aqua computer farbwerk 360 USB RGB LED Controller User Manual

Contents

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Product Information

Specifications

- **Product Name**: FARBWERK 360
- **Manufacturer**: Aqua Computer GmbH & Co. KG
- **Current Version**: February 2024
- **Language**: English (Also available in Deutsch)

Product Usage Instructions

Safety Precautions:
Before using the FARBWERK 360, read all safety precautions provided in the manual to ensure safe operation.

Scope of Delivery:
Check the contents of the package to ensure all components are included as per the list provided in the manual.

Assembly Instructions:
Follow the step-by-step assembly instructions provided in the manual for proper installation of the FARBWERK 360.

Electrical Connections:
Connect the device to the appropriate power source as instructed in the manual to avoid any electrical issues.

Aqua Suite Software:
Install and configure the aqua suite software following the detailed instructions in the manual for optimal performance of the FARBWERK 360.

Preface

The farbwerk 360 is an integrated RGBpx effect controller for up to 360 individually addressable LEDs. Additionally, the device is equipped with four temperature sensor inputs, one flow sensor input 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 especially the illustrations in this manual.

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!
- 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!

Scope of delivery

- One farbwerk 360 controller
- Two RGBpx LED strips 32 cm, width 10 mm, 15 addressable LEDs (replacement part no. 53268)
- Two RGBpx cables, length 50 cm (replacement part no. 53261)
- One internal USB cable (replacement part no. 53215)
- Four screws M3 x 8 mm (replacement part no. 91032 or 91069)
- Four hex nuts M3 (replacement part no. 91017)
- Quick start manual

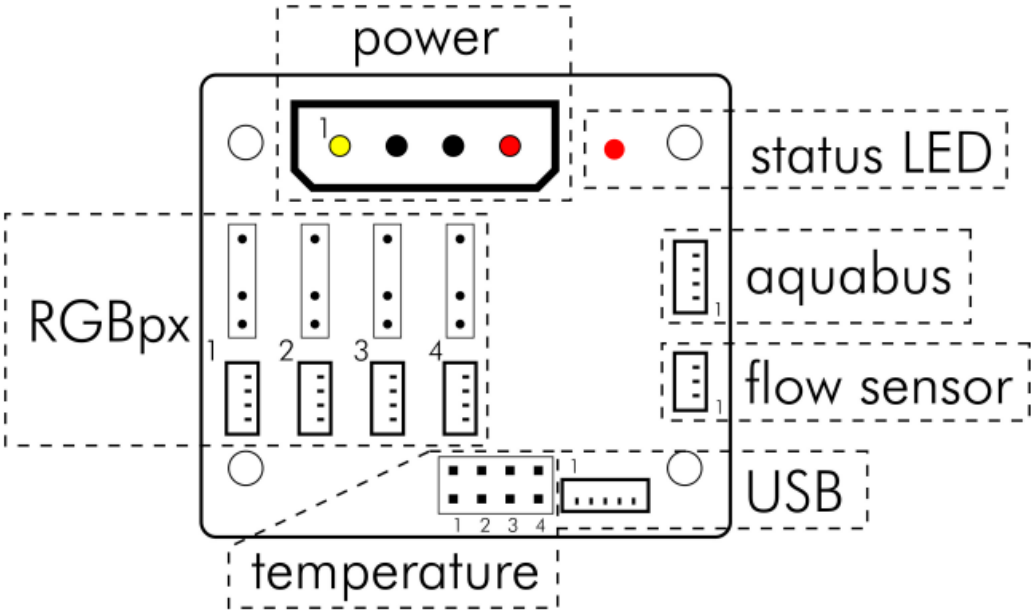
Assembly instructions

The farbwerk 360 controller can be installed inside the PC case using the supplied screws and nuts. In order to access the mounting holes, bend the rubber insulation away from the top cover of the farbwerk 360 controller and remove the top cover. Reinstall the top cover afterwards. Alternatively, double-sided adhesive tape can be used to secure the farbwerk 360 controller inside the PC case.

Make sure that the electric connectors do not have contact with metal parts or other electronic devices inside the PC case, otherwise, malfunctions or destruction of the farbwerk 360 unit or other devices may occur!

Electrical connections

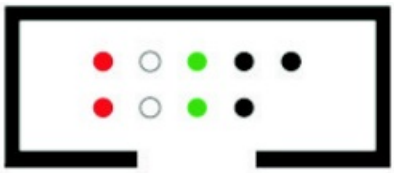
farbwerk 360 connector overview
ATTENTION: Completely turn off your power supply or disconnect the mains power cord from the wall outlet before connecting or disconnecting any cables to/from the device!



Connector “power”
Please connect an HDD power plug of your PSU to this connector. Do not use excessive force but double-check the polarity of the plug if you are having trouble connecting.
Pin assignment:

- Pin 1 not connected
- Pin 2 GND
- Pin 3 GND
- Pin 4 +5 V

Connector “USB”
This connector is used for USB communication with a PC. 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 a 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

Connector “aquabus”
Reserved for future use, no compatible products available as of April 2020. Connector for communication with other Aqua Computer devices.
Pin assignment:

- Pin 1 GND
- Pin 2 aquabus SDA
- Pin 3 aquabus SCL
- Pin 4 +5 V

Connector “flow sensor”
Flow sensor and special interconnecting cable are optional accessories and not included in delivery.
Pin assignment:

- Pin 1 GND
- Pin 2 flow sensor +5 V
- Pin 3 flow sensor signal

Compatible flow sensors:

- Flow sensor with 5.6 mm nozzle (53061, requires cable 53212)
- Flow sensor “high flow” (53068, requires cable 53212)
- Flow sensor high flow LT (53291)
- Flow sensor high flow 2 (53292)

Connector “temperature”
Connector for up to four temperature sensors.
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)

Connector “RGBpx 1/2/3/4”
Connectors for up to 90 addressable LEDs each. For each output, both an RGBpx connector and a motherboard type ARGB connector are available. Use one connector per output only, not both connectors simultaneously. If the RGBpx product to be connected has more than one RGBpx connector, the connector marked with the word “IN” must be used! Additional RGBpx products may be connected to the “OUT” connector.
Compatible RGBpx products:

- RGBpx LED-Strip (53268, 53269, 53270)
- RGBpx lighting set (53271, 53272)
- RGBpx Splitty4 (53267)
- RGBpx Splitty12 ACTIVE (53300)
- RGBpx LED ring for ULTITUBE (34115)
- RGBpx LED ring for aqualis (53274, 53276)
- RGBpx LED ring for 60 mm reservoir (53277)
- RGBpx cable (53259, 53260, 53261, 53266, 53297)

Do not use passive splitters to connect multiple components in parallel. If parallel connection of components is required, use active splitters that supply power from an additional PSU power plug (e.g., RGBpx Splitty12 ACTIVE, order code 53300 – not included in delivery).
Irrespective of this advice, a parallel connection of components may work. The maximum number of LEDs connected to one output must never exceed 90! The farbwerk 360 might detect an implausible or excessive electrical current and disable the outputs. This can be prevented by configuring all unused LED positions to emit the color white. Malfunctions (flickering, wrong colors displayed) may occur due to excessive digital control signal load. In case of problems, use an active splitter.

Status LED
The red status LED is continuously on for a period of approximately ten seconds during startup and then turned off during normal operation. The status LED is blinking during error conditions.

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.

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.

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.

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

cannot 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.
-  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 the USB connection and power supply of the device if necessary.

Overview pages

Current sensor readings and diagrams from all supported devices can be displayed on 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.

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.

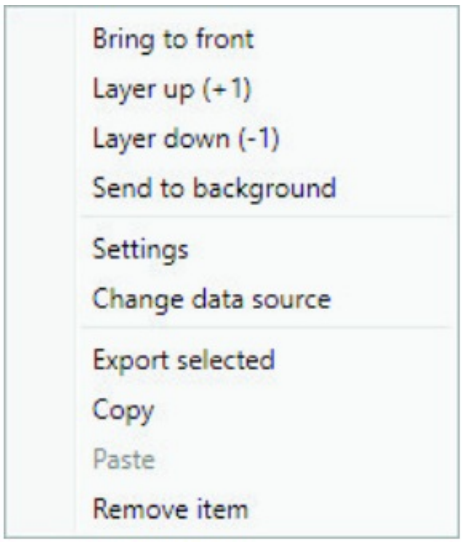
If an overview page is unlocked for editing while desktop mode is active, the page will be displayed in the aquasuite window for editing and the current desktop will be displayed as background for your convenience.

Creating new overview pages and activating edit mode
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 the lock symbol in the page listing.

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.

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 in the desired position.



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.

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.

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.

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 a “User defined” element to an overview page. Switch to the “Display” tab in the 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.

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

Data quick view and data log

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.

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.

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.

Manual data export
Saved data can be exported from the data log into an 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.

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.

Sensor configuration

- Select “Sensors” from the device list below the “farbwerk 360” entry.

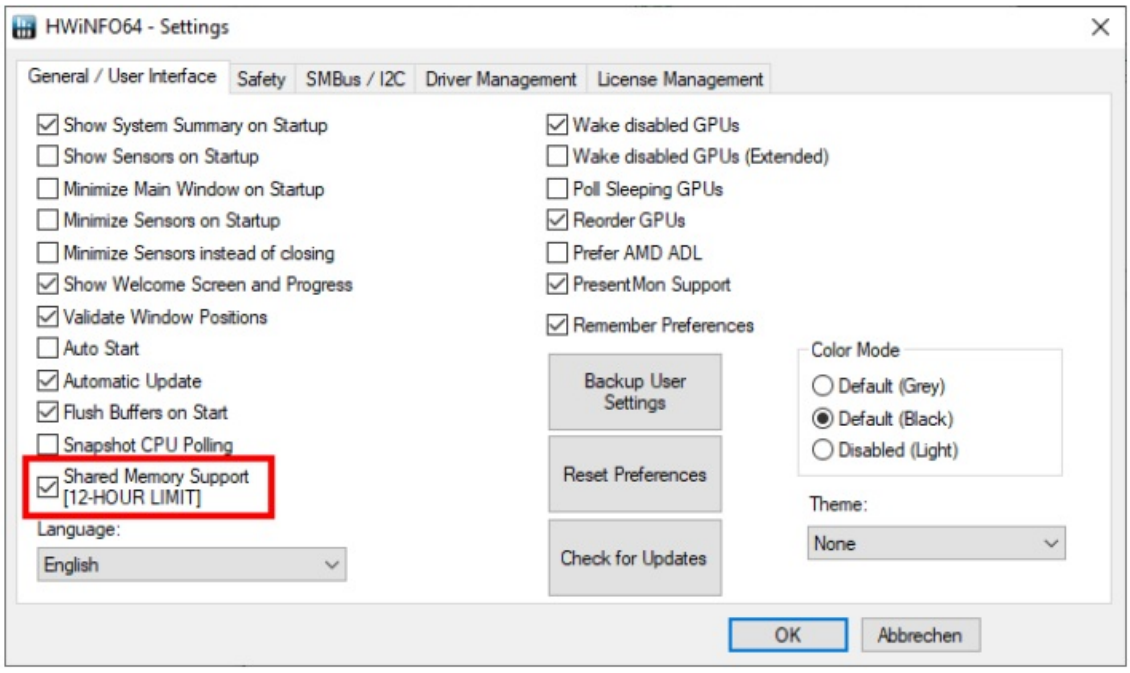
- In the upper area, the 21 available sensors are displayed including current data. In the lower area, the currently selected sensor can be configured.

Hardware temperature sensors
The first four sensors in the list represent the temperature sensor inputs of the farbwerk 360. If necessary, each temperature sensor can be calibrated by adding an offset of ±15 °C.

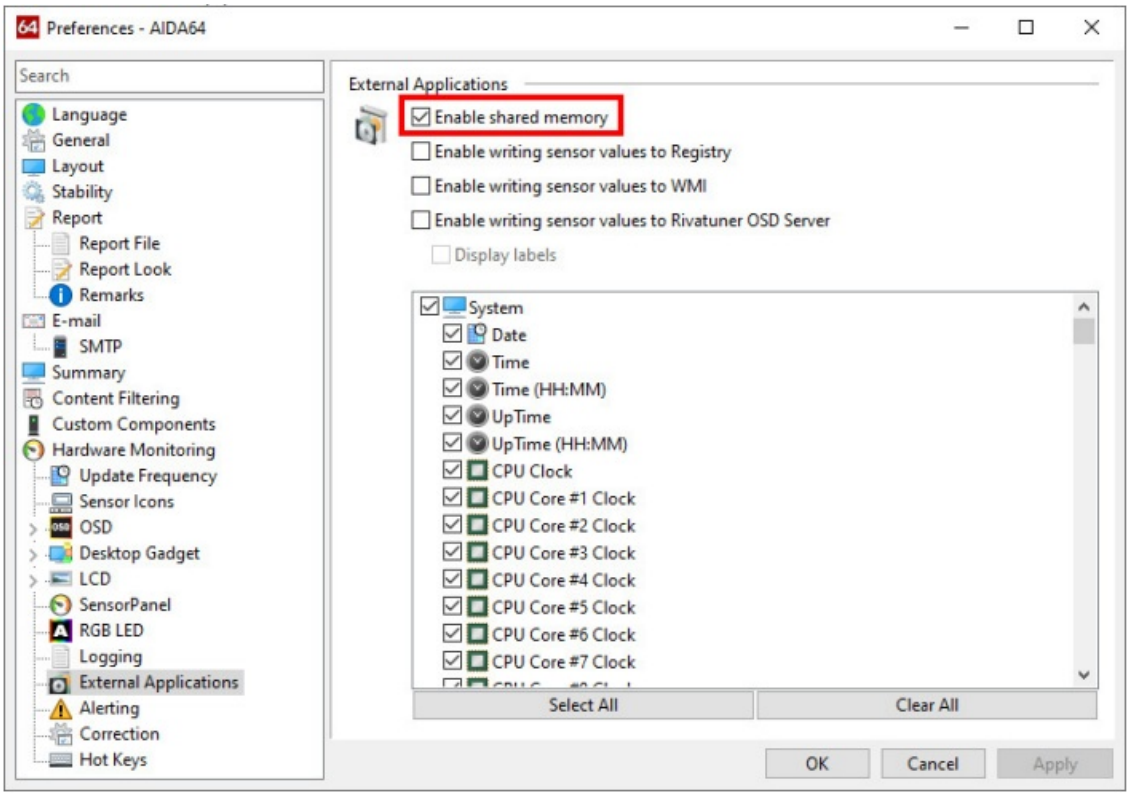
Hardware flow sensor
The fifth sensor in the list represents the flow sensor input of the farbwerk 360. Calibration values for sensors sold by Aqua Computer can conveniently be selected from a drop-down list. Select the appropriate entry for the flow sensor connected to the farbwerk 360. If necessary, the flow rate can be calibrated by ±10 %.

Software sensors

- The last 16 sensors in the list are software sensors and can be used to transmit sensor data that is not physically available to the farbwerk 360 controller from the computer by USB connection.
- During installation of the aquasuite, the background service “Aqua Computer Service” is also installed. This service supplies various data from PC components and imported data from aquasuite web, additionally sensor data provided by third-party software can be accessed. In order to access third-party software data, the third-party software has to be correctly installed, configured, and running.
- Currently, the “Aqua Computer Service” supports data transfer from “HWiNFO” (REALiX, Freeware, www.hwinfo.com) and “AIDA64” (FinalWire Ltd., subject to license fees, www.aida64.com).
- In the HWiNFO settings menu, “Shared Memory Support” must be activated and the “Sensor Status” window has to be open:



- In the AIDA64 preferences menu, “Enable shared memory” must be activated in the “External Applications” sub-menu



- By clicking the plus symbol labeled “Data source”, one of the provided sensors can be assigned to the selected software sensor.
- For each software sensor, a scale factor and an offset may be configured for the manipulation of the displayed sensor value. Data from third-party software regularly requires the scale factor to be adjusted.

RGBpx configuration

1. Select “RGBpx” from the device list below the “farbwerk 360” entry.
2. In the RGBpx overview, select the RGBpx output to be configured.
3. After selecting an RGBpx output, new LED controllers can be added. Position and the number of assigned LEDs can be modified for existing LED controllers, multiple assignments, and controller settings can be modified. Each LED controller can be activated or deactivated for each of the four available profiles as well.

Create and configure additional LED controllers

1. After selecting an RGBpx output, new LED controllers can be added by clicking the plus symbol. Alternatively, use the right mouse button and select “New” from the context menu. Select the desired effect from the superimposed list of available effects. The controller name can be altered from its default as well. Confirm your selection by clicking the check symbol in the lower right corner.
2. The configuration of the newly added LED controller can be modified in the lower area of the window. Each LED controller can be activated or deactivated for each of the four available profiles as well. Most effects offer extensive customization options such as color selection or speed adjustment. Additionally, many effects can be configured to modify effect parameters depending on current sensor data.
3. In total, up to 20 LED controllers can be configured.

Modify existing LED controllers

1. Existing LED controllers can be selected by clicking the corresponding color bars, the configuration of the selected controller can then be modified in the lower area of the window. Each LED controller can be activated or deactivated for each of the four available profiles as well.
2. By clicking the gear symbol, the effect to be displayed can be changed and the controller name can be altered. Confirm your selection by clicking the check symbol in the lower right corner.

Modify LED assignments

1. Existing LED controllers can be moved by using “drag&drop” on the corresponding color bars. The horizontal position of the color bar defines the position of the effect on the connected LEDs. The vertical position determines the priority of the LED controllers, if multiple controllers are assigned to a range of LEDs. Controllers positioned further up in the list have higher priority than controllers further below. (See chapter Transparency as well.)
2. By using “drag&drop”, LED controllers can also be moved to another RGBpx output. The length of the bar (corresponding to the number of LEDs assigned) can be changed by moving the right/left edge of the color bar.

Duplicate LED controllers

1. Select the LED controller(s) to be duplicated and click the duplicate symbol to create new LED controllers using identical configurations. Alternatively, use the right mouse button and select “Duplicate” from the context menu. These duplicated controllers will initially have configurations identical to the original controllers, but can be modified without affecting the original controllers.
2. In total, up to 20 LED controllers can be configured.

Multi-assign LED controllers

1. Select the LED controller(s) to be multi-assigned and click the multi-assign symbol to create multiple entries for the selected controllers. Alternatively, use the right mouse button and select “Multi-assign” from the context menu.
2. These multi-assigned controllers share a common configuration. Apart from the position of the assigned LED area, configuration changes will always affect all of the multi-assigned controllers.
3. In total, up to 60 assignments can be configured.

Delete LED controllers

1. Select the LED controller(s) to be deleted and click the delete symbol to delete the selected controllers. Alternatively, use the right mouse button and select “Delete” from the context menu.

Transparency

1. The default configuration defines all colors of the LED controllers in the farbwerk 360 as “solid”, meaning without transparency. If multiple LED controllers are assigned to a LED or an area of LEDs, the LED controller

with the highest priority determines the color of the LED. As described above, this is always the LED controller the furthest up in the list of controllers.
2. However, the opacity of almost all color definitions in the LED controllers can be individually configured, resulting in a varying level of transparency. The corresponding sliders in the color selection are identified by a drop symbol. This feature can be used to blend and mix colors where overlapping LED controllers are configured.

Sound controlled effects

1. Sound-controlled effects can be used to visualize the current audio output of the computer. A warning in the LED configuration area will notify you if audio analysis has been disabled in the aquasuite.
2. In this case, please enable the feature in the general aquasuite configuration. The general aquasuite configuration can also be used to modify existing audio filters and define custom audio filters.

AMBIENTpx effect
The AMBIENTpx effect replicates the border area of the current monitor content on the configured LEDs. This effect is meant to be used with LED strips installed to the rear of the monitor for background lighting. A warning in the LED configuration area will notify you if video analysis has been disabled in the aquasuite. In this case, please enable the feature in the general aquasuite configuration.

For each configured AMBIENTpx effect, please select the correct monitor, edge, and desktop range to evaluate for the effect.

Prerequisites and limitations:

- The AMBIENTpx effect requires Microsoft Windows operating system version 8.1 or newer.
- Screen content preventing analysis by DRM or similar methods cannot be analyzed.
- Multi-monitor setups must be configured using standard procedures of the operating system. Special features of the graphics card driver like “NVIDIA Surround” or “AMD Eyefinity” must be disabled.
- AMBIENTpx is not available while “NVIDIA G-Sync” is active.

 Profile management farbwerk 360

1. Select “Profiles” from the device list below the “farbwerk 360” entry.
2. The profile management can be used to select up to four profiles manually or automatically. In order to use this functionality, LED controllers must be assigned to the individual profiles as described above.

Manual profile selection

1. Select the profile to be activated by clicking the corresponding button.

Automatic profile selection

1. The active profile can automatically be selected depending on sensor readings, a timer, or depending on running applications. A variety of conditions can be configured, with (applicable) conditions further down the list

having a higher priority than entries further up.

2. The duration of the profile timer can be configured and is available for profile selection as a “data source.” If “Reset timer automatically” is selected, the timer will be reset after the set period of time and count up again, otherwise the timer will stop when reaching the maximum value.

System settings farbwerk 360

 Select “System” from the device list below the “farbwerk 360” entry.

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.

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

Basic RGBpx settings
All RGBpx outputs of the farbwerk 360 can be completely disabled and the brightness of all outputs can be reduced using a slider.

Firmware update
The most up-to-date firmware for all supported devices is always included in the current version of the aquasuite software. The button “Update firmware now” will start the update process for the device firmware. During the firmware 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.

Playground

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

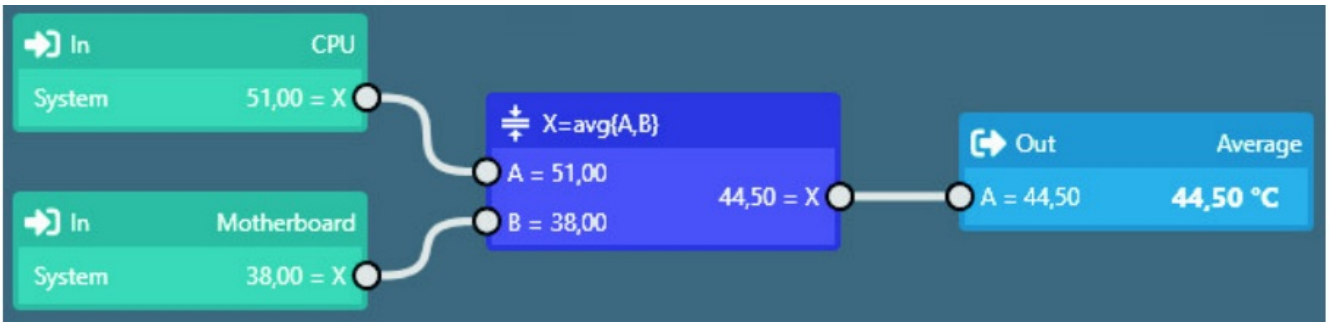
 Input values

- 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 an 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.

 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.

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 threshold is exceeded in the exact moment the calculation is performed.

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 the 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.

 **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.

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

 **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.

 **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 forum signatures. The code required for the Aqua Computer forums is provided for your convenience.

Data import

1.  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.
2. 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.

Basic settings

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

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

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

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.

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.

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.

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

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).

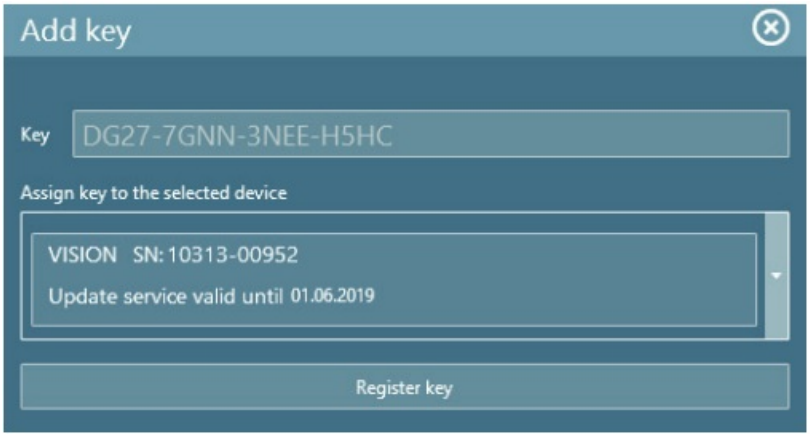
Audio and video

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 a 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.

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 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 cannot 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.

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

Technical details and care instructions

Technical details

- **Power supply:** 5 V DC +5 %, max. 8 A
- **Dimensions:** 54 × 49 x 17 mm
- **Ambient temperature range**: 10 to 40 °C (noncondensing)

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

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

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)

FAQ’S

Q: How can I reset the device to factory defaults?
A: To reset the FARBWERK 360 to factory defaults, navigate to System Settings and select the Factory Defaults

option.

Q: Can I use third-party temperature sensors with this product?
A: It is recommended to use hardware temperature sensors specified for compatibility with the FARBWERK 360 for accurate readings.

Documents / Resources

	aqua computer farbwerk 360 USB RGB LED Controller [pdf] User Manual farbwerk 360 USB RGB LED Controller, farbwerk 360, USB RGB LED Controller, LED Controller

References

- Home | AIDA64
- Aqua Computer Homepage - Home
- User Manual