TIMO *web*

for the aquaristics-computer „aquastar“ of Messrs. iks

MANUAL

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Preface

TIMO is a software, which makes the programming of the aquaristics-computer aquastar of Messrs. iks much easier. The software is able to create and transfer programmings for the aquastar, to execute long-term memories of all measured values, to generate alarm and warning messages and to send them by mail. Parameter data files can be converted for the different firmware versions. You can apply **TIMO** very versatile. Another hint: **TIMO** is not a product of Messrs. iks. This software has been developped without the assistance and knowledge of Messrs. iks. Enthusiasted aquarists have developped the basis and the software in their spare-time, as the possibilities offered by the software's producer was not sufficient.

The question, which will raise first is – for which purpose do you actually need **TIMO**? This question is very simple to answer. In connection with an iks aquastar, this software can do a very good job for you, thus giving you more time for your hobby.
The designers of this software always whished to have a possibility to secure the data, which has been programmed so toilsome via the keyboard of the aquastar. This was the starting-point. Little by little always new ideas came up and thus the demands to the functionality of the software increased. **TIMO** is now the product of a development over many years.

This document, which you are just reading, is the English manual for **TIMO.** This manual will show you all the essentials written on a few pages. Possibly you also simply prefer a compact manual. In this case, you will appreciate this manual.

The manual will, of course, not answer all your questions. This is actually really not intended. You will sure know the proverb: *"it's quality not quantity that counts"*. This manual thus offers you a clear view on the essential things and offers a basic understanding for the software **TIMO.** Any further questions can be answered in the forum for TIMO under **www.matuta.com**

Please note this word of warning: Your iks aquastar and **TIMO** can assist you in every respect with supervising of your aquarium and relieve you with routine matters. They can in time indicate to you a possible water deterioration and then become active with measures which have been programmed by you. However, you have to decide by yourself what has to be switched via a socket in special cases. You do indeed have a tremendous number of adjustment and monitoring possibilities, but also (or maybe just because) still the *only responsibility* for the livings taken care by you.
All technical systems are developped by human beings. Therefore errors can occur. In the firmware of the aquastar as well as in the software **TIMO**. The designers, however, try to avoid this, but it cannot be completely excluded. Please always keep this is mind and test the controls and regulations before start-up on their 100% function and safety. **Please also consider the notes for operation.**

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Note for operation

For further documentation, please also read the manual of the aquastar. In this help, only the operation of **TIMO** is being treated. It is no instruction for programming the aquastar.

The software has been checked carefully. Anyhow, errors cannot be excluded. Any liability for direct or indirect damages, regardless of which type, which are in connection with the application of the programme is expressly being excluded.

? **By programming the aquastar directly or via TIMO, there can occur situations, which can become highly dangerous for the monitored aquarium and its passengers. A monitoring on plausibility of the indicated parameters for programming does not take place.**

? **Regulations can exclude themselves mutually resp. become ineffective.**

? **The indication of alarm values can deactivate the regulations unintentionally.**

? **The aquastar possesses numerous peculiarities, so as after a new start-up all intervals run automatically. This has to be considered as after a programming the aquastar starts from new.**

? **In TIMO there is always the profi mode visible, regardless how the adjustment has been executed at the aquastar. Thus extended functions become visible, about which you should necessarily inform yourself in advance.**

? **A tele-monitoring of TIMO is in principle actually possible, despite that fact further measures for prevention of damages and monitoring of the device will become absolutely necessary!**

Before the purchase

Before you purchase **TIMO,** you should in any case download the shareware version, which is available free of charge. Therefore please consult www.matuta.com. Under download – aquastar you will find a shareware version of **TIMO**.

The shareware version has some restrictions compared with the standard **TIMO.**
The most important restrictions are:

- Only memorizing of the aquastar programme is functioning. The writing back function to the aquastar is being locked.
- It is impossible to send data via FTP or mail
- Some functions are locked
- The shareware version can be changed to a full version by clearing

Despite these restrictions you can test the useability of **TIMO** trouble-free. Does communication with the aquastar function? Is the offered programming surface convenient for you? Can you manage with the operation? Do you like the programme surface? These and a lot more questions can be answered with the free shareware version.

The licence model

If you buy a standard software, you will receive a data carrier (disc or CD) which contains the programme. That's all. You normally cannot profit from the improved versions, which the designer will release in the course of the next months. Except you buy again one or more updates against good money. So if you want to keep the current status, this could become expensive.

1 year updates free of charge and access to TIMO online

TIMO thus offers an improved licence model.

In addition to the programme you will receive:

- a *Password*, with which you can download **during 1 year** the current **TIMO**-version from *www.matuta.de* oder *www.matuta.com* free of charge.

Thus you have over a long period access to updates and will always be equipped with the latest **TIMO**-version. New or improved functions cost only a few minutes time for download.

- With your *password* you can also use **during 1 year TIMO online free of charge** on www.matuta.com. In this case we talk about an online registration of your transferred measured data. For more information, please see the **TIMO online** chapter

Of course, the forum on www.matuta.com will be available for you free of charge and without any restrictions. Besides the **TIMO** support, you will also find construction manuals, articles and for sure also friendly people.

For current prices and detailed information, please contact www.matuta.com. There you can also clear the shareware version and place online orders.

Which operating system?

For **TIMO** you require a PC with the operating system Microsoft Windows ME, NT, 2000 or XP.
If you have free choice, than please join Windows XP. This does not inevitably mean that Windows XP is the best of the before mentioned operating systems, but only that all the tests were done with the use of Windows XP and thus there is most experience with this system.

Actually, **TIMO** would also run with Windows 98SE. But you would have to patch the system in many items to higher versions. For the normal user, this will already create some problems, so that the set-up routine will now finally refuse these systems.

Please also keep in mind that Microsoft will give up any support for these old systems. From this point of view it makes really no sense to keep **TIMO** desperately downward compatible.

TIMO can also be used on MAC. But only with a Windows-simulation. Such a programme is for example Virtual PC. Under this simulation surrounding a Windows system could then be installed.
In the meantime **TIMO** runs successfully on numerous MAC – computers.

System provisions:

Minimum:

Operating system:	Windows ME, NT 4.0, 2000, XP
Processor:	starting from Intel Pentium-Processor
Working memory:	minimum 64 MB
Fixed-disk space:	20 MB plus space for selected data
Graphics card:	SVGA-compatible, resolution 800x600
COM-Port	a free COM-Port RS232

Optimum:

Operating system:	Windows XP
Processor:	Intel Pentium-III-Processor or higher
Working memory:	512 MB or more
Fixed-disk space:	20 MB plus space for selected data
Graphics card:	SVGA-compatible, resolution 1024x768 or more
COM-Port	a free COM-Port RS232
Additionals:	Internet connection

TIMO and the firmware of aquastar

Since the creation of **TIMO**, Messrs. iks has developped numerous firmware versions for the aquastar. The first firmware, which was supported by **TIMO**, was version 2.14.

In case of this version we do not talk about a **TIMO** version number, but about the version of aquastar firmware. As the structures are very different within the various firmware versions of the aquastar, also **TIMO** had to be adapted and thus being extended. So if you connect an older **TIMO** version with a later aquastar firmware, **TIMO** will conclude the connection to aquastar because of safety reasons.

In this connection it is therefore important to know, which firmware is being used in the aquastar. This can be found out as follows:

- By unplugging the mains plug of the aquastar. Afterwards please reconnect the current supply. Then the aquastar will be re-started and indicates the version in the display.

- When useing the **TIMO** software, the version will be indicated in the status line when memorizing the programming.

Based on the version number of **TIMO** it can be recognized up to which aquastar firmware the support will function. This numbering was first brought in with the version 2.19.

A **TIMO**-version 2.19.XX supports all firmware versions of the aquastar from 2.14 to 2.19. The last two XX of the **TIMO**-version number stand for the release version of **TIMO**.

A **TIMO**-version 2.20.01 would thus stand for the first release for the firmware 2.20 of aquastar.
Of course always also downward compatible to all previous versions. The oldest firmware, which is supported by **TIMO** is always the firmware version 2.14.

No rule without exception. The firmware 2.18 of the aquastar was that much defective that a support by **TIMO** could not be realized.

A TIMO-version 2.17.xx is thus not in a position to communicate with an aquastar, which possesses a firmware > 2.17. For that purpose TIMO has to be updated. The process of same you will find in chapter „Update of TIMO“.

Please also read chapter ‚change of version“

Installation of TIMO

Administration rights under Windows 2000 / 2003, Windows XP

For an installation on this operating system it is necessary, that you have the corresponding administration rights. Should you relate to another user category, please contact your corresponding system administrator. He will provide you with the necessary data, depending on entitlement.

Please update the operating systems before the installation of software **TIMO**. Current for Windows 2000 is SP (Service Pack) 4. Under Windows XP it is SP 2.

For all these operating systems there are a great number of current safety and stabilization updates available. Please check your system also in this point concerning relevance to the present updates, in order to avoid unpleasant surprises.

Windows 2000

Before installation of the software it will be necessary to check the relevance of the internet browser. On your computer should at least be installed version 5.5. of the Microsoft internt browser. Please also do not forget to install the corresponding safety updates for this browser!

Now you can finally start

The software has an installer. It carries out all system adjustments, which are necessary for the operation of **TIMO.** Please execute the setup.exe. You will be guided through the installation by the setup-routine. Should you wish to de-install **TIMO**, you can carry out this step under system control – software in your Windows version. All installed components will then be removed from your system.

The programme consists of the actual programme with some Visual Basic-components, which will be copied into the Windows dictionary and being registered.

TIMO knows the languages English and German. The setup decides depending on the country setting of the computer. If German is chosen as country setting, **TIMO** will be installed in German. In case of English or unknown country setting, the software will be installed in English.

After installation **TIMO** runs as shareware. Some functions will then not be available. How to release **TIMO** is described in chapter „first start-up of **TIMO"**

In order to read-out and transfer the data from aquastar, the data cabel of the aquastar has to be connected to a free COM-Port of the computer (normally COM1 or COM2).

The information about the cable to be used can be found in the menue item Extras – connection cable. But you can also use the original iks cable.

First start-up of TIMO

When you start **TIMO** for the first time, a start screen will be indicated. It is possible that this is somewhat longer visible for the first time, as different components will be configurated for the first use. After the start you will be informed that you deal with a shareware resp. light version. By a click on the button registration you get directly to the input of the licence number in order to release **TIMO** as full version.
Should you not yet have a registration, please just close the window.

For many options a connection to the aquastar will be absolutely necessary. Under menue item Extras Comport, please set the corresponding Comport, via which your computer communicates with the aquastar. In most cases it should function with the COM 1. With many notebooks COM 1 is booked by the internal mouse or touchpad. The outer interface is in this case mostly COM 2.
Some later computers do not have a serial interface at all. In this case a USB -> serial converter will be of help. In the meantime these can be bought at a favourable price and they are functioning trouble-free in most cases. These converters install a virtual Comport. This means the computer has now a Comport, which is physically not available. In most cases this is installed as COM 3. If **TIMO** should communicate with this USB adapter, you have to indicate as a Comport the virtual Comport, which is in our example COM 3.

Also a connection via network will be possible. More information can be found on web side www.matuta.com.

In order to configurate **TIMO** correctly, you should first read-out the programming of the aquastar. Thus **TIMO** knows the connected sensors and sockets. More details please see next page.

Registration of TIMO

If you are satisfied with **TIMO,** you can also release the remaining functions. In this case a registration with costs will become necessary.

Please join our web side www.matuta.com. On the start side you will find a note for registration.

At the moment of this manual, 2 registrations are possible:

On one side **TIMO** as full version. There, all possibilities, with the exception of the functions described under web options, are feasable. A later purchase of the web option is possible at any time.

Of course you can order **TIMO** also directly with the web options.

After having decided for a method of payment on the web side and filled in the form, please transfer the corresponding amount.

After receipt of payment, you will be informed by e-mail about the release.

Should payment be effected by bank transfer, the whole process could take some time. This delay is, however, mostly due to the banker.

But should you not have heard anything after a few days, please do not hesitate to send a mail to support@matuta.com and give notice. After all, we are all only human beings, who make mistakes or even forget something.

Otherwise I would like to thank you already now for the purchase of **TIMO.** At the end you make it possible to develop such a software, which will never become a mass product and thus will not be of interest for large companies.

Programming of the aquastar memorizing and storing

For this purpose, please click on tab ‚Programming'. An empty sheet with a structure similar to Excel will be indicated. Now please click on ‚read programme'. So the current programming and configuration of the aquastar will be memorized and indicated. Should you receive a messge that the firmware is unknown, please read chapter „TIMO and the firmware of aquastar".

As the aquastar has no interface, which reacts immediately on external demands, as for example from **TIMO,** it could happen that you will be faced with a time cross when you try to get in connection with the aquastar. This is called time out. Then please repeat the procedure.

This memorized programming can now be stored on a data carrier via menue item ‚data file – store under'. Now you have a storage of the current programming of the aquastar.

If you are positioned on the tab ‚Programming', you can also re-memorize a stored programming. Under menue item „data file – open" you can access to your data carriers and memorize a data file. This will then be indicated in the programming window.

Menue item data file with its sub-functions store and open are depending on the tabs information, measured data export, read memory and programming. If you are positioned on tab programming, you can store and read programmings. In the menue item read memory you can store on a data carrier the measured values which are set in the aquastar after memorizing or memorize thereof.

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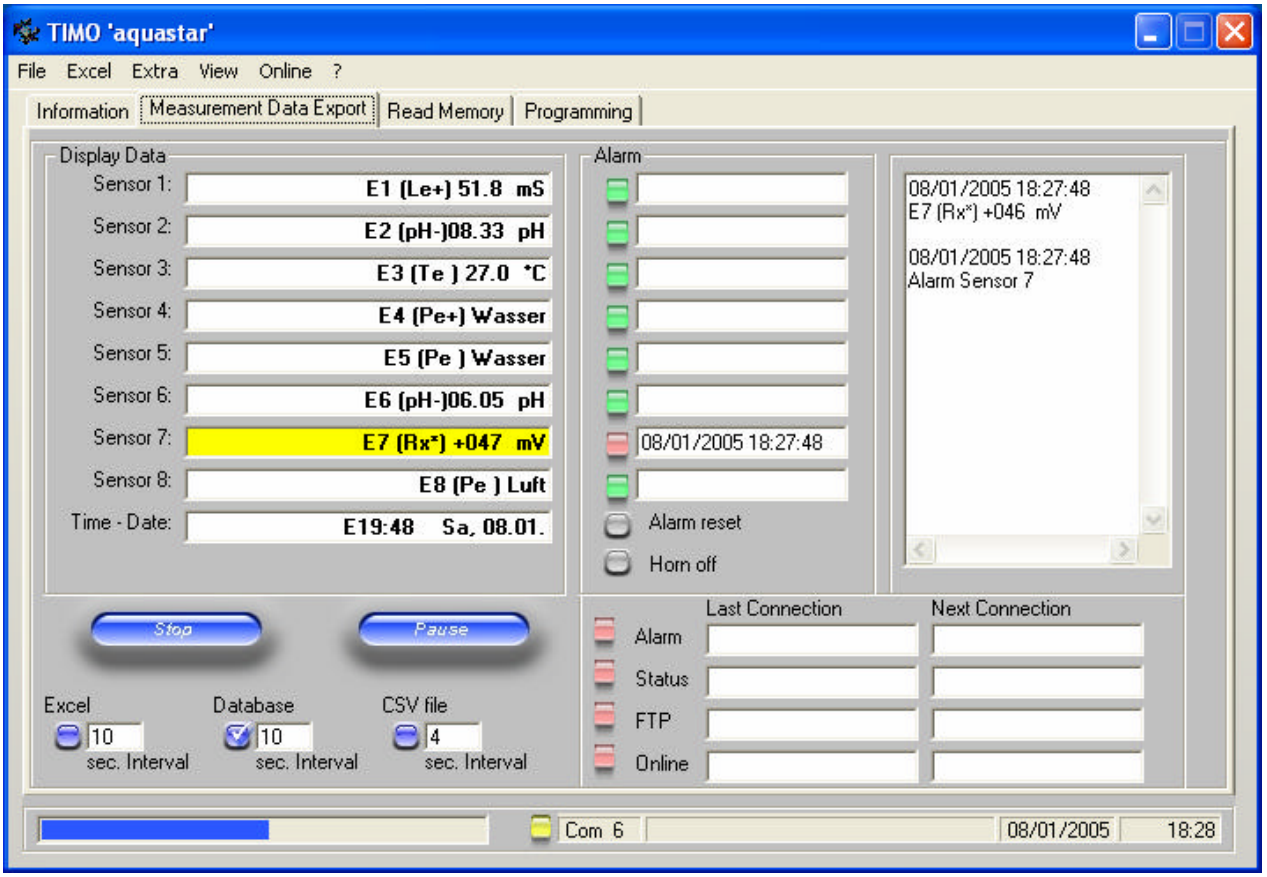
Memorizing of measured values

Now we are at the part, which shows the center of **TIMO**. Under tab Measured values Export you will find all information and settings, which **TIMO** requires for administration of the current measured data.

When **TIMO** is connected to the aquastar and any sensors are linked, the current values can be displayed in **TIMO.**

Therefore please click on button ‚Start'. **TIMO** now tries to get in connection with aquastar. If this is successful, the lettering of the button changes to ‚Stop', in the status line a progress beam begins to run and the values of the sensors in the field ‚Display Data' will be indicated. The just actualized field will be backed with yellow colour. In case of the example shown below, 2 sensors are connected. A pH- and a temperature sensor. Additionally, the current date and the time of the aquastar is being displayed. For all sensors which are not occupied, xxxx will be indicated as value.

Not yet really exciting, but the first step.



Next to each sensor field there is also an alarm field. Based on the data, **TIMO** recognizes whether there is an alarm or not.

Should there occur an alarm during the running time, this will be listed with date and time at the corresponding sensor position. As long as the alarm lasts, the LED is flashing red instead of green. If a fault can be eliminated by itself, the LED will be switched out, but the alarm keeps listed until it will be answered manually.

Should there occur various alarms on one sensor, only date and time of the first occurance will be listed. The alarm will be listed until it is answered with the button “reset alarm”. With this procedure the alarm reports of all sensors will be deleted.

Should there occur an alarm and you have installed a sound distribution at your computer, you will hear a warning horn. For answering, there exists a button “stop horn”. Thus the alarm reports are kept, only the horn stops. Should any further sensor create an alarm, the horn starts again. Even if the alarm goes on its own and appears again, the horn is reactivated. Thus you cannot miss any alarm message.

By answering the alarm reports, the horn is automatically reactivated. If you do not request the horn, you can switch same off generally. For this purpose in the menue ‚Extras’ the entry ‚Audible Alarm’ is existing. By a click you can put or remove a small hook in front of this entry. If the small hook is visible, the alarm is active.

With the web licence, these alarms can be sent via SMS or E-Mail.

The relevance of the data is depending on the set time interval of the external display. This can be changed under point Programming Setting of Measured Value. Should you have put the value on maximum 4 seconds per sensor, a complete runthrough will take 32 seconds. If the minimum value of 1 second is set, it is only 8 seconds. We recommend to set 2 seconds per sensor.

If you press button ‚Stop’, the connection to aquastar is ended and no further data will be received. The button ‚Pause’ is actually only a pause for data registration. If the pause does not last too long, all measured values will be added.

Thus you have already get known to the most important button within **TIMO.** What can we now do with these values? You will learn a simple application in the next chapter.

The TIMO display

If you memorize measured values, these can also be displayed somewhat more convenient than in the window ‚Export of Measured Data'.

Generate a connection to the aquastar and memorize the current values of the sensors as described in the chapter „Memorizing of Measured values".

Afterwards please choose in the menue under view point ‚Display'. **TIMO** disappears from the screen and a display with moving letters becomes visible.

If there is no connection, there the text – no connection to aquastar – will become visible.

Although **TIMO** is now not visible, **TIMO** continues to work in the background. If at a later stage you will record the data of the sensors also in a different way, you can despite only have indicated the display on the screen. The other records will be executed despite.

Now you have an external display for the aquastar without great costs.
If you close the display window again, **TIMO** will become visible again.

Further views

As we are just talking about the views of **TIMO** – **TIMO** can also run in the Tray Bar. The Tray Bar is the right-hand part of the start listing under Windows. Besides the **TIMO**-symbol nothing more can be recognized. But also in this view, **TIMO** continues working completely.
Let's try. Please click in the menue under view on Tray Bar. **TIMO** has disappeared. Now please have a look at the right-hand side of the start listing. There you will find **TIMO.** By a double-click on the **TIMO** symbol, **TIMO** will become visible again.

Now it is getting more and more serious. Let's have a look at further functions of **TIMO.**

Memorizing of storage

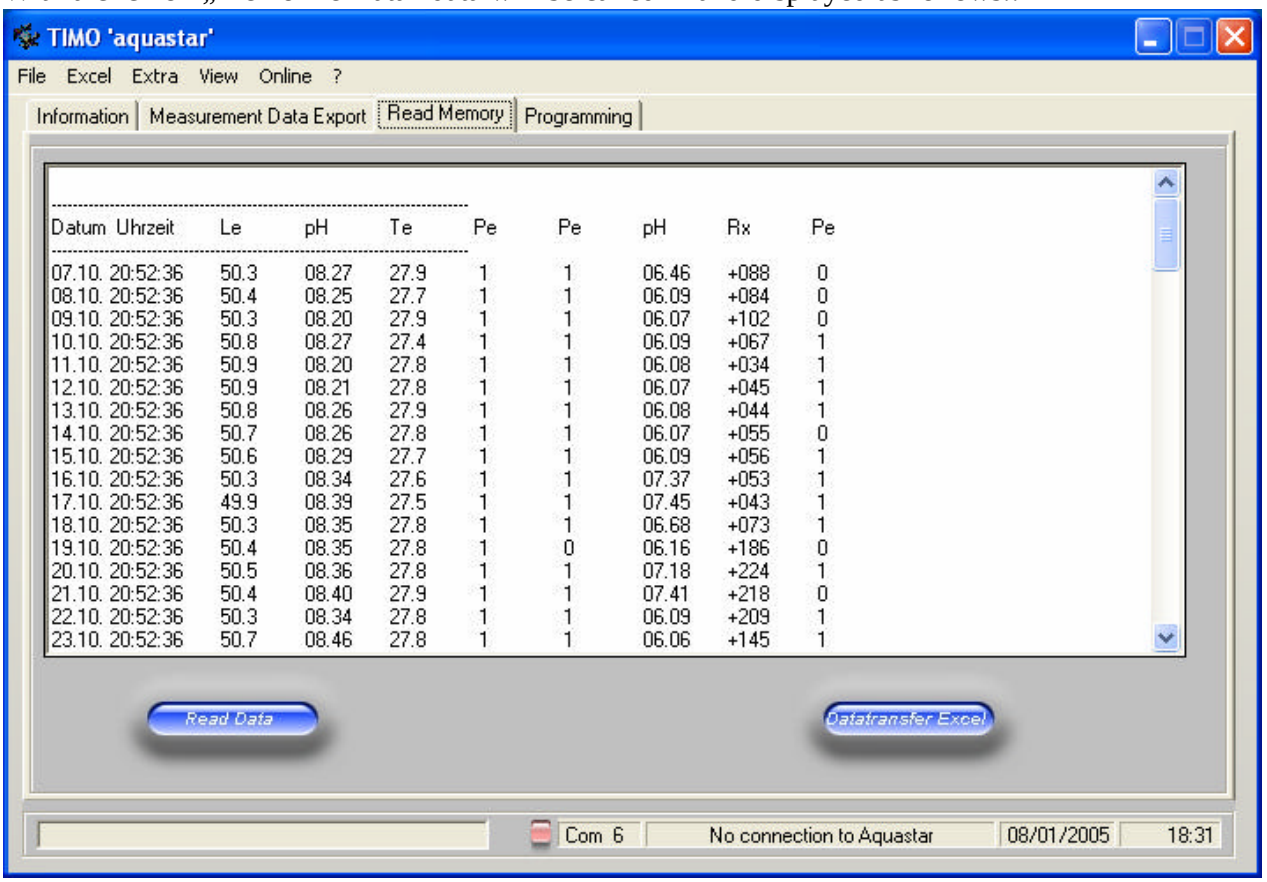
Should the connection to the aquastar still be active from the previous test, please end the connection. Please click on button ‚Stop' in ‚Measured Data Export'.

Note: All settings or changes at parameters in **TIMO** are only possible in „Stop-Position".

The aquastar is able to store up to 2000 measuring chains. A measuring chain contains the values of all connected sensors. These measuring chains can be read-out with **TIMO.**

Now please change to tab "Read Storage"

With a click on „Memorize Data" data will be called in and displayed as follows::



In this example, a 10-minutes storage interval is set in the aquastar.
Displayed will be date, time and the two existing sensors temperature and pH with their corresponding values.
With the scroll beam on the right-hand side you can now scroll down and thus receive a common view about the measured values.

Unfortunately it often happens that the memorized data is garbled or cannot be memorized at all.

Why does TIMO display wrong values in the module „Read Storage" ?

The moduel „Read Storage" in **TIMO** only displays those values, which have actually been sent by aquastar. The problem has been known for a long time. This is caused by the faulty storage of the measured data in the aquastar. The only remedy is to completely delete the storage data at the aquastar and to set an increased storage interval – for example 01:00:00 (for one hour). Afterwards the measured values will be stored again properly and then be displayed in **TIMO** accordingly.

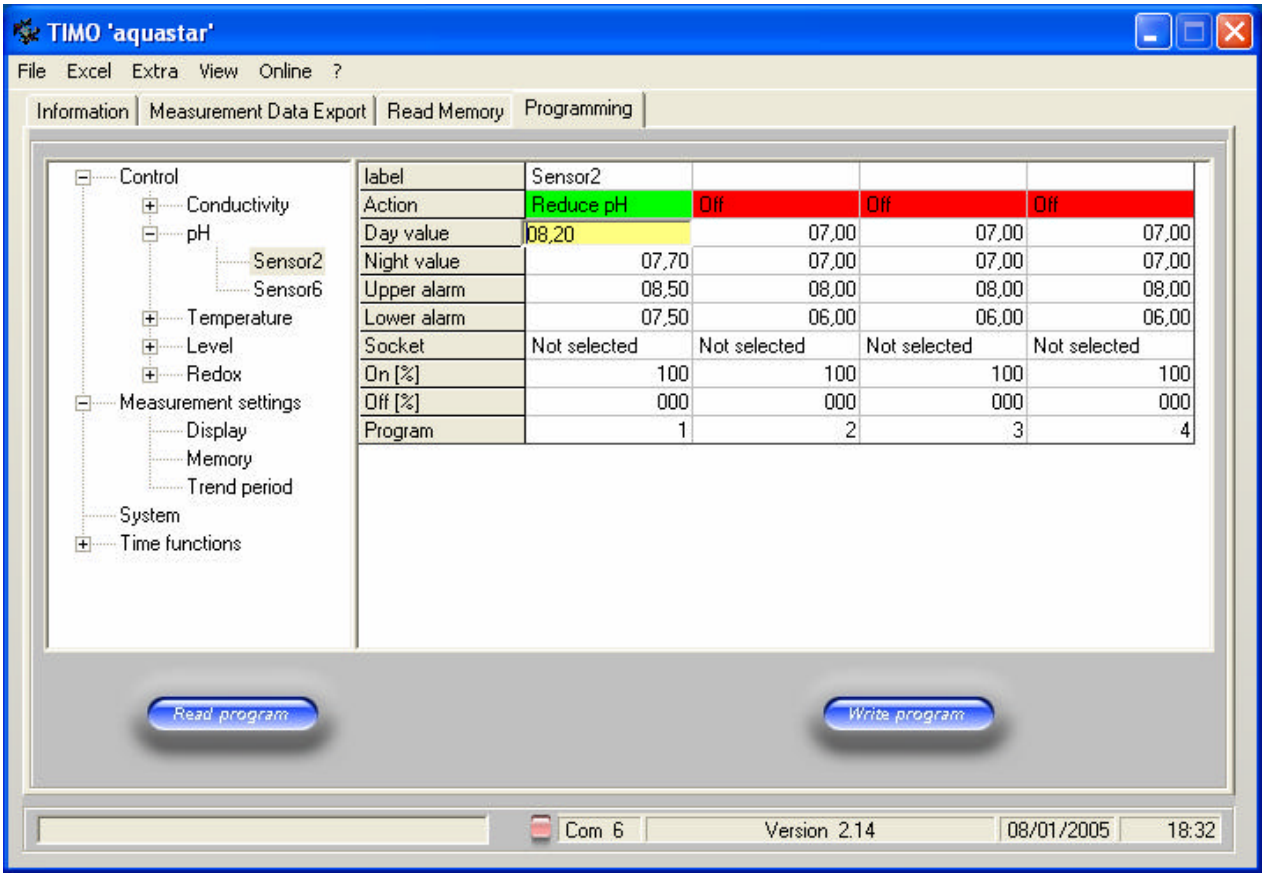
Based on these problems with the internal storage of the aquastar, a long-term record of measured data should better be carried out in **TIMO.**

The button ‚Data to Excel' will be described in the chapter data export to Excel.

Therefore let's continue quickly and have a look at the programming.

Programming

The following sections describe step by step the programming of the aquastar via **TIMO.** This avoids the often rather tiresome and inconvenient creeping in the lower frame of the aquarium, if you want to change one or more parameters.



After a click on „Read Programme“ the programming data will be memorized in TIMO rapidly. Now three main menues will be displayed: measured value settings, regulation, system and time functions. By a further click on the „+-Symbol“ in front of the individual main menues, the sub-menues will be opened, which can then be handled accordingly.

The programming is divided into the same sections as with the direct programming at the device. If you have already once dealt with the programming at the aquastar, this will be very familiar to you.

The programming via **TIMO** is very clearly shaped and actually self-explanatory. Anyhow, let’s deal with it from beginning to the end.

This applies for all values to be set:

In order to change a parameter, please click with the mouse into the corresponding field. Is the value freely to define, the field turns yellowish, the figures move to the left-hand side and can be edited. By a click in a neighboured menue, the previously fed value will be set, the field turns to white again.

If certain parameters can only be changed within preset limits, a scroll beam will open after a mouse click. Please choose the requested value, by a click on the next field this will then be taken and immediately be stored.

Is a parameter visible, but only to be edited under certain provisions, the requested field changes to yellow anyhow, but the value cannot be changed and is moreover only be displayed in grey letter colour.

Setting of measured values

Indication of set measured values:

Internal display: Here the time is set, how long the internal display of aquastar indicates the individual measured values, before it "jumps" to the next two measured values. Possible set values are 1,2,3 or 4 seconds.

External display: This relates to the measured value indication time of the external display (if existing) till the next measured value, also here 1,2,3 or 4 seconds.

Guiding value: If a guiding value probe is connected, you can choose between the following display-units: Siemens, Salinität or Dichte.

Oxygen: Here you can choose between indication of %saturation or mg/Liter

Redox: Setting possibility of indication mV or rh-value

Temperature: Indication °C or Fahrenheit

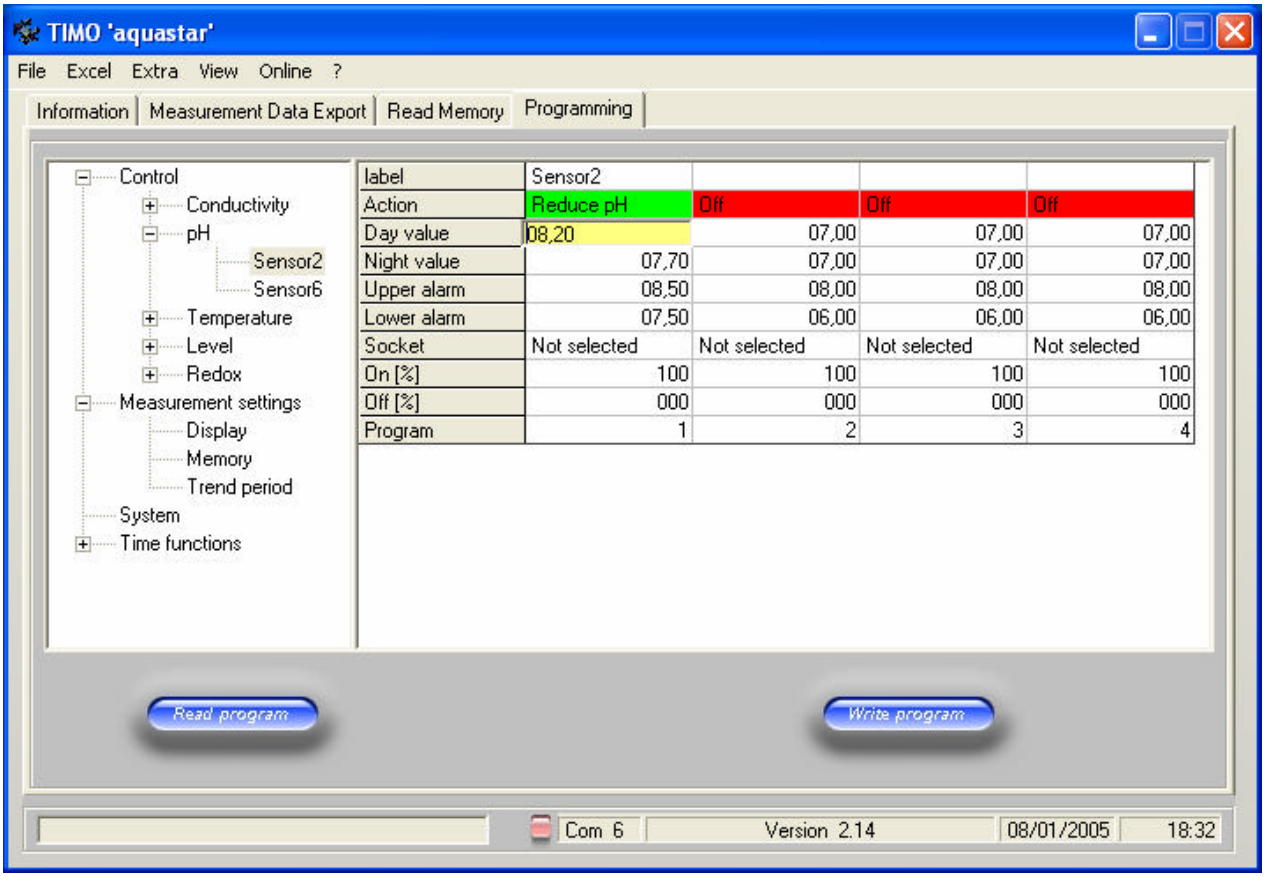
Setting of measured values – storage:

This menue relates to the time interval, in which the aquastar files the measured values in its internal memory. Here any value from 0 sec. up to 23h:59m:59s can be set.

Setting of measured values – tendency time period:

This function in the aquastar is not yet defined. This is more or less a space gap for future expansions and can be ignored.

Regulation



Here the regulation behaviour is defined and how it should react on the individual values, which are transferred by the connected sensors.
In the above example, only two sensors are active: temperature and pH-value in the lime reactor.
Now the regulations for the two sensors will be explained. For the other, not mentioned sensors, it will, however, be the same in principle.

Regulation -> pH -> Sensor 1

In the above graphics, the menue for the parameters of the pH-value is already obvious. It is endeavoured to lower the pH-value with CO2 in the lime reactor, if the set value is exceeded.

Here the individual functions:

label: This field is to be edited freely and is meant to be a „support for concept“, in order to assign the function immediately.

Action Here the type of regulation is chosen (scroll beam) Possible values:

	„off, reduce pH, increase pH“.
Day value	The pH-value, which the aquastar should keep over the day (*)
Night value	Regulation range of the pH-value during the night hours (*)
Upper alarm	Alarm barrier, if the pH-value exceeds the set value
Lower alarm	Alarm barrier, if the pH-value falls below the set value
Socket	Here the requested outlet of the current socket board will be assigned by scroll beam. In an example this is outlet 1 of the first current socket board.
on [%], off [%]	both fields are only active and to be edited if a dimmable current socket board is connected to the aquastar. If the pH-control is connected to such a current socket board, the preset values (100% resp. 0%) are not allowed to be changed at all.
Application	To be chosen with scroll beam: „aquarium“ or „pond“
Program	Numbering of the process. There are 4 processes existing per regulation. Thus with a sensor 4 different switching functions can be executed. This will be explained in more detail with the next example.

(*) The time of the day and night hours will be edited in the sub-menue „day/night – simulation“

Regulation-> Temperature -> Sensor 2

In this example the temperature regulation in the aquarium is somewhat more demanding.
If the water temperature is below 24,8 °C, bar heater I must switch on. If its heating capacity will not be sufficient and the temperature decreases more, bar heater II will also be connected at 24,3 °C. If temperature decreases further, the alarm will come into action.
For cooling the same applies vice-versa.
If the tank temperature exceeds 26,5 °C, cooler I comes into action at the water surface (creation of evaporation cold). If its cooling capacity will not be sufficient and the temperature increases more, cooler II will come into action at 28 °C. If temperature increases further, the alarm will come into action at 28.8 °C.

With the two heaters resp. coolers we strive for a possibly linear temperature course within the tank, larger temperature deviations, caused by too quick heating resp. cooling will be avoided.

This example has to be defined as follows:

label	Heater 1	Heater 2	Blower 1	Blower 2
Action	Heating	Heating	Cooling	Cooling
Summer Day[°C]	28,80	28,80	26,50	28,00
Winter Day [°C]	28,80	28,80	26,50	28,00
Summer Night[°C]	28,80	28,80	26,50	28,00
Winter Night[°C]	28,80	28,80	26,50	28,00
Upper alarm	28,80	28,80	28,80	28,80
Lower alarm	28,80	28,80	23,50	23,50
Socket	09 Temperature	10 Temperature	Not selected	Not selected
On [%]	100	100	100	100
Off [%]	000	000	000	000
Program	1	2	3	4

label: This field is to be edited freely and is meant to be a „support for concept“, in order to assign the function immediately.

action Here the regulation type is chosen (scroll beam) Possible values: „off, heating or cooling“.

Summer day [°C] Here the temperature is defined which has to be kept in summer or winter
Winter day [°C] during the day.
Summer night [°C] And here the temperature which should be regulated in the night hours
Winter night [°C] in both seasons.

Upper alarm Alarm barrier, if the temperature exceeds the set value

Lower alarm Alarm barrier, if the temperature falls below the set value

socket Here the requested outlet of the current socket board will be assigned by scroll beam. In an example these are outlets 2,8,9,10.

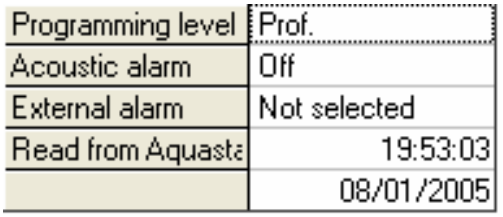
on [%], off [%] both fields are only active and to be edited if a dimmable current socket board is connected to the aquastar. If the heating bars or ventilators are connected to such a current socket board, the preset values (100% resp. 0%) are not allowed to be changed at all.

Program Numbering of the process. There are 4 processes existing per regulation. Thus with a sensor 4 different switching functions can be executed.

For further setting possibilities for the other regulations, please see the aquastar manual.

System

In this setting menue the programming mode will be fixed, alarm output will be defined and the current time as well as the date will be displayed in the aquastar.



Programming level: Via scroll beam you can choose between „Profi“ and „Normal“

Acoustical alarm: Herewith the internal alarm transmitter (pieper) of the aquastar will be switched on or off (scroll beam)

External alarm: In this menue a free outlet of a current socket board can be defined to which a horn, flashing warning light etc. will be connected.

Read by the aquastar: The current system time and the date at the time of read-out of the aquastar programming will be indicated. Both values are unfortunately not available via **TIMO**.

Time functions

This section deals with all time functions which can be set in the aquastar. Day-night functions will be defined, switching times for lightening, switching on/off of pumps and the intervals for dosing pumps.

Time functions -> Floating simulation

In the sub-menue floating simulation it is possible to generate breaking of the waves with the individual pumps, depending on the programmed random times and to determine the time period of these waves and to get the floating strength influenced by the day/night lowering.

The regulation type „ebb/flow“ allows additionally to operate two floating pumps reciprocally. Herewith one pump stops, the other is operating. After the automatic switch, the first pump stops and the second is operating.

label	Strömung				
Action	Tide	Off	Off	Off	
Time duration	06:00:00	00:00:00	00:00:00	00:00:00	
Random factor	00:00:00	00:00:00	00:00:00	00:00:00	
Socket tide	05 Low tide	Not selected	Not selected	Not selected	
On [%]	100	100	100	100	
Off [%]	000	000	000	000	
Wave duration	00:00:00	00:00:00	00:00:00	00:00:00	
Nocturnal Fall [%]	000	000	000	000	
Socket current	06 High tide	Not selected	Not selected	Not selected	
On [%]	100	100	100	100	
Off [%]	000	000	000	000	
Program	1	2	3	4	

label	Also this field is to be edited freely and is meant to be a „support for concept“, in order to assign the function immediately.
Action	Here again the regulation type is chosen (scroll beam). Possible values: „off“,current“ or „Tide“.
Time Duration	If this regulation type is chosen, the set time determines the time interval till the pumps switch towards each other.
Random factor	The time period programmed here will be used by the aquastar to change the interval period fixed under „duration ebb/flow“ by random generator within the limits. Example: If there are 6 hours fixed under „duration ebb/flow“ and the random variation is 30 minutes, the ebb/flow duration can be between 5,5 and 6,5 hours.

Socket „tide“	determins the outlet for the „ebb“-pump, this means here the first outlet of the second current socket board.
on%, off%	only to be used with dimmable current socket boards with corresponding controllable pumps.
Wave duration	determines the time period for the wave duration
Night lowering	only to be used with dimmable current socket boards, the floating in the aquarium will be lowered according to natural conditions. Definition in %
Socket „current“	determines the outlet for the „flow“-pump, in this case this means the second outlet of the second current socket board.
on%, off%	only applicable for dimmable current socket boards.
Program	Numbering of the process. There are 4 processes existing per regulation. Thus with a sensor 4 different switching functions can be executed.

Time function -> day/night simulation

With the aid of the following input mask, the length of the day-night-duration in the aquarium will be determined. Either fix times can be programmed, the sunrise resp. sundown, but it can also be calculated automatically by the aquastar, depending on the individual time zone. If a day/night simulation is requested for the light switches, pH- or temperature lowerings, the programming of this mask will be essential.

label					
Action	Simulation	Off	Off	Off	
Day/Night on	08:00:00	08:00:00	08:00:00	08:00:00	
Day/Night off	20:00:00	20:00:00	20:00:00	20:00:00	
Longitude	+049,03	+049,03	+049,03	+049,03	
Latitude	-08,24	-08,24	-08,24	-08,24	
TimeZone	+01	+00	+00	+00	
Socket	Not selected	Not selected	Not selected	Not selected	
On [%]	100	100	100	100	
Off [%]	000	000	000	000	
Program	1	2	3	4	

label	Also this field is to be edited freely and is meant to be a „support for concept“, in order to assign the function immediately.
Action	determines the regulation type. Possible settings: off, simulation or on.
Day/Night on	this input field is only active in regulation type „on“ resp. „off“, fix switch times will be determined, when the sunrise should be executed.
Day/Night off	please see „sunrise“
longtitude/ latitude	In connection with regulation type „simulation“, sunrise or sundown will be simulated by the aquastar nearly according to natural conditions

depending on the individual date, time and the coordinates.

Note: The coordinates indicated here will be taken over automatically by all other coordination fields after storage.
A multiple input will not be necessary, but it is also not possible to simulate different time zones.
(By the way, the coordinates shown above refer to Eduard's living room in Unterhaching ✍)

Time zone — Definition of the Greenwich-time (GMT). For Germany here the value +01 has to be put in.

socket — Here the requested outlet of the current socket board will be assigned by scroll beam.

on%, off% — only applicable for dimmable current socket boards

Program — Numbering of the process. There are 4 processes existing per regulation. Thus with a sensor 4 different switching functions can be executed

Time functions -> Moon phase

This mask is nearly identical to the day/night simualtion and refers to the moon simulation of the aquastar.

label	Monnlight 1				
Action	On	Off	Off	Off	
Lunar phase on	00:59:00	00:00:00	00:00:00	00:00:00	
Lunar phase off	09:00:00	00:00:00	00:00:00	00:00:00	
Longitude	+049,03	+049,03	+049,03	+049,03	
Latitude	-08,24	-08,24	-08,24	-08,24	
TimeZone	+01	+01	+01	+01	
Brightness	000	000	000	000	
Socket	07 Moon	Not selected	Not selected	Not selected	
On [%]	100	100	100	100	
Off [%]	000	000	000	000	
Program	1	2	3	4	

label — Also this field is to be edited freely and is meant to be a „support for concept", in order to assign the function immediately.

Action — determines the regulation type. Possible settings: off, simulation or on.

Lunar phase on — this input field is only active in regulation type „on" resp. „off", fix switch times will be determined, when the moonrise should be executed.

Lunar phase off — please see „moonrise"

longtitude/ latitude — In connection with regulation type „simulation", moonrise or moondown will be simulated by the aquastar nearly according to natural conditions depending on the individual date, time and the coordinates.

Time zone	Definition of the Greenwich-time (GMT). For Germany here the value +01 has to be put in.
socket	Here the requested outlet of the current socket board will be assigned by scroll beam.
on%, off%	only applicable for dimmable current socket boards
Program	Numbering of the process. There are 4 processes existing per regulation. Thus with a sensor 4 different switching functions can be executed

Programming -> Timer

Here all, continuously repeated switching times can be defined in the aquastar: light, pumps, dosing pumps, water-change controls and all other consumers which should be programmed via fixed switch on and off times.

For this menue in **TIMO** an additional switch time makro is integrated, with which the individual switch times can also be displayed graphically by a click on this symbo 
This makro calls MS Excel. It will only be displayed, if MS Excel is actually installed on your system.

label	Zeit1	Strömung links/rec	Spurenelemte A	Spurenelement B
Action	Daily	Daily	Off	Off
Begin	11:00:00	22:00:00	00:00:00	00:00:00
End	23:30:00	10:00:00	00:00:00	00:00:00
Weekday				
Socket	04 Timer	03 Timer	Not selected	Not selected
On [%]	100	100	100	100
Off [%]	000	000	000	000
Program	1	2	3	4

label	Also this field is to be edited freely and is meant to be a „support for concept“, in order to assign the function immediately.
Action	determines the regulation type. Possible settings: off, daily or weekly
Beginning/end	In these fields the switch on/off times will be defined.
Weekday	Depending on the regulation type „weekly“, here an individual day of the week can be defined. The aquastar thus can be used as daily and weekly timer, the times will here be defined accordingly.
Socket	Here the requested outlet of the current socket board will be assigned by scroll beam.
on%, off%	only applicable for dimmable current socket boards

Program	Numbering of the process. There are 4 processes existing per regulation. Thus with a sensor 4 different switching functions can be executed

Programming -> Interval

In this mask, intervals resp. continuously repeated switch on/off processes will be defined with times. In fresh water, with this function fertilizers etc. can be fed via the dosing pump, in case of marine water trace-elements etc.

label	Intervall1	PH Becken		
Action	On	On	On	On
Begin	00:00:00	00:00:00	00:00:00	00:00:00
End	00:00:00	00:00:00	00:00:00	00:00:00
How long on	00:05:00	00:01:00	00:00:20	00:00:20
How long off	00:30:00	00:02:00	11:59:40	11:59:40
Random Factor on	00:00:00	00:00:00	00:00:00	00:00:00
Random Factor off	00:00:00	00:00:00	00:00:00	00:00:00
Socket	Not selected	Not selected	13 Interval	14 Interval
On [%]	100	100	100	100
Off [%]	000	000	000	000
Program	1	2	3	4

label — Also this field is to be edited freely and is meant to be a „support for concept“, in order to assign the function immediately.

Action — determines the regulation type. Possible settings: “off” or “on”

Beginning/end — In these fields the time period, during which the interval function should be active, will be defined.

How long on — Here it is defined how long the interval should be on (socket under voltage)

How long off — Here it is defined how long the interval should be off (socket without voltage)

Random variation on — The interval time „on period“ can here be extended by a random variation

Random variation off — Please see „Random variation on“.

Socket — Here the requested outlet of the current socket board will be assigned by scroll beam.

on%, off% — only applicable for dimmable current socket boards

Program — Numbering of the process. There are 4 processes existing per regulation. Thus with a sensor 4 different switching functions can be executed

Attention: In case of a system reset or after activating the programme, the chosen outlet will be active during the time „on period“, even if time is outside the beginning-end-time!

Time functions -> Food pause

With the F2 key, a „food pause" can be defined at the aquastar. This is for a short-term floating moderation, so that the food substances in the aquarium will not be swept away by the floating and keep achieveable for the animals.
As an example I would like to announce here, that in my tank also the skimmer is switched via the food pause key. As for dosing of additives (i.e. Amino acids), the skimmer should be switched off for a short time, it makes sense to „abuse" this "food pause" key also for other functions. This ensures that it will not be forgotten to put the corresponding devices into operation again.

Bezeichnung	Futterpause	
an		
00:00:00	00:00:00	
00:30:00	00:30:00	
00:30:00	00:30:00	00:00:00
01 pH	aus	000
02 Temperatur	aus	000
03 Zeitschaltuhr	aus	000
04 Zeitschaltuhr	aus	000
05 Ebbe	an	000
06 Flut	an	000
07 Mond	aus	000
08 Temperatur	aus	000
09 Temperatur	aus	000
10 Temperatur	aus	000
11 frei	aus	000
12 frei	aus	000

Designation — Also this field is to be edited freely and is meant to be a „support for concept", in order to assign the function immediately.

on resp. off — Here the function, which refers to the individual outlets of the socket board will be determined.

In the third field, a rigid time will be defined, in which the food pause should become active. This is for example necessary, if a food automatic apparatus will take over the holiday replacement. The fourth and fifth fields from above refer to the time, in which the food pause is active.
In the above example, the ebb as well as the flow floating pump will be without function over a period of 30 minutes, after having pressed the F2-key.
In the remaining fields it is once again listed, which functions are occupied by which outlets. At the very right-hand side there is the possibility not to switch off functions completely, but to lower as a percentage, provided dimmable socket boards as well as suitable devices will be available.

If an outlet is positioned „on“, this means that it will be without current, thus „off“, after having pressed the F2-key. Thus “on” resp. “off” does in this case not refer to the switch conditions of the individual outlets, but to the function of the food pause.

Sending of programming to the aquastar

From the previous chapters we now know, how programming of the aquastar can be memorized and changed. Now the changed programming should be transferred to the aquastar and being activated.

For all further explanations we suppose that you are positioned on the tab „programming“

Before transfer you should first store the changed programme on a data carrier. Therefore please choose in the menue data file – store under. This stored programming can also be re-memorized with the menue item data file – open.

Now please click on button „record programme“. This button will only become active after release of the software.

When transferring a programming to the aquastar, various items will be checked. Among others, whether the programme version is identical with the aquastar version. This is, however, only working from aquastar firmware version 2.17. In this case **TIMO** prevents automatically the transfer, if there is a conflict being recognized in the version.

With older firmware-versions this is impossible. To be on the safe side it will therefore be asked once again before transfer. Should you transfer a non-compatible programme version to the aquastar, this will not be accepted by aquastar and being rejected. Afterwards, the old programme of the aquastar will be deleted!

The correct transfer of the programme will be checked by means of a check sum. The aquastar can also be programmed newly in operating condition and restarts after programming automatically. In case of a correct programming, the calibration of the sensors will be kept.

If during transfer a check sum fault occurs, the new programming will not be accepted. The old programming was, however, being destroyed by this attempt. A reset has to be executed at the aquastar, so that a new programming can be transferred. How to execute a reset can be taken from the aquastar manual. During this reset, all calibrations of the sensors get lost. Thus after transfer of the programme all sensors have to be calibrated newly.

After a new start all intervals begin operating. This is unfortunately a mistake, which is included in all firmware versions of the aquastar. This even happens when the aquastar is switched off and on again.

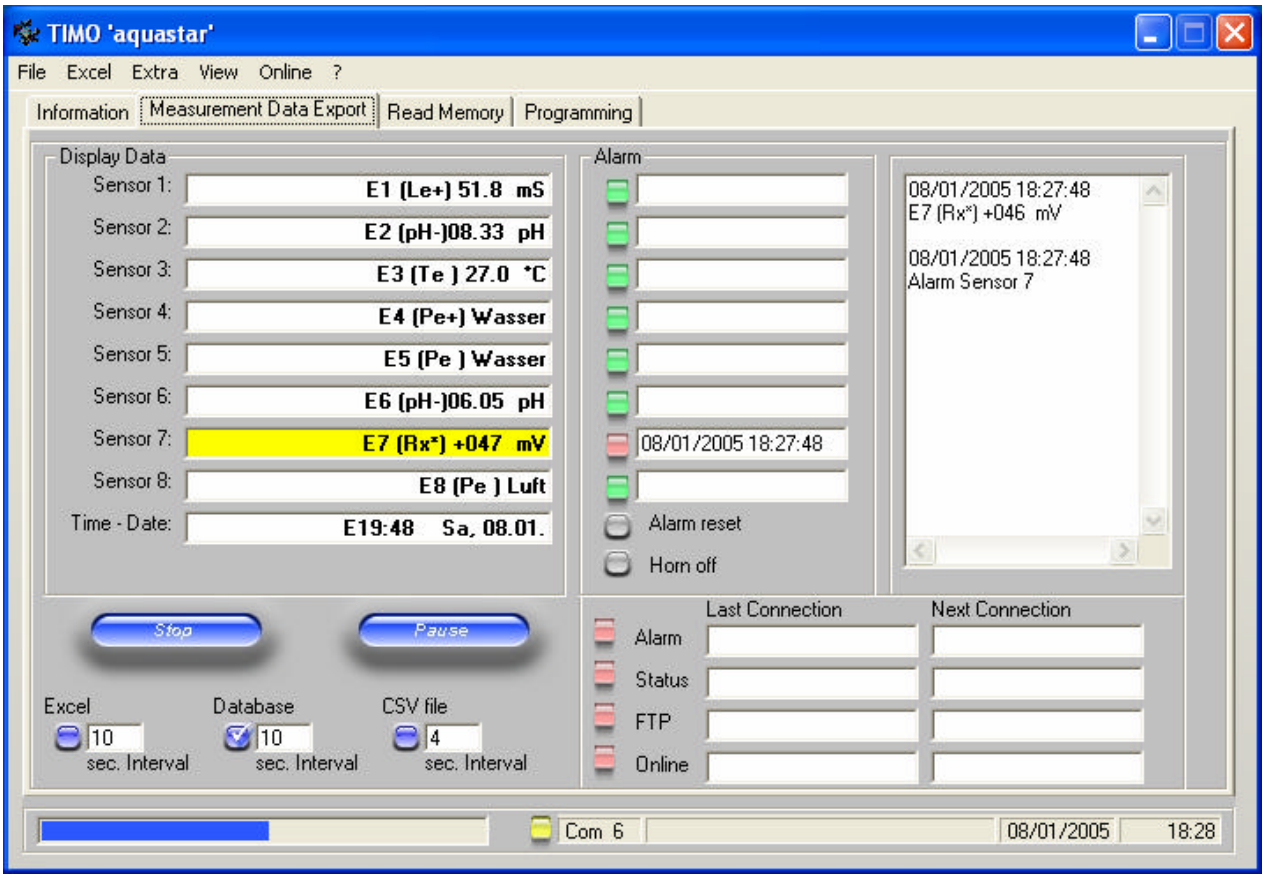
Storage of measured values into a data base

Now let's have a look what **TIMO** can conduct with all the data. How to memorize the current measured values will be explained in chapter "memorize measured values".

Only to display the current sensor data makes not much sense over the long run, as a lot of measures do only have a meaningful significance in a longtime record.

TIMO can display and put into the archives data in most different ways. One method is to archive the data in an ACCESS-compatible data base. However, we have to tell **TIMO** where and how to put the data into the archives.

Therefore let's have once again a look at the window ‚Measured data – Export':



Under the Start/Stop- and Pause-buttons, there are the entries Excel, data base and CSV data file.
Here we talk about options, which can be determined before receipt of the data, which means the click on the start button. If in these options a small hook is shown, this option is activated. In the above screen the data would thus be filed in Excel and in a data base.

Now first have a look at the filing of the data in the data base. Please press the blue button, which is positioned under data base. A small hook and this position is activated. By another click the small hook will be removed and writing into the data base is stopped.

The settings done at these options will be stored and will automatically be set when **TIMO** is started the next time.

Now you can additionally set the interval, in which the data will be filed in the data base.
In the above example, an interval of 60 seconds has been set. This means, every 60 seconds the data current at this time will be filed in the data base.

You should not choose the interval too narrow as enormous data quantities could occur. It would also not make any sense. As only those data will be received, which the aquastar sends to its external display and as the update speed is to be set in the programming, new data for all sensors will only be available after 8 seconds at the earliest.

Here a small table, after which time period all sensor data have been updated:

Setting in programming – Measured values settings – External display	After this time all sensors in the view have been updated.
1 second	8 seconds
2 seconds	16 seconds
3 seconds	24 seconds
4 seconds	32 seconds

In case an update interval of 2 seconds has been set in the programming for the external display, the interval for the data base should not be less than 16 seconds.

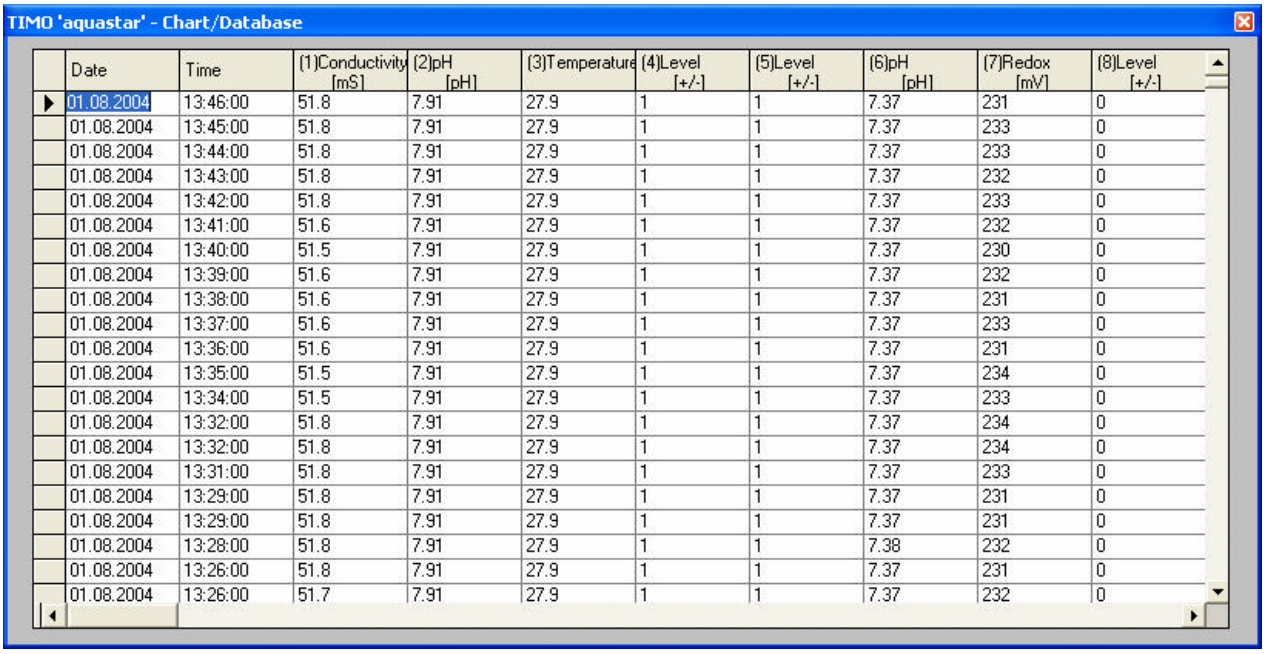
In practise, however, much higher values have been proven to be practical. As these measured values will not change all of a sudden, intervals of 240 seconds and more will be quite enough. Only the recorded level switches could in the meantime have switched without having been recorded in the data base. But they actually have no meaning for statistical evaluations.

But smaller intervals for the data base will function anyhow. Only the old data will then be stored again.

If you have set all inputs for the data base, you can begin recording of the measured values by pressing button „Start“.

Indication of measured values of the data base

After you have now recorded values in the data base, you sure would like to see them once.
Therefore please choose in the menue under view „diagrammes/data base“ and afterwards „data base“. The following window will be visible:



Date	Time	(1)Conductivity [mS]	(2)pH [pH]	(3)Temperature	(4)Level [+/-]	(5)Level [+/-]	(6)pH [pH]	(7)Redox [mV]	(8)Level [+/-]
01.08.2004	13:46:00	51.8	7.91	27.9	1	1	7.37	231	0
01.08.2004	13:45:00	51.8	7.91	27.9	1	1	7.37	233	0
01.08.2004	13:44:00	51.8	7.91	27.9	1	1	7.37	233	0
01.08.2004	13:43:00	51.8	7.91	27.9	1	1	7.37	232	0
01.08.2004	13:42:00	51.8	7.91	27.9	1	1	7.37	233	0
01.08.2004	13:41:00	51.6	7.91	27.9	1	1	7.37	232	0
01.08.2004	13:40:00	51.5	7.91	27.9	1	1	7.37	230	0
01.08.2004	13:39:00	51.6	7.91	27.9	1	1	7.37	232	0
01.08.2004	13:38:00	51.6	7.91	27.9	1	1	7.37	231	0
01.08.2004	13:37:00	51.6	7.91	27.9	1	1	7.37	233	0
01.08.2004	13:36:00	51.6	7.91	27.9	1	1	7.37	231	0
01.08.2004	13:35:00	51.5	7.91	27.9	1	1	7.37	234	0
01.08.2004	13:34:00	51.5	7.91	27.9	1	1	7.37	233	0
01.08.2004	13:32:00	51.8	7.91	27.9	1	1	7.37	234	0
01.08.2004	13:32:00	51.8	7.91	27.9	1	1	7.37	234	0
01.08.2004	13:31:00	51.8	7.91	27.9	1	1	7.37	233	0
01.08.2004	13:29:00	51.8	7.91	27.9	1	1	7.37	231	0
01.08.2004	13:29:00	51.8	7.91	27.9	1	1	7.37	231	0
01.08.2004	13:28:00	51.8	7.91	27.9	1	1	7.38	232	0
01.08.2004	13:26:00	51.8	7.91	27.9	1	1	7.37	231	0
01.08.2004	13:26:00	51.7	7.91	27.9	1	1	7.37	232	0

Here you can now have a look at the values and also change data. Changing of the data can only be done trouble-free, if no measured values will be recorded at that time. Otherwise **TIMO** can even lock data records against changing.

Note: The designations in the table heads of these tables depend on the equipment of your aquastar. They can have a completely different look at your device. The table heads will be inserted when you memorize a programming of the aquastar for the first time.

If you should be familiar with Access, you can also integrate these tables in your own applications.

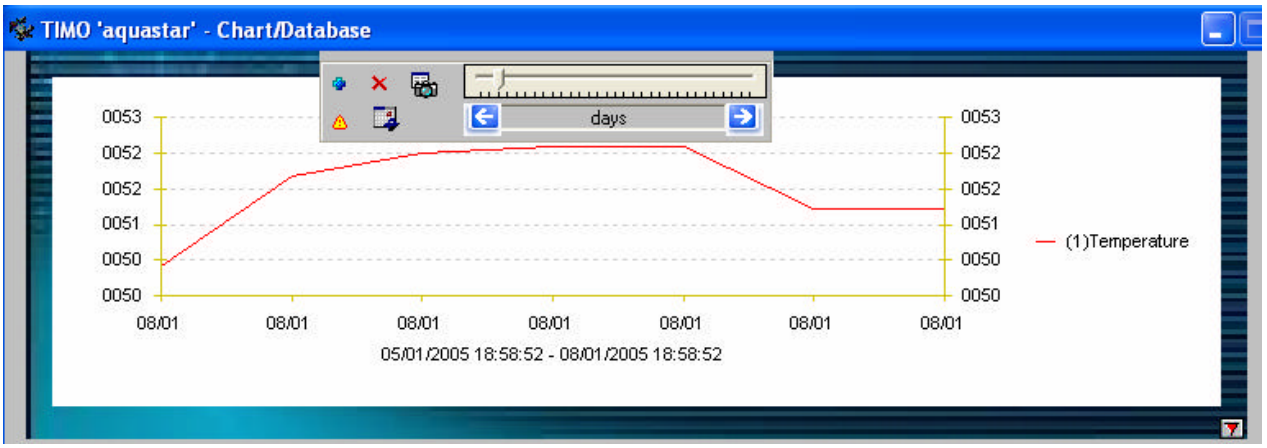
By storage of the individual measured values of the sensors, now a headstone for a longterm evaluation has been established. The evaluation of the next chapter uses this stored data.

Longterm evaluations/ Diagrammes

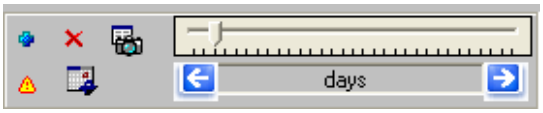
The diagrammes based on the data base within **TIMO** are a very powerful tool.The possibilities and settings are accordingly.

In order to get known to the basic functions of these diagrammes, please stop all data records.

Please choose in menue „View“ - ‚chart / Data base’ – ‚chart’



As there is not yet any data in the data base, an empty diagramme should be visible. In this diagramme will be indicated that for this time period no data is available yet. The diagramme window has an own grafical menue:



This menue is freely movable. Let’s have a look at the individual menue points

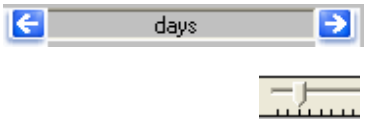
With this symbol, further diagrammes can be added. The maximum number of diagrammes is 10. Please click once on this symbol.

With this symbol, the last added diagramme can be deleted. The first diagramme always remains and cannot be removed.

With this symbol you should be careful. Here, after a request, all data will be deleted from the data base. As all diagrammes are based on the data of this data base, afterwards no data course will be indicated any more.

With this symbol you can photograph all diagrammes at the same time. The data files will be stored in the installation register of **TIMO**. This routine is also used by **TIMO** itself. It may therefore happen, that these picture files will be overwritten by **TIMO.** Should you need these pictures for other purposes, please copy them from this register into another one.

With this symbol you open the data base. It is the same function as the menue item under ‚View'- ‚Data base/Diagrammes'- ‚Data base'

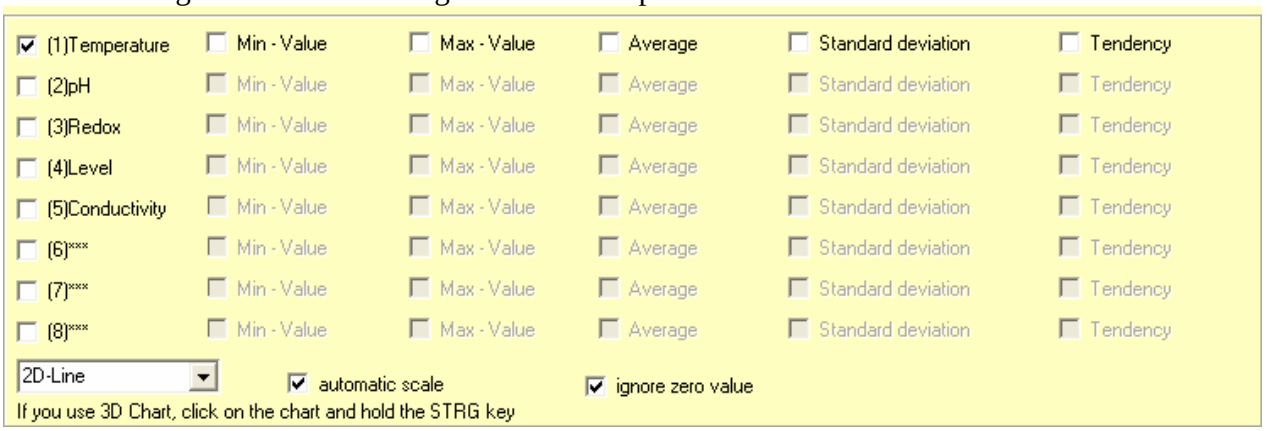


With these two symbols you can fix the time frame, which should be indicated in the diagrammes. With the upper symbol switching between hours, days and months will be possible. With the slider control you will then determine the number.

Note: The indication of diagrammes with great time periods is very intensive in calculation. Please only set the time period, which is important for you.

The settings within this menue are valid for all indicated diagrammes. Each diagramme, however, also has its own menue. In order to make same visible, please click with the right-hand mouse key on the corresponding diagramme. Alternatively, you can also click on the small arrow, which is positioned at the end of each diagramme at the right-hand side.

Below the diagramme the following window will open:



Here you can now execute all settings in relation with this diagramme.

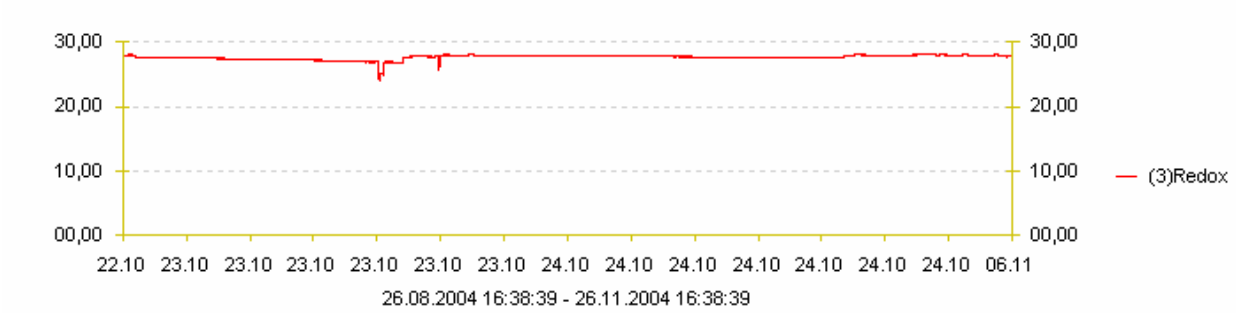
In the first column, all possible sensors of the aquastar are listed. If you have already once memorized a programming, you will find there the right designations. Please now choose, which sensors should be indicated.

In the following columns you will find possibilities, also to indicate statistical evaluations in this diagramme. This evaluation will be indicated as a line within the diagramme.

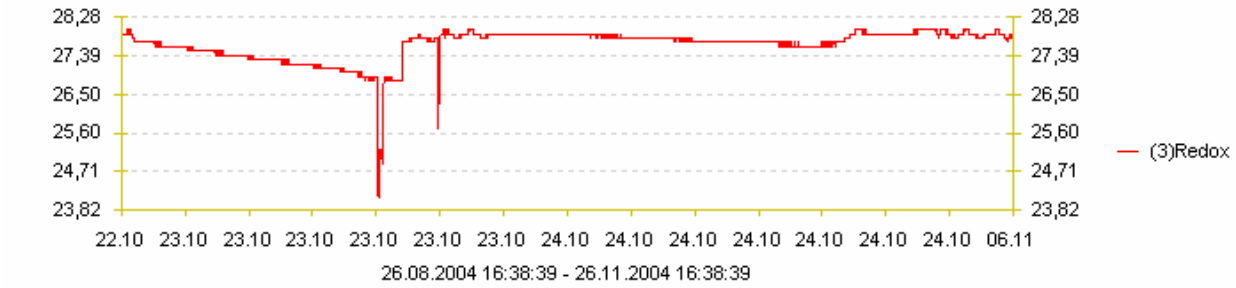
In the choice box you can change the look of the diagrammes. There are a lot of possibilities, from simple 2D- up to pretentious 3D-diagrammes. Here your liking will decide.

The option ‚automatic scaling' displays the diagramme in the most favourable version. So the X-axle no longer starts at zero, but slightly under the lowest measured value. Therefore the course will be more clearly. The following examples will express the function:

Diagramme without automatic scaling



The same diagramme with automatic scaling



The optio n ‚elimination of zero values' avoids that sensor data with a zero value will be included in the calculation of the diagramme. Such values mostly occur due to maintenance or malfunction. These zero values would interfere the automatic scaling and thus extend the range unnecessarily.

The diagrammes can be run live parallely. For this purpose, please keep the diagramme window open and click in the window measured data export on the start button. As soon as the first data files have been memorized, the diagramme will be drawn and being updated with each further data file.

These diagrammes can also automatically be stored on your private web side. More details you will find in chapter "web options".

Read-out values from the diagrammes

If you desire to read the measured value of a certain item from the graphical illustration, please proceed as follows:

Please click on the requested sensor in the legend next to the graphical illustration or click directly on the diagramme. Thus each measuring point of the curve will be marked. Afterwards, please click on the requested position. Now the corresponding value will be indicated below the mouse indicator.

Repair of data base/compressing/optimization

All data bases tend to reach an enormous size in the course of the operating time. This results from old, no longer required data files, connection breaking offs and others. In the long term, the data base would react more and more slowly and the erection of the diagrammes would be slowed down drastically.

Normally it will not be necessary for the user to care about the data base. **TIMO** arranges by itself for such care measurements in certain intervals. With each programme start-up, but also during recording of the data.

Despite that it may happen, that the data base will be damaged by a sudden voltage loss for example. In order to repair and optimize the data base manually, also the option ‚repair data base' exists in the menue under ‚view – diagrammes/data base'

Should the data base afterwards still not function, you can create a new data base. In the working register of **TIMO** the file timo.mdb is existing. This is the actual data base. As this is destroyed and can obviously not be restored, please delete same. After a new start-up of **TIMO**, a new data base is created. Of course, this does no longer contain any data.

Data Export to Excel

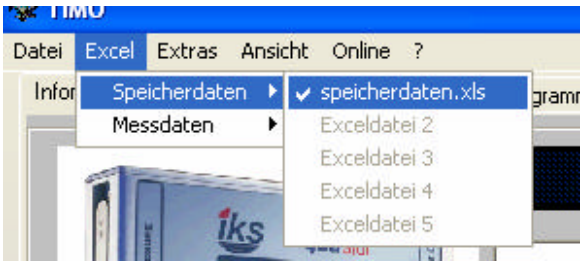
TIMO is in a position to export the data also directly to Excel at some places. But only if MS Excel is actually installed on your system. Otherwise these functions will be deactivated within **TIMO.**

As the measured data can result from different sources, a definition will be necessary. All data, which are recorded live over the measured data-export-window will be called measured data in the further course.

Data, which was stored in the internal aquastar memory are called storage data.

Export of storage data

The storage data can be transferred to excel after memorizing in the window „read storage". So that **TIMO** knows, where the data has to be sent to, the menue option „Excel" is existing. After having clicked there, you will also here find the differentiation storage data and measured data. As we are talking about storage data, please click on storage data.



There you will now find 5 entries. One of them is black, the others grey. Here we talk about the names of the posible Excel tables, in which this data should be sent. If requested, you can change this line with a mouse click. The data will be sent to the table, in front of the name of which a small hook is positioned.

A table has been created with the installation and is activated by standard. In case of the 4 grey fields we talk about Éxcel tables which are not yet defined. How to insert here a note about your own Excel tables will be explained in the next chapter.

As a simple Excel table is supplied, you can now click on ‚data to Excel'. An Excel table will open, in which the storage data can be filed. During data transfer, Excel and **TIMO** will be inaccessible.

This supplied Excel table does not inc lude any further functions. Excel is well known to most users. Thus own applications right round the aquastar can be realized.

Export of the measured data

Also the currently memorized data in the window ‚measured data export" can be sent to Excel.
Therefore the option Excel exists below the ‚Start/Stop' and ‚Pause' buttons. If you should like to activate this option, please click on the option so that a small hook will appear. Thus this function is activated. Moreover, you can indicate the interval, in which the data has to be filed in Excel. The setting for the best interval duration was already explained in chapter ‚storage of measured value in a data base'

Also in this case it is necessary to make all settings before transfer of the measured data will be started. In which Excel table the data will be written, you will find in the menue. Please also read the previous chapter "export of storage data'.

Drawing of own Excel-work files for measured data

The new Excel data file has to be located in the same register as **TIMO.** This register will be called work register in the further course.

First of all, please create a work sheet with the name sample in Excel. In this work sheet you can enter all calculations, diagrammes etc. The range, in which the data of **TIMO** will be stored must have a current number, a date file, a time field and 8 sensor fields, this means totally 11 fields. These fields will be filled with the data degressively later on. After having stored your new Excel table, you still have to make familiar your new xls.data file to the **TIMO** software. Therefore please open the data file global.ini from the work register with a text editor, for example Notepad.
Now it should look about as follows:

'Excel connection for current measurement read-out
[Excel1]
Exceldatei1=messdaten.xls
Startzelle1=a31
Exceldatei2=
Startzelle2=
Exceldatei3=
Startzelle3=
Exceldatei4=
Startzelle4=
Exceldatei5=
Startzelle5=
AktiveDatei= 1

In total up to 5 Excel tables for measured data can be specified. For example please enter for Excel data file2= your new Excel data file. Should your Excel data file be test.xls, the line should read Exceldatei2=test.xls
.

Moreover, the start cell has to be specified. This is the first cell in the Excel work sheet, at which **TIMO** starts to enter the data. Should the data be entered from column B, line 30, the line should read as follows:
Startzelle2=$B$30

Store the data.

After a new start-up of **TIMO** you will find the new Excel data file under Excel – measured data. If you click there once, a small hook will be positioned in front. Thus the following transfers in the new Excel data file will take place. You can switch between the individual Excel data files.

Drawing of own Excel-work files for storage data

The new Excel data file must be located in the same register as **TIMO**. This register will be called work register in the further course.

First of all, please create a work sheet with the name data-date. In this work sheet you can enter all calculations, diagrammes etc. The range, in which the data of **TIMO** will be stored must have a consecutive number, a date file a time field and 8 sensor fields, this means totally 11 fields. These fields will be filled with the data degressively later on. After having stored your new Excel table, you still have to make familiar your new xls.data file to the **TIMO** software. Therefore please open the data file global.ini from the work register with a text editor, for example Notepad.
Now it should look about as follows:

'Excel connection for storage read-out
[Excel]
Exceldatei1=speicherdaten.xls
Startzelle1=a31
Exceldatei2=
Startzelle2=
Exceldatei3=
Startzelle3=
Exceldatei4=
Startzelle4=
Exceldatei5=
Startzelle5=
AktiveDatei= 1

In total up to 5 Excel tables for storage data can be specified. For example please enter for Excel data file2= your new Excel data file. Should your Excel data file be test.xls, the line should read Excel data file 2=test.xls.

Moreover, the start cell has to be specified. This is the first cell in the Excel work sheet, at which **TIMO** starts to enter the data. Should the data be entered from column B, line 30, the line should read as follows:
Startzelle2=$B$30

Store the data.

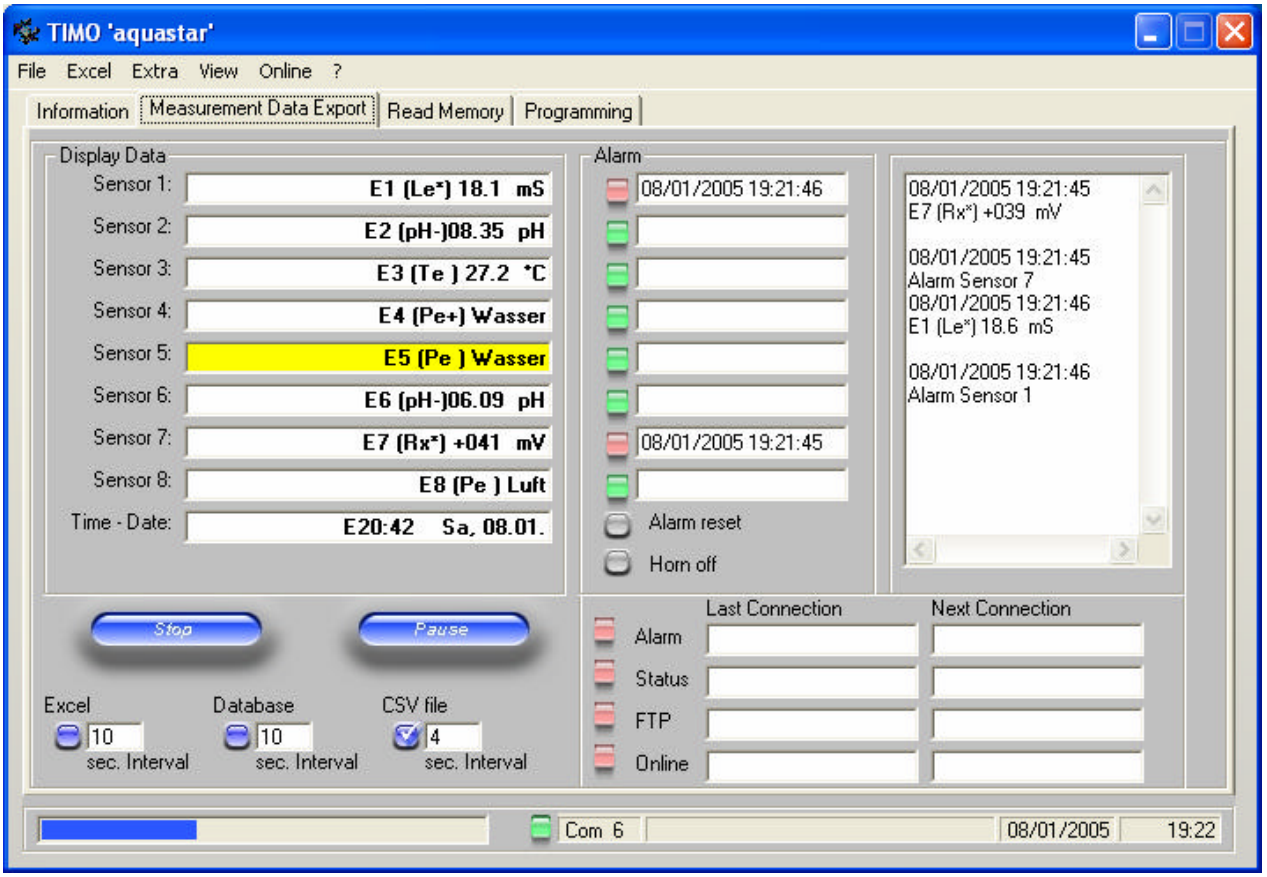
After a new start-up of **TIMO** you will find the new Excel data file under Excel – storage data. If you click there once, a small hook will be positioned in front. Thus the following transfers in the new Excel data file will take place. You can switch between the individual Excel data files.

Note: Enabling **TIMO** to add current measured data to an Excel work sheet, in which data has already been recorded, the following small routine has to be inserted in Excel as a makro. If this routine is missing, the existing data will be overwritten after Excel has been re-opened.

```
Function letzte_Zeile(Zelle As String)
Range(Zelle).Select
Selection.End(xlDown).Select
letzte_Zeile = ActiveCell.Row + 1
End Function
```

Data export via CSV data file

CSV data files can be interpreted and processed by most of the programmes. In the Microsoft Office family, for example Access or Excel can handle these data files without any problems. Therefore also **TIMO** offers this format.



Below the Start/Stop- and Pause-buttons you will find the entries Excel, data base and CSV data file. Here we talk about options, which can be determined before receipt of data, thus when clicking the ‚Start' button. If the options show a small hook, this option is active. This means that in the above illustration the data would be filed to Excel and in a data base.

But now we want to create a CSV data file. Therefore please click now the button below CSV data file, so that this option will become active.

The settings carried out at these options will be stored and automatically be adjusted when **TIMO** is started next time.

Now you can also set the interval, in which the data should be filed in the CSV-data file.
In the above example an interval of 60 seconds has been set. This means, every 60 seconds the current data at this time will be written into the data file.

The setting for the best interval duration has already been explained in the chapter ‚store measured values in a data base'.

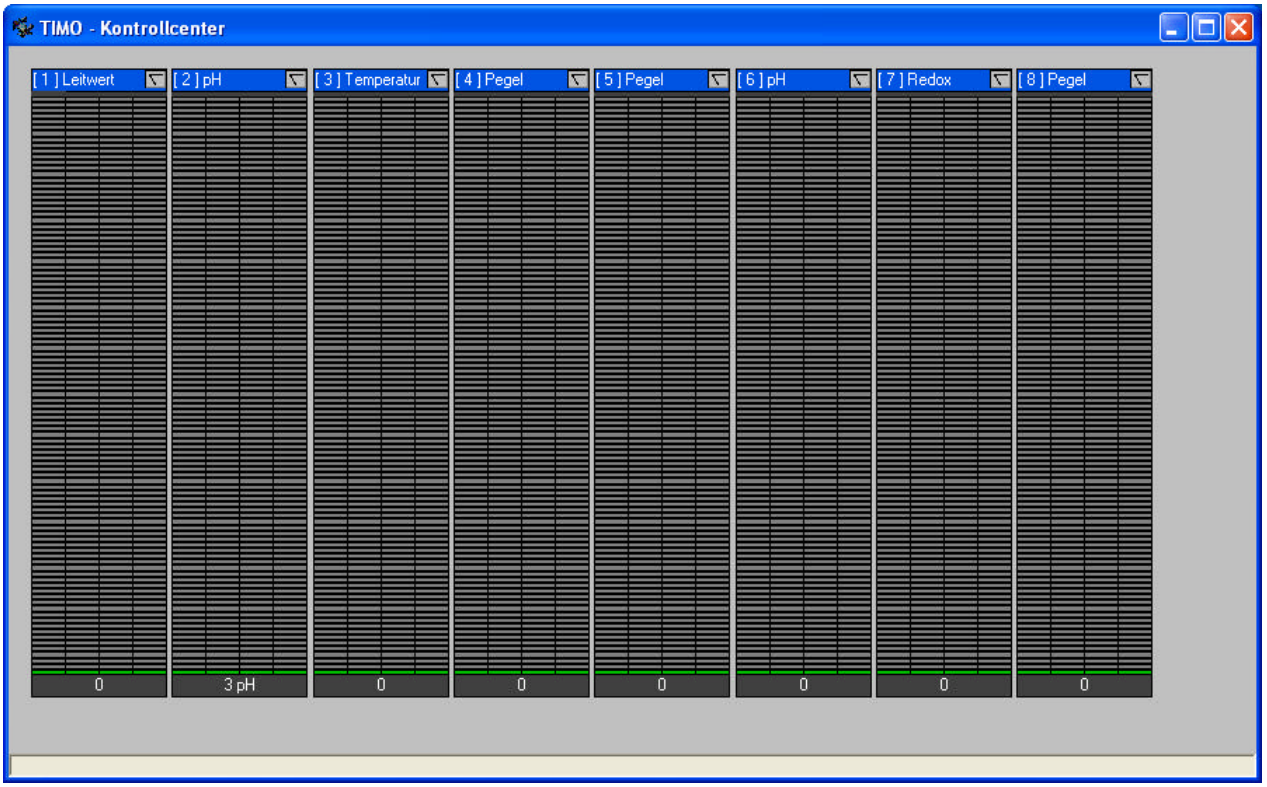
If you now click the button ‚Start' a storage dialogue will open. There you can specify the storage place and the name for the CSV data file.

After the end of the data transfer, you can have this just created CSV-data file being memorized by other programmes. Let's try same with Excel.

The Monitor Center

The monitor center is a special illustration of all all measured values, warning and alarm limits within **TIMO.** Via menue view – monitor center this window will be opened.

Delayed LED-boards for each sensor will build up. In the title of each LED-board, the designations for the sensors will be indicated, if a programming has already been memorized.



Each LED board represents the total measuring range of the sensors. The measuring ranges have automatically been determined by the recognition of the sensors and correspond to the information of the manufacturer. Thus the indication of a pH-sensor corresponds to the range of pH 3-13, the one of a temperature sensor to the range of 5-45 degrees Celsius. These ranges will be covered by a row of 100 LED's.

Each sensor can control 4 processes. Each process can possess in its programming own alarm levels. For this reason, 4 LED-boards will be displayed for each sensor, each of which graphically illustrates a process of the sensors.

You will find out that this tool offers a plenty of ressources and during building-up, will bring the computer even to a short-term standstill. But please also consider that in this surface all available data from **TIMO** will flow in and this will be displayed in 2400 LED's.

Extraction of all indications, which are not required

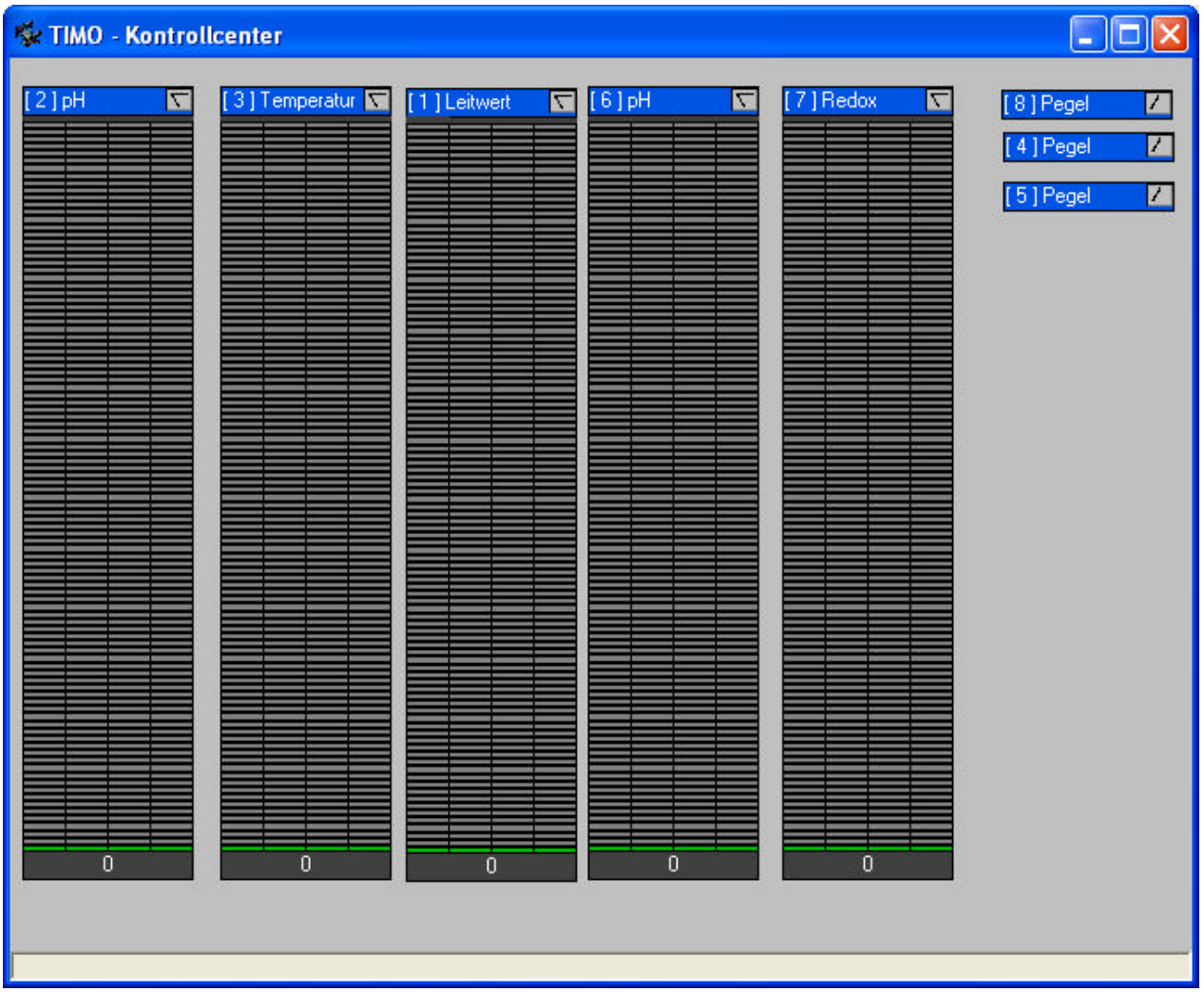
All not required indications can be minimized. Therefore please click on the arrow shown in the title of the LED-board of the corresponding sensor. The LED-board will be minimized and just the title remains visible. These settings will be stored automatically and after the next start-up, you will find these monitor centers in the new division.

Shifting of the indications

All indications in the monitor center can be shifted and placed freely. Therefore please click with the left-hand mouse key on the title of the indication and keep the mouse key pressed. Now you can shift the indication with the mouse and position same at a new place. These settings will be stored automatically and after the next start-up, you will find these monitor centers in the new division.

Also the size of the monitor window can be changed and remains after a new start-up.

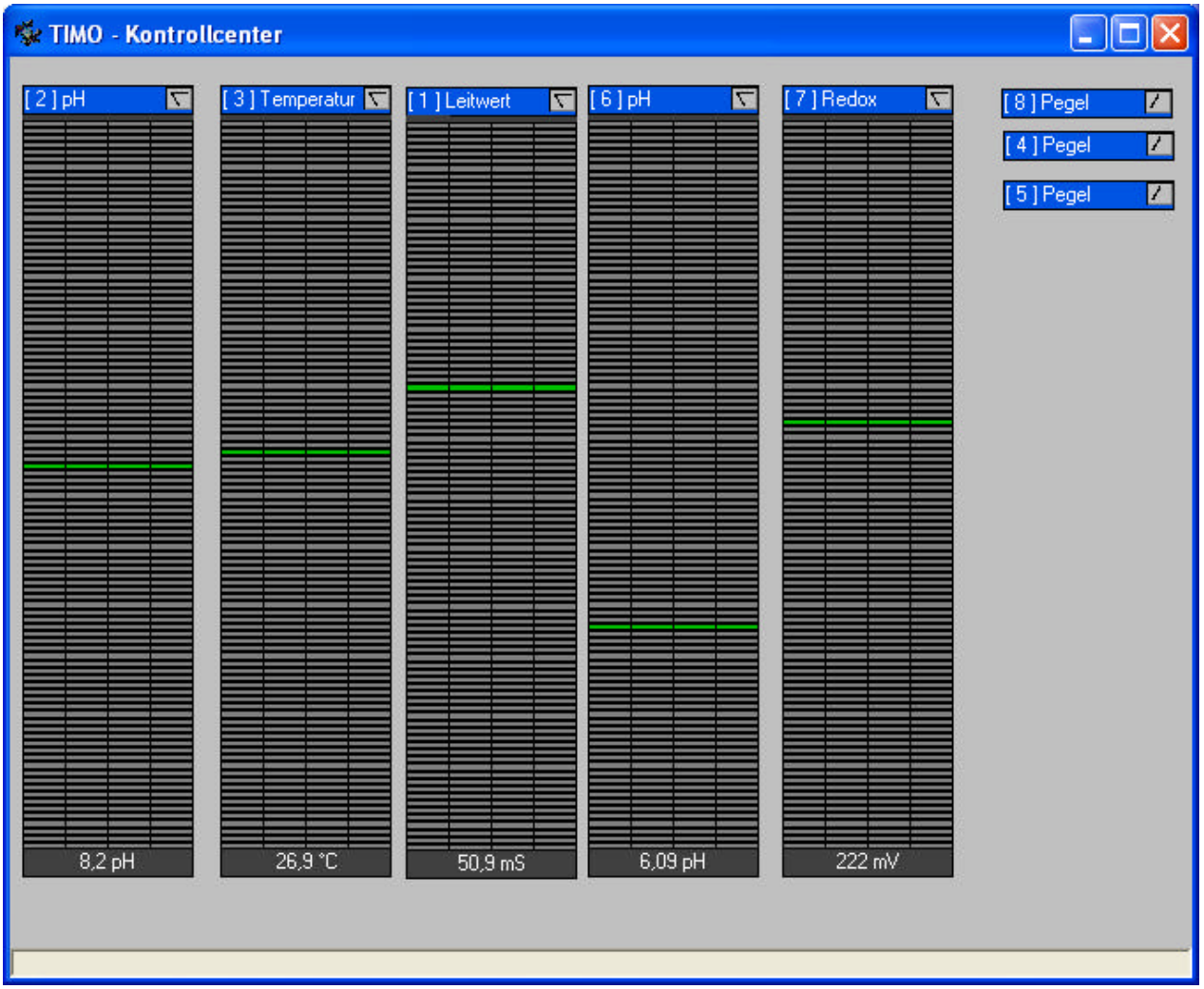
Afterwards the display could look as follows:



Indication of the current measured values in the monitor center

Now please start memorizing of the measured values of the aquastar as was explained in chapter ‚memorize measured values'. For the monitor center, storing of the data into a data base or Excel will not be necessary.

After some time the current values will be indicated as green LED-beams and the value will also be displayed below in the LED-board as number with the corresponding component.



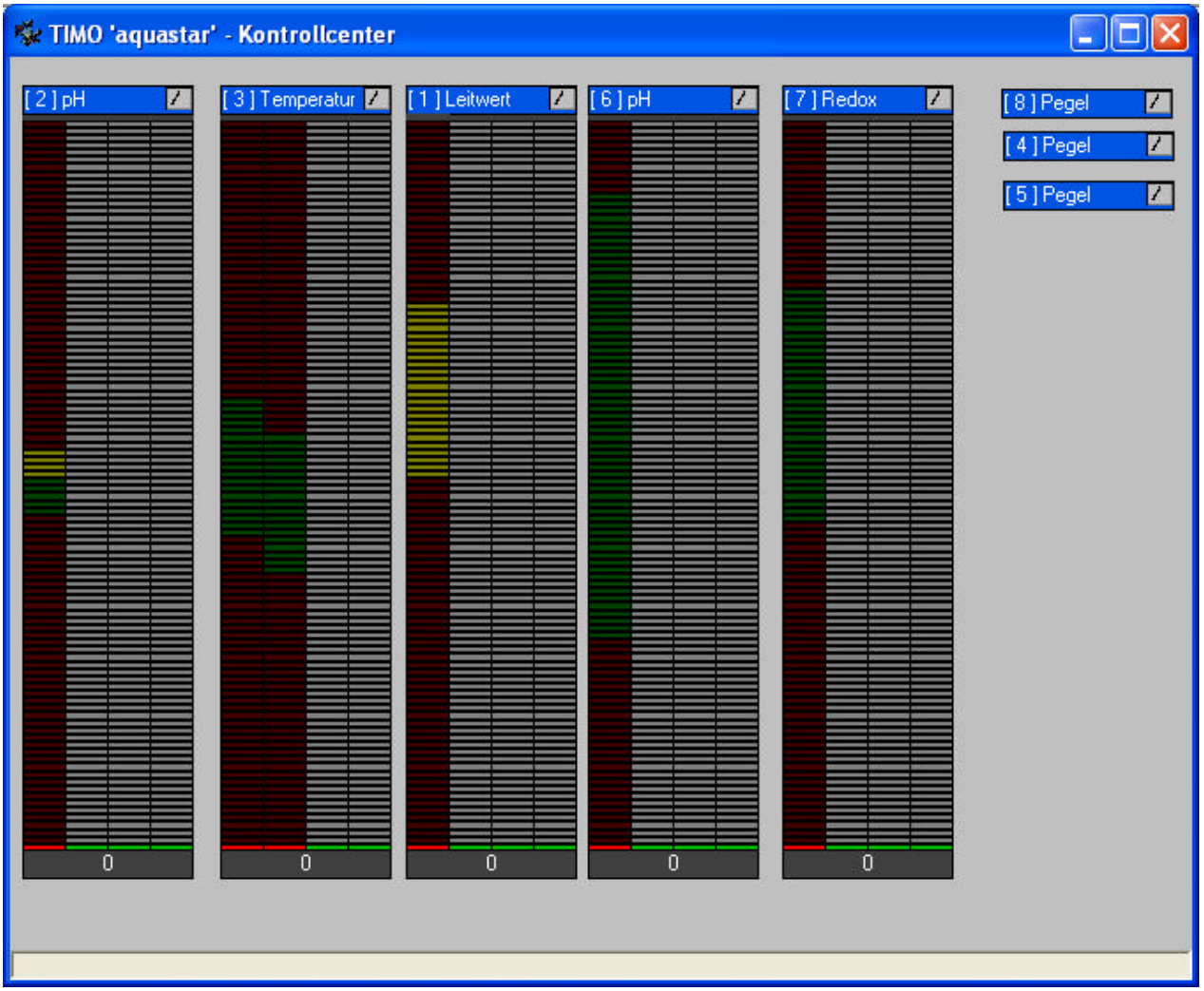
Insertion of the set alarm limits

In the displays also the programmed alarms can be inserted. Therefore it will be necessary to memorize a current programming of the aquastar or out of a data file. Now please stop memorizing of the measured values, change to the window ‚programming' and memorize a programming.

After memorizing of the programming and with opened monitor center, the monitor center will be up-dated. **TIMO** requires some moment for same.

All changes at alarm barriers and warnings as well as activation of regulations will immediately be transferred to the monitor center.

After memorizing of the programming, the display will be changed.



Let's have a somewhat closer look at the indication of the first pH-value.

The first column is layed out with coloured segments, the remaining 3 are grey. We remember: each sensor has 4 processes. In case of this sensor, only the first process has been activated in the programming. In contrary here to the temperature sensor. There we have 2 active processes.

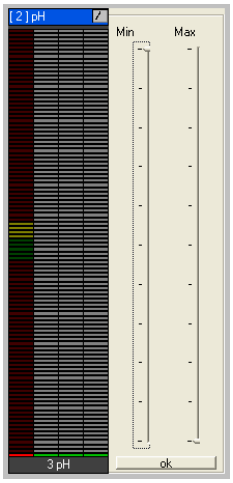
As the measuring range of the pH-value lasts from pH 3-13, all ranges above the upper alarm value, which was specified in the programming, are indicated in red. For the lower alarm, this will be identical, faithful to the sense. The allowed regulation range is displayed in green. Thus the regulation should normally be within the green range. At the temperature sensor you can recognize that the individual processes can in fact have different alarm limits.

In case of the pH-sensor there is also a yellow range existing. This stands for a warning range, which cannot be defined in the aquastar. Here we talk about an extension of function by **TIMO**. Please also see chapter ‚warning and alarm messages' in the description web options.

Scaling of the indications

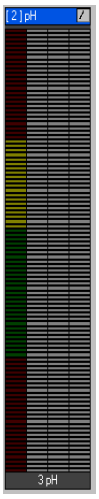
Now no sensor will have to cover the complete range. It is relatively incredible, that for example in a marine water aquarium a pH-value around pH 3-5 will appear. Thus it makes sense to scale the indication ranges and thus to improve readability. We could also talk about a spreading of the inicated range.

For this purpose please click with the right-hand mouse key on the title of the corresponding indication. In our example we take the pH-sensor once again.



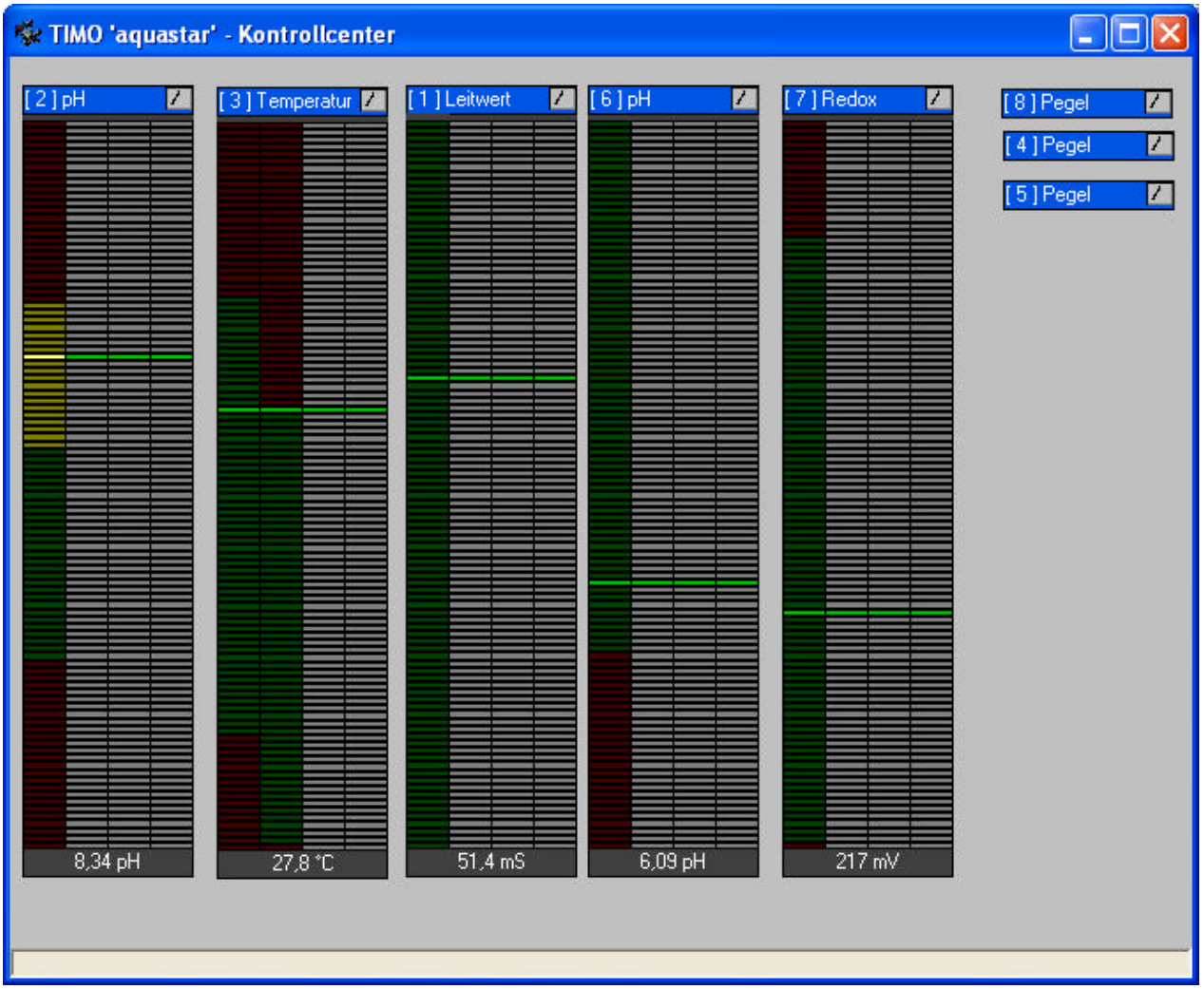
A box with slider controls will be opened. Here the limits of the indication can be determined. Let's stay with the pH-measurement in the sea water aquarium. Here the pH-value ranges approximately between pH 7.5 and 8.5. As we also would like to see the alarm limits in the display, we now position the Min.-control at 7 and the Max-control at 9.

After confirmation of the data by pressing the ‚ok' key, the box will be reclosed and the data will be taken for the display. This will again be somewhat delayed.



Now the display looks somewhat different. The alarm, warning and regulation ranges can now clearly be distinguished. The spreading of the green regulation range results now in the fact that also minor changes in the pH-value can be recognized in the display. Then the next or previous LED will light up.

Here you will now see the monitor center in operation. All ranges will be scaled according to the corresponding programming. Now it can be recognized at a glance, which regulations are within the green range and which not. Also important parameters of the programming can be seen here. Which processes of the sensors have been activated at all, where are the alarm and warning limits.

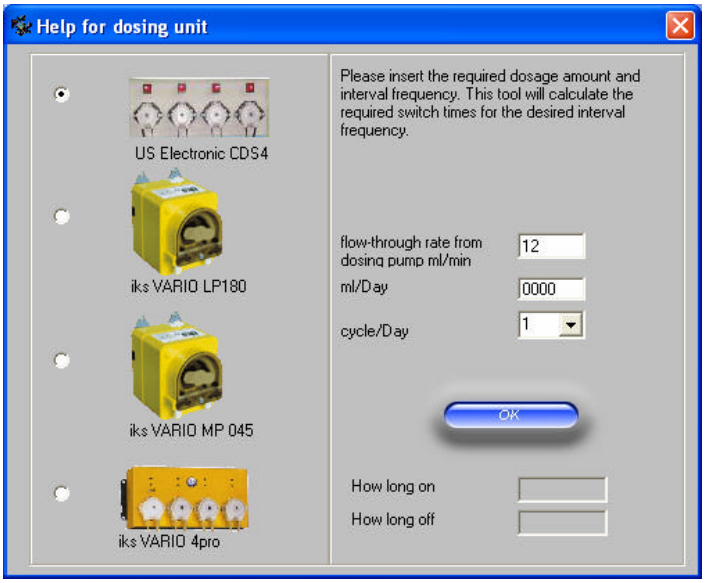


Help for dosing pumps

The aquastar supports in its programmings also so-called intervals, with which sockets can be switched on and off cyclically. Here on and off times can be set freely, also the time frame, within which the intervals should be active at all.

This is a good solution for the triggering of the dosing pumps. In this case, however, a problem will occur. On the trace-elements etc., which should be inserted by the dosing pumps, it is only mentioned how many ml should be dosed per day. As it really makes sense for example for trace-elements not to insert them “all at once”, but shared over the day, now the question is raised, how to find out of this information the optimum programming for the interval control, which finally triggers the dosing pump.

TIMO can take over this tiresome conversion. In the menue you will find under ‚Extras’ the entry ‚help for dosing unit’.



Here **TIMO** will offer you the 4 most frequent dosing pumps, which will be used with the aquastar. By choosing the corresponding pump, the feeding quantity will be set automatically. Now the data, how many ml per day should have to be dosed and in how many intervals will still be required. After a click on ‚OK’, the on and off times for the interval will be calculated and indicated. Should no result appear, this combination will not be possible as the minimum or maximum feeding quantity of the dosing pump has been exceeded. The most frequent mistake is to distribute a too small quantity on too many intervals.

The results of the calculation will not be inserted automatically into the programming, but have to be transferred manually.

For iks dosing pumps VARIO LP180 and VARIO MP045 the feeding quantities can be adjusted. **TIMO** inserts the most minimum feeding quantity. Should your pump be set in a different way, please correct the value ‚set feeding quantity in ml/min’ with the corresponding values.

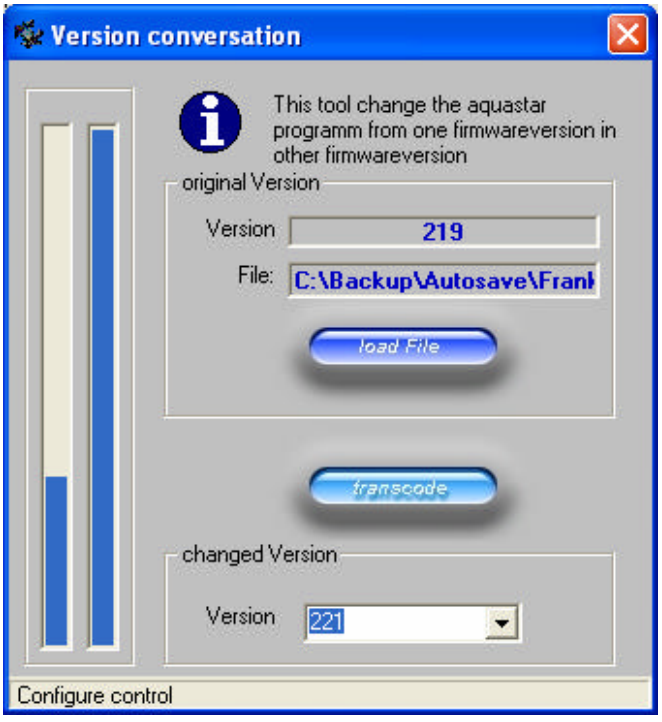
By stating the set feeding quantity, also the interval for any other dosing pump, which is not included in this listing, can be calculated.

Conversion of version

Do you remember chapter ‚**TIMO** and the firmware of the aquastar'? In this chapter it is explained that the programmings for the aquastar depend on its firmware.

Let's assume that you will use **TIMO** and the aquastar in version 2.17. Now you execute an update of the firmware 2.19 at the aquastar. During this procedure, also the complete programming within the aquastar will be deleted. If **TIMO** can support this firmware (possibly after an update), it would, however, be possible to get in connection with the aquastar, but the previous programming would not be transferred as your stored programming and the firmware of the aquastar are different now. In this moment you would once again have to put in manually the complete programming in the aquastar. And in order to avoid this, **TIMO** was originally developped.

To remedy this matter, **TIMO** offers the possibility to convert an existing programming to another firmware version. During this process all programming will be taken, if these do also exist in the new firmware. In case of new functions, which are not yet included in the old programming, default-values of the firmware will be taken. As also conversions to older firmware versions can be executed, there could exist functions in the originally programming, which have not yet been available in the old firmware. These will simply be ignored and not being transferred.



Please choose ‚load file' and memorize a stored programming. The version and the path of this programming will be indicated.

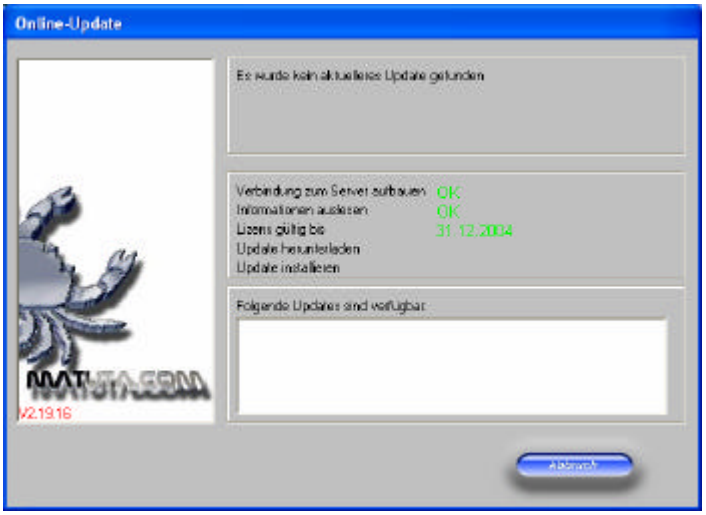
In the choice box please insert for which firmware this programming should be after conversion.

Afterwards please choose ‚transcode'. the progress beams indicate, how far the conversion has progressed. After conversion has been finished, a window will open in which you insert the storage place for the new data file.

Thus you have now a programming for the new firmware and can memorize same under ‚programming' and transfer to the aquastar.

Online-Update

To keep **TIMO** always on the current status, www.matuta.com will offer updates regularly. These can be loaded with the web-updater. This programme compares the installed components with the versions, which are available online. Only the required components will be loaded. This update works only from this computer, on which a licenced version of **TIMO** is installed.



The updater can either be started directly out of **TIMO** in the menue under ‚?' – ‚webupdate' or out of the start menue.

After a click on ‚Start', a connection to the webserver of matuta.com will be established. There it is searched for more recent versions. Should there be updates available, these will be indicated in the updater, but will not automatically be loaded. Only after a click on ‚Download', these data files will be loaded and installed.

Should it not be possible to establish a connection to the server, please check Firewall, Proxy etc.

What to do if the update will not be loaded?

Unfortunately, there are numerous possibilities:

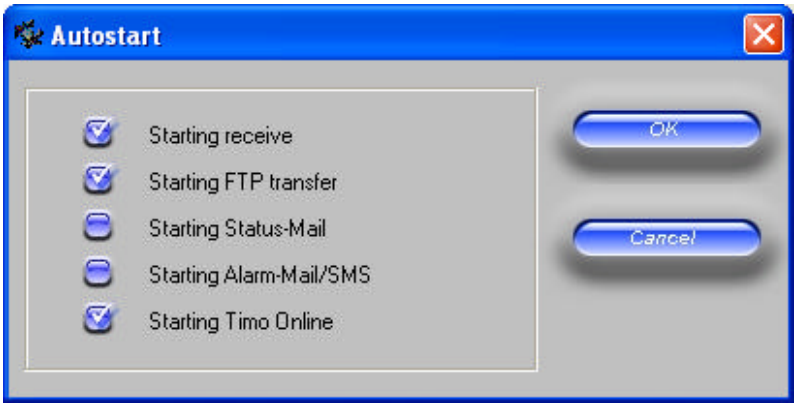
? Your **TIMO**-version is not registered or registration has expired. Should you desire further updates, please contact us.

? Your clearing has not yet been deposited on our server. If you only just now have received clearing, please be somewhat patient with us. Should it, however, still not function on the next day, please contact us.

? The updater gets no connection, because you use a so-called Proxy. Further information hereto you will find on the previous page.

Autostart

Under the menue item Extras, the option Autostart is available. With this option you can determine, which actions should be executed automatically during start-up.



For an unattended logging, the following would make sense:

Please create a linkage with timo.exe and copy same in the Autostart-file. Thus, with every start-up of Windows, the programme **TIMO** will be started automatically. Within **TIMO** please determine under Autostart, that the receipt of measured data should be started. Please therefore click on ‚start receipt of measured data". If a small hook appears, this option will be activated. Further options can only be activated if this item is active. The options Alarm, Status-Mail, **TIMO online** etc. are only available with the web licence. Further information to these functions will be given in the chapter of the web options.

After start-up of **TIMO** a connection to the aquastar will be established as well as all further options within the aquastar will be activated.
The Autostart will be delayed by 5 seconds, so that **TIMO** can initialize correctly all parameters.

Even if the option Status-Mail has also been activated, the first mail will not contain any data. This mail has been generated before **TIMO** received enough data from the aquastar. Due to this fact also in the Status-Mail a new start-up of **TIMO** can be recognized.

The web options

With the optional web options **TIMO** is able to send the recognized alarms by mail or SMS. Within **TIMO** there is an administration of warnings. These warnings are freely determined alarm levels, which will, however, not lead to a switch off of the corresponding regulation. The warnings are to inform the users before an alarm occurs.

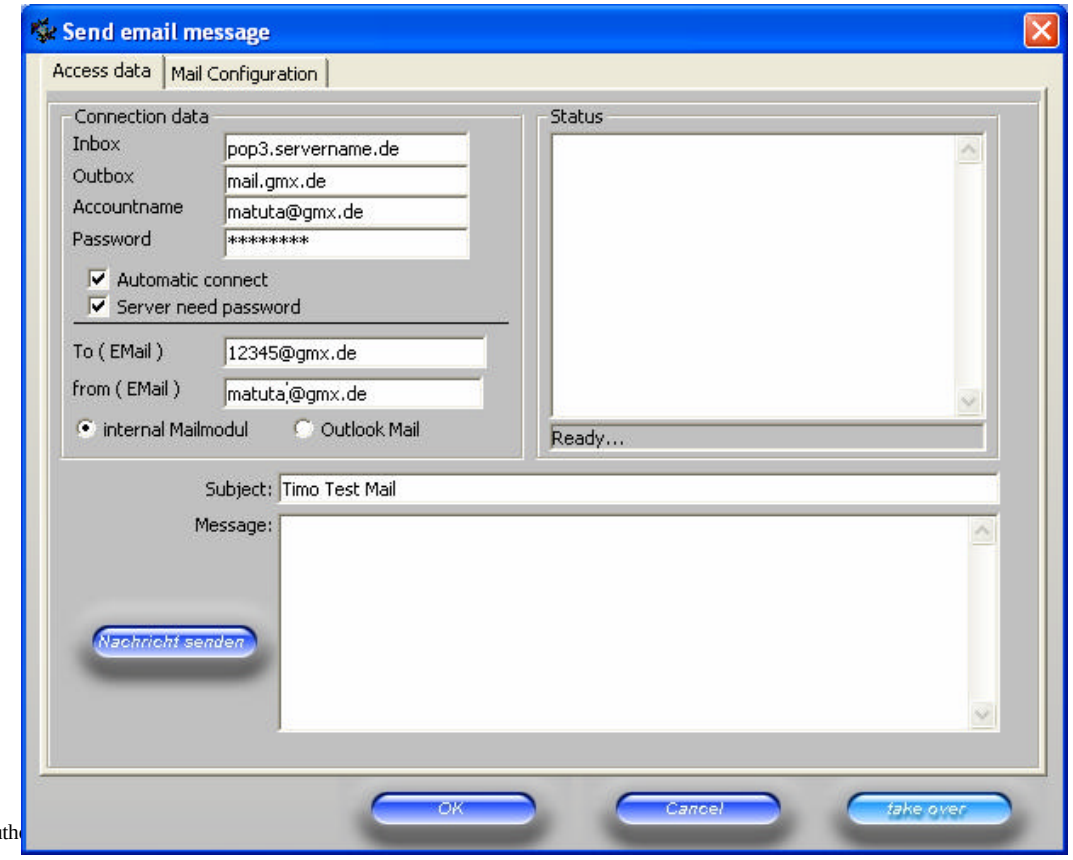
Besides the alarm and warning functions, also functions for online-visualisation are existing. The diagrammes generated in the diagramme-module can be transferred cyclically to a web side. This web side could for example be your private homepage.

TIMO online is an extension of this diagramme function. **TIMO online** is a service on the server of matuta.com. This service generates diagrammes independently out of the data received by **TIMO.** Each registered user can set the number, appearance and configuration of the diagrammes according to his own liking. **TIMO online** is the most convenient and for the user also easiest possibility, to have a look at the current data world-wide.

Status Mail

This function sends in adjustable intervals the current measured data by mail. So you will receive cyclically a status report. The contents and the layout of the status report is adjustable.

First of all, the entry data to your mailbox will be required. Therefore please choose in the menue ‚Online' – ‚Mail' – ‚Configuration'. The following window will open:



Here the entry data to the e-mail box will be required. This is the same data you entered in Outlook Express or similar e-mail programmes.

Let's start with the mail inbox. This is the server name, which receives the incoming mails at your address. Here we talk mostly about a POP3-Server. If you use Outlook Express, you will also find this address under options – accounts-e-mail-server.

The next column is the exit mail server. Mostly, you will find an entry SMTP there.

The account name is your e-mail address.

Password is your password for your e-mail account.

The option „Server requires authentification" should be chosen. Most e-mail server demand this setting.

"automatic connection" is meant for a dialing connection. If "connect automatically" is chosen, while a dialing connection it is not asked whether the connection should be established. This item should be chosen, so that unattended status and alarm reports can be sent. This setting has only a function, if the internal mail module is being used.

To e-mail: The receiver's address

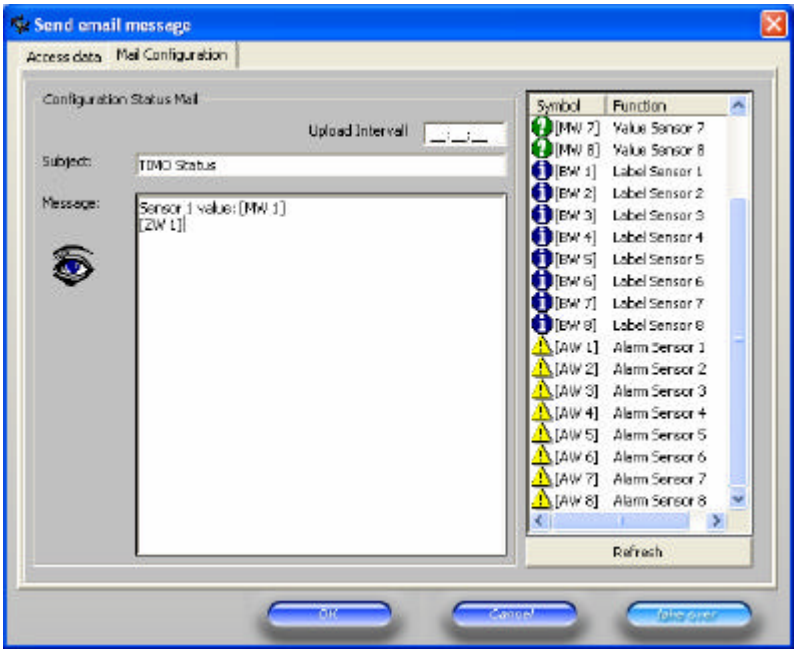
From e-mail: This is the sender's identification. There it will be best also to enter the e-mail account.

The option „internal mail module / Outlook Mail" determines, which module will be used for sending the mail. The internal mail module supports no Exchange server. Thus, should the internal mail module not function, you should go for Outlook. So also the complete settings within Outlook will be taken over. Please take care that Outlook is configurated in such a way to immediately send its mails, otherwise no mails will be sent. The sent mail you will also find in the Outlook file – sent mails.
Since extension of the safety settings by Microsoft, external programmes, thus also **TIMO** cannot automatically send mails via Outlook. A box will be displayed, in which each mail has to be allowed manually. But this safety setting can also be reset and thus make the automatic sending possible again. How this functions is numerous times explained in the Internet.
Normally the internal mail module functions trouble-free. It would be best to use same.

After you have entered all required information, please click once on take over, so that all data will be stored. Now you can send a test mail in order to check the function. Insert a text under message and click on send message.

If the internal mail module is used, you will see on the right-hand side of the status window the messages of the exit mail server. When later on using status and alarm mails, the information will also be entered in this window and can be checked there.

When using Outlook, nothing will be seen in the status window. The success can only be checked in Outlook.
All alarm and status reports will now be sent via this address. Now you still have to configurate the status and alarm reports. This will be done under mail configuration.



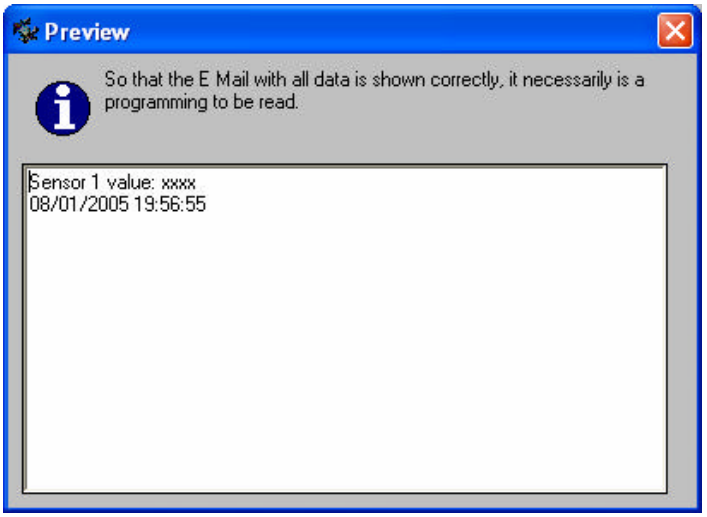
In this window, the look of the status e-mail can be configurated.

In the reference and message fields any free text, with the exception of the symbols [and] can be entered. In order to fill your text with data of **TIMO,** please draw the corresponding symbols off the right-hand side window and position same at the corresponding place in your text. Then **TIMO** inserts a text, which starts with [and ends with]. At these positions, the corresponding values of **TIMO** will be inserted later on. An interleaving of the variables is not possible. The used symbols will be deleted from the right-hand side, so that they will not be used numerous times in the mail by mistake. The listing can, however, be refilled with all symbols by a click on “filling. Thus all symbols will be available once again. Important is also the indication of the upload interval. This is the cycle, in which the mails will be sent to the receiver’s address.

A pattern will be supplied. The generated status mail out of this pattern looks as follows:

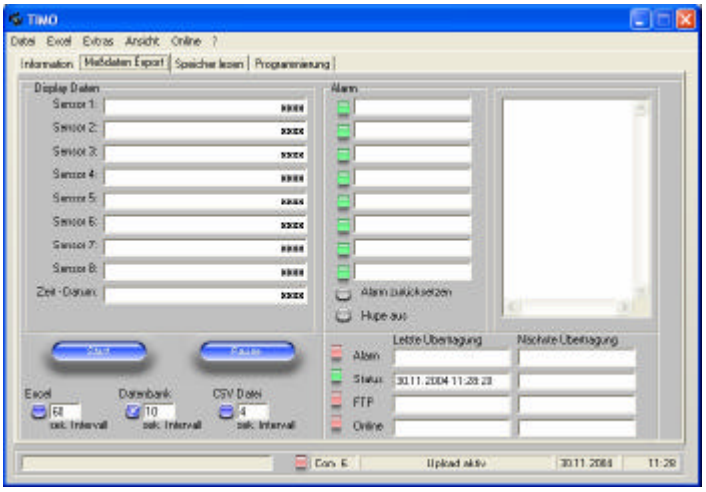
Sensor 1:Leading value current measured value: E1 (Le+) 50.1 mS last alarm:
Sensor 2:pH current measured value: E2 (pH)07.56 pH last alarm:
Sensor 3:Temperature current measured value: E3 (Te) 27.4 °C last alarm:
Sensor 4:Level current measured value: E4 (Pe+) water last alarm:
Sensor 5:Level current measured value: E5 (Pe) water last alarm:
Sensor 6:Redox current measured value: E6 (Rx-) +456 mV last alarm:
Sensor 7:pH current measured value: E7 (pH)06.06 pH last alarm:
Sensor 8:Level current measured value: E8 (Pe) air last alarm:

Message generated: 16.07.2003 11:48:05



You can also have a look at your configuration in the preview, if you click on the eye. If presently measured values from the aquastar are being received, this data will be entered, otherwise xxx.

So that the status mail can now also be sent cyclically, please click in the menue under ‚Online'- ‚Mail' –‚activate Transfer Status Mail'. Thus a small hook will be positioned in front of this entry and this function will be active.



After activation of ‚activate Transfer Status Mail', a mail will be sent with the aid of the pattern and the current data. In order to ensure that current data will be sent, please click in the window measured values export the ‚Start' button. Otherwise **TIMO** will not receive any data from aquastar.

At the same time, in the window ‚Measured data Export' the LED at the status indication changes from red to green and symbolizes the active function. Under ‚last transfer' a time stamp will be deposited. Also the next transfer will be indicated there, if at the mail configuration an interval was entered. Should the transfer not have been successful, the LED will light up yellow.

This function can also be activated in the Autostart. After **TIMO** has been started, a status mail is transferred immediately. At this time, however, no data of the aquastar will be available yet. Thus the first mail is without measured values, but a possible new start-up of **TIMO** can be recognized that way.

Warning and alarm messages

The aquastar actually knows only alarm messages. When the programmed alarm levels are exceeded or fallen short, the regulation will no longer be executed. This sounds very sensible for the first moment. The following examples will, however, show you quickly that such a method of function will not be sufficient.

Cooling of the aquarium

In the summer months, a cooling of the aquaria could become necessary. Especially tropical tanks are often tending to temperatures in the limit range during this time. How these cooling measurements will be converted, should not be the topic here. Moreover, how the corresponding programming has to be for same.

Let's take a sea water tank as an example. Cooling should start at 28 degrees Celsius.

label	
Action	Cooling
Summer Day[°C]	28,00
Winter Day [°C]	28,00
Summer Night[°C]	28,00
Winter Night[°C]	28,00
Upper alarm	30,00
Lower alarm	22,00
Socket	12 Temperature
On [%]	100
Off [%]	000
Program	1

A programming could be as follows:
When 28 degrees Celsius are exceeded, socket number 9 will be switched on and initiates the cooling process. To prevent that cooling will be too deep in case of a fault, the lower alarm is set to 22 degrees. This means that the aquastar will react with an alarm message when the 22 degrees have been reached and cooling will be switched off. This alarm message could now be used for the automatic sending of an alarm mail or SMS. This could now be the reaction for searching the cause.
In order to ensure that we receive a mail if it gets too hot, we will configurate the upper alarm on 30 degrees. Now, everything should work. -Really?

Let's have a closer look at the upper alarm. What will happen, if the aquastar reaches an alarm level? It **switches off** the corresponding regulation. Although we have now reached the critical limit of 30 degrees Celsius, now also the regulation, which means in our case the cooling, will be switched off.
Who knows where the temperature will go up to without cooling? Therefore please set the upper alarm to a value, which will never be reached, for example 40 degrees Celsius.
But now we no longer get an alarm and thus can also not react, if the tank reaches the critical temperature.

pH-control of a lime reactor

In sea water tanks, a lime reactor will be used for covering of the Calcium requirement. Within these reactors the pH-value will be lowered from approx. pH 8 to pH 6 by means of CO^{2-}gas. We will now trigger a magnet valve for the CO^{2}-gas, so that the pH-value in the reactor will be set.

label	Sensor2
Action	Reduce pH
Day value	600,00
Night value	600,00
Upper alarm	700,00
Lower alarm	500,00
Socket	12 pH
On [%]	100
Off [%]	000
usage	Aquarium
Program	1

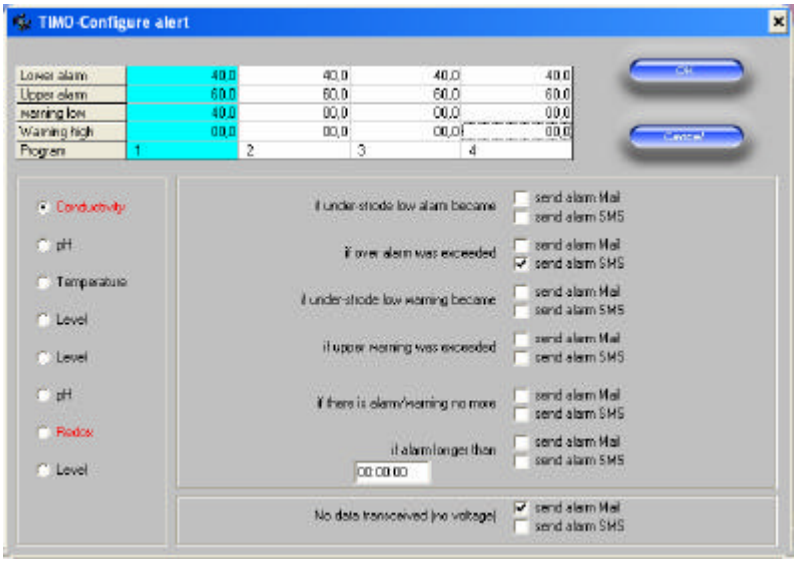
A programming could be as follows:
When pH 6 is exceeded, socket number 12 will be switched on and opens the magnet valve. Now we set the lower alarm on pH 5. This means that if pH 5 will be reached, the aquastar reacts with an alarm message and the regulation will be switched off. This alarm message could now be used for the automatic sending of an alarm mail or SMS. This could now be the reaction for searching the cause.

Now we want to know, when the CO^2-bottle will be empty. If no more CO^2 is fed into the reactor, the pH-value will increase to approx. pH 8. Thus we will set the upper alarm on pH 7. Now the aquastar is generating an alarm, if pH 7 will be exceeded. Thus we know, when the CO^2-bottle is empty. Fantastic.

Let's also have here a closer look at the upper alarm. The CO^2-bottle is empty, the pH-value has exceeded pH 7. We have received an alarm and change the CO^2-bottle. But now the aquastar will not open the CO^2-valve, as the regulation has been switched off. We will have no success in putting this regulation back into operation. Thus the upper alarm has to be set that high, that it will not be reached, for example pH 12. But then our alarm „CO^2-bottle empty" will no longer work.

As can be seen from these two examples, the aquastar is missing warnings. This means alarm messages, which will not switch off a regulation, but can send a mail or SMS. This function is taken over by **TIMO.** As the aquastar does not know these warnings, these will also not be entered in the programming, but in a separate window. As these warnings will be used for the mail and SMS alarm, this window will be found in the menue under ‚Online' – ‚Email -> SMS' – ‚Configuration Alarm values'. This entry will only be active, if a programming was memorized before. This is necessary as in this window much more is adjustable.

Configuration of the alarms and warnings



On the left-hand side the sensors are positioned. In the upper part of the form, an extraction of the programming can be seen. This extraction is depending on the choice of the sensor on the left-hand side.
In the programming now the additional fields upper and lower warning exist. Please also see chapter ‚Warning and Alarm messages'.
In the middle range, the options are visible, when a warning resp. alarm should be sent.

As each regulation has 4 processes, in each of which alarm and now also the warning level can be defined, the middle range shifts, if another process was chosen in the regulatio n. In the middle range you will thus always only see the configuration for the chosen process.

Please first of all click on the extraction of the regulation. The upper and lower alarm was read-out from the current programming and entered. In the fields upper and lower warning, the alarm values have been inserted automatically. These warnings can be edited, as is already known from programming.

Now you can indicate in the middle range, when an alarm should be effected and how. As a mail or SMS and this for each process of a sensor. Thus a very high number of combinations will be possible and an ingenious combination of warnings and alarms are possible.

If for a sensor a warning or alarm has been chosen for the sending as mail or SMS, this sensor will be inicated in red. This shows that a configuration is existing. This is not always immediately obvious. Even if the alarming is only programmed on the higher processes.

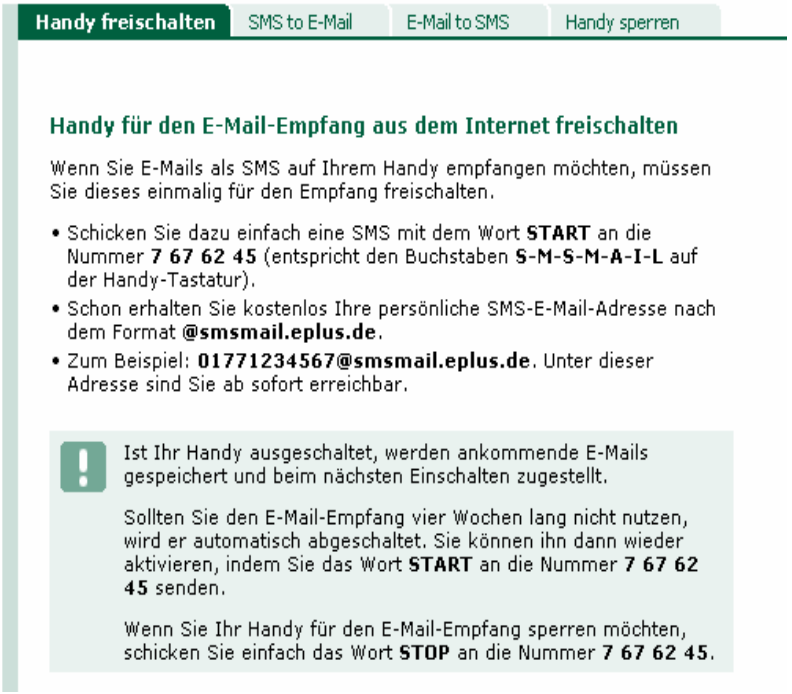
The alarm mails will be sent to the same address to which also the status mail is sent. Even if you do not desire status mails, but would like to be informed about the alarms by mail, the entry data has to be indicated at the status mail. More details please see in chapter ‚The Web Options – Status Mail'

Alarm and warning messages via SMS

In order alarm and warning messages can be generated at all, these have to be configurated first. This will be explained in chapter ‚Configuration of the Alarms and Warnings'.

The sending of SMS within **TIMO** is a special type of e-mail. All known providers of mobile nets support the possibility to send an e-mail to a handy resp. to pass same on. There, the e-mail of the mobile provider is converted to a SMS and then being sent to the handy.

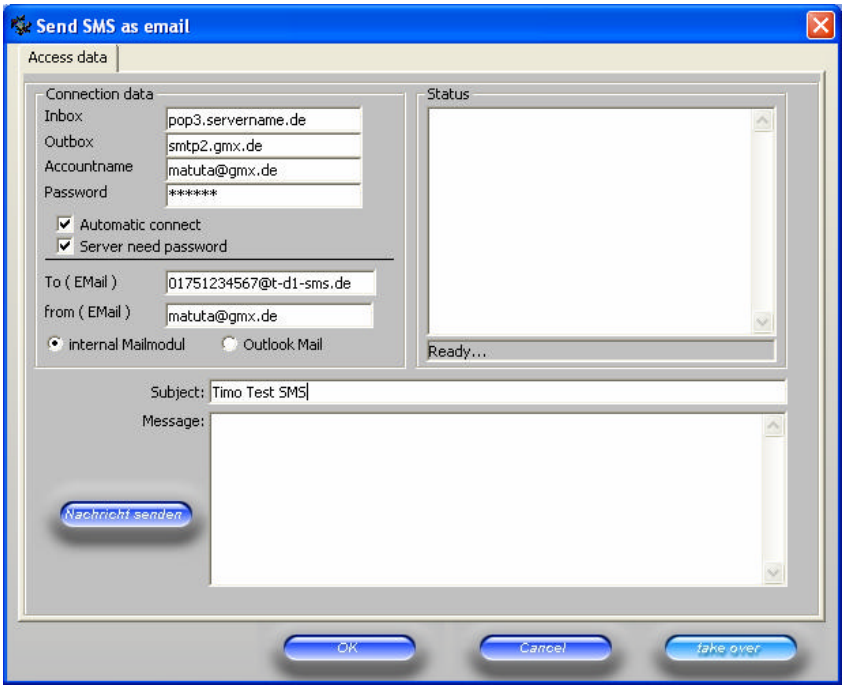
The conversion, number of letters and a lot of other aspects are very different with the individual providers. Also the costs which will incur and required clearings. Therefore we can here only describe the process in principle. Further information to the services E-mail -> SMS can only be given by your mobile phone provider.



Here an example of the required settings at E-plus (germany). The required clearings, applications for special services and telephone numbers vary considerably within the individual providers.

It was tried to find in **TIMO** the lowest common denominator for all mobile phone providers. This seems to have been successful as in the meantime there are providers of this function with E- and D-Nets, partly also at third-party providers.

In order to configurate an account for sending of SMS in **TIMO,** please choose in the menue under ‚Online'- ‚E-mail->SMS'-, Configuration'. As this mail will be sent via your standard e-mail account, the entries are identical to the entries in the configuration of the status mail. Just the receiver to (e-mail) is now your e-mail receiver for the handy.



Here the entry data for the e-mail box will be required. This is the same data which you have entered in Outlook Express or similar e-mail programmes.

Let's start with the mail income. This is the server name, which receives the incoming mails to your address. This is mostly a POP3-Server. If you use Outlook Express, you will also find this address under Options – Accounts- E-mail-Server.

The next column is the mail exit server. Mostly you will find there an entry with SMTP.

The account name is your e-mail address.

Password is your password for your e-mail account.

The option „Server need password" should be chosen. Most e-mail server demand this setting.

"automatic connection" is meant for a dialing connection. If "connect automatically" is chosen, while a dialing connection it is not asked whether the connection should be established. This item should be chosen, so that unattended status and alarm reports can be sent. This setting has only a function, if the internal mail module is being used.

To e-mail: The receiver's address for the mail account of your handy. Mostly it consists of your telephone number and a domain name, for example 0177123456@smsmail.eplus.de

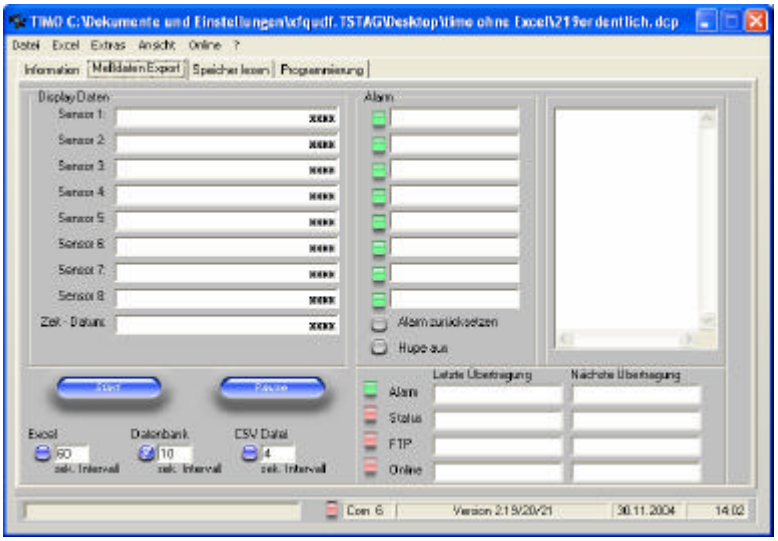
From e-mail: This is the sender's identification. There it will be best also to enter the e-mail account.

The option „internal mail module / Outlook Mail“ determines, which module will be used for sending the mail. The internal mail module supports no Exchange server. Thus, should the internal mail module not function, you should go for Outlook. So also the complete settings within Outlook will be taken over. Please take care that Outlook is configurated in such a way to immediately send its mails, otherwise no mails will be sent. The sent mail you will also find in the Outlook file – sent mails.
Since extension of the safety settings by Microsoft, external programmes, thus also **TIMO** cannot automatically send mails via Outlook. A box will be displayed, in which each mail has to be allowed manually. But this safety setting can also be reset and thus make the automatic sending possible again. How this functions is numerous times explained in the Internet.
Normally the internal mail module functions trouble-free. It would be best to use same.

After you have entered all required information, please click once on take over, so that all data will be stored. Now you can send a test mail in order to check the function. Insert a text under message and click on send message.

Until receipt of this e-mail as a SMS on your handy, there could absolutely pass some time. Experience has shown that such mails by SMS could even be delayed by 10-15 minutes.

So that the alarm mail and/or SMS will actually be sent, please click in the menue under ‚Online'-‚E-mail->SMS'-‚Activate Transfer'. Thus a small hook will be positioned in front of this entry and this function will be active.



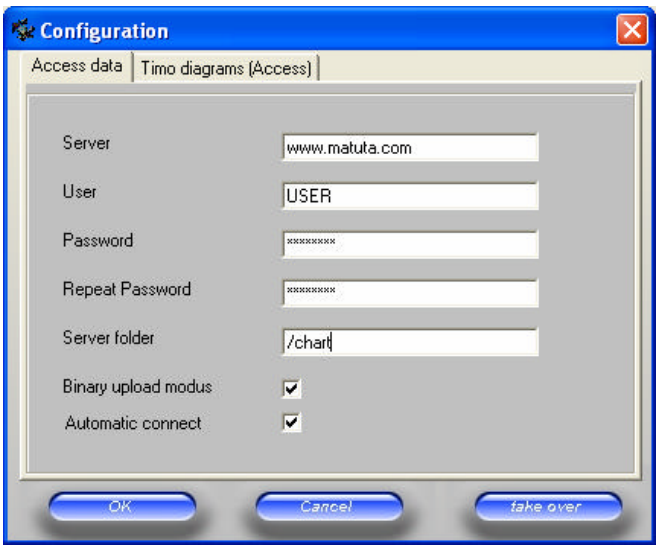
After activation of the transfer, the LED in the window 'Measured data Export' changes in case of an alarm from red to green and symbolizes the active function. As soon as a warning or an alarm will be sent by SMS or mail , a time stamp will be deposited. Should the transfer have failed, the LED lights up yellow. During the next transfer there will never be entered a value, as the moment of time is unknown.
This function can also be activated in the Autostart.

For the configuration and the sending of warnings and alarms, it is absolutely necessary, that a programming is being memorized before.

Conversion of diagrammes onto the homepage

In the chapter Longterm Evaluations / Diagrammes it was explained how to record the measured data and display same as a diagramme. These diagrammes can also be transferred cyclically onto a web side by **TIMO.**

Therefore **TIMO** has to be informed about the entry data to your web side. Please choose in the menue ‚Online'-‚Diagrammes->FTP'-‚Configuration'



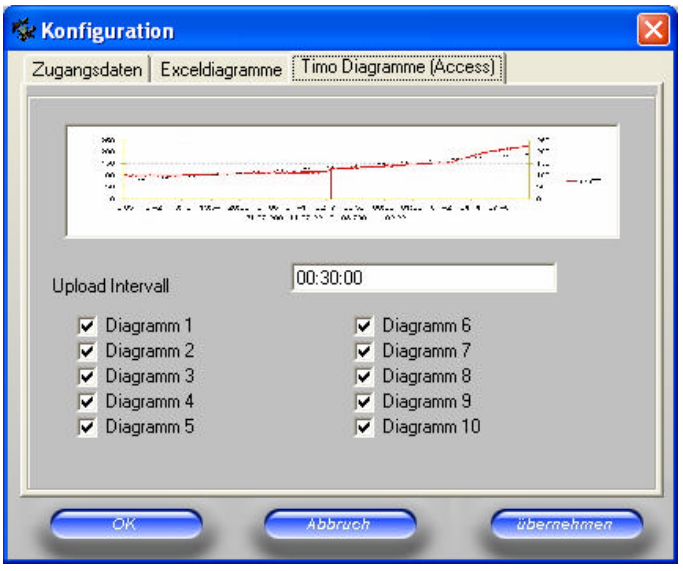
Under server please enter your homepage address.

Also user and password for the FTP-entry to your homepage.

Under server listing, you can mention files, in which the diagrammes have to be filed. Otherwise, the data files will be positioned in the Root-listing. These must already be existing.

Upload mode Binary should remain chosen, otherwise transfer will be done in the ASCII mode.

"automatic connect" is meant for a dialing connection. If "connect automatic" is chosen, while a dialing connection it is not asked whether the connection should be established. This item should be chosen, so that unattended diagrammes can be sent.

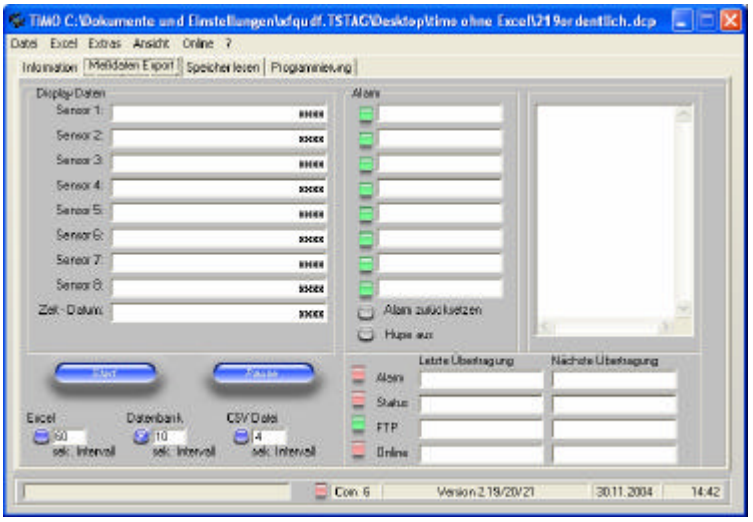


Here you can now indicate, which of the created diagrammes should be loaded onto the web side and the interval, during which this should happen.

The diagrammes will be transferred to the web side as chart1.jpg, chart2.jpg.

If you have a HTML-side on your homepage, in which these pictures are integrated, you can now see the current measured values cyclically.

To ensure that the diagrammes will now actually be transferred onto the web side, please click in the menue under ‚Online'-‚Diagrammes->FTP'-‚Activate Transfer'. Thus a small hook will be positioned in front of this entry and this function will be active.



After activation of the transfer, the LED in the window 'Measured data Export' changes in case of FTP from red to green and symbolizes the active function. As soon as the diagrammes will be transferred, a time stamp will be deposited.

Also the following transfer will be indicated there, if an interval has been inserted in the configuration. Should the transfer have failed, the LED lights up yellow.

This function can also be activated in the Autostart. After **TIMO** has been started up, the diagrammes will be transferred immediately. At this time there will, however, not yet be any data from the aquastar available. Thus the first diagrammes will be without measured values, but in that way a possible new start-up of **TIMO** can be recognized.

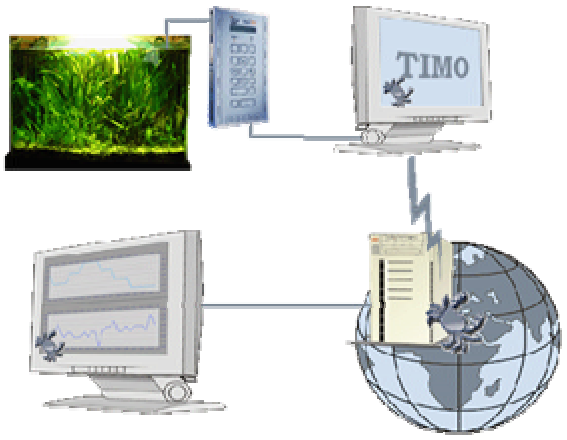
During transfer of the diagrammes, all functions of **TIMO** will be inaccessible. This can be realized by the entry „Transfer Active" in the status line of **TIMO**.

TIMO online

What is TIMO online?

Have you already once made up your mind about the measured values of your aquarium, if you are not at home? You are at work and would like to be informed constantly about the condition of your tank? You are on holiday and ask yourself what about the tank? The matuta-team has found a possibility to answer all these questions. The software **TIMO** is the most favourable solution for the use of a iks aquastar in order to receive the measured data of the individual sensors in digital version. Until now, these have, however, been remaining on the inserted computer and could only be viewed via Excel-evaluations. **TIMO online** is now making a further step and sends this measured data to the worldwide web. In the first instance, **TIMO online** is only an option to send measured data within **TIMO.** This turns, however, to a detailled web-evaluation if you have a look on the internet pages of www.matuta.com. The received measured values are being evaluated graphically there. The user receives all setting possibilities, which data he wants to see and over which period. He can change the look of all diagrammes in colour and size and thus can also throw in his individual liking. The number of diagrammes can be determined individually. He receives information about maximum and minimum values of each individual measured value, average values and can follow possible trends with the aid of the graphics. Regardless of where the user is located, he just has to logg in with his foreign account www.matuta.com and will constantly being informed about the measured values of his aquarium.

How functions TIMO online?



The aquastar registers the data of the aquarium. This data will be collected by **TIMO** and being processed. With the aid of an internet connection, this data will be sent to the matuta-server within certain intervals and will then be stored there in a data base. So it is warranted that the data will always be current in the evaluations. With each demand of a view, the data will be evaluated and being displayed graphically. The diagrammes will be stored as picture data on the matuta-server and will continuously be integrated newly. An actualization of the internet page will thus evaluate for the time being the measured data of each individual view. Thus you will always receive the current results.

What is required for TIMO online?

TIMO online can only be used with the web version of **TIMO**. This has to be acquired as a licence. As **TIMO** sends the measured data to a server in the internet, the used computer has to have an internet connection. **TIMO online** can be used for testing purposes over a period of 1 year. If you decided to use this service also in future, please send an e-mail to an administrator or presenter. Then a licence will be established.

Settings within TIMO

If you have a web licence of **TIMO,** menue item „Online“ will be accessible to you. Under this menue item, a further menue item will be found „**TIMO online**“ with a configuration possibility.
Please insert there under „User“ your foreign account with the corresponding password. The server to which the data will be sent is preset with the matuta-server (www.matuta.com) and has not to be changed. Below the password, the upload interval in minutes can be set. This can be adjusted according to your requirements, but please bear in mind that each evaluation on the matuta-pages will take longer, the more measured values have been developped within the evaluation period. A good choice will thus be an interval from 5 to 10 minutes. After these settings have been taken over, the transfer still have to be activated. In order to achieve same, please use under the same menue item the setting „Activate Transfer“. If all data has been inserted correctly, you will receive a message under the card file tab „Measured Data Export“ in the status window on the right-hand side. Should the connection have been failed, please recheck your entered user name and the password as well as your internet connection.

After activation of the transfer, in case of online the LED will change in the window ‚Measured Data Export“ from red to green and symbolizes the active function. As soon as the data will be transferred, a time stamp will be deposited. Also the next transfer will be indicated there, if an interval has been entered at the configuration. Should the transfer have been failed, the LED will light-up yellow.

In order to start with the sending of the measured values, please press the „Start“ button under the card file tab „Measured Data Export“.

Indication on the web side

If you have logged in yourself on the matuta-pages with your valid foreign account, you will find a menue item „**TIMO Online**“ in the left-hand side of the navigation listing. Under this menue item you will find besides this document also all other menue items, which are explained there.

This function can also be activated in the Autostart. After start-up of **TIMO,** the data will be transferred immediately.

FAQ – Frequently Asked Questions

With which aquastar versions does matuta TIMO function?

Based on the version number of **TIMO** it can be recognized up to which firmware the aquastar the support will function. This numbering was introduced with the version 2.19 first.

A **TIMO**-Version 2.19.XX supports all aquastar versions from 2.14 – 2.19. The last two XX of the **TIMO** version number stand for the release-version of **TIMO.**

A **TIMO**-Version 2.20.01 would thus mean the first release for the firmware 2.20 of the aquastar. Of course, always also downward compatible to all previous versions. The oldest firmware, which is supported by **TIMO** is always the firmware-version 2.14

There is no rule without exception. The firmware 2.18 of the aquastar was that much faulty, that a support by **TIMO** could not be realized.

Software Update

Once again a small summary of the function:
With same it is possible to keep the software automatically updated. Here, the already installed **TIMO**-data files will be compared with a list on the download server. Should there exist on the server at least one later version of a data file, this will automatically be loaded into the installation register of **TIMO** and being installed. After a new start-up of **TIMO** you are thus always on the current level.

TIMO does not load any programme file, resp. writes not to the aquastar.

TIMO is not familiar with the used firmware of the aquastar. For safety reasons the transfer of parameter data files to the aquastar is not allowed.

Please see hereto also FAQ:
With which aquastar versions does matuta **TIMO** function?

What to do, if the release does not function?

The release resp. the code has been used very often in the meantime. Thus you can assume that the key generator and the corresponding routines in **TIMO** functions correctly.

Please check once again the inserted release. In the transmitted key only 0 (zeroes) are existing, never the letter O.

Please delete all releases which are already inserted and set them once again. Please take care to insert the corresponding release at the right position. The release for **TIMO** is effected in the top line, for the web option in the bottom line.

Unfortunately there can also occur mistakes during transfer as this is no automatic system. So if nothing seems to function, please get in contact with us.

Why does TIMO indicate faulty values in the module "read memory"?

The module "read memory" in **TIMO** only displays those values, which have actually been sent by the aquastar. The problem has already been known for a long time. The cause is due to the faulty storage of the measured data in the aquastar. The only solution will be to delete the storage data at the aquastar completely and to adjust a higher storage interval, for example 01:00:00 (for one hour). Afterwards, the measured values will be stored again properly and being displayed accordingly in **TIMO**.

Where to find the register code?

Please click on the question mark in the menue. Please choose the entry info in the pop-up menue. Another window will open. In case of a non-registered version you will find there the button licence. Please click on same.
A further window will open with the title ‚enter licence'.
In the upper section you will find an ID consisting of figures and letters. This is your register code. This will be required to generate your release.