Spring Air

ULTRA FLOW

Installation and Maintenance Manual

User and Installation guide for

JIMCO KPC STO-Master

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User and Installation guide for

JIMCO KPC STO-Master

Please read these instructions
-before assembling, installing and commissioning in order to avoid injury or product damage

Photolysis Oxidation in brief

JIMCO A/S products work through Photolysis Oxidation. Photolysis Oxidation involves the following:

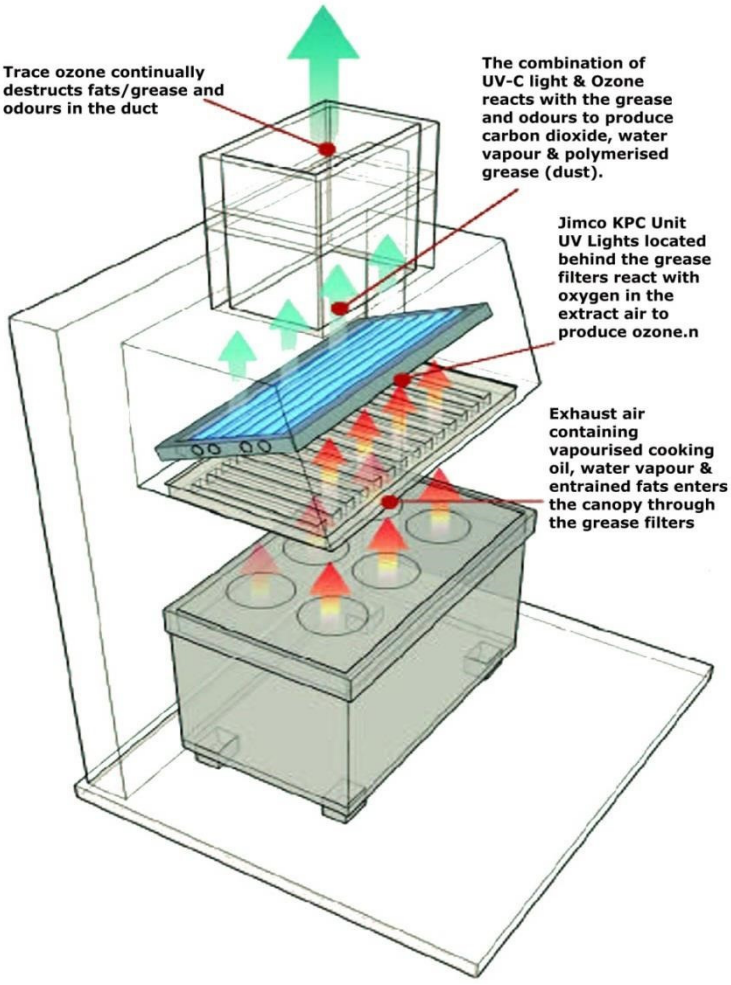
Double carbon-bonded organic molecules oxidize naturally.

However, some organic substances are more difficult to break down than others.

If these substances are exposed to UVC light at a particular wavelength, it is possible to break the protein chains found in organic matter into simpler compounds, which are then easy to oxidize.

Oxidation is a chemical process similar to combustion but doesn't require high temperatures or ignition. This process can be thought of as a cold form of combustion.

Typical Jimco KPC Canopy Unit



The following occurs with Jimco UVC technology:

The UVC light emitted by the Jimco lamps destroys the protein chains found in organic deposits from smoke and cooking grease. The same lamps produce ozone from the 20 % oxygen present, which occurs naturally in the atmosphere. The ozone oxidises/cold combusts the remaining products in the hood and ventilation system.

After this process, the air is cleaned of organic products, with the result that the smell is reduced. The accumulation of fat/oil in pipes and channels is reduced, thus minimizing the risk of fire. The ventilation system's power is improved, resulting in a better internal climate.

Contents

Description of Controller

This Jimco Controller is designed to control Jimco UVC components used for cleaning ventilation air, primarily from industrial and commercial kitchens.

When connected to the external components, the Controller can control Jimco UVC elements (frames). It contains equipment for the safe operation of the UVC device, including pressure switches and safety switches for filters. A current sensor monitors the power consumption of the lamps and sounds an alarm if the lamp fails.

An hour-counter, monitors the operating-hours (Max. 9,999 hours) of the connected UVC elements. When 0 hours remain, the device switches off and a Jimco distributor/technician can assist in replacing lamps, inspecting the system and resetting the lamp timer.

Technical specifications

Supply voltage: 90VAC, 1 Phase - 208VAC 3 Phase
Max. power supply: Single Phase: 30 A, Three Phase 16A per Phase
Max. connected power: Single Phase 3600W, Three Phase 5800W
Power consumption - Standby: 0.3A
Ingress Protection: IP66
Dimensions (W x H x D): 305*240*110mm (12.0” x 9.5” x 4.5”)

Nameplate:

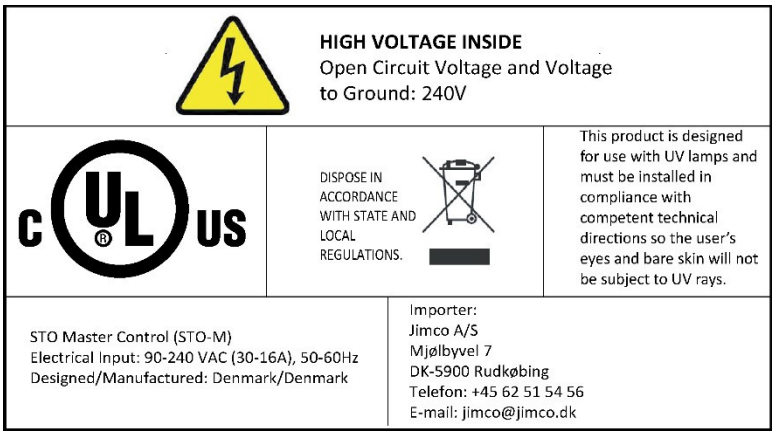
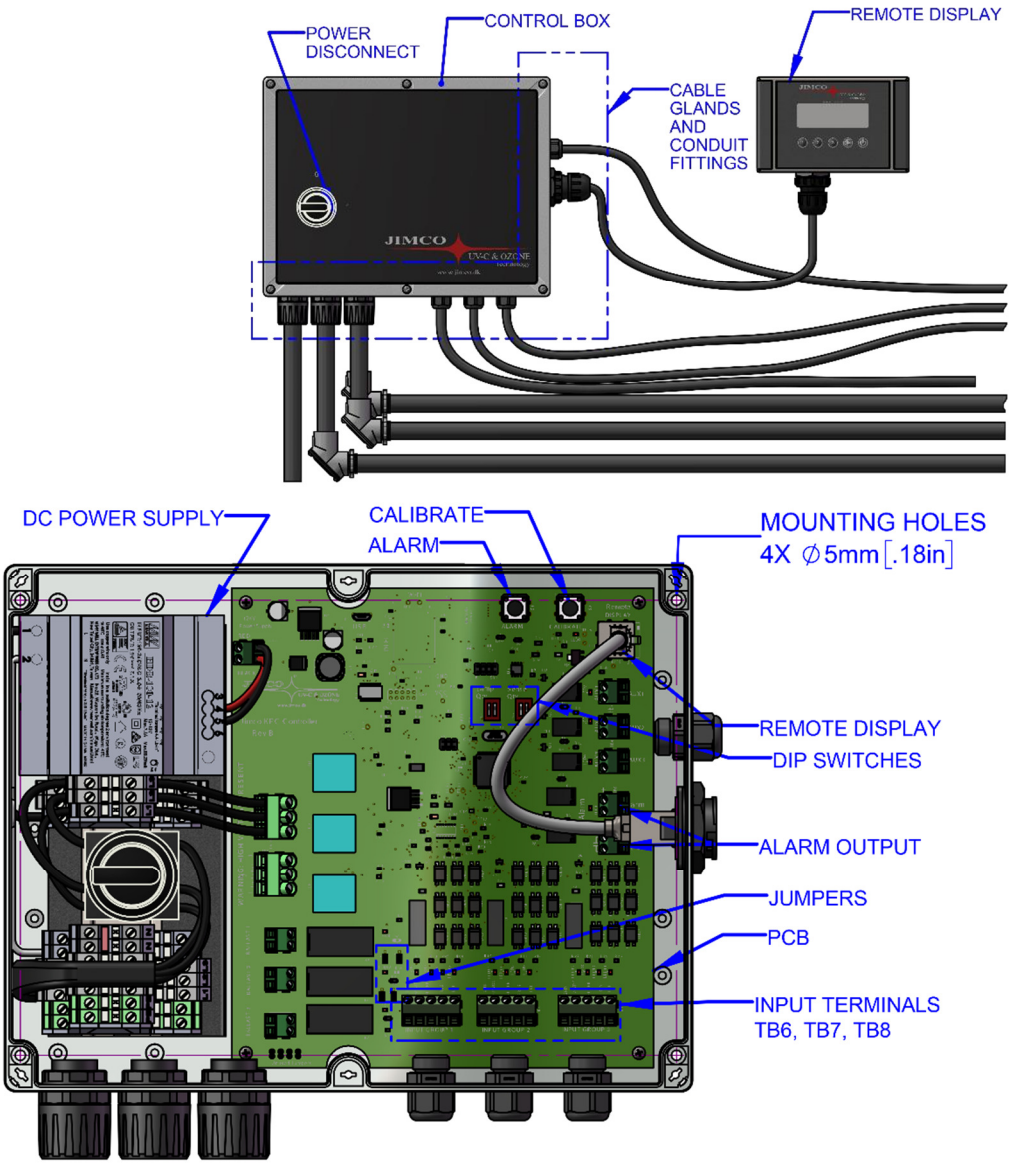


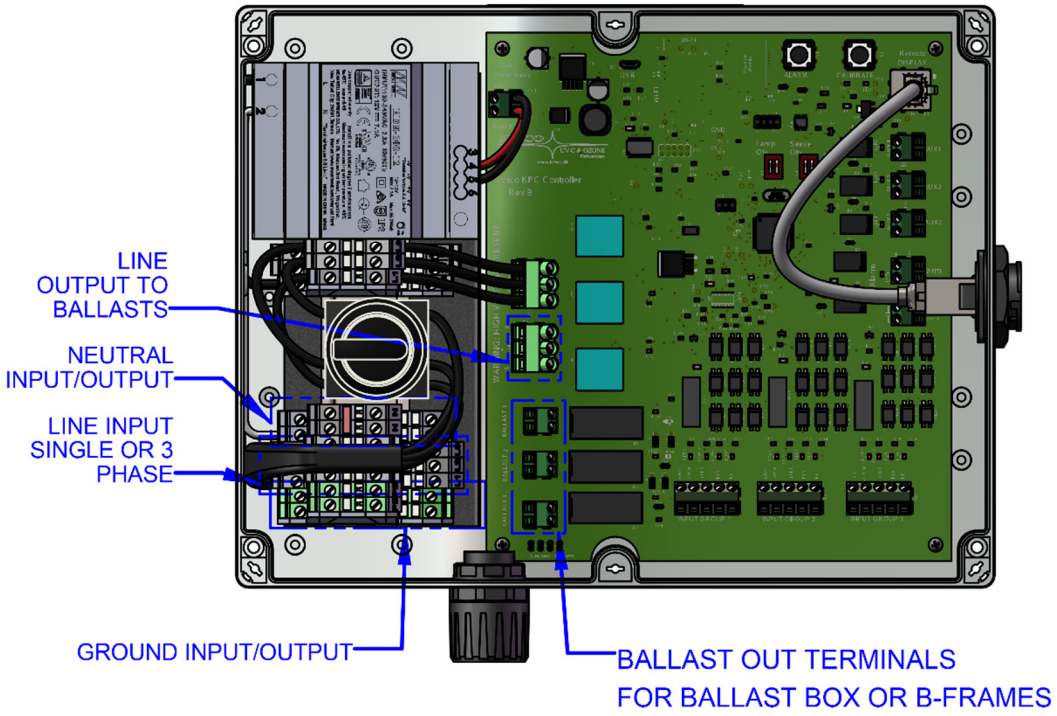
Figure 1: (Label TBD until certification is complete)

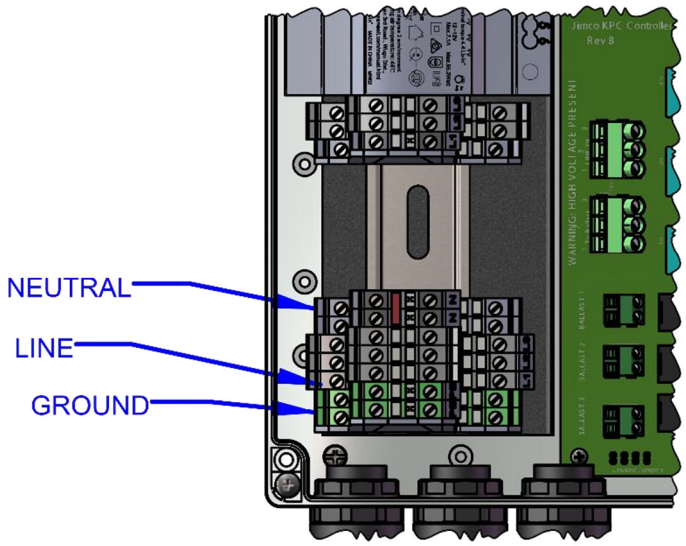
Overview of Controller

External Internal

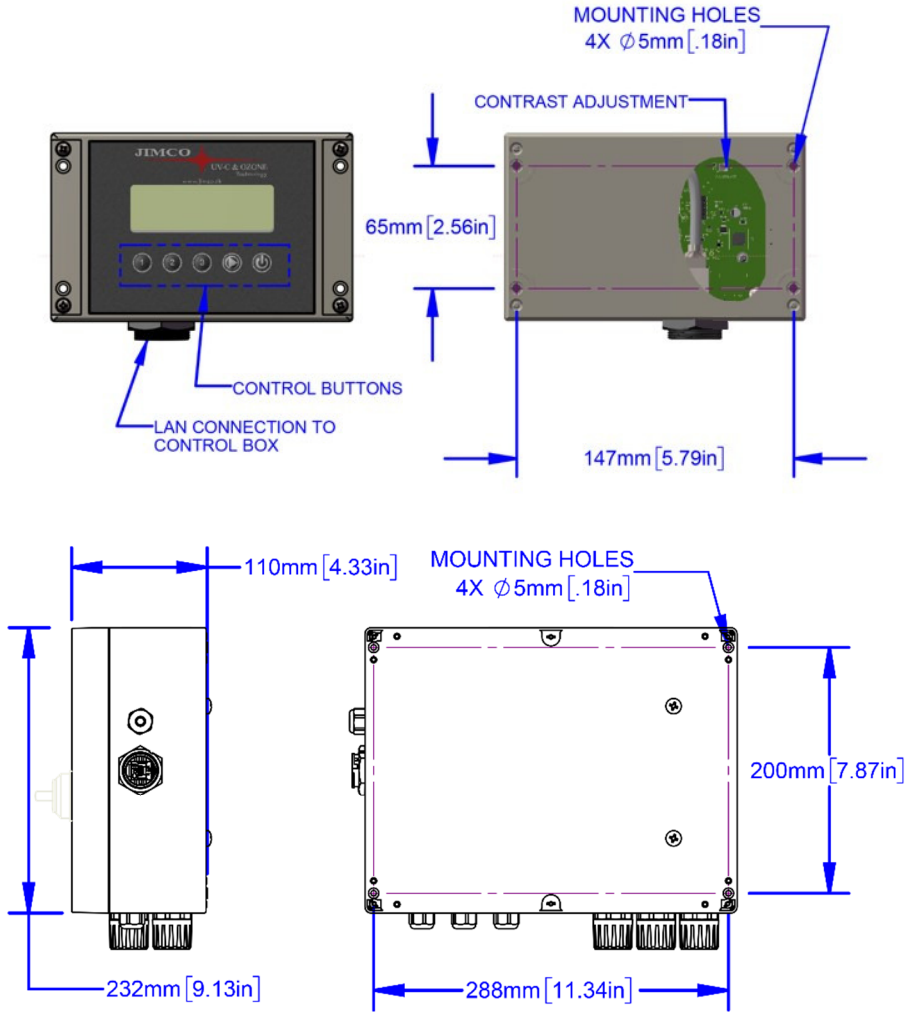


Power Input Terminals





Remote Display Exterior



Warnings and safety

Improper use can result in injury/damage to persons and equipment.

Please read the instructions before using the controller. This prevents injury/damage to persons and the device. Please save this manual.

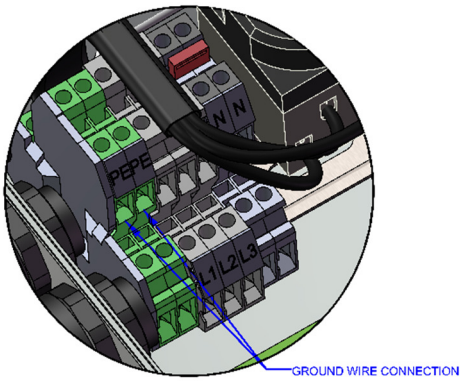
> Always switch off the controller before opening it to avoid electric shock. Always disconnect the power before working on hoods to prevent eye damage as a result of exposure to UV light.

> The controller is designed solely for the uses mentioned in the manual-controlling Jimco equipment. Any other application is counter-indicated, and may be dangerous.

The manufacturer cannot be held liable for injury/damage caused by inappropriate use.

> Using a defective unit may incur risk. If you suspect damage, disconnect the device immediately and contact your distributor for service.

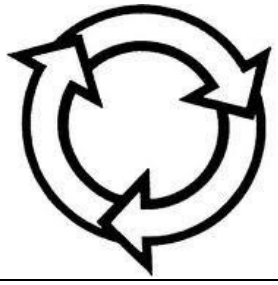
> Repairs may only be performed by qualified persons with knowledge of electrical equipment. Repairs carried out by unqualified persons may incur significant risk for the user! Never allow unskilled personnel to operate the machine.



> The STO Master control box must be connected to ground (bonded) according to local electrical codes. The terminal block is intended for ground wire connections (YELLOW/GREEN TERMINALS). This ground bonding connection should be inspected by a qualified electrician. The manufacturer cannot be held liable for injury/damage due to inadequate ground bonding (e.g. electric shock).

> Only use the controller with the required UV light and Ozone safety accessories. Failing to use the accessories or overriding safety measures can pose a risk of ozone damage, as well as eye injury from exposure to UV light.

Environment and disposal

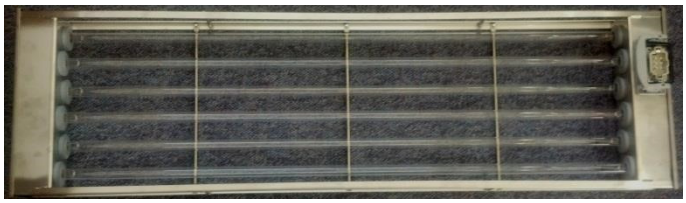


The packaging protects the machine against damage in transit. The packaging materials are selected on the basis of environmental and waste considerations, and can be reused.
The recycling of packaging materials saves raw materials and reduces landfill. The packaging should be returned to your nearest recycling/collection point.

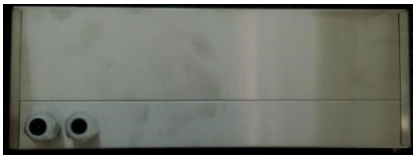
Old electrical and electronic products contain valuable material. They also contain harmful substances which are necessary for their operation and safety. If the products are disposed of along with household waste or handled incorrectly, it can damage human health and the environment. Do not, therefore, dispose of old products along with household waste.

The disposal of accessories is described separately.

Accessories



UVC Element (Frame) (A-model) (model displayed KPC300S) Includes the following types:
KPC xxxS
PC xxxL
KPC xxxHO-S
KPC xxxHO-L

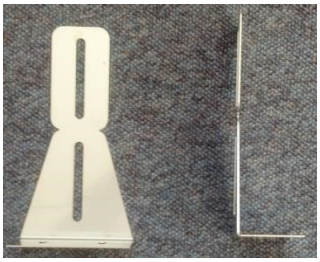


Ballast box (for A-model frames)
The following types:
KPC BBx00W N
KPC BBx00W HOS
KPC BBx00W HOL

Cable for A-model Frames (Included with Frame)

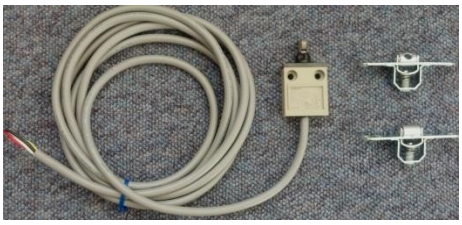
UVC Element (Frame) (B-model) (model displayed KPC 200S-IB) The following types:
KPC x00S-IB
KPC x00L-IB
KPC 400HOS-IB

Cable for B-model framework (Included with Frame)



Suspension bracket
Suitable for A and B models
(Included with Frame)

Pressure switch
Supplied with hose and
connection pipes



Safety switch
Supplied with counter pressure
springs
Inductive version also available.

Setup and installation

The controller (STO Master) shall be installed on a flat, vertical surface near the cooker hood or duct system where the UVC elements (frames) are located. It shall be installed at a height that makes operation as easy as possible for the user. In addition, the location shall be selected so as to ensure that the device is not exposed to water.

Maximum ambient temperature (AT): 30 degrees C.

Accessories shall be installed as described in the respective manuals.

Attachment:

The device shall be attached to the mounting surface using the holes at the bottom of the chassis (see below). Use screws suitable for the wall substrate. (not included)

Figure 2: STO Master Control Box mounting

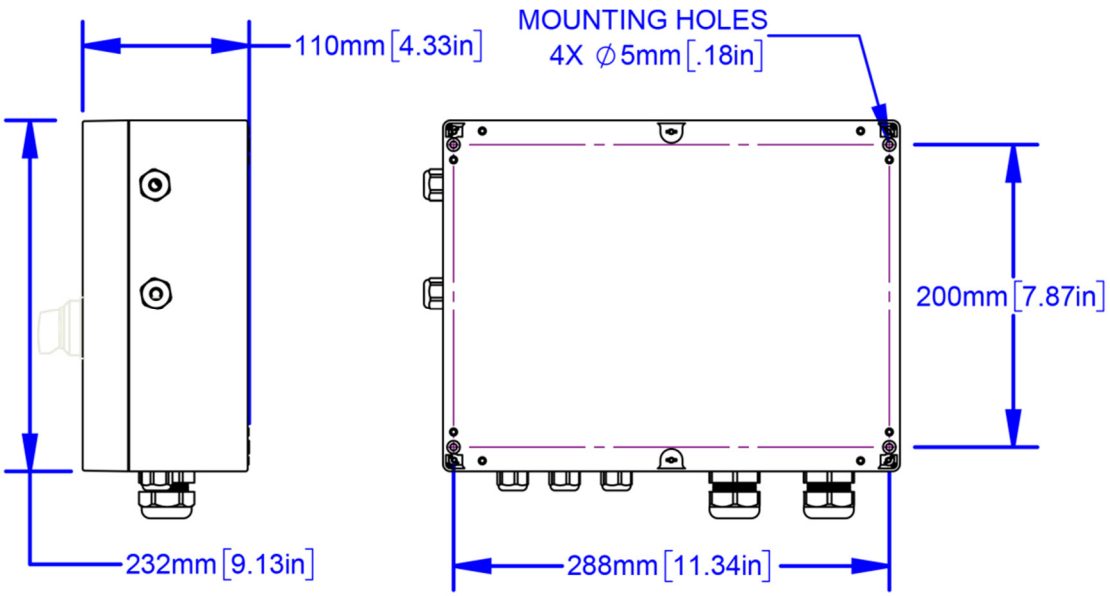
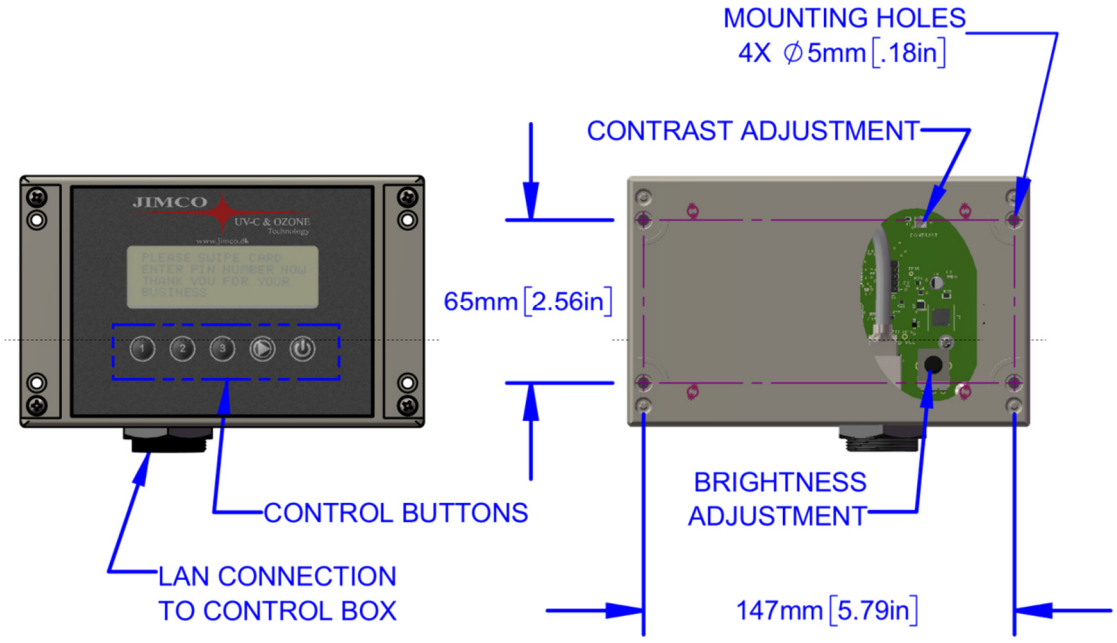
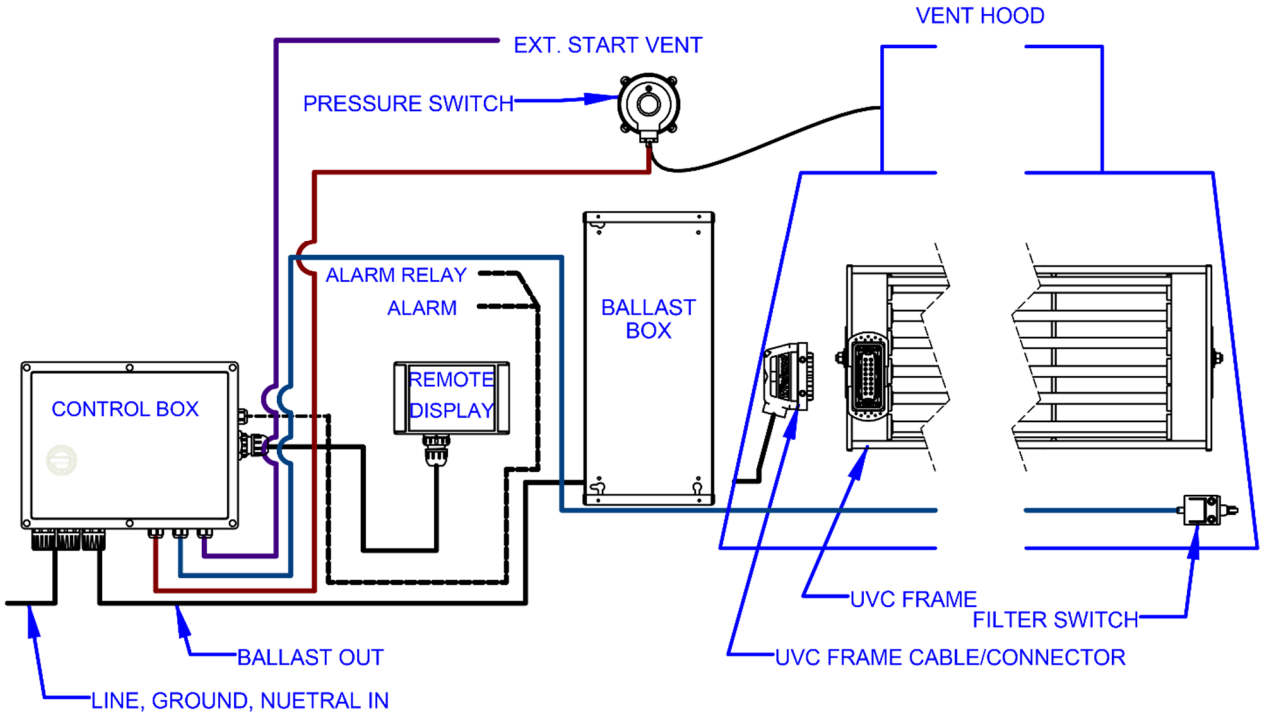


Figure 3: STO Master Remote Display mounting



Interconnect Diagram:



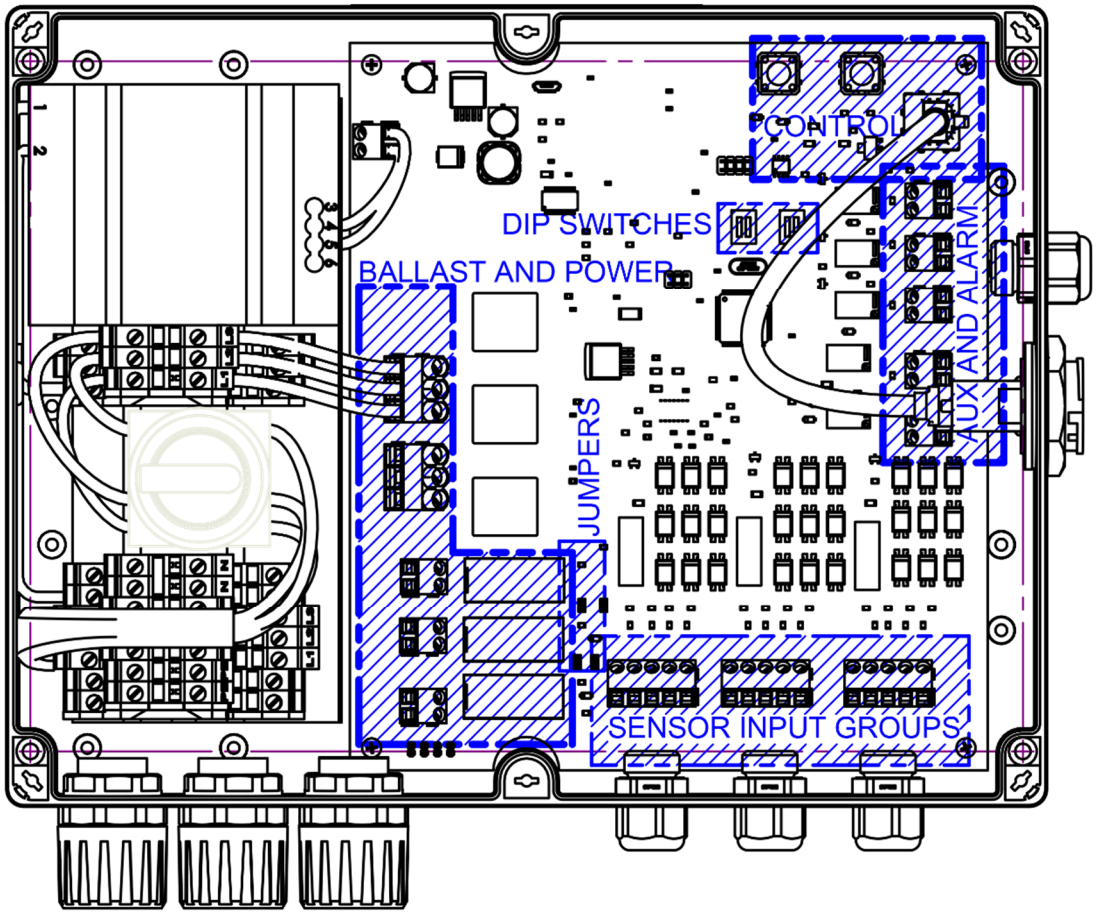
System Wiring

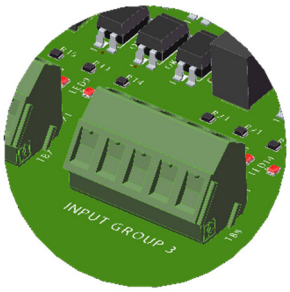
Electrical installation of the JIMCO UVC system entails the following tasks

1. Connecting the Remote Display to the control box
2. Wiring external sensors to the control board
3. Wiring the ballast boxes to the UVC frames (refer to the set-up and installation instructions included with the JIMCO Ballast Box
4. Wiring the ballast boxes to the control box
5. Setting the Jumpers and Dip-Switches
6. Optionally connecting the control board to an external alarm
7. Wiring the control box master switch to the control board and building electrical system

The JIMCO STO Master control board is arranged in zones to facilitate easy connection and configuration. The following figure shows the zones

Figure 4: CONNECTION ZONES





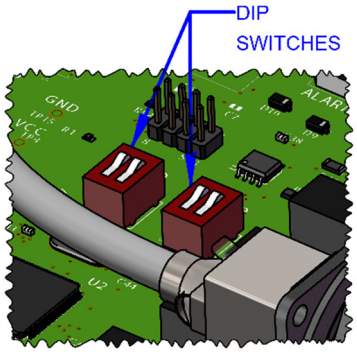
Individual wires are connected to the control board at several terminal blocks. Each terminal block consists of two or more screw clamp connections. The connection is made by inserting the stripped end of a wire into the block and tightening the set screw until it is secured. The following table shows strip back and tightening torque for connectors on the control board

Table 1: Wire Strip-back and tightening torque for terminal blocks

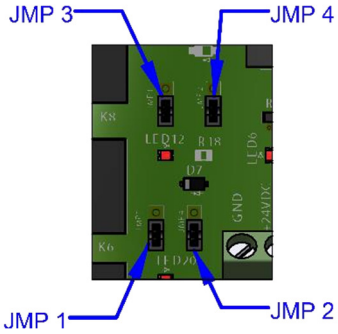
Terminals	Torque max	Strip back length

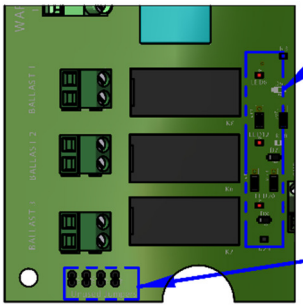
BALLAST SWITCHING	.6Nm	7mm
BALLAST POWER	.6Nm	8mm
SENSORS, ALARMS, AND AUX	.6Nm	6mm

The system can be configured to accommodate multiple combinations of sensors and UVC frames. This is achieved via dip switch and jumper terminals on the main board of the control box.



Instructions for a particular system configuration will indicate the dip switch settings by calling out a series of zeros and ones that indicate the on/off setting for each position on the dip switch

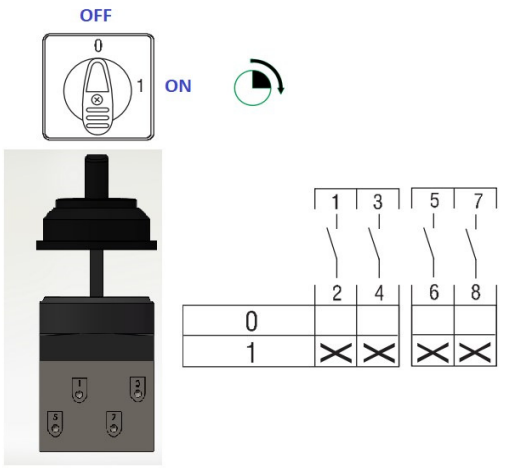




Jumper terminals are configured by applying an included shorting connector to a pair of neighbouring terminals. When not used, jumpers can be stored on dummy terminals located at the bottom of the board.

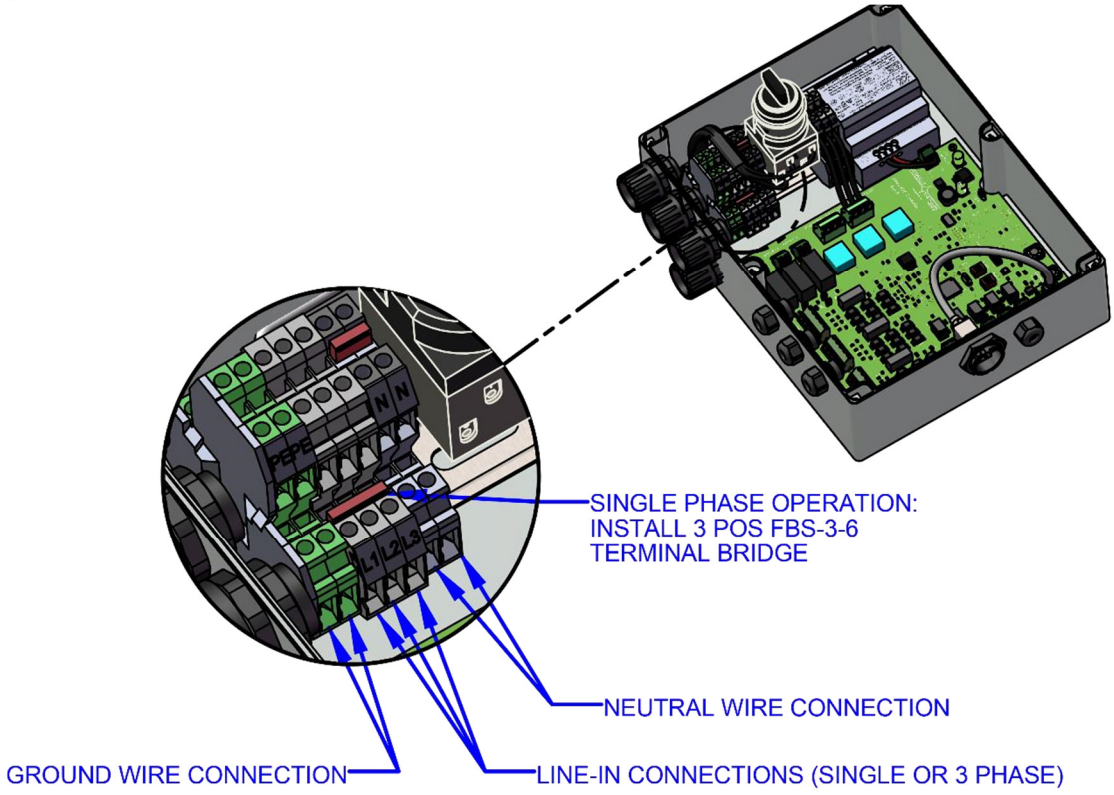
The control box comes with the master switch prewired for three phase input. Line inputs from building power are connected to the L1, L2, and L3 terminals block (shown below). Outputs from the switch are connected to the input terminal blocks and then to the board mounted terminals.

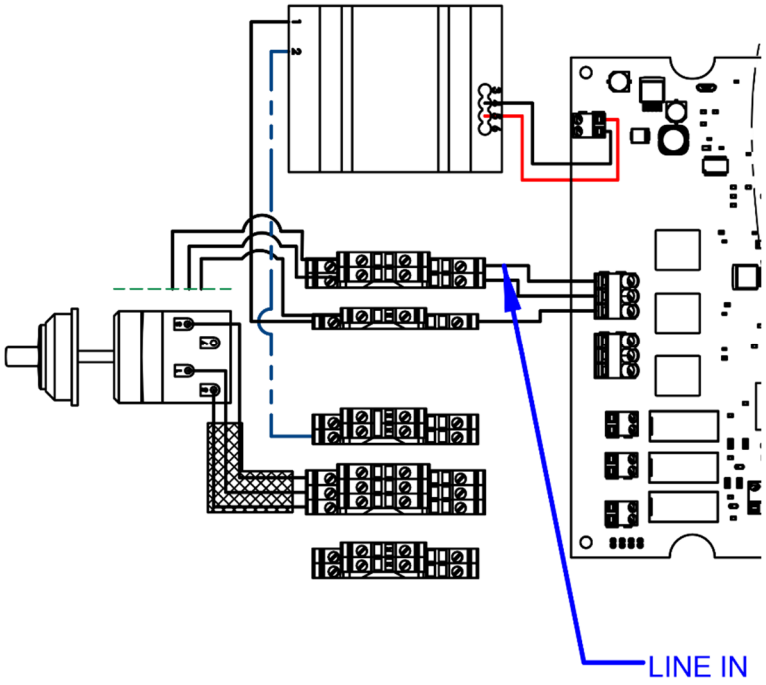
Single Phase power can be incorporated into the control box by connecting the Line wire to the L1 terminal block on the input side, and adding a three leg jumper between the L1, L2 and L3 input terminal blocks. Building power to the STO Master control box should be cut off at the circuit breaker until wiring or maintenance is completed and inspected. Prior to enabling building power, the master switch should be in the off-position.



The master switch works with single or three phase alternating current by closing or opening the circuit on the Line current.

Neutral and Ground are wired directly the screw terminals on the DIN rail.





Wire and Cable

Wire and cable stocks for connecting the system should be appropriate for the voltage and current of each of the system components in accordance with your local building electrical codes and applicable regulations.

Figure 5: Component Electrical Requirements

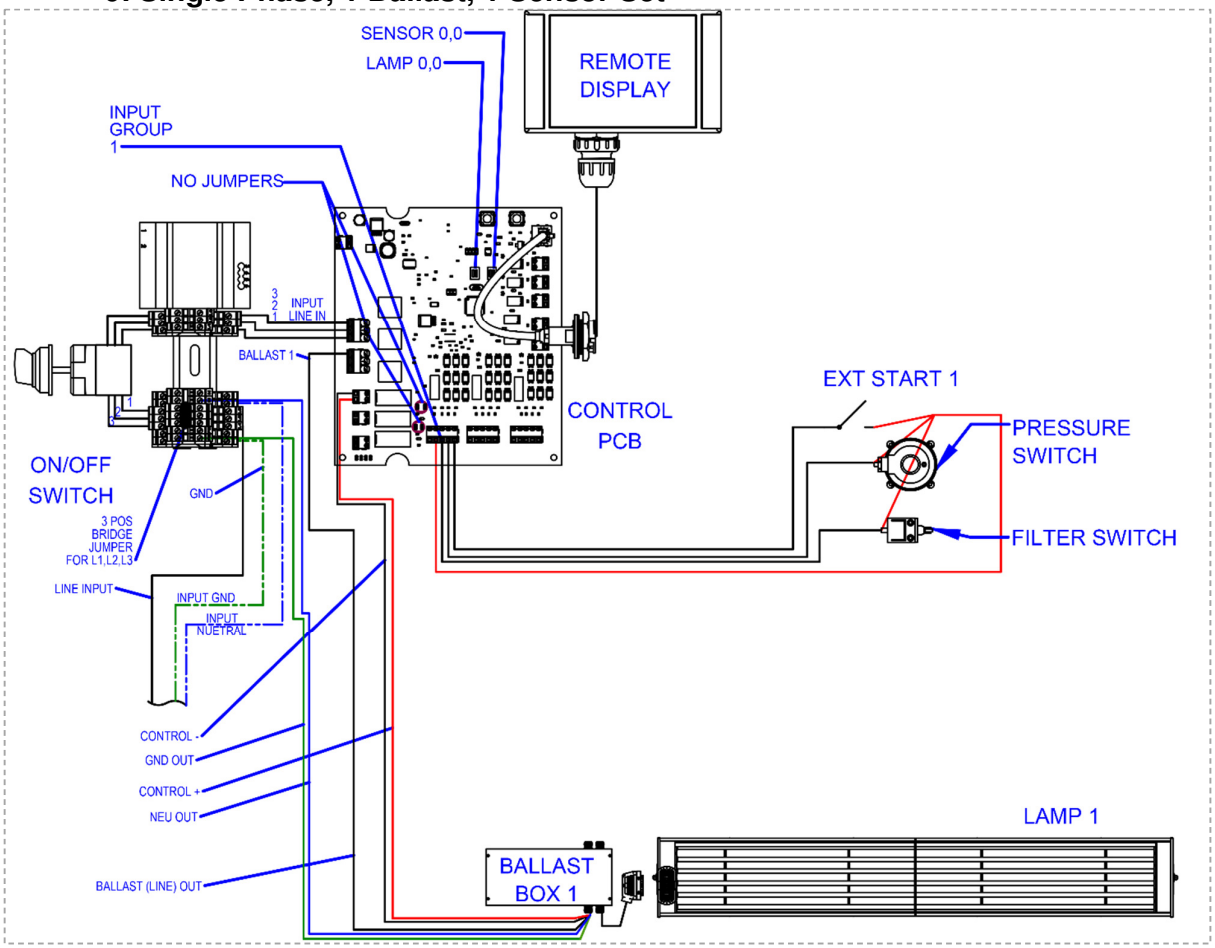
Component	Electrical Requirements	Notes
STO Control box	90-240 Volt, Single or 3 Phase AC, 50-60Hz: 30-16 Amps, 10AWG jacketed cable	Ground conductor will be supplied for bonding the power conductor
Pressure Switch	24Volts DC <1 Amp,18 AWG jacketed cable	See Appendix 1 Use of accessories: Pressure switch:
Filter Switch	24Volts DC, <1 Amp, 18 AWG Jacketed cable	See Appendix 1 Use of accessories: Safety switch

Ballast Box (1 per UVC frame)	90-240 Volts, 960W, 5060Hz AC Input,14 AWG Conductor	Refer to Ballast Box installation instructions for power requirements
Component	**Electrical Requirements**	**Notes**
UVC Frame		Use JIMCO supplied cable and connector. Refer to Ballast Box installation instructions for power requirements
Remote Display	CAT6a RJ45 cable	Remote display supplied with weatherproof RJ45 connector
External Start Switch	24Volts DC <1 Amp, 18 AWG conductor	Supplied by others.
External Alarm (Optional)	Output: 24 Volts DC 500 mA Max,18AWG conductor Contact closure: 90-240Volt AC, 10 Amp. 14AWG conductor	Supplied by others. See Setup and installation Alarm output

Wiring System Configurations

The following figures provide an overview of the system wiring for the most common configurations

Figure 6: Single Phase, 1 Ballast, 1 Sensor Set



Figure

7 Single Phase, 2 Ballast, 1 Sensor Set

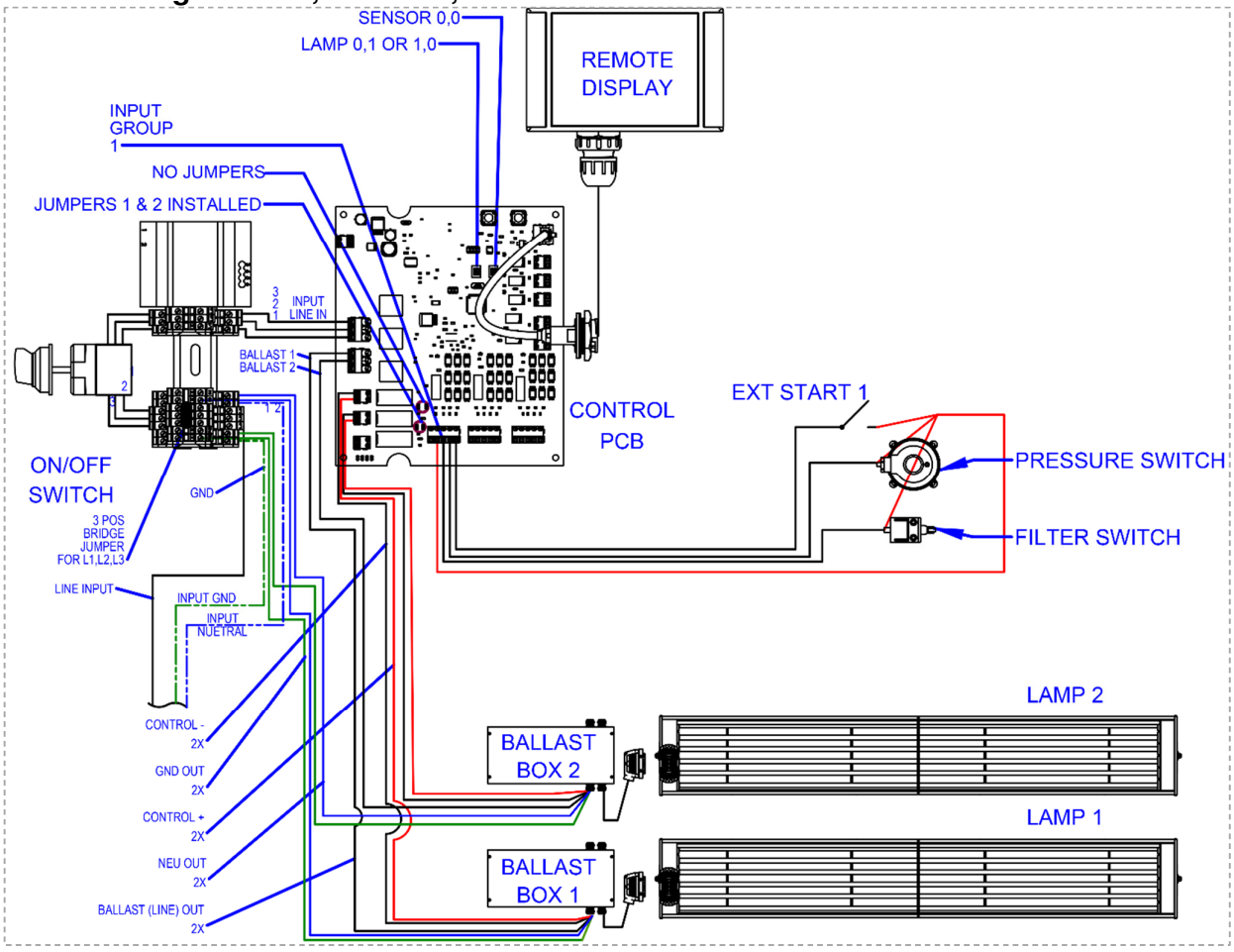


Figure 8: Single Phase, 2 Ballast, 2 Sensor Set

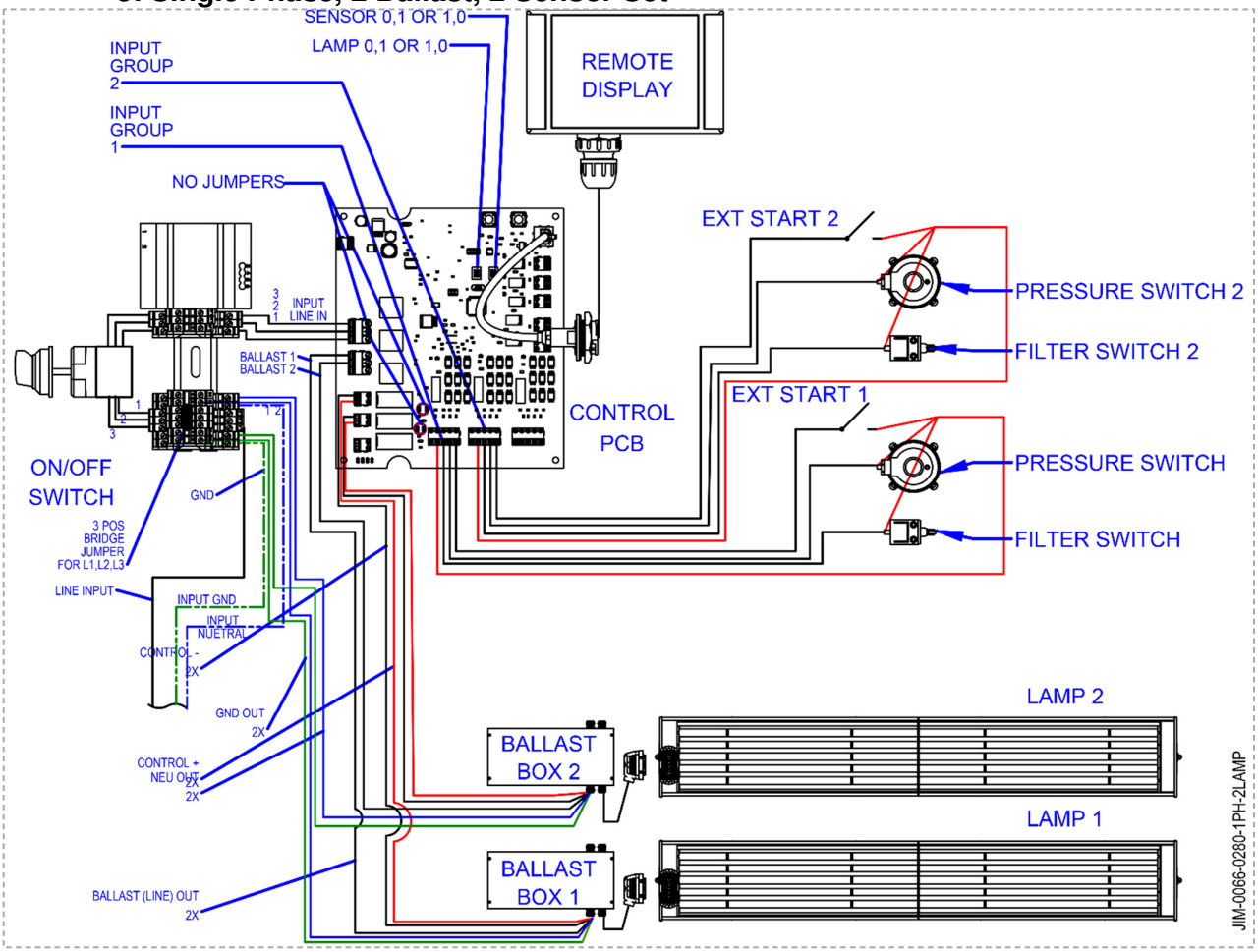


Figure 9: Single Phase, 3 Ballast, 1 Sensor Set

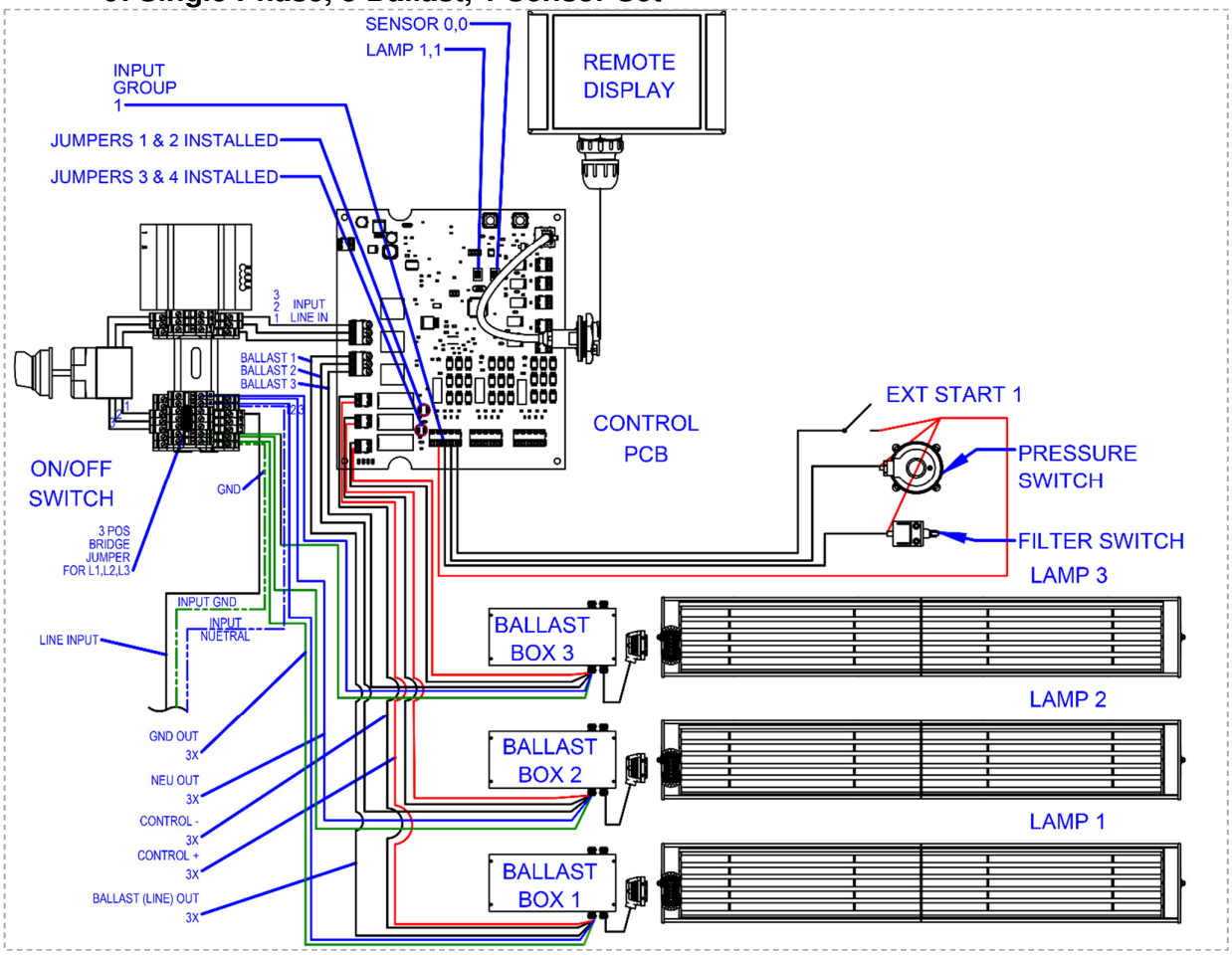
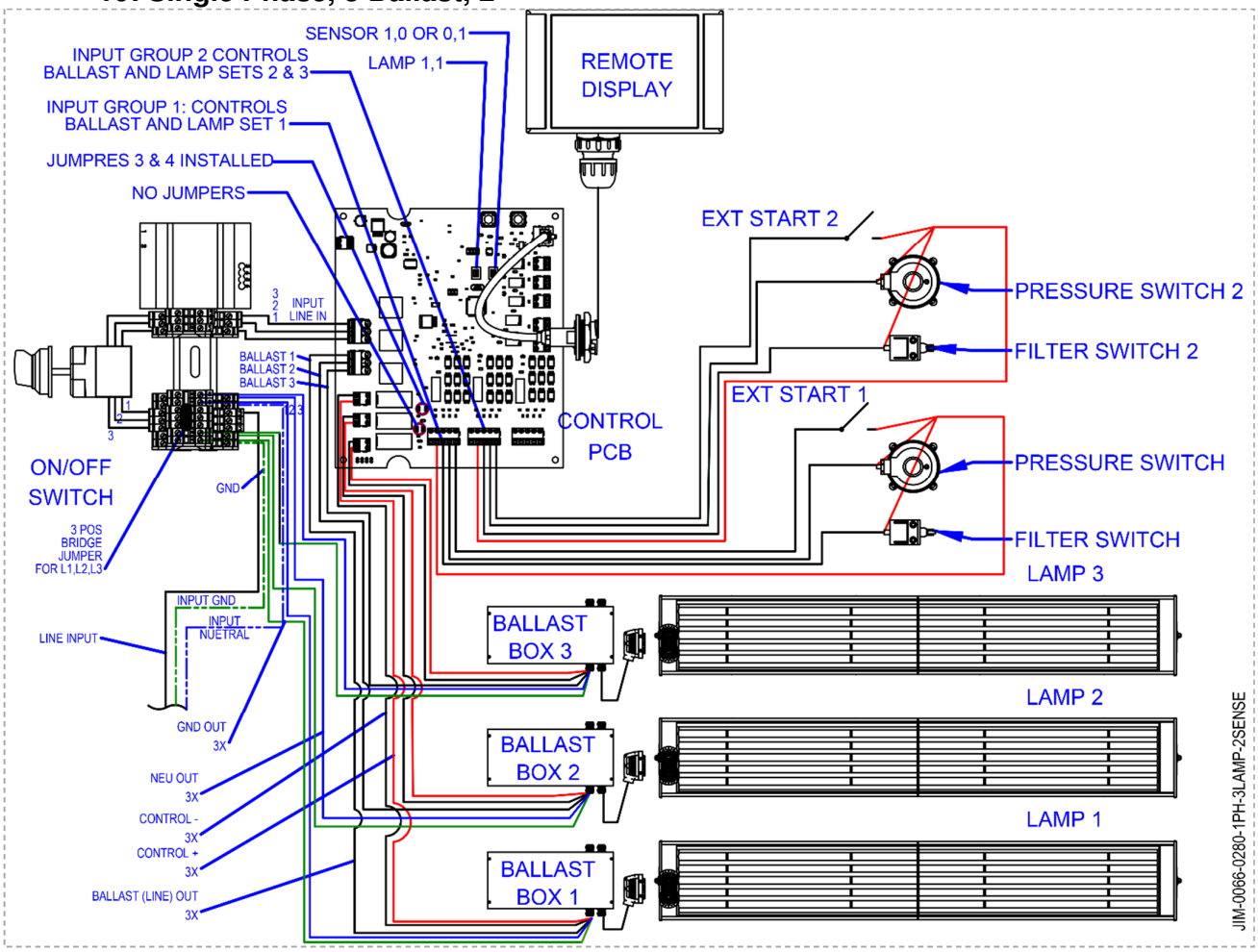
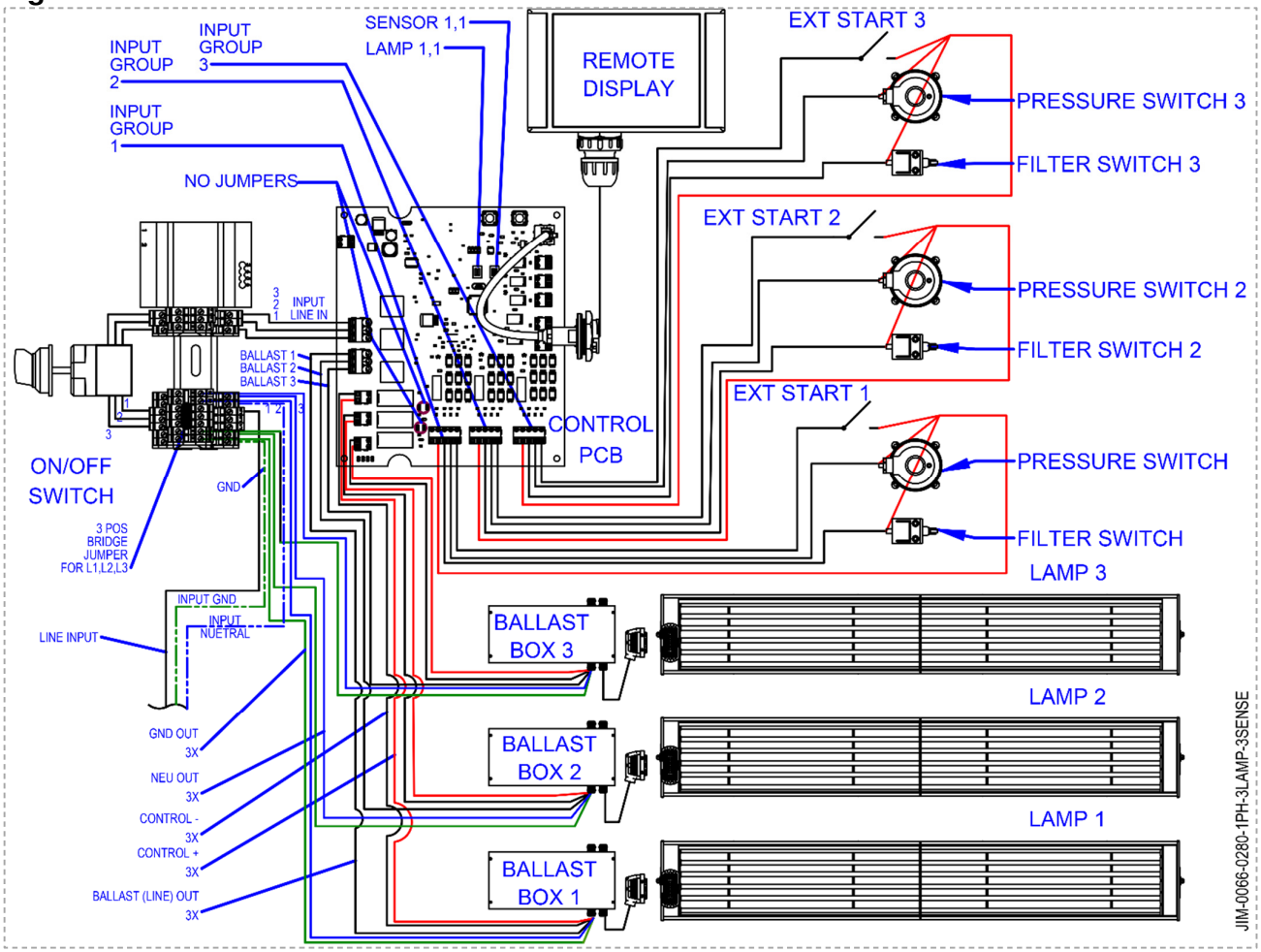


Figure 10: Single Phase, 3 Ballast, 2 Sensor Set



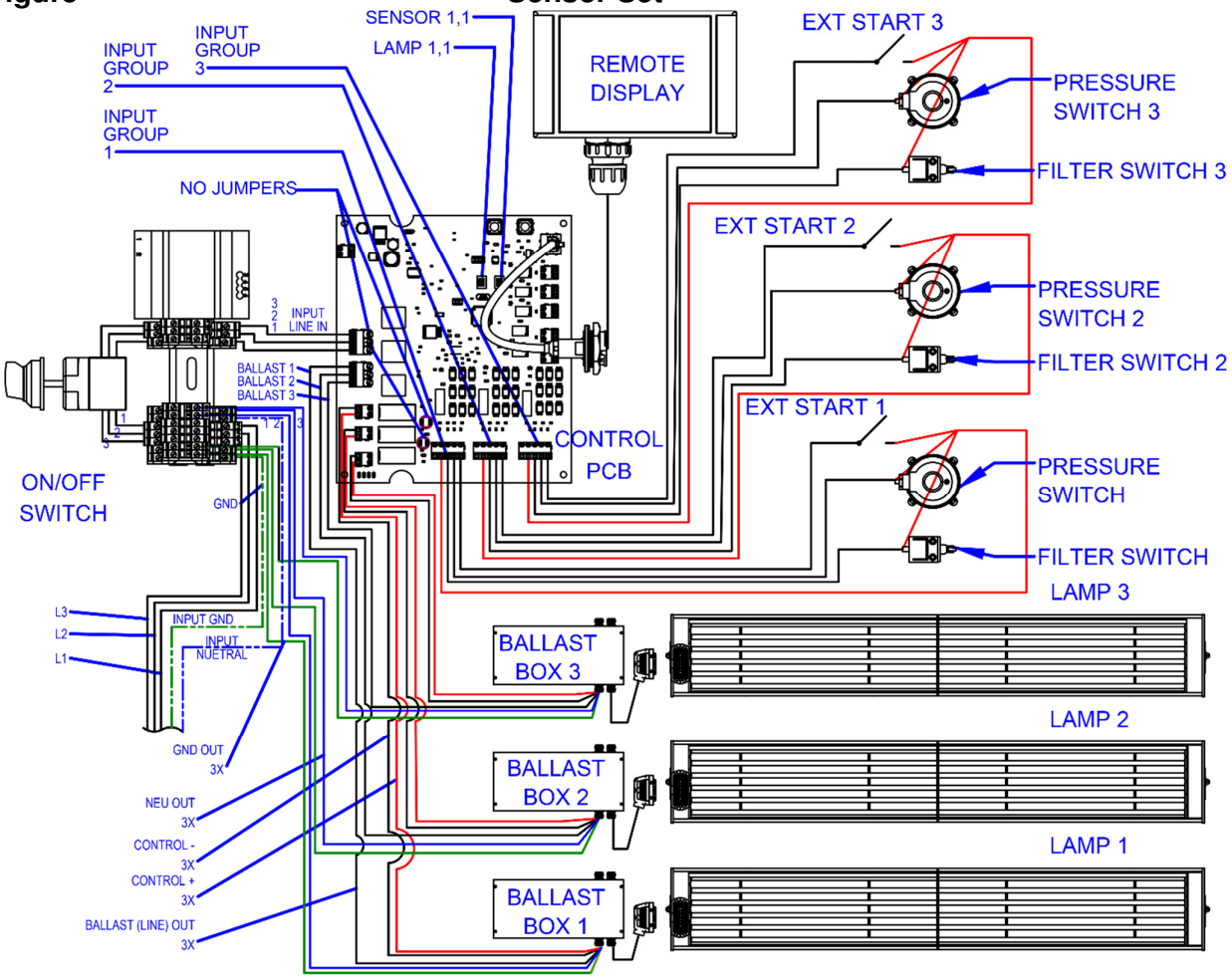
11: Single Phase, 3 Ballast, 3

Figure **Sensor Set**



12: Three Phase, 3 Ballast, 3

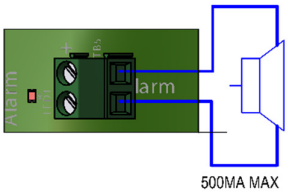
Figure **Sensor Set**



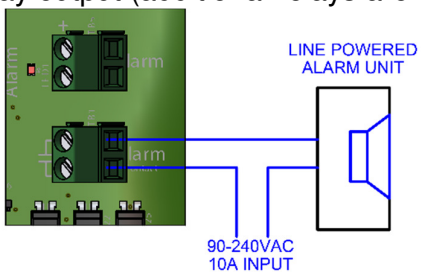
Important: If no EXT Start signal is available it is strictly required to use an additional pressure guard connected to the “ext. Start” input terminal.

Alarm output

There are 2 alarm options: A 24V dc output and a voltage-free relay. Be aware that only 500mA may be drawn from the 24V dc output.



Relay output (additional relays are connected here)



Initial Startup

After installation and electrical installation a few settings must be selected on the STO Master.

Conditions for operation

For safety reasons, the following operational conditions are in place:

- External start signal (EXT) must be in place

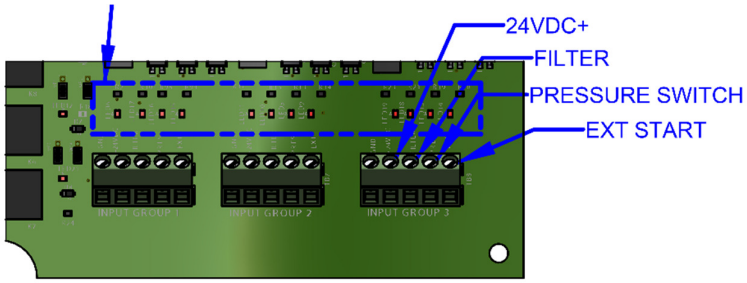
- Filter switch (FILTER) must be activated (the filters are mounted)

- Pressure switch (PRES) must be activated (exhaust fan is on, lowering the pressure in the duct)

The STO Master control board displays the powered/connected status of sensor and alarm input by lighting LEDs adjacent to the screw terminal blocks. A lit LED indicates only that the circuit is powered and closed, not that the sensor is functioning properly

.

Figure 13: LED (INPUT GROUPS SHOWN)

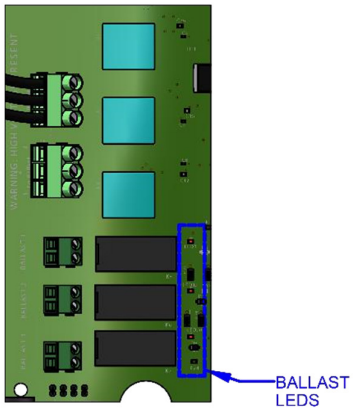


Calibration of Current sensors

Before the current meters can be calibrated, all connected UVC frames must be in operation.

An LED indicating the status of power to the lamp ballasts is located next to the switching relays on the control board.

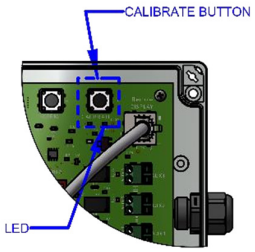
Figure 14: BALLAST LEDS



Make sure that the system is turned on and that all connected UVC lamps are lit. It is recommended to let the system run for approximately 15 minutes before performing the calibration.

On the control box, turn the main switch to On
On the remote display
Verify each lamp systems status is **OK** and the lamps are **On (see** Operating instructions**)**
On the Control box
Open the control box cover
Attention: risk of electric shock

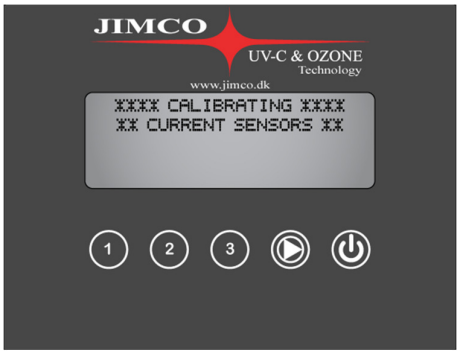
Press the Calibrate button



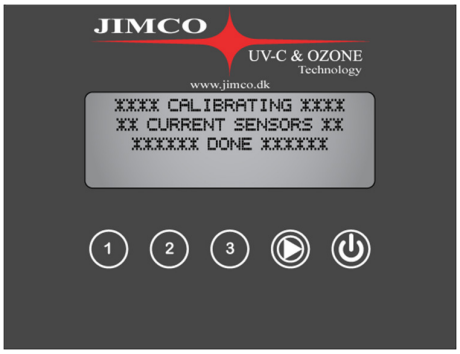
An LED under the Calibrate Button indicates the stages of calibration

- Rapid flashing (0.1 Sec ON, 0.1 Sec Off) calibration in progress
- Steady Amber: Calibration Complete
- Slow flashing (1 Sec ON, 1 Sec Off) for 3 seconds after Calibration completes and during normal operation: current measuring is operational
- Double flash (0.3 Sec On, 0,1 Sec Off, 0.3 Sec On, 1 Sec Off): current is measuring out of range. Check power ballast and lamp systems for malfunction.

During Calibration, the remote display will show the following



When Calibration is complete:



If the UV system is not on when the calibrate button is pressed, this message will display:

In this case, see
Operating instructions below and follow the steps to enable the lamp systems

Operating instructions

Reviewing Lamp System Status

On the remote display:
When the system is turned on by pressing the power button, the splash screen will display

Pressing (1) shows the status screen for lamp system 1

Lamp system status display Includes

Status: (3 States) **OFF** when system is switched off, **AUTO** when switched on, **ON** when interlocks are engaged and lamps are activated

REMAINING HOURS: time before the next scheduled lamp replacement

EXT: External Switch (2 states) **NO** when off **OK** when on

FILTER: Filter Interlock Switch (2 states) **NO** when off **OK** when on

FLOW: Pressure Sensor detecting air flow (2 states) **NO** when off **OK** when on

LAMPS: UVC Lamp Systems (3 states) **OFF** when switched off, **OK** when on, **FAIL** when fault occurs

Pressing toggles **STATUS** between **OFF** and **AUTO**

Pressing (2) shows and gives control access to lamp system 2

Pressing (3) shows and gives control access to lamp system 3

Maintenance

The controller requires minimal or no maintenance. If it is dirty, it can be wiped with a damp cloth with ordinary household detergent.

Do not rinse the device directly with a pressure washer or hose.

Other maintenance of the UVC system:

The lamps' optimum efficiency is only attained when the lamps are clean and free of deposits.

Weekly (or according to experience) Turn

off the UVC lamps on the control panel.

Check the UVC lamps' condition.

If the lamps are dirty, clean them as shown below.

Check the control panel for alerts.

Every 6 months

The air purification system should be checked every six months, as part of the maintenance agreement with the supplier. The safety equipment shall also be checked on this occasion.

The UVC lamps generally have a life span of 9,999 hours, after which they must be replaced. There is an hour meter on the control panel. Lamps should be replaced at least every two years (See *Reviewing Lamp System Status*).

Alarms and switches

Alarms and switches are arranged so as to protect the operating and maintenance personnel and to safeguard the equipment. If an alarm cannot be resolved, the power supply to the UVC lamps should be switched off on the control panel and the error shall be reported to the supplier.

The lamps should be cleaned as required, based on operating experience, as follows: -
Turn off the UVC lamps on the control panel.
Switch off the fan-if this is required-in accordance with the operating instructions.

Remove the grease filters from the hood.

Wipe the UVC lamps with a damp cloth. Apply an alkaline cleaner to the lamps as required. Follow the detergent instructions. Use water to rinse the detergent off the lamps. Soft water is preferable for preventing lime deposits on the lamps. Dry the lamps with a dry cloth. If the lamps are calcified (best viewed on dry lamps) de-calcify them with deacidification agent.

Place the grease filters back in their slots again

Turn on the UVC lamps on the control panel so that the system returns to normal operation.

Resetting Lamp Timer

UVC Lamps decrease in effective output with extended use. The system is equipped with a built in timer that notifies the operator when the lamps need to be replaced: A Jimco Service Technician must replace the lamps and reset the lamp timers using a factory password. The technician will also ensure the most efficient operation by inspecting the system for maintenance issues .

Appendix 1 Use of accessories:

Safety switch

This will ensure that the lamps switch off if the filters are not installed or if they are removed, so that people are not exposed to UVC light.

The springs' function is solely to ensure the filters being pushed away from the filter switch when removing a filter.

Location:

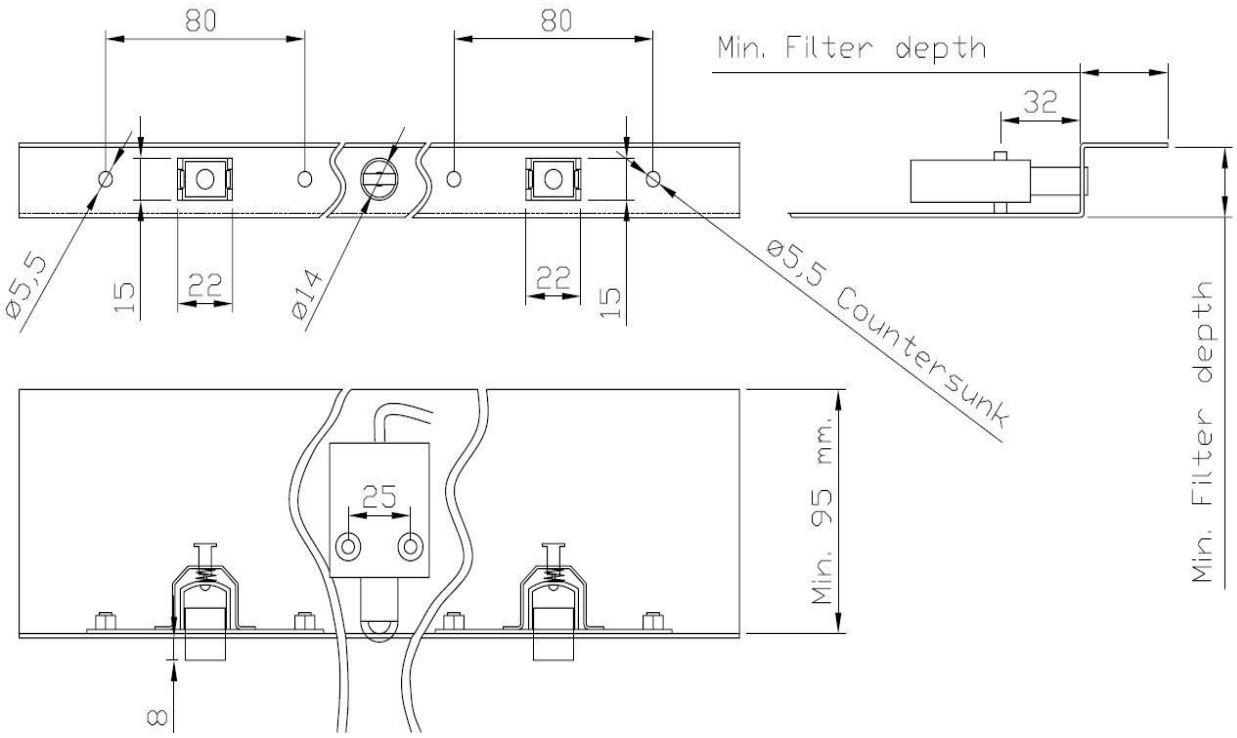
The filter switch and the springs are designed for installation in a blank plate. If there is no blank plate in the hood, it may be necessary to replace the filter with a blank plate. (see photo)

Filter switch

Mounting:

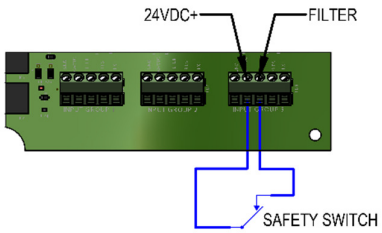
The switch is mounted in the centre of the blank plate with a spring on each side; see attached drawing .

It is very important to mount the filter switch correctly. You should pay particular attention to ensuring that the filters and blind plates meet FULLY, so that contact is unaffected. Light must not escape from between the filters and blind plate of the lamps.

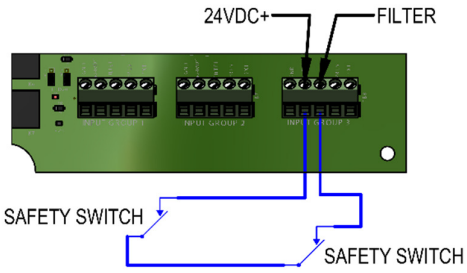


Technical drawing of safety switch:

Electrical connection:
The safety switch is connected to input 2. If multiple switches are to be used (e.g. for long hoods), they shall be installed in series.



One switch

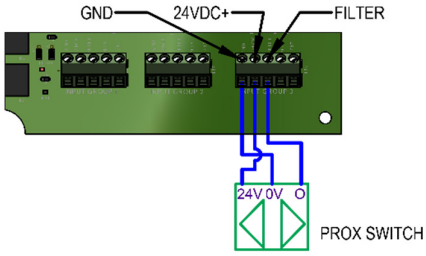


Several switches

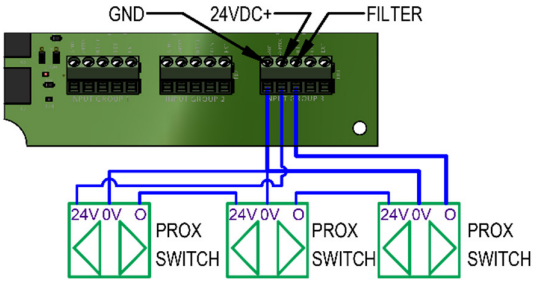
Electrical connection, proximity switches:

In some cases proximity switches are used as safety switches. Please connect as described below. 1 switch

2 or



more switches (max 3)



Pressure switch:

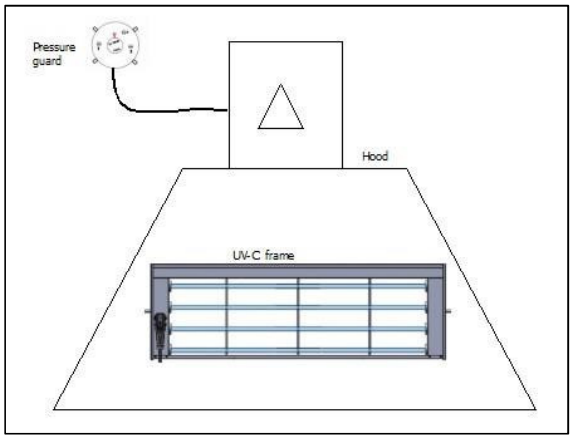
The pressure switch registers whether there is under pressure in the hood/duct system.

It ensures that the UVC lamps cannot be lit if the fan/suction system is not running.

Location:

The pressure switch can be placed above a suspended ceiling, on pipes or walls.

It should always be as close as possible to the place where the measurement is taken.



- The pressure switch MUST always be set up so that it is easily accessible for servicing/adjustment.

- The pressure switch MUST always be mounted vertically.

- The pressure switch should be mounted as close to the hood as possible, preferably NOT in the hood, as there may be places where the under pressure is not great enough for a stable measurement.

The supplied plastic spigot is screwed onto the pipe/duct system where you want the measurement taken, but NEVER on the bottom of a tube, as there may be foreign bodies/condensation in the spigot, whereupon the pressure switch will not work.

Mounting:

When the spigot and pressure switch are mounted, the plastic hose from the pressure switch's - Spigot (P2) is conducted to the spigot on the pipe/duct system.

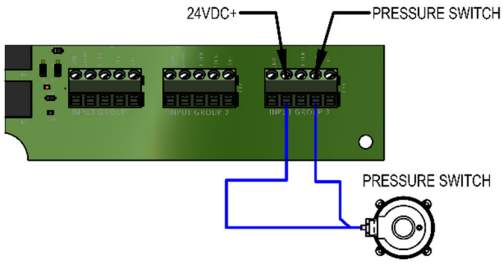
The pressure switch's + Spigot (P1) shall have neutral air; i.e. neither positive nor negative pressure. (It may be necessary to conduct a hose from the + Spigot, to the room where the appliance is installed)

-P2

Electrical connection:

The pressure switch is equipped with a single pole changeover switch (SPDT).

The close function is connected to the STO Master as shown below.



Adjustment:

1) The pressure guard setting needs to be adjusted to maximum following the manufacturer's guidelines.

2) Turn on the kitchen hood fan.

3) After turning on the fan, the pressure guard has to be adjusted down until the point where the lamps turn off. Adjust the setting up slowly until the lamps turn on and then stop adjusting.

4) After this adjustment in Step 3, turn the fan off.

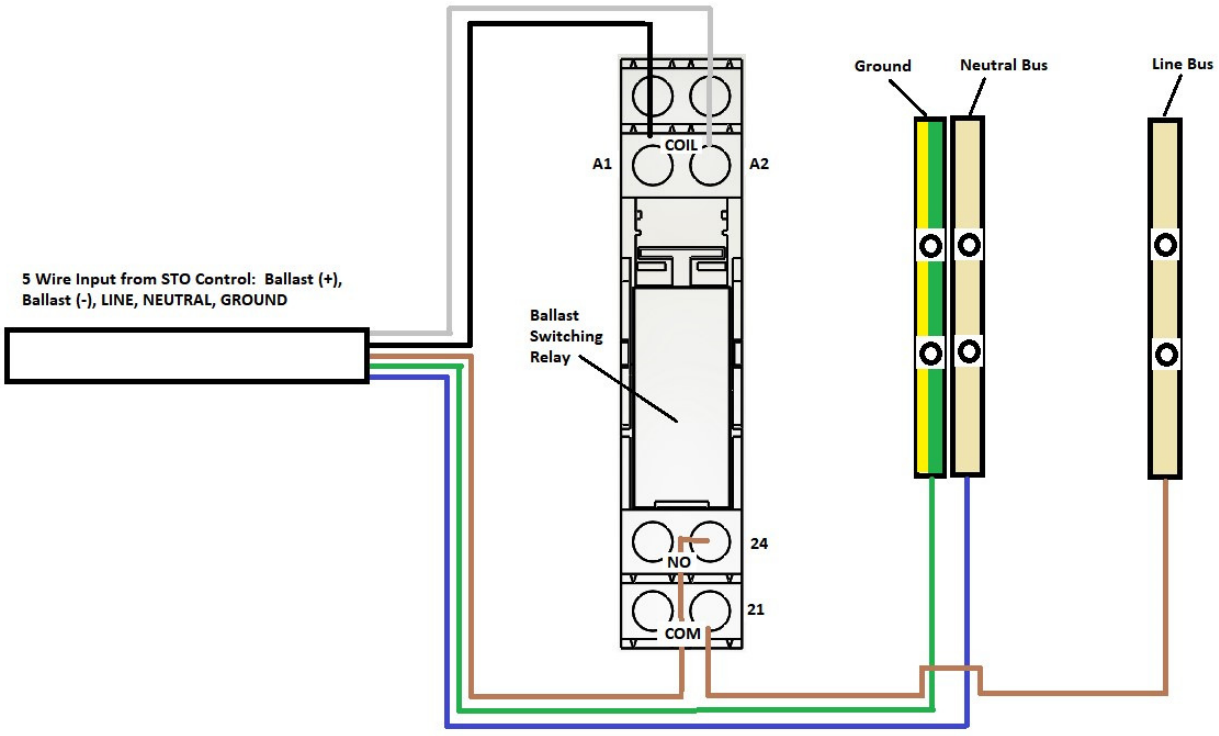
5) If the lamps are not turning off, adjust the setting down by small increments. Continue adjusting the calibration until the system is functioning correctly with the lamps turning on and off corresponding to the kitchen hood fan tuning on and off.

Appendix 2: Mounting and Wiring of Ballast:

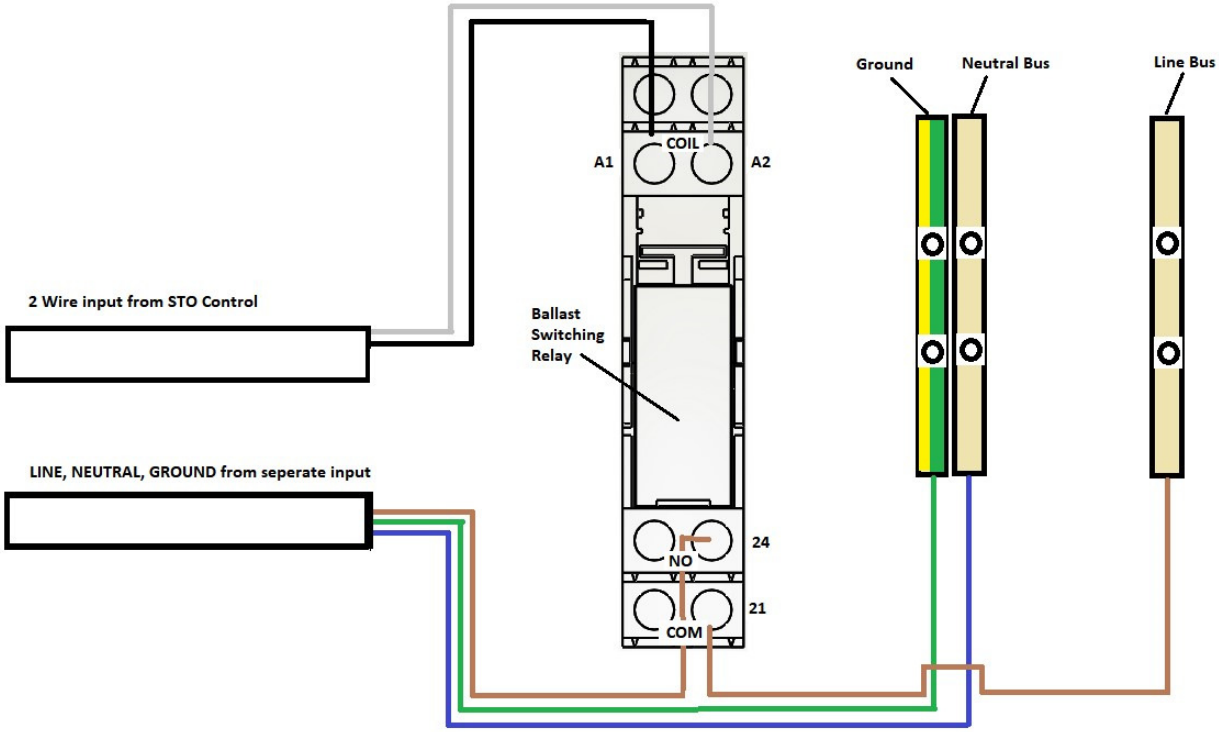
Location: Ballast should be mounted above the hood structure away from water wash down areas in the kitchen. Ballast enclosure is not water resistant.

Wiring: The Ballast is connected to the control panel, building power and the lamp assembly. There are options for these connections as outlined below:

5 Wire input from STO Control:



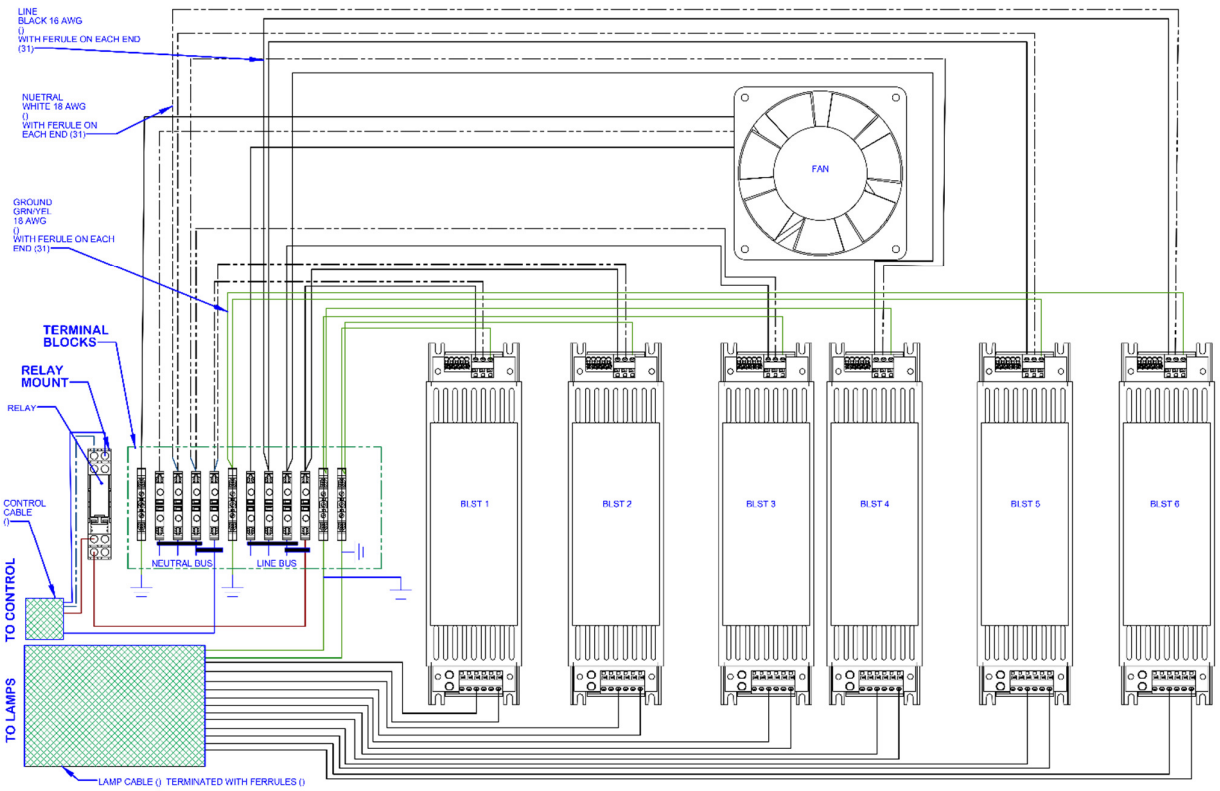
2 Wire input from STO Control, Power from separate (L, N, G) input:



Lamp Connection within the Ballast Enclosure: The ballast enclosure includes up to 6 individual ballast modules. Each lamp in the KPC lamp frame needs to be connected to a ballast module within the ballast enclosure as shown below.

Connect as shown. Each lamp has a numbered wire pair. The numbers are on the wire insulation. A wire pair for each lamp is labelled Lamp 1:(1,2), Lamp 2:(3,4), Lamp 3: (5,6), Lamp 4: (7,8), Lamp 5: (9,10), Lamp 6:(11,12)

Ballast Box Internal Wiring


LINE
BLACK 16 AWG
()
WITH FERULE ON EACH END
(31)
NUETRAL
WHITE 18 AWG
()
WITH FERULE ON
EACH END (31)
GROUND
GRN/YEL
18 AWG
()
WITH FERULE ON EACH
END (31)
TERMINAL
BLOCKS
RELAY
MOUNT
RELAY
CONTROL
CABLE
()
TO CONTROL
TO LAMPS
NEUTRAL BUS
LINE BUS
FAN
BLST 1
BLST 2
BLST 3
BLST 4
BLST 5
BLST 6
LAMP CABLE () TERMINATED WITH FERRULES ()

Notes:

SUPPLIER

MAINTENANCE COMPANY

MANUFACTURER

JIMCO KPC A/S

Mjølbyvej 7
DK-5900 Rudkoebing
Denmark

WEB: www.jimco.dk
Mail: jimco@jimco.dk

THE EU ENVIRONMENTAL AWARD 1999 – 2000

JIMCO A/S

An environmental award in the category

CLEANER TECHNOLOGY

The purpose of this award is to encourage the development and use of technology, which considerably reduces the unwanted influence of the industry on the environment. It can be production technology or processes, which improve the utilization of recourses, integrate recycling in the production, improve the lifecycle sequence of the product or the technology or in other ways contribute to the development of viable production. By the award of projects in this category importance will be attached to the innovative aspect and documented better resource economy compared to traditional production forms. The technology should be in use or have documented results from full-scale tests. Simple filter solutions cannot be considered.

Motivation:

JIMCO A/S is given an environmental award in the category cleaner technology for the development of Photo-Lytic-Oxidation-Systems for the reduction of odours, grease and oil using ultra violet light. The UV-light form ozone, which oxidises the odour substances/ grease molecules in the air and thereby reduce obnoxious smells effectively. At the same time you will by using JIMCO's FLO-system avoid grease contamination of ductwork and fans and thereby considerably reduce the risk of fire as well as the problems of disposal of filters. The odour substances are transformed into CO_2, water and polymerised waxes. FLO-units are made in various sizes and are thus suitable for the use in restaurants as well as the industry etc. With the air-cleaning unit you will also have a compact installation, avoid the use of carbon filters or catalysts, no residues, competitive initial cost and low operational and maintenance costs. It is the opinion of the judging committee that JIMCO with the development of this system has found a simple and effective solution to a prevalent problem.

Jens Vormar Rasmussen
The Danish Engineers Society
Chairman of the judging committee

Kristian Smestad
The Danish Engineers Society
Secretary of the judging committee

The Environmental Award Competition has been arranged in cooperation with the EU-Commission and UNEP. The purpose of the Award Competition is to encourage and promote commendable initiatives in the environmental field.

The judging committee of the award have been composed of representatives appointed by The Danish Ministry for Environment and Energy, The Danish Trade Ministry, Danish Industry, The Trade Counsel of the Danish Labour Movement, The Danish Nature Conservancy Association and The Danish Engineers Society, who have handled the chairmanship and the secretariat and been in charge of the completion of the prize-giving.

EEA 2000

THE DANISH ENGINEERS SOCIETY

Start Up Report

Job Name/SN	
Date	
Customer	
Location	
Spring Air Service Company	
RPD Model No.	
Number of Hoods connected	

Initial Startup

After installation and electrical installation a few settings must be selected on the STO Master.

Conditions for operation

For safety reasons, the following operational conditions are in place:

-External start signal (EXT) must be in place

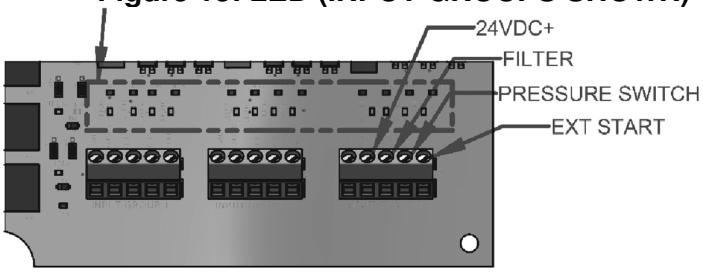
-Filter switch (FILTER) must be activated (the filters are mounted)

-Pressure switch (PRES) must be activated (exhaust fan is on, lowering the pressure in the duct)

The STO Master control board displays the powered/connected status of sensor and alarm input by lighting LEDs adjacent to the screw terminal blocks. A lit LED indicates only that the circuit is powered and closed, not that the sensor is functioning properly

.

Figure 13: LED (INPUT GROUPS SHOWN)

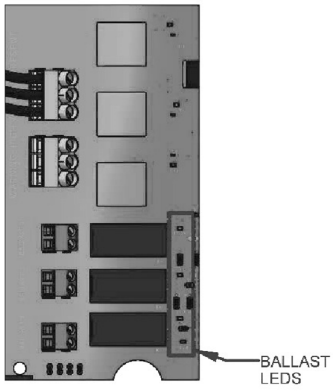


Calibration of Current sensors

Before the current meters can be calibrated, all connected UVC frames must be in operation.

An LED indicating the status of power to the lamp ballasts is located next to the switching relays on the control board.

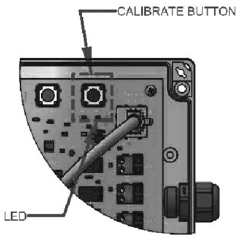
Figure 14: BALLAST LEDS



Make sure that the system is turned on and that all connected UVC lamps are lit. It is recommended to let the system run for approximately 15 minutes before performing the calibration.

On the control box, turn the main switch to On
On the remote display
Verify each lamp systems status is **OK** and the lamps are **On (see**
Operating instructions**)**
On the Control box
Open the control box cover
Attention: risk of electric shock

Press the Calibrate button



An LED under the Calibrate Button indicates the stages of calibration

· Rapid flashing (0.1 Sec ON, 0.1 Sec Off) calibration in progress

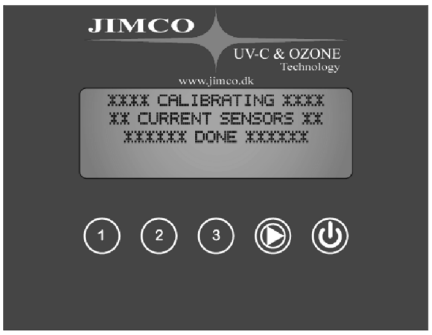
· Steady Amber: Calibration Complete

· Slow flashing (1 Sec ON, 1 Sec Off) for 3 seconds after Calibration completes and during normal operation: current measuring is operational

· Double flash (0.3 Sec On, 0,1 Sec Off, 0.3 Sec On, 1 Sec Off): current is measuring out of range. Check power ballast and lamp systems for malfunction.

During Calibration, the remote display will show the following

When Calibration is complete:



If the UV system is not on when the calibrate button is pressed, this message will display:

In this case, see
Operating instructions below and follow the steps to enable the lamp systems

Operating instructions

Reviewing Lamp System Status

On the remote display:
When the system is turned on by pressing the power button, the splash screen will display

Pressing  shows the status screen for lamp system 1

Lamp system status display Includes

Status: (3 States) **OFF** when system is switched off, **AUTO** when switched on, **ON** when interlocks are engaged and lamps are activated

REMAINING HOURS: time before the next scheduled lamp replacement

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Pressing toggles **STATUS** between **OFF** and **AUTO**

Pressing shows and gives control access to lamp system 2

Pressing shows and gives control access to lamp system 3

Maintenance

The controller requires minimal or no maintenance. If it is dirty, it can be wiped with a damp cloth with ordinary household detergent.

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The lamps' optimum efficiency is only attained when the lamps are clean and free of deposits.

Weekly (or according to experience) Turn off

the UVC lamps on the control panel.

Check the UVC lamps' condition.

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