AXILOG ^{II}

user manual

VERSION 3.0

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1. CONTENTS

1   INTRODUCTION

The Axilog ^{II} vibration monitor is used to measure vibrations of buildings, in order to assess the risk of damage to the building, or the nuisance of the vibrations for persons residing in that building.

In order to avoid possible damages, several national and international guidelines can be used to signal and alarm on vibrations that are too high for the specific building. Alarm messages can be sent to several interested parties such as the operator and the project manager, by means of SMS and/or email. Built-in guidelines include the Dutch SBR, German DIN, and the British Standard.

The Axilog ^{II} is primarily designed to make vibration monitoring efficient and effective, with ease of use and automation of repetitive tasks in mind. Mobile broadband access allows remote control of any number of Axilog ^{II} simultaneous, from the comfort of your own desk.

The Axilog ^{II} and the PC software that comes with it, can be used to monitor and control a (large) number of systems remotely. This includes reading the registrations from the equipment and the production of simple reports of these registrations. All fully automated, so that you can focus on situations where your advise and guidance are required. No more tedious work to make daily reports. For the final report at the end of a project, advanced reporting options are available that can be used to generate a report based on one of the templates (which you can edit or design yourself).

The Axilog ^{II} has a built-in fast 3G internet modem and all settings and control can be made remotely. Also, real-time measured values are transmitted to the PC as soon as they become available. You can monitor the process from a distance, no need to stay next to the Axilog ^{II}.

PC software is free to use with every Axilog ^{II}, there are no maintenance fees or additional licence costs. The software runs on your own (server) PC and the only monthly costs will be for the SIM in the Axilog ^{II}.

The Axilog ^{II} is equipped with a large internal rechargeable battery of Li-Ion type. The energy storage capacity of this battery is sufficient for relatively long periods of uninterrupted operation. Energy savings such as automatically putting the internet modem to sleep on a daily schedule can further increase the operational period. The battery is charged from the adapter (included in the delivery) but a 12 Volt car battery can also be used,

The Axilog ^{II} has extensive capabilities for sending an alarm message when certain vibration limits are breached. You can connect an alarm lamp, and/or send SMS messages and/or email messages to several people. The Axilog ^{II} can do all that, even when the connection with the PC is active at the same time. Events such a battery low, memory full, sensor shock, registration start, registration stop, and many others, can also be sent via SMS and/or email. An Axilog ^{II} keeps you fully informed.

The Axilog ^{II} has two clear LCD's that are readable even in direct sunlight. Back lights make the LCD's clearly visible in the dark. One of two LCD's informs the user about the status, and the other LCD always shows the measured values.

The capacity of the registration memory is sufficient for a long period of uninterrupted operation. The memory can be read while the registration is still running. Registrations can be started and stopped manually but there are also timers available for starting and stopping the registration automatically, either each day at the same times or on a different schedule for each day of the week if so desired.

When the Axilog *II* is powered-on, and the registration should be active according to the schedule, the Axilog *II* will automatically begin the registration. If the registration is active, it is not possible to switch the Axilog *II* off. Properly configured, operating the Axilog *II*
in the field can be as simple as switching the equipment on in the morning, and switching it off at the end of the day.

The Axilog *II* sensor is fully digital and has its calibration constants built-in. This means that any Axilog *II* sensor can be used with any Axilog *II* data logger, and there is no need to keep sets of sensor and data logger together. In case of a recalibration you only need to ship the sensor to us.

The sensor also has a built-in GPS receiver. As soon as a registration starts, the GPS is enabled. When the GPS has a valid position, this position is stored in the registration and the GPS is switched off.

The sensor also has a built-in electronic level. When a registration starts, the level is measured and the tilt of the sensor is stored in the registration memory. Also, when the sensor endures a shock, the level is automatically measured and the tilt is stored in the registration database.

If you have the Axilog *II*
on your desk, you can program and control it using a USB cable. This is faster than the mobile internet connection. Also, some very specific functions (such as uploading new firmware to the data logger) can only be done via USB. All other functionality is the same between USB and mobile internet.

2   MEASUREMENT PRINCIPLES

The Axilog *II* sensor has its own internal Digital Signal Processor (DSP) which is used to prepare the signals from the three (X, Y and Z) geophones for further processing by the data logger.

Digital filters in the DSP limit the transfer function to the required bandwidth, which is associated with the guideline that is used. These filters also compensate the transfer functions of the geophones themselves.

A fresh sample is created each two second interval. The DSP calculates the peak values of the signal in this two second interval, and performs an FFT of the signal. Then, the dominant frequency is determined, which is the frequency at which the FFT of the signal is the highest relative to the frequency dependent curve of the selected guideline.

The sensor transmits a data set, that is calculated as described above, to the logger every two seconds. The loggers shows the sample on the upper LCD and saves the sample with the highest velocity over the registration interval. The logger also checks if the incoming values are below the alarm levels and generates SMS, email, etc. as appropriate.

3   THE BATTERY

The Axilog *II* has a large capacity Lithium battery, that can power the Axilog *II* for a long time without recharging. The actual lifetime of the battery largely depends on the energy consumption of the LCD back lights, the internet modem, and the sensor. There are many ways that you can minimise the energy consumption of these two components, depending on your needs. For very long term measurements, the Axilog *II* can be powered continuously by mains current via the adapter, or any other 12 Volt source such as a large (car) battery.

The battery can be charged approximately 1000 times before the capacity starts degrading. The battery is a Li-Ion type that keeps it nominal capacity best when it is not regularly fully discharged

There is no separate battery for the internal clock – if the battery is discharged completely, the clock must be set. This can be done using the keys on the Axilog *II* and also with the PC either via USB or via the mobile internet connection.

Registration data and settings are always retained, even if the battery is removed.

The system is supplied with a 12 Volts DC adapter for charging the battery. Axilog *II* can also be charged from an external 12 Volt (car) battery. The charge current is approximately 4 Amp max. It takes about 10 hours to charge a fully depleted battery. You can do measurements while the Axilog *II* is charging.

NOTE: The adapter that is supplied with the system is for indoor use only.

4   THE INTERNET MODEM

Axilog *II* has an energy efficient and fast built-in GSM modem. The PC software can connect to many Axilog *II* systems in the field through the mobile internet network. When connected, the Axilog *II* can be controlled completely from the remote location. Real-time values are available for remote monitoring. There is no need to be present on the site. The PC software handles many Axilog *II* systems at the same time.

The modem in the Axilog *II* can be powered off to prolong battery life. The Axilog *II* can be programmed with a flexible schedule to power the internet modem on- or off. You can always find a good compromise between accessibility of the Axilog *II* and energy consumption of the modem.

The internet modem requires a SIM card to operate. You get the SIM card from a mobile internet provider. Depending on the services that your provider gives you, you can:

- Contact the Axilog *II* using the Axilog Manager software running on your PC. When contact is established, you can fully control the Axilog *II* from behind your desk, and also see the real-time measured values, practically without any delay. Of course you can collect the contents of the registration memory (without interrupting the current measurement), and have an in-depth look at the data. The full functionality of the Axilog Manager can be found in the manual for the Axilog *II* software suite.

- When there is an alarm or an event, the Axilog *II* can send SMS messages to up to six telephone numbers.

- When there is an alarm or an event, the Axilog *II* can send email messages to up to six email addresses.

- When there is an alarm or an event, the Axilog *II* can contact the Axilog Manager on your computer. The Axilog Manager can be configured to automatically respond to some events, and read the current registration data and optionally make a report, all without user intervention.

4.1   CONTACTING THE AXILOG *II* VIA MOBILE INTERNET

If you want to contact your Axilog *II* system(s) from your PC you need a simcard with a static, public IP address. Your simcard provider can help you with that. In the UK, your best option is to look for a provider that has a SIM for use in mobile internet routers.

Some providers do provide a static IP, but not a public one. In that case you have to contact the Axilog ^{II} via a VPN connection with the computer of your mobile service provider.

If you cannot get a SIM with a static public IP then your PC won't know how to contact your Axilog ^{II}. However, since your PC is probably on a wired LAN, it may still be possible that your PC has a static, public IP. You may have to do some configurations in your network to arrange that (port forward). When your PC has a static, public IP, then the Axilog ^{II} will know how to contact your PC. You can then leave the initiative to make contact to the Axilog ^{II}. You can program the Axilog ^{II} to contact the PC as soon as the Axilog ^{II} is powered on, and/or when a registration starts or stops, and/or when there is an alarm, and many other events.

You can also have the Axilog ^{II} send an SMS and/or email each time it gets a new IP address assigned from the mobile internet network. In this case, you can even access an Axilog ^{II} that does not have a static IP, of course the IP still has to be public.

4.2 SENDING SMS MESSAGES FROM THE AXILOG ^{II}

The main advantage of SMS is that it is quick, and SMS messages are usually delivered without great delay. If you want that the message is delivered as quickly as possible, then always use SMS for that. Select an internet provider that allows SMS messages (and does not charge too much for that).

4.3 SENDING EMAIL MESSAGES FROM THE AXILOG ^{II}

To send an email, the Axilog ^{II} contacts an email server, and asks it to transmit the email to the email server of the addressee. When the email arrives at the email server of the addressee, the email can be collected with the email client from the addressee, such as Outlook or the email client in your smart phone. The email client polls the email server to see if new emails have arrived. This can introduce delays between the Axilog ^{II} sending the email and the receipt of the email in Outlook or your smart phone. Additionally, the transport of the email through the various email servers can introduce delays, such as scanning for viruses, checking blacklists, spam filters, etc.

4.4 HAVE AXILOG ^{II} MAKE CONTACT WITH YOUR SERVER

The Axilog ^{II} can be instructed to contact your server at specified events and also at regular intervals. You can use this if you want to have the Axilog ^{II} on line but cannot get a static public IP for the mobile internet in the Axilog ^{II}, but also if you want to have the Axilog ^{II} automatically go on line as soon as it is powered on or starts a registration. Program the IP address of your server computer (or its domain name) into the Axilog ^{II} and let the Axilog ^{II} take the initiative to make a connection. The Axilog Manager will accept the connection and from that moment on the Axilog ^{II} is fully accessible. Your network has to be configured for this (port-forward, firewall settings, etc.)

5 ALARMS

The Axilog ^{II} can generate alarms via:

- an output on the data logger, which can be connected to an alarm lamp on site

- e-mail messages sent to up to 6 email addresses

- SMS messages sent to up to 6 telephone numbers

There are two alarm levels and each level has it's own alarm. Each of the two alarms has it's own set of email addresses and SMS numbers. The Axilog *II* has two buttons, one to generate a test alarm on the primary, and one to generate a test alarm on the secondary alarm.

The Axilog *II* can generate an alarm based on:

- an absolute value of the peak velocity within the measurement interval

- a frequency dependent smart alarm based on the peak velocity and the associated dominant frequency within the measurement interval

The absolute alarm value is programmed in mm/s. The frequency dependent smart alarm follows the curve as defined by the programmed guideline and is programmed as a percentage of the allowable value of the velocity according to the guideline.
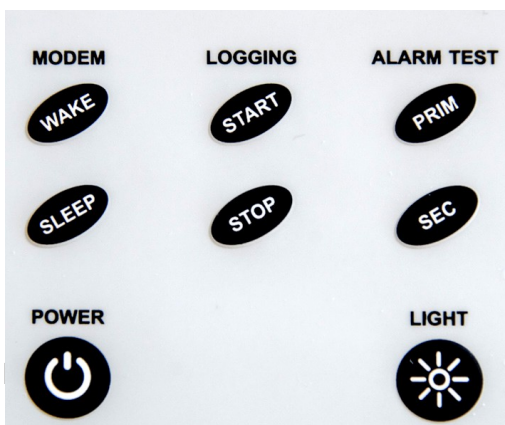
6   THE AXILOG *II* KEYBOARD

The Axilog *II* has two LCDs. The upper LCD shows the actual measured values or the peak values from the peak detector memory. The bottom LCD is used to show the status and to change the settings.

The keyboard has a few fixed function keys, and keys that are used to go through the settings menu and change the settings.

The fixed function keys are for:

- Modem Wake or Modem Sleep. With these keys you can power-on or power-off the built-in internet modem. If the modem is off, you can switch it on and it will stay on until it is time to switch it off according to the programmed schedule. If the modem is on, you can switch it off and it will stay off until it is time to switch it on according to the programmed schedule. If required you can overrule

the programmed schedule altogether. The modem must be powered on to accept connections from the PC. Outgoing connections such as contacting the server after an event, or send SMS and/or emails, always automatically power-on the modem.

- Logging Start or Stop. With these keys you can manually start or stop the registration. If the registration is off, you can switch it on and it will stay on until it is time to switch it off according to the programmed schedule. If the registration is on, you can switch it off and it will stay off until it is time to switch it on according to the programmed schedule. If required you can overrule the programmed schedule altogether.

- Alarm test primary en secondary. Use these keys to generate a test alarm. Everything that is programmed for an actual alarm such as SMS messages and/or email messages, will be done so you can check if the emails and/or SMS messages arrive at the intended destinations.

- Power on/off. When a registration is active, you can not power off the Axilog *II*. A message will appear on the LCD to let you know that you first must stop the registration before you can switch the Axilog *II* off. If the Axilog *II* is switched on and a registration should be active according to the programmed schedule, then the Axilog *II* will immediately start its registration. This means that a properly configured Axilog *II* can be installed on site, and all the operator then has to do is press the power button to switch the Axilog *II* on. Everything else such as start/stop the registration and power-on or power-off the modem, will be fully automatic.

- LCD back lights. The back lights consume a lot of energy. You can program the back lights to go off after a specified time (which can also be infinitely long) and use the button to switch the back lights manually off or on.

The function keys on the left and right side of the LCD are used to go through the menu or to make changes to the settings. If a function key is active is has a triangle besides it on the LCD. If a function key would be active but cannot be operated right now because a registration is running, then a small cross is besides it on the LCD.

A number of settings (such as email addresses and SMS telephone numbers) can only be changed via the PC.

7   THE REGISTRATION MEMORY

The registration memory has a capacity that should be more than sufficient for most applications. If required, the memory can be read without interrupting the registration.

The Axilog *II* has flexible schedules for starting and stopping the registration based on a manual schedule, a daily schedule, or a weekly schedule. When you select a daily of weekly schedule, then the registration will start automatically when you power on the Axilog *II* and a registration should be active according to the schedule. As long as a registration is active, you cannot power-off the Axilog *II*.

There are two ways to use the registration memory:

– Linear. The memory is written from start to end, and when the memory is full the registration stops. You can get an email and/or an SMS when the memory is almost full, and when the memory is completely full.

– Circular. The memory is divided in blocks. Samples are written to the memory until it is full, and then the oldest block is erased to make space for new samples. The registration is endless but you can loose old samples when the memory is not read before the old samples are erased.

The registration memory is not used only for samples. You can program the Axilog *II* to write events to the registration memory too. That way you will have a full record of everything that has happened during the registration. Of course the additional event information will also take up space in the registration memory. A special mention in this regard for frequency spectra and signal traces that can be stored after an alarm has been generated.

The registration memory can be read while a registration is active. The Axilog Manager software can read the data from the registration memory, keep polling the Axilog *II* for new data, and download the new data as soon as it is available.

8   THE SENSOR

The sensor is fully digital and has adjustment constants and the latest calibration date stored internally. Sensors can be exchanged freely between Axilog *II* systems. For calibration, only the sensor needs to be shipped.

The sensor has an internal GPS receiver. When a registration starts, the data logger requests a GPS location and as soon as a location is available, it can be written in the registration memory. Then the GPS receiver is powered off to conserve power.

The sensor also has in internal electronic level. When a registration starts, the tilt of the sensor is measured and stored in the registration. When the sensor endures a shock, the sensor tilt is measured again. This way you can decide if the sensor has been displaced due to the shock. Of course you can also program the Axilog *II* to send an email and/or SMS when the sensor endures a shock.

9   CHANGING THE SETTINGS IN THE AXILOG *II*

All settings described here can be made using the keys and bottom LCD on the Axilog *II*. The bottom LCD normally shows the status. Press MENU to change to the menu home screen.
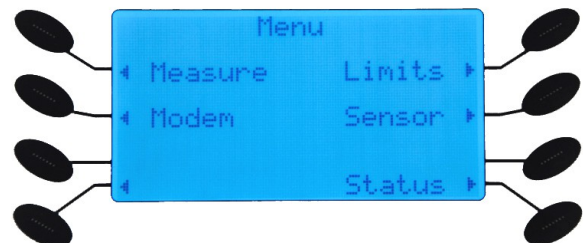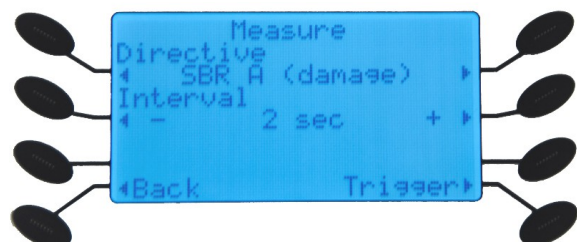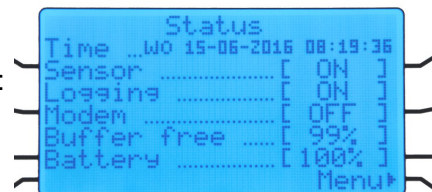
9.1   MEASUREMENT

In this menu you select the frequency response as follows:

- SBR A (damage) 0.8 Hz .. 100 Hz

- SBR B (nuisance) 1 Hz .. 80 Hz

- DIN 45669 C (damage) 0.8 Hz .. 100 Hz

- DIN 45669 B (nuisance) 0.8 Hz .. 100 Hz

For BS7385 you select DIN 45669 C frequency response.

The measurement interval is adjustable is steps of 2 seconds and with a smallest interval of 2 seconds.

9.2   TRIGGER

Set a trigger level at the minimum vibration level for a registration. Vibrations below the trigger level will not be recorded. This is to avoid (long) runs of very small and insignificant vibrations in the registration memory. The trigger level can be changed up or down in steps of 1 mm/s, 0.1 mm/s or 0.01 mm/s with the appropriate function keys.
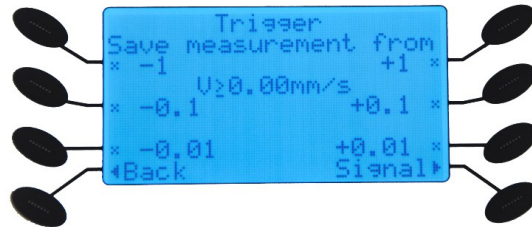
9.3   SIGNAL TRACE

Each time an alarm is generated, you can optionally store a small signal trace of the velocity signal. Internally a trace of 2 seconds long is created each 2 seconds. If the velocity in the trace raise an alarm, the trace can be stored in the registration memory. If the measurement interval is longer than 2 seconds, then the trace with the largest velocity during that measurement interval will be stored. You can store the traces in the registration memory:
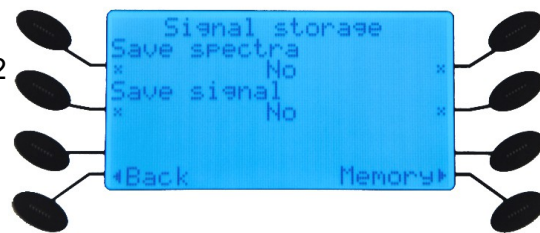
- Never

- With each sample that raises an alarm

Keep in mind that the traces take up a lot of space in the registration memory.

9.4   SIGNAL SPECTRUM

The sensor calculates a frequency spectrum of each 2 seconds signal trace. You can store the spectrum in the registration memory:

- Never

- With each measurement that is bigger than the trigger level

- With each sample that raises an alarm

Keep in mind that the spectra take up a lot of space in the registration memory.

9.5   MEMORY

With the function 'Memory' you can select either:

– Linear. The memory is written from start to end, and when the memory is full the registration stops. You can get an email and/or an SMS when the memory is almost full, and when the memory is completely full.
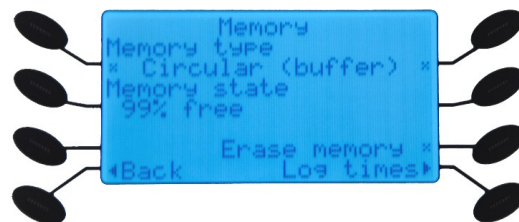
– Circular. The memory is divided in blocks. Samples are written to the memory until it is full, and then the oldest block is erased to make space for new samples. The registration is endless but you can loose old samples when the memory is not read before the old samples are erased.

If you want to switch between circular and linear, then you must erase the memory contents first.

The percentage of the memory that is still available for samples is shown on the status screen. When you erase the memory then only the stored samples and events will be erased, the Axilog *II* settings will not be erased.

9.6   LOG SCHEDULE

You can set the logging schedule:

- Manual. You can start and stop the registration using the Start and Stop buttons on the keyboard, or remote via the PC.

- Select a daily schedule if you want logging to start and stop at the same time each day of the week. The Start and Stop buttons can still be used to overrule the logging schedule.

- Select a week schedule if you want logging to start and stop at different times each day of the week. The Start and Stop buttons can still be used to overrule the logging schedule.
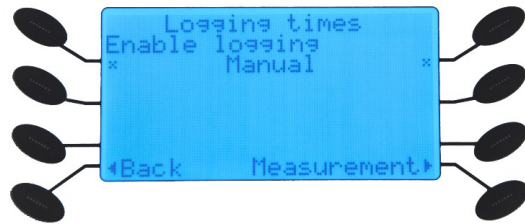
Use the function 'back' (lower left corner) to go back to the main menu screen.Setting alarm limits

Use the menu selection 'limits' to set the alarm limits. You can either choose an absolute velocity for the alarm, or a smart frequency dependent alarm. With a smart alarm, the dominant frequency will be used to find the alarm limit appropriate for the selected guideline SBR, DIN or BS. A user defined guideline can also be entered (on the PC) and selected.

9.7   ALARMS

There is a primary alarm and a secondary alarm. Both work the same way but can have different limit values and can also be programmed to send different SMS messages and email messages. Absolute alarm levels are entered in mm/s, a smart alarm level is entered as a percentage.
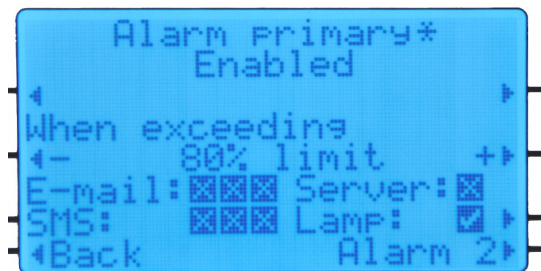
Use function key 'Alarm 1' to set the alarm level of the primary alarm. You can also disable the alarm.

You can see which actions are assigned to this alarm:

☑ Action is on (programmed by the PC)

☒ Action is off (via the PC)

E-mail:☒☒☒☒ Server: ☒

SMS: ☒☒☒☒ Lamp: ☑

These settings can be different for each (pre)defined recipient:

- the equipment manager

- the project manager

- the operator

A check mark at 'Server' means that the Axilog ^{II} will try to contact the server when there is an alarm. A check mark at 'Lamp' means that the Axilog ^{II} will activate the output when there is an alarm. The outputs can be used to enable an alarm lamp. The output for the alarm lamp can be enabled and disabled on the Axilog ^{II} but you need the PC to change any of the SMS and email settings.

9.8   SENSOR

When the registration starts or stops, the sensor will be powered on or off. However, if there is currently no registration active, you can still power on the sensor manually. This enables you to see the measured values in the upper LCD. You can also see other relevant information such as date of last calibration and sensor serial number and the tilt of the sensor in the bottom LCD.
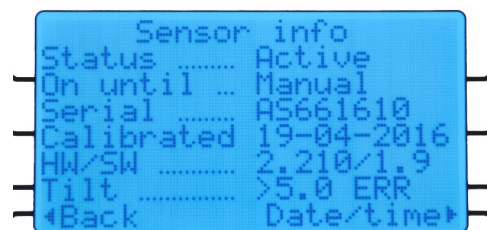
This menu also has the option to set date and time of the internal clock/calendar.

10 MODEM

The modem enables remote control and real-time monitoring, however, it uses relatively much power from the battery. Therefore it is best if the modem is off when it is not in use. There are several possibilities to make sure the modem is off as much as possible and still allow access when required. The options that are available also depend on the type of sim card that is used in the Axilog ^{Ii}.

A sim card can have a public IP address or it can have an IP address that is not directly accessible from a regular internet connection. If the IP address is public it can either be fixed or dynamic. If it is fixed, the IP address is always the same when the sim is online. A dynamic IP address is assigned when the sim goes online and is different each time the sim logs on to the mobile network.

A public fixed IP address is by far the easiest to work with. With a public fixed IP, the Axilog ^{II} can be accessed from a regular internet connection and in the software it is unambiguous which system is accessed. If a system can be accessed or not then only depends on whether the modem in the Axilog ^{II} is on or off. The modem can be switched on and off manually, or automatically with a day- or week schedule. Thus a pattern can be chosen that allows access to the system when required and save power when access is not required.

In all other cases the initiative to contact the server must be with Axilog ^{II}. The Axilog ^{II} can be instructed to contact the server at regular time intervals. If the server is active (computer is on, program is running) and Axilog ^{II} connects to the computer, it can be controlled from the computer from that moment on. So, if you program the Axilog ^{II} to connect to the server once every hour, it will take a maximum of 1 hour after you start up the computer and software before the connection to the Axilog ^{II} in the filed is established. As soon as the remote connection is terminated, the

server has to await the next time the Axilog *II* makes the connection. Besides the time based connections, Axilog *II* can also be programmed to connect to the server when an event occurs in the Axilog *II*. An event can be an alarm, start or stop logging and many other things.

You can program the following modem schedules:

– always on (shorter battery life)

– day- or week schedule (optimized battery life)

– connect to server only when events occur (long battery life)

– never connect to the server, modem always off (maximum battery life)

The settings are made as follows:

Select the Modem menu.

Select either:

- "Standby", modem is off, but it will be activated if events occur that are programmed to initiate a connection to the server

- "Continuous", the modem is always on, and always accessible

- "Day schedule" and "Week schedule", modem is accessible on the programmed times
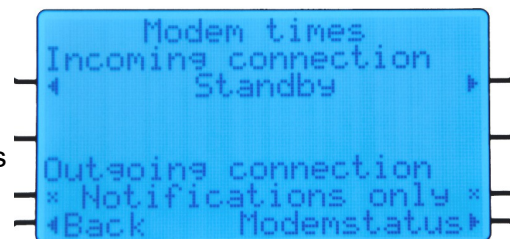
You will find the setting for the outgoing connection to the server at the bottom of the screen.The options are:

- "Notifictions only" when the modem connect to the server only when events occur that are programmed to initiate a connection to the server

- "Every xx hour xx min." if the Axilog *II* is programmed to connect to the server at the specified interval.

The setting for the outgoing connection can be set with the PC software only.

Please note! It is possible to select a combination of settings that will disable incoming connections on the Axilog *II* and preclude outgoing connections, so that it becomes impossible to connect to the Axilog *II* through the mobile connection. In that case the settings can only be changed using the USB connection. The status of the modem connection is always visible in the modem status screen.

- The modem status can be:

  ○ OFF: The modem is off. It will be switched on only when an outgoing connection is required to send an SMS and/or an e-mail or to contact the server when an event occurs that is programmed to contact the server.

    AUTO: The modem is off. A time schedule is
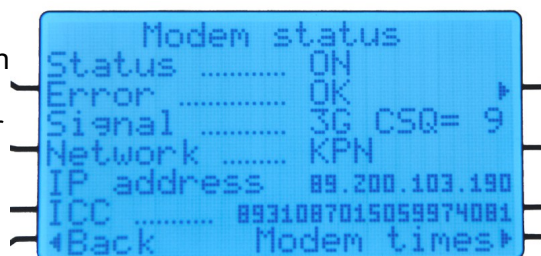
active that controls when the modem is on or off. Besides this It will be switched on only when an outgoing connection is required to send an SMS and/or an e-mail or to contact the server when an event occurs that is programmed to contact the server.

START: The modem is going online and is being initialized

REGG: The modem is waiting for registration on the GSM network. As soon as this is done, an SMS can be send.

REGD: The modem waits for registration on the GSM data network

IP: The modem awaits its IP address from the network

ON: The modem is on. The status symbols indicate which functions are used.

STOP: The modem is disconnecting from the network

Exx: One of the actions of the modem failed and the error code indicates what went wrong

- If one of the actions of the modem failed, the status screen shows the error code(s):

  ○ SIM: No sim card found

  ○ PIN: sim pincode invalid or not set

  ○ REG: cannot register with GSM or GPRS

  ○ APN: invalid APN or APN inaccessible

  ○ IP: Time-out when waiting for an IP address from the provider

  ○ SER: cannot connect to the Axilog *II* server

  ○ @SR: cannot connect to the e-mail server

  ○ @AU: the e-mail server uses authentication that is not supported by Axilog *II*

  ○ @LI: wrong user name or password for the e-mail server

  ○ @RA: one of the entered e-mail addresses is invalid

  ○ x... : unexpected error – if this occurs regularly, please contact your supplier for further analysis

- The signal strength of the GSM network is indicated with the so-called CSQ. The CSQ is a figure in the range 0...30. A CSQ of 10 or higher is fine for a good connection. A CSQ of 4 or less is too low for an error free connection. You can connect an external antenna to improve the CSQ.

The button "Modem schedule" opens the schedule for the modem. You can set a day and week schedule here. This concerns only the periods that the modem is activated to accept incoming connections from the server. Outgoing messages are always send regardless the settings in the schedules.

- If the modem is in 'standby', it remains switched off when the Axilog *II* is switched on. With the buttons 'WAKE' and 'SLEEP' on the front of the logger the modem can be activated and deactivated.

- If the modem is set to 'continuous' it is switched on when the Axilog *II* is switched on.It can still be controlled with the Modem WAKE and SLEEP buttons on the logger.

- If a day- or week schedule is selected it can be can be set with the button 'Schedule'

- If a day schedule is selected, the loggerd follows this schedule every deay of the week. The buttons on the front of the logger can still be used to switch the logging on or off.

- If a week schedule is selected, the start and stop times can be set for every day of the week. The buttons on the front of the logger can still be used to switch the logging on or off.

The 'back' button takes you back to the main menu.

11 SYMBOLS IN THE STATUS SCREEN

On the status screen on the bottom LCD various symbols are used to show the state:

PC1   Indicator PC connection

This indicator shows how many PC connections are open. This includes a connection with the server, if any.

USB   Indicator USB connection

This indicator shows that a USB cable is connected.

⇃⇂ ⇃⇂ ⇂   Indicator data transfer

This indicator changes state to show that data runs from the Axilog *II* to the PC, from the PC to the Axilog *II*, or in both directions simultaneous, either via USB or via modem.

⬛]   Indicator modem listens for incoming connections

This indicator shows that the modem is open for incoming connections from the PC. It may still be impossible to connect, for instance when the IP address of the modem is not a public IP.

▦ ✉ 🖵   Indicators connection active

These indicators show if there is an active connection for SMS, email or server contact.

G 3G   Indicator mobile technology

This indicator shows the mobile internet network: GPRS or 3G.

📶   Indicator mobile signaal strength

An indicator that has 0 .. 5 bars shows how strong the mobile signal strength is.

The upper LCD shows actual measured values and peak values from the peak detectors. There are some indicators on this LCD too:

🗐   Registration active

🔋   Battery is charged

🔔   Primary and/or secondary alarm output is active

12 PC SOFTWARE

The Axilog *II* comes complete with the Axilog Software Suite which includes:

- Axilog *II* Manager for online control (change settings, view actual measured values in real-time) of all your Axilog *II*, and collect data from the registration memory.

- Axilog *II* Report Tool for largely automated reporting of the collected data.

Refer to the Axilog Software Suite Manual for details.

13 HOW TO PLACE A SIM CARD

Open the logger housing. In the bottom part there are 6 screws. Remove these.

At the top side and at the bottom side there are two mounting plates with each two connectors (USB – CHARGE and ALARM – SENSOR respectively). These plates are mounted with 4 screws each. Remove the screws that are in the bottom part of the housing and loosen the ones in the top part a little bit.
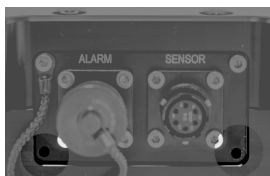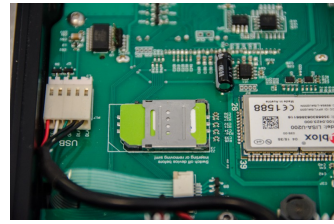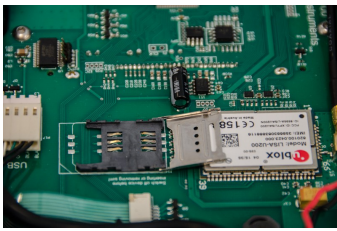

The logger housing can now be opened.

BE CAREFUL – The antenna wire and the battery are connected to both the top and the bottom part of the housing. So be careful, or you may damage these wires.

Open the housing as shown on the picture.

You will see the simcard holder inside the unit. There are arrows on the sim card holder that tell you how to open and close it. Open it and place the simcard in it, then close the holder. Make sure it is locked.

Close the housing again. Be careful that the antenna wire is in the opening in the bottom part of the housing.

Also be aware that the seals of the connector mounting plates are well in their place.

14 HOW TO PLACE THE SENSOR

The sensor bracket should mounted on the wall as firm as possible. There are 3 mounting holes. One screw may be enough, it depends on the wall type (bricks, concrete) and how flat the surface is, on which the bracket is mounted.

Choose a spot on the wall that is as flat as possible.

If necessary, you can fixate the bracket with 4 screws on the corners of the mounting bracket. If in doubt, use 3 mounting screws. Proper installation is important to get good measurements.
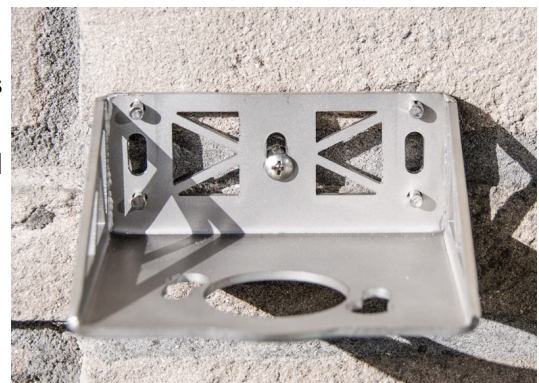
If the bracket is installed, the sensor can be placed on it. The sensor has a mounting ring and an adjustment ring, as shown below.

Seen from the bottom, the sensor is mounted as shown below. Place the sensor on the bracket and turn it so that the bolts slide into their in their slots. Fasten the two outer bolts hand tight.

Loosen the central bolt a bit and move the sensor until it is horizontal. The bulb in the spirit level must be entirley within the circle. If the sensor is leveled, fasten the cental bolt hand tight.

Make a note of the orientation of the X- and Y direction of the sensor or always mount the sensor in the same way. The orientation can be important when interpreting the measured values.

Make sure that the cable of the sensor does not guide water to the sensor, as shown below.

WRONG!   **OK!**

The same applies to the carrying case. If the sensor cable is guided into the case, and it is outside, make sure the cable points down outside the case so it does not guide water into the case.