Change history GrowControl GrowBase "Beta version"

There are usually two firmware versions for a controller.

Beta version: New features - New bugs

Here the newest features are included. The probability for bugs is higher in this version.

The file name or version number of a beta version ends with the letter "b". (e.g. fw504300000b.bin)

Stable version:

This version has been extensively tested. The individual functions have usually passed through the beta version before.

The file name or version number of a stable version ends with the letter "s". (e.g. fw504300000s.bin)

Feedback:

Please give us feedback about your experience with this version or about our products in general.

Both positive and negative feedback is very important for us to become even better.

Please also feel free to give us feedback on how interesting or important a newly added feature or change is to you, or what you would like to see in the future.

If your feedback relates to a specific product or version, please include the firmware version number, product name and, if possible, the serial number found on the bottom of the unit.

If it is an error description, please describe the error and the circumstances under which it occurs as precisely as possible.

This document lists chronologically the changes that have a particular impact on users.

31.10.2023 – 5043.0.00.18b (filename: fw504300018b.bin)

- **Bugfix Sunrise and Sunset "Lighting 0-10V**
  In some scenarios, the sequence of ramps for sunrise and sunset did not work as expected. This has been fixed in this version.
- **Display Info Lighting: Resolution increased**
  The display now has one decimal place. (e.g. 15% → 15.0%)

05.05.2023 – 5043.0.00.15b (filename: fw504300015b.bin)

- **Dimming & shutting off lights when temperatures are too high.**
  On particularly hot days or in cases where fans or air conditioners fail, damage to plants can be limited or avoided by dimming or switching off the lights.
  A function that gradually dims or switches off the lights when the set excess temperature is exceeded has now been implemented.
  The overtemperature can be set separately for the day and CO2 phases.
  If the respective overtemperature is exceeded over an adjustable period of time, the light is shut down in three adjustable phases/steps.
  Sequence:
  1. overtemperature is present
  2. lights are dimmed to the value of phase 1
  3. if after waiting time the temperature is still above the set overtemperature, the lights are dimmed down to the value from phase 2
  4. if, after the waiting time, the temperature is still above the set overtemperature, the lights are dimmed to the value from phase 3.

  Only when the temperature drops below a set threshold again, the lights will be dimmed to the allowed maximum brightness or switched on again.

  The following settings have been added to the Lights Settings section:
  - Function Dimming at Overtemperature ON/OFF
    In order for the lights to be dimmed when the overtemperature is exceeded, the function must be switched on here.
  - Overtemperature Day [°C/°F]
    This value is used during the day phase without CO2 dosing.
  - Overtemperature CO2 [°C/°F]
    This value is used during the CO2 phase
  - Dimming Value at Overtemperature Phase 1 [% or OFF].
  - Dimming Value at Overtemperature Phase 2 [% or OFF].
  - Dimming Value at Overemperature Phase 3 [% or OFF]
  - Phase Overtemperature Duration [minutes]
    This value is used to determine the duration after which the next phase is entered, provided the temperature is still above the set overtemperature after this time has elapsed.

  The following settings have been added to the Advanced Settings section:

- Lights Overtemperature Delay [seconds]
  This value is used to determine for how long the overtemperature must be exceeded for the controller to enter phase 1.
- Lights overtemperature hysteresis [°C/°F]
  This value specifies how far the temperature must drop in order to exit the overtemperature mode. The absolute temperature at which overtemperature mode is left depends on the temperature set in the Lights Overtemperature Settings (Day/CO2) section.
  Example:
  Overtemperature: 30.0°C
  Hysteresis: 3.0°C
  The overtemperature mode is left when the temperature has dropped below 27.0°C again. (30-3 =27)

When the controller is in overtemperature mode, a warning is displayed on the home screen.
E.g.: "Temperature High! Lights: OFF" or "Temperature High! Lights: 20%"

- **Dehumidifying & Humidifying Introduction**
  In principle, it does not make sense to humidify and dehumidify at the same time. This means that a certain distance should be maintained between the humidity setpoint for humidification and the humidity setpoint for dehumidification.
  Until now, the humidifier always uses exactly the humidity setpoint that is either set or resulting from the VPD calculation.
  The setpoint for a dehumidifier is the result of the humidity setpoint and the value Advanced Settings →Setpoint Offset Dehumidifier.
  Dehumidification via the exhaust air has so far been configured with a fixed distance to the humidity setpoint (5 or 10% RH).
  As a result, in situations/phases in which dehumidification is required, the humidity is not reached very well, since dehumidification is already switched off long before the humidity setpoint is reached.
  With the changes from the following paragraphs, a much more flexible setting for dehumidification via the exhaust air is possible. If the settings are changed, they should be selected in such a way that there is a sufficient distance between humidification and dehumidification. This means that humidification and dehumidification should not be active at the same time.
- **Dehumidification via the exhaust air: flexible settings**
  Introduction:
  To dehumidify via exhaust air, there is a setting Dehumidification Mode in the Climate Settings section.
  The option has now been renamed from Set Dehumid Mode to Dehumi Exhaust Mode.
  Here the selection options OFF, Low, Medium, High are now available.
  Previously, the humidity threshold (distance to setpoint) at which dehumidification via exhaust air begins for the respective mode was fixed. In addition, the maximum permitted temperature undershoot for the respective mode was fixed. The exact previous values are mentioned in the user manual. The modes are tuned differently. In the low mode, the controller reacts more cautiously to a humidity overshoot. In the other two modes it reacts more strongly.

  Change:
  In the Advanced Settings menu section the options Dehumidify Exhaust Offset and Dehumidify Exhaust Temperature Undercut have been added. With these values, dehumidification via the exhaust air can now be set much more flexibly.
  Example Dehumidify Exhaust Offset
  With a humidity setpoint of 60% RH and a Dehumidify Exhaust Offset of 2.5% RH, dehumidification via the exhaust air takes place above 62.5% RH.
  If the currently measured temperature is below [setpoint temperature (room) - Dehumidify Exhaust Temperature Undercut], dehumidification is not performed via the exhaust air.
  Example:
  Setpoint temperature (room) = 27.0°C
  Dehumidify Exhaust Temperature Undercut = 7°C
  Dehumidification via the exhaust air only takes place when the room temperature is above 20°C.
  If Dehumidify Exhaust Temperature Undercut is turned all the way up to OFF, the temperature deviation is not taken into account.
- **Dehumidification via exhaust air: change in the way it works**
  Previously, the function was designed as a limitation of humidity, which was relatively aggressive and sudden. If the measured temperature was far below the setpoint temperature (room), the dehumidification occurred very late, because it was always tried to find a compromise between humidity and temperature.
  The function has now been adapted to allow actual control to the desired humidity setpoint via ventilation.
  As before, the controller has to find a compromise between temperature and humidity in some situations. However, especially for situations where the measured temperature is below the setpoint temperature (room), the new dehumidification function works much more accurately and harmoniously.
- **Offset for Humidifier added**

In the Advanced Settings menu section, the option Offset Humidifier has been added. The factory setting is 0%. This means that a humidifier uses exactly the humidity setpoint that is set.
Example Offset Humidifier:
With a humidity setpoint of 60% RH and a Offset Humidifier of 0.5% RH, the humidifier will operate with a setpoint of 59.5% RH.
We have added this setting to allow better "averaging" between humidification and dehumidification.

- **Event Timer: Execution every Xth day**
  Each event timer now has an additional setting Execution rhythm. This can be used to set whether the particular event is executed every day, every other day up to every 28th day.
  Background info: If a certain event has been executed to the end, the current date is saved. In the future, based on this saved date and the set Execution Rhythm, it will be decided whether the event should be executed again. In the Advanced Settings section under Reset Event Dates all saved date entries can be deleted.
- **Multi Out: Always ON**
  Previously, there was already the option to permanently disable an outlet. Now we have added the option Always ON.
- **Message when saving settings**
  Up to now, the info "Settings saved!" was only displayed when saving via a long keystroke + confirmation via Apply & Save. This has been changed so that the message is now always displayed when settings are saved.
- **Improvement Speed display EC fans**
  With some EC-fans the speed display (rpm) worked badly. Sometimes double rpm was displayed sporadically, on other fans completely wrong values were displayed. The reason is a bad quality of the rpm signal at some EC-fans. We have adapted the software so that the detection is somewhat more robust, as far as this is possible with a reasonable effort.
  For some fans this change is not sufficient and the signal needs to be filtered better to get a correct and stable display. Controllers produced in the future will be equipped with an additional filter.
  If the tachometer display works badly for you, and a correct display is important to you, talk to us about it. Then we can supply an external filter.
  The speed display is for information only and it is only displayed if the fan also transmits the speed to the controller. If several EC fans are connected to one port, only one fan should transmit the speed signal.
- **Options pressure sensor calibration moved**
  The Calibrate Pressure Sensor and Pressure Sensor Auto Calibration options have been moved from the Ventilation Settings section to the System Settings section.
- **Change factory settings**
  Multi Out 1 function: intake air AC → Disabled
  Multi Out 1 Function: Exhaust air AC → Deactivated
  The function "AC fan" is used less and less. In addition, this is to avoid the accidental control of other devices with the "AC fan" function.
- **Heating Mat: Small Adjustment**
  The fixed-programmed hysteresis was such that the heating mat did not always quite reach the set temperature, because it switched off too early for some setups. The setting was adjusted.
- **Humidifier PID control**
  The behavior of the PID humidifier control has been slightly adjusted and optimized.
- **CO2 Hysteresis: Small Adjustment**
  In the program, the application of the Hysteresis Setting from the Advanced Settings section has been slightly adjusted. If CO2 dosing is now more frequent than desired, the Hysteresis CO2 value in the Advanced Settings section can be increased slightly.
- **Firmware date and time**
  In the System Settings section, the time at which the firmware was generated is now displayed in addition to the firmware version. This is mainly for internal purposes to easily distinguish different sub-versions.

20.09.2022 – 5043.0.00.14s (File name: fw504300014s.bin)

- **Separate settings AC/EC fans**
  The minimum & maximum settings for AC and EC fans are now completely independent of each other for all phases (day, night, CO2). For each fan (EC exhaust, EC intake, AC exhaust and AC intake), a minimum and a maximum value can now be set for each phase.
  In the menu area "System" it can be selected whether the settings for EC, AC or AC&EC fans are displayed.
  This makes the settings more flexible and easier to understand. In addition, we can avoid the display of some warnings.
  Please check the fan settings after the update!
- **Ramp day/CO2/night setting**
  The duration of the ramp is now entered in minutes. Previously, a more difficult to understand interval duration was entered.
- **CO2: regulation type P and PD removed**
  The regulation types P and PD are not suitable for almost all setups. To avoid irritation and to keep the menu clean, we have removed these options and related settings.

- **CO2 sensor: calibration, filter setting**
  Although the calibration was actually successful, an error was displayed often during sensor calibration. This has been fixed. In addition, the routines for calibration and filter setting have been optimised, making them much faster now.
  The calibration routine was adapted so that the success message is also displayed correctly for the CO2 sensor from version 3.0.0.
- **CO2: small failure correction in CO2 control when switching a CO2 generator**
- **CO2: added minimum time for CO2 dosing to "Advanced Settings"**

28.10.2021 – 5043.0.00.10s (File name fw504300010s.bin)

- **Regulation type "PID" added for humidifier control**

  With the PID control algorithm, more accurate humidity control is possible. The control type can be set in the "Advanced settings" area. In "PID" mode, a humidifier is switched on and off frequently.
- **Regulation parameter Kd for humidifier control added** in the "Advanced settings" section. (differential proportion/factor of the humidifier PD or PID control).
  With a higher value, the control reacts more strongly to changes in the currently measured air humidity value.
- **Lights MIN added**
  The minimum dimming value of the connected lighting 0-10/1-10V can be set here. A sunrise starts at this value. A sunset ends at this value before the lights are switched off.
- **Lights MAX supported up to 115% (boost)**
  Some luminaires support boost control above 100%. This is now also possible with the controller.
  With older controllers, the maximum possible value may be limited to 100% by the hardware.
  The 0-10/1-10V output is designed for 20mA. However, the boost does not work up to 115% at full load:
  5 mA --> approx. 115% max.
  10 mA --> approx. 112% max.
  20 mA --> approx. 100% max.
  Typically, a luminaire requires much less than 1mA.
- **Setting of the set temperature for the heating mat has changed**
  Previously, the heating mat temperature could already be set either to a fixed value or relative to the ambient temperature. This was done via a single value and was somewhat cumbersome/confusing.
  Now it is determined on a separate menu screen in the "Climate settings" area whether the heating mat temperature is to be regulated to a fixed value (absolute/fixed) or to a temperature relative to the ambient temperature.
  CAUTION: After the update, check whether the settings for the heating mat control (day/night) in the "Climate settings" section are correct!
- **Dehumidification via exhaust air**
  The tuning for the "Dehumidify via extract air" function was changed so that the ventilation reacts stronger to high humidity.