

# IntelliClimate

## Installation and User Guide



- Monitors temperature, relative humidity, CO<sub>2</sub> and light levels
- Controls fans, air conditioners, heaters, dehumidifiers, humidifiers, CO<sub>2</sub> injection/extraction, two light banks
- Additional sensor available for larger growing areas
- Extensive fail-safe features
- Settings can be scheduled to automatically change to match plant growth stage
- Auto-learn – self learning automatically adjust CO<sub>2</sub> cycle times to minimise wastage
- Connect to the cloud via IntelliGrow (subscription required)



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**Quick-start page with helpful hints**

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## **Disclaimer:**

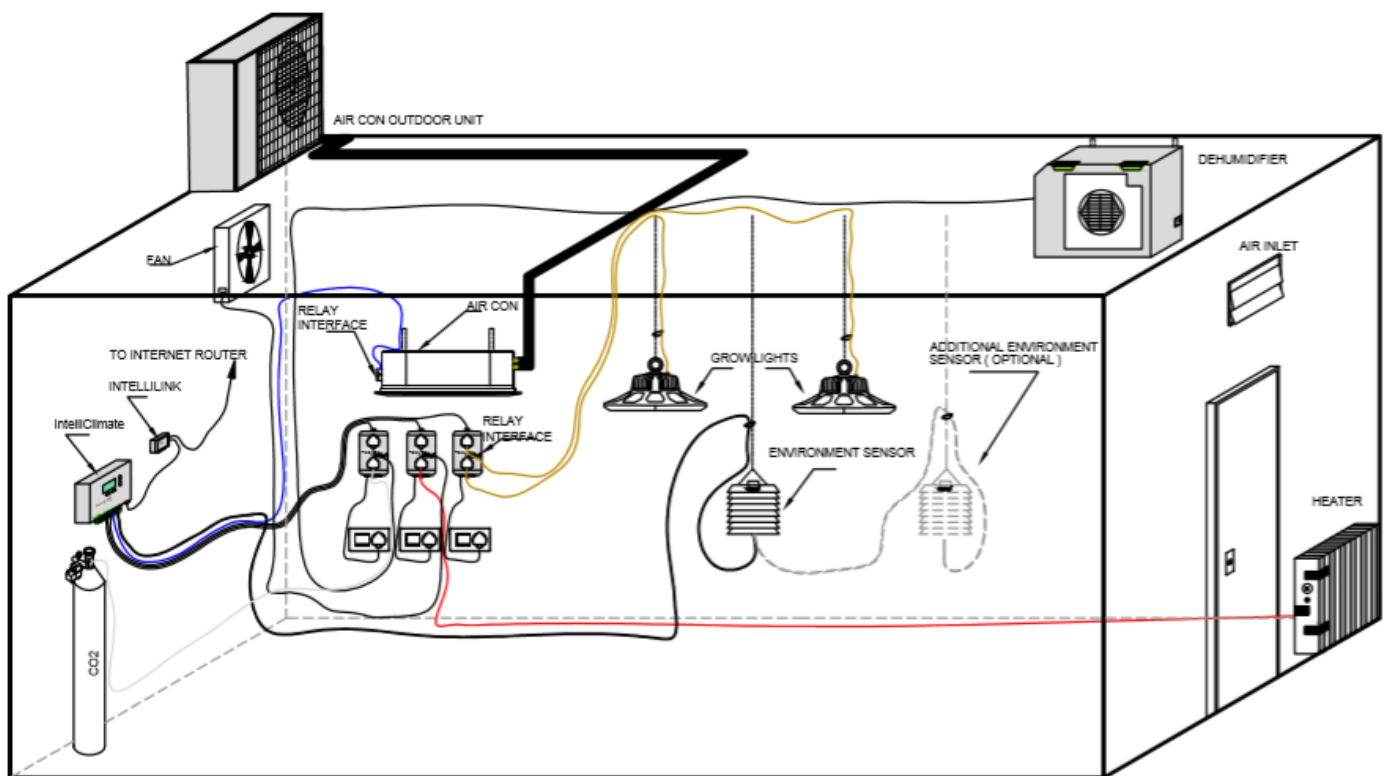
Suggested settings are made in good faith, care and consideration. However, Autogrow can accept no responsibility for the accuracy or appropriateness of suggestions or the outcome resulting from their use.

## Quick start

**This is not a substitute** for reading the relevant sections of the manual but is included to emphasize some important and useful points.

If the growroom is to be operated at high humidity for long periods (e.g. during cutting/rooting stage) it is preferable to mount the controller outside the growroom. This is easily done as the growroom sensors are supplied with a long 5m (15ft) cable. If required, this can be replaced with a longer cable. Data cable such as **CAT5** computer network cable should be used in this situation. This should be **Stranded** cable to avoid breakages.

The IntelliClimate Kit comes with one EnviroSensor unit (measuring temperature, relative humidity, light and CO<sub>2</sub>). A second optional EnviroSensor unit may be connected which is useful in larger growrooms (> 10m x 10m). Control will normally be based on the average readings from the two sensors, but should one sensor fail, control will automatically revert to the working sensor.



## IMPORTANT:

If you intend to inject CO<sub>2</sub> an air conditioner and dehumidifier should also be considered. Together, these will allow longer periods of CO<sub>2</sub> injection to occur without the need to vent the room. This will lead to significant improvement in growth rates with lower use of expensive CO<sub>2</sub>.

### SAFETY NOTE

If you do inject CO<sub>2</sub> into the growroom always do the following before entering.

- 1) Disable CO<sub>2</sub>
- 2) Force on fans
- 3) Leave door open whilst inside

## IntelliGrow

With IntelliGrow, your Intelli devices are accessible via your web browser so you can control your growing operation remotely from your phone, tablet, or computer. IntelliGrow gives you complete visibility 24 hours a day and enables you to manage multiple locations from the comfort of your office, using a single sign on.

Automatically manage your environment settings, set remote alarms and data log your progress with this one simple solution.

**Though you can set most everything on the controller itself via the keypad, the below features are only available on IntelliGrow.**

- Scheduling
- Advanced Settings
- History

To access the latest version of your IntelliGrow Quick Start Guide, please head to:

<https://knowledge.autogrow.com/articles/intellilink-quick-start-guide>

Please visit <https://autogrow.com/our-products-solutions/intelligrow> for more information.

## Section A - IntelliClimate™ Growroom Controller

The IntelliClimate is the most advanced and user-friendly growroom environment controller on the market. It has a wide range of possible applications which will be discussed briefly in this section. To keep the user interface as simple as possible, only the readings and settings relevant to the selected features are displayed on the controller's LCD and on IntelliGrow. To add extra features, enter "Configure" menus on the controller or "Functions" on IntelliGrow.

### Functions

The controller can operate in a number of modes ranging from a simple cycle-timed mode to a sophisticated system making optimal use of a range of attached equipment. After installing the unit, tell the IntelliClimate what you have connected by entering "Configure" menus on the controller or "Functions" on IntelliGrow. Once the controller knows what you have attached to it, it will automatically select the most appropriate mode of operation. When the controller is supplied, it is pre-set as a simple fan cooled environment controller with CO<sub>2</sub> injection disabled.

### Lighting

The IntelliClimate can control two light banks. It is a good idea to split your lights into two groups. Firstly, when using both banks together, it allows the controller to stagger the switch on times, so the power surge from the first bank has subsided by the time the second bank comes on. Secondly, during the vegetative phase of growth, the lights are on for longer periods (18 hours) but a lower intensity may be used. The controller has the ability to switch on one bank and alternate the banks each day. This ensures that the plants receive light from both sides. If one bank is turned on and the light sensor detects a low light level, the controller assumes that the bank is out of action (bulb blown) and automatically switches on the other bank. If alarms are enabled, it will alert you to the fact that a light has failed. Similarly, if a power failure occurs, the controller has a programmable cool-down delay timer before bringing the lights back on in stages. This has a significant impact on lamp life.

#### *Lighting*

Lamp cool-down time

< 15 mins >

\*On IntelliGrow

For those using air cooled lights, fit the cooling fan to blow air through the light fittings rather than suck out the hot air. This way the fans run cooler and last longer.

## Fans

The fans may be used for cooling, humidity reduction, air changes and to bring in ambient CO<sub>2</sub> (if CO<sub>2</sub> injection is not used). During the day when CO<sub>2</sub> is being injected, other means to control temperature or humidity will be used in preference to the fans which will only be used to force an occasional air change and provide a fail-safe if the air conditioner or dehumidifier fails.

### Minimum periodic air change rules

Force Fan ON for

Day	< 00h > < 01m > < 00s >	Every	< 02h > < 00m >
Night	< 00h > < 00m > < 30s >	Every	< 04h > < 00m >

\*On IntelliGrow

For simple systems that have CO<sub>2</sub> injection but do not have air conditioning or dehumidification, the controller will operate as a cycle timer system with three timed phases:

Phase 1) Fans on

Phase 2) Fans off, inject CO<sub>2</sub>

Phase 3) Fans off, CO<sub>2</sub> off, wait while plants absorb CO<sub>2</sub>

In this mode, the controller will self-adjust the timings if it finds that CO<sub>2</sub> is being wasted due to the fans being forced on by heat or humidity build up before the plants have time to use the CO<sub>2</sub>. If this situation is not controlled, it will stop injecting CO<sub>2</sub> and will revert to maximum venting (within temperature limits) to bring in as much ambient CO<sub>2</sub> as possible. This will reset every new day period.

### CO<sub>2</sub> Rules

☐ CO<sub>2</sub> injection is allowed when not venting. Also allow injection when only F1 is running?

Allow for CO<sub>2</sub> cycling by allowing temperature to
 

fall below the current vent temp target by no more than
 < 3.6 °F >

rise above the current vent temp target by no more than
 < 5.4 °F >

Inject only if measured light greater than
 < 10 w/m<sup>2</sup> >

☒ If hot and frequent venting is required then reduce CO<sub>2</sub> injection to avoid wastage

Inject time
 Min < 2 mins >
 Max < 10 mins >
 Wait time
 Min < 5 mins >
 Max < 15 mins >

Vent time
 Min < 2 mins >
 Max < 20 mins >

\*On IntelliGrow

## Humidifier or fogger

This output can drive either a standard fan-based fogger or ultrasonic humidifier or alternatively a nozzle-type fogger. When humidifier is selected, the function is very simple with the humidifier coming on when the humidity is too low and going off when the offset is reached. When fogger is selected, the operation is similar except when it is calling for humidification the output is pulsed on and off producing small amount of fog and allowing time for each amount to dissipate before the next.

### Fogging rules

Only fog to cool during day if RH lower than	< 70 % >	Fog pulse ON every	< 00h > < 05m > < 00s >
Only fog to achieve RH (VPD) setpoint if temperature greater than	< 68 °F >	Fog pulse ON for a	Min < 1 sec > Max < 30 secs >

\*On IntelliGrow

## Heater, Dehumidifier and CO<sub>2</sub>

The purpose and function of these devices is self-explanatory, and they all work to keep the temperature, humidity and CO<sub>2</sub> close to the set points. In the advanced settings of IntelliGrow, you will see switching offsets for each device. This allows you to set the offset from the main set point at which it will turn on and another offset at which it will turn off. Although these come preset to typical values that will avoid excessive overshoot or rapid cycling in most growrooms, it is possible for the user to customise them to achieve optimal performance.

## Selection of units

The grower can determine the temperature units they are familiar with, C° or F° and they can set the proper date format (DD/MM/YY or MM/DD/YY).

## Advanced settings and rules

These settings and rules are pre-set to typical values that suit the majority of growrooms, however, expert users may wish to alter them to achieve optimal performance. **Note:** the advanced settings are only accessible via IntelliGrow and are not available from the controller LCD menu system.

## Fail safe operation

Fail safes ensure that your growroom will try to maintain your set points in the event of equipment failure. For example, if an air conditioner fails, the system will automatically switch to cooling by fans.

## Power Supply & Outputs

The outputs voltages are all dependent on the power supply adapter used. The IntelliClimate is supplied with a 24VDC power supply. **Note:** The outputs are limited to a current of 1.2A inductive load and 3A resistive load. The power supply should be sized according to the maximum load that can be applied at any one time. The maximum total draw at any one time should not exceed 4A.



## Getting Started

Follow the installation instructions in **Section C** and when everything is installed and connected do the following:

- Connect power to the IntelliClimate
- Check that the power light on the front panel is on
- Check that the LCD display has some information on it
- Navigate to the Overrides menu and Force ON each piece of equipment to confirm your wiring is correct

## Connect IntelliClimate to the cloud

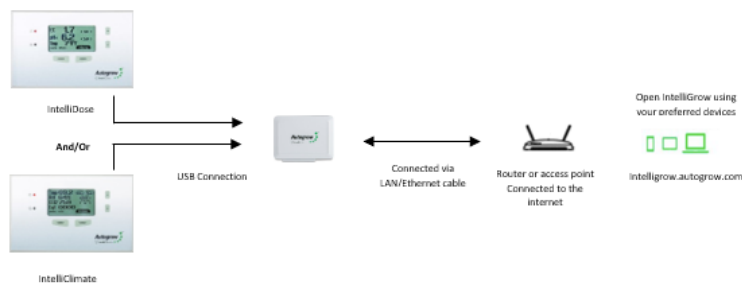
Connecting your IntelliClimate to IntelliGrow will allow for remote access, data logging, text/email alerts and remote tech support. In addition, you will have access to the Advanced Settings.

**We recommend you use the Autogrow IntelliLink gateway device to connect your controller directly to your network.**

### Connect your devices as per the picture below

IntelliLink with LAN/Ethernet:

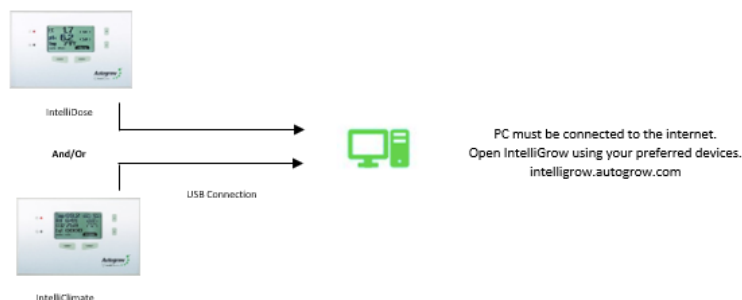
Connecting controller to IntelliGrow account using IntelliLink (via LAN/Ethernet cable)



or

Direct Connection with PC:

Installing IntelliGrow Gateway Software on PC



## Connect via IntelliLink (recommended):

Please visit this page for the IntelliLink Quick Start Guide:

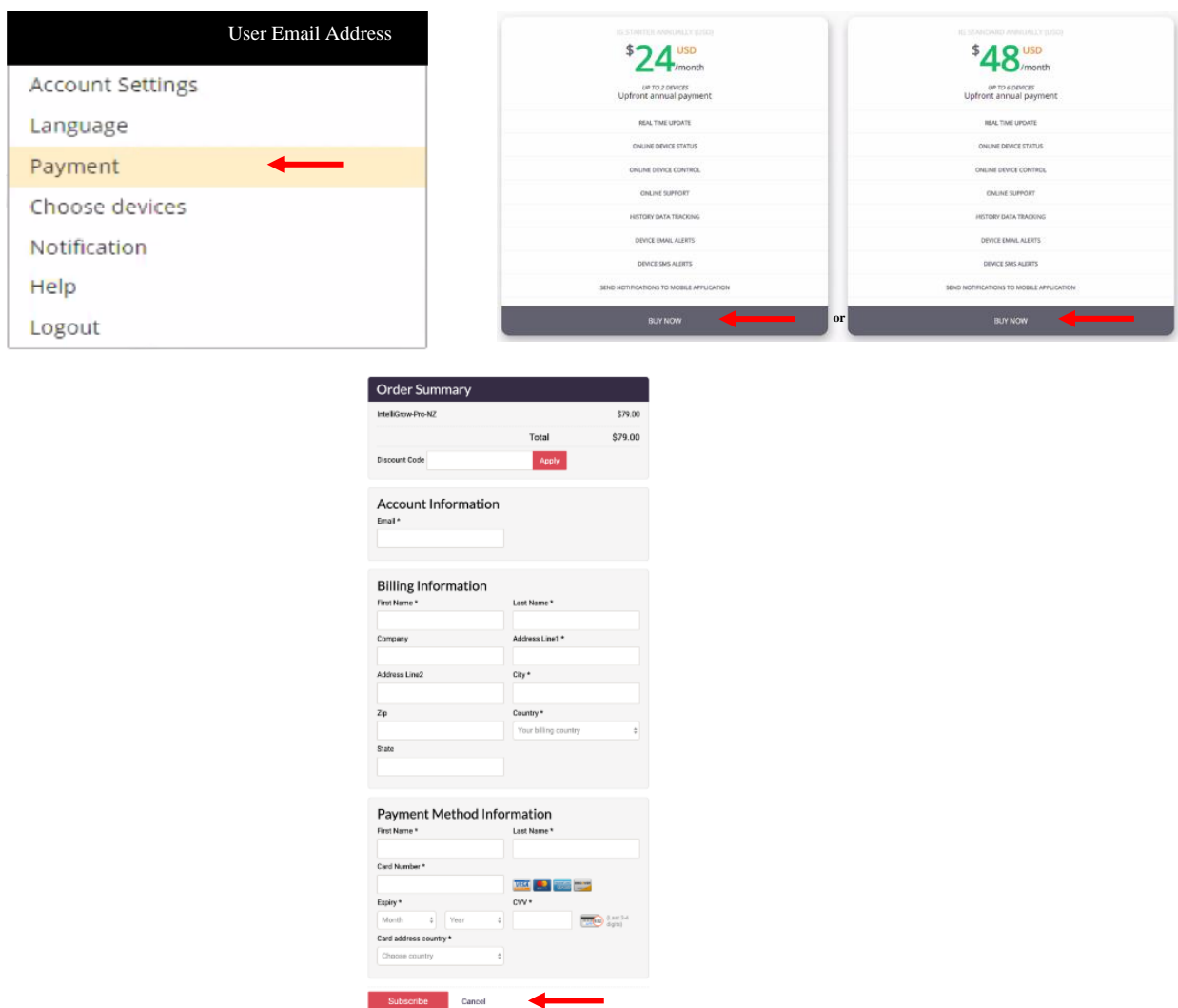
<https://knowledge.autogrow.com/articles/intellilink-quick-start-guide>

## Connect via PC:

Please visit this page <https://knowledge.autogrow.com/articles/connecting-with-windows> to download the IntelliGrow gateway software. Confirm your IntelliClimate is connected to your PC via USB cable. If you experience any issues, please contact [support@autogrow.com](mailto:support@autogrow.com).

## Here are the instructions to activate your IntelliGrow Subscription

- You will need to first register for a new account here <https://intelligrow.autogrow.com/>
- Login using your account details
- Click your profile in the top right of the page and select “Payments” from the menu.
- Click on IG **Starter/Standard** Annual “Buy Now” button.
- Fill in your details in the Order Summary and click subscribe



**User Email Address**

- Account Settings
- Language
- Payment**
- Choose devices
- Notification
- Help
- Logout

**IG STARTER ANNUALLY \$24 USD /month**  
UP TO 2 DEVICES  
Upfront annual payment

**IG STANDARD ANNUALLY \$48 USD /month**  
UP TO 4 DEVICES  
Upfront annual payment

**Order Summary**

IntelliGrow-Pro-NZ \$79.00  
Total \$79.00

Discount Code  **Apply**

**Account Information**  
Email \*

**Billing Information**  
First Name \*  Last Name \*   
Company  Address Line1 \*   
Address Line2  City \*   
Zip  Country \*   
State

**Payment Method Information**  
First Name \*  Last Name \*   
Card Number \*   
Expiry \*  /  CVV \*   
Card address country \*

**Subscribe** Cancel

## Section B – Settings using IntelliGrow website

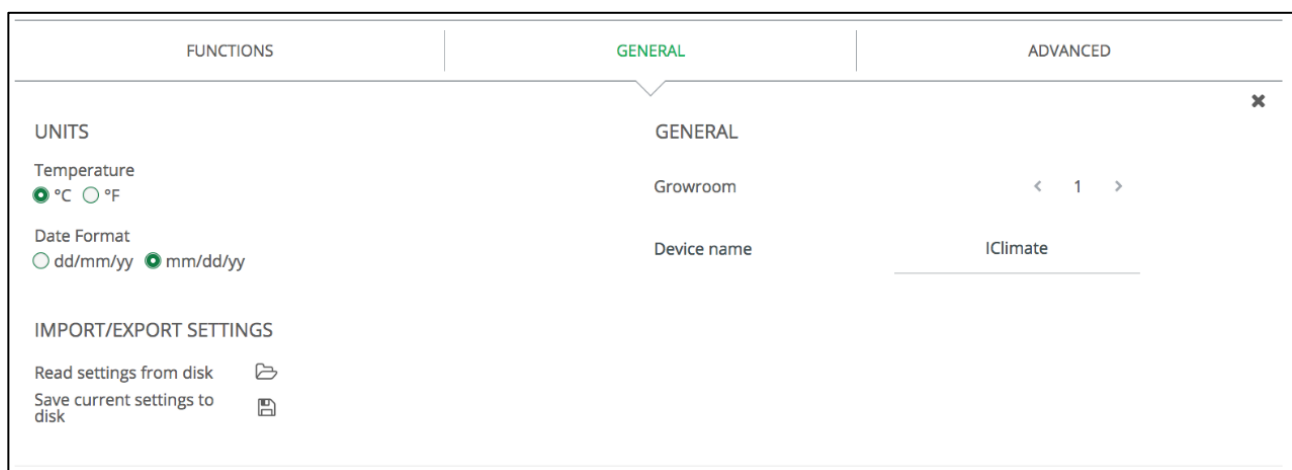
### ORDER OF SETTING UP A NEW CONTROLLER

- 1) Visit <https://intelligrow.autogrow.com/> to create account
- 2) Connect your IntelliClimate to your gateway (computer or IntelliLink)
- 3) Ensure your IntelliClimate shows as connected to your IntelliGrow account
- 4) Set the configuration of the controller to match the physical equipment
- 5) Check the time/date on the controller

### Configuration

#### General

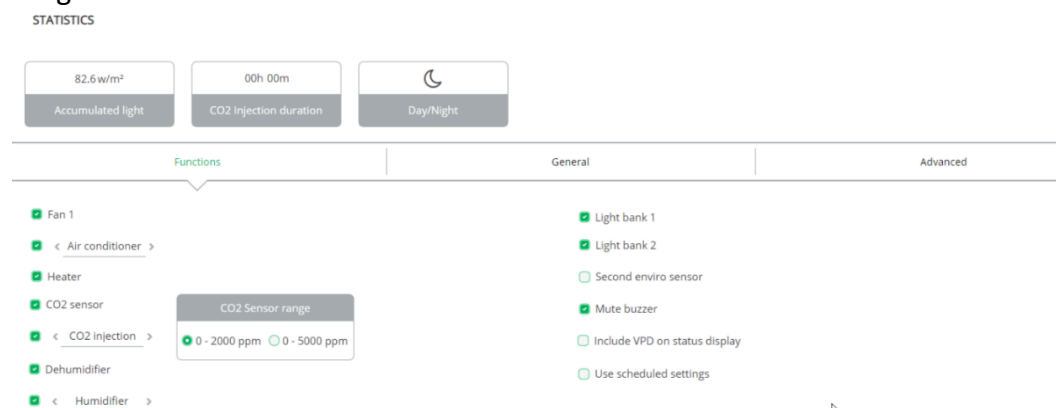
First, select your temperature units, date format and name your device. You can also import/export settings and save your current settings to your computer.



\*On IntelliGrow

#### Functions

Second, check each device you have installed. Some devices share one output, so you can only select one device or the other. The software enforces this when one is selected the other is automatically “greyed out”. If you want to select the greyed device, you must de-select the other one first. After changing any settings, click the 'Save' button at the bottom-right of IntelliGrow.



\*On IntelliGrow

## Advanced settings and rules

These settings and rules are pre-set to typical values suiting the majority of growrooms. However, expert users may wish to alter them to achieve optimal performance.

### Switching offsets

This group of advanced settings refers to the exact point at which a device is switched on or off. The idea is to have a small differential between the ON point and OFF point to avoid device switching on/off too rapidly as this could cause unnecessary wear. The switching offsets are also useful to avoid overshoots when a heater or CO<sub>2</sub> is switched off.

The IntelliClimate has standard offsets as a default, but after observing your growroom, you can alter these offsets to achieve your perfect environment conditions.

#### SWITCHING OFFSETS FROM CALCULATED TARGETS

Fans	On < <u>0.9°F</u> >	Off < <u>-0.9°F</u> >	CO2	On < <u>-200 ppm</u> >	Off < <u>-100 ppm</u> >
Heater	On < <u>-0.9°F</u> >	Off < <u>0.9°F</u> >	Dehumidifier	On < <u>8%</u> >	Off < <u>2%</u> >
Air conditioner	On < <u>0.9°F</u> >	Off < <u>-0.9°F</u> >	Humidifier	On < <u>-5%</u> >	Off < <u>5%</u> >

\*On IntelliGrow

### Rules

Each rule is listed below with a brief description and a suggested initial value.

#### Humidify/temperature control rules

When changing from night to day, prevent heater from switching on for XX minutes prior to lights turning on to prevent exceeding your temperature set point.

##### *Humidify/temperature control rules*

When changing from night to day prevent heater from switching on for < 5 mins >

\*On IntelliGrow

Set the heating offset to ensure the fans and heaters do not run simultaneously. This is especially useful in colder environments where outside air could cool the room down very quickly.

Heating offset from temperature set point (used to ensure heater and fans do not operate simultaneously) < -7.2°F >

\*On IntelliGrow

## Minimum periodic air change rules

This will force an air change if the fans have not been operating for other reasons. This will expel humid, stale air and bring in ambient CO<sub>2</sub>. It is good practice to allow minimum air change when air conditioning is active to expel methane and other stale air. You may want to change these settings between winter and summer.

Most growers would not want an air change to occur when the air conditioner is running, to avoid expelling the cool air. If you would like to allow for air change while the air conditioner is running, please tick the box.

### Minimum periodic air change rules

Force Fan ON for

Day	< 00h > < 05m > < 00s >	Every	< 01h > < 00m >
Night	< 00h > < 03m > < 00s >	Every	< 02h > < 00m >

☒ Allow minimum periodic air change while air con active

\*On IntelliGrow

## Setpoint ramping

When changing between day and night, this rule defines a period of time for the set points to gradually change (or ramp) from one value to the other. If the environment changes too quickly, you can shock your plants. Usually, 15-30 minutes is an appropriate ramping time.

### Setpoint Ramping

Ramp setpoints at day/night transition for < 30 mins >

\*On IntelliGrow

## Air Con

If the air con is forced on for the day period you can also force it on before the day period starts, typically 2-10 minutes. This cools the room down in anticipation of the lights coming on.

### Air Con

☒ Force on air-con during day period

Start air-con (before day period) < 2 mins >

\*On IntelliGrow

## CO<sub>2</sub> rules

CO<sub>2</sub> injection is allowed when not venting. You can choose to allow CO<sub>2</sub> to inject when the Fan 1 is running. This is useful if your Fan 1 is an HAF (air flow) fan. If your Fan 1 is an exhaust fan, tick the box to allow the IntelliClimate to reduce CO<sub>2</sub> injection to avoid wastage.

**IMPORTANT:** The IntelliClimate has a factory default to only allow CO<sub>2</sub> injection when the light readings are above 10w/m<sup>2</sup>

If your light levels are below this number, your CO<sub>2</sub> will not inject. Please adjust your EnviroSensor so it gets a light reading or login to IntelliGrow and change this setting. For further assistance, please contact [support@autogrow.com](mailto:support@autogrow.com).

Allow for CO<sub>2</sub> cycling by allowing temperature to

fall below the current vent temp target by no more than < 3.6 °F >

rise above the current vent temp target by no more than < 5.4 °F >

\*On IntelliGrow

Most growers will want to minimize wastage of CO<sub>2</sub>, so you have a few options to choose from. You can choose to allow the temperature set points to rise or fall to cycle CO<sub>2</sub> most efficiently.

### CO<sub>2</sub> Rules

☐ CO<sub>2</sub> injection is allowed when not venting. Also allow injection when only F1 is running?

Inject only if measured light greater than < 10 w/m<sup>2</sup> >

\*On IntelliGrow

If it is hot and the room is frequently venting, you can reduce CO<sub>2</sub> injections. You can override these settings and control your CO<sub>2</sub> by setting inject, wait and vent times to work for your specific growroom.

☒ If hot and frequent venting is required then reduce CO<sub>2</sub> injection to avoid wastage

Inject time Min < 2 mins > Max < 10 mins >

Wait time Min < 5 mins > Max < 15 mins >

Vent time Min < 2 mins > Max < 20 mins >

\*On IntelliGrow

## CO<sub>2</sub> Extraction

Certain growing environments may require that CO<sub>2</sub> is extracted from the growroom. You can choose CO<sub>2</sub> Extraction under the Functions tab. The IntelliClimate will run fans to bring CO<sub>2</sub> levels to your desired set point.

## Humidification

As the room cools down the RH will automatically rise. You can choose to allow humidification during the night period, or have it disabled. When changing from day to night, you can inhibit humidification for 30 mins prior to the change. The purpose is to ensure the room and crop are left dry for the night.

### Humidification

☒ Allow humidification during night time period

When changing from day to night inhibit humidification for < 30 mins >

\*On IntelliGrow

## Fogging

Fogging is an effective way to cool your room down while helping to control relative humidity. You can choose to use fogging to cool your room when the humidity is low enough that fogging will not cause an adverse reaction. If the room is too cool, the fogging will hold off. Fogging will pulse on and off to maintain your desired set point.

### Fogging rules

Only fog to cool during day if RH lower than < 70 % >

Fog pulse ON every < 00h > < 05m > < 00s >

Only fog to achieve RH (VPD) setpoint if temperature greater than < 68 °F >

Fog pulse ON for a

Min < 1 sec >

Max < 30 secs >

\*On IntelliGrow

## Lighting

Metal halide and high-pressure sodium bulbs need to cool down after switching off to preserve the life of the bulb. In the event of a power outage, the lamp cool-down time is important to ensure this happens. LED lights do not require a cool-down period.

To avoid a power surge, there should be a minimum gap between light bank 1 switching on and light bank 2. Normally, 6 minutes is sufficient. If electronic ballasts are used it may be possible to reduce this time.

### Lighting

Lamp cool-down time < 15 mins >

After switching on first light bank, switch on next light bank after < 6 mins >

\*On IntelliGrow

## Fail Safe Settings

You can customize your fail safe settings to levels appropriate for your growroom.

- **Aircon override** - If the temperature becomes excessive when in aircon mode, the fan will switch ON.
- **CO<sub>2</sub> fail safe** - Switch on all fans if CO<sub>2</sub> exceeds 1950ppm. Although CO<sub>2</sub> is not poisonous, it can cause suffocation.
- **CO<sub>2</sub> injection override** - If you run out of CO<sub>2</sub> gas and the CO<sub>2</sub> level falls below 300ppm, the system will revert to using the fans to bring in ambient CO<sub>2</sub>.
- **Fan fail override** - If in fan mode and temperature continues to rise the lights will progressively shut down
- **Lighting override** - If a bank of lights fails, the light level will fall below your minimum value (in Alarm Settings) and the controller will switch to the alternative bank of lights.
- **Dehumidifier override** - If the RH becomes excessive, the AC will come ON. If the RH continues to rise, the fans will come ON.

### FAIL SAFE SETTINGS

#### Aircon override

Switch on all exhaust fans if temp exceeds < 87.8 °F >

#### CO<sub>2</sub> fail safe

Switch on all fans if CO<sub>2</sub> exceeds < 750 ppm >

#### CO<sub>2</sub> Injection override

Revert to fan(s) for this session if CO<sub>2</sub> falls while injecting

#### Fan fail override

Switch off one light bank if temp exceeds < 91.4 °F >

Switch off all lights if temp exceeds < 95 °F >

#### Power failure

After cool-down, switch lights on after < 0 mins >

#### Lighting override

☒ If light level falls below alarm minimum for more than 5 minutes, switch on other light bank. (Note: will not retry until next day)

#### Dehumidifier override

Switch to AC if RH exceeds setpoint plus < 15 % >

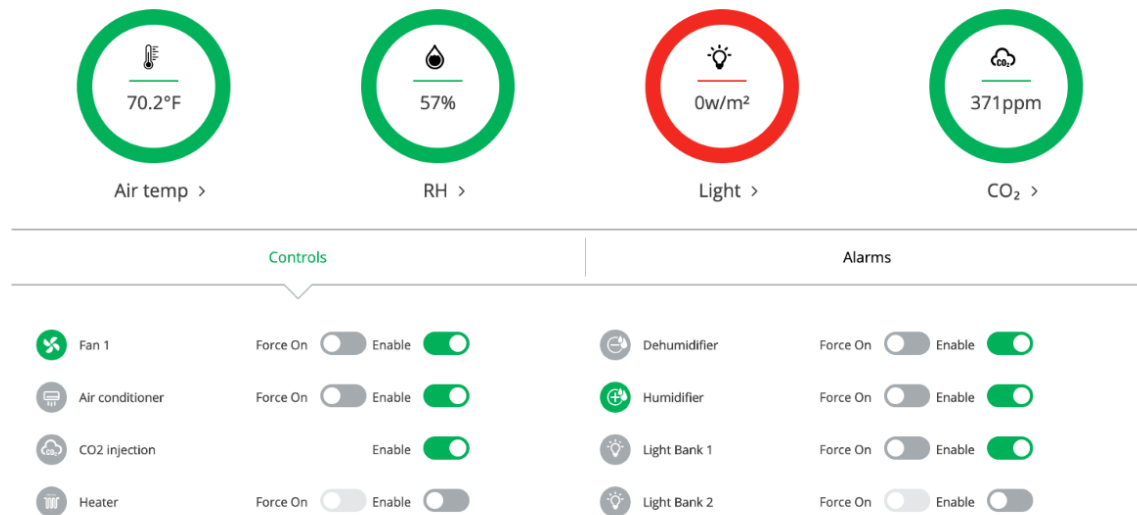
Switch on fans if RH exceeds 93% or setpoint plus < 20 % >

\*On IntelliGrow



## Readings

This screen allows you to view readings and set points for functions that have been enabled under the function's menu.



\*On IntelliGrow


Enabling a function will allow the controller to automatically manage the equipment to maintain your set points. All functions (except CO<sub>2</sub>) can be “forced on” to activate the equipment, overriding your set points. Forcing on a function is an easy way to test your outputs. Functions with a green icon are currently running, while those greyed out are not.




## Scheduling










The scheduling feature allows you to preload a typical growing sequence, so the environment automatically changes to match the requirements of the crop. Each line in the table is specified by a day number (and date) and specifies the settings required. These settings stay in effect until the date of the next line. New lines are easily added using the + button and lines are deleted by clicking the X button.

The scheduling feature is only available while using IntelliGrow. If the IntelliClimate loses connection to IntelliGrow, it will continue with the current set points until it is reconnected to the cloud.

Once you have entered your schedule, you can save it to your local computer to be used again in the future. The dates in the table are relative to the specified start date. A schedule created for a start date of 15 January can be reused starting from any other date.

Start Date 07/23/20 

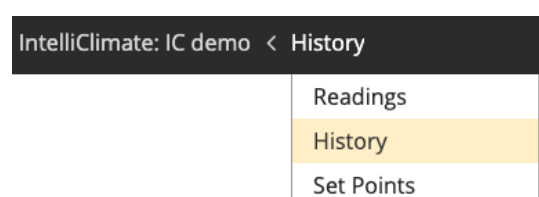
Day	Date	Light Bank	Light On	Light Duration	Day Temp °F	Night Drop °F	RH Day %	RH Night %	RH Max %	CO2 ppm
 1	07/23/20 	Both ▾	06h 00m	18h 00m	77	5	75	65	95	400
 8	07/30/20 	Both ▾	06h 00m	18h 00m	77	5	75	65	95	500
 15	08/06/20 	Both ▾	06h 00m	12h 00m	77	5	75	65	95	600
 22	08/13/20 	Both ▾	06h 00m	12h 00m	77	5	75	65	95	800
										

\*On IntelliGrow

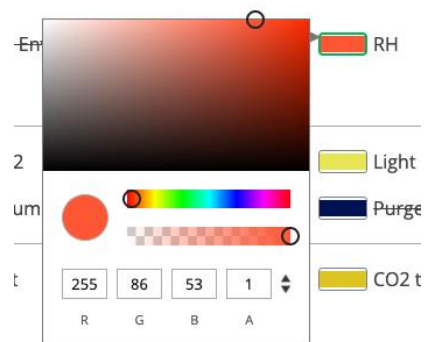
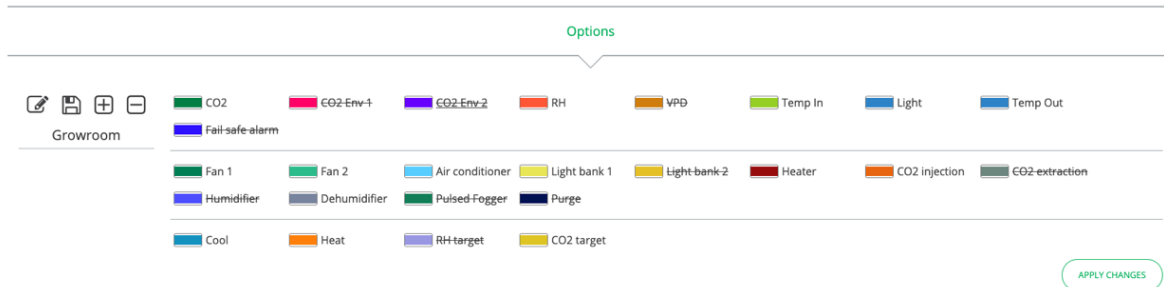
## History

The history screen on IntelliGrow is very helpful for growers to see not only their historic data, but also when their equipment is running and how effective it is. The history screen will show you the temperature, relative humidity, CO2 and light levels over any length of time. You can set up the history graph to show information specific to your interests.

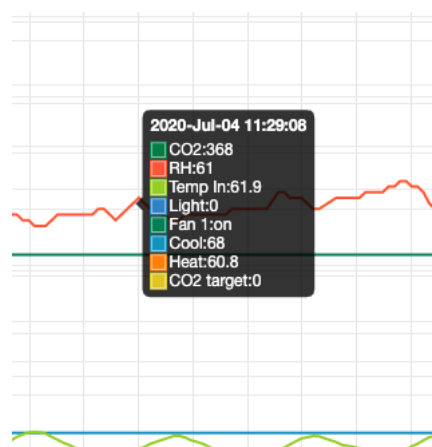
To access history, simply click on History in the drop down menu:



Click “Options” at the bottom of the screen to choose your readings, peripherals and targets. If two of the colors are too similar, click on the color box to change the color of the line. You can save these settings to your local computer for future use. You can have multiple presets saved.



Hovering your mouse over any point on the history graph will give you exact details about that single moment:



If there is a perimeter you do not want to see displayed, simply click it off on the left hand side:



You can also export the data into a .csv file:

EXPORT TO FILE 

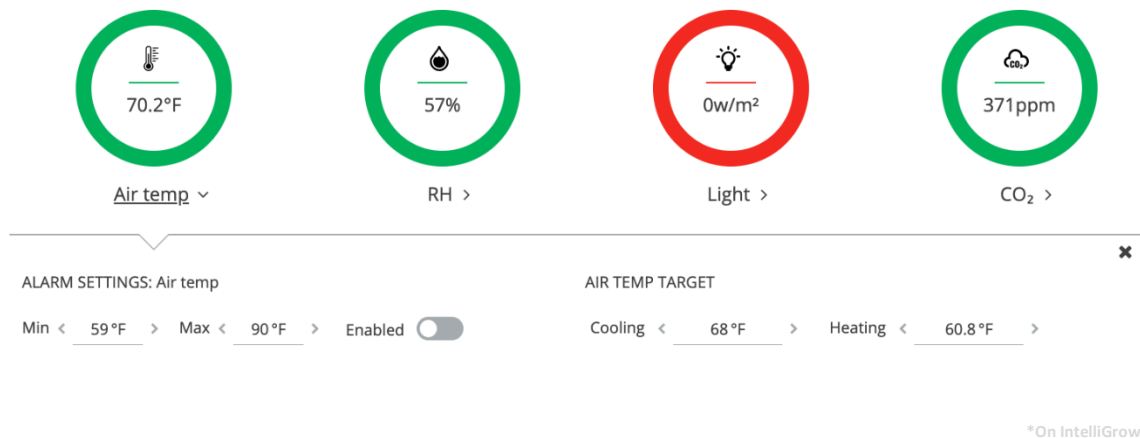
Date	Time	CO2	CO2 Env 1	CO2 Env 2	RH	VPD	Temp In
7/1/20	0:29:07	337	337	0	59	0.801	63.5
7/1/20	1:29:17	339	339	0	60	0.783	63
7/1/20	2:29:26	339	339	0	60	0.765	62.5
7/1/20	3:29:34	342	342	0	60	0.75	62
7/1/20	4:29:42	343	343	0	60	0.735	61.6

## Alarm Settings and Targets

Set points are user-defined. You can set your desired temperature, humidity & CO<sub>2</sub> to maintain an ideal growing environment. The IntelliClimate will “learn” how to use your installed equipment to be the most effective. The targets you see displayed on the controller are constantly changing as the IntelliClimate evaluates the most efficient way to control your room.

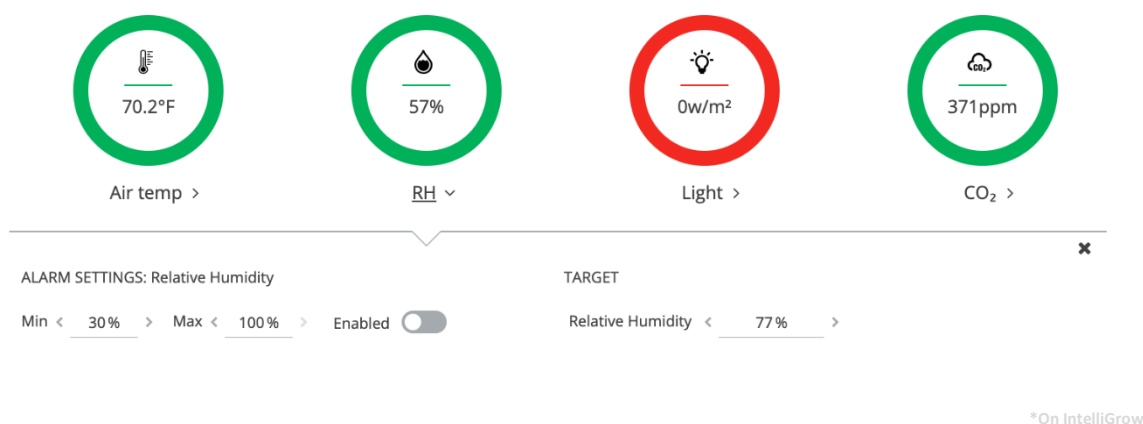
## Air Temp

You can set your minimum and maximum temperature values allowed in your growroom. If the temperature goes above or below, it will trigger an alarm, sending you a text and/or email alert. This feature can be enabled or disabled. Temperature targets are continually adjusting to meet the demands of the growroom. This is done automatically as the IntelliClimate adjusts set points. You can set the target to a desired value and it will force the setting one time and then revert back to original set point.



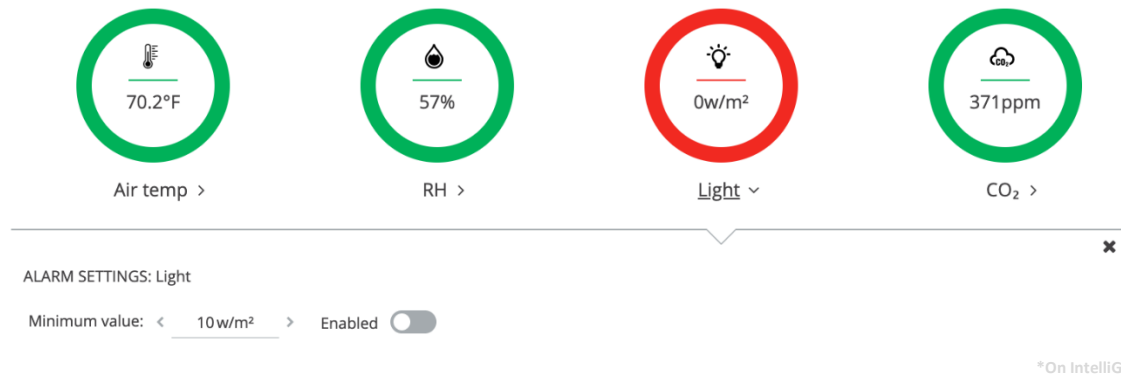
## RH (Relative Humidity)

You can set your minimum and maximum humidity values allowed in your growroom. If the humidity goes above or below, it will trigger an alarm, sending you a text and/or email alert. This feature can be enabled or disabled. Humidity targets are continually adjusting to meet the demands of the growroom. This is done automatically as the IntelliClimate adjusts set points. You can set the target to a desired set point and it will force the setting one time and then revert back to original set point.



## Light

You can set your minimum light value allowed in your growroom. If the light level falls below, it will trigger an alarm, sending you a text and/or email alert. This feature can be enabled or disabled



## CO<sub>2</sub>

You can set your minimum and maximum CO<sub>2</sub> values allowed in your growroom. If the CO<sub>2</sub> goes above or below, it will trigger an alarm, sending you a text and/or email alert. This feature can be enabled or disabled. CO<sub>2</sub> targets are continually adjusting to meet the demands of the growroom. This is done automatically as the IntelliClimate adjusts set points.



## Alarms

The alarms can be enabled to operate on the controller (buzzer) or via IntelliGrow to send text/email alerts. Each of these can be enabled or disabled. When connected to IntelliGrow, any enabled alarm will send an alert when a relevant reading deviates outside user set limits.

### ALARM SETTINGS: Air temp

Min < 59 °F > Max < 90 °F > Enabled ☐

## Section B2 – Settings using IntelliClimate Keypad

Though you can set most everything on the controller itself via the keypad, the **Scheduling, Advanced Settings and History** features are only available on IntelliGrow.

The two keys at the bottom of the display are “soft keys”. This means their function at any time is shown on the screen above them. After switching on, you will see the right-hand key has the label “menu” on the LCD above it and the left-hand key is unused at this point. To the right of the LCD screen are two arrow keys. Arrow keys are used for moving up or down through the menus, and when in a screen which allows you to edit a numeric value, they are used for increasing or decreasing the values. They are also used to select between different options.

On first pressing the “menu” button, you will see yourself in the main menu. Use the down arrow to move down and you see the following items

- SETTINGS
- TARGETS
- OVERRIDES
- ALARMS
- CLOCK
- CONFIGURE
  - INSTALLED PERIPHERALS
  - CO<sub>2</sub>

For example, to change a set point, move down to Settings and then press “enter” to enter the Settings menu. Now by pressing the down and/or up arrows move through this sub-menu to see the item that you wish to change, and press enter. After making any changes the soft keys will allow you to either save the new setting or to cancel and exit out of that screen.

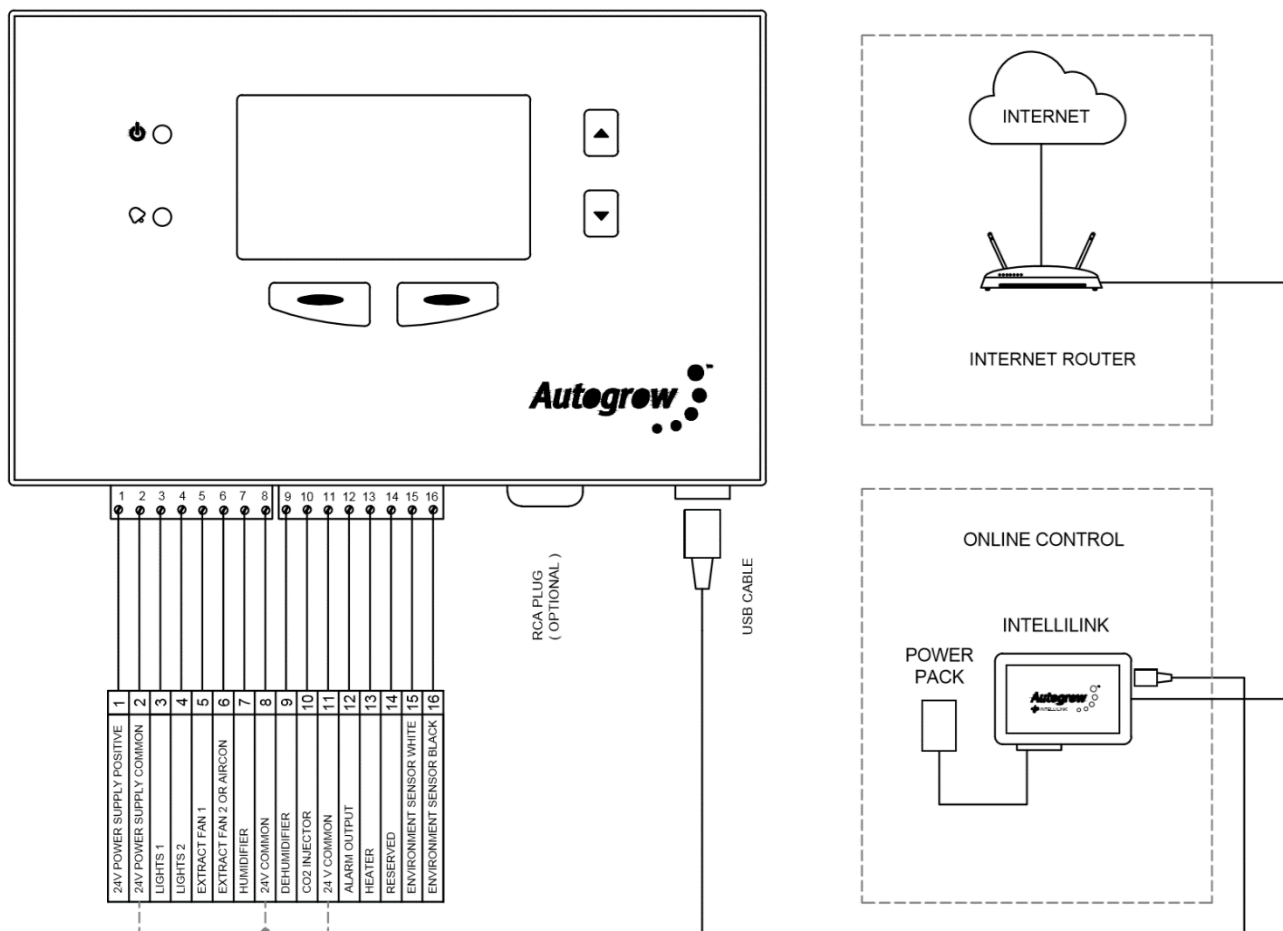
We suggest you use **Section B (pages 11-16)** on IntelliGrow settings to guide you through the setting procedure.

## Section C - Installation

The IntelliClimate controller should be installed in a cool, dry place out of direct sunlight. Remove the screws holding the back, fit the mounting feet, then screw to the wall. If using the dry wall (plaster board) anchors, use the longer screws supplied. If fixing to a plywood back board use the shorter screws

The low voltage power from the adapter is connected to the two-left connection terminals on the left-hand connector. With many power supplies, the cable is a screened “co-axial” type. In this case the screen should be connected to the “Common” and the center wire to the 24V line connection on the controller.

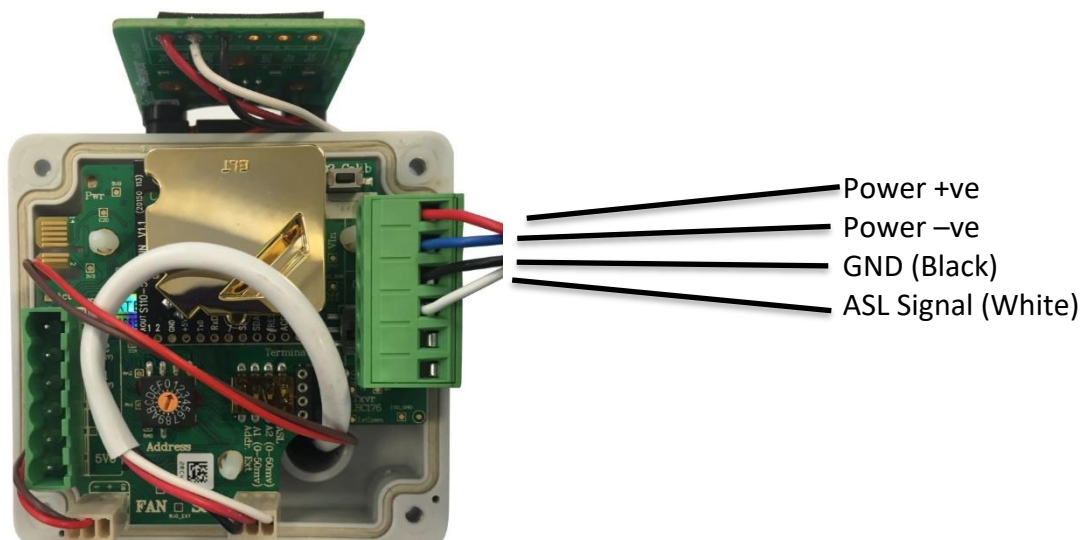
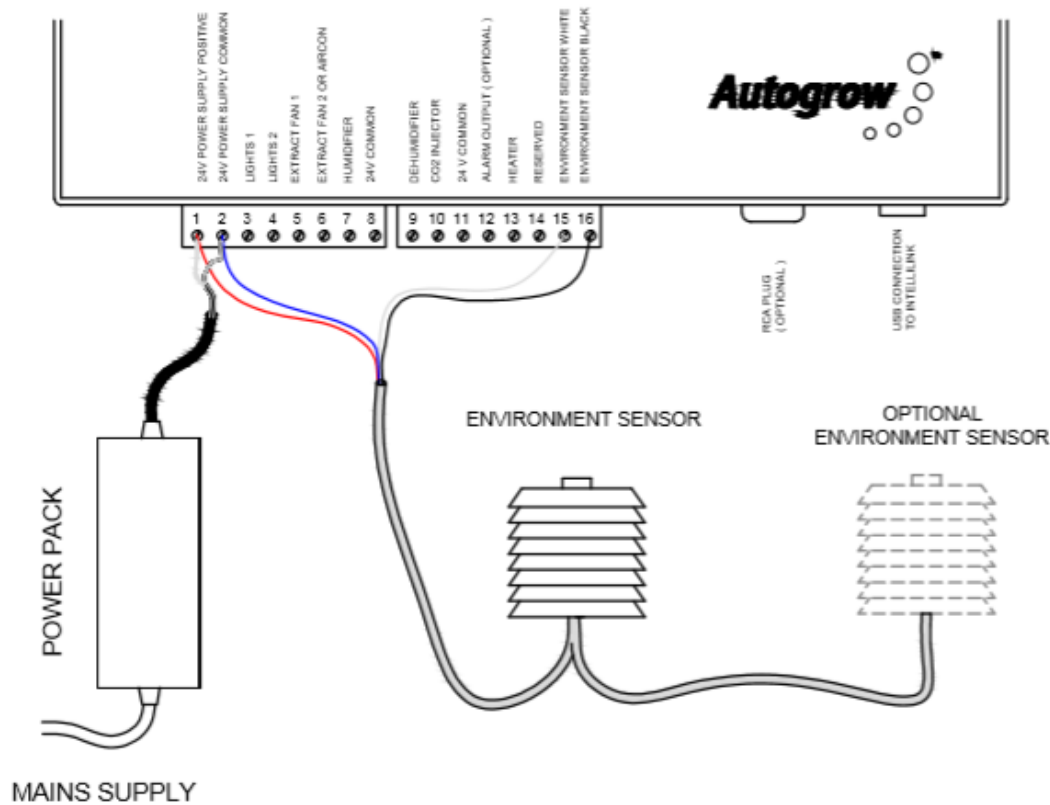
A 24V DC power supply adapter is supplied.





## Connection to EnviroSensor

A single cable is run from the IntelliClimate to the first enviro sensor which loops from the first enviro sensor to the second sensor (if fitted).



IntelliClimate Environment Sensor



ES Intelli “Ultra” wiring at Controller

### Setting the address of the EnviroSensors

The first EnviroSensor should have the rotary switch set to 1 with the second EnviroSensor set to 2.

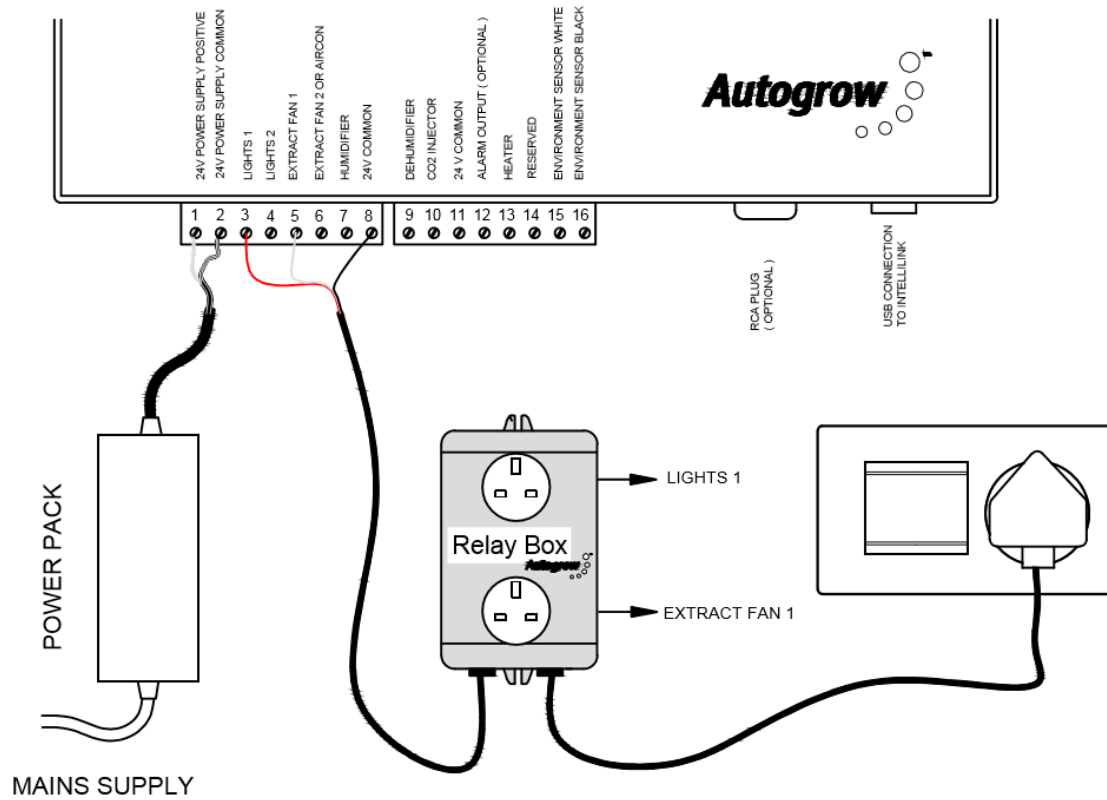


### Relay Boxes

To drive mains powered equipment, the 24V DC outputs must be connected to relays or contactors that have 24V DC coils. We normally supply twin relay boxes that provide a convenient method of achieving this. The **total** mains current draw from a relay box should not exceed the rating as printed on its label.

The black wire is the common, the red is for the upper socket outlet and the white is for the lower socket outlet.

## Example connection of a relay box to operate Light1 and Fan1



## Section D - Maintenance

Very little maintenance is required and is really limited to keeping all equipment clean, dry and cool. Observe and double check all readings from time to time to ensure that sensors are still accurate. This is particularly important for the CO<sub>2</sub> sensor.

### Calibration of CO<sub>2</sub> sensor

**SOFT CALIBRATION** – allows calibration against an accurate CO<sub>2</sub> sensor or known CO<sub>2</sub> level. On the IntelliClimate:

**Menu > Configure > CO<sub>2</sub> > Enviro 1 (or 2) > CO<sub>2</sub> Scale Factor**

Use the up or down arrows to change the scaling away from the normal 100% until the scaled or calibrated CO<sub>2</sub> reading below the box is correct, press “Save” to store the new calibration. When doing this, the percentage change needed is displayed on the screen. The normal percentage is 100%. If this ever needs to be set below 50% or above 150% this may indicate some deterioration of the sensor. In this case first try the hard calibration below to see if that corrects the reading. If not, you may require a new CO<sub>2</sub> module.

**HARD CALIBRATION** – Allows the sensor to self-calibrate when placed in fresh air at ambient CO<sub>2</sub> levels. As this is less convenient than the SOFT calibration mentioned above, it is suggested that this is carried out only once per year.

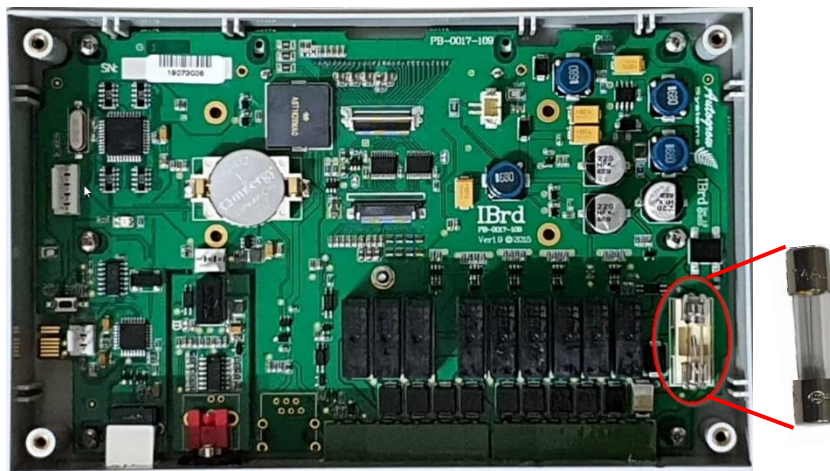
Place the sensor box outside in fresh air and connect to an IntelliClimate controller. On the IntelliClimate:

**Menu > Configure > CO<sub>2</sub> > Enviro 1 (or 2) > Open-Air Calibration**

On pressing start a new screen with a timer counting down from 11 minutes will appear. During this time leave the EnviroSensor in fresh air and avoid breathing near it. It will self-calibrate to the ambient CO<sub>2</sub> level. At the end, navigate back to the software calibration screen “CO<sub>2</sub> scale factor” and set this to 100%.

## Section E - Fault finding

- **Unit is completely dead** – i.e. no display, no power light, no outputs.
  - Check the power pack is functioning (by measuring with a voltmeter if possible), is plugged into an active outlet and properly connected to the controller.
  - If unit still fails to function, the probability is the internal 4A fuse (20mm x 5mm miniature glass fuse) may have blown. Most likely cause is that wires connecting to the relays have touched together and shorted out. To fix this it is important to clear the fault first. Inspect all wiring and ensure all wires are well insulated right to the point where they enter the terminal block. Then replace the fuse with a genuine 4A fuse. **DO NOT ATTACH WIRE OR ALUMINIUM FOIL ACROSS IT.**

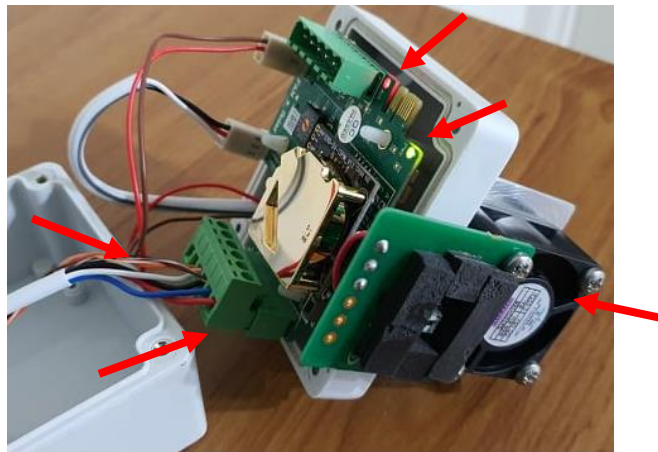


- **Lights or other equipment do not come on when expected**
  - Test the relevant output using a voltmeter set on a range suitable for measuring 24V DC while the output is active. You can force on an output via the Override menu. Measure between the output pin in question and one of the common connections. If the pin has 24V on it then the fault lies with the peripheral or relay driving it. If there is not 24V on the relevant pin, then recheck all settings starting with configuration.
  - Double check all other settings and readings to be sure that the peripheral in question should be ON.



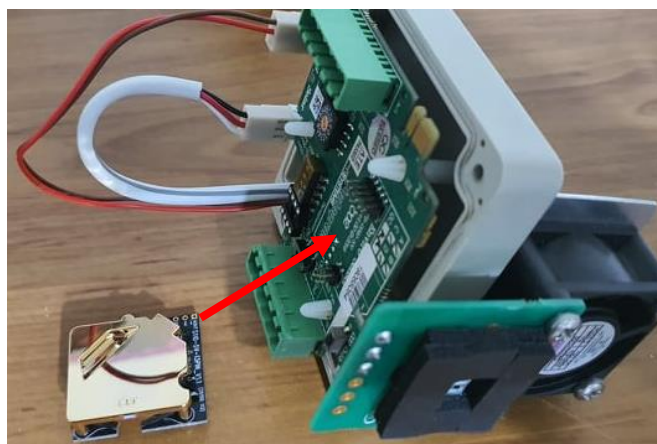
- **System not showing Temperature & Humidity readings**

- Confirm there is power to the EnviroSensor by visually checking to see the internal fan is running
- If the fan is not running, please check all wiring.
- If the fan is running, please power cycle the sensor by unplugging it from the green terminal block on the left.
- After you plug it back in, if there are still no readings, open the EnviroSensor and check that there is a green power light and a flashing red communications light.



- **System not showing CO<sub>2</sub> readings**

- Confirm there is power to the EnviroSensor by visually checking to see the internal fan is running.
- If the fan is not running, please check all wiring.
- If the fan is running, please power cycle the sensor by unplugging it from the green terminal block on the left.
- After you plug it back in, if there are still no readings, open the EnviroSensor and check that there is a green power light and a flashing red communications light.
- If the lights are functioning, gently remove the gold CO<sub>2</sub> sensor from the PCB and reseal it, ensuring all the pins are aligned correctly.





- **System not showing Light readings**

- The light sensor is on the top of the EnviroSensor, with the louvers pointed down.
- Make sure this sensor is under your lights, not upside down or mounted above the lights.
- LED lights will read low by nature, so place the sensor as close to the fixture as possible.



- **CO<sub>2</sub> not injecting or CO<sub>2</sub> active target displaying 0ppm**

- Confirm your light readings are over the factory default of 10 w/m<sup>2</sup>.
- Confirm the system is in Day mode.
- You must have at least one light bank enabled for CO<sub>2</sub> to function (even if a light is not connected)
- By default, CO<sub>2</sub> will not inject if Fan 1 is running. You can tick this box on IntelliGrow to allow CO<sub>2</sub> to inject while Fan 1 is running:

*CO<sub>2</sub> Rules*

- ☒ CO<sub>2</sub> injection is allowed when not venting. Also allow injection when only F1 is running?

\*On IntelliGrow

## Section F - Specification

### **IntelliClimate**

- 9 outputs 24VDC
- Ratings of individual outputs are 3Amps but the total draw from all 9 outputs must not exceed the rating of the supply adapter
- RH resolution  $\pm 2\%$  and accuracy
- Temperature resolution and accuracy 0.5°C/32.9°F
- Temperature sensor range 0-50°C/32-125°F
- Operating temperature range 0-50°C/32-125°F (not in direct sunlight)
- CO<sub>2</sub> resolution and accuracy 50ppm
- Power source – 120V/240V into 24VDC plug pack (supplied)
- Outputs will have the same voltage as the supplied voltage from the power pack
- Supplied with 3m USB cable

### **Twin Relay Boxes**

- USA 110V 15A total draw
- UK 240V 13A total draw
- AUS/NZ 240V 10A total draw



## Thank you for your purchase.

Get the most out of your IntelliDose or IntelliClimate control systems with IntelliGrow. IntelliGrow is a cloud-based solution allowing you to access, set, monitor and manage your growing operation - anywhere, anytime.

IntelliGrow Apps are available for download from both [Google Play App Store](#) and [Apple App Store](#)



**Better growing control, more freedom.** Manage your growing operation anywhere, anytime by logging in on your PC, tablet or phone.

**Base today's decisions on real-time data.** Leverage up to 5 years of historical grow data to make smarter, data-driven decisions.

**Best in class infrastructure.** Protect your growing data with enterprise level data security, at small business prices.

**Keep your site running smoothly.** Invite Autogrow's experts to log in remotely when you need them.

**We'll handle the tech.** Seamless product updates mean you get more functionality, without any disruption.



Don't have an on-site computer?  
IntelliLink will provide the  
internet connectivity.



Find out more at [autogrow.com/intelligrow](https://autogrow.com/intelligrow)



#### In the box:

##### HCTR-IC-001-01

- 1 x IntelliClimate controller
- 1 x Mounting hardware
- 1 x Instruction manual

##### HKIT-IC-001-01

- 1 x IntelliClimate controller
- 1 x 24V DC 2.5A power supply with universal plug
- 1 x EnviroSensor (temperature, humidity, light, CO<sub>2</sub>)
- 1 x 3m USB cable
- 1 x Mounting hardware
- 1 x Instruction manual

##### HKIT-IC-002-01

- 1 x IntelliClimate controller
- 1 x 24V DC 2.5A power supply with universal plug
- 1 x EnviroSensor (temperature, humidity, light, CO<sub>2</sub>)
- 1 x 3m USB cable
- 1 x Mounting hardware
- 1 x Instruction manual
- 3 x Twin Relay Box

#### Warranty and Replacements

If you have equipment purchased from Autogrow and it has developed a fault, please complete this form so that our support staff can diagnose the problem.

- Visit this page for Terms and Conditions <https://autogrow.com/terms-conditions>
- Visit this page for the RMA Form <https://autogrow.com/support-and-rma-form>
- Contact the distributor you bought the product from.
- Contact [support@autogrow.com](mailto:support@autogrow.com)

[www.autogrow.com](http://www.autogrow.com)

[sales@autogrow.com](mailto:sales@autogrow.com)

North America (+1) 707 206 2220

Global (+64) 9 415 2380

## Section G – Compliance Declaration

### Compliance Declaration - International regulations and codes



**This equipment is designed for commercial use and complies with the following regulatory codes.**

#### USA

##### Compliance with FCC Part 15 Class A

This equipment has been tested and complies with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operating this equipment in a residential area is likely to cause harmful interference, which the user will be required to correct the interference at his own expense. The end user of this product should be aware that any changes or modifications made to this equipment without the express approval of Autogrow Systems Ltd, could result in the product not meeting the Class A limits, in which the FCC could void the user's authority to operate the equipment.

#### Europe

**This product has been tested and found to comply with EC requirements for commercial equipment and carries the CE mark**

<b>Radiated Emissions</b>	EN55022 Class A
<b>Conducted Emissions</b>	EN55022 Class A
<b>ESD</b>	EN61000-4-2 (IEC 801-2)
<b>Radiated Immunity</b>	EN61000-4-3 ENV50204 (IEC 801-3) EN55024

#### Australasia

**This product has been tested and complies with C-tick requirements for commercial equipment EN55022 (CISPR 22) Class A**

#### RoHS

**This product is free from lead and other heavy metals**

Although this product is exempt from the RoHS regulations as it is classified as Category 9 Monitoring and control Instrument, it is nevertheless made with RoHS compliant components and assembled using lead free solder. It should be recycled at the end of its life. It may be returned to the distributors in your region for recycling or safe disposal