DIMLUX

SMARTBOX SERIES

User Manual

Smartbox 6/3

Smartbox 4/0

Smartbox 8/0

THE FUTURE OF GROWING
JUST GOT BRIGHTER.

DIMLUX

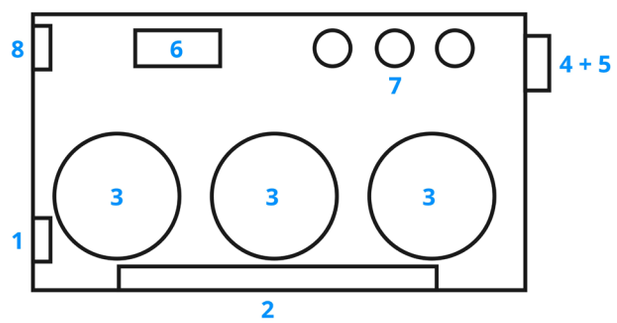
Table of Contents

1. SPECIFICATIONS

1.1 DEVICE LAYOUT & PORTS

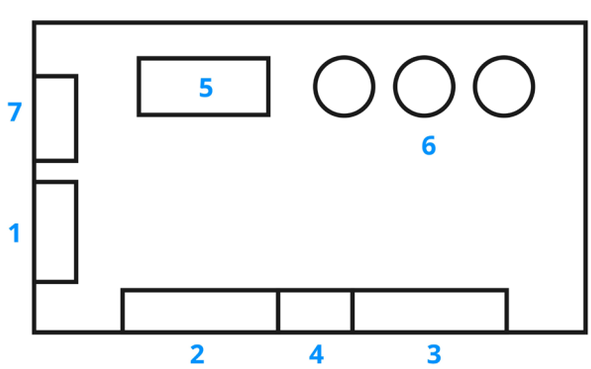
The Dimlux Smartbox units are available in three functional variations and a sub-model for the UK market. The three models each have a distinct port layout but they all share the same user interface, software and configuration. Depending on the chosen model you'll have 4 to 8 smartports (more on that in chapter 2) and three controlled power outlets on the 6/3 model, chapter 1.2.

1.2 SMARTBOX 6/3 - EU & UK VARIANT



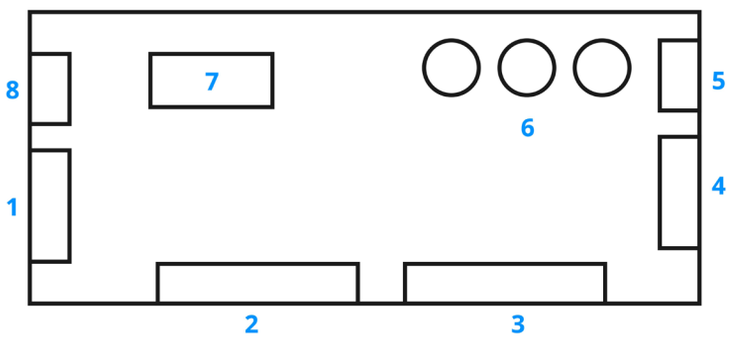
1. IN/OUT	communications port - RJ10
2. P1 to P6	smartports - RJ45
3. OUT1 to OUT3	controlled power outlets - 230V EU or UK
4. 16A fuse	fuse, max 15 ampere over 3 ports - T16A H500V
5. Powersupply	fixed power cord - 230V EU or UK
6. Display	user interface display
7. Controlbuttons	control buttons UP, DOWN, ENTER
8. USB 2.0 port	USB port for software updates

1.3 SMARTBOX 4/0



1. IN/OUT	communications port - RJ10
2. P1-P2	smartports - RJ45
3. P3-P4	smartports - RJ45
4. USB 2.0 port	USB port for software updates
5. Display	user interface display
6. Controlbuttons	control buttons UP, DOWN, ENTER
7. Power supply	powersupply adapter AC 100-240V 50/60Hz DC 16V 1.5A

1.4 SMARTBOX 8/0



1. IN/OUT	communications port - RJ10
2. P1-P2-P3	smartports - RJ45
3. P4-P5-P6	smartports - RJ45
4. P7-P8	smartports - RJ45
5. USB 2.0 port	USB port for software updates
6. Controlbuttons	control buttons UP, DOWN, ENTER
7. Display	user interface display
8. Power supply	powersupply adapter AC 100-240V 50/60Hz DC 16V 1.5A

2. INTRODUCTION

2.1 WHAT IS A SMARTBOX

Smartbox 6/3 (EU)

Airlux Technologies is a leader in the design, production, and delivery of advanced climate & lighting control solutions tailored to indoor farming and horticulture. Our flagship systems—the Opticlimate Revomax and Dimlux Xtreme series—set the standard for innovation and performance in the industry.
To ensure optimal operation, security, and reliability, we've also developed our own line of control systems. The Smartbox series is a range of purpose-built control units, engineered to provide maximum precision and seamless system integration. This manual will guide you through connecting and configuring non-smart Airlux and third party climate& lighting control hardware to your Smartbox.

2.2 VARIATIONS

Smartbox 8/0

To ensure the best fit for your specific system setup, the Smartbox series is available in three model variations and a sub version for the UK market. These models differ in their port configurations, which define their intended applications. Our intuitive naming convention makes it easy to identify the right version for your needs: each Smartbox model is designated by two numbers—the first represents the number of smartports, and the second indicates the number of controlled power outlets. More on ports can be found in Chapter 2.3.

The available model variations are:

- Smartbox 6/3 - 6 smartports, 3 controlled power outlets (EU variant)
- Smartbox 6/3 - 6 smartports, 3 controlled power outlets (UK variant)
- Smartbox 8/0 - 8 smartports, 0 controlled power outlets
- Smartbox 4/0 - 4 smartports, 0 controlled power outlets

Smartbox 4/0

While the port configurations vary, all models share the same core software and control capabilities. This ensures a user-friendly and consistent experience across the range. Each unit comes pre-configured and ready for seamless integration with our RevomaxII, XtremeII, and humidity-control systems. Simply select your use-case and you're ready to go!

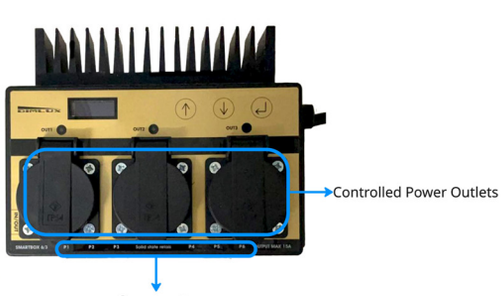
Repeaterbox

When your Smartbox does not have enough smartport connections, our repeaterbox can easily expand the compatible Smartport selection on your model. It will expand the compatible ports eightfold and repeats it's function

Repeaterbox

2.3 PRIMARY PORTS

The Smartbox series comes with pre-configured primary ports in two distinct types. In both cases, it is important to note that the ports are pre-programmed based on the intended use case. For example, the fan in a water cooler in a basic Revomax setup is usually controlled by a Smartbox 6/3 and must be connected to the first controlled power outlet. This approach ensures that installation is easy and straightforward. All specific use cases and designated ports will be addressed in Chapters 3, 4, and 5.



Smartport

The smartports all use industry-standard RJ45 cabling that can host a variety of sensors, humidifiers and more advanced control options that use inverters for even more precise control.

Controlled Power Outlets

The controlled power outlets on the 6/3 model are designed to control non-smart Airlux Technologies as well as 3rd party peripherals like fans, de-humifiers and waterpumps.

USB & Communication

In addition to the primary control ports described above, the Smartboxes also feature a USB port for software updates and a communications port for connecting to other control hardware. More on this can be found in Chapter 6.

Smartbox 4/0 with USB and Communication port

2.4 MODES

The Dimlux Smartbox series is designed and configured with three distinct use cases in mind: use with a Revomax and water cooler, use with an Airlux Technologies humidifier, and use with an XtremeII LED lighting setup. In Chapters 3, 4 and 5 , we'll take a closer look at all three modes/use-cases.

Watercooler mode

In a setup with a Revomax II and water cooler, the Smartbox 6/3 is used to connect a temperature sensor, a water cooler, and a water pump. The Smartbox manages the pump and water cooler to ensure operating temperatures remain stable. In addition to the Smartbox 6/3, a Dimlux Smart Remote Controller is used for daily operation and configuration.

Alternatively, in this mode, you can connect inverters to enhance control of the water cooler and water pump. In this case, a Smartbox 8/0 or 4/0 can also be used, depending on the number of systems you wish to control. As this variant is more complex to build and configure, please contact your dealer or visit us at airluxtechnologies.com for support with this advanced operating mode.

OptiClimate industrial water cooler

Humidification mode

In many indoor, vertical farming and other horticulture situations, the humidity level is too low for healthy crops. The Smartbox 6/3 can be used to control our high-capacity humidification system. Connect our advanced RH (relative humidity) sensor and optionally a water leakage and light sensor to enhance the use and convenience of this setup further.

OptiClimate Humidifier

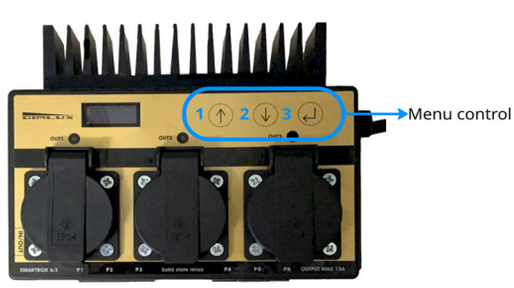
Maxi Controller mode

In situations with Dimlux XtremeII LED or HPS fixtures, a Dimlux Maxi Controller can be used to control the lighting. The Smartbox 6/3 can connect climate control systems such as heaters, dehumidifiers, and fans to the system, allowing you to operate from a single location and device. In this mode, the Maxi Controller takes over control, and the Smartbox is used as a breakout box to connect all the necessary hardware and sensors.

Dimlux Maxi Controller

2.5 CONTROLLING THE MENU

When in operation, the main display shows relevant operating values such as temperature and the current system mode. The menu is controlled via a three-button interface. Access the menu by pressing the Up button, use the Up and Down buttons to navigate, and press Enter to confirm your input. The available menu options change depending on the selected operating mode.



Smartbox with control buttons

1 = UP / 2 = DOWN / 3 = ENTER

For readability purposes, in this manual actions will be defined as
UP - DOWN - ENTER

All menus will be fully explained in the corresponding chapter:

- chapter 3: Watercooler mode
- chapter 4: Humidification mode
- chapter 5: Maxi Controller mode

3. WATER COOLER MODE

3.1 MODE EXPLAINED

The water cooler mode is short for 'RevomaxII, Water Cooler and Pump' mode. It controls not only the water cooler but is also used in conjunction with a Revomax II and pump. For more information on this setup, visit our knowledge base at **opticlimate.com/knowledge-base/.** This mode is the default factory setting.

OptiClimate industrial water cooler

OptiClimate industrial water pump

Important settings and characteristics

- The water cooler mode can be used in two variations: a basic control and an advanced control version.
- The basic control mode only applies to the Smartbox 6/3.
- The advanced control also applies to the 8/0 and 4/0 versions.
- The basic and advanced options use the same basic programming, regardless of the Smartbox variant you use. No settings need to be changed.
- The default temperature setting is set to 32 degrees Celcius, this is the correct setting for the RevomaxII
- When using pressure sensors, the system can automatically shut down. In some situations, the economic impact of the system shutting down can be greater than the cost of replacing a pump. Assess your situation carefully.
- The Smartboxes are also compatible with our older systems, the PRO3 and PRO4. The settings are the same except for the temperature, which needs to be set to 29 degrees Celsius.

3.2 PORT CONFIGURATION

As stated earlier, the port configuration and programming (i.e. the behaviour of the ports) are the same across the different Smartbox variations in Water Cooler mode. The difference lies in the availability of ports on each model. Since the basic control setup requires controlled power outlets, the 6/3 is the only suitable option. The advanced setup can be built using any of the three models, depending on the scope of your project. The in/out port for external control is explained in chapter 3.

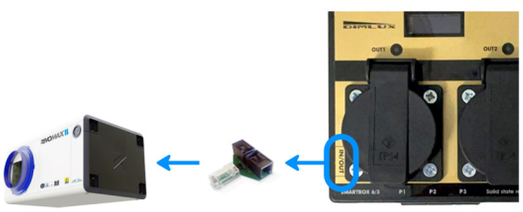
MODEL	**Smartbox 6/3**	**Smartbox 4/0**	**Smartbox 8/0**
Basic Control comp.	YES	NO	NO
Advanced Control comp.	YES	YES	YES
IN/OUT	RevomaxII Start-Stop	RevomaxII Start-Stop	RevomaxII Start-Stop
Controlled Power Outlets			
OUT1	Water Cooler	n/a	n/a
OUT2	-	n/a	n/a
OUT3	Water Pump	n/a	n/a
Smartports			
P1	Temp sensor in	Temp sensor in	Temp sensor in
P2	Temp sensor out	Temp sensor out	Temp sensor out
P3	Inverter Cooler	Inverter Cooler	Inverter Cooler
P4	Inverter Pump	Inverter Pump	Inverter Pump
P5	Pressure sensor in	n/a	Pressure sensor in
P6	Pressure sensor out	n/a	Pressure sensor out
P7	n/a	n/a	Inverter Cooler 2
P8	n/a	n/a	Inverter Pump 2

* n/a = not available

3.3 CONNECTING THE REVOMAXII SYSTEM

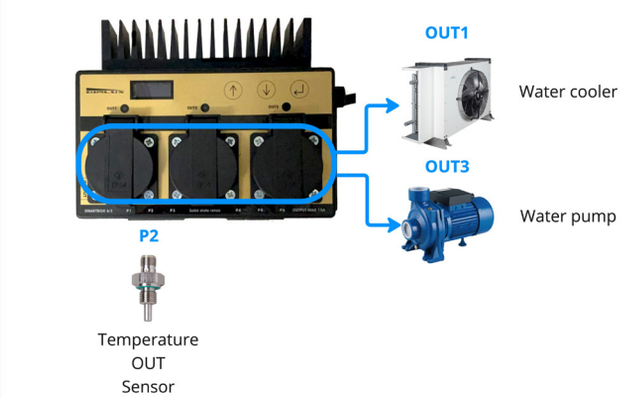
To connect the Smartbox and its peripherals (water cooler, water pump, inverters, sensors) to the Revomax II (or an older PRO3 or PRO4 model), a communication cable and a start-stop sensor are required. The system with a RevomaxII is controlled with a Smart Remote Controller. For instructions on how to connect and operate the Revomax II further, please refer to the Revomax II manual available on our knowledge base at airluxtechnologies.com.

Smart Remote Controller



3.4 SCHEMATIC - BASIC CONTROL

In the basic control setup, we'll be using the Smartbox 6/3. The schematic below shows the required temperature sensor, water cooler, and water pump. The Smartbox is programmed to operate these components: a temperature sensor to measure water temperature; a water cooler to cool the water heated by the Revomax II; and a water pump to circulate the water. Make sure to connect the elements to the correct port. For more information and instructions on building a complete system, please refer to the Revomax II manual and video series.



3.5 SCHEMATIC - ADVANCED CONTROL

In the advanced control setup, you can use a Smartbox 4/0 when working with temperature sensors and a single set of inverters. If your situation requires pressure sensors, (to shut down the pumps when pressure drops) and/or a second pair of inverters (for larger installations), the Smartbox 8/0 is the recommended option.

As stated earlier, a Dimlux repeater can replicate the inverter ports eightfold. This allows even the largest installations to be controlled from a single, local Smartbox. The repeaterbox copies the ports settings to eight new ports. For instructions on connecting inverters and creating the advanced setup, please refer to the Revomax II manual at airluxtechnologies.com.

Smartbox 4/0

Controls a maximum of two temperature sensors and two inverters. One for the water cooler, one for the water pump. With a repeaterbox, one of the inverter-ports can be expanded into eight inverter ports of that type. A second repeaterbox can expand the other port. The repeaterbox copies the function of the source port one to one.

Smartbox 8/0

In addition to the 4/0 functionality, the 8/0 model can also control two pressure sensors and a second pair of inverters without repeaterboxes.

3.6 MENU IN DETAIL

The menu of the Smartbox changes based on the mode selected. Water cooler mode is default mode when you take the unit out of the box. Below is the menu structure and explanation on the settings you can change:

Top menu - Status

Watercooler - mode selected
Temp In - Current temperature input
Temp Out - Current temperature output
Fan & Pump - Current status of water cooler fan and water pump

Select **UP** to enter the menu. Use **UP** and **DOWN** to navigate through the options described below. Use **ENTER** to select the menu. Continue to the value menu and again use **UP** and **DOWN** to change the value. All menus have an **EXIT** option to return to the top layer.

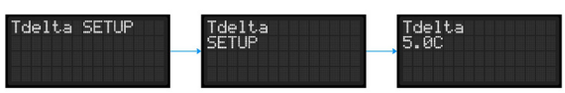
All menus work with the same hierarchy:

T-Out Setup - sets the target temperature in Celcius of the T-Out sensor of the water cooler. Value must be 32 degrees for the RevomaxII or 29 degrees for the PRO3 and PRO4.

- select t-out setup > enter value

T-Delta Setup - this option only applies when using inverters in an advanced control setup. sets the difference in temperature in Celcius between water coming out of the water cooler and coming in again. this must be 5 degrees.

- select t-delta setup > enter value

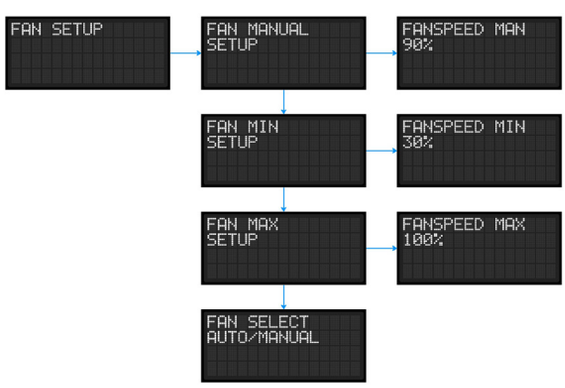


NTC setup - negative temperature coefficient, in other words: temperature sensor. Sets the correction of the sensor, default setting is 0, no correction. Change only when the shown temperature does not correspond with temperature value on the RevomaxII.

- select NTC setup > enter value

FAN setup - sets the minimal and maximum speed of the fan of the water cooler. Standard values are min 10% and max 100% in AUTO mode. In almost all cases the standard values must be used to ensure proper cooling. Do not change without guidance from your dealer or our own specialists.

- select FAN setup > MIN, MAX, AUTO, MANUAL > change value

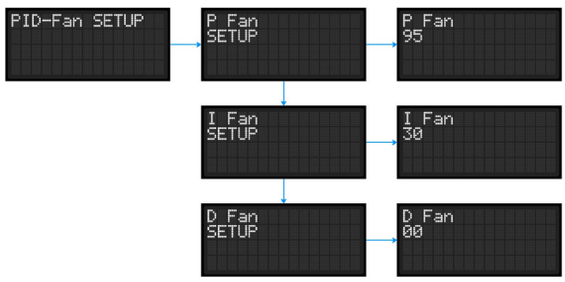


PUMP setup - sets the minimal and maximum speed of the pump. Standard values are min 65% and max 100% in AUTO mode. In almost all cases the standard values must be used to ensure proper cooling. Do not change without guidance from your dealer or our own specialists.

- select PUMP setup > MIN, MAX, AUTO, MANUAL > change value

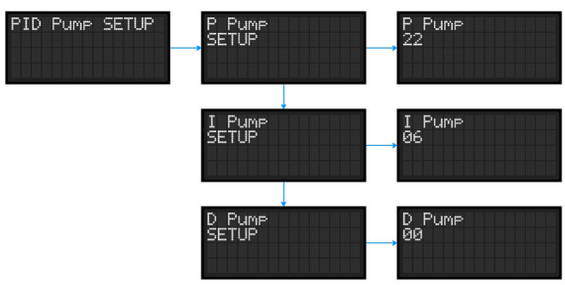
PID FAN setup - sets the charateristics of the fan in the water cooler in scientific PID (proportional, integral, derivative) values. Do not change unless you have a good understanding of the PID terminology and workings

- select P - I - D setup > change value



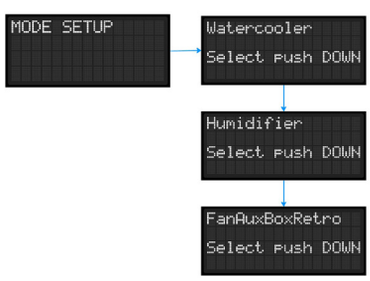
PID PUMP setup - sets the charateristics of the pump in scientific PID (proportional, integral, derivative) values. Do not change unless you have a good understanding of the PID terminology and workings

- select P - I - D setup > change value



MODE setup - change the operating mode to humidificaton or maxi controller mode.

- select mode HUMIDIFICATION - FANAUXBOXRETRO (maxi controller mode) > change value

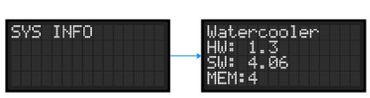


BEEP setup - enable or disable audible tone when clicking on a button

- select on/off > select value

SYS info - Shows vital system information, software version, memory use and status sensors

- select > shows info



EXIT - Return to the status display (top menu)

4. HUMIDIFICATION MODE

4.1 MODE EXPLAINED

OptiClimate Humidifier

The humidification mode is designed to easily operate our high-capacity humidifier. In many indoor, vertical farming and other horticultural situations, the humidity level is too low for healthy crops. The OptiClimate humidification system is operated by our Smartbox 4/0.

The humidifier regulates the humidity in the room by vaporising water and distributing it into the environment, either directly or via an air-hose configuration. Water is poured over anti-bacterial threaded pads; warm, dry air is then forced through these pads by a powerful fan, distributing cooler, moist air into the environment.

To activate the humidification mode, refer to chapter 3.6 and navigate to **MODE setup** and select **Humidification mode.**

Advanced Humidity Sensor

Important settings and characteristics

- This mode is designed to be used with our OptiClimate Humidifier only
- The humidification mode is designed to be used with a Smartbox 4/0, but the 6/3 and 8/0 versions also work
- Uses the supplied special advanced (RS485-Modbus) humidity sensor. The standard RevomaxII RH (humidity) sensor does not work
- No alternative ports are available in this mode

4.2 PORT CONFIGURATION

The port configuration for the humidification mode is limited to the first four ports of the used Smartbox. By default, the Smartbox 4/0 is the best choice as in this mode, only the first four ports are used.

MODEL	**Smartbox 6/3**	**Smartbox 4/0**	**Smartbox 8/0**
Humidification comp.	YES	YES	YES
IN/OUT	not used	not used	not used
Controlled Power Outlets			
OUT1	not used	n/a	n/a
OUT2	not used	n/a	n/a
OUT3	not used	n/a	n/a
Smartports			
P1	Humidifier	Humidifier	Humidifier
P2	Humidity & TempSensor	Humidity & Temp Sensor	Humidity & Temp Sensor
P3	Waterleakage sensor	Waterleakage sensor	Waterleakage sensor
P4	Lightsensor	Lightsensor	Lightsensor
P5	not used	n/a	not used
P6	not used	n/a	not used
P7	n/a	n/a	not used
P8	n/a	n/a	not used

* n/a = not available

4.3 SCHEMATIC

The humidification system can directly be used with just the humidifier and special intelligent humidity sensor. The complete system is available in a convenient package. Just plug in the system as below and set the Smartbox on humidity mode.

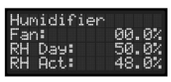
Optionally the system can be enhanced with a water leakage sensor that can shut down the system to prevent further water damage. The other option is a lightsensor that automates the day and night cycle in case you want a different humidity level in each part. Just connect them to the correct port and use the menu in chapter 3.4 for configuration

4.4 MENU IN DETAIL

The menu of the Smartbox changes based on the mode selected. After the humidification mode is selected as stated in chapter 4.1, the menu is changed into the dedicated controls for our OptiClimate Humidification unit.

Top menu - Status

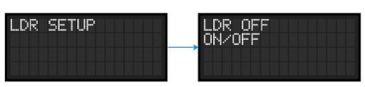
FAN - current speed of the fan in percentage
RH day - Relative Humidity setting for daytime
RH night - Relative Humidity setting for nighttime



Select **UP** to enter the menu. Use **UP** and **DOWN** to navigate through the options described below. Use **ENTER** to select the menu. Continue to the value menu and again use **UP** and **DOWN** to change the value. All menu's have a **EXIT** option to return to the top layer.

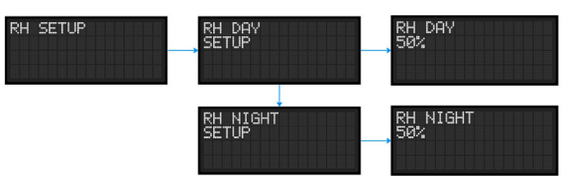
LDR Setup - Light Dependant Resistor setup, sets lightsensor on or off when connected. When on, the day- and night cycle is determined by the lightsensor. When off, the system is always on and uses basic RH setting

- select LDR setup > select on/off.



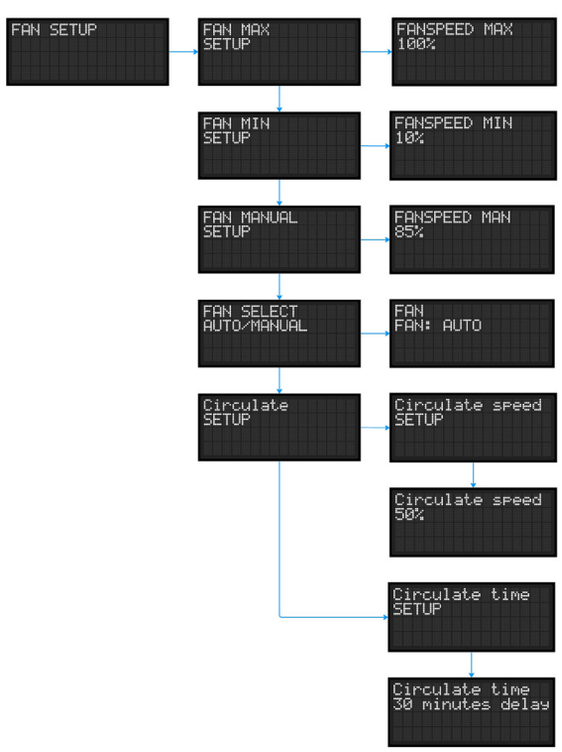
RH setup - Relative humidity setup. Sets fixed target relative humidity value or uses day- and nightcycle with light sensor.

- RH Day > target value in daytime when LDR (lightsensor) is active and light threshold is met (enough light)
- RH Night > target value in nighttime when LDR (lightsensor) is active and light threshold is not met (not enough light)



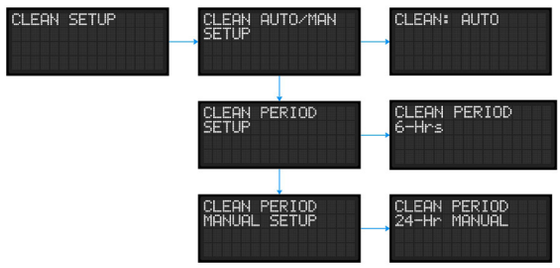
FAN setup - FAN circulation and speed setup. Circulation is the delay (fan keeps running for x-minutes at x-speed) after the system is turned of, or changes into nightmode in minutes.

- FAN Max > set max FAN speed (30-100%). Set at 30% and increase when needed
- FAN min > set min FAN speed (0-40%). Set minimum 10% below max
- FAN select AUTO>MANUAL. Auto is PID (check PID menu) regulated, MANUAL is fixed speed
- FAN manual setup, set MANUAL speed, 0-100%
- Circulate TIME (min) > SET value
- Circulate SPEED (percentage) > SET value



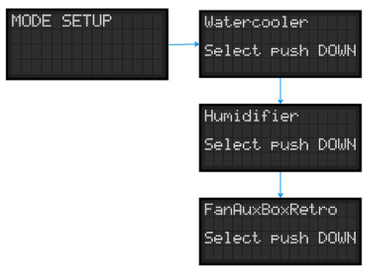
Clean setup - Build-up of dirt and minerals occur when vaporizing water. Clean setup regulates the draining and refreshing of the waterreservoir. The higher the contamination (dust, dirty water and other environmental factors) the shorter the interval. Ask your dealer for advise or visit us at Airluxtechnologies.com

- Clean AUTO (uses period setting) > MANUAL (1-72 hrs interval)
- Clean PERIOD > sets 3-6-12-24 hrs interval cleaning window



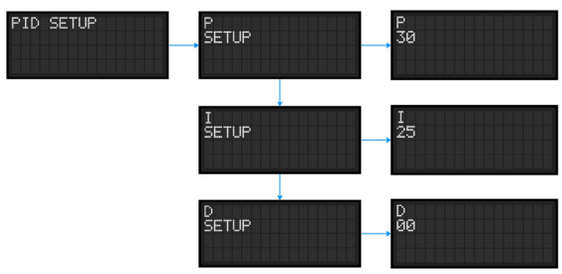
MODE setup - change the operating mode to humidificaton or maxi controller mode.

- select mode WATERCOOLER - FANAUXBOXRETRO (maxi controller mode) > change value



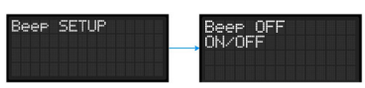
PID setup - sets the charateristics of the fan in scientific PID (proportional, integral, derivative) values. Do not change unless you have a good understanding of the PID terminology and workings

- select P - I - D setup > change value



BEEP setup - enable or disable audible tone when clicking on a button

- select on/off > select value



SYS info - Shows vital system information, software version, memory use and status sensors

- select > shows info

EXIT - Return to the status display (top menu)

5. MAXI CONTROLLER MODE

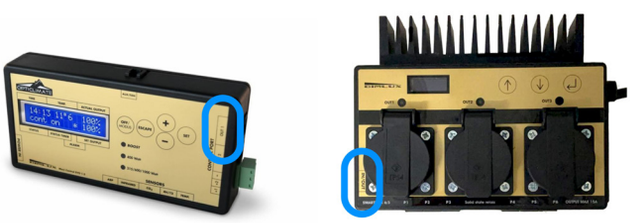
5.1 MODE EXPLAINED

Dimlux Maxi Controller

In the Smartbox software, the Maxi Controller mode is called **FanAuxBoxRetro**. In certain situations, a Dimlux Maxi Controller is preferred—or even essential—for operating your Airlux Technologies configurations. The most common scenario where this applies is when you want to control Dimlux XtremeII LED lighting fixtures, but also require control over your indoor climate with a heater, (de)humidifier, and fan.

When the Smartbox is set to this mode, the Maxi Controller assumes full control of all settings, and the Smartbox (most commonly the 6/3 model) functions as a breakout box for the connected climate hardware. Please note that the settings within the Smartbox itself are no longer accessible, as the Maxi Controller manages everything. Only the Change Mode option remains.

The Maxi Controller is out of scope for this manual. Refer to our dedicated Maxi Controller manual at our knowledgebase at airluxtechnologies.com



5.2 PORT CONFIGURATION

In the Maxi Controller mode, only the controlled power outlets and the inverterport for the water cooler are active. This means the Smartbox 6/3 is the only relevant model for this mode.

MODEL	**Smartbox 6/3**	**Smartbox 4/0**	**Smartbox 8/0**
Maxi Contr. Mode Comp.	YES	NO	NO
IN/OUT	to Maxi Controller	to Maxi Controller	to Maxi Controller
Controlled Power Outlets			
OUT1	Heater	n/a	n/a
OUT2	(de)Humidifier	n/a	n/a
OUT3	Fan	n/a	n/a
Smartports			
P1	not in use	not in use	not in use
P2	not in use	not in use	not in use
P3	not in use	not in use	not in use
P4	not in use	not in use	not in use
P5	not in use	n/a	not in use
P6	not in use	n/a	not in use
P7	n/a	n/a	not in use
P8	n/a	n/a	not in use

* n/a = not available

6. EXTRA PORTS

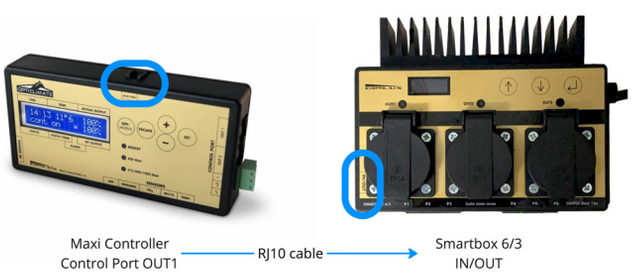
6.1 COMMUNICATIONS PORT

As explained in chapters 3 (watercooler mode) and 5 (maxi controller mode) all Smartboxes can be connected to other control methods like the Smart Remote Controller or Maxi Controller that are required by more advanced setups like an OptiClimate RevomaxII climate control system or Dimlux XtremeII LED lighting setup. In both cases, the Smartbox now acts like a break-out box. Which means another control method takes over most functionality/ configuration and the Smartbox is mostly used for its connectivity. In chapters 3 and 5 the specific use for the communications port is further explained in detail.

Industry standard RJ10 connector

This standardized port with RJ10 connector, can be used to either connect a RevomaxII system or connect a Maxi Controller. For instructions on both scenario's we refer to their respective manuals for more detailed information.

Other control method: Smart Remote Controller



6.2 USB PORT

All Smartbox models are equiped with a service port with a standard USB B connector with USB version 2.0. Updates for the Smartbox cannot be installed by the user as the soft- and firmware is complete and thouroughly tested for all use-cases the Smartbox is designed for. Changes to it's soft- and firmware can only be done by our professionals at airluxtechnologies.com.

USB2.0 A to B cable

6.3 FACTORY RESET

In case of malfunction, the Dimlux Smartbox can be reset to its original factory settings with a simple procedure.

1. make sure the Smartbox is disconnected from it's power source
2. hold the most left controlbutton (UP)
3. re-connect the the power source and wait for the Smartbox to initiate it's reset procedure

7. WARRANTY

7.1 WARRANTY STATEMENT

The Dimlux Smartbox series and accessories are designed and manufactured with maximum care and craftsmanship. Airlux Technologies warrants the delivered goods to be free of defects for the duration of the applicable warranty period under normal use and conditions after the original purchase date. When the product shows any defects within this period that is not due to improper use, Airlux Technologies will replace or repair the defect product with a suitable replacement with at least the same functionality and specifications. Warranty of the replaced products will remain under warranty for the remaining period from the original product and purchase date. For service, the owner ships the unit to the closest Airlux Technologies service location, to be determined by the service desk. Airlux Technologies will require the original receipt to determine the warranty eligibility.

To contact the support desk:

By Phone: +31 20 776 6006
By e-mail: support@airsupplies.nl

7.2 KNOWLEDGEBASE

Direct link: www.dimlux.nl/knowledge-base

Scan the QR-code to go to our online knowledge base for the latest manuals and information