



conviron

Adaptis A350 / A1000

Operator's Manual

Feb 08- 2008
V4-Global



Adaptis

Operator's Manual

**PLEASE READ THESE INSTRUCTIONS
CAREFULLY AND COMPLETELY
BEFORE PROCEEDING**

Published by:

CONVIRON
590 Berry Street
Winnipeg, Manitoba
Canada R3H 0R9
www.convirion.com

May 2007

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TABLE OF CONTENTS

PRECAUTIONS	4
GENERAL	4
INSTALLATION	5
KIT INSTALLATIONS	8
– TISSUE CULTURE	8
– PLANT GROWTH	18
– INCUBATOR	26
– ARABIDOPSIS	32
CHAMBER START-UP	38
Installation	38
Start-Up	40
CONTROLLER NAVIGATION	41
Controller Navigation – Table	42
Sample Program	58
ALARM TROUBLESHOOTING – USER	60
DRIP PAN ACCESSORY INSTALLATION	66
TECHNICAL SPECIFICATIONS	70

GENERAL PRECAUTIONS



Hazard Warning



Please Note



Important Information

The following symbols are used throughout this Manual to draw your attention to important warnings, guidelines and product information. Please take note of their respective meanings.



Use Qualified Personnel

Qualified trades-people such as electricians, plumbers, refrigeration mechanics, etc. should perform all work as required by local codes and regulations.



High Voltage Hazard

Working with high voltage will be required when installing this equipment. Do NOT attempt this work unless you have the appropriate knowledge and experience. Take appropriate safety precautions and ensure that the building power supply to the chamber is off prior to installation.



High Voltage & Water Hazard

Water that could come in contact with the electrical components presents a high voltage hazard. Avoid these conditions. If you have any doubt of safe watering practices, contact CONVIRON.



Water Damage Hazard

Avoid water coming in contact with the electrical components, as it presents the risk of water damage to both high and low voltage electrical components. If you have any doubt of safe watering practices, contact CONVIRON.



Electrostatic Hazard

Electronic components in the control system can be damaged by electrostatic discharge (ESD). A substantial voltage can be discharged by the human body without necessarily feeling it, which is enough to destroy many electronic components.



Shipping Hazard

Shipping vibration can cause electrical and plumbing connections to loosen. Inspect all connections BEFORE connecting to main building services.



Live Voltage Hazard

The main terminal in the control panel has live voltage unless the external breaker is OFF. Injury can result without use of extreme caution when working in the control panel.



Lights Hazardous vapours

Adaptis units contain fluorescent lamps. There is no exposure to hazardous vapours while the lamps are operating. However, because they are extremely fragile, when broken, the emitted vapours may harm humans. Avoid enter in direct contact with broken fluorescent lamps. Keep the unit doors locked at all

times (specially the A350 side doors) to avoid damage on the lamps. If watering plants inside the unit is required, do it with care, avoid contact with the lamps as well as spilling over the lamps and canopies. To dispose lamps, follow the requirements in your area or contact your local authorities for procedures.



Light High temperatures

Fluorescent lamps operate at high temperatures. Avoid touching the lamps at all times.



Operational Precaution

Operate your CONVIRON equipment for a few days before introducing any plant material to acquaint yourself with the equipment's operation and to ensure the equipment meets the requirements for your experiments.



Replacing Lamps

Identify first the lamp/s to be replaced. **Completely disconnect the power supply to the unit by unplugging it from its receptacle before replacing lamps.** Unlock the lamp to be replaced by rotating it ¼ turn in its socket, and remove it with care to avoid breaking it. Install the new lamp. Ensure it is locked in its socket by rotating it ¼ turn. Dispose unused lamps, following the requirements in your area or contact your local authorities for procedures.



Replacing kits (only for A1000 models)

When a kit is installed in the cabinet for the first time, all four lamp connectors inside the cabinet are capped. **Adaptis** cabinets can operate at high temperature and humidity creating a hazard if the connector is exposed to such environment. Keep the caps on the unused connectors at all times. When replacing kits ensure to re-cap all connectors not being used.

INSTALLATION PRECAUTIONS

Read these instructions carefully before proceeding. Ensure building power to the chamber is off prior to installation.

The **Adaptis A350** reach-in chambers are shipped in a single crate while the A1000 chambers are generally shipped in two crates – one for the cabinet and another for the kit. To avoid damage, keep the chamber crated until it is ready for placement within the facility.



Preparation

Before moving the chamber to its final location, make sure it clears through doorways, hallways, elevators, etc. You may need to uncrate it before moving it. The door may be removed if absolutely necessary.

1. Using a utility knife, carefully uncrate the chamber.
2. Verify receipt of all components per the packing list. Notify your Dealer or CONVIRON Sales member immediately of any missing components.



Uncrating & Unpacking



3. Ensure all units' doors are locked before start moving the chamber to the installation location.

4. Remove kit parts from packaging where necessary.



Environmental Conditions

CONVIRON guarantees proper functionality of the chamber for conditions that do not exceed 30°C ambient temperature. It is important to ensure that the room in which the chamber is located adheres to these environmental conditions.

Chambers with air-cooled condensing units need a minimum of 1 foot (300mm) of space at the back for proper operation.



Shelving

Adaptis chambers come with wire shelves. These shelves do not slide over their supports. To position the shelves, simply locate the supports according to the required shelf height and gently lower the wire shelf over the supports. Push them completely back into position.



Positioning

Once the chamber is moved into position, ensure that the levelers (4 in total) are unscrewed until making firm contact with the floor. Ideally, the levelers in the front should be adjusted slightly higher than those in the back, to facilitate drainage.



Electrical Connections

Before connecting the chamber to building electrical service, verify it matches the service specified on chamber serial plate.

See Chamber Start-up section for details

Ensure a proper ground wire connection from the building panel.

Verify neutral to ground voltage is within tolerance. <3VAC.

If the unit does not contain a suitable plug, install an electrical adapter ensuring the presence of the connection to ground, or replace the provided plug by one that meets the local electrical requirements for your chamber by qualified personnel.



Drain Connections

A male 1/2" NPT (A1000 and A350) or a 1" OD hose (A350) gravity drain is under the rear of the chamber. Connect to either an open drain or a tapped gravity drain..

If your equipment has been order with DP option (drip pan) there is no need to connect the drain



Fresh & Exhaust Air Connections

Adaptis Reach-in chambers are equipped with a damper for fresh and exhaust air exchange. A single lever located inside the chamber cabinet adjusts both the intake and exhaust air simultaneously.

Recommendation: Adjust exhaust air before every experiment.

Adaptis chambers cannot be connected to a building central exhaust or fresh air supply as they are. They require adapters to the mechanical dampers located on the chamber roof.



Additive Humidity

All **Adaptis** reach-in chambers present added Humidity as a Standard feature. The mist is generated using Ultrasonic humidifiers capable of providing a fine mist without the need for high pressure systems that require maintenance. A connection to a **purified water source** is required when additive humidity is to be used. Use purified water made by one of these methods:

- Distillation
- Reverse osmosis or;
- De-ionization



Maximum and Minimum Water Pressure

Maximum allowable pressure in all **Adaptis** units is 4 bar (60PSI). Minimum pressure required: 0.3 bar (5 PSI).

See Chamber Start-up section for details



Water Connection points

Connection points are always at the back of the cabinet – no need to open the machine compartment. Connection is made to the water inlet with a compression fitting. The supply line should be M6 (1/4 inch) in diameter.



Water Quality Specifications

pH: 7.0 ± 0.5
Filtration: <2 microns or 0.00008 inch
Purity: Resistivity 0.5 to 5.0 Meg Ohms or
Conductivity 2.0 to 0.2µSiemens



Humidity system Maintenance

When not in use, the humidity box (located inside the machine compartment), must be drained and cleaned. Close the water supply valve while not in use.

CONVIRON recommends setting a moderate RH value in all programs to keep the USH feature operable without significantly affecting the experiment.



Unit clean


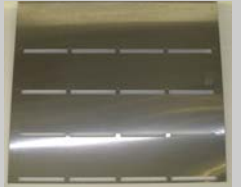
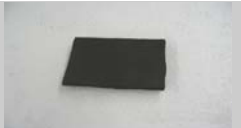


Inside the **Adaptis** cabinets there are Sensors and other electrical components. Never water the unit's interior directly using a hose. For interior cleaning please damp a clean towel or rag outside the unit, and carefully wipe the unit down. Do not use abrasive cleaners. Detergents in low proportions are suitable for most cleaning requirements.

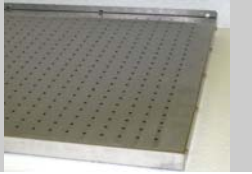






Adaptis A350 will require maintenance of the glass windows. Use glass cleaners in both sides (interior and exterior).

Kit Installation - Tissue Culture

KIT PARTS

The following list comprises the components for the Tissue Culture kit.

Qty	Description	Picture
1	Back Plenum bottom	
1	Back wall plenum	
25	Screw M4 x 6 Pan	
4	Insulation – small	
3	Insulation – large Insulation - narrow	
2	Fan cover (2)	
1	Air Inlet cover	
8	Screw M3 x 35	
6	Screw M3 x 25	

4	Air shelf	
10	Shelf support	
1	Top shelf	
8	Lamp fixture support	
4	Lamp fixture w connector	
4	Lamp fixture without connector	
16	Screw front (M43 x 6 Thumb)	
16	Screw back (M4 x 6 socket)	

KIT ASSEMBLY INSTRUCTIONS

Open the cabinet door, and visually inspect the cabinet (see photo 1). Ensure the two fan cavities on the right side wall are cleared as well as the screw-holes to install the fan-cover or the fans. If screws are found in any of these holes, they must be removed. Refer to Photo 1.



Photo 1: A1000 empty cabinet

1. Install The Back Plenum Bottom Panel

This panel is very important since it closes the back wall plenum directing the airflow to the four shelves at equal pressure. (A loose fit and the airflow will not be evenly distributed.) If the panel is installed upside down, the airflow will not reach the bottom shelf.

Four screws (M4 x 6 mm) are required to install the Back Plenum bottom. Firmly screw the panel into the back wall with the 4 screws (See Photo 3).

If required, apply sealant to guarantee a tight seal. Notice that there are two holes to collect the drain - Do not plug them.



Photo 2: A1000 view after Installing the Back Plenum Bottom Panel

2. Install the Back Plenum:

Now the Back wall plenum can be installed. It must be installed with the short flanges toward the Unit's back wall. The four (4) rows of slots should be located offset toward the bottom of the chamber (see photo 3).

The largest flange at the top must be facing the door and must be installed in between the fan housing and the coil drip pan.

Remove the 6 screws at the back of the fan housing, install the plenum, and secure the back wall plenum utilizing the 8 screws (M4 x 6 mm) in the kit. Reinstall the 6 screws at the back of the fan housing (see photo 4)



Photo 3: A1000 view after Installing the Back wall Plenum



Photo 4: A1000 back plenum mounting detail shown. The plenum top flange seats above the fan housing

3. Install the Canopy Fan covers:

The A1000 cabinet presents 2 fan compartments located on the right side wall and an air inlet compartment located on the left side wall. The fans and air inlet are used **ONLY for the PG Kit** and allow an air stream to cool the lamp canopy. For all other kits, these ports must be covered to avoid treated air from inside the chamber from leaking out.

To cover the openings, the IN kit contains two fan covers and one air inlet cover. The kit also contains insulation for placement under the covers. Place the small insulation blocks (4), two in each compartment, as shown in the picture. Using the four (4) M3 x 35 screws, install the fan cover.

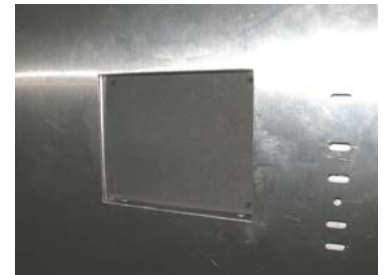


Photo 1: Small insulation installed inside the fan compartment

Repeat the procedure with the second fan cover. (See photo)

Note: There is a wire and a connector inside the compartment that is used for the PG Kit. Place it in between the two layers of insulation. Do not remove it nor pull it, otherwise a PG kit will not be able to operate if required in the future.

Note: The covers must be installed slightly inside the opening to minimize the protrusion of the screw head to the inside of the chamber.



Photo 2: Fan cover installed

4. Install The Canopy Air Inlet Cover:

To cover the air inlet, first place the two narrow insulation blocks provided in the kit – one on top of the other at the bottom of the opening. The three large insulation blocks (glued together) now have to be placed (vertically) on top of the two narrow pieces (see photo). Using the six (6) M4 x 25 screws provided, install the air inlet cover.



Photo 3: Large and narrow insulation showed as they go inside the air filter compartment



Photo 4: Large and narrow installed inside the compartment



Photo 5: Air inlet cover installed

Note: The covers must be installed slightly inside the opening to minimize the protrusion of the screw head to the inside of the chamber.

5. Install The Shelves

The shelves are installed from the bottom to the top. The bottom shelf has two elements that differentiate it from the rest of the shelves:

- The lower flange is shorter
- It contains a small handle close to the back

Carefully grab the bottom shelf and slide it over the floor of the chamber until the upper flange reaches the back plenum. Lift the bottom shelf by the handle (so the shelf is tilted down towards the front), and push the shelf toward the back wall until the lower flange rests inside the lower slot.

Note: It maybe necessary to loosen the four (4) Back plenum bottom screws to facilitate the insertion.

Now slowly lift the shelf from the front side so that it is tilted down towards the back. Install the shelf supports. To install the shelf supports first insert the top part into the corresponding slot and then press slightly on the bottom side snapping it into place (about 1" / 25 mm below the top one). Install the supports on each side wall, only on the front side, starting from the lowest slot. (See Photo 11 for details.)



Photo 11: Detail of the Bottom Shelf support

Once the shelf is seated on the two shelf supports, firmly screw the shelf to the back plenum (4 M4 x 6 mm screws). Before installing the other three air shelves, the Lamps fixtures support can be installed.

6. Install the Lamp fixtures support:

The lamp fixture supports are the same for all lamp fixtures and must be installed immediately below the air shelves. The supports have two different size holes on each flange: two (2) 9/32" diameter (7.2 mm) in one side and two (2) 3/16" (4.7 mm) in the other side.

Note: The side with larger holes must be installed toward the back (the opening in the shelf)



Photo 12: Notice the larger hole in the back side

On the side flange of each air shelf (bottom side) there are numbers "2" and "3" stamped beside the holes to indicate the number of fixtures to be installed. If the kit is being installed with two lamp fixtures (basic configuration), slide the lamp fixture support below the air shelf. Using M4 x 6 screws, first screw the back support to the air shelf on a number "2" indicator. See Photo. Repeat the same with the front fixture support.



Photo 13: Notice the number "2" stamped on the side flange



Photo 14: Lamp fixture supports installed

Repeat this support installation instruction with all the air shelves and the top shelf.

Now, the other three air shelves can be installed into the unit. To install the other three air shelves, carefully insert the shelf in a tilted position (lower in the front) into the corresponding slot, until the lower flange inserts into the corresponding slot. Now, slowly lift the front of the shelf and install the shelf supports only in the side walls, front side.



Photo 15: A1000 after installing the Bottom shelf



Photo 16: A1000 view after installing the third shelf



Photo 17: A1000 view after installing the second shelf.



Photo 18: A1000 view after installing the first shelf.

7. Install The Top Shelf:

To allow the installation of the lamp fixtures for the top shelf, a lamp fixture support must be installed. To install it, five (5) screws (M4 x 6) must be inserted into the back wall in the space at the top.

Note: THE SCREW MUST BE INSERTED BUT NOT TIGHTENED. A 1/8" to 3/16" (3 to 5 mm) gap must be left between the screw Head and the back wall in order for the top shelf to slide in.



Photo 19: 5 screws installed at the Back plenum before installing the top shelf

Support the top shelf (front side tilted down) until the five grooves located in the lower flange insert around the screws. Slowly tilt the top shelf in the other direction (front side tilted up) and insert the two remaining shelf supports. Tighten the five screws in (See photo 14).

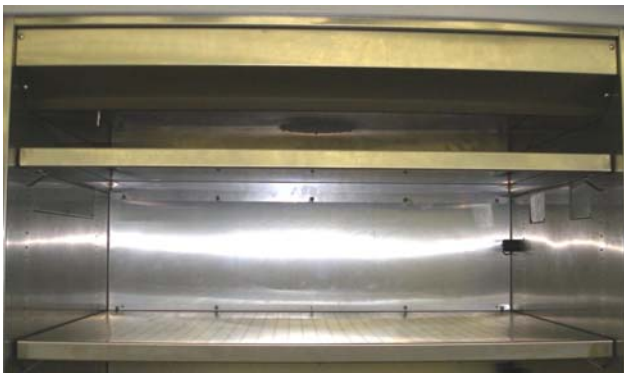


Photo 20: Top shelf installed

8. Install the Lamp fixtures support:

There are two different types of lamp fixtures - four (4) with a connector and four (4) without. The fixtures with a connector have a female connector and an 8" (200 mm) cord. The lamp fixture without the female connector has only the 8" cord.

Note: The lamp fixtures with the connector must be installed always closer to the back wall plenum, whereas those without connector must be always installed closer to the door.

Insert 2 M4 x 6 (Socket Head) fasteners into the back side of the lamp fixtures (the side of the cord plug). DO NOT TIGHT THEM. Leave a 1/8" (3 mm) gap between the lamp fixture (see Photo).



*Photo 21: M4 x 6 (Socket)
shown with 1/8" (3mm) gap*

*Photo 22: Lamp fixture assembled
showing the Socket screws
in the back side and the
Thumb screws at the front*



Grab the Lamp fixture with the connector first and install it in the back support with the M4 x 6 Socket Head hanging from the support.

Finish installing the Lamp fixture using two M4 x 6 (Thumb) at the front side (See photo 23)



Photo 23: Back Lamp fixture installed (Notice the Thumb screw at the front)

Remove the plug cover from the side wall. Plug the front fixture into the back fixture, and plug the Back fixture into the side wall.



Photo 24: Lamp fixtures assembled and plugged


Repeat the same procedure with all the remaining shelves.

The Unit is now ready to operate. Please read the Instructions in the Operator's Manual before proceeding with the Start Up

Kit Installation - Plant Growth

KIT PARTS

The following list comprises the components for the Plant Growth kit.

Qty	Description	
1	Back Plenum bottom	
1	Back wall plenum	
10	Screw (M4 x 6)	
1	Floor cassette	
1	Canopy air inlet filter	
6	Screw (M2 x 25)	
2	Lamp canopy supports	

1	Lamp Canopy	
2	Canopy cooling Fan	
1	AC DC CONVERTER	
2	M3 X 4 SCREWS	

KIT ASSEMBLY INSTRUCTIONS

Open the cabinet door, and visually inspect the cabinet (see photo 9). Ensure the two fan cavities on the right side wall are cleared and so are the screw-holes to install the cover or the fans. If screws are found in any of those holes, they must be removed. See the look of the cabinet interior in Photo 9



Photo 9: A1000 empty cabinet

1. Install The Canopy Fans:

Place the four M3 x 35 screws through the four mounting holes on the fan (see photo 10) and install the canopy fans, one in each fan compartment.

Note: Install the fans such that the air flows from inside the chamber to the outside and such that the wires are located in the most convenient position.



Photo 6: Canopy cooling fan showed with four M3 x 35 screws before installation

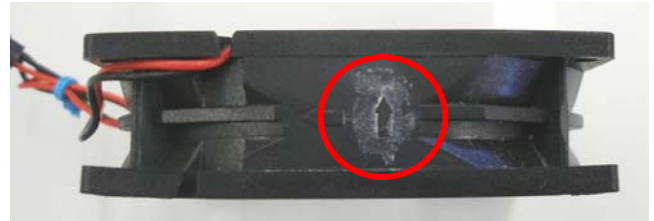


Photo 7: Arrow indicates the airflow direction – ensure it points towards the chamber exterior.



Once the fans are mounted into the compartment, connect the wires as showed (See photo 8).

Note: This step may require the installer to first pass the fan cables from the top down. The wires can be connected to their power supply on a later step.

Photo 8: The fan wire connector has a single orientation connection – ensure the connections 'snaps' together.

2. Install The Canopy Air Inlet Filter:



Using the M3 x 25 screws, install the air filter such that the filter mesh sits flush with the inside wall. (See photo 13)

Photo 9: Canopy air inlet filter is showed.

3. Install the back plenum bottom panel:

Four screws (M4 x 6 mm) are required to install the Back Plenum bottom. Firmly screw the panel into the back wall with 4 screws (See Photo 16). Note the four holes in the front of the support where the Back plenum will be fastened.



Photo 10: A1000 view after Installing the Back Plenum Bottom Panel



Photo 11: Correct position of the Back plenum bottom panel.

4. Install the Back Wall Plenum:

The Back wall plenum must be installed with the three short flanges toward the Unit's back wall and the 4 slotted keyholes at the bottom. The largest flange at the top must be facing the door **and must be installed in between the fan housing and the coil drip pan (see photo 11a). Therefore, remove the 6 screws at the back of the fan housing**, install the plenum, and secure the back wall plenum utilizing the 8 screws (M4 x 6 mm) in the kit. Reinstall the 6 screws at the back of the fan housing (see photo 11a)



Photo 11a: Shows in detail the back plenum installed above the fan housing

5. Install The Lamp Canopy Supports:

The PG kit uses ambient air to cool the light canopy. As the air circulates through the canopy it absorbs heat which is then expelled back to atmosphere. This enables maximum light output throughout the entire temperature range, since the lamps are cooled by ambient air, while it also helps to ease the heat load on the refrigeration system.



CAUTION: Ensure at least 2" of free space around the side walls of the chamber interior to facilitate proper air circulation whenever possible.



CAUTION: The lamp canopy for the PG Kit is predetermined by the position of the cooling fans on the side wall. The canopy must be installed such that the air fans align with the canopy ports. Failing to do so may result in user injury or improper chamber operation.

Place the lamp canopy support in each side wall directly below the openings (See photo 19). Ensure the clips are secure and firmly locked



Photo 12: Fans Installed and plugged in to their compartments. Notice the position of the lamp canopy support with respect to the fans



Photo 13: Air filter installed in its compartment. Again, notice the position of the lamp canopy support with respect to the filter

6. Install the canopy:

Carefully slide the canopy in until the screw socket located in the center of each side of the Lamp canopy locks into the support center hole. Plug the canopy in.

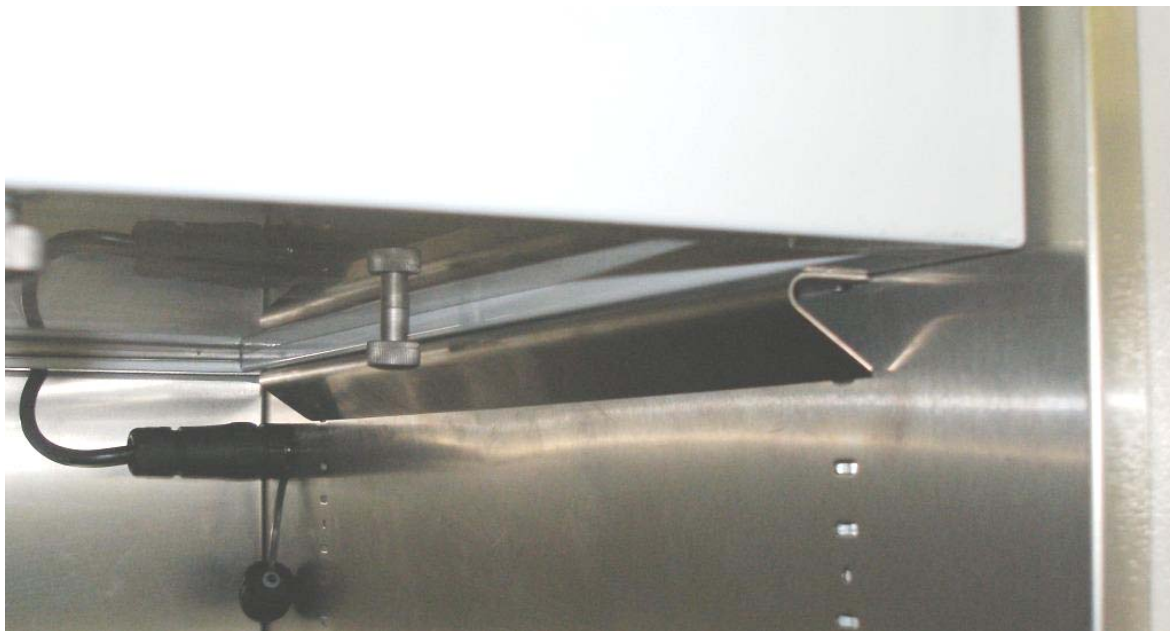


Photo 14: Lamp canopy locked into the support and plugged in



Only the top connector must be used with this kit. Keep capped all unused connectors.

7. Install The Floor Plenum:

The floor has multiple “hat” profiles which collectively configure a single piece called a “plenum”. The rear of the floor plenum has an opening which facilitates conditioned air to access the floor. Holes throughout the floor plenum provide an evenly distributed upward air stream.

Note: In the back side of the plenum there are four socket head M4 x 6 screws, that have to be partially screwed in (leave a gap of 1/8” (3mm), so the floor plenum can snap and lock into the key hole.

To install the floor cassette, simply slide the cassette into position ensuring the opening faces rearward towards the back plenum. Be careful when sliding it in - once it contacts the back plenum (by slightly lifting it up and pushing forward), use the 4 screws located on the upper edge of the cassette to fit into the slotted keyholes at the bottom of the plenum. Release the floor and lock it into the keyholes.



Photo 15: Floor cassette Installed

8. Connect the canopy fans to the control system:

Unscrew the unit top cover and carefully remove. Remove the clear cover from the AC/DC converter. Connect the fan wires, ground, and power wires as shown (See photo 14). Reinstall the clear cover.

NOTE: The converter works with power supply between 110 and 240 VAC automatically.

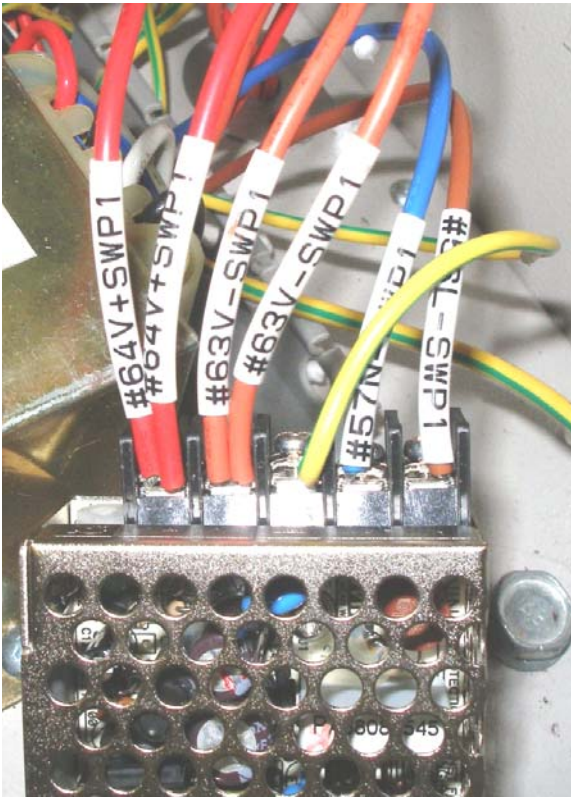


Photo 16: Notice the wire labels: from left to right: +VDC; -VDC; ground, neutral, Line.

Install the AC/DC converter in to the RIGHT side wall as shown (with 2 M3 x 4 screws provided)

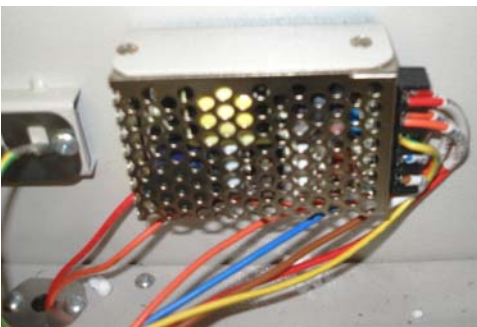


Photo 17: Ac / DC converter installed.


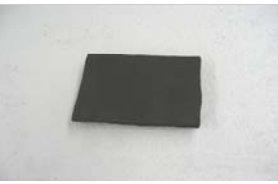



The chamber is now ready to operate. Please carefully read the Operator's Manual before proceeding with the Start Up.






Note: The maximum levels of light needs to be set in the Controller for this Kit. The Default setting is one level of light. To change the setting, follow the set up instructions at **Section 6: OPTIONS – Setup** (Page 57) in the Navigation Table.

Kit Installation - Incubator

KIT PARTS

The following list comprises the components for the Incubator kit.

Qty	Description	Picture
1	Back Plenum bottom	
1	Back wall plenum	
25	Screw M4 x 6 Pan	
4	Insulation – small	
	Insulation - large	
	Insulation - narrow	
20	Shelf support (clip)	
2	Fan cover	
1	Air Inlet cover	

8	Screw M3 x 35	
6	Screw M3 x 25	
5	Wire shelf (with lamp fixture support)	
8	Lamp fixture support	
4	Lamp fixture without connector	

KIT ASSEMBLY INSTRUCTIONS

Open the cabinet door, and visually inspect the cabinet (see photo 26). Ensure the two fan cavities on the right side wall are cleared as well as the screw-holes to install the fan-cover or the fans. If screws are found in any of these holes, they must be removed. Refer to Photo 26.



Photo 26: A1000 empty cabinet

1. Install the back plenum bottom panel.

This panel is very important because it directs the airflow through the plenum at equal pressure. A loose installation and the airflow distribution will not be even. Four (4) screws (M4 x 6 mm) are required to install the Back Plenum Bottom Panel. Firmly screw the panel into the back wall with 4 screws (See Photo 3). Ensure that the two drain holes are never plugged.



Photo 18: A1000 view after Installing the Back Plenum Bottom Panel

4. Install the Fan Covers:

The A1000 cabinet contains 2 fan compartments in the right side wall, and an air inlet compartment in the left side wall. The purpose of these fans is to provide cooling for the lamp canopy ONLY for the PG Kit. For all other kits, the fan ports must be covered to avoid the treated air from escaping. To cover the openings install the two fan covers and one inlet air cover. To retain the insulation value of the walls in that area, the kit includes insulation. Place the four small insulation blocks (two in each port) as shown in the picture. Using the four (4) M3 x 35 screws, install the fan cover. Repeat the procedure with the second fan cover. (See photo)

NOTE: There is a wire and a connector inside the compartment. Place it in between the two layers of insulation. Do not remove it or pull on it as the wires will be required should you decide at a later time to install a PG kit.

NOTE: The covers must be installed slightly recessed into the opening to minimize the protrusion of the screw head.



Photo 19: Small insulation covering the fan compartment



Photo 20: Fan cover installed after insulation

5. Install the Air Inlet Cover:

The air inlet is located on the left sidewall of the chamber. To cover the air inlet, first install the two narrow insulation blocks at the bottom of the opening, one on top of the other. The three large insulation blocks that are glued together can now be placed (vertically) on top of the two narrow pieces (See photo). Using the six (6) M4 x 25 screws provided, install the air inlet cover



Photo 21: Large and narrow insulation shown as they go inside the air filter compartment



Photo 22: Large and narrow insulation installed inside the compartment



Photo 33: Air inlet cover installed

6. Install the wire shelves

The shelves must be installed from the bottom to the top. The bottom shelf has to be placed in the lowest possible position in contact with the Back plenum. To install the clips first insert the top part of into the desired slot and then press lightly on the bottom to snap it into position. Place the four (4) shelf supports (clips) into the slots in the side wall (See photo).

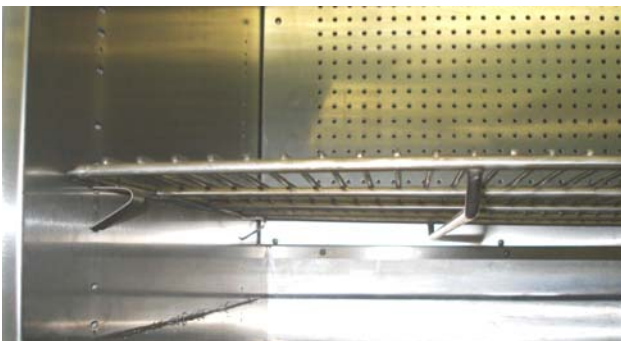


Photo 34: Wire shelf with lamps fixture support showed

Carefully grab a wire shelf and place it over the four lower clips. Install the rest of the supports in each side wall at the desired height (see Photo).



Photo 35 Air shelf supports showed

7. Install the Lamp fixtures:

NOTE: The IN kit is able to support one, two, or three light fixtures per shelf. The basic Kit provides a total of four lamp fixtures. If more lamp fixtures are required, they can be ordered by contacting Convion (some limitations to minimum temperature and maximum humidity apply). The fixtures provided are referred to as lamps fixtures **without** connectors whereas those that are additional are referred to as lamp fixtures **with** connectors. The latter fixtures simply have a female connector to allow daisy chain connecting of all the lamp fixtures in one shelf.

Single Lamp Fixture per shelf:

Two lamp fixture supports are required per lamp fixture. Install as shown (See photo).



Photo 36: Lamp fixture and support



Photo 37: Lamp fixture with supports showed

Install the lamp fixture by hanging it from the shelf. The lamp fixture can be hung at any point along the shelf with the cord plug closer to the female connector located on the right side wall. Remove the plug covers from the side wall and plug each fixture into the connector in the side wall. Repeat with all the remaining shelves.

Multiple Lamp fixtures per shelf

NOTE: Always install the lamp fixtures with the connector facing the back wall plenum. Those without a connector must always be installed closer to the door.



Photo38: Bottom shelf and one light fixture showed

Remove the plug cover from the side wall. Plug the front fixture into the back fixture and plug the back fixture into the side wall. Repeat with all the remaining shelves.






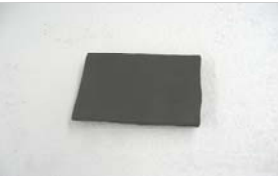



The Unit is now ready to operate. Read the Instructions in the Manual carefully before proceeding with the Start Up.

Note: The maximum levels of light needs to be set in the Controller for this Kit. The Default setting is one level of light. To change the setting, follow the set up instructions at **Section 6: OPTIONS – Setup** (Page 57) in the Navigation Table.

Kit Installation - Arabidopsis

KIT PARTS

The following list comprises the components for the Arabidopsis kit.

Qty	Description	Picture
1	Back Plenum bottom	
1	Back wall plenum	
25	Screw M4 x 6 Pan	
4	Insulation – small	
3	Insulation - large	
2	Insulation - narrow	
8	Shelf support (clip)	
2	Fan cover	
1	Air Inlet cover	

8	Screw M3 x 35	
6	Screw M3 x 25	
2	Wire shelf	
2	Lamp Canopy	
2	Canopy support	

KIT ASSEMBLY INSTRUCTIONS

Open the cabinet door, and visually inspect the cabinet (see photo 39). Ensure the two fan cavities on the right side wall are cleared as well as the screw-holes to install the fan-cover or the fans. If screws are found in any of these holes, they must be removed. Refer to Photo 39.



Photo 39: A1000 empty cabinet

1. Install the back plenum bottom panel.

This panel is very important because it directs the airflow through the plenum at equal pressure. A loose installation and the airflow distribution will not be even. Five (5) screws (M4 x 6 mm) are required to install the Back Plenum Bottom Panel. Firmly screw the panel into the back wall with 5 screws (See Photo 40). Ensure that the drain holes are never plugged.



Photo 40: A1000 view after Installing the Back Plenum Bottom Panel

2. Install the Back Plenum:

The Back wall plenum must be installed with the three short flanges toward the Unit's back wall and the largest flange at the top facing the door **and must be installed in between the fan housing and the coil drip pan (see photo 18). Therefore, remove the 6 screws at the back of the fan housing**, install the plenum, and secure the back wall plenum utilizing the 8 screws (M4 x 6 mm) in the kit. Reinstall the 6 screws at the back of the fan housing (see photo 41)



Photo 41: Shows in detail the back plenum installed above the fan housing

2. Install the Fan Covers:

The A1000 cabinet contains 2 fan compartments in the right side wall, and an air inlet compartment in the left side wall. The purpose of these fans is to provide cooling for the lamp canopy ONLY for the PG Kit. For all other kits, the fan ports must be covered to avoid the treated air from escaping. To cover the openings install the two fan covers and one inlet air cover. To retain the insulation value of the walls in that area, the kit includes insulation. Place the four small insulation blocks (two in each port) as shown in the picture. Using the four (4)

M3 x 35 screws, install the fan cover. Repeat the procedure with the second fan cover. (See photo)

NOTE: There is a wire and a connector inside the compartment. Place it in between the two layers of insulation. Do not remove it or pull on it as the wires will be required should you decide at a later time to install a PG kit.

NOTE: The covers must be installed slightly recessed into the opening to minimize the protrusion of the screw head.



Photo 42: Small insulation installed inside the fan compartment.



Photo 43: Fan cover installed.

3. Install the Air Inlet Cover:

The air inlet is located on the left sidewall of the chamber. To cover the air inlet, first install the two narrow insulation blocks at the bottom of the opening, one on top of the other. The three large insulation blocks that are glued together can now be placed (vertically) on top of the two narrow pieces (See photo). Using the six (6) M4 x 25 screws provided, install the air inlet cover



Photo 44: Large and narrow insulation shown as they go inside the air filter compartment



Photo 45: Large and narrow insulation installed inside the compartment



Photo 46: Air inlet cover installed

4. Install The Lamp Fixtures:

The AR kit is provided with two lamps canopies. The location of the canopies within the chamber may vary according to the experiment, or specific user requirements. However, there is a limitation determined by the distance from the top canopy to the fan housing. If the canopy is installed too close, the airflow may be significantly reduced, affecting the unit's performance.



CAUTION: Do not install the top canopy closer than 3" (75mm) from the fan housing.

The maximum growth height that the A1000 provides when using the AR kit is 18" (450mm). The user can adjust the growth height according to his/her needs. Another option is to have different growth heights between the two tiers, or to install a single canopy with one large growth height.

To install the lamp canopy supports, first insert the top portion into the desired slot and then press slightly on the bottom portion to snap it into place (about 1" / 25 mm below the upper slot).



Photo 47: Canopy support showed with 18" (450 mm) between them for maximum growth height

Slide the canopy above the supports with the cord plug close to the connectors located on the right side wall. Notice a socket Head screw present in the center of the canopy side flanges. The socket must enter into the hole in the center of the supports, preventing the canopy from sliding.

Photo 238: AR canopy seated on top of the support and locked into the center hole.



Remove the plug cover from the side wall. Plug the front fixture into the back fixture, and plug the Back fixture into the side wall. Repeat with all remaining shelves.



Only two connectors must be used with this kit. Keep capped all unused connectors

5. Install the wire shelves

The wire shelves must be installed according to the desired growth height. The lowest possible position for the lower shelf is above the bottom row of holes in the Back Wall Plenum. To install the clips, first insert the top portion into the desired slot and then press lightly on the bottom side snapping it into the corresponding slot (about 1" / 25 mm below the top one).

Place the four (4) shelf supports (clips) into the slots in the side wall (See photo 11)



Photo 49: Bottom wire shelf. Notice the position with respect to the back wall plenum

Carefully place the wire shelf over the four lower clips. Install the rest of the support clips in each side wall at the desired height (see Photo).

The chamber is now ready to operate. Please read the Operator's Manual carefully before proceeding with the Start Up.

Note: The maximum levels of light needs to be set in the Controller for this Kit. The Default setting is one level of light. To change the setting, follow the set up instructions at **Section 6: OPTIONS – Setup** (Page 57) in the Navigation Table.

CHAMBER START-UP

INSTALLATION

Chamber Placement

Adaptis units must be placed in ventilated areas. The ideal temperature around the equipment is 21°C. Although **Adaptis** will perform at higher ambient temperatures (See spec), it is recommended that the product be placed in areas that have circulating air.

NOTE: Adaptis A1000 products will dissipate up to 2400 W to ambient.
Adaptis A350 products will dissipate up to 1400 W to ambient.

Also necessary for product placement are the following:

- ▶ Power supply:
- ▶ Water supply
- ▶ Drain connection

If there is no a drain close to the unit a Drip Pan can be ordered.

Please allow for the following clearances:

- ▶ At least 1 ft (300 mm) must be left clear behind the back wall.
- ▶ At least 1 ft (300 mm) must be left clear above the unit.
- ▶ A1000: At least 2" (50 mm) must be left clear on each side of the A1000 when the PG Kit is installed. Note – if any kit other than the PG Kit is installed, no side clearance is required.
- ▶ A350: At least 2" at each side of the unit must be left clear. Two feet (600 mm) are required to obtain full access for service to the side panels

[See Drawing on Page 66]

Leveling and locking the unit

Adaptis cabinets are delivered with four (4) levelers in order to prevent the unit from rolling on its casters once installed, and also to compensate for any variance in the floor level. The levelers are $\frac{3}{4}$ " x 4" bolts that insert at the four corners at the bottom of the base. The unit must be tilted or lifted in order to thread the bolts in. (The leveling bolts may also come already installed). The two levelers in the front are very important and can affect the performance of the unit.

The height of the levelers must now be adjusted so the unit rests on the levelers rather than the casters. Do this as follows:



1. Start adjusting the levelers in the back wall until they are slightly higher than the casters.
2. Now adjust the ones on the side walls (See photo). They should be adjusted (unscrewed) until the gap between the caster and the floor is at least $\frac{1}{8}$ " (3mm) and no more than $\frac{1}{4}$ " (6 mm)
3. It is important that the two front levelers are perfectly level (side to side) so the door closes easily. An out-of-level condition on the front levelers can cause the door to bind due to misalignment.

Hooking the Unit up

Adaptis A1000 and A350 products are provided with a 10 ft power cord (3 m) with plug¹ and a female “quick” M6 water supply connection. The connection point is at the back of the cabinet.



A1000 Rear Cabinet View



A350 Cabinet View

Power supply:

All **Adaptis** products are single phase and delivered to the market in two options:

	120VAC/60 Hz (3 wires + ground). A 20A breaker required
	230VAC/50Hz (3 wires + ground). A 15A breaker required

Connect the unit to the power supply – verify the voltage shown on the Serial Plate.

Added Humidity:

All **Adaptis** products provide added humidity by using Ultrasonic humidifiers in all chambers. This system requires 15 PSI (1 bar) pressure of purified supply water.

Water supply requirements:

- ▶ Flow: Maximum: 0.25 gallons / hour (0.9 Litres / hour)
- ▶ Water quality: A connection to a purified water source is required for chambers with additive humidity. Use purified water made by one of these methods:
 - Distillation
 - Reverse osmosis, or
 - De-ionization
- ▶ pH: 7.0 ± 0.5
- ▶ Filtration: <2 microns or 0.00008 inch
- ▶ Purity: Resistance 0.5 to 5.0 MegaOhms or Conductivity 2.0 to 0.2µSiemens

NOTE: It is important to use a purified water source as failure to do so will void the product warranty.

¹ Some markets require the user to connect the power cord to the corresponding type of plug.

Maintenance

If the water system is not going to be used for a long period of time, purge the water tank located in the mechanical compartment. To do so:

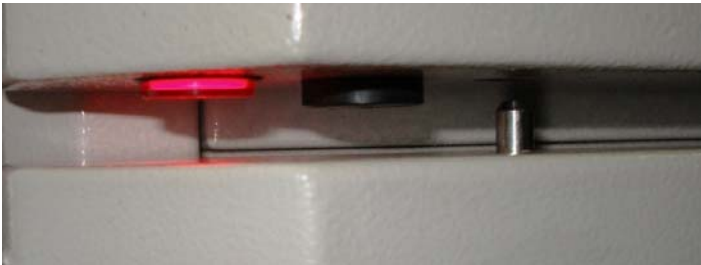
- ▶ SHUT THE CHAMBER OFF (with the switch button located between the door and front panel),
- ▶ Lift the top cover, turn the breaker off, and disconnect the ground wire at the back of the top cover.
- ▶ Carefully remove the top cover.
- ▶ Open the water tank lid.
- ▶ Clean the water tank.
- ▶ Make sure there are not water residues over the ultrasonic discs.
- ▶ Place the lid back (this is very important otherwise air from the unit will be damped into the ambient at all times)

Installing your Kit

See previous Section of Operator's Manual.

START UP

The unit is now ready to operate. The breaker, located inside the machine compartment, should be in the ON position. The Main Power switch is located on the left hand side of the unit between the top panel and the door (See photo below). Open the door slightly and push the button once. The switch is backlit and turns red for power ON.



In a few seconds the Controller will boot up. The User now has to configure some parameters in the controller to adequate the controller's response to the specific model being setup.

Find how to adjust these parameters in Pages 56 and 57 of this manual, within the *Options Menu*.

These parameters are:

1. **On- delay:** Is a function (in seconds) that will delay the chamber start up after a power outage, to avoid all equipment to start simultaneously. CONVIRON recommends setting a time delay between 10 and 20 seconds. However, this may vary according to the number of Units installed.
2. **Time / Date:** Allows the user to set the actual date and time according to the time zone where the unit is being installed.
3. **Setup:** Allows the User to adjust the maximum number of discreet levels of light that are present in the Unit. (See page 57)
4. **Security:** The User may enable this function which restricts the access to some of the controller features, such as programming, scheduling, etc. The User can set passwords for up to three users with different passwords.

CONTROLLER NAVIGATION

INTRODUCTION

Convion's new CMP6000™ series controller represents the culmination of nearly a half century of experience with controlled environments for the agricultural biotechnology research field. What has emerged is Convion's most sophisticated control system to date and yet a control system that is highly intuitive, simple to operate and very reliable. With the system's 4 x 20 character display, the use of acronyms is minimized allowing for simple communication and operation. Among the CMP6010's innovative features are the following:

- ▶ **Setup:** Given the versatility of the Adaptis, the Temperature and Humidity range are adjustable, while the User selects the maximum discreet levels of light.
- ▶ **Programs:** Easy to program, Up to 16 programs including 24 lines each.
- ▶ **Schedule:** Allows the user to combine programs and determine the number of repetitions.
- ▶ **Alarm:** A complete variety of Alarms to ensure the experiment accuracy and the unit and User safety. Alarm logging for improved serviceability.
- ▶ **Real-Time Clock:** Programs are run in real-time
- ▶ **Security:** Three levels of security: Public, User, and Factory.
- ▶ **Help:** At most of the navigations Screens, press a key and access to the Help Menu

CONTROLLER NAVIGATION SITE MAP

The following provides an visual overview of the topics covered in this Controller Navigation section of the Manual.

1. **STATUS**
2. **PROGRAM**
 - a. Create
 - b. Delete
 - c. Edit
 - i. Edit Lines
 - ii. Delete Lines
 - iii. Add Lines
 - iv. Sort Lines
 - d. Schedule
 - i. Clear Schedule
 - ii. Edit Schedule
 - iii. Run Schedule
 - iv. Stop Schedule
3. **SECURITY**
 - a. Login
 - b. Passwords
 - c. logout
4. **ALARM**
 - a. Settings
 - b. View
 - c. Clear
5. **SERVICE**
6. **OPTIONS**
 - a. Time / Date
 - b. On-Delay
 - c. Security
 - d. Network
 - e. Setup

Controller Navigation - Table

Notes:

Convion recommends that the User carefully read these instructions prior to placing the unit into service. A thorough understanding of the product's operation and features will help the User to obtain the best performance out of the equipment.

Once power has been supplied to the unit (See Section 1 and 2 above) the CMP6010 Controller can be powered up by turning the Controller switch ON. Make sure the breaker inside the top mechanical compartment is still in the OFF position. The Controller switch is located at the bottom left corner of the Adaptis control panel just above the upper left corner of the chamber door. The switch is accessible by opening the door.

Upon powering the unit up for the first time, the Controller will show the Status screen with the actual Temperature.

- ▶ Press arrows ▲ or ▼ to access the Humidity Status screen
- ▶ Press arrows ▲ or ▼ to access the Light Status screen
- ▶ To access the Main Menu, press Enter (↵) once.

To assist the User with navigating the CMP6010 Controller, this Manual uses the following conventions:

- ▶ Press arrows ▲ or ▼ to scroll functions within the same column;
- ▶ Press Enter (↵) once to access the menu at the next column to the right;
- ▶ Press <Esc> once to access the menu at the next column to the left.

MAIN MENU	SUB MENU AND DESCRIPTION	ACTION	ACCESS
1. STATUS	Shows the actual status of all three controlled parameters and their respective set-points (Temp, Humidity and Light levels).	<p>Temperature Status screen will be displayed.</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to toggle between Temperature / Humidity / Light display ▶ Press Enter (↵) to return to the Main Menu. 	P
2. PROGRAM	Create Allows the creation of a new program. A number between 01 and 16 will automatically be assigned.	<p>By default the controller assigns the lowest program number available.</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to assign the new program a different number. <i>The controller displays only those programs available.</i> ▶ Press Enter (↵) to accept. 	U
	Warning: If all programs are in use, a warning screen is displayed "Use edit or delete from the main menu".	Note: A program can be written in any sequence and can then be sorted at a later time. However, even if the program is not sorted when saved, the program will still run in real-time sequence (See Sort Program under EDIT below)	
	Note: While creating a program all Edit functions (Insert line, Delete line, and Sort Program) are available (See Edit Menu below).	<p>The controller automatically displays line # 01 in the program</p> <ol style="list-style-type: none"> 1. Press Enter (↵) once to fill line 01 with default values. 2. Press Enter (↵) to move the cursor to the next column. 3. Press arrows ▲ or ▼ to set the Hours. 4. Press Enter (↵) to accept. <i>The cursor now flashes on the Minutes column.</i> 5. Press arrows ▲ or ▼ to set the minutes. 6. Press Enter (↵) to accept. <i>The cursor now flashes on the temperature column</i> 7. Press arrows ▲ or ▼ to set the temperature in degrees Celsius. 8. Press Enter (↵) to accept. <i>The cursor now flashes on the Humidity column</i> 9. Press arrows ▲ or ▼ to set the Relative Humidity. 10. Press Enter (↵) to accept. <i>The cursor now flashes on the Light column</i> 11. Press arrows ▲ or ▼ to set the light level: 0 for OFF; 1 to 3 for ON (depending on model and kit) 12. Press Enter (↵) to accept. 13. <u>THE CURSOR RETURNS TO THE SAME LINE# COLUMN.</u> 14. <u>PRESS ▼ TO WORK ON THE NEXT LINE - 02.</u> <p>Repeat the procedure until the program is completed.</p>	
		Note:	

		<p>A maximum of 24 lines can be used per program.</p> <p>Once the program has been created press <Esc>.</p> <p>Warning: If two or more lines have been set to start at the same time, a warning screen will be displayed disallowing the program from being saved until amended. Press enter (↵) to go back to the program editor.</p> <p>The display reads “Save Changes to program # XX”. YES is displayed by default.</p> <p>To save the program:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) to accept. Display reads “Program XX saved” ▶ Press Enter (↵) to continue <p>To avoid saving the program:</p> <ul style="list-style-type: none"> ▶ Press ▼ or ▲ to select NO. ▶ Press Enter (↵) to accept. Display reads “Changes to Program # XX have been discarded”. ▶ Press Enter (↵) to continue. ▶ Press Enter (↵) to accept. ▶ Press <Esc> once to return to the Main Menu, and twice to return to the Program screen. 	
	<p>Delete Allows deletion of selected stored programs</p>	<ul style="list-style-type: none"> ▶ Press Enter (↵) to display the first program currently stored (i.e., 01) <p>Warning: If no programs are stored a warning screen is displayed “No programs stored. Use –create-from the program menu”</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select the program to be deleted. The controller will only scroll through the programs stored. ▶ Press Enter (↵) when the correct program is selected. <p>The screen displays a warning “Are you sure you want to permanently delete program # XX?” The default screen displays NO.</p> <p>To avoid deleting the program:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) to select NO. Display reads “Program restored”. ▶ Press Enter (↵) to continue. <p>To delete the program:</p>	

		<ul style="list-style-type: none"> ▶ Press arrow ▲ or ▼ to select YES. ▶ Press Enter (↵) to accept. Display reads “Program deleted”. ▶ Press Enter (↵) to continue. ▶ Press Enter (↵) to accept. ▶ Press <Esc> once to return to the Main Menu, and twice to return to the Program screen. 	
	<p>Edit Allows changes within stored programs:</p> <p>Edit lines</p>	<ul style="list-style-type: none"> ▶ Press Enter (↵) to display the first program currently stored (i.e. 01). ▶ Press arrows ▲ or ▼ to select the program to be edited. The controller will only scroll through the programs stored. ▶ Press Enter (↵) when the correct program is selected. The first four lines of the selected program is displayed. Scroll down as necessary. <p>The Edit Menu presents four Edit Options:</p> <ol style="list-style-type: none"> 1. Edit Lines 2. Add Line 3. Delete Line 4. Sort Program <p>Press the <Prg> button to toggle between the four Edit Options.</p> <p>1. Edit Lines - By default the controller only allows the editing of <u>existing lines</u>. The cursor initially flashes over line 01.</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select the <u>Line</u> to be edited. ▶ Press Enter (↵) until the cursor is positioned over the <u>parameter</u> to be edited ▶ Press arrows ▲ or ▼ to change the setting. ▶ Press Enter (↵) to accept the change. The cursor automatically advances to the next parameter on the same line. <p>Once the ‘Light’ setting has been edited, press Enter to re-position the cursor over the line #. If changes are required to subsequent lines, press arrows ▲ or ▼ to select the appropriate line to edit.</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) to select the parameter to be edited. ▶ Press arrows ▲ or ▼ to change the setting. Repeat until no more changes are needed. <p>When Editing is complete, press <Esc> ONCE to save the edited program,</p> <p>The display reads “Save changes to Program # XX”</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) to continue. By default the cursor flashes over YES. <p>To accept the changes:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) to accept the changes. 	

		<p>To discard the changes:</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select NO. ▶ Press Enter (↵) to discard the changes. The display reads <i>“Changes to Program # have been discarded”</i> ▶ Press Enter (↵) to continue. <p>Press <Esc> once to return to the Main Menu , or twice to return to the Status Screen</p>	
		<p>Warning: If two or more lines have been set to start at the same time, a warning screen will be displayed disallowing the program from being saved until amended. Press enter (↵) to go back to the program editor.</p>	
	Delete Lines	<p>2. Delete Lines - By default the controller only allows the deleting of <u>existing lines</u>. The cursor initially flashes over line 01.</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select the line to be deleted. ▶ Press <Prg> until the screen displays “Enter (↵) to delete line.” ▶ Press Enter (↵) to delete the line over which the cursor flashes. ▶ Press arrows ▲ or ▼ to select the next line to be deleted. <p>Repeat until no more changes are needed.</p>	
		<p>Note: At least one line must exist in a program. To delete an entire program, use the function “Program”→ Delete.</p>	
	Add Lines	<p>When no more changes are required:</p> <ul style="list-style-type: none"> ▶ Press <Esc> to save the edited program and press Enter (↵) to accept. ▶ Press <Esc> once to return to the Main Menu , or twice to return to the Status Screen <p>3. Add Line - By default the controller will add a new Line 01. Adding a line can be done at any point in the program being edited since the “sort program” function can then be used to reorganize the steps chronologically.</p>	
		<p>Note: A maximum of 24 lines can be used per program.</p> <p>To insert a line at any point within the existing program, proceed as follows:</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select the program line where a new line is to be Inserted. 	

		<ul style="list-style-type: none"> ▶ Press the <Prg> button until the displays reads 'Enter (↵) to Add Line' at the bottom of the screen ▶ Press Enter (↵) to insert the new line. Notice that subsequent lines have all moved one line down. The cursor now flashes over the new line to be added. The Inserted line is displayed with default values. Press Enter (↵) to move the cursor to the next column. ▶ Press arrows ▲ or ▼ to set the Hours. ▶ Press Enter (↵) to accept <i>The cursor should now flash on the Minutes column.</i> ▶ Press arrows ▲ or ▼ to set the minutes. ▶ Press Enter (↵) to accept. <i>The cursor should now flash on the temperature column</i> ▶ Press arrows ▲ or ▼ to set the temperature. ▶ Press Enter (↵) to accept. <i>The cursor should now flash on the Humidity column</i> ▶ Press arrows ▲ or ▼ to set the Relative Humidity. ▶ Press Enter (↵) to accept. <i>The cursor should now flash on the Light column</i> ▶ Press arrows ▲ or ▼ to set the light level: 0 for OFF; 1 to 3 for ON (depending on the model and kit) ▶ Press Enter (↵) to accept. <p>THE CURSOR RETURNS TO THE LINE# COLUMN. Repeat the procedure until the program is completed.</p> <ul style="list-style-type: none"> ▶ Press <Esc>; the screen displays "Save changes to Program # XX" By default the cursor flashes over YES. <p>To accept the changes:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) to accept the changes. "Program # saved." <p>To discard the changes:</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select NO. ▶ Press Enter (↵) to discard the changes. The screen displays "Changes to Program # have been discarded" ▶ Press Enter (↵) to continue. <p>Press <Esc> once to return to the Main Menu , or twice to return to the Status Screen</p> <div style="background-color: yellow; padding: 5px;"> <p>WARNING: If two or more lines have been set to the same time, a warning screen will display "Program contains duplicate time lines" disallowing the program from being saved until amended. Press enter (↵) to go back to the program editor until fixed.</p> </div> <p>4. Sort Program - This function sorts the lines of a program based on time thereby simplifying the (re)viewing of a Schedule</p>	
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		<ul style="list-style-type: none"> ▶ Press <Prg> until the bottom of the screen displays “Enter (↵) to Sort Program”. ▶ Press Enter (↵) to accept. Now the program has been sorted by time (A to Z) 	
		<p>Note: All programs are automatically sorted when the program is saved. As such, there is no need to Sort a program before saving it.</p>	
	<h2>Schedule</h2> <p>Allows the User to combine programs and to repeat them according to the desired needs.</p>	<p>The Schedule function allows for a sequence of programs to be executed by the Controller. A Schedule is a table with two columns: one for the program #, and the second for the number of repetitions that program is to be executed.</p> <p>Integro is capable of a single Schedule composed of up to 8 programs. Every program can be repeated from 1 to 99 (or infinity) before jumping to the following program in the schedule. The Schedule can also be executed from 1 to 99 or infinity times.</p> <p>The Schedule menu contains 3 options:</p> <ol style="list-style-type: none"> 1. Clear 2. Edit 3. Run 	
	<p>Note: CMP6010 capability Maximum Schedules: 1 Maximum Programs: 8 Program repetition range : 1 to 99, or infinity Schedule repetition range: 1 to 99, or infinity</p>		
	<h3>Clear Schedule</h3>	<p>1. Clear - Allows the User to clear the entire Schedule currently stored.</p>	
	<h3>Edit Schedule</h3>	<p>Warning: A warning is displayed – “Are you sure you want to clear all entries from the Schedule?” The cursor flashes over “NO” (default answer).</p> <p>To avoid Clearing the Schedule:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) at the ‘NO’ prompt. The screen displays “Schedule restored”. <p>To Clear the Schedule:</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select YES. ▶ Press Enter (↵) to accept. The screen displays “Schedule cleared”. ▶ Press Enter (↵) to continue. <p>2. Edit - Allows the creation of a new Schedule or the editing of the current Schedule.</p>	

	<p>Creating a schedule:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) ▶ Screen displays a table indicating - line #, program #, and repetitions. ▶ The cursor flashes over the line 01 column. ▶ Press Enter (↵). ▶ Line 01 is displays default values – Program # --; Repetitions - infinity. ▶ Press Enter (↵) once. The cursor flashes over the program # ▶ Press arrows ▲ or ▼ to select the program # (only those already stored will be displayed). <p>If no programs have been created, Integro displays “Warning No programs available for scheduling! Use -create- from the program menu. Press Enter (↵) to continue”.</p> <ul style="list-style-type: none"> ▶ Press Enter (↵). The cursor flashes over the repetition column. ▶ Press arrows ▲ or ▼ to select the repetitions needed for that particular program. ▶ Press Enter (↵). The cursor flashes over the Line 01 column. ▶ Press arrow ▼ to select the Line 02 ▶ Press Enter (↵). Line 02 is completed with default values: Program#: --; Repetitions - infinity. ▶ Press Enter (↵) once. The cursor flashes over the Program #. ▶ Press arrows ▲ or ▼ to select the Program # (only those already stored will be displayed). ▶ Press Enter (↵). The cursor flashes over the Repetition column. ▶ Press arrows ▲ or ▼ to select the Repetitions needed for that particular program. ▶ Press Enter (↵). The cursor flashes over the Line 01 column. <p>Repeat the procedure until all required entries are completed. No more than 8 entries are allowed. If more than 8 lines are attempted, the controller displays a Warning –</p> <p>Warning: “Schedules are limited to a maximum of 8 entries!”</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) to continue. ▶ Press <Esc> <p>If the default program was not changed, a warning is displayed:</p> <p>Warning: “One or more invalid program selection(s) as indicated by ‘—’! Press Enter (↵) to continue</p> <p>Note: Once all entries are completed, the User has the ability to delete lines from the schedule as</p>
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	<p style="text-align: center;">Run Schedule</p>	<p>well as edit them. Simply move the cursor over the Line # to be edited and press <Prg> to toggle between Add, Edit and Delete lines.</p>	
		<p>The screen displays: "Enter the number of schedule repeats". The cursor flashes over the infinity sign.</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select the repetitions needed for the Schedule. ▶ Press Enter (↵) to accept. The screen displays: "Save changes to the Schedule?" The cursor flashes on "YES". ▶ Press Enter (↵) to continue. <p>To Save the Schedule:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) to accept. The screen displays "Schedule saved". ▶ Press Enter (↵) to continue. ▶ Press Enter (↵) to return to the Schedule Menu. ▶ Press <Esc> to return to the Program Menu, twice to return to the Main Menu, and once again to return to the Screen Menu. <p>To discard the Schedule:</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select "NO". The screen displays "Changes to schedule have been discarded". ▶ Press Enter (↵) to continue. ▶ Press Enter (↵) to return to the Schedule Menu. ▶ Press <Esc> to return to the Program Menu, twice to return to the Main Menu, and once again to return to the Screen Menu. <p>Editing an existing Schedule</p> <ul style="list-style-type: none"> ▶ Press Enter (↵). The screen displays the stored Schedule and the cursor flashes over Line 01. ▶ Press Enter (↵) to edit line 01, or ▶ Press arrow ▼ to select the line to be Edited. ▶ Press <Prg> and toggle between Edit / Add / Delete lines. Once no more changes are needed: ▶ Press <Esc> to select the number of Repetitions for the schedule, then Save the Schedule. <p>3. Run – The controller starts executing the sequence of programs entered in the Schedule. Integro has the ability to start a Schedule from a selectable point. The following warning message is displayed:</p>	
		<p>Note: It's important, for the accuracy of the Schedule, that the Time</p> <p>Warning: "Time and date setting should be verified prior to running the Schedule. Press Enter (↵) to</p>	

	and Date be set prior to running the Schedule. Time and Date can be adjusted while running the Schedule, but some time lines may be altered.	<i>continue.</i>	
		<p>The Starting Entry/Repeats screen is displayed with the actual Schedule presented.</p> <ul style="list-style-type: none">▶ Press arrow ▼ to select the Line from which the Schedule is to be started.▶ Press Enter (↵). <p>The cursor will start flashing over Repetition 01 of the selected program indicating the current number of repetitions (i.e.: line 3; Program 07; repetition 01/99).</p> <ul style="list-style-type: none">▶ Press arrows ▲ or ▼ to select the Repetitions for the Schedule (i.e.: 18/99).▶ Press <Esc> to save the starting point. <p>The controller is also able to start from any selectable point in the Schedule. The screen displays "Start schedule from repeat number XX".</p> <ul style="list-style-type: none">▶ Press Enter (↵) to continue.▶ Press arrows ▲ or ▼ to select the Schedule Repetition desired (default value 01)▶ Press Enter (↵). The screen displays "Are you sure you want to run the schedule". The cursor flashes on "YES".▶ Press Enter (↵) to continue. <p>To Run the Schedule:</p> <ul style="list-style-type: none">▶ Press Enter (↵). The screen displays: "Schedule started".▶ Press Enter (↵) to continue.▶ Press Enter (↵), to return to the Schedule Menu, press <Esc> once to return to Program Menu, twice to return to Main Menu, and once again to return to the Screen Menu. The <Prg> button is now flashing.	
	Stop Schedule	<p>Note:</p> <p>At any time the schedule status can be checked. From the status screen, press <Esc> and <Prg> simultaneously. A bar will indicate what program is the one being executed.</p> <p>To avoid running the Schedule:</p> <ul style="list-style-type: none">▶ Press arrows ▲ or ▼ to select "NO".▶ Press Enter (↵), to return to the Schedule Menu, press <Esc> once to return to Program Menu, twice to return to Main Menu, and once again to return to the Screen Menu. <p>Immediately stops the execution of the Schedule.</p> <ul style="list-style-type: none">▶ Press Enter (↵). The following message is displayed: "Are you sure you want to stop the SCHEDULE?" The cursor flashes over "NO".▶ Press Enter (↵) to continue.	

		<p>To avoid stopping the Schedule:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) <p>To stop the schedule:</p> <ul style="list-style-type: none"> ▶ Press arrows ▲ or ▼ to select “YES”. ▶ Press Enter (↵). The screen displays: “<i>Schedule stopped</i>”. ▶ Press Enter (↵) to continue. ▶ Press Enter (↵) to return to the Schedule Menu, press <Esc> once to return to Program Menu, twice to return to Main Menu, and once again to return to the Screen Menu. ▶ The <Prg> button is no longer back-lit. 	
3. SECURITY	<p>Login</p> <p>Allows logging in as User or Factory. Factory Login is strictly for service purposes and is password protected</p>	<p>If the Security feature (from the Option Menu) is turned off, then there is no need to Login</p> <p>Note: Security is turned off. Only factory access level requires login!</p> <p>If the Security feature (Option Menu) is turned ON, use the following to Login:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) until the cursor flashes on the Select User line. ▶ Press arrows ▲ or ▼ to select the User # or Factory. ▶ Press Enter (↵) to accept. Now the cursor flashes over the Password line. ▶ Press arrows ▲ or ▼ to select the first digit of the current password. To accept, press Enter (↵). The cursor should flash now over the second digit. Repeat the procedure until completing the five digits. ▶ The screen will display “Login Successful”. ▶ Press Enter (↵) to continue. ▶ Press (Esc) once to go back to the Security Menu, twice to return to the Main Menu, and once again to return to the Status Screen 	P
	<p>Passwords</p> <p>Allows setting different Passwords for each user.</p> <p>Note: Security is not enabled until activated from the Options Menu</p>	<p>First time setting a Password:</p> <p>The Factory default Password is 00000. Therefore, to set a new Password for a User, a “Password change” is required.</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) once until the cursor flashes over the Select User line. ▶ Press arrows ▲ or ▼ to select the User number from 1 to 3. ▶ Press Enter (↵) to accept. The cursor flashes over the first digit of the Old password line. The default Password is showed (00000). ▶ Press Enter (↵) five times until the cursor flashes over the last digit of the Old Password. ▶ Press Enter (↵) once again. Now the cursor flashes over the “<i>New Password</i>” line. ▶ Press arrows ▲ or ▼ to select the first digit of the new Password 	

	<p>Allows the setting of Passwords to restrict User access to some of the controller's features. There are three different users available - User 1, 2 and 3. Passwords are set with five digits.</p>	<ul style="list-style-type: none"> ▶ Press Enter (↵) to accept. The cursor should flash now over the second digit ▶ Repeat the procedure until completing the five digits. ▶ Once finished, Press Enter (↵) once again to accept. <p>Note: Take note of the new password and keep it in a secure place.</p> <p>The controller displays <i>"Password successfully changed"</i>. At the bottom of the display it will display <i>"Press Enter (↵) to continue"</i>.</p> <p>Note: If the current Password is forgotten, contact Convion's Customer Care.</p> <p>To change an existing Password:</p> <ul style="list-style-type: none"> ▶ Press Enter (↵) once until the cursor flashes over the <i>"Select User"</i> line. ▶ Press arrows ▲ or ▼ to select the User number from 1 to 3. ▶ Press Enter (↵) to accept. The cursor flashes over the first digit of the Old password line. ▶ Press arrows ▲ or ▼ to select the first digit of the current password ▶ Press Enter (↵) to accept. The cursor flashes over the second digit. ▶ Repeat the procedure until completing the five digits. ▶ Press Enter (↵) once again to accept. The cursor flashes over the <i>"New Password"</i> line. ▶ Press arrows ▲ or ▼ to select the first digit of the new password ▶ Press Enter (↵) to accept. ▶ The cursor should now flash over the second digit. Repeat the procedure until completing the five digits. ▶ Press Enter (↵) once again to accept. <p>Note: Take note of the new password and keep it in a secure place.</p> <p>The screen displays <i>"Password successfully changed"</i>. At the bottom of the display it will display <i>"Press Enter (↵) to continue"</i></p> <ul style="list-style-type: none"> ▶ Press Enter (↵) to accept. The display is back at the Security Menu. To Login or Logout, continue working within the actual Menu. If no more changes are required, press (Esc) to go back to the Main Menu ▶ Press (Esc) to go back to the Status Screen 	
	Logout	<p>Note: Warning: Are you sure you want to logout?</p>	

		<p>By default the cursor will flash on “NO”.</p> <ul style="list-style-type: none"> ▶ To remain Logged in , Press Enter (↵). ▶ To Log Out, press arrows ▲ or ▼ to select “YES”. ▶ Press Enter (↵) to accept. The screen displays “Logout successful”. At the bottom of the display it will read “Press Enter (↵) to continue”. ▶ Press Enter (↵) to accept. ▶ Press (Esc) once to go back to the Security Menu, twice to return to the Main Menu, and once again to return to the Status Screen 	
4. ALARM	<p>Settings <i>Allows the User to change the Low and High Alarm Limits for Temperature and Relative Humidity.</i></p>	<p>TEMPERATURE ALARM: Defaults values:</p> <p>Low Limit: -05.0 °C High Limit: 55 °C</p> <p>To change the default values, proceed as follows:</p> <p>Press Enter (↵) once. The cursor flashes on the Set Low Limit line. Press arrows ▲ or ▼ to adjust the new Low Limit value. Press Enter (↵) to accept. The cursor flashes on the Set High Limit line. Press arrows ▲ or ▼ to adjust the new High Limit value. Press Enter (↵) to accept.</p> <p>Press arrow ▼ to access the Humidity Alarm screen, or Press <Esc> once to return to the Alarm Menu, twice to return to Main Menu, or three times to return to the Status Screen.</p>	U
	<p>Note: The Controller will provide a visual and audible alarm, AND WILL SHUT OFF THE EQUIPMENT whenever one of the Temperature Limits is reached.</p> <p>The Controller will provide a visual and audible alarm whenever one of the Humidity Limits is reached, but WILL NOT STOP THE MACHINE.</p>	<p>HUMIDITY ALARM: Defaults values:</p> <p>Low Limit: 000 % High Limit: 100%</p> <p>To change the default values, proceed as follows:</p> <p>Press arrows ▲ or ▼ once until the HUMIDITY ALARM screen is displayed. Press Enter (↵) once. The cursor flashes on the Set Low Limit line. Press arrows ▲ or ▼ to adjust the new Low Limit value. Press Enter (↵) to accept. The cursor flashes on the Set High Limit line. Press arrows ▲ or ▼ to adjust the new High Limit value. Press Enter (↵) to accept. Press <Esc> once to return to the Alarm Menu, twice to return to Main Menu, or three times</p>	

		to return to the Status Screen.	
	View <i>Allows the User to see the Alarm History (the last 15 Alarm Events) with Date, Time and Status.</i>	<p>The Controller will display the Alarm History screen, with a list of the last 15 Alarm events indicating:</p> <ol style="list-style-type: none"> 1. Type 2. Time 3. Date 4. "Act" - Actual value (only for Temp and Humidity Alarm; otherwise 000) 5. "Lim" - Limit value (only for Temp an Humidity Alarm; otherwise 000) <p>Press arrow ▼ to Scroll down, and arrow ▲ to Scroll up.</p>	
	Clear <i>Allows the User to Clear the Alarm History.</i>	<p>Note: The Controller displays a Warning message: Are you sure you want to clear all alarms? The cursor will flash on the default answer NO.</p> <hr/> <p>To restore the Alarm History: Press Enter (↵) to display "Alarm History Restored". Press Enter (↵) to accept. Press <Esc> once to return to the Main Menu, and twice to return to the Status Screen.</p> <p>To Clear the Alarm: Press arrows ▲ or ▼ to change to YES Press Enter (↵) to display "Alarm History Cleared". Press Enter (↵) to accept. Press <Esc> once to return to the Main Menu, and twice to return to the Status Screen.</p> <p>Note: It is recommended to Clear all alarms after view the list and repair the failure.</p>	
5. SERVICE	This section is restricted to authorized personnel only.		

6. Options	Time/Date <i>Allows the User to set the clock and date to allow real-time management.</i>	<u>To Set the Time/Date:</u> The screen displays the current value. Press Enter (↵) to position the cursor over the Hours. Press arrows ▲ or ▼ to adjust the value. Press Enter (↵) to accept. The cursor flashes over the Minutes. Repeat for Minutes, Day, Month and Year. Press <Esc> once to return to the Option Menu, twice to return to the Main menu, and three times to return to the Status Screen.	U
	Note: To guarantee the accuracy of an experiment, the Time/Date has to be adjusted before running the Schedule. Time can be adjusted while a schedule is running, but will affect the duration of the timeline.		
	On-Delay <i>Selects the delay in re-starting the chamber operation after a power outage (in seconds.)</i>	<u>To set the On-Delay:</u> The screen displays the current value. <i>The cursor flashes in the background.</i> Press arrows ▲ or ▼ to adjust the On-Delay value. Press Enter (↵) to accept. Press <Esc> once to return to the Option Menu, twice to return to the Main menu, and once again to return to the Status Screen.	
	Security <i>Enables / Disables the security feature.</i>	The Controller has three levels of access: Public – User – Factory. When the Security feature is OFF, all features in the controller have Public access except for Service which has a Factory password protection. When the security is ON, only those features indicated with a “P” in the column to the right within this chart have Public access. The remaining features are restricted to Users and Factory “Are you sure you want to turn security ON?” The cursor will flash over the default NO. To cancel security, Press Enter (↵) To enable security, Press arrows ▲ or ▼ for YES, then Press Enter (↵).	

	<div><div><div>Setup</div><div>Allows the user to define the number of discreet Levels of light and the Offset for the inputs.</div></div></div>	<div><div>Light Levels screen will be displayed Lighting range, 0 – 1 (by default)<ul style="list-style-type: none">Press Enter (↵) once. The cursor flashes on “1” (maximum light level)Press arrows ▲ or ▼ to select the maximum level of light from 1 to 3 according to the following .</div><div><div>Note:</div><div>For the A1000 Model, use the following maximum light selection table in accordance with your particular kit application.</div><table><tr><th>Kit Model</th><th>Maximum Light Level</th></tr><tr><td>IN</td><td>1</td></tr><tr><td>AR</td><td>3 (50Hz); 3 (60Hz)</td></tr><tr><td>PG</td><td>3</td></tr><tr><td>TC</td><td>1</td></tr><tr><td>A350</td><td>3</td></tr></table><div>Note also that the default setting for the light settings is set to only one level of light. To change this requires this set up instruction.</div></div><div><ul style="list-style-type: none">Press Enter (↵) to accept.Press arrow ▼ once. The display now reads Select-Input Offset. The default values are: TEMP Offset : 00.0 °C HUM Offset: 00 %RHPress Enter (↵) once. The cursor flashes on the first digit of the Temperature Offset (default value 00.0 °C.Press arrows ▲ or ▼ until the desired value is adjusted.Press Enter (↵) to accept. The cursor flashes on the first digit of the Humidity Offset (default value 00 %RH).Press arrows ▲ or ▼ until the desired value is adjusted.Press Enter (↵) to accept.Press <Esc> once to return to the Option Menu, twice to return to the Main Menu, and once again, to return to the Status Screen.</div></div>	Kit Model	Maximum Light Level	IN	1	AR	3 (50Hz); 3 (60Hz)	PG	3	TC	1	A350	3	
Kit Model	Maximum Light Level														
IN	1														
AR	3 (50Hz); 3 (60Hz)														
PG	3														
TC	1														
A350	3														

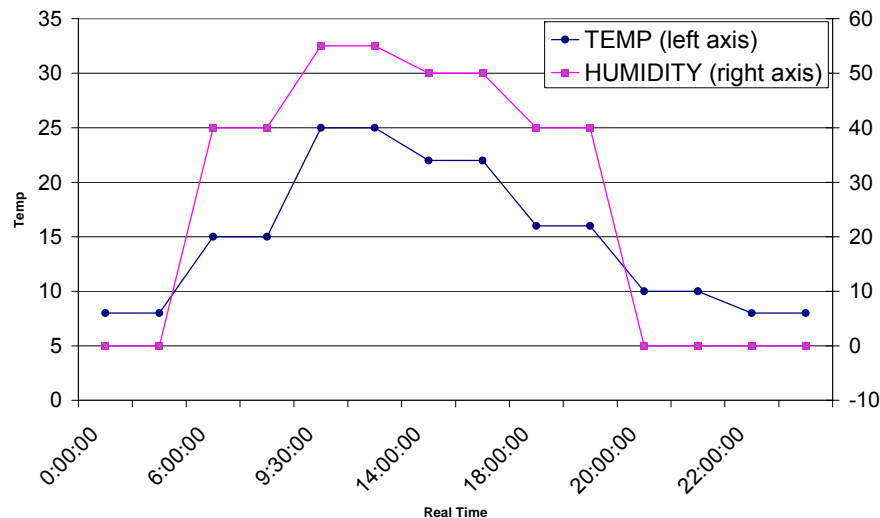
Sample Program

Writing a program in the CMP6010 is simple and intuitive. Before programming the Controller the Operator should know:

- ▶ Up to 16 programs can be stored in the CMP6010 - each one with up to 24 lines.
- ▶ The Controller runs Schedules, NOT PROGRAMS.
- ▶ CMP6010 can store one Schedule at a time.
- ▶ To run the same program indefinitely, the Schedule allows for the selection of ∞ in the number of repetitions.
- ▶ It is not necessary to have the program sorted in chronological order as the CMP6010 has the ability to Sort the program automatically. As such, the controller will sort the program after each Save even if the User did not select Sort.
- ▶ The CMP6010 Controller works based on step logic – that is, the Operator only needs to enter the **start** time of a change. The Controller then automatically keeps that set-point until it detects the next time change.
- ▶ There is no need to write a timeline for the program at midnight in order to 'chain' the program. However, if desired, the schedule can change at midnight from one program to the next.

The graph below represents a sample desired control scheme. The table on the right represents the corresponding CMP6010 Schedule.

PROGRAM EXAMPLE



Line #	Start Time	Temp	Relative Humidity	Light Level
01	06:00	15.0	40	1
02	09:30	25.0	55	3
03	14:00	22.0	50	2
04	18:00	16.0	40	1
05	20:00	10.0	0	0
06	22:00	8.0	0	0

With the assumption that no other programs exist within the CMP6010 memory, these are the steps required to program the above sample:

1. From the Status Screen, Press Enter (↵) once to access to the Main Menu
2. Enter (↵) once again to access the Program Menu
3. Enter (↵) once again to access the Create Option
4. Enter (↵) once again: By default the CMP60101 assigns the lowest program number available – '01' for this example.
5. Press arrows ▲ or ▼ to assign the new program a different number. *The controller displays only those programs available.*
6. Press Enter (↵) to accept. The controller automatically displays line # 01 in the program
7. Press Enter (↵) once to fill line 01 with default values.
8. Press Enter (↵) to move the cursor to the next column.
9. Press arrows ▲ or ▼ to set the Hours (for this example, 06)
10. Press Enter (↵) to accept. *The cursor now flashes on the Minutes column.*
11. Press arrows ▲ or ▼ to set the minutes (for this example, 00)
12. Press Enter (↵) to accept. *The cursor now flashes on the temperature column*
13. Press arrows ▲ or ▼ to set the temperature (for this example, 15.0).
14. Press Enter (↵) to accept. *The cursor now flashes on the Humidity column*
15. Press arrows ▲ or ▼ to set the Relative Humidity (for this example, 40).
16. Press Enter (↵) to accept. *The cursor now flashes on the Light column*
17. Press arrows ▲ or ▼ to set the light level: (for this example, 01).
18. Press Enter (↵) to accept.
19. THE CURSOR RETURNS TO THE SAME LINE# COLUMN. (for this example, 01).
20. PRESS ▼ TO WORK NOW ON LINE 02.
21. Repeat the procedure until the program is completed.
22. Once the program has been created, press <Esc>.
23. CMP6010 displays "Do you want to save the program". The cursor flashes over the default "YES".
24. Press Enter (↵).
25. CMP6010 displays "Program # saved. Press Enter (↵) to continue"

ALARM TROUBLESHOOTING - USER

Introduction:

The CMP6010 provides several different alarms;

- ▶ temperature limit
- ▶ humidity limit
- ▶ door open
- ▶ refrigerant low pressure: 3 different conditions
- ▶ refrigerant high pressure: 3 different conditions

Temperature and refrigerant alarms will automatically shut the chamber off to prevent damage to the life of its core components. Humidity and 'door open' will not shut the chamber off but will trigger the appropriate alarm sequence. The alarm buzzer is conveniently located between the top door edge and the upper control panel.

ALARM CODES

NOTE: Alarms are only enabled when a Schedule is Run.

Active Alarm: An alarm condition has triggered and a corrective action has not yet been taken. Visual alarm flashes and audible alarm sounds.

Inactive Alarm: An Alarm condition has triggered and a corrective action has been taken or the alarm has been resolved automatically. Visual alarm on steadily, audible alarm 'off'.

Acknowledged Alarm: User simply acknowledges the alarm condition by pressing <enter>. If the condition that triggered the alarm is still present, the alarm remains active. If the condition that triggered the alarm is no longer active, the alarm backlight turns 'off' and the buzzer silences.

Unacknowledged Alarm: Alarm condition that remains unacknowledged (and therefore unresolved) by the User.

Screen	Alarm Type	Description	Action	Troubleshooting	To Resume
HUMIDITY ALARM	High Limit exceeded	Indicates that the actual RH within the chamber is higher than the alarm High Limit.	Visual and Audible Alarm DOES NOT STOP THE CHAMBER. Alarm button backlight flashes	Press <Alarm> to identify the Alarm type.	Press Enter (↵) to acknowledge the Alarm. If the Alarm condition has been completely removed, <Alarm> backlight will be 'off'. If there was water damage, wait until the chamber is dry. Only after the failure is completely resolved should the water supply be resumed.
				User: Verify the presence of water inside the chamber. If water is present, stop the chamber immediately and shut the water supply off.	
				If the Relative Humidity Set point is high (more than 90%), drops of water sometimes form over the sensor resulting in an inaccurate reading of 100% or higher. Open the door until the display reading drops below the Alarm Set Point value.	
				Note: As the door is opened, the circulating fan will stop running. This is normal. However, after 1 minute, the chamber will also trigger a Door Open Alarm, and after 5 minutes the chamber will shut off.	
				If RH is not critical for the experiment, keep the door open for less than 1 minute or until the actual reading is lower than the Alarm Set point. Verify the Humidity Set point and ensure it is lower than 90% AT ALL TIMES. Verify the Alarm High Limit Set point. (Press Enter (↵) to access the Main Menu→ Alarm→ Settings). The High Humidity Alarm Set point must be higher than the RH set point at anytime during the schedule. Remove any External Humidifying device that may have been placed inside the chamber.	

				Visit www.convirion.com for service or Call Convirion's customer Care.	
	Low Limit exceeded	Indicates that the actual RH within the chamber is lower than the alarm Low limit	Visual and Audible Alarm. DOES NOT STOP THE CHAMBER. Alarm button backlight flashes	Press <Alarm> and then Enter (↵) to acknowledge the Alarm. User: Verify the water supply and strainer (if Installed) correct operation. Verify the chamber door is closed properly. Verify that the exhaust air/fresh regulator works properly. Verify the alarm limit is adequate (Press Enter (↵) to access the Main Menu→ Alarm→ Settings). If Low RH Alarm Set point is 0, the sensor must be replaced. Call CONVIRON's Customer Care. Call your local representative or call Convirion's customer Care.	If the situation that triggered the alarm has been corrected, the alarm button backlight stops flashing and stays on. Press the Alarm button until clear
TEMPERATURE ALARM	High Limit exceeded	Indicates that the actual Temperature within the chamber is higher than the alarm High Limit set point.	SHUTS THE CHAMBER DOWN. Sound and visual warning; Alarm button backlight flashes	Press <Alarm> and then Enter (↵) to acknowledge the Alarm. User: 1. Check the High Temperature Alarm set point. (Press Enter (↵) to access the Main Menu→ Alarm→ Settings). 2. Remove any External Heating device that may have been placed inside the chamber. 3. Call your local representative or call Convirion's customer Care. .	
	Low Limit	Indicates that	SHUTS THE	Press Enter (↵) to acknowledge the Alarm.	

	exceeded	the actual Temperature within the chamber is lower than the Alarm Low limit Set point.	CHAMBER DOWN. Sound and visual warning Alarm button backlight flashes	User: 1. Check the Low Temperature Alarm set point. (Press Enter (↵) to access the Main Menu→ Alarm→ Settings). 2. Ensure the door is closed properly. 3. Call your local representative or call Convion's customer Care.	
DOOR OPEN	Warning	Indicates door Open	DOES NOT STOP THE CHAMBER. After the door is kept open for more than 1 minute, sends a Warning Alarm	Note: NEVER KEEP THE UNIT DOOR OPEN FOR MORE THAN 3 MINUTES WHILE THE UNIT RUNS. If more than 3 minutes are needed, stop the Schedule.	Close the Unit door and Press Enter (↵) to acknowledge the Alarm. Press <Esc>
				Note: When the door is opened, the circulating fan is stopped to avoid the entrance of unconditioned air into the chamber as much as possible. IF THE DOOR IS KEPT OPENED FOR MORE THAN 5 MINUTES, THE UNIT MAY START BUILDING FROST ON THE COIL. User: Close the door.	
LOW PRESSURE WARNING	Warning	Monitors the Low Pressure switch status	DOES NOT STOP THE CHAMBER	Press <Alarm> to identify the Alarm type.	
				User: Press Enter (↵) to acknowledge the Alarm. Note: If this warning message does not appear again on the Screen, it is an indication that the refrigeration system had an occasional condition where it hit the Low Pressure Cut-off set point, and automatically recovered. This may be also be occur after a long Open door condition. Does not require Service. If this Warning message appears frequently, it might be an indication that the refrigeration system has a very	

				small leak and therefore requires service.	
				Call your local representative or call Convion's customer Care.	
LOW PRESSURE (repeat)	Visual and Audible	Indicates the Low Pressure cut-off Set point was reached at least three times in the last 30 minutes	SHUTS THE CHAMBER DOWN	Press <Alarm> to identify the Alarm type.	
				User: Call your local representative or call Convion's customer Care.	
				Note: This Alarm is an indication of a potential failure in the refrigeration system. To protect the components of the refrigeration system, the chamber automatically shuts down.	
LOW PRESSURE (time)	Visual and Audible	Indicates the Low Pressure cut-off Set point was reached and remained open for at least 45 seconds.	SHUTS THE CHAMBER DOWN	Press <Alarm> to identify the Alarm type.	
				User: Call your local representative or call Convion's customer Care.	
				Note: This message is an indication of a potential failure in the refrigeration system. To protect the components of the refrigeration system, the chamber automatically shuts down.	
HIGH PRESSURE WARNING	Warning	Monitors the High Pressure switch status	DOES NOT STOP THE CHAMBER	Press <Alarm> to identify the Alarm type.	
				User: Press Enter (↵) to acknowledge the Alarm.	
				Note: If this warning message does not appear again, it is an indication that the refrigeration system had an occasional condition where it hit the High Pressure Cut-off set point, and automatically recovered, and does not require service.	
				If this Warning message appears frequently, it might be an indication that the refrigeration system has a condition	

				that requires service.	
				User: Call your local representative or call Convion's customer Care.	
HIGH PRESSURE (repeat)	Visual and Audible	Indicates the High Pressure cut-off Set point was reached at least three times in the last 30 minutes	SHUTS THE CHAMBER DOWN	Press <Alarm> to identify the Alarm type.	
				User: Call your local representative or call Convion's customer Care.	
				Note: This message is an indication of a potential failure in the refrigeration system. To protect the components of the refrigeration system, the chamber automatically shuts down.	
HIGH PRESSURE (time)	Visual and Audible	Indicates the High Pressure cut-off Set point was reached and remind opened for at least 45 seconds.	SHUTS THE CHAMBER DOWN	Press <Alarm> to identify the Alarm type.	
				User: Call your local representative or call Convion's customer Care.	
				Note: This message is an indication of a potential failure in the refrigeration system. To protect the components of the refrigeration system, the chamber automatically shuts down.	

Drip Pan Installation Instructions

The drip pan is offered as an accessory for the **Adaptis** family of products for customers who either do not have a drain connection close to the unit, or who simply prefer to avoid using such a connection. The drip pan accessory can hold up to 4 litres of water although it is recommended not to exceed the 2 litre capacity.

Check the drip pan regularly (preferably before and after watering plants) and try to keep it empty and clean.

1.0. Accessory Components

- 1.1. The Adaptis A1000 Drip Pan Accessory (P/N 220685) is composed of the following elements:

P/N 220685– Drip Pan Accessory- A1000

Item #	Qty	Description	Image
1	1	Drip Pan	
2	1	Drip pan base	
3	4	Drawer glides	
4	2	Guides (L= 762 mm; 30")	
5	8	M3 x 6 countersunk screws	
6	4	M3 x 16 sheet metal screws	

1.2. The Adaptis 350 Drip Pan accessory (P/N 22662) is composed of the following elements:

P/N 226625– Drip Pan Accessory- A350

Item #	Qty	Description	Image
1	1	Drip Pan	
2	1	Drip pan base	
3	4	Drawer glides	
4	2	Guides (L = 600 mm; 24")	
5	8	M3 x 6 countersunk	
6	4	M3 x 16 sheet metal screws	

2.0. Installations Instructions:

1. Take one of the guides (item # 4) and join it with the drawer glide (item # 3 - “C” shape) using three of the countersunk screws (item # 5)



Figure 1: The two “C” shaped glides must be installed with three countersunk screws



Figure 2: The glide's wheel must be installed toward the guide's end

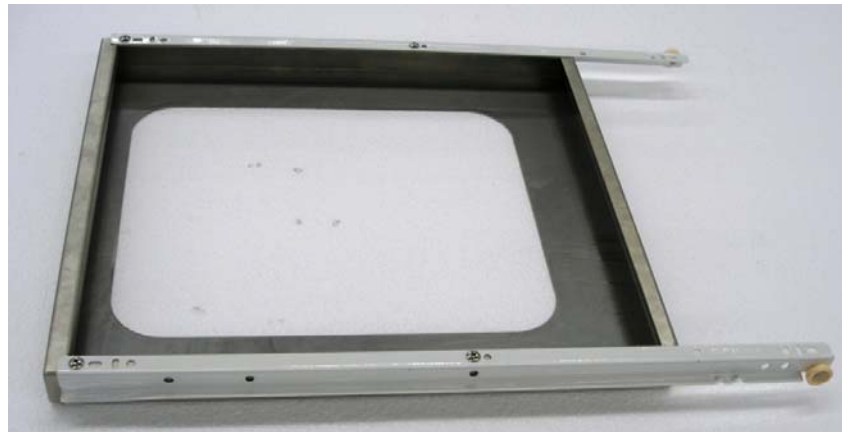
- Using the sheet metal screws (item # 6), screw the guides into the bottom of the Adaptis cabinet below the base. Note that this operation may require tilting the unit slightly to gain access. Exercise caution here and ensure the unit door is locked.



Figure 3: Two guides attached to the bottom of the Adaptis cabinet

- The other two drawer glides ("Z" shape) must now be screwed into the bottom flange of the Drip Pan Base (item # 2).

Figure 4: The "Z" shaped glides must be screwed at the bottom of the drip pan base shown



as

- Insert the drip pan (item # 1) into the base (item # 2).
- Slide the drip pan into the glides.

The unit is now ready to operate.

For inspection, slide the drip pan toward the outside of the unit and inspect the level and cleanliness of water. If necessary, remove the drip pan (slide all the way to the front, and then tilt it upwards slightly), drain it and clean it using non-abrasive detergents.

TECHNICAL SPECIFICATIONS

			A1000		A350	
1.0.	Power supply					
	Powers supply	[Volt]	120	230	120	230
	Phase		1	1	1	1
	Frequency	[Hz]	60	50	60	50
2.0.	Dimensions					
	External	[in / mm]	42 x 32.5 x 79		31 x 27 x 74	
	Internal (gross)	[in / mm]	37 x 28 x 57		23 x 21 x 48	
	Internal (net)	[in / mm]	37 x 25 x 47		23 x 19 x 42	
	Capacity (gross)	[ft3 / lts]	34.12 / 966.2		13.41 / 379.72	
	Capacity (net)	[ft3 / lts]	25.16 / 712.45		10.62 / 300.72	
3.0.	Refrigeration System					
	Refrigerant		R-134a	R-134a	R-134a	R-134a
	Charge	[lbs/Kg]	4.6 / 2.1	4.6 / 2.1	4 / 1.8	4 / 1.8
4.0.	Main components Amp draw					
	Compressor RLA	[Amp]	6.7	3	5.34	2.54
	Compressor LRA	[Amp]	41.9	14.8	41.9	12.6
	Circulating fan nominal power	[Amp]	1.6	0.9	0.9	0.5
5.0.	Humidity System					
	Water requirements					
	Flow (MAX)	Ga/l hr / lts/h	0.25 / 0.9		0.25 / 0.9	
	Quality		<div><p>.pH: 7.0 ± 0.5 Filtration: <2 microns or 0.00008 inch Purity: Resistively 0.5 to 5.0 Meg Ohms or Conductivity 2.0 to 0.2μSiemens</p></div>			
6.0.	Control system					
	Controller		CMP6010	CMP6010	CMP6010	CMP6010
	Software version		v 2.0.	v 2.0.	v 2.0.	v 2.0.
7.0.	Design performance					
	Humidity max [Lights On/L Off]	[%RH]	80/90	80/90	90	90
	Humidity min	[%RH]	ambient	ambient	ambient	ambient
	Temperature max	[°C]	45	45	40	40
	Temperature min [Lights ON]	[°C]	10	10	5	5
	Temperature min [Lights Off]	[°C]	4	4	5	5
	Temperature control	[°C]	+ / - 0.5		+ / - 0.5	
	Humidity Control	[%RH]	+ / - -5		+ / - -5	

	A1000							
	IN		AR		PG		TC	
	230V/50Hz	120V/60Hz	230V/50Hz	120V/60Hz	230V/50Hz	120V/60Hz	230V/50Hz	120V/60Hz
KIT Total inputs amp	1.42	2.7	2.83	5.4	1.77	4.1	2.83	5.4
Light average	75	75	450	450	500	500	150	150
Number of fixtures	4	4	2	2	1	1	8	8
CABINET Total Input Amps	5.9	10.6	5.9	10.6	5.9	10.6	5.9	10.6
TOTAL INPUT AMPS	7.3	13.3	8.9	16	7.6	14.7	8.9	16
Minimum TOTAL Circuit ampacity	8	14.9	9.6	17.6	8.4	16.3	9.6	17.6
Maximum OVERCURRENT PROTECTION	15	20	15	20	15	20	15	20
Additional fixture	0.35	0.65	1.42	2.6	n/a	n/a	0.35	0.65

	A350	
	220V/50Hz	120V/60Hz
KIT Total inputs amp		
Light average		
Number of fixtures		
CABINET Total Input Amps	8.4	15.1
TOTAL INPUT AMPS	8.4	15.1
Minimum TOTAL Circuit ampacity	9.1	16.4
Maximum OVERCURRENT PROTECTION	15	20
Additional fixture	n/a	n/a