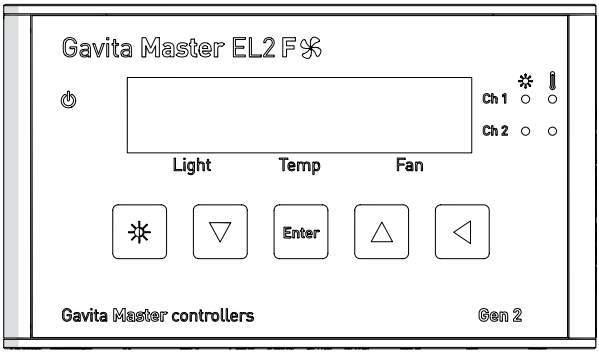
Gavita **Master** Controller EL2F



User manual

User manual
Gavita Master controller EL2F

Dear customer,

Congratulations on the purchase of your Gavita Master controller EL2F.
This manual contains all the information necessary to install, use and maintain the Gavita Master controller EL2F. Please read and understand this manual completely before installing and using the product.
Consult the index at the start of this manual to locate information relevant to you.

In this manual, the Gavita Master controller EL2F will be referred to as "the controller".

This is the original manual, keep it in a safe location!

Table of content

1. Introduction

1.1. Product description

The Gavita Master controller EL2F is a dual channel light controller. Each of the controller's two channels can control up to 40 (250*) Gavita e-series fixtures or ballasts. It is possible to use those channels to control fixtures in two completely independent rooms, or to control up to 80 (500*) fixtures in one room. When a fan is connected, it is possible to regulate the temperature in the room.

With an External Contact Module (ECM) auxiliary equipment can be controlled. Up to two ECMs can be connected. An alarm can be connected to go off at temperature shutdown or power outage. These devices need to be purchased separately.

** When using a repeater bus fixture or ballast. Check the specifications of your fixture for more information.*

1.2. Glossary of Terminology

Cage clamp	Wire clamp
Ballast	A ballast is a device intended to ignite and power HID lamps
Complete fixture	A ballast integrated with a reflector and lamp

1.3. Used symbols

The following icons will be used throughout the manual:

Warning! A warning indicates severe damage to the user and/or product may occur when a procedure is not carried out as described.

Caution! A caution sign indicates problems may occur if a procedure is not carried out as described.

Note/Example: A note or example provides tips and addition information to the user.

2. Product specifications

2.1. General product information

Product name	Master Controller EL2F
Product code	41.00.XX.XX
Producer	Gavita International bv

2.2. Technical specifications

Controller dimensions (LxWxH)	110 x 21 x 65 mm	
Weight	115 gram	
Power supply	Adapter: 100V-240V AC 50/60hz - 15V DC (1000mA)	
Maximum control voltage	11.5V	
Maximum voltage/current alarm contacts (NO/NC)	13,5V/50mA	
Maximum cable length per port	100m (328ft) / 250m (840ft)*	
Maximum number of ballasts per port	40	250*
Total number of ballasts per controller	80	500*

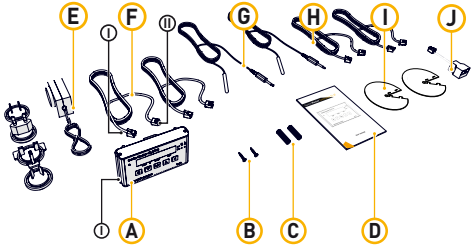
** When using a repeater bus fixture or ballast*

2.3. Environment

⚠ **Warning!** The product may not be exposed to moisture, condensing humidity, contamination or dust.

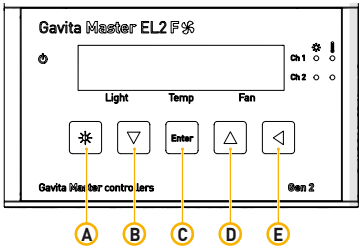
Temperature range	0-35 °C / 32 - 95 °F
Operating humidity (non-condensing)	<80%

2.4. Components



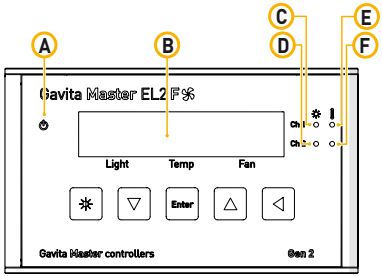
A. Gavita Master controller EL2F
   I. Mounting plate
B. 2x Countersunk screw
C. 2x Plug
D. Manual
E. 120-240V AC - 15V DC power adapter (1000mA)
F. 2x Controller cable (5m/16ft)
   I. RJ (6P4C) plug (connect to ballasts)
   II. RJ (4P4C) plug (connect to controller)
G. 2x Temperature sensor with cable (5m/16ft)
H. 2x RJ (4P4C) Fan control cable (5m/16ft)
I. 2x Hood
J. 1x Splitter for fan output

2.5. Controls



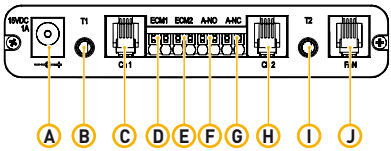
	Key	Function
A	Quick-key	View output level
B	Down	Navigate down in menu / decrease value Press and hold to scroll / decrease smoothly
C	Enter	Go to menu / confirm
D	Up	Navigate up in menu / increase value Press and hold to scroll / increase smoothly
E	Back	Navigate back in menu / cancel / reset

2.6. Indications



	Signal	Function
A	Power	A burning green light indicates controller is active. A blinking green light indicates a power interruption has occured during operation.
B	Display	Displays status, warnings and controller menu.
C	Light CH1	A burning blue light indicates the port is active. Blue light off indicates the port is inactive.
D	Light CH2	
E	Temperature warning CH1	A burning red light indicates the auto-dim temperature has been exceeded in the past. A blinking red light indicates the auto-dim temperature threshold is currently exceeded. The corresponding output channels are being dimmed. A fast blinking red light indicates the shutdown temperature threshold has been exceeded. All output channels have been shut down.
F	Temperature warning CH2	

2.7. Connections



A. 15V DC input
B. 3,5 mm jack main temperature sensor (T1)
C. RJ (4P4C) channel 1 port for controlling up to 40 ballasts
D. Cage clamp connector ECM1 (output is active when main channel is on)
E. Cage clamp connector ECM2 (output is active when main channel is off)
F. Cage clamp alarm Normally Open (potential free contact)
G. Cage clamp alarm Normally Closed (potential free contact)
H. RJ (4P4C) channel 2 port for controlling up to 40 ballasts
I. 3,5 mm jack auxiliary temperature sensor (T2)
J. RJ (4P4C) fan port

2.8. Accessories

Accessories are not included, they have to be bought separately. Visit the website of Gavita International: www.gavita.com for the latest Gavita products.

Part	Variants	Product code
Interconnect cable RJ (6P4C) - RJ (6P4C)	2 ft / 0,60 m	43.50.00.08
	5 ft / 1.5 m - standard cable	43.50.00.04
	8 ft / 2.4 m	43.50.00.09
	10 ft / 3.0 m	43.50.00.10
Controller cable RJ (4P4C) - RJ (6P4C)	5 ft / 1.5 m	43.50.00.11
	16 ft / 5 m - standard cable	43.50.00.12
	25 ft / 7.5 m	43.50.00.13
Three-way RJ Splitter		43.50.00.01
Universal adapter	100V-240V AC 50/60hz	42.02.03.08
External Contactor Module (ECM) (with 10 ft / 3 m cable)	US version 120V 15A	42.00.12.20
	US version 240V 15A	42.00.24.20
	UK version 240V 13A	42.00.24.11
	EU version 230V 16A	42.00.23.10
	AUS version 240V 10A	42.00.24.60
	CH version 240V 10A	42.00.23.12
ECM controller cable 3m/10 ft	10 ft / 3.0 m standard cable	42.03.01.15
Temperature sensor (with 5 m cable - 3.5 mm mini jack plug)	16 ft / 5.0 m cable length - standard	42.50.00.14
Fan cable RJ (4P4C) - RJ (4P4C)	16ft / 5.0 m	
Fan balancer		42.58.01.01

2.9. Compatible ballasts and fixtures

Ballasts and fixtures are not included, they have to be bought separately. Visit the website of Gavita International: www.gavita.com for the latest Gavita products.

The Gavita Master controller EL2F is compatible with all Gavita e-series ballasts and fixtures.

3. Safety guidelines and measures

⚠ **Warning!** Keep the controller away from fire, excessive heat, water, dust and contamination.

⚠ **Warning!** The Gavita Master controller EL2F may only be used to control compatible Gavita e-series ballasts. Do not connect the controller to other products as this may be dangerous and may cause malfunctions in the connected equipment. Doing so will void the warranty.

⚠ **Warning!** The ECM channels of the Gavita Master controller EL2F may only be connected to Gavita ECMs. Do not connect the controller to other products as this may lead to malfunctions or damage and can be dangerous. Doing so will void the warranty.

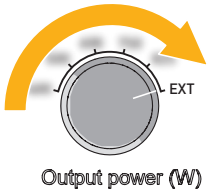
⚠ **Warning!** Do not open or disassemble the controller, it contains no serviceable parts. Opening the controller will void its warranty.

⚠ **Warning!** Make sure the signal wires do not touch the reflectors. The reflectors get very hot.

4. Installing the controller

4.1. Preparations

1. Mount the fixtures or ballasts as per your lighting plan. Interconnect them as described in the manual of the fixture or ballast. Make sure the rotary knob on all ballasts is set to "EXT" (external control). Connect the ballasts or fixtures to the mains.

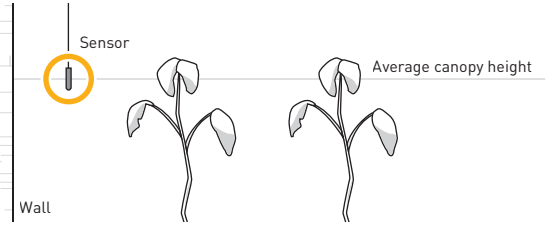


Each of the controller's two channels can control up to 40 (250) Gavita e-series fixtures or ballasts. It is possible to use those channels to control fixtures in two separate rooms, or to control up to 80 (500*) fixtures in one room. Channel 2 then operates in "follow" mode.*

** When using a repeater bus fixture or ballast. Check the specifications of your fixture for more information.*

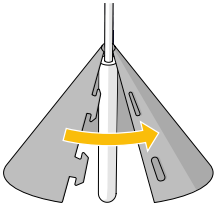
Warning! The controller may only be connected to compatible Gavita e-series remote ballasts and complete fixtures.

2. Find a suitable place for the temperature sensor and the controller. Hang the sensor between the plants on average canopy height and preferably not against the wall. Do not position it in direct airflow.



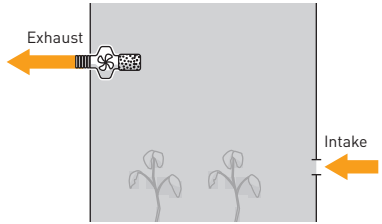
If you are using another climate control system, hang it close to the sensor of that system. If necessary, the sensor cable may be lengthened an extra 5 meter with a standard 3.5 mm jack extension cable. A sensor with a cable length of 30 meter is also available.

3. Cover the temperature sensor from the light. Use the hood supplied with the controller and fold it around the sensor. Direct light cast upon the sensor will disrupt temperature measurements.

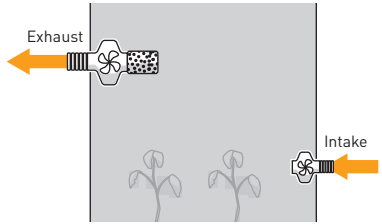


4. Determine your fan setup. Most growers prefer a slight underpressure in their growing rooms. Your setup depends on the amount of ventilation you need.

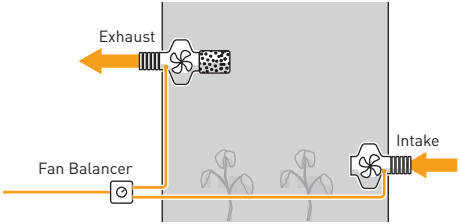
Option 1: Use one fan for exhaust and a vent for intake.



Option 2: Use a bigger fan for exhaust, and a smaller fan for intake.

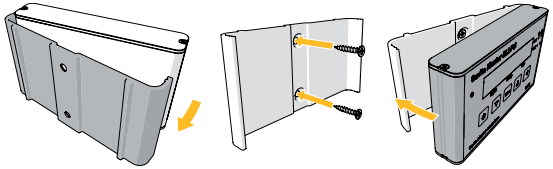


Option 3: Use fans of the same size, and add a fan balancer to limit the intake airflow. A fan balancer is sold separately.

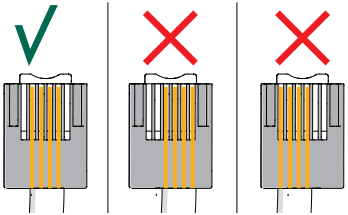


You will be able to set minimum and maximum speeds for the fans later in the process.

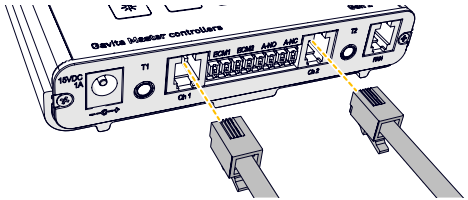
5. Take the controller and remove the mounting plate from the body carefully. Affix the mounting plate to a wall using the countersunk screws. Remount the controller on the mounting plate.



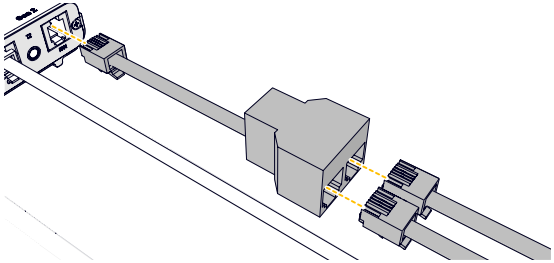
6. If necessary, shorten the RJ cables. You'll need an RJ crimp tool. Cut the cables to the desired length. Strip 8mm of the outer insulation, but leave the inner insulation intact. Push the four wires into the middle four openings of the RJ plug. Crimp the plug on the wire with an RJ crimp tool.



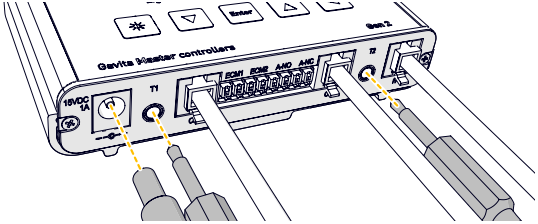
7. Connect the lamp control cables to the controller. Connect the 4P4C end to the controller, and the 6P6C end to the fixture. The lamps will not ignite yet.



8. Connect the fan cables to the fan splitter, and the fan splitter to the controller. The fan splitter is used to break out fan functionality for channel 1 and channel 2.



9. Connect the power input and the temperature probes. The display will light up, and you can continue to set up the controller.



4.2. Setting up the controller

1. The display lights up when the controller is connected to power. It will ask you to set time and date first. Choose between 12 and 24 hour mode and press **enter** to confirm. Set time and date using the arrow keys and press **enter** to confirm. If you want to change this later, open the menu and select **system time**.

2. If desired, change the language by pressing **enter** to open the menu, and select **language**. Press **enter** again to save your choice.

3. By default, temperature is displayed in °C. If you want to change to °F, press **enter** to open the menu, and select **temp probe**. Select **units** and change to °F. Press **enter** to confirm.

4. Press **enter** to open the menu and select **channel 1**. Select **display mode** and use the arrow keys to select the nominal power of your fixtures. Alternatively, select **100%** to always display power output as a percentage.

This setting determines how power output is displayed when pressing the ✳ key and does not affect the working of the controller. It is for your reference only.

5. In the channel 1 menu, select **output level**. Set the desired light intensity and press **enter** to confirm.

New lamps need to run at nominal power for at least 100 hours to ensure they don't fail prematurely.

6. In the channel 1 menu, select **light cycle**. Set the time to switch the light on and the time to switch the light off. Press **enter** to confirm.

7. In the channel 1 menu, select **set temp levels** to set night, day, auto-dim and shutdown temperature levels.

Auto-dim & shutdown: if the temperature rises above the set treshold, the lamps will firstly be dimmed and, if the temperature continues to rise, shut down to prevent crop damage.

8. Select **fan config** in the channel 1 menu and set the min. and max. values for fan speed as a percentage. If you are not sure about these values, perform a test run.

In the **fan config** menu, set the **override** property.

This property determines fan behaviour during auto-dim and when manually activated.

- Select **on** if you want the fan to run at 100% max when auto-dim is activated or when you set **fan mode** to **on**.
- Select **off** if you want the fan to run at the maximum value as set in the **fan config** menu when auto-dim is activated or when you set **fan mode** to **on**.

Please refer to paragraph 5.3 for more information on activating and deactivating fans.

9. Select **fan response** in the **fan config** menu. This controls how fast the fans respond to changing temperatures.

Set to **1** (slow), **2** (standard) or **3** (fast). The standard setting is sufficient for most situations.

10. Set channel 2 mode. Channel 2 can either follow the settings of channel 1, invert them or operate completely independent. Open the menu and select **ch2 mode**.

- Select **follow main** if all fixtures are located in one room or two identical

rooms.

- Select **independent** or **inverse** if the fixtures of channel 2 are located in a different room.

If channel 2 is set to "independent" or "inverse" mode, it needs a temperature sensor and fans of its own. Follow the steps in paragraph 4.1 and connect the temperature sensor to jack input T2 on the controller. Select **channel 2** *in the menu and repeat steps 3 to 9 in this paragraph to program channel 2.*

11. New lamps need to run for at least 100 hours at nominal power to ensure they do not fail prematurely. Select **output level** in both channel menus and set to 100% . Select **output mode** in both channel menus and set to **on**.

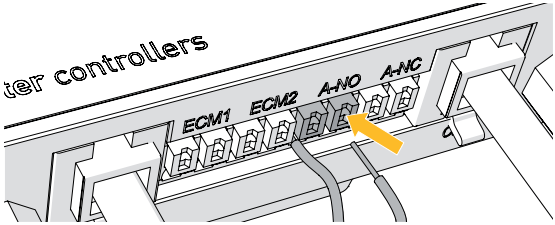
12. After this minimum period of 100 hours, browse to **output mode** in the channel menus and set to **auto**. If channel 2 is set to follow mode, only channel 1 needs to be set to **auto**. The controller will now operate as programmed.

13. Check the status LEDs of the ballasts or fixtures. Consult the manual of the fixture for the meaning of the codes and possible solutions to errors. Check the controller display. If it indicates an overload, recheck your RJ cables.

4.3. Connecting a temperature shutdown-, sensor failure- or power-off alarm

Temperature shutdowns and power outages will always be logged. Access the log by opening the menu and selecting **logs**.

The controller will remember its settings after a power outage. Time and date are kept for approximately 40 hours. After this period, you'll need to set this again.



The controller has two pairs of cage clamps marked A-NC (normally closed) and A-NO (normally open). When a temperature shutdown, sensor failure or power failure occurs the "A-NC" contact opens and the "A-NO" contact closes. Both pairs of clamps may be connected to a third party alarm installation or text messaging module.

⚠ **Warning!** The alarm contacts are rated for a maximum of 13,5V/50mA.

4.4. Connecting auxiliary equipment using the External Contactor Module (ECM)

If you want to use the controller to control for example a CO_2 source, a light or watering unit, or a heater, you'll need an External Contactor Module or ECM. You can control up to two ECMs. ECM1 follows channel 1, ECM2 follows channel 2.

ⓘ *ECM2 is inverse to ECM1 if channel 2 is set to follow or inverse mode.*

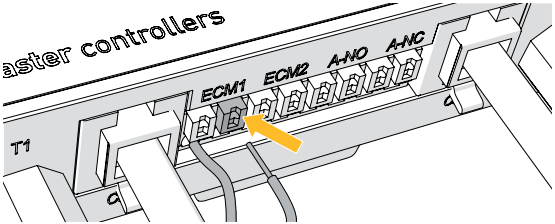
⚠ **Warning!** Never connect more than one ECM to one set of cage clamps.

⚠ **Warning!** ECMs can handle equipment with a resistive load (AC1) of up to 16A. The maximum allowable current can be limited by the local situation.

⚠ **Warning!** To prevent over-current, always determine the maximum allowable current for your cabling before connecting a load to the ECM.

1. Strip the endings of the signal cable 8mm. Finish them with cable end sleeves. A cable of up to 20 meters may be used.

2. Press the spring pins above the contact openings of the cage clamps to open them.



3. Insert the endings of the signal cable into the desired cage clamp set of the controller.

4. Release the spring pins to lock the wires in place.

5. Connect the cable to the cage clamps of the ECM.

Consult the ECM manual to learn how to connect the ECM to auxiliary equipment.

4.5. Controlling auxiliary equipment

Auxiliary equipment can be activated either during lights-on period (day) or lights-off (night).

1. Set the ECM for channel 1. Press **enter** to open the menu and select **channel 1**.

2. Select **ecm config**.

3. Select **day** to activate the ECM during lights-on, or select **night** to activate it during lights-off.

LOGS	SUNRISE/SUNSET	ECM ON DURING
▶CHANNEL 1	▶ECM CONFIG	▶DAY

Example: a CO_2 source, light or watering unit may be activated during lights-on periods. A heater may be activated during lights-off periods.

Channel 2 can only be set if it operates in independent mode. If it operates in follow mode, the setting of channel 1 will be followed. If it operates in inverse mode, the setting of channel 1 will be inversed.

4.6. Calibrating the temperature sensor(s)

If necessary, the temperature measured by the Gavita controller can be adjusted to match the temperature measured by another system in the room.

1. Press **enter** to open the menu and select **temp probe**.

2. Press **enter** to leave the temp units setting unchanged.

3. Set **calibrate** to YES.

4. Choose between **T1** and **T2** and press **enter** to select the temperature value you wish to adjust.

5. Adjust the temperature to the desired value and press **enter** to confirm your choice.

! *The calibrated temperature values are stored in the internal memory of the controller. Resetting the controller will restore these values (see paragraph 5.9).*

4.7. Setting the sunrise and sunset period

To allow crops to adjust to either a lights-on or lights-off period, a sunrise and sunset period may be set. During this period, the light intensity increases from 50 percent to up to the desired intensity. By default, both periods are set to 15 minutes.

1. Press **enter** to open the menu and select the channel you want to change the sunrise/sunset period for.

2. Select **sunrise/sunset**.

- Set ramp up time (0-30 min) to simulate sunrise.
- Set ramp down time (0-30 min) to simulate sunset.

5. Using the controller

5.1. Activating or deactivating lights

1. Press **enter** to open the menu and select **channel 1** or **channel 2**.

Channel 2 can only be set if it operates in independent mode.

2. Select **output mode**.

Each channel can be set to three output modes:

AUTO	Run the programmed light cycle
ON	Lights are on, temperature safety settings apply
OFF	Lights are off

3. Press **enter** to confirm.

When the lights are activated, a blue light burns.

Warning! When replacing lamps, always disconnect them from the mains. Simply switching them off is not sufficient.

5.2. Setting light intensity

1. Press the ☀ key and select the channel of which you want to alter the intensity.

2. Use the arrow keys to set the intensity.

You can use this setting to boost your lamps to a maximum of 115%.

By default, power is displayed as a percentage. You can set the controller to instead display the power output in Watts. Press **enter** *to open the menu and select* **channel 1** *or* **channel 2**. *Select* **display mode** *and use the arrow keys to*

select the nominal power of your fixtures. This setting determines how power output is displayed when pressing the ☀ key and does not affect the working of the controller. It is for your reference only.

5.3. Activating or deactivating fans

1. Press **enter** to open the menu and select **channel 1** or **channel 2**.

Channel 2 can only be set if it operates in independent mode.

2. Select **fan mode**.

Each channel can be set to three output modes:

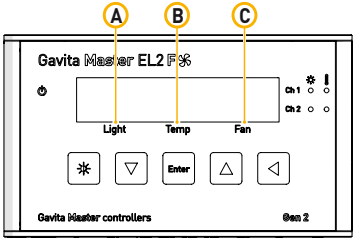
Fan mode	Override*	Fan behaviour
AUTO	ON	Fan speed is controlled automatically by the controller, maximum speed is as set in the fan config menu. If auto dim is active the max fan speed is automatically 100%.
	OFF	Fan speed is controlled automatically by the controller, maximum speed is as set in the fan config menu. It will not go higher, even if auto dim is active.
ON	ON	Fans are on and run at 100%.
	OFF	Fans are on and run at the maximum speed as set in the fan config menu.
OFF	ON/OFF	Fans are off

* Please refer to paragraph 4.2, step 8 for more information on the override property

3. Press **enter** to confirm.

5.4. Reading the default screen

The default screen displays whether or not the lights are activated, and at what power they are running (A). The measured temperatures are shown (B) as are fan speeds per channel (C).

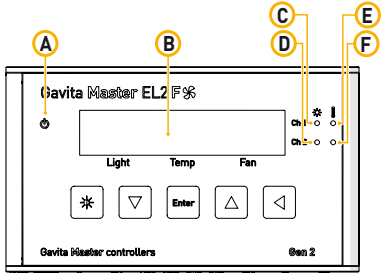


5.5. Show system time and temperature settings

1. Press an arrow key in the default screen to show system time and date.
2. Press an arrow key again to show the highest and lowest registered temperatures.

DATE	TIME		
14/07/17	11:48	H:30.0C	L:23.4C
		H:30.6C	L:23.8C

5.6. Interpreting LED signals



5.6.1. **Green light (A)**

A burning green light indicates the controller is functioning.

A blinking green light indicates the power has been interrupted.
After a power failure the blinking green indicator must be reset. Hold the back button ◀ for three seconds to reset the indicator.

5.6.2. **Blue light (C/D)**

A burning blue light indicates the ballasts connected to channel 1 and/or channel 2 are activated.
A blinking blue light indicates an overload in the channel.

When a blue light is off, it indicates the connected ballasts are deactivated.

5.6.3. **Red light (E/F)**

A blinking red light indicates the auto-dim temperature is exceeded.

A fast blinking red indicates the shutdown temperature has been exceeded.

A burning red light indicates the auto-dim temperature has been exceeded in the past.

5.7. Error messages and solutions

5.7.1. **Sensor disconnected**

The message "Sensor removed" appears when one or two temperature sensors are not plugged in. All devices connected to the controller are

deactivated. Plug in the missing sensor to resolve.

5.7.2. **Sensor failure**

If the message "sensor failure" appears, the sensor is defect. All devices connected to the controller are deactivated. The controller must be reset.

- Replace the temperature sensor
- Hold the back button ◀ for 3 seconds to reset the message.

5.7.3. **Controller Overload**

If the message "controller overload" appears, one of the channels of the controller has been overloaded. The blue led indicator behind the overloaded channel will also start flashing. An overload may occur when the wiring of one of the channels has short circuited. All devices connected to the controller will be deactivated.

- Check which channel indicates the overload.
- Search for faulty wiring or contacts and replace it.
- Hold the back button ◀ for 3 seconds to reset the message.

5.7.4. **Fan Overload**

If the message "fan overload" appears, one of the fan channels of the controller has been overloaded. An overload may occur when the wiring of one of the fan channels has short circuited. All devices connected to the controller will be deactivated.

- Check which fan channel indicates the overload.
- Search for faulty wiring or contacts and replace it.
- Hold the back button ◀ for 3 seconds to reset the message.

5.7.5. **Auto-dim**

When the auto-dim temperature has been exceeded, the message "auto dim" will appear on the display next to the corresponding channel. The red light will also flash. The flashing will continue until the temperature drops half a degree Celsius/ 0.9 degrees Fahrenheit below the auto-dim temperature for at least 30 seconds.
A burning red light indicates the auto-dim temperature has been exceeded in the past.

- To resolve a burning red light, hold the back button ◀ for three seconds to reset the warning.

5.7.6. **Temp Alarm**

When the shutdown temperature has been exceeded, the message "Temp alarm" will appear on the display and the red light will flash rapidly. All devices connected to the controller are deactivated. The controller must be reset;

- Ensure the temperature of the room is below the shutdown temperature. If the temperature is still above shutdown temperature,

the controller cannot be reset

- Hold the back button ◀ for three seconds to reset the controller.

5.8. After a power loss

If power is restored within 40 hours, the controller will resume its program as set by the user. If power takes longer than 40 hours to be restored, the controller loses time and date settings. It will therefore set all outputs to "off" until time and date are set again. When set, the controller resumes its program.

5.9. Reading the log

Auto-dim, shutdown and power loss events are logged in the controllers memory. For each channel, the high and low temperatures are kept as well.

To access the log, press **enter** to open the menu and select **logs**.

5.10. View the firmware version on the controller

Your reseller or Gavita International bv may request the firmware version of your controller to check for compatibility with (future) Gavita products.

1. Press **enter** to open the menu and select **info**.
2. The firmware version is displayed.

5.11. Reset to factory settings

1. Press **enter** to open the menu and select **factory reset**.
2. Select **yes** and press **enter** to confirm. All settings are reset to their factory defaults.

6. Maintenance and Repair

⚠ **Warning!** Do not open or disassemble the controller, it contains no serviceable parts. Opening the controller will void its warranty.

⚠ **Warning!** Do not use acids, solvents, abrasives or other aggressive substances to clean the controller as this may cause damage.

The controller is maintenance free. It may be cleaned with a soft dry cloth. Please contact your reseller in case of controller malfunction.

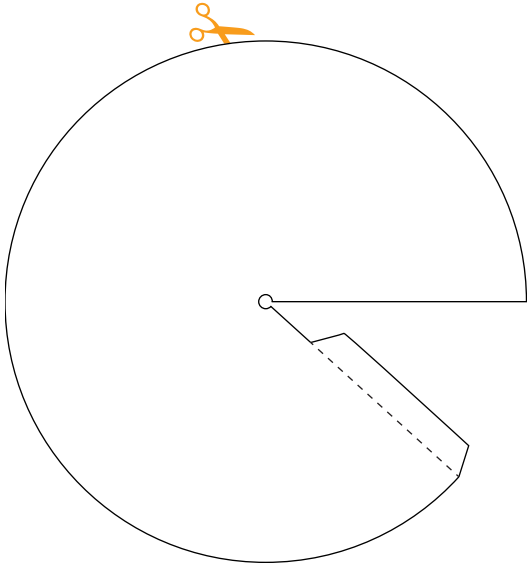
7. Environment and Disposal

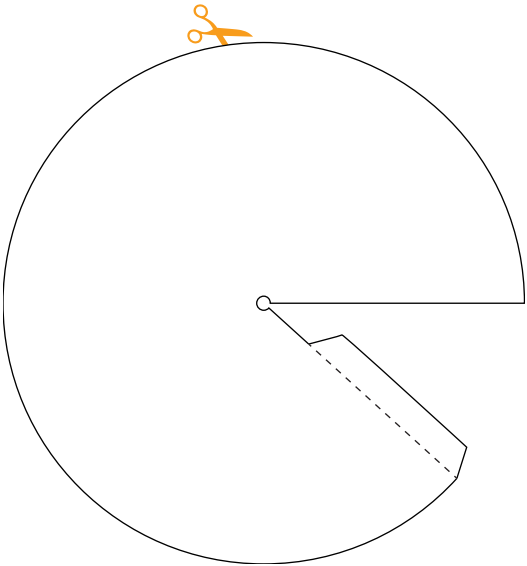
ATTENTION: THIS PRODUCT CONTAINS A BATTERY.
MUST BE DISPOSED OF PROPERLY.

The symbol on the material, accessories or packaging indicates that this product may not be discarded as household waste. Dispose of the equipment through a recycling center that handles electronics and electrical appliances within the EU and in other European countries which use separate collection systems for used electronics and electrical appliances. By disposing of the equipment in the proper way, you will be helping to prevent possible risks to the environment and public health, which might otherwise be caused by improper handling of the discarded equipment. Recycling of materials contributes to the conservation of natural resources. Therefore, please do not dispose of your old electronics and electrical appliances via household waste.

8. Warranty

Gavita International bv warrants the mechanical and electronic components of their product to be free of defects in material and workmanship if used under normal operating conditions for a period of three (3) years from the original date of purchase. If the product shows any defects within this period and that defect is not due to user error or improper use Gavita International bv shall, at its discretion, either replace or repair the product using suitable new or reconditioned products or parts. In case Gavita International bv decides to replace the entire product, this limited warranty shall apply to the replacement product for the remaining initial warranty period, i.e. three (3) years from the date of purchase of the original product. For service return the product to your shop with the original sales receipt.





For more information, or to download documents, contact:

Gavita International bv
Oosteinderweg 127
1432 AH Aalsmeer
The Netherlands

Tel : +31(0)297-380 450
Fax : +31(0)297-380 451
E : info@gavita.com
W : www.gavita.com