

User and installation manual



poweradjust 3 USB

ENGLISH: PAGE 1

DEUTSCH: SEITE 25

Current as of February 2024

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1. Preface

The poweradjust 3 USB unit is a high power fan or pump controller for PCs. The output features speed signal detection, additionally the poweradjust 3 USB unit has a temperature sensor input, a flow sensor input, a speed signal output as well as USB and aquabus interfaces.

Considering the fast technical development, we reserve the right to perform alterations to the products at any time. It therefore is possible that your product does not correspond precisely to the descriptions or illustrations in this manual.

2. Safety precautions

The following safety precautions have to be observed at all times:

- Read this manual thoroughly and entirely!
- Save your data onto suitable media before working on your hardware!
- Never touch electronic components during operation! Do not connect or disconnect cables to/from the device while the device is powered! Components may get very hot during operation. After power off, let the device cool down for at least 30 minutes before touching it!
- Do not turn the PC on unless you are sure that all cable connections to/from the poweradjust 3 USB unit are correctly attached!
- This product is not designed for use in life support appliances, devices, or systems where malfunction of this product can reasonably be expected to result in personal injury. Aqua Computer GmbH & Co. KG customers using or selling this product for use in such application do so at their own risk and agree to fully indemnify Aqua Computer GmbH & Co. KG for any damages resulting from such application!

3. Scope of delivery

- One poweradjust 3 USB controller
- One internal USB cable (replacement part no. 53085)
- One aquabus/speed signal cable (3 contacts, replacement part no. 93111)
- One connection cable for DDC/D5 pumps (replacement part no. 53053)
- Four screws M3 x 4 mm (replacement part no. 91184)
- This manual

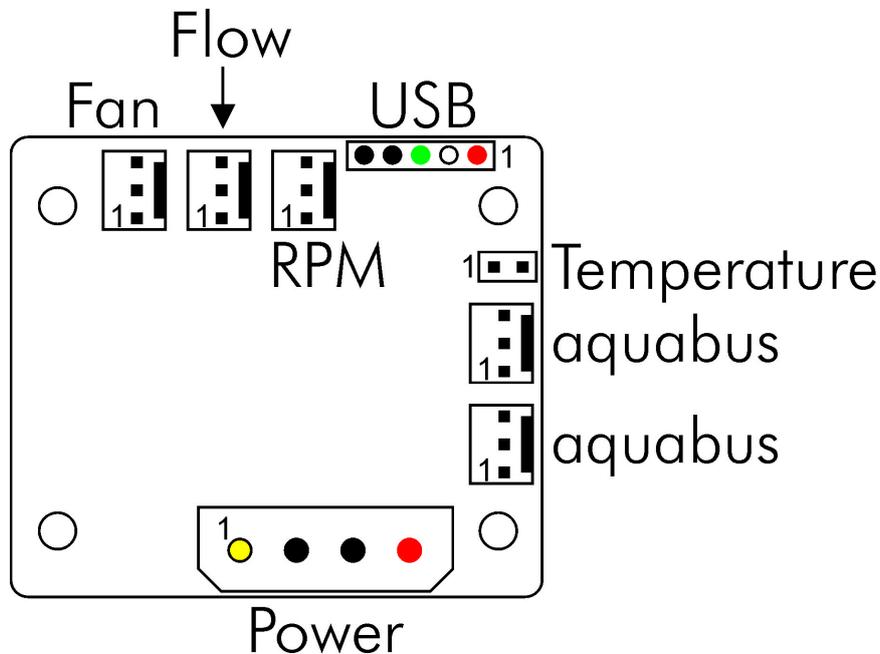
4. Assembly instructions

Use the supplied screws to install the poweradjust 3 USB controller inside your PC case. Make sure that the PCB and electronic components do not have contact to metal parts or other electronic devices inside the PC case, otherwise malfunctions or destruction of the poweradjust 3 USB unit or other devices may occur!

5. Electrical connections

5.1. Connector overview

ATTENTION: Completely turn off your power supply or disconnect the mains power cord from the wall outlet before connecting or disconnecting any cables to/from the device!



Please refer to the following chapters for details on the individual connectors.

5.2. Power supply

Connect a power plug of your PC's power supply unit to this connector. Do not use excessive force but double check the polarity of the plug if you are having trouble to connect.

Pin assignment:

- Pin 1: +12 V
- Pin 2: GND
- Pin 3: GND
- Pin 4: not connected

5.3. Power output (fan or pump connector)

Regulated fan/pump output with speed signal processing. Maximum current at 12 V is 2.5 A (30 Watts total power), with optional heat sink (not included in delivery) 3.0 A / 36 Watts. The poweradjust 3 features temperature monitoring to prevent damage to the poweradjust 3 controller board. If the internal electronics temperature sensor reading exceeds approximately 80 °C, the power output is set to 100 % power to minimize power dissipation. If the sensor reading rises further to approximately 100 °C, the power output is set to 0 % power and effectively switched off. In both cases, the poweradjust 3 controller activates the manual control option

for the power output. This setting remains active until it is manually reset through the aquasuite software or until the device is restarted.

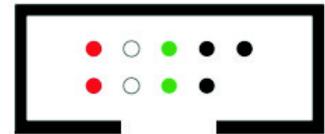
Despite this over temperature protection, the power output is not short-circuit proof!

Pin assignment: Pin 1: GND
Pin 2: 0-12 V
Pin 3: Speed signal

5.4. USB

This connector is used for USB communication to the PC and for power supply. Connect to an internal USB header of your motherboard. Take special care to make sure the pin alignment matches your motherboard!

The corresponding connector on the motherboard is usually a 9 pin connector with two independent USB ports. Both rows of 4/5 pins can be used to connect an USB device. The black wires (GND) are to be connected to the side of the missing pin, see picture with colored pin assignment.



Pin assignment: Pin 1: +5 V (red)
Pin 2: D- (white)
Pin 3: D+ (green)
Pin 4: GND (black)
Pin 5: not connected

5.5. aquabus 1/2

Connector for communication with other Aqua Computer devices. You can use the aquabus/speed signal cable included in delivery to connect the poweradjust 3 controller board to a suitable connector of a compatible device, for example an aquaero. USB and aquabus interface can be used at the same time, aquabus data is processed with higher priority.

Pin assignment: Pin 1: GND
Pin 2: SDA
Pin 3: SCL

Compatible aquabus devices:

- aquaero 6 XT (53146, 53206, 53250, 53251, 53262, 53263)
- aquaero 6 PRO (53145, 53253)
- aquaero 6 LT (53234)
- aquaero 5 XT (53089, 53125, 53249)
- aquaero 5 PRO (53090, 53252)
- aquaero 5 LT (53095)

5.6. Flow sensor

Flow sensor and special interconnecting cable are not included in delivery.

Pin assignment: Pin 1: GND
 Pin 2: +5 V
 Pin 3: Signal

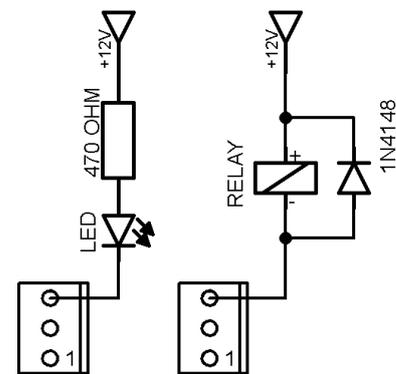
Compatible flow sensors:

- Flow sensor with 5.6 mm nozzle (53061, requires cable 53027)
- Flow sensor "high flow" (53068, requires cable 53027)
- Flow sensor high flow LT (53291)
- Flow sensor high flow 2 (53292)

5.7. Speed signal

Depending on configuration, this header can either be used as a generic speed signal or as a "open collector" switching signal.

The speed signal or the switching signal can be configured to be deactivated or activated in case of an alarm condition for monitoring purposes using the aquasuite software. For example, the supplied speed signal cable can be used to connect this header to the CPU fan header of your motherboard. Depending on the type of motherboard and BIOS settings, emergency shutdown of the PC upon alarm condition or an acoustic alarm may be initiated. Please refer to the motherboard manual for details on functionality and BIOS settings.



Alternatively, if configured as "power switch (53217)", this connector can be connected to the power switch header of the motherboard using an additional specialized cable (art. 53217, not included in delivery).

Pin assignment: Pin 1: GND
 Pin 2: not connected
 Pin 3: speed signal/open collector max. 30 V / 100 mA

5.8. Temperature sensor

Connector for a temperature sensor.

Compatible sensors:

- Temperature sensor inline G1/4 (53066)
- Temperature sensor inner/outer thread G1/4 (53067)
- Temperature sensor G1/4 (53147)
- Temperature sensor plug&cool (53025)
- Temperature sensor 70 cm (53026)

6. aquasuite software

The Windows software aquasuite is an extensive software suite and can be used for configuration and monitoring. The software is not required for operation though. All configuration parameters can be saved into the device's memory.

Please note: Depending on the type of product you are using, some features may not be available for your device.

6.1. Installation of the aquasuite software

For configuration and monitoring of our products with USB interface, the aquasuite software is available for download from our website www.aqua-computer.de. You will find the setup program in the support section of the website under Downloads/Software.

The setup program checks all connected USB devices for embedded update service periods and offers various aquasuite versions depending on detected devices. If no device with update service for the latest aquasuite version is found, a warning is displayed and older aquasuite versions that do not require an update service purchase can be selected for installation. For installation and update service validation, an internet connection is required.

The latest aquasuite version may also be installed if no suitable update service period has been found in a device. Subsequently, update service may be purchased or an existing key may be entered within the aquasuite. These functions can be accessed in the aquasuite/Updates tab.

6.2. Basic operation

The program window is divided into two main areas. On the left side, a list of “overview pages”, data quick view, data logger, device pages, aquasuite web and aquasuite configuration is displayed, the right side shows the details of the currently selected list element. The list can be hidden or restored by clicking the arrow symbol in the upper left corner.

List elements may be minimized or maximized for easier access by clicking the title bar. The title bars may contain various symbols that will be explained in the following chapter.

6.3. Symbols in the headlines



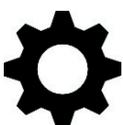
Click the plus symbol in the “Overview pages” headline to create a new overview page.



Clicking the monitor symbol will toggle desktop mode for this overview page. While desktop mode is active, the color of the symbol will change to orange.



Overview page: Clicking the padlock symbol will unlock or lock this overview page for editing. Device: Device can not be used due to update service problems, see “Updates and update service” for details.



Clicking the gear symbol will access the basic configuration page of the selected list element.



In order to save all settings into a device, click the disk symbol in the headline.



This symbol indicates that communication with this device is not possible at the moment. Check USB connection and power supply of the device if necessary.

7. Overview pages (aquasuite)

Current sensor readings and diagrams from all supported devices can be displayed in overview pages. For each device a pre-configured overview page is automatically generated the first time the device is connected to the PC. These pages can be individually modified and new pages can be created. Within one overview page, data from all connected devices can be accessed.

7.1. Desktop mode

Each overview page can be displayed directly on your desktop. You can enable desktop mode for an overview page by clicking the monitor symbol in the list of overview pages. Desktop mode can only be enabled for one overview page at a time. With desktop mode enabled, elements of the overview page may cover program symbols on your desktop, but mouse clicks are transmitted to underlying desktop symbols.

If a overview page is unlocked for editing while desktop mode is active, the page will be displayed in the aquasuite window for editing and the current desktop will be displayed as background for your convenience.

7.2. Creating new overview pages and activating edit mode

In order to create a new overview page, click the plus symbol in the headline "Overview pages".

Existing overview pages can be unlocked for editing by clicking lock symbol in the page listing.

7.3. Adding new elements

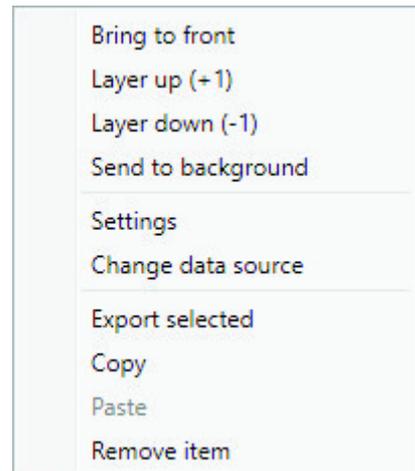
If the currently selected overview page is unlocked for editing, a plus symbol is displayed in the top right corner of the screen. Click the symbol to add a new element to the page and select the desired element from the following list. All available data is displayed in a tree diagram, click the arrow symbols to access individual items.

Confirm your selection by clicking the check symbol in the bottom right corner. The new element will be displayed in the upper left corner and the configuration window is displayed. Configure the element as described in the next chapters.

7.4. Editing existing elements

If the currently selected overview page is unlocked for editing, right-clicking an element will access a context menu.

To access the settings of an element, select “Settings” in the context menu or simply double click the element. If you want to move an element, “drag” this element while holding down the mouse button. Release the mouse button when the element is at the desired position.



7.5. Values and names

If the currently selected overview page is unlocked for editing, right-click an element and select “Settings”. You may also double click the element.

Font face, size and color as well as position, decimal places and unit can be configured for individual values.

7.6. Detailed data elements

If the currently selected overview page is unlocked for editing, right-click an element and select “Settings”. You may also double click the element. Apart from position, size and color, the style of the element can be selected and configured. The following styles are available:

- **Headline only:** Compact display as a headline.
- **Text:** Displays the numerical value in a box with a headline.
- **Bar graph:** Displays numerical value as well as bar graph.
- **Chart:** Displays the value in chronological sequence as a chart.
- **Gauge:** Displays the value as an analog gauge.

All display styles offer extensive configuration options, additionally statistical data such as minimum, maximum and average can be displayed.

7.7. Log data chart

This element can be used to display charts on overview pages. The charts have to be created using the data log functionality of the aquasuite before they become available for overview pages. Please refer to the next chapter for details. Once a chart has been configured, it can be selected from the “Chart selection” list on the “Display” tab of the settings dialog.

7.8. User defined: Images, text, drawing elements

By using user defined controls, simple drawing elements such as circles, rectangles and texts as well as images and more sophisticated elements can be added to an overview page. To do so, add an “User defined” element to an overview page. Switch to the “Display” tab in following dialog box, select the type of element to be

created from the drop down menu and confirm your selection by clicking the “Load preset” button. Depending on the type of element, an additional dialog may appear before the code (XAML, Extensible Application Markup Language) of the new element is displayed in the lower part of the dialog window. You may want to customize the code. By clicking the “Ok” Button, the new control is saved to the overview page.

Step-by-step example to add an image: Select “Image” from the drop down menu and click the “Load preset” button. Select an image file using the following file selection dialog. The code is then displayed in the lower part of the dialog window and can be modified. Save the new control by clicking the “Ok” button. The picture will be displayed on the overview page.

More complex controls such as data bindings and animations are also available but will require some programming experience for configuration.

7.9. Export and import of overview pages

Elements and complete overview pages can be exported from the aquasuite and can then be imported either on the same PC or on other PCs. For export as well as import, the overview page must be in edit mode.

To export a complete page, right click a free spot of the page and select “Export page” from the context menu. To export individual elements, select the element or elements, perform a right click and select “Export selected” from the context menu. For import, right click a free spot of the page and select “Import page” or “Import items” from the context menu. Using “Import page”, the current page will be deleted and only the imported page items will be displayed, using “Import items” will add the items from file to the current page without altering the existing items. During import, the elements will be assigned to devices using the following scheme:

If a device with identical serial number is found on the computer, no changes are made.

If no device with identical serial number is found on the computer, the element will be assigned to the first device found of identical type.

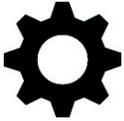
When importing complex pages with elements referring to more than one device, it is recommended to edit the device assignment in the file using a text editor prior to importing.

8. Data quick view and data log (aquasuite)

All data currently monitored by the aquasuite can be accessed in the “Data quick view” section. This includes data from connected USB devices as well as hardware data supplied by the Aqua Computer background service. Displayed data may be filtered using the text box next to the magnifier icon, a chart shows the development over a maximum of ten minutes. All data shown here is not stored permanently.

In contrast, the “Data log” may be used to selectively and permanently store data from all connected Aqua Computer devices and hardware data supplied by the background service. Logged data can then be analyzed by creating charts or be exported to files. Data is only logged while the aquasuite software is being executed.

8.1. Log settings



The log settings can be accessed by clicking the “Log settings” element below the “Data log” headline in the listing. To log data, create a new log data set by clicking the plus symbol in the upper right corner of the settings window. Enter name, time interval and configure automatic deletion of old data to meet your requirements. You may then add the data sources to log by clicking the plus symbol in the “Data sources” window section. You may add an unlimited number of data sources to each log data set, the total number of log data sets is also unlimited.

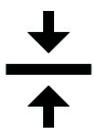
8.2. Analyze data



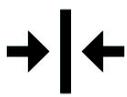
Logged data can be visually evaluated as charts. To do so, select “Analyze data” below the “Data log” headline in the listing. The chart will initially be empty, directly below the chart are eight buttons to modify the chart. In the lower section of the window, the chart data can be configured. To add data to the chart, first select the “Data sources” tab in the chart configuration and select a data set to be displayed. If no data sources are available, you will have to configure the log settings as described in the chapter “Log settings” of this manual. Select the time period to be displayed on the right side of the window and add the data to the chart by clicking the “Add data to chart” button. Repeat this procedure if you want to display more than one data set in the chart. You may modify the chart using the “Chart setup” and “Data series setup” tabs. Finally, you can use the “Chart manager” tab to save the current chart configuration and to load or delete previously saved configurations. All saved chart configurations will be available on overview pages for the “Log data chart” element. The currently displayed chart can be edited by using the buttons directly below the chart and may also be saved as an image file. The button corresponding to the currently selected function is highlighted by an orange frame. Please refer to the following list for details on each function:



To save the currently displayed chart as an image file, click the floppy disk symbol and select a name and location in the following dialog.



This function can be used to add horizontal lines to the chart. While this function is activated, simply click into the chart to add a line at the current cursor position.



This function can be used to add vertical lines to the chart. While this function is activated, simply click into the chart to add a line at the current cursor position.



This function can be used to add annotations to the chart. While this function is activated, simply click into the chart to add an annotation at the current cursor position. By clicking into the text box, you may edit the text. You may also drag the little circle beside the text box to move the connecting line to the desired position. Use drag and drop to move existing annotations.



This function can be used to remove horizontal/vertical lines or annotations from the chart. While this function is activated, simply click the element to be removed.



This function can be used to move the visible portion of the chart. Press and hold the mouse button while moving the cursor in the chart to select the position to be displayed, then release the button.



This function can be used to zoom in and out. Use the mouse wheel or select the area to be displayed. You can reset the zoom settings by double-clicking in the chart area.



This function can be used to reload and update the chart.



This function will completely remove the chart.

8.3. Manual data export

Saved data can be exported from the data log into a XML file. To do so, select "Analyze data" below the "Data log" headline in the listing. Select the "Data sources" tab in the chart configuration and select a data set to be exported. If no data sources are available, you will have to configure the log settings as described in the chapter "Log settings" of this manual. Select the time period to be exported on the right side of the window and start the export process by clicking the "Export data" button. Enter a file name and path in the following dialog window.

8.4. Automatic data export



The automatic data export feature can be used to save data from the aquasuite into an XML file on the hard disk or in the RAM ("memory mapped file") in a regular time interval. The automatic data export will always overwrite the previously saved data, so the file always contains only the most recent data set. Select "Automatic data export" below the "Data log" headline in the listing to access the settings screen. Create a new export data set by clicking the plus symbol in the upper right corner of the screen. Enter name, path and time interval to meet your requirements. You may then add the data sources to log by clicking the plus symbol in the "Data sources" window section. You may add an

unlimited number of data sources to each export data set, the total number of export data sets is also unlimited.

9. Fan configuration (aquasuite)



Select "Fan" from the device list below the "poweradjust" entry.

9.1. Fan mode

In the upper area, current fan data (speed, power output, voltage) is displayed as plain text as well as in a diagram.

Select the desired mode of operation for the fan output below the diagram. If "Manual fan settings" is selected, the fan output can be set to a fixed value. In "Speed controlled" mode, you can set the desired rotation speed, the poweradjust 3 controller will regulate output power to keep the speed constant if technically possible. In "Automatic temperature control" mode (Ultra version only), the fan power will be dynamically adjusted depending on the current temperature sensor reading.

9.2. Manual fan settings

When using manual mode, set the desired output power here.

9.3. Speed settings

When using the speed controlled mode, set the desired speed here. The controller speed setting should not be changed in normal setups.

9.4. Automatic temperature control

When using the automatic temperature control mode, set the desired target temperature. The controller speed setting should not be changed in normal setups.

Additional safety features: If no temperature sensor is connected or the target temperature is exceeded by approximately 10 °C, the output is set to 100 % (disregarding the maximum power setting). If the target temperature is undercut by approximately 10 °C, the output is switched off or set to minimum power respectively if "Hold minimum power" is activated.

9.5. Start boost and output settings

The start boost feature can be used to reliably power up a fan or pump connected to the power output. If activated, the poweradjust 3 unit will set the output to the configured power for the configured duration before switching to normal operation. Exception: If the power output is set to 0 % (either by manual setting or by automatic control), the start boost will not be activated even if speed signal and/or

flow signal should be missing. If this behavior is not suitable for your application, make sure to use the “Hold minimum power” feature described in the next paragraph!

When using the speed controlled mode or the automatic temperature control mode, the output range can be limited in both directions (“Minimum power”/“Maximum power”). The check box “Hold minimum power” determines output behavior while the assigned controller value is 0 %: If the box is checked, the output will be set to the minimum power value and remain active. If the box is not checked, the output will be switched off. Set minimum power to a value at which the connected fan or pump reliably starts up.

10. Alarm configuration(aquasuite)



Select “Alarms” from the device list below the “poweradjust” entry.

10.1. Speed signal/Output

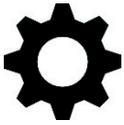
Select the signal to be provided through the speed signal output. Available options are the speed signal of a connected fan/pump or flow sensor or an artificial speed signal. Alternatively, the speed signal output can be configured as a switching output. The check boxes “Switch off speed signal in case of alarm condition” and “Invert output behavior” determine output behavior during alarm conditions.

Option “Power switch (53217)”: This mode can be used for emergency shutdown of the PC, if the speed signal/RPM header is connected to the power switch header of the motherboard using a suitable cable (art. 53217). Before connecting the cable, make sure the poweradjust is configured correctly! After connecting the cable, test the setup by deliberately creating an alarm condition. If the PC is not shut down, the cable header connected to the motherboard must be rotated by 180 degrees and the test has to be repeated. Emergency shutdown may result in data loss as operating system and running programs are not shut down properly!

10.2. Alarm reporting and alarm limits

Select the data sources to be monitored and set appropriate alarm limits. If the current reading is below the lower limit or higher than the upper limit, an alarm will be raised if the check box “Activate alarm evaluation” is set for this value. All sources that currently raise an alarm are highlighted with a red background color in the software. Make sure only to use readings for alarm evaluation that are functional with your specific setup.

11. System settings poweradjust 3 (aquasuite)



Select "System" from the device list below the "poweradjust" entry.

11.1. Device information

The details displayed here might be required when you contact our service for support. You may enter a "Device description" for easier identification, this text will be displayed in the device list and in the data quick view.

11.2. Factory defaults

Click the button "Reset device to factory defaults" for a complete reset of all settings. You will have to completely reconfigure the device after resetting it to factory defaults!

11.3. Key management

In order to upgrade your poweradjust 3 unit to a higher version, you will need the serial number and the device key from the "Device information" section of this page. Order the desired upgrade from the Aqua Computer web shop and enter serial number and device key into the "Annotations" field during the checkout process. For your convenience, you can also click the button "Buy upgrade key" to display a help page with all necessary information.

After receiving your activation key from Aqua Computer, enter the key to the box labeled "Enter upgrade key" and click the "Apply" button. The poweradjust 3 unit needs to be restarted after entering the activation key. To do so, save all settings into the poweradjust 3 unit (by clicking the disk symbol in the device list) and shut down your PC. Wait for a few seconds before turning the PC on again.

11.4. Current measurement calibration

If you detect inaccuracies in the current readings, you can make corrections here. In general, this should not be necessary. The current measurement is a purely informative value and not relevant for control functions.

11.5. aquabus configuration

Before connecting poweradjust devices to an aquaero 5/6 controller, each poweradjust device has to be configured to an individual aquabus address. You may skip this step if only one poweradjust device is connected. Addresses 50 through 57 are available for poweradjust devices.

11.6. External temperature sensor

If you detect inaccuracies in the temperature sensor readings, you can make corrections here. In general, this should not be necessary.

11.7. Flow sensor

If a flow sensor is connected to the poweradjust 3 unit, set up the flow sensor input in the lower region of the screen. The current sensor reading is displayed as well.

11.8. Firmware update

The aquasuite software contains the current firmware files for all supported Aqua Computer devices. The button "Update firmware to version xxxx" will only be displayed if the current firmware of the device is not up to date. In this case, click the button to perform a firmware update. During the update process, do not disconnect the device from the PC and do not power down the PC! After the firmware is successfully updated, the aquasuite software will be automatically closed. Upon next start-up, the device has to be configured anew.

12. Playground (aquasuite)

Click the entry "Playground" to configure Virtual Software Sensors, global profile management and hotkeys.

12.1. Input values



Input values defined in this section can be manipulated by individually configured control elements, for example sliders or buttons.

Create a new input value by clicking the plus symbol in the upper right corner of the "Input values" window and configure the properties as desired. A name, an icon, a unit, a range of values as well as a initial value can be assigned to each input value. This new input value will then be available to be displayed on overview pages and in the quick view section and can be used as a data source for software sensors and virtual software sensors.

In the lower area of the window, control elements can be created and configured to manipulate the input value. These preconfigured control elements can then be used for overview pages or in the system tray.

12.2. Virtual Software Sensors

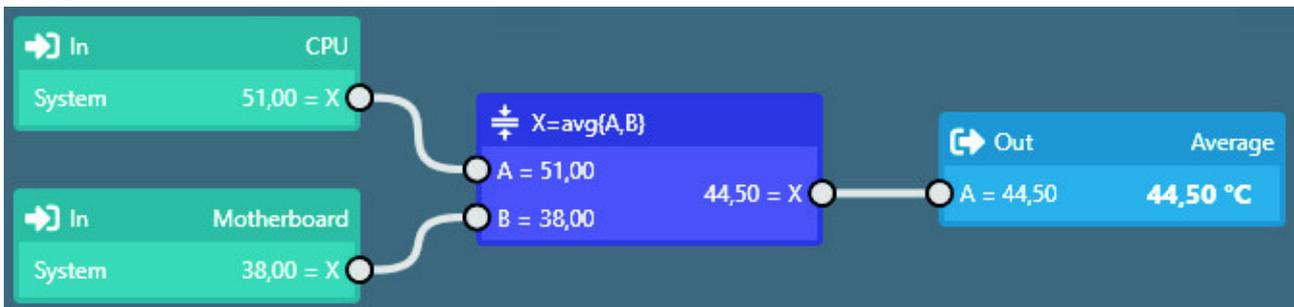


Virtual Software Sensors can be used for extensive yet easy to use adaptation and calculation of sensor values using mathematical and logical functions as well as filters.

Create a new Virtual Software Sensor by clicking the plus symbol in the upper right corner of the “Virtual Software Sensors” window. Each Virtual Software Sensor always has an “Out” element which will provide the resulting sensor value. In the settings dialog of this element, the name and unit of the sensor can be configured. You can now add data sources and function blocks to the lower area of the sensor window and connect inputs and outputs of the blocks with lines. Connect the output of the last function block with the “Out” element.

The resulting virtual sensor can be used within the aquasuite software, for example for overview pages, additionally it may be transmitted via USB connection to connected devices that feature software sensors.

The following (very simple) example calculates the average out of two temperatures:



Virtual software sensors are updated once per second and re-calculated with the numbers valid in that particular moment. When using fast changing input values, extreme values can therefore either be used or ignored for the calculation. No smoothing or averaging is taking place.

12.3. Output actions



While the virtual software sensors are used as a value within the aquasuite, output actions configured in this section are used to trigger events. Various notification events including emails and MQTT messages are available. Additionally, external programs can be started.

Create a new output action by clicking the plus symbol in the upper right corner of the “Output actions” window and configure the properties as desired. Each output action always has an “Output” element which represents the event itself. In the settings dialog of this element, the event to be executed can be selected and configured.

You can now add data sources and function blocks to the lower area of the window and connect inputs and outputs of the blocks with lines. Connect the output of the last function block with the “Output” element. The event will be executed when the input of the “Output” element reaches a value greater than zero.

Output actions are updated once per second and re-calculated with the numbers valid in that particular moment. When using fast changing input values, extreme values can therefore either be used or ignored for the calculation. No smoothing or averaging is taking place. Example: If thresholds are exceeded for very short periods of time lasting less than one second, the action can be executed or not be executed seemingly at random, depending on whether the thresholds is exceeded in the exact moment the calculation is performed.

12.4. Global profiles



The global profile management can be used to conveniently change settings in multiple devices simultaneously and activate desktop pages. Individual actions can be defined for each of the four profiles, switching between profiles can either be done manually or automatically depending on configurable rules.

In order to use this feature, set up profiles within the individual device configurations first. These profiles can then be activated using the global profile management. Not every type of device supports profiles.

Buttons in the upper window area can be used to switch between global profiles. Alternatively, the profile icon in the title bar of the aquasuite window or a profile icon in the system tray may be used.

Example use cases: Switching of LED illumination settings depending on current time of day or modification of fan settings when a graphics application is launched.

Notice for profile activation depending on running applications: During configuration of the respective rule in the aquasuite, the application to be configured must already be running. The application selection within the aquasuite will always show currently running applications and processes only.

12.5. Hotkeys



Hotkeys are key combinations that will be processed system-wide and can activate global profiles or desktop pages. The configured key combinations will be registered in the operating system and be processed by the background service. If the configured actions only use the profile management, the aquasuite does not have to be running for hotkeys to be operational; if desktop pages are used, the aquasuite must be running.

Do not use key combinations for this function that are required by other applications.

13. aquasuite web

Click the entry "aquasuite web" to publish data on the internet or import data from the internet. The server for this service is operated by Aqua Computer and provided for use with the aquasuite, without warranty for error free operation or perma-

ment availability. Aqua Computer reserves the right to limit or cancel this service at any time.

13.1. Data export



To publish data, create a new export data set by clicking the plus symbol in the upper right corner of the “Data export” window. The name of the data set may be modified to meet your requirements. You may then add the data sources to export by clicking the plus symbol in the “Data sources” window section. By clicking the gear symbol, the name of the corresponding value can be changed. Up to 30 data sources can be added to each export data set, the total number of export data sets is limited to 10. All selected values will be transmitted to the Aqua Computer server by the Aqua Computer background service approximately every 15 seconds, even after closing the aquasuite.

Notice regarding data security: All data contained in the configured export data sets is transmitted to the Aqua Computer server with transport security. The server stores the data set in volatile memory until a new data set is received or until 10 minutes have passed. Data received is not permanently stored, data is also not correlated to IP addresses or other personal data. Data on the server may be accessed by anyone without restrictions, furthermore automatic data collection and recording through third parties is possible. Use the data export feature for data that you want to publish publicly and are allowed to do so only.

13.2. Data access



Published data can be obtained from the Aqua Computer server in various formats. Generally, the “access key” is required to access data.

In addition to access through any internet browser and importing data into the aquasuite, data is also available in JSON format and compatible to Circonus. Furthermore, the server generates banner images in two different sizes from the transmitted data, suitable to be included in forums signatures. The code required for the Aqua Computer forums is provided for your convenience.

13.3. Data import



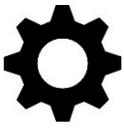
To import a data set from the Aqua Computer server, the “access key” of the data set is required. The access key can be found in the aquasuite on the computer providing the data in the “Data access” section.

Create a new import entry by clicking the plus symbol in the upper right corner of the “Data import” window. Enter the access key of the data set to be imported. Up to 10 data sets (each containing up to 30 values) can be configured.

In order to verify that data is being imported, use the “Data quick view” feature in the aquasuite. Navigate to “Data from Aqua Computer service”, then “aquasuite web”. For each imported data set, you should find an entry with the name of the

data set containing the individual values. It may take a few seconds before imported data is displayed.

14. Basic settings (aquasuite)



Click the entry "Settings" below the headline "aquasuite" to access basic settings for language, units and start-up of the software.

14.1. Language

Select a language from the drop down menu. After changing the language setting, the software will have to be restarted.

14.2. Create overview pages

After activating the "Generate device overview pages", new overview pages with default settings will be created for all devices.

14.3. Reorder menu items

The order in which overview pages and devices are displayed in the list can be adjusted to your preference. Activate the reorder mode by clicking the "Edit menu order" button or by clicking and holding one of the elements for a few seconds. Sort the list items by clicking the arrow symbols and exit the reorder mode by clicking the check symbol on the right side of the window when done.

14.4. Units

Select the units to be used for temperature and flow values from the drop down menus. After changing these settings, the software will have to be restarted.

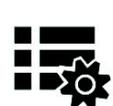
14.5. Event log

Events from various parts of the aquasuite can be saved to text files. Use the buttons to view the files either internally in the aquasuite or with an external program.

14.6. Application start-up

You may customize start-up behavior to suit your preferences. You may also select to hide the task bar symbol of the software when minimized.

14.7. Service administration



The background service configures special USB settings for all connected Aqua Computer devices, provides hardware data, software sensors, profile management, aquasuite web and Playground and should therefore always be active.

The hardware monitoring features of the background service can be disabled for specific categories if errors occur. Especially when using hardware monitoring software of different manufacturers at the same time, conflicts can occur when accessing data. Deactivate the hardware monitoring feature of the aquasuite or parts of it in this case.

When maintenance mode is activated, all optional modules of the background service are deactivated. This is useful in case of erroneous settings in the Playground, in particular if a system shutdown is configured and triggers too often. Therefore, in default configuration maintenance mode is automatically enabled if the computer is shut down three times by this feature (recommended setting).

14.8. Audio and video



The background service can analyze audio and video data and provide it to connected devices. Both functions can be enabled and disabled separately.

Notices for video analysis: Screen content preventing analysis by DRM or similar methods cannot be analyzed. If a graphics card is configured for variable refresh rate or a modified refresh rate, video analysis may fail; please deactivate this function in the graphics settings of the operating system if necessary.

14.9. Updates and update service



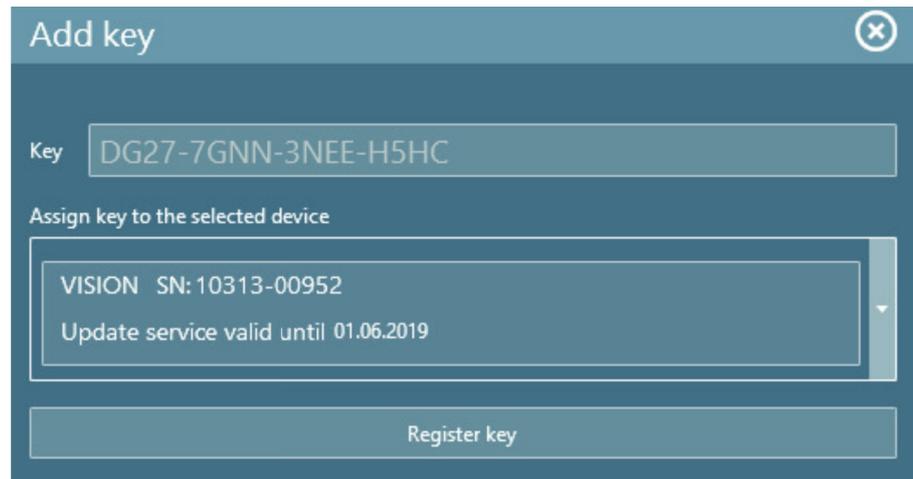
For software activation, all aquasuite versions starting with version 2017 require an active update service for the initial release date of the respective version. Update service periods are generally assigned to individual devices, brand-new devices automatically contain update service for a specific period depending on the type of the device. For software activation, at least one device in the computer must contain a corresponding update service period that includes the release date of this software version. If a valid update service period is detected for at least one device, all devices connected to the computer can be used with this version. It is not mandatory that each device has a corresponding update service period. For update service validation, the aquasuite requires an internet connection.

After successful validation, a file containing current data is stored on the computer. A re-validation is performed only if a new software version (update) is installed or upon connection of new devices. New devices can not be used prior to re-validation, even if other devices with corresponding update service periods are connected at the same time.

To purchase update service, please use the “Buy” button, which will open a website with current prices and payment options.

If you have received a key for update service with a device or bought one separately, you may enter the key after clicking the “Register” button. Select a currently

connected USB device from the list for update service assignment. After clicking the “Register key” button, the update service period is permanently assigned to the selected device and stored on the Aqua Computer update server. The key will not have to be re-entered after re-installation of the software or transfer of the device to another computer, but transferring the update service period to another device is not possible.



During update service validation and software activation, device serial numbers and a calculated computer ID are transmitted to and stored on the update server. No further personal information such as IP addresses are stored.

14.10. E-mail and MQTT accounts



Accounts for sending e-mail or MQTT messages can be configured. These accounts can then be used to send messages in the “Outputs” section of the Playground.

15. Technical details and further instructions

15.1. Technical details

Dimensions W x H x D:	47 mm x 41 mm x 36 mm
Power supply voltage:	12 V DC $\pm 5\%$
Power supply current:	max 5.0 A
Fan output voltage:	0-12 V
Fan output current:	max. 3 A at 12 V, short-term load 4.5 A
Fan output continuous power: max.	36 W at 12 V
Speed signal connector:	“open collector” max. 30 V / 100 mA
Ambient temperature range:	10 to 40 °C (noncondensing)

15.2. Care instructions

Use a dry and soft cloth for cleaning. All electronic components and headers must not get in contact with coolant or water!

15.3. Waste disposal

This device has to be disposed of as electronic waste. Please check your local regulations for disposal of electronic waste.



15.4. Contact Aqua Computer

We are always happy to answer questions regarding our products and to receive feedback. For answers on frequently asked questions, please also check our website www.aqua-computer.de. You might also want to visit our forums and discuss our products with experienced moderators and thousands of members – available 24/7. To get in direct contact with our customer support team, we offer several options:

Email: support@aqua-computer.de

Postal address: Aqua Computer GmbH & Co. KG
Gelliehäuser Str. 1
37130 Gleichen
Germany

Tel: +49 (0) 5508 9749290 (9-16 h CET, German and English language)