its program related to the configuration that was done by the user.

14. GPS Function (only Advanced GSM Modul)

In use with a GPS Mouse connected to the serial port of the GSM module the device is able to send its actual position data to a defined target number. This data can be entered into a special GPS Software (e.g. GID Route Premium) in order to indicate by a graphic overlay the position of the supervised object. Therefore the GPS Mouse has to be connected to the serial port of the module after the configuration was done successfully.

To send the GPS data you have to change the content (not the name of the SMS!!!) of the predefined SMS ("**Outgoing SMS**") to **GPSPDATA** or **GPS**. Each name will trigger another kind of position indication which will be sent out:

GPSPDATA: Data will be sent in a plain text string.

```
<module indentification><blank>
GPRMC,<1>,<2>,<3>,<4>,<5>,<6>,<7>,<8>,<9>,<10>,<11>,<12>
```

The single parameters in the report (like <1>) have the following meanings (bold marked reports are necessary for the location in a GPS software):

1. UTC Time hhmmss
2. Status, A=Valid Position, V=NAV receiver warning
3. **Latitude, ddmm.mmmm (with leading zeros sended)**
4. **N or S hemishere**
5. **Longitude dddmm.mmmm Format (with leading zeros sended)**
6. **Longitude E or W**
7. Speed 0000.0 Knot (with leading zeros sended)
8. Course 000.0 up to 359.9 degree
9. UTC date ddmmyy
10. Magnetic Variations 000.0 to 180.0 degrees
11. Magnetic variation direction E or W
12. Mode Indicator

GPS: Data will send as a string.

```
<module indication><blank>  
Time: <hour>h<minute>m<second>s<blank>  
Lat: <value>< N or S><blank>  
Long: <value><W or E><blank>  
Speed: <speed><blank>  
Course: <course><blank>  
Date: <day>.<month>.<year>
```

With the GPS function you have a easy but useful possibility to check the actual position data of any supervised object.

15. SMS features (depends on local provider)

Informations gathered at May 02

With the SMS you are able to use many functions to report the events on different ways:

- **SMS to Speech**
A sent SMS is changed by the provider into a voice message. How to use this function you have to ask your local provider, whether he supports it.
- **SMS to Fax**
A sent SMS is changed by the provider into a fax message. How to use this function you have to ask your local provider, whether he supports it.
- **SMS to E- Mail**
A sent SMS is changed by the provider into an e-mail. How to use this function you have to ask your local provider, whether he supports it.

Because there are such a lot of providers worldwide, ConiuGo is not able to gather the needed informations from all of them. If you need support please contact your local dealer or your local provider to find out how SMS to voice, to E-mail or to Fax does work in your special case and which services you have to order if you like to use one of this features. Here are given some informations how SMS to E-Mail and SMS to Fax are used in Germany:

If you want to send an SMS to an E-Mail-account the **name of the outgoing SMS** in the GSM Module has to be set to **EMAIL**.

The text of the SMS then has to start with the E-Mail address. In this address instead of the @ the * has to be used.

Example: frosty.snowman*iceland.com Here is the news for you!

Please note that the separation between the E-Mail- address and the text is a *blank*.

The SMS then is sent to the normal SMS gateway of your provider, but a special phone no. for the SMS to E-Mail- server has to be selected. Please ask your provider how this service can be used in his network.

16. Maintenance and waste disposal



The emergency accumulator has to be disposed professionally due to its health endangering and ecologically harmful components.

The components contained in the emergency accumulator (optional accessory) are health endangering and ecologically harmful. The professional disposal of an accumulator therefore is stipulated legally by recycling. If you have no other disposal possibility, the accumulator can be returned to the manufacturer you bought it (at your own expense) and then will be disposed properly.



Do not throw the emergency accumulator into open fire or expose it to excessive heat.

This Module was carefully manufactured by ConiuGo by today's state of the art. With this we have striven for a long lifetime of this device. If you do not need the GSM module any longer and there is no another disposal option, it can be given back to ConiuGo (on your own expense) and will be disposed properly.

17. Troubleshooting



Possible reasons for a malfunction of the module you will find on the papers for the failure search. If you could not identify the problem please contact our support staff:

suportstaff@coniugo.com

18. Diagrams

Diagram 1 - part 1

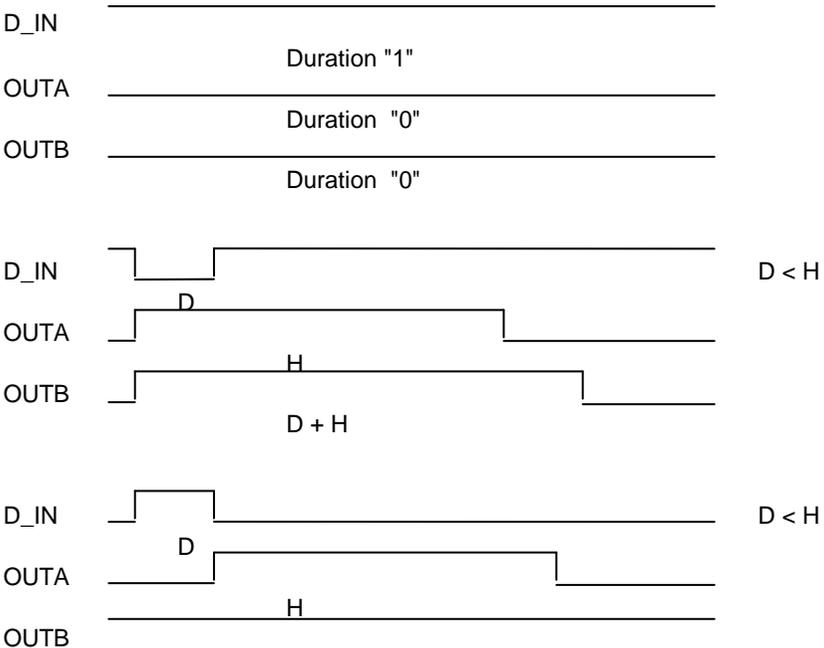
Function of the 0-active connection of a digital input

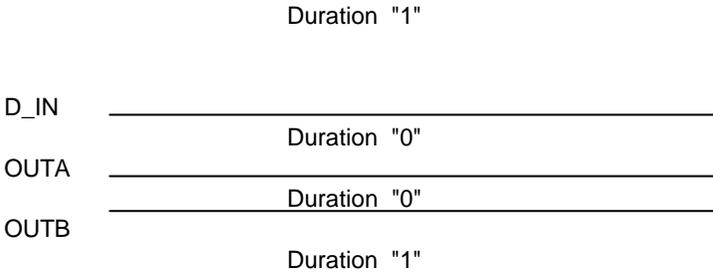
In the connection table, "0" is entered for the digital input.

D_IN – Digital input without hold time

OUTA – Digital output with hold time, not retriggerable

OUTB – Digital output with hold time, retriggerable





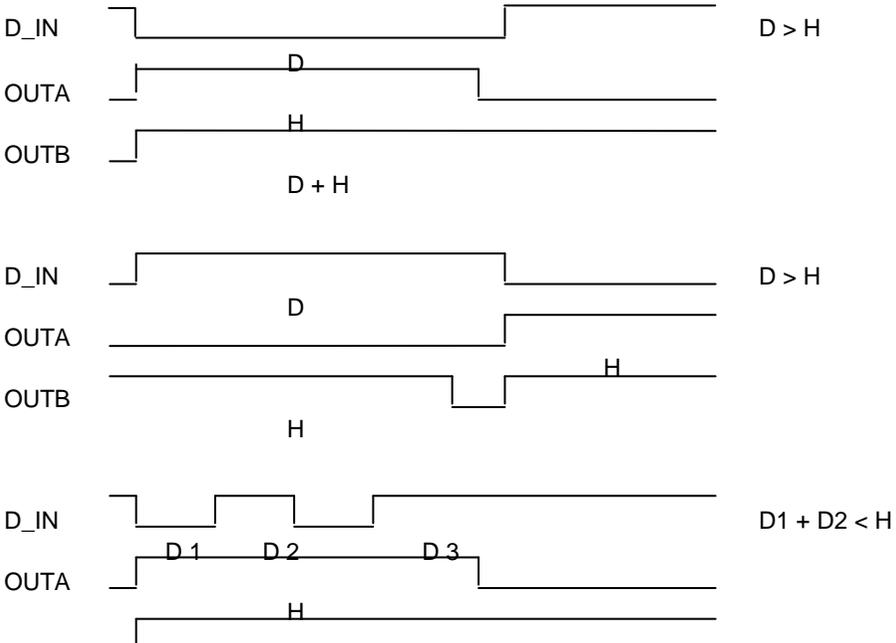
D – duration of the impulse at digital input (at least 3 seconds)
 H – pre-set hold time of the digital output (with a delay of some seconds)

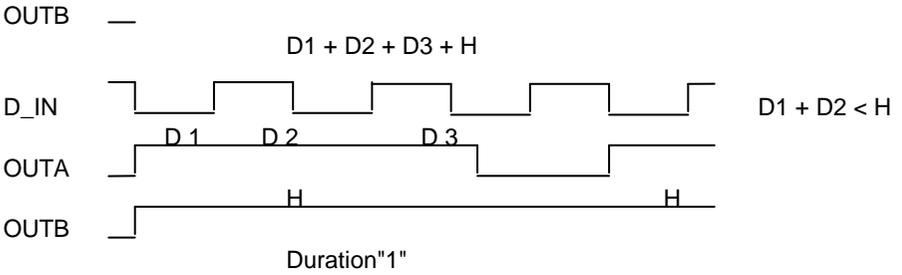
Diagram 1- part 2

Function of the 0-active connection of a digital input

In the connection table, "0" is entered for the digital input.

- D_IN – Digital input without hold time
- OUTA – Digital output with hold time, not retriggerable
- OUTB – Digital output with hold time, retriggerable





D – duration of the impulse at digital input (at least 3 seconds)

H – pre-set hold time of the digital output (with a delay of some seconds)

Diagram 2 - part 1

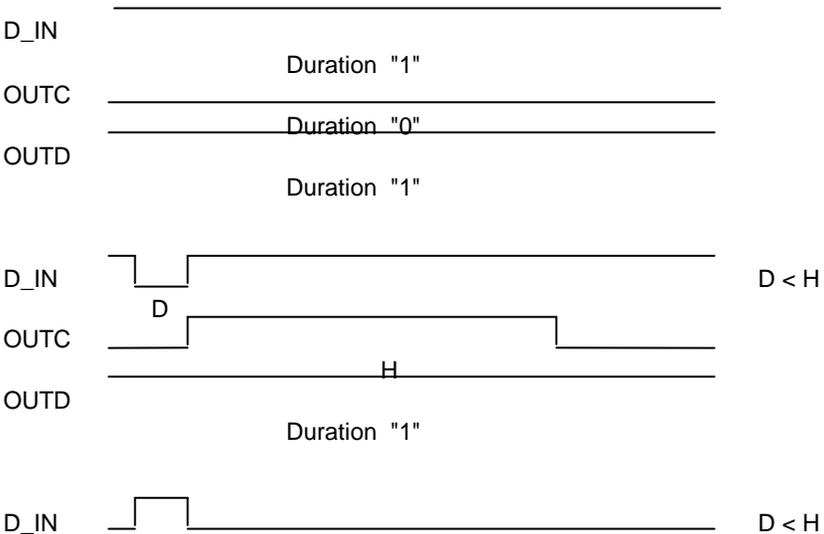
Function of the 1-active connection of a digital input

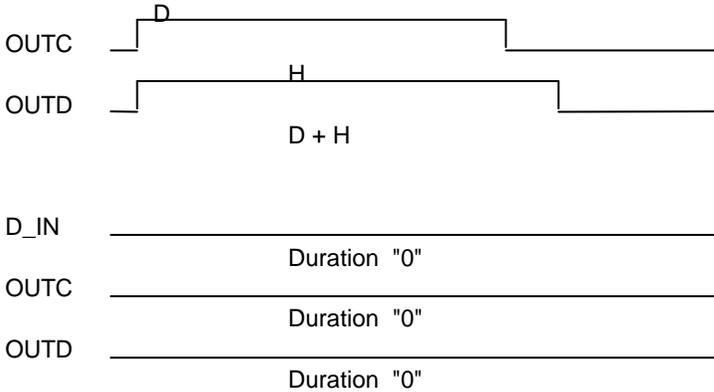
In the connection table, "1" is entered for the digital input.

D_IN – Digital input without hold time

OUTA – Digital output with hold time, not retriggerable

OUTB – Digital output with hold time, retriggerable

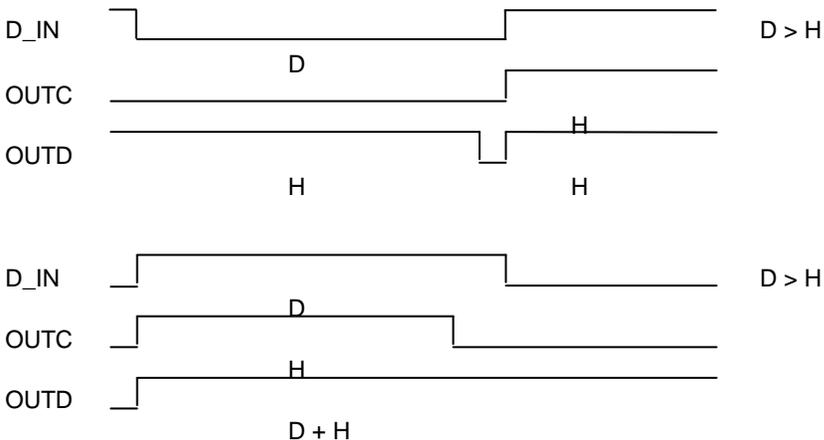


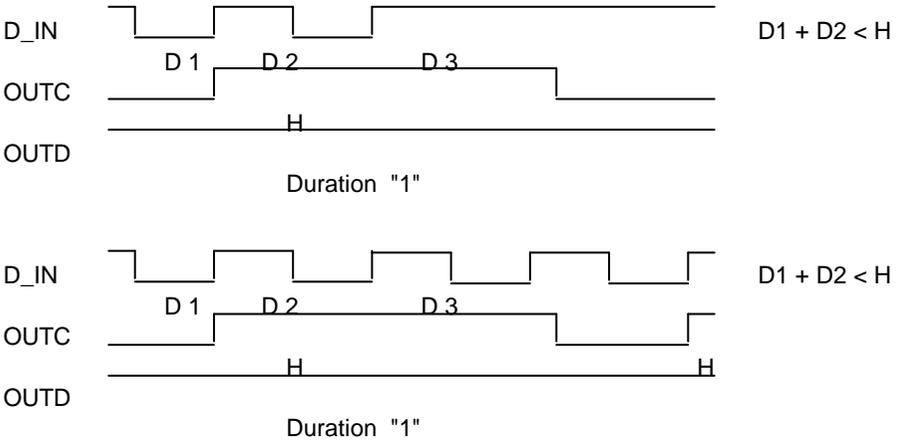


D – duration of the impulse at digital input (at least 3 seconds)
 H – pre-set hold time of the digital output (with a delay of some seconds)

Diagram 2 - part 2
Function of the 1-active connection of a digital input

In the connection table, “1” is entered for the digital input.
 D_IN – Digital input without hold time
 OUTA – Digital output with hold time, not retriggerable
 OUTB – Digital output with hold time, retriggerable





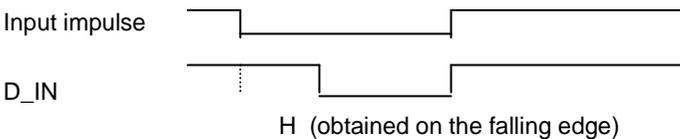
D – duration of the impulse at digital input (at least 3 seconds)
 H – pre-set hold time of the digital output (with a delay of some seconds)

Diagram 3
Function of the hold time of a digital input

The hold time of a digital input only has an effect to the falling edge of a negative impulse. The edge increasing to "1" isn't influenced through the hold time.

At the parameter setting of the digital inputs a hold time is entered for an input (shorter impulses are suppressed.)

Input impulse – External impulse, connected to input
 D_IN – Digital input with hold time



D – duration of the impulse at digital input (at least 3 seconds)

H – pre-set hold time of the digital output (with a delay of some seconds)

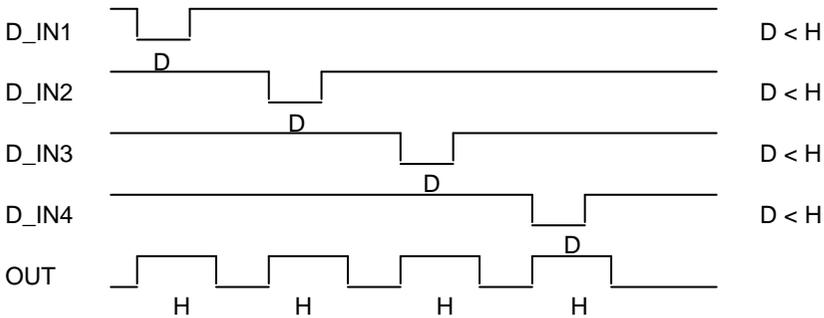
Diagram 4

Use of multiple connections for one output

In this example, every digital input activates the output:

D_IN1 to 4 – Digital inputs

OUT – Digital output



D – duration of the impulse at digital input (at least 3 seconds)

H – pre-set hold time of the digital output (with a delay of some seconds)