# Operating Manual

## Air Handling Unit v3 &
## Air Handling Unit v3 Compact

For Web Cleaning, Air Knives and Air Rinsing Systems

# AHUv3 - Systems Specific Settings



Issue 3: 23.11.2021

# Contents

# Safety Instructions

## Electrical Safety

The Air Handling Unit is designed to meet the safety requirements of the Low Voltage Directive 2006/95/EC (previously numbered 73/23/EEC).

**WARNING**

1. The unit is designed for 3 Phase + neutral + ground. Variable voltage between 200V and 440V (440V = absolute maximum including voltage fluctuations).
2. **At voltages higher than 235V 3Phase (Phase – Phase) the unit MUST be internally wired using the star connection, and a Neutral supply MUST be connected to the AHUv3. Failure to do so will damage the pumps beyond repair and will invalidate warranty.**
3. **At voltages below 235V, neutral is optional provided the internal delta connection is used.**
4. The mains power must not be turned on more frequently than once a minute, as this will damage the internal blowers beyond repair. When interlocking with the line, the unit must not be interlocked by supplying power to the AHUv3. For interlocking the remote Start/Stop Interlock cable must be used.
5. See wiring diagrams on pages 19-24 for further details.

**IMPORTANT**

To reduce the risk of fire, electric shock or injury:

1. All electrical work should only be completed by qualified electricians.
2. Always isolate the system from the mains power supply before removing the pump/motor panel.
3. Use only as described in the manual.
4. Connect to a properly grounded outlet.

**CAUTION**

When working with the pump/motor housing open, live, 230/115 Volt components are accessible. Make sure that rules and regulations for work on live components are always observed.

## Dangers to Eyes, Breathing and Skin

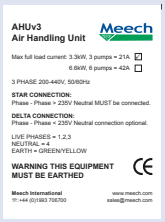
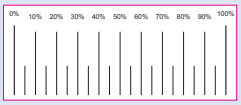
Once used, the filters in the Air Handling Unit contain a mixture of particulates, some of which may be sub micron size. When the used filters are moved it may agitate some of this particulate, which could get into the breathing zone and eyes of the operative.

Additionally, depending on the materials being extracted, the particulate may be an irritant to the skin.

**CAUTION**

When changing used filters always wear a mask, safety glasses and gloves.

# Warning and Information Labels

| Label/Symbol | Position |
|---|---|
|  | Rear panel of unit, next to cables. |
|  | Both sides of unit |
|  | Rear of unit |
|  | Top Front door top right corner |
|  | Rear panel of unit |
|  | Rear panel of unit |
|  | Rear panel of unit, near Positive Pressure Bleed Valve |

# Introduction

## Air Handling Unit Overview

The Air Handling Unit (AHUv3) is supplied with the following Meech systems:

- CyClean-R™ Non-Contact Web Cleaning System
- CyClean™ Non-Contact Web Cleaning System
- VacClean™ Contact Web Cleaning System
- ShearClean™ Non-Contact Web Cleaning System
- IonRinse™ Ionised Air Rinsing System
- JetStream - Ionising and Non-Ionising Air Knife Systems

The AHUv3 provides the positive pressure and vacuum pressure airflows and houses the system filters. There are 4 models available,an 1 Pump-Mini(Manual is a seperate document), a 2 pump - Compact unit, a 3 pump unit and a 6 pump unit. For applications where a higher volume capacity is required the 6 pump unit can be used.

## AHUv3 Main Components

The AHUv3 is of robust design and requires minimal maintenance. The main components are shown below:

1. LCD Screen
2. Optional IEC Socket Output
3. Optional Additional Cable Exit Point
4. Mains Power In Cable
5. Signal/Interface Cable
6. On/Off Isolator Switch
7. Cooling Vents
8. Positive Pressure Duct Connection Spigot
9. Exhausted Coolant Air Outlet Spigot/Baffle
10. Positive Pressure Bleed Valve
11. Vacuum Duct Connection Spigot

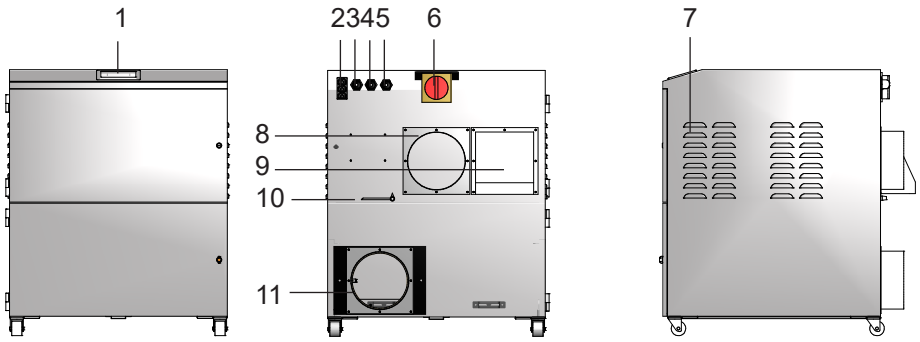



fig. 1

# AHUv3 Installation Procedure

## General Positioning

1. Move the AHUv3 to the location where it is going to be installed and remove it from its packaging. The AHUv3 should be installed in a well ventilated room.

**CAUTION**

Due to the weight involved the AHUv3 should only be lifted using suitable lifting equipment, and with regard to appropriate safety precautions. (See page 17 for product weight details).

2. Ensure that a 0.5 metre (1.64ft) space is available around any louvered areas of the AHUv3 to ensure adequate air flow. Lock the two braked castors.

**CAUTION**

Do not block or cover the cooling vents on the AHUv3, as this severely restricts airflow and may cause damage.

**CAUTION**

Under no circumstances should the exhaust outlet/s be covered, as this will restrict the airflow and cause overheating.

3. Check filters are located in their correct position and carefully close the AHUv3 door.
4. Depending on your system, make the required 150mm (6”) or 200mm (8”) ducting connections on the rear of the AHUv3.

## Remote Start/Stop Interlock

1. The remote Start/Stop interlock function can be used when the AHUv3 is set to “Remote” mode on the touchscreen. It can then be automatically switched on/off by a signal from the line - closed contact will start system.

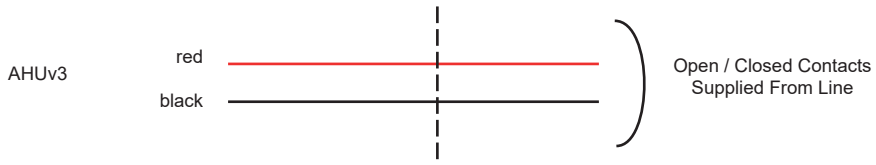



fig. 2

**WARNING**

The unit must not be interlocked by supplying power to the AHUv3. For interlocking the remote Start/Stop Interlock cable must be used.

## Filter Condition Signal

1. A filter condition volt free contact is provided, i.e. an open circuit will exist between the green and white wires when the filter condition is blocked.

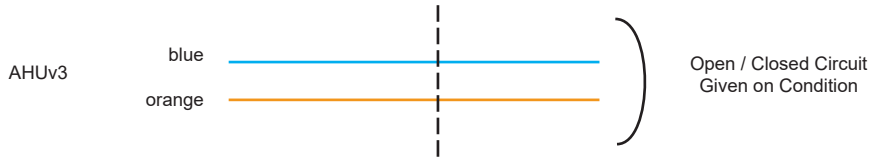

The signal can be connected to a control panel, beacon, siren or other warning device.

fig. 3

Note: Opened circuit condition of this circuit will not directly stop the AHUv3 fans.

## System Running Signal

1. A system running volt free contact is provided, i.e. a closed circuit will exist between the blue and orange wires when the system is running.




The signal can be connected to a control panel, beacon, siren or other warning device.

fig. 4

**CAUTION**

This feature should only be used on control voltage circuits.

## Electrical Supply Connection

1. Connect the power cable to an isolated electrical supply (see pages 19 and 24 for details). The mains socket outlet should be installed near the equipment and be easily accessible. The cable run to the AHUv3 should be arranged so as not to create a trip hazard.

**CAUTION**

Before plugging the AHUv3 in, check that the mains input at the isolated supply is the same as the voltage supply detail on the model details label that is located on the side of the AHUv3.

**WARNING**

1. The unit is designed for 3 Phase + neutral + ground. Variable voltage between 200V and 440V (440V = absolute maximum including voltage fluctuations).
2. **At voltages higher than 235V 3Phase (Phase – Phase) the unit MUST be internally wired using the star connection, and a Neutral supply MUST be connected to the AHUv3. Failure to do so will damage the pumps beyond repair and will invalidate warranty.**
3. **At voltages below 235V, neutral is optional provided the internal delta connection is used.**
4. The mains power must not be turned on more frequently than once a minute, as this will damage the internal blowers beyond repair. When interlocking with the line, the unit must not be interlocked by supplying power to the AHUv3. For interlocking the remote Start/Stop Interlock cable must be used.
5. See wiring diagrams on pages 20-25 for further details.

## Electrical Delta-Star Transformer

For 3 phase voltages higher then 235V (phase-phase) the AHUv3 requires a 3-phase electrical supply with neutral.

For installations where a neutral connection is not available, a delta-star transformer can be used to provide the neutral connection as shown in the diagram below.

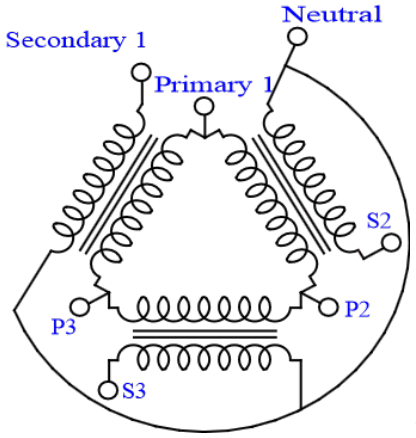



fig.5

The electrical specification of the transformer is as follows (where XX is the input voltage, where X is kVA):

- 3-Phase XkVA transformer IP21 enclosed
- Primary XXV delta connected c/w +/-10% tappings
- Secondary XXV star + neutral connected c/w +/- 10% tappings
- Neutral terminal to be double rated
- Dimensions: 480mmH x 438mmW (including fixing flange) x 334mmD
- Weight: 65kg

## General Safety Requirements

1. The AHUv3 weighs 95kg or 105kg depending on the number of pumps, and should only be lifted with suitable lifting equipment. The Compact AHUv3 weighs 70kg and should only be lifted with suitable lifting equipment.

2. If the AHUv3 is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

**WARNING - Mains Voltage**
Dangerous voltages exist in the AHUv3. Ensure mains supply is isolated before opening the unit and that all covers are refitted before operating.

The AHUv3 is now ready for use.

# Operation

## The Control Interface

fig. 6

## Switching On

The AHUv3 is switched on by first rotating the isolator switch located on the back of the unit in a clockwise direction (fig. 6), and then pressing the “Start” button located on the front touchscreen.

## Automatic Vacuum Pressure Control

The AHUv3 features automatic vacuum pressure control. This feature allows the systems to be set up with the required level of vacuum pressure for the application. As the filtration in the AHUv3 becomes progressively blocked, it will automatically increase the fan speed to maintain the preset vacuum pressure level.

# Screen operation

The AHUv3 is operated by a touch screen interface. The touchscreen has one main home screen that can be used to set and control the system, and there is also access to further information screens that can be accessed without a password.

See figure 1 below for the Home screen.

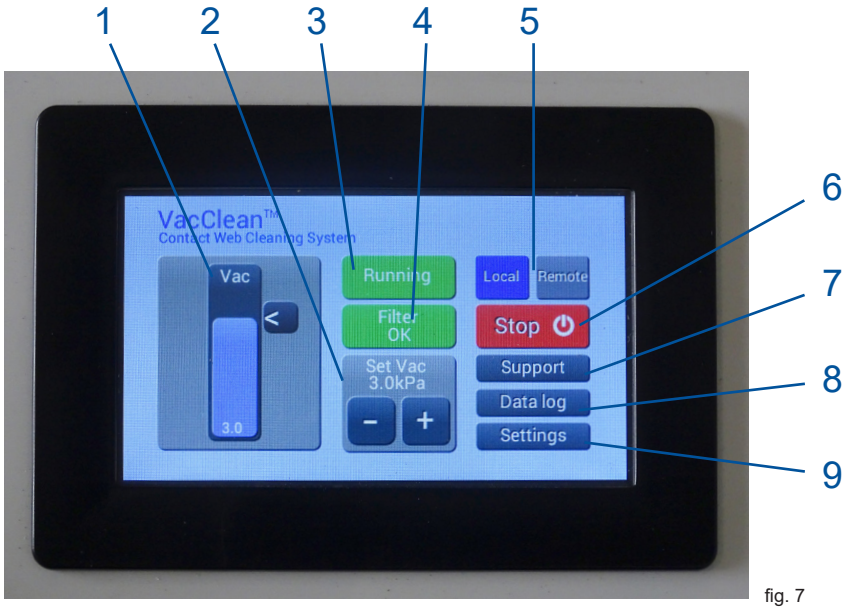



fig. 7

Shown on the screen are the following:

## 1. Vacuum/Pressure Level indicator

The Vacuum/Pressure Level indicator shows the value achieved by the AHUv3.

The arrow points to the ‘target’ pressure level and the figure and graph represent the actual Vacuum/Pressure achieved.

For systems where both Vacuum and Positive pressure are connected two graphs will be present, and the arrow indicates which one is being set and monitored by the Vacuum/Pressure ‘Set’ buttons (2)

## 2. Vacuum/Pressure target set pressure value and setting buttons

The ‘+’ and ‘-‘ buttons are used to set the Vacuum/Pressure level. The target value is shown in kPa just above the buttons. This is also represented by the arrow shown in the Vacuum/Pressure level indicator (1).

## 3. System status indicator

The System status indicator displays if the system is running or stopped. This status can also be accessed via the signal cable – see page 9 for details.

## 4. Filter status indicator

The filter status indicator displays the filter status. When the filter is clean the filter status will be green and display ‘Filter OK’, when the filter is dirty (but not blocked) the status will turn orange and display ‘Filter Dirty’; and when the filter is blocked and will need cleaning or replacing the filter status will turn red and display ‘Filter Blocked’. When the filter is blocked this also triggers the filter blocked signal in the signal cable – see page 9 for details.

## 5. Local/Remote toggle buttons

The local/remote toggle buttons are used to determine if the system is to be turned on/off using the start/stop button on the screen or if it is to be controlled remotely with the line. When in remote mode the unit will start and stop automatically with the line and the start/stop button will become inactive.

## 6. Start/Stop button

The Start/Stop button is used to start and stop the AHUv3. When controlled remotely from the line these buttons become inactive and can only be used when ‘Local’ mode is selected.

## 7. Support button

Contact information can be accessed using the ‘Support’ button.

## 8. Data log button

Total hours run and Filter information can be accessed using the ‘Data Log’ button

## 9. Settings button

Additional settings can be accessed using the ‘Settings’ button. This is for use by a Meech Engineer only and is password protected.

**IMPORTANT**

For further information on the individual system setup, see CyClean, ShearClean, VacClean, JetStream and IonRinse specific settings on the following pages:

- CyClean - p.28
- 
- VacClean - p. 32
- ShearClean - p.33
- JetStream - p.34

- The settings procedure should be completed with the system in its installed position. All ducting should be connected to the AHUv3 and to the web cleaning, or air rinsing head.

- On delivery the AHUv3 will be set up to achieve a factory set vacuum or positive pressure. Refer to the web cleaning system manual for details of the factory setting tests.

# Filtration

## Filtration Levels

The AHUv3 is supplied as standard with the following filter:

- F8 Grade Bag Filter
  Efficiency of 90-95% at 0.4µ or 100% at 1µ
  Dual layer filter of approximately 2m² surface area

An upgraded filter of the following specification may also be installed:

- H14 Grade HEPA Filter
  Efficiency of 99.997% of 0.3µ
  110mm deep with approximately 7.5m² surface area

The Compact AHUv3 is supplied as standard with the following filter:

- F8 Grade Bag Filter
  Efficiency of 90-95% at 0.4µ or 100% at 1µ
  Dual layer filter of approximately 0.7m² surface area

An upgraded filter of the following specification may also be installed:

- H14 Grade HEPA Filter
  Efficiency of 99.997% of 0.3µ
  110mm deep with approximately 4.5m² surface area



## Filter Capacity Increase

The AHUv3 can be supplied with an optional inline filter unit. The inline filter unit houses a larger F8 grade filter bag with a surface area of approximately 7.4m². The inline filter is installed as a pre filter to the AHUv3.

## Replacing Filters

The filters need attention when the filter dirty status is displayed.

To prevent overheating the unit should not be run for a prolonged period with the filter dirty status displayed.

A log of filter changes should be maintained by the user.

It is recommended that a spare set of filters are kept on site to minimise downtime of the system. Part numbers for the filters can be found on page 16 of this manual.

**CAUTION**

When changing filters appropriate safety equipment should be used.

## Bag Filter Replacement

To change the bag filter:

1. Isolate the electrical supply to the AHUv3.
2. Turn the catches on the front of the AHUv3 and open the door. The bag filter is located in the lower section of the AHUv3 (fig. 8).

fig.8

3. Slide the bag filter out of the AHUv3. Remove the bag from the retaining tray by unhooking the metal hooks and removing the 2 locating screws (fig. 9).

fig.9

4. Replace with a new bag ensuring the hooks and lugs are fitted. Slide the filter tray back into position.
5. Ensure the bag is pushed to the very back of the AHUv3 and has located correctly.
6. Close the door and fasten the latches.
7. Reconnect the electrical supply and start the system.

## HEPA Filter Replacement

The HEPA filter is an optional upgrade filter. If fitted it can be changed by following these steps:

1. Isolate the electrical supply to the AHUv3.
2. Undo the catches on the front of the AHUv3 and open door (fig. 10).

fig.10

3. The HEPA filter is the higher of the two filters.
4. The HEPA filter will slide in/out manually (fig. 11).

fig.11

5. The filter can now be removed from the AHUv3.
6. Slide the replacement filter back into position on the filter guide runners.
7. Close the door and fasten the latches.
8. Reconnect the electrical supply and start the system.

## Filter Disposal

All filters are manufactured from non-toxic materials.

Whilst the bag filter is washable, cleaning used filters is not recommended.

Disposal of the used filters depends on the material deposited on them, and appropriate waste disposal guidelines should be followed.

# Maintenance

## Maintenance UK

It is a legal requirement, under regulation 9 of the COSHH regulations, that all local exhaust ventilation systems are visually inspected on a weekly basis where possible, and undergo a thorough inspection and test on an annual basis.

COSHH requires the annual inspection and testing to be carried out by a competent person with a specific documentation of the results held in a log book.

## Maintenance General

User maintenance is limited to cleaning the AHUv3 and replacing the filters with new. Only trained maintenance technicians are authorised to carry out component testing and replacement. Unauthorised work or the use of unauthorised replacement filters may result in a potentially dangerous situation and/or damage to the AHUv3, and will invalidate the manufacturers warranty.

## Cleaning the AHUv3

Do not use abrasive cleaning product as this will damage the finish. The AHUv3 should be cleaned with a proprietary stainless steel cleaner, following the manufacturer's instructions.

The cooling inlets and outlet should be cleaned at least quarterly to prevent build up of dust and overheating of unit.

# Consumable and Spare Parts

## AHUv3 Filters

| Description | Mini AHUv3 (1 Pump) | Compact AHUv3 (2 Pumps) | 3 & 6 Pump AHUv3 |
|---|---|---|---|
| F8 Grade Bag Filter | ASYS-MBM-01 | ASYS-CBM-01 | ASYS-SBM-01 |
| H14 Grade HEPA Filter | - | ASYS-CHW-01 | ASYS-SHW-01 |

## AHUv3 Side Filters

| Description | Mini AHUv3 (1 Pump) | Compact AHUv3 (2 Pumps) | 3& 6 Pump AHUv3 |
|---|---|---|---|
| Kit comprising stainless steel housings and panel filters for Compact AHUv3 | - | A-AHUV3-SFKCOMP-01 | - |
| Kit comprising two 5-micron panel filters for Compact AHUv3 | - | A-AHUV3-SIDEFILTCOMP | - |
| Kit comprising stainless steel housing and panel filters for 3 and 6 pump AHUv3 | - | - | A-AHUV3-SFK-01 |
| Kit comprising two 5-micron panel filters for 3 and 6 pump AHUv3 | - | - | A-AHUV3-SIDEFILTERS |

## AHUv3 - 2 Pump and 3 Pump Unit Fuses

| Item Protected | Fuse Rating | Voltage |
|---|---|---|
| Powerpack | T1AH250V | 100-230V |
| Fans | 16A MCB Type B | 100-230V |

## AHUv3 - 6 Pump Unit Fuses

| Item Protected | Fuse Rating | Voltage |
|---|---|---|
| Powerpack | T1AH250V | 100-230V |
| Fans | 32A MCB Type B | 100-230V |

## AHUv3 - Pump Replacement

| Description | Product Code |
|---|---|
| Pump to suit AHUv3 | ASYS-PUMP or ASYS-PUMP-02 * |

* Before you order your pump replacement please provide the AHU serial number

## AHUv3 - Loom Replacement

| Description | Product Code |
|---|---|
| Loom Assembly - 1 Pump AHUV3 | A-AHUV3-LOOM-1PUMP |
| Loom Assembly - 2 Pump AHUV3 | A-AHUV3-LOOM-2PUMP |
| Loom Assembly - 3 Pump AHUV3 | A-AHUV3-LOOM-3PUMP |
| Loom Assembly - 6 Pump AHUV3 | A-AHUV3-LOOM-6PUMP |
| AHUv3 Additional Protection PCB | A-AHUV3-PROTECT-PCB |

## AHUv3 - Screen Replacement

| Description | Product Code |
|---|---|
| Programed Control System inc. Touchscreen | A-AHUV3CONTROLSYS |

# AHUv3 Compact, AHUv3 and Secondary AHUv3 System Specification



| | Compact -2 Pumps | | AHUv3 -3 Pumps | | AHUv3 -6 Pumps | |
|---|---|---|---|---|---|---|
| Output: | 2.2kW | | 3.3kW | | 6.6kW | |
| Capacity: | 733 m³/hr | | 1100 m³/hr | | 2200 m³/hr | |
| Weight: | 70kg | | 95kg | | 105kg | |
| Noise level: | 69dBa | | 72dBa | | 78dBa | |
| Full Load Current: | Neutral | Line | Neutral | Line | Neutral | Line |
| FLC @ 400V: | 11.3A | 8.1A | 11.5A | 6.9A | 23A | 13.8A |
| FLC @ 200V: | N/A | 17A | N/A | 12.5A | N/A | 25A |
| Electrical supply: | 200- 440V 3ph 50/60Hz | | | | | |
| Size (mm): | H925 x D450 x W450 | | H925 x D750 x W750 | | | |
| Exhauster: | Turbine Fan | | | | | |
| Filters: | Bag<br>HEPA | | Efficiency F8<br>Efficiency H14 | | 90-95% @ 0.4µ<br>99.997% @ 0.3µ | |
| Stainless steel: | Grade 430 | | | | | |

**Environmental Operating Range:**

| | |
|---|---|
| Temperature: | +5°C to +40°C |
| Humidity: | Max 80 % RH up to 31°C To Max 50% RH at 40°C |
| Altitude: | Below 2000m |
| Pollution Degree: | 2 |

**WARNING**

1. The unit is designed for 3 Phase + neutral + ground. Variable voltage between 200V and 440V (440V = absolute maximum including voltage fluctuations).
2. **At voltages higher than 235V 3Phase (Phase – Phase) the unit MUST be internally wired using the star connection, and a Neutral supply MUST be connected to the AHUv3. Failure to do so will damage the pumps beyond repair and will invalidate warranty.**
3. **At voltages below 235V, neutral is optional provided the internal delta connection is used.**
4. The mains power must not be turned on more frequently than once a minute, as this will damage the internal blowers beyond repair. When interlocking with the line, the unit must not be interlocked by supplying power to the AHUv3. For interlocking the remote Start/Stop Interlock cable must be used.
5. See wiring diagrams on pages 19-24 for further details.

# AHUv3 Voltage Range

The AHUv3 is designed for use with a range of supply voltages.

## Voltages higher than 235V 3-Phase (Phase-Phase)

For installations where the 3-Phase supply voltage is higher than 235V (phase to phase) the AHUv3 must be run with a neutral supply to ensure that the blowers do not fail beyond repair. If a neutral supply is not available an additional transformer will be required – see pages 19-21 for details.

For this voltage the wiring inside the AHUv3 will be pre-set by Meech in ‘Star’ configuration which ensures that the neutral connection is connected to the pumps internally. See pages 19-21 for diagram showing the ‘Star’ configuration AHUv3 internal wiring.

## Voltages lower than 235V 3-Phase (Phase-Phase)

For installations where the 3-Phase supply voltage is below 235V (phase to phase) a neutral supply is optional providing that the AHUv3 has been pre-set by Meech in ‘Delta’ configuration.

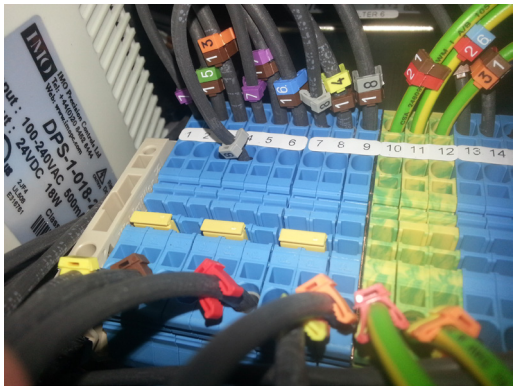
For this voltage the wiring inside the AHUv3 will be pre-set by Meech in ‘Delta’ configuration which enables the AHUv3 to run without a neutral. See pages 22-24 for diagram showing the ‘Delta’ configuration AHUv3 internal wiring.

It is critical that the AHUv3 is run with the correct wiring configuration to match the supply voltage – if not this will result in the pumps failing beyond repair.

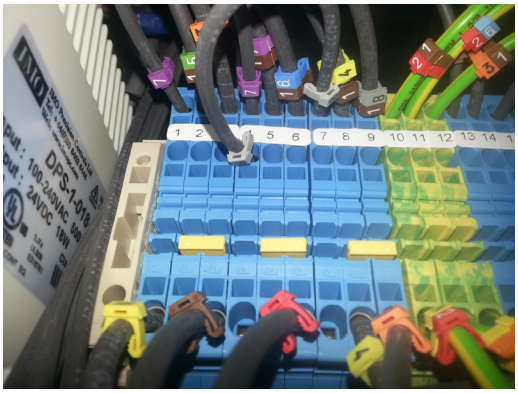
# AHUv3 Voltage Setup Checks

To check the wiring configuration prior to turning on the AHUv3, the following 2 checks can be made to ensure the AHUv3 supplied matches the supply voltage.

1. The correct corresponding wiring diagram is included inside the electrical door of the AHUv3 and states which wiring it is configured to.
2. Physically check the position of the yellow, 2-way jumpers located in the terminal blocks match that in the corresponding wiring diagram. See figure 12 below showing the location of the terminals.



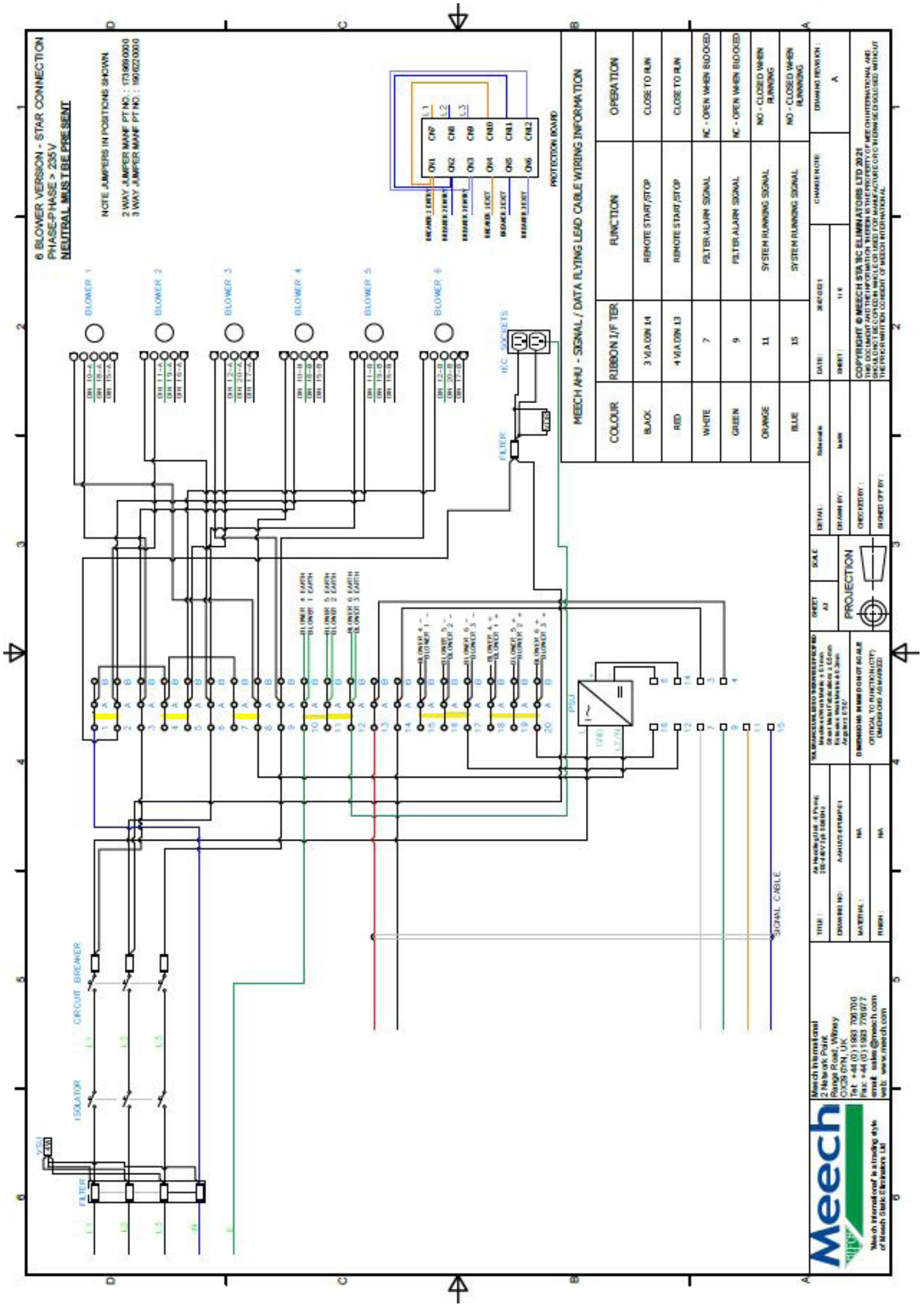
Star Configuration: Jumpers across 1-2; 4-5; 7-8



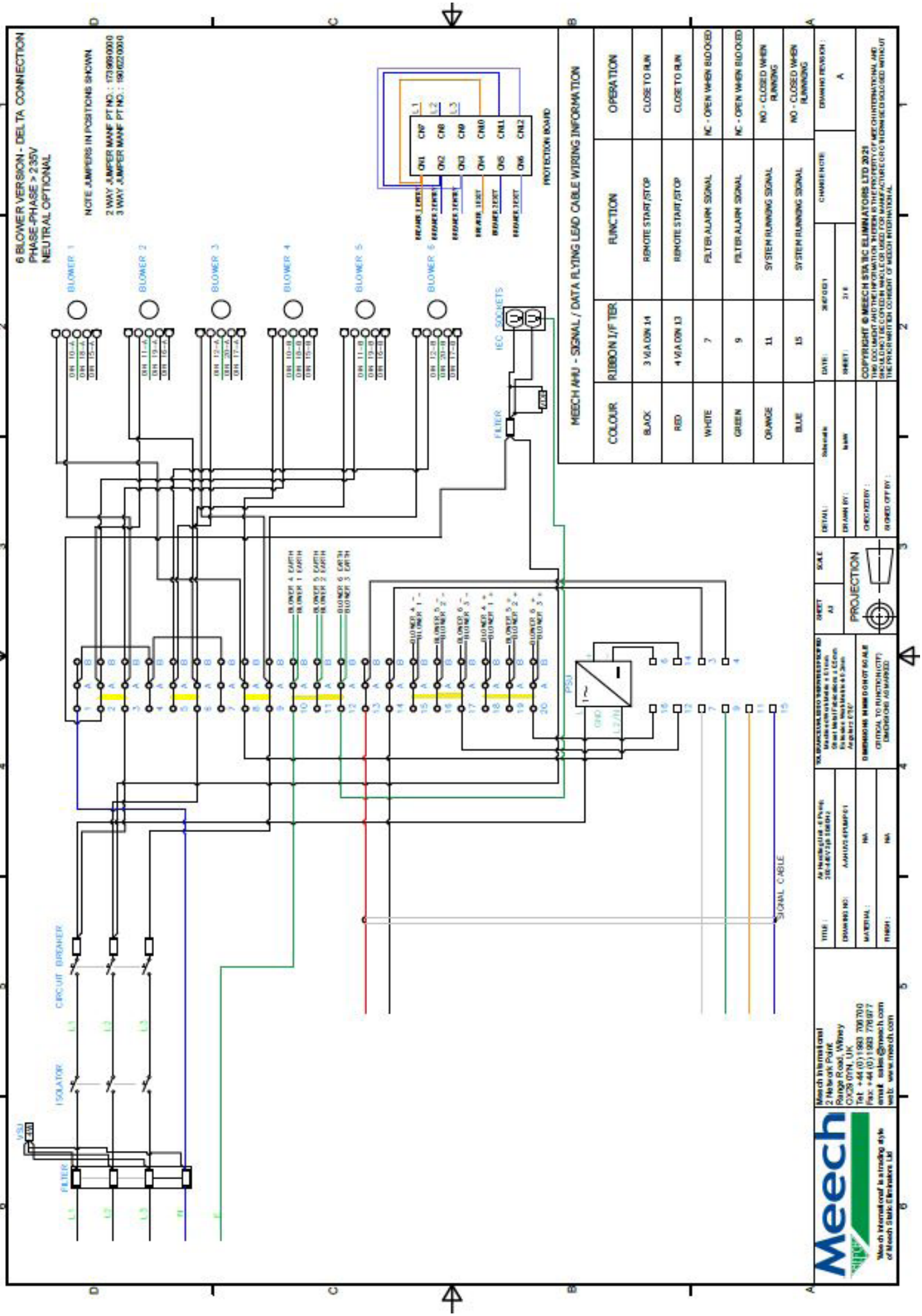
Delta Configuration: Jumpers across 2-3; 5-6; 8-9

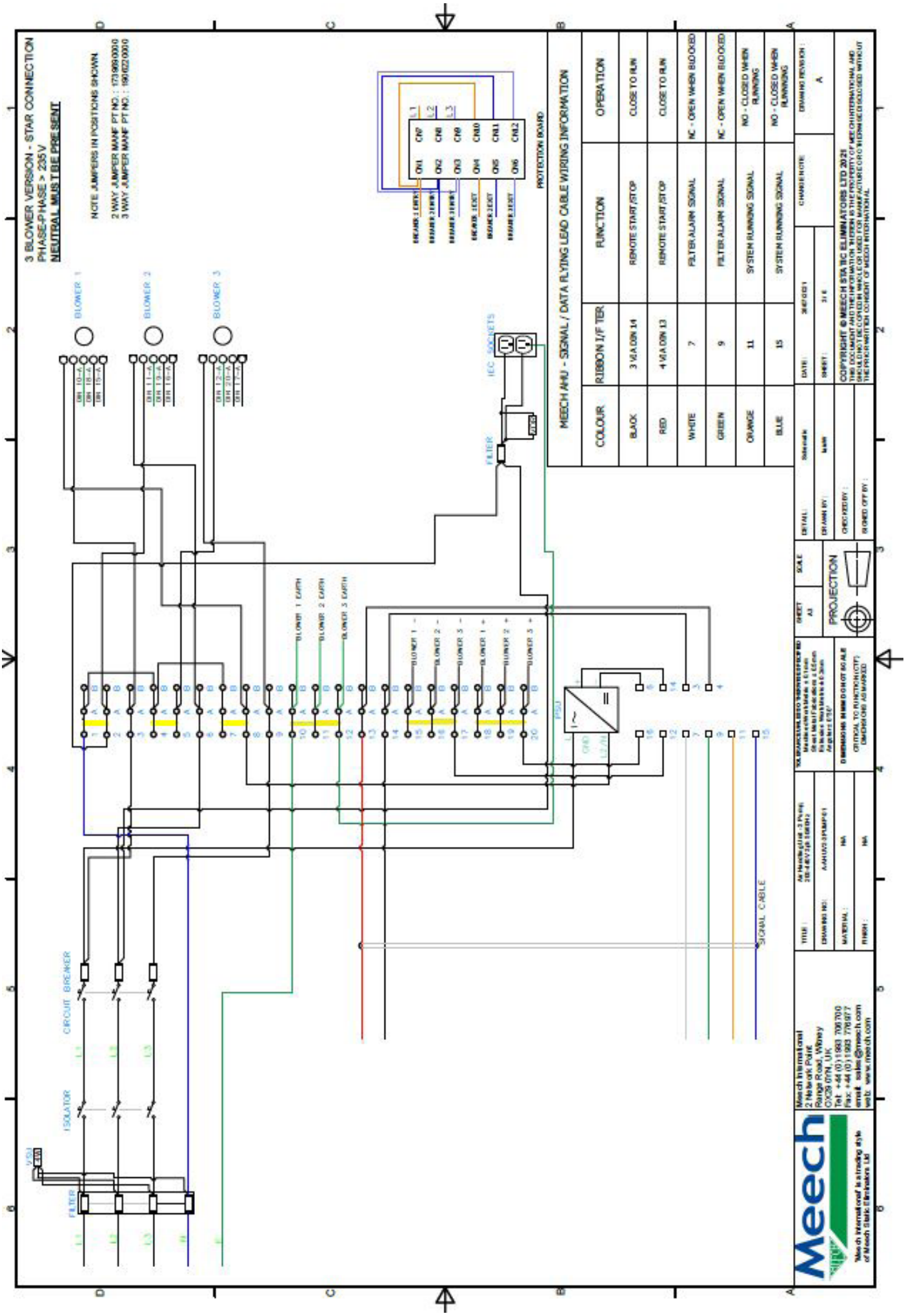
fig. 12

# AHUv3 Wiring Diagram



# AHU lv3 Wiring Diagram




3 BLOWER VERSION - STAR CONNECTION
PHASE-PHASE > 235V
NEUTRAL MUST BE PRESENT
NOTE JUMPERS IN POSITIONS SHOWN
2 WAY JUMPER MANF PT NO.: 1739990010
3 WAY JUMPER MANF PT NO.: 1906220010
MEECH AHU - SIGNAL / DATA FLYING LEAD CABLE WIRING INFORMATION
COLOUR
RIBBON I/F TER.
FUNCTION
OPERATION
BLACK
3 VIA DIN 14
REMOTE START/STOP
CLOSE TO RUN
RED
4 VIA DIN 13
REMOTE START/STOP
CLOSE TO RUN
WHITE
7
FILTER ALARM SIGNAL
NC - OPEN WHEN BLOCKED
GREEN
9
FILTER ALARM SIGNAL
NC - OPEN WHEN BLOCKED
ORANGE
11
SYSTEM RUNNING SIGNAL
NO - CLOSED WHEN RUNNING
BLUE
15
SYSTEM RUNNING SIGNAL
NO - CLOSED WHEN RUNNING
BLOWER 1
BLOWER 2
BLOWER 3
ISOLATOR
CIRCUIT BREAKER
FILTER
IEC SOCKETS
PROTECTION BOARD
SIGNAL CABLE
PROJECTION
Meech International
2 Network Point
Range Road, Witney
OX29 0YN, UK
Tel: +44 (0) 1993 709 709
Fax: +44 (0) 1993 776 977
email: sales@meech.com
web: www.meech.com
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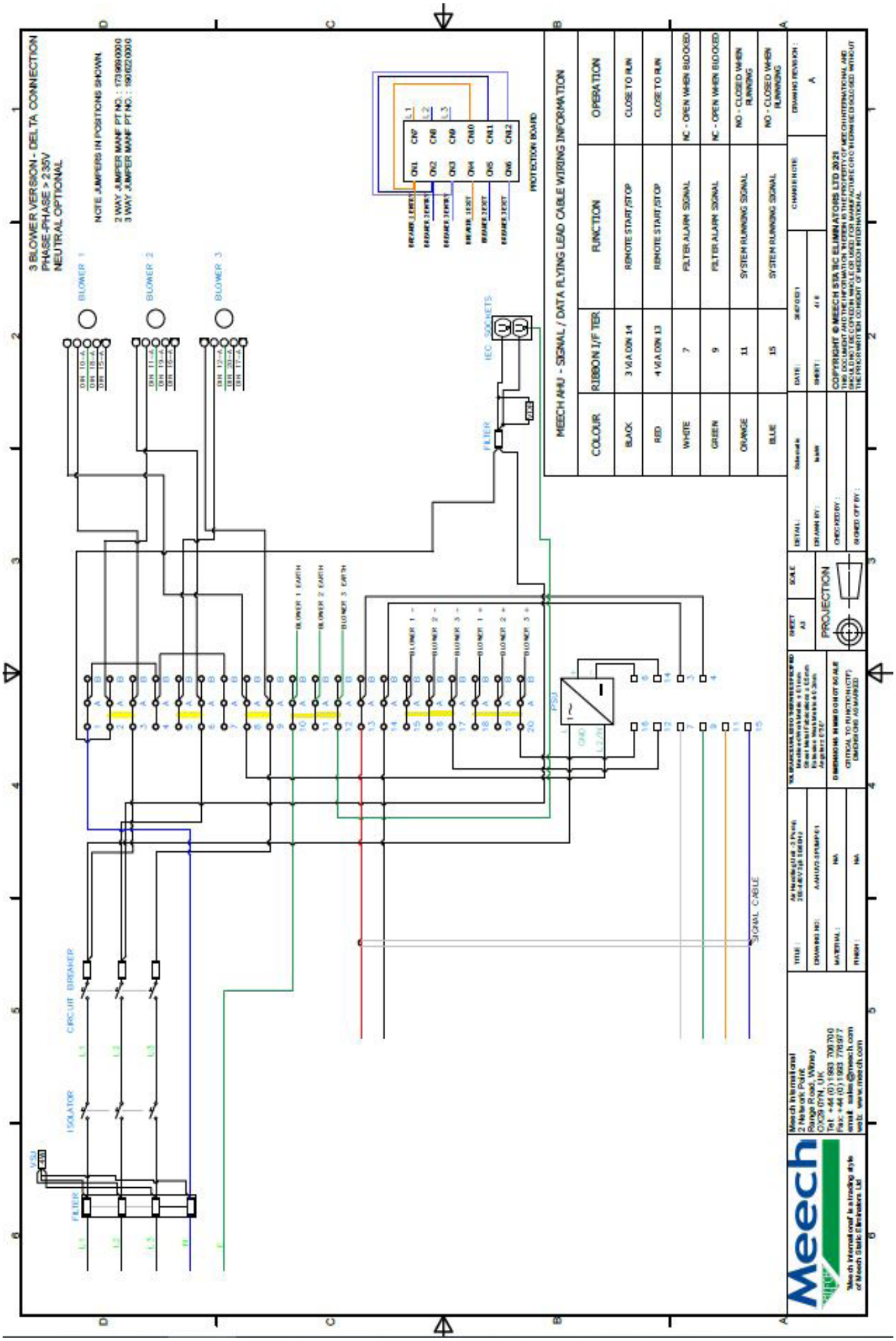
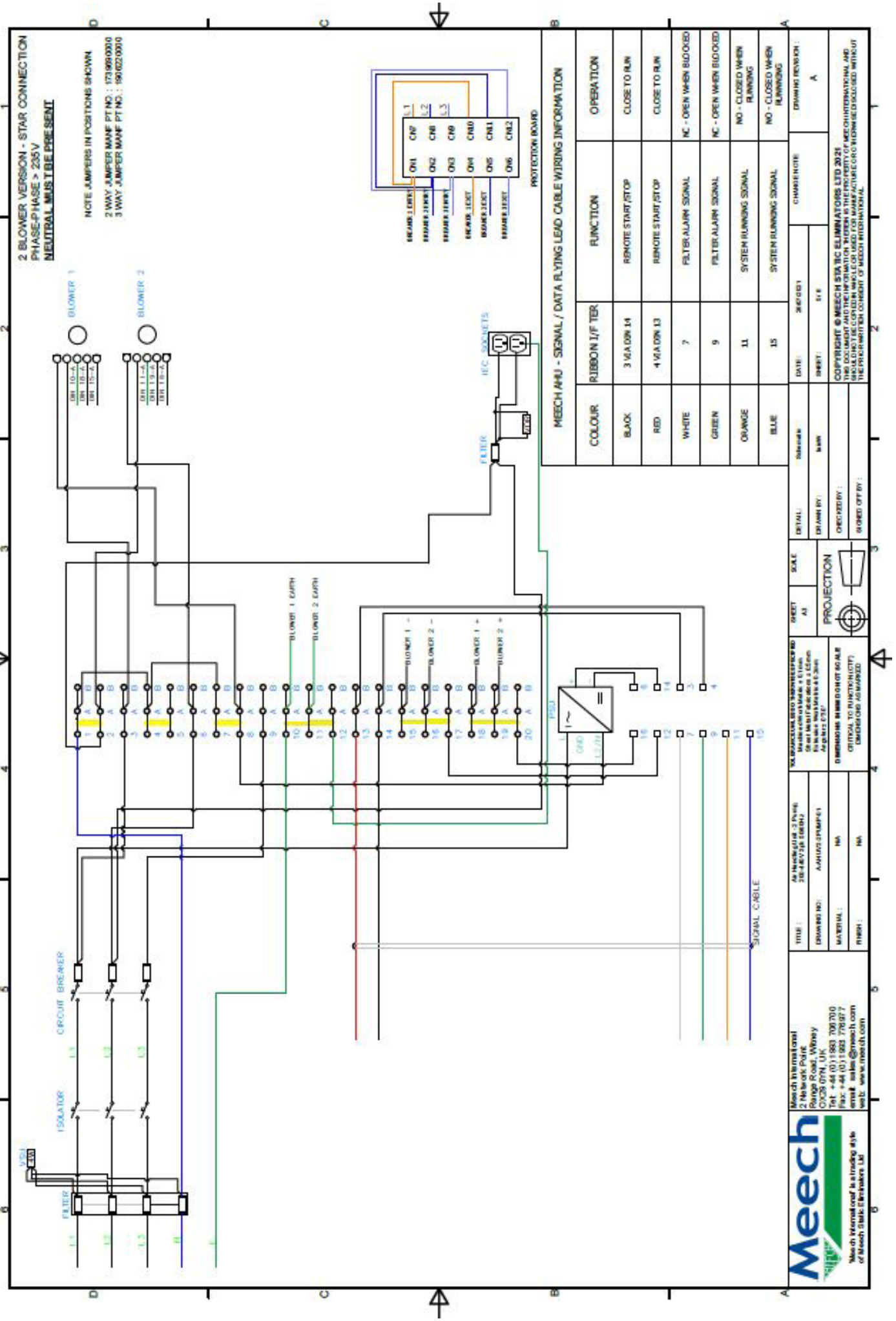
# AHUv3 Wiring Diagram




2 BLOWER VERSION - STAR CONNECTION
PHASE-PHASE > 235V
NEUTRAL MUST BE PRESENT
NOTE JUMPERS IN POSITIONS SHOWN
2 WAY JUMPER MANF PT NO.: 1719990010
3 WAY JUMPER MANF PT NO.: 1916220010
MEECH AHU - SIGNAL / DATA FLYING LEAD CABLE WIRING INFORMATION
COLOUR
RIBBON I/F TER
FUNCTION
OPERATION
BLACK
3 VIA DIN 14
REMOTE START/STOP
CLOSE TO RUN
RED
4 VIA DIN 13
REMOTE START/STOP
CLOSE TO RUN
WHITE
7
FILTER ALARM SIGNAL
NC - OPEN WHEN BLOCKED
GREEN
9
FILTER ALARM SIGNAL
NC - OPEN WHEN BLOCKED
ORANGE
11
SYSTEM RUNNING SIGNAL
NO - CLOSED WHEN RUNNING
BLUE
15
SYSTEM RUNNING SIGNAL
NO - CLOSED WHEN RUNNING
BLOWER 1
BLOWER 2
PROTECTION BOARD
IEC SOCKETS
FILTER
ISOLATOR
CIRCUIT BREAKER
SIGNAL CABLE
PROJECTION
Meech International
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web: www.meech.com
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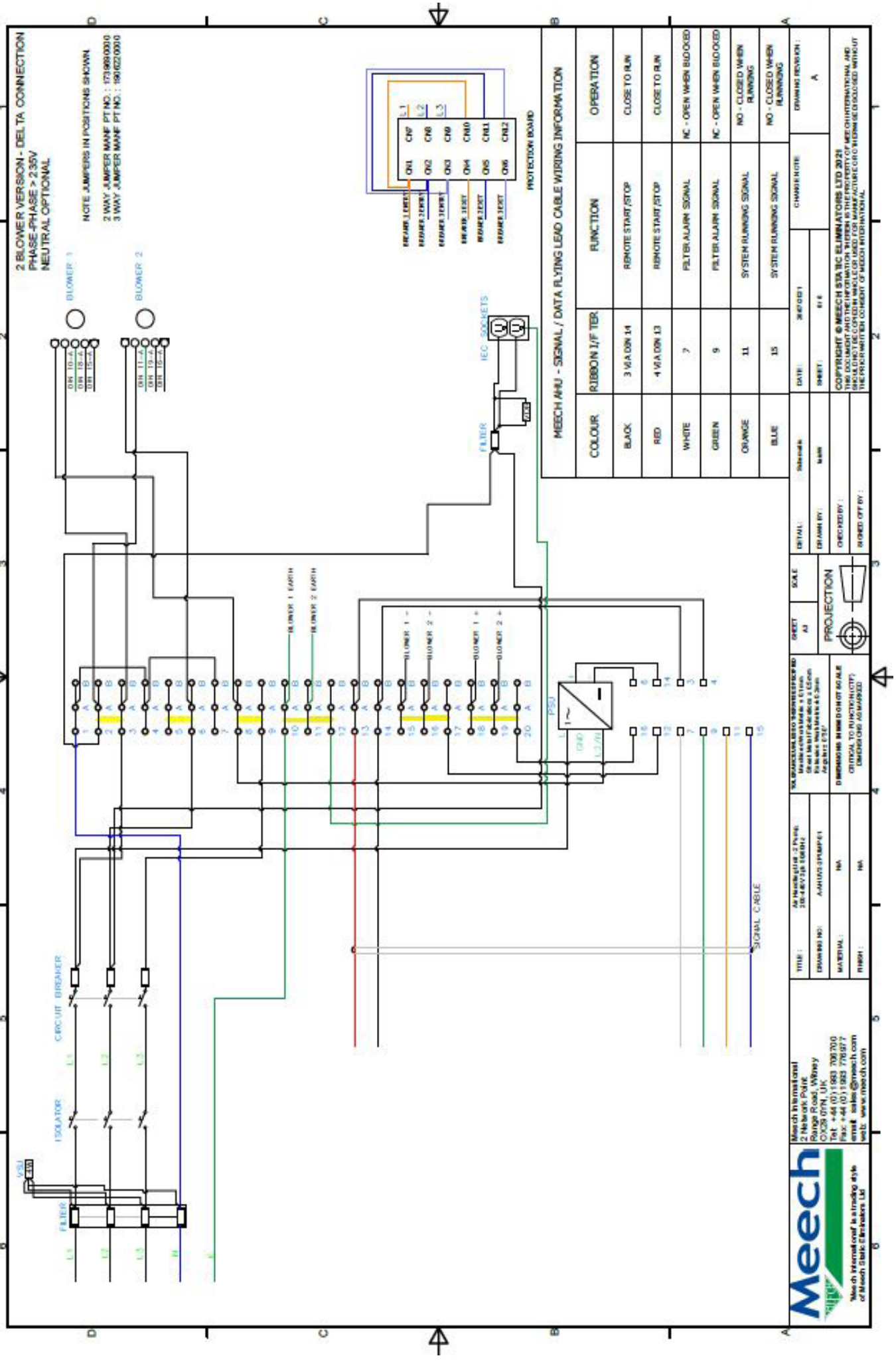
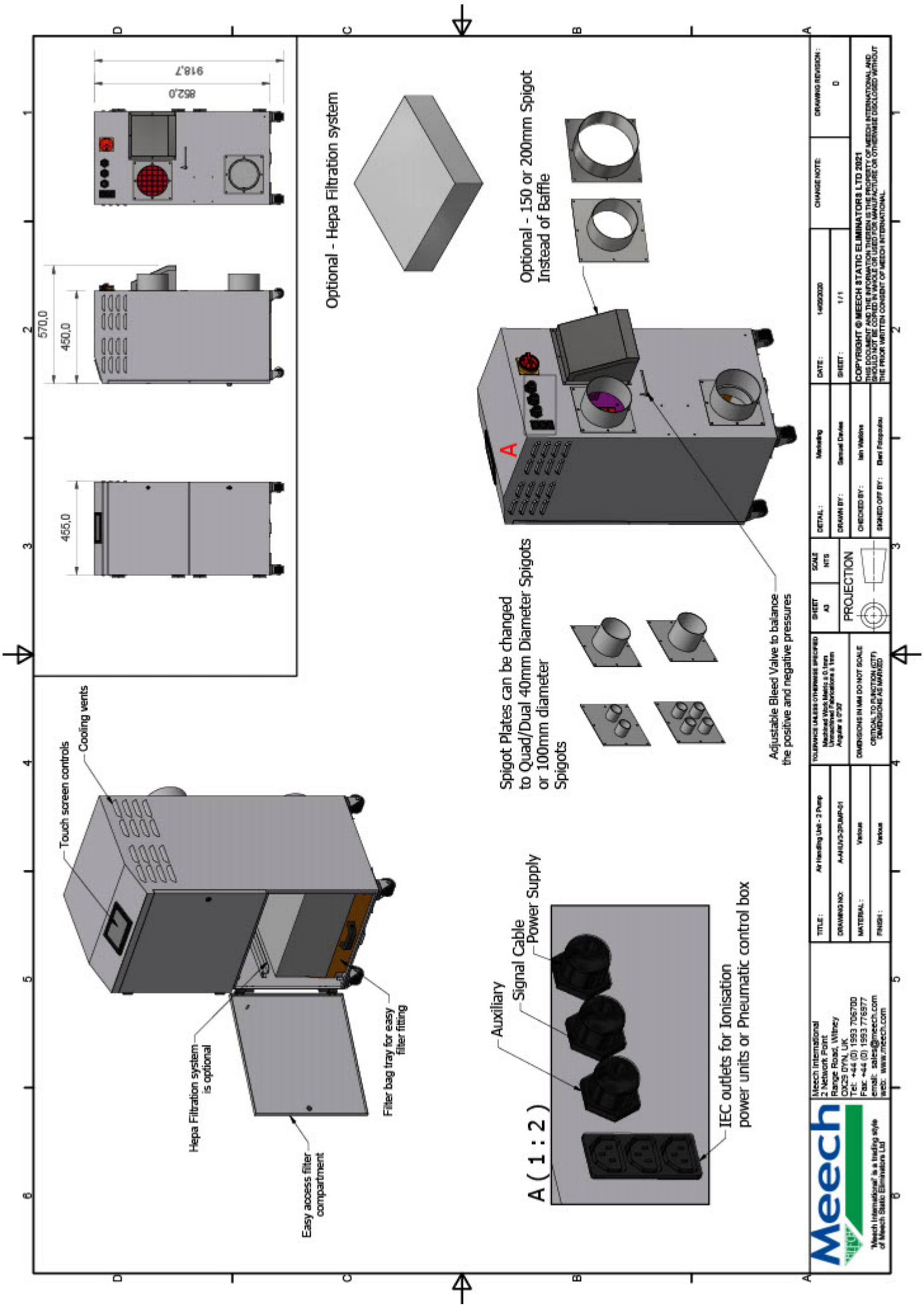
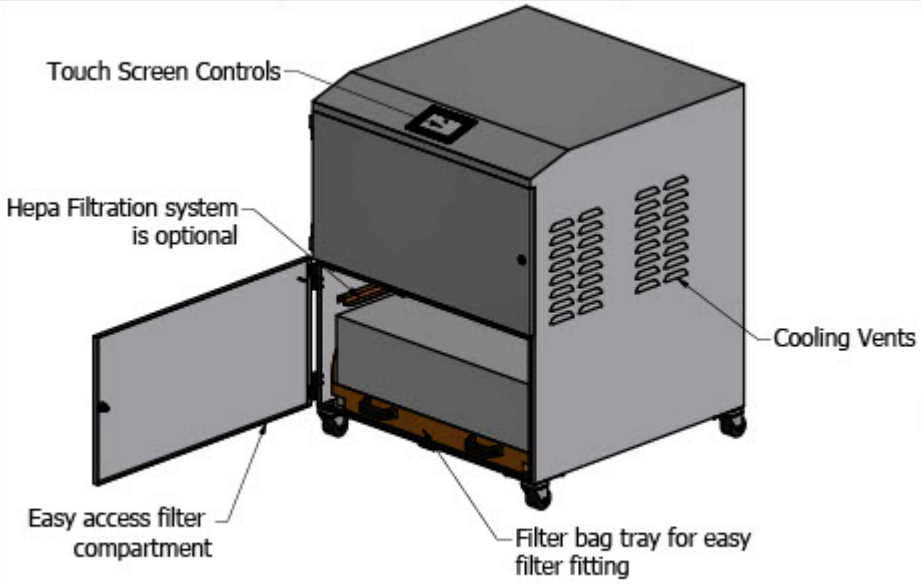
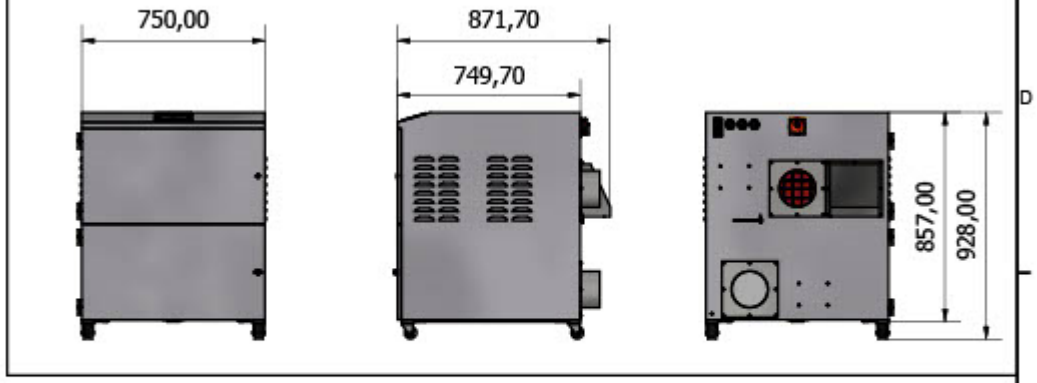
# AHUv3 Wiring Diagram



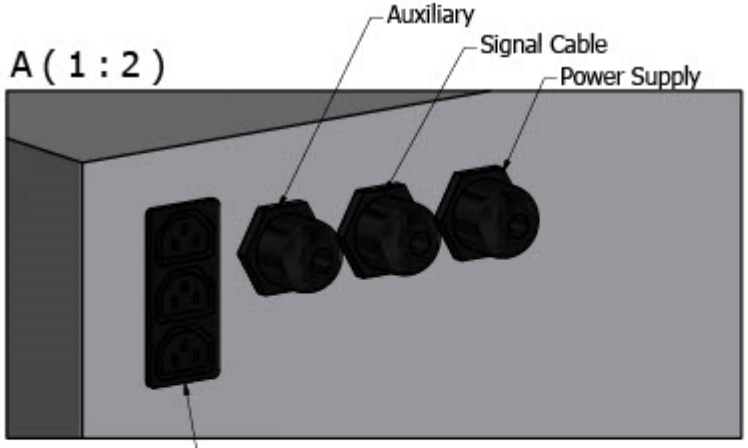
# General Arrangement Drawing

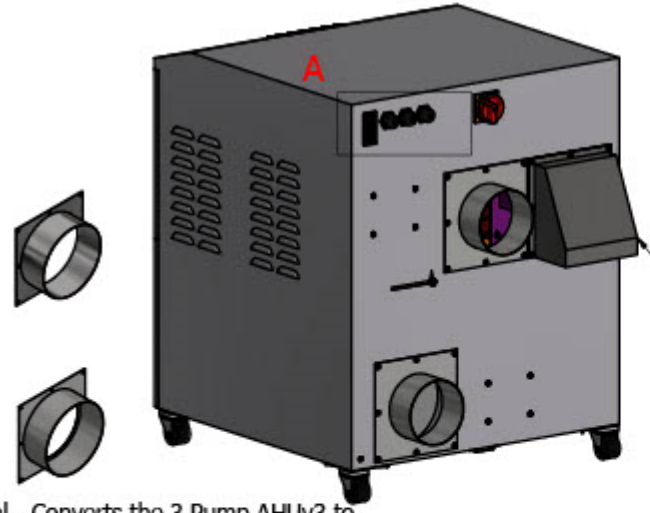




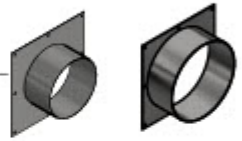

Optional - Hepa Filtration system



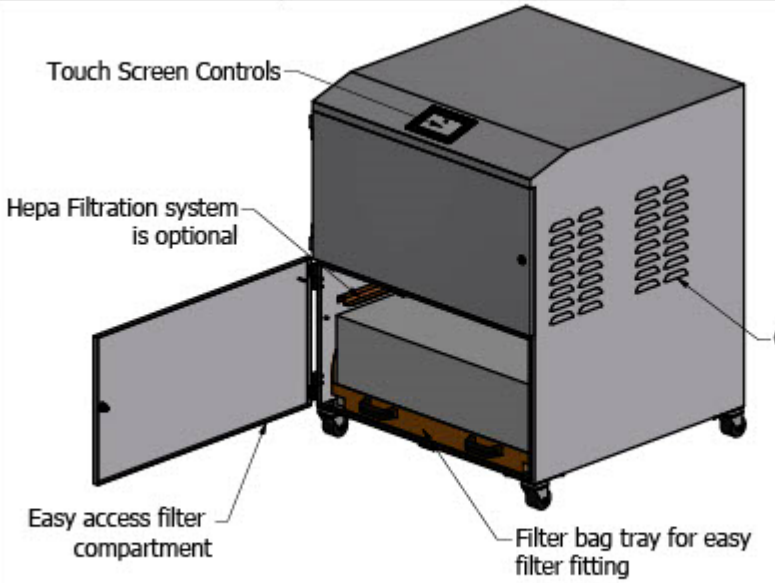



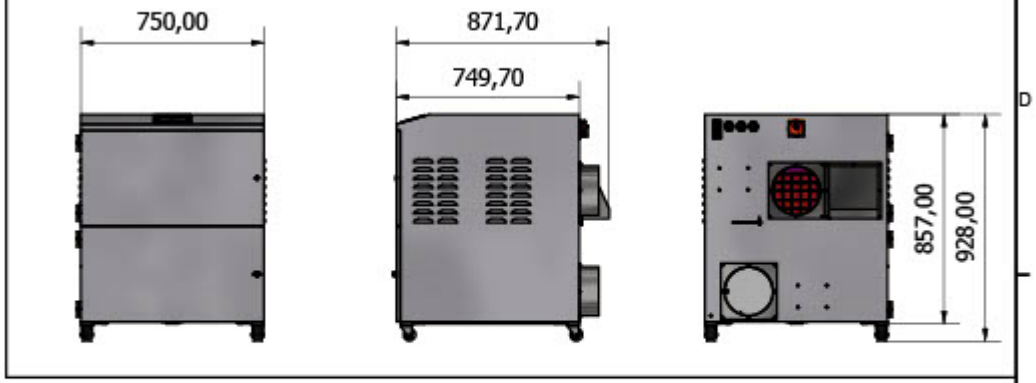

Optional - Converts the 3 Pump AHUv3 to 200mm spigots from standard 150mm

Optional - 150 or 200mm Spigot Instead of Baffle

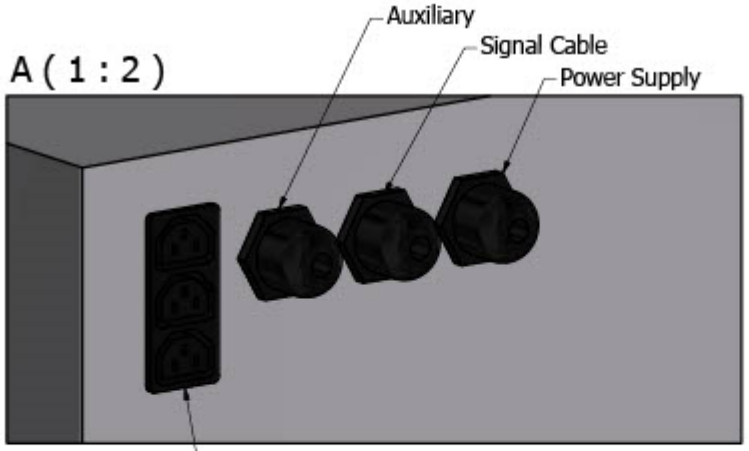


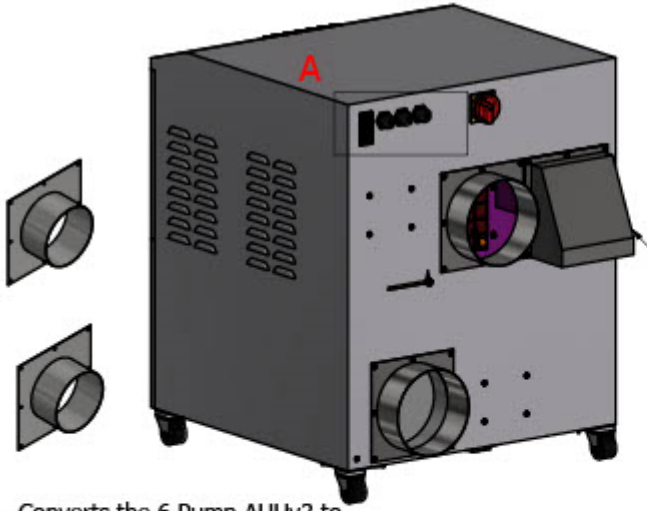
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Meech International<br>2 Network Point<br>Range Road, Witney<br>OX29 0YN, UK<br>Tel: +44 (0) 1993 706700<br>Fax: +44 (0) 1993 776977<br>email: sales@meech.com<br>web: www.meech.com<br>'Meech International' is a trading style of Meech Static Eliminators Ltd | TITLE: Air Handling Unit - 3 Pump, 200-440V 3ph 50/60Hz | TOLERANCE UNLESS OTHERWISE SPECIFIED<br>Machined Work Metric ± 0.1mm<br>Unmachined Fabrications ± 1mm<br>Angular ± 0°30' | SHEET A3 | SCALE NTS | DETAIL: Marketing | DATE: 09/04/2021 | CHANGE NOTE: | DRAWING REVISION: D |
| | DRAWING NO: A-AHUV3-3PUMP-01 | | PROJECTION | | DRAWN BY: Samuel Davies | SHEET: 1 / 1 | | |
| | MATERIAL: Various | DIMENSIONS IN MM DO NOT SCALE | | | CHECKED BY: Iain Watkins | COPYRIGHT © MEECH STATIC ELIMINATORS LTD 2021 | | |
| | FINISH: Various | CRITICAL TO FUNCTION (CTF) DIMENSIONS AS MARKED | | | SIGNED OFF BY: Eleni Fotopoulou | THIS DOCUMENT AND THE INFORMATION THEREIN IS THE PROPERTY OF MEECH INTERNATIONAL AND SHOULD NOT BE COPIED IN WHOLE OR USED FOR MANUFACTURE OR OTHERWISE DISCLOSED WITHOUT THE PRIOR WRITTEN CONSENT OF MEECH INTERNATIONAL. | | |




Optional - Hepa Filtration system




Optional - 150 or 200mm Spigot Instead of Baffle

Optional - Converts the 6 Pump AHUv3 to 150mm spigots from standard 200mm

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web: www.meech.com

"Meech International" is a trading style of Meech Static Eliminators Ltd

| | |
|---|---|
| TITLE : | Air Handling Unit - 6 Pump, 200-440V 3ph 50/60Hz |
| DRAWING NO: | A-AHUV3-6PUMP-01 |
| MATERIAL : | Various |
| FINISH : | Various |

TOLERANCE UNLESS OTHERWISE SPECIFIED
Machined Work Metric ± 0.1mm
Unmachined Fabrications ± 1mm
Angular ± 0°30'

DIMENSIONS IN MM DO NOT SCALE

CRITICAL TO FUNCTION (CTF) DIMENSIONS AS MARKED

SHEET A3 | SCALE NTS

PROJECTION

| | |
|---|---|
| DETAIL : | Marketing |
| DRAWN BY : | Samuel Davies |
| CHECKED BY : | Iain Watkins |
| SIGNED OFF BY : | Eleni Fotopoulou |
| DATE : | 09/04/2021 |
| SHEET : | 1 / 1 |
| CHANGE NOTE: | |
| DRAWING REVISION : | D |

# AHUv3 - Systems Specific Settings

# CyClean System Specific Settings


Fig 13

When running with the CyClean system, the AHUv3 monitors the vacuum and positive pressure and controls the vacuum pressure.

## CyClean Setting the pressure

The required pressure is adjusted using the '+' and '-' buttons on the main screen. The 'Set' target pressure value shown above the buttons will alter as the buttons are pressed, and the unit will self adjust to meet this requirement.

If the pressure control buttons are greyed out and the pressure needs to be adjusted, please contact Meech HQ for details on how to unlock the buttons.

The default vacuum pressure setting for CyClean is 1.0kPa and 1.1kPa positive.

## Remote Mode

The AHUv3 can be controlled to start/stop remotely to allow the system to be integrated with the line.

To enable remote mode the wiring must first be connected (see page 8) to the line correctly. Once this is in place the 'Remote' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in remote mode the unit will start and stop automatically with the line, and the start/stop button on the unit will become inactive.

## Local Mode

If running independently to the line the system can be controlled to start/stop manually using the start/stop button.

To enable Local mode the 'Local' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in Local mode the system will not start/stop automatically with the line.

## Support

Contact information can be accessed using the 'Support' button

## Data Log

Total hours run and Filter information can be accessed using the 'Data Log' button

## Settings

Additional settings can be accessed using the 'Settings' button. This is for Meech Engineering use only and is password protected.

# CyClean™ Setup Procedure

The airflows of the CyClean non-contact web cleaning system should be adjusted to achieve optimum cleaning results. The best cleaning results will be achieved, when the system is set to have equal positive and negative airflows, on both the web entry and exit sides (minimising the risk of any recontamination).

The positive airflow into either side of the CyClean head is adjusted by bleeding off a volume of the blowing (positive) airflow to create an airflow bias in favour of vacuum. The volume of air that is bled from the blowing (positive) airflow will vary with each installation, and is adjusted by using the valve slider located at the back of the unit.

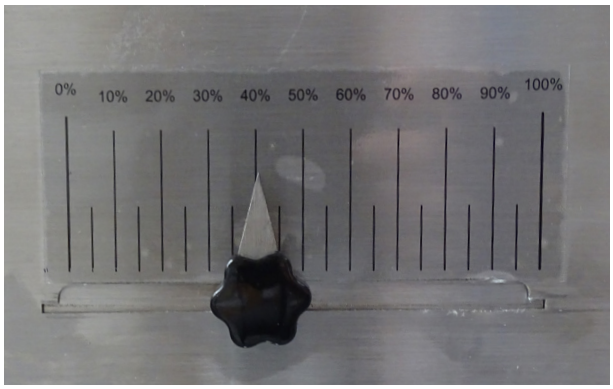


fig.14

Refer to the CyClean operating manual provided with the system (pages 7-15) for CyClean installation instructions.

**CAUTION**

Only when the CyClean head and AHUv3 are installed correctly with all electrical connections and ductwork in place, and the web is running centrally through the CyClean, can the setup of the CyClean system commence.

The system can now be set up (see Setting the Vacuum Pressure Level on page 28) and tested. The standard system setup is to have 1kPa on both the vacuum and positive pressure readings. To achieve this follow the steps below:

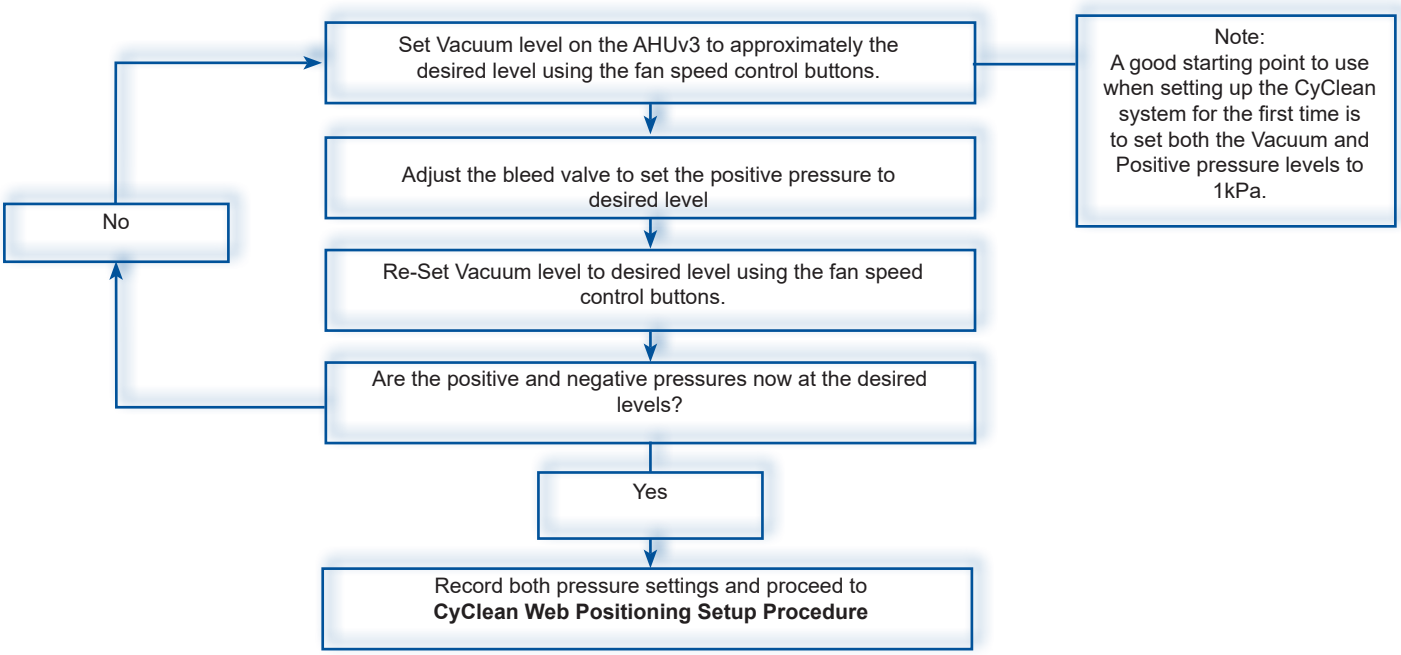
1. Increase the vacuum pressure to a value of approximately 1.0kPa.
2. At this point, if the vacuum and positive pressure readings are different then the bleed valve can be adjusted at the back of the unit to make the two readings equal. Only very slight adjustments are required.
3. After any adjustment to the bleed valve, the vacuum pressure setting (use the push buttons) will need to be re-set to ensure that the unit does not ‘hunt’ to keep the previous vacuum setting the same.
4. Check the pressure readings again and re-adjust (by holding down both buttons simultaneously and then repeatedly pressing up or down) to get the values to equal 1kPa on both the vacuum and positive pressure gauges.
5. At this point there should be good cleaning and no air blowing out of the ‘web entry’ side of the CyClean.
6. If air is still being blown out of the ‘web entry’ side then the bleed valve can be opened further to decrease the air being blown out against the air being sucked in. A good test for this is sprinkling dust on the web or holding a piece of cotton up against the ‘web entry’ side if it is not possible to test with a moving web.
7. Now check that the web is not sticking to one side or the other – if it is then ideally the tension needs to be increased in the web. If it is not possible to increase the tension then the bleed valve will need to be closed slightly to increase the blow pressure enough to stop the web from sticking to either side.
8. It is more important that the web does not stick to the CyClean manifold than having an intake of air on the ‘web entry’ side, so ensure that the bleed valve is adjusted finally to ensure this is the case keeping the CyClean non-contact.

Note: It is very important that the ducting connections from the AHUv3 to the CyClean head are equal in length for both the blowing and vacuum airflows.

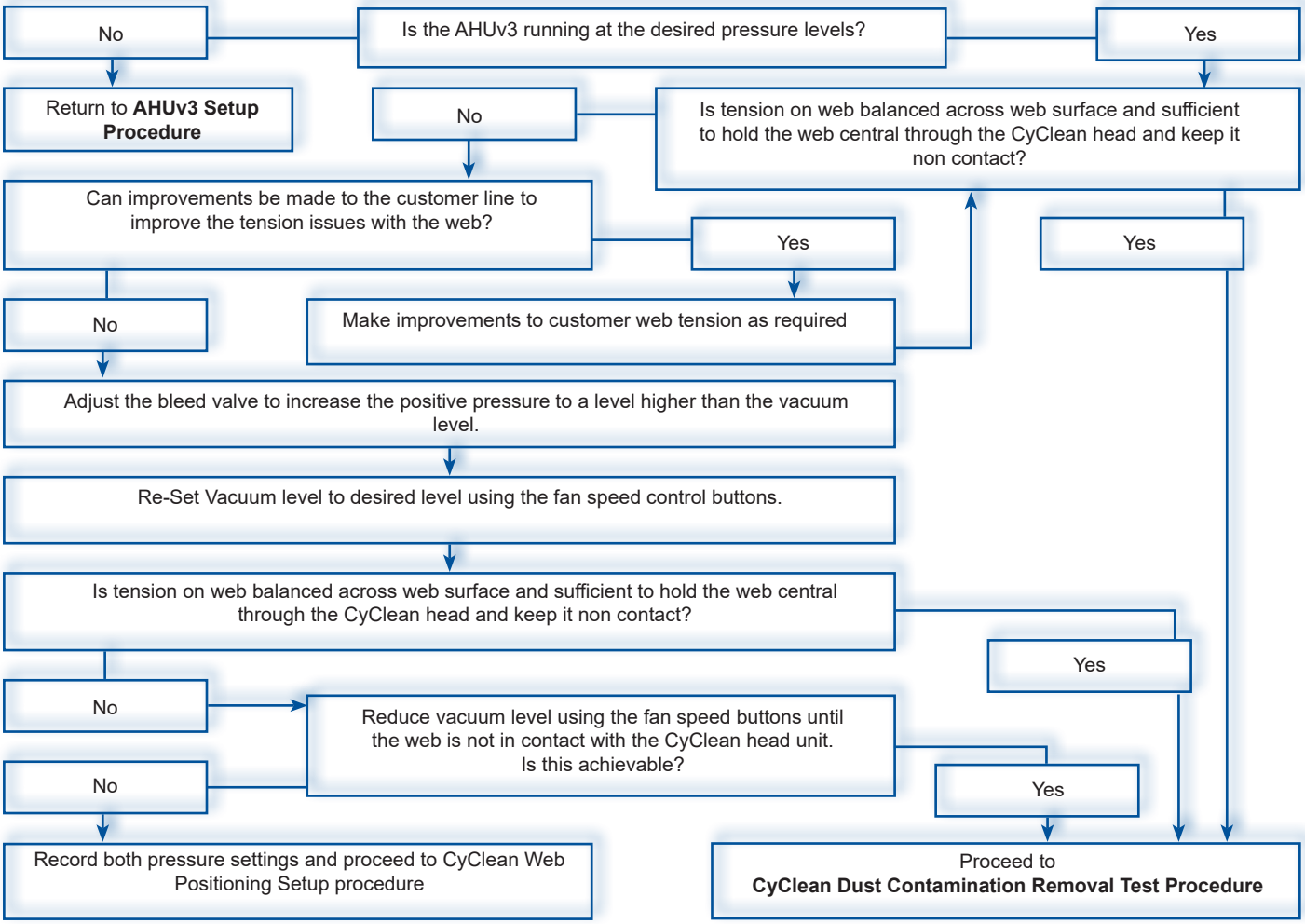
# AHUv3 Setup Procedure for CyClean

**CAUTION**

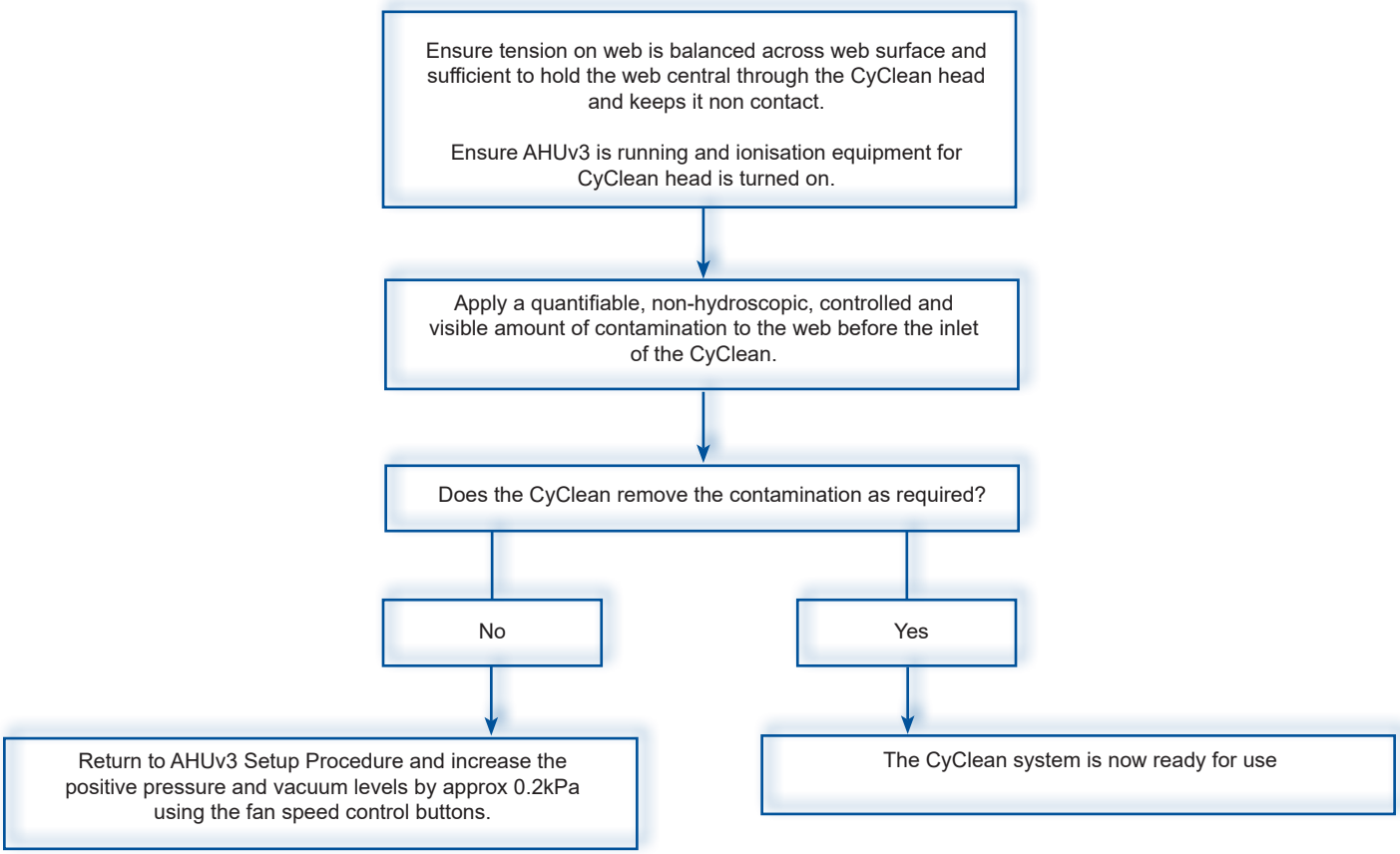
Ensure web is running centrally and there is good tension present on the web prior to and throughout setup procedure.




# CyClean Web Positioning Setup Procedure



# CyClean Contamination Removal Test Setup



# CyClean-R System Specific Settings


fig.15

When running with the CyClean-R system, the AHUv3 monitors the vacuum and positive pressure and controls the vacuum pressure.

## CyClean-R Setting the pressure

The required pressure is adjusted using the '+' and '-' buttons on the main screen. The 'Set' target pressure value shown above the buttons will alter as the buttons are pressed, and the unit will self adjust to meet this requirement.

If the pressure control buttons are greyed out and the pressure needs to be adjusted, please contact Meech HQ for details on how to unlock the buttons.

CyClean-R will be sent out set to a net inflow which may have different positive pressure to what is shown in image.

## Remote Mode

The AHUv3 can be controlled to start/stop remotely to allow the system to be integrated with the line.

To enable remote mode the wiring must first be connected (see page 8) to the line correctly. Once this is in place the 'Remote' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in remote mode the unit will start and stop automatically with the line, and the start/stop button on the unit will become inactive.

## Local Mode

If running independently to the line the system can be controlled to start/stop manually using the start/stop button.

To enable Local mode the 'Local' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in Local mode the system will not start/stop automatically with the line.

## Support

Contact information can be accessed using the 'Support' button

## Data Log

Total hours run and Filter information can be accessed using the 'Data Log' button

## Settings

Additional settings can be accessed using the 'Settings' button. This is for Meech Engineering use only and is password protected.

# VacClean System Specific Settings

fig. 16

When running with the VacClean system, the AHUv3 monitors and controls the vacuum pressure.

## Setting the pressure

The required pressure is adjusted using the '+' and '-' buttons on the main screen. The 'Set' target pressure value shown above the buttons will alter as the buttons are pressed, and the unit will self adjust to meet this requirement.

If the pressure control buttons are greyed out and the pressure needs to be adjusted, please contact Meech HQ for details on how to unlock the buttons.
The default vacuum pressure setting for VacClean system is 3.0kPa.

## Remote Mode

The AHUv3 can be controlled to start/stop remotely to allow the system to be integrated with the line.

To enable remote mode the wiring must first be connected (see page 8) to the line correctly. Once this is in place the 'Remote' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in remote mode the unit will start and stop automatically with the line, and the start/stop button on the unit will become inactive.

## Local Mode

If running independently to the line the system can be controlled to start/stop manually using the start/stop button.

To enable Local mode the 'Local' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in Local mode the system will not start/stop automatically with the line.

## Support

Contact information can be accessed using the 'Support' button

## Data Log

Total hours run and Filter information can be accessed using the 'Data Log' button

## Settings

Additional settings can be accessed using the 'Settings' button. This is for Meech Engineering use only and is password protected.

# ShearClean System Specific Settings

fig. 17



When running with the ShearClean system, the AHUv3 monitors and controls the vacuum pressure.

## Setting the pressure

The required pressure is adjusted using the '+' and '-' buttons on the main screen. The 'Set' target pressure value shown above the buttons will alter as the buttons are pressed, and the unit will self adjust to meet this requirement.

If the pressure control buttons are greyed out and the pressure needs to be adjusted, please contact Meech HQ for details on how to unlock the buttons.

The default vacuum pressure setting for ShearClean system is 2.0kPa.

## Remote Mode

The AHUv3 can be controlled to start/stop remotely to allow the system to be integrated with the line.

To enable remote mode the wiring must first be connected (see page 8) to the line correctly. Once this is in place the 'Remote' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in remote mode the unit will start and stop automatically with the line, and the start/stop button on the unit will become inactive.

## Local Mode

If running independently to the line the system can be controlled to start/stop manually using the start/stop button.

To enable Local mode the 'Local' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in Local mode the system will not start/stop automatically with the line.

## Support

Contact information can be accessed using the 'Support' button

## Data Log

Total hours run and Filter information can be accessed using the 'Data Log' button

## Settings

Additional settings can be accessed using the 'Settings' button. This is for Meech Engineering use only and is password protected.

# JetStream System Specific Settings


fig. 18

When running with the JetStream system, the AHUv3 monitors and controls the positive pressure.

## Setting the pressure

The required pressure is adjusted using the '+' and '-' buttons on the main screen. The 'Set' target pressure value shown above the buttons will alter as the buttons are pressed, and the unit will self adjust to meet this requirement.

If the pressure control buttons are greyed out and the pressure needs to be adjusted, please contact Meech HQ for details on how to unlock the buttons.

The default positive pressure setting for JetStream system is 3.0kPa.

## Remote Mode

The AHUv3 can be controlled to start/stop remotely to allow the system to be integrated with the line.

To enable remote mode the wiring must first be connected (see page 8) to the line correctly. Once this is in place the 'Remote' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in remote mode the unit will start and stop automatically with the line, and the start/stop button on the unit will become inactive.

## Local Mode

If running independently to the line the system can be controlled to start/stop manually using the start/stop button.

To enable Local mode the 'Local' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in Local mode the system will not start/stop automatically with the line.

## Support

Contact information can be accessed using the 'Support' button

## Data Log

Total hours run and Filter information can be accessed using the 'Data Log' button

## Settings

Additional settings can be accessed using the 'Settings' button. This is for Meech Engineering use only and is password protected.

# IonRinse™ System Specific Settings

fig. 20

When running with the IonRinse system, the AHUv3 monitors the vacuum and positive pressure and controls the positive pressure.

## Setting the pressure

The required pressure is adjusted using the '+' and '-' buttons on the main screen. The 'Set' target pressure value shown above the buttons will alter as the buttons are pressed, and the unit will self adjust to meet this requirement.

If the pressure control buttons are greyed out and the pressure needs to be adjusted, please contact Meech HQ for details on how to unlock the buttons.

The default positive pressure setting for IonRinse system is 2.0kPa.

## Remote Mode

The AHUv3 can be controlled to start/stop remotely to allow the system to be integrated with the line.

To enable remote mode the wiring must first be connected (see page 8) to the line correctly. Once this is in place the 'Remote' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in remote mode the unit will start and stop automatically with the line, and the start/stop button on the unit will become inactive.

## Local Mode

If running independently to the line the system can be controlled to start/stop manually using the start/stop button.

To enable Local mode the 'Local' button will need to be pressed which is located on the main screen – the button will turn blue when active.

When in Local mode the system will not start/stop automatically with the line.

## Support

Contact information can be accessed using the 'Support' button

## Data Log

Total hours run and Filter information can be accessed using the 'Data Log' button

## Settings

Additional settings can be accessed using the 'Settings' button. This is for Meech Engineering use only and is password protected.

# Trouble Shooting

In the unlikely event of a problem with your AHUv3 please contact your local representative, or Meech directly.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# CE Approval

An EC declaration of conformity for this product exists in respect of the Low Voltage Directive: 2014/35/EU (“LVD”) & Electromagnetic Compatibility Directive: 2014/30/EC (“EMCD”).

CE

# Repairs & Warranty

The AHUv3 is warranted by Meech Static Eliminators Ltd to the original purchaser against defects in material and workmanship for one year after purchase. Should any malfunction occur, please return the unit directly to Meech Static Eliminators or your local distributor. All products returned to the factory MUST be accompanied by a return authorisation number and must be shipped prepaid. For prompt service, ship the unit to the factory with the return authorisation number shown clearly on the label. Be sure it is well packed in a sturdy carton with shock absorbing material.

Include a note stating the nature of the problem as specifically as possible, and also include instructions for returning the unit to you. We will pay one-way return surface shipping costs on any repairs covered under the warranty.

Field repairs should never be undertaken. Attempts by unqualified personnel to repair the unit will invalidate the warranty.

# Declaration of Conformity

**Meech International**

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Fax: +44 (0) 1993 776977

email: sales@meech.com
web:www.meech.com

Equipment

## Air Handling Unit /
## Secondary Air Handling Unit

CE

### Applicable Harmonised standards

| | |
|---|---|
| LVD. | EN 61010-1:2010 |
| EMCD. | EN 61000-6-4:2007+A1:2011<br>EN 61000-6-2:2005<br>BS EN 61000-6-4:2007+A1:2011<br>BS EN 61000-3-2:2014<br>BS EN 61000-3-3:2013<br>EN 61000-6-1:2007<br>BS EN 61000-6-3:2007+A1:2011 |
| | BS EN ISO 12100:2010<br>BS EN ISO 12100:2010<br>BS EN 60204-1:2006+A1:2009<br>BS EN 13849-1:2015<br>BS EN 62061:2005+2015 |

### EC Council Directives

Low Voltage Directive
2014/35/EU (Technical File)

Electromagnetic Compatibility Directive
2014/30/EC (Technical File)

Machinery Directive
2006/42/EC (Technical File)

On behalf of the above named company, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.

J. Ferguson

.....
Jon Ferguson, Engineering Manager.

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