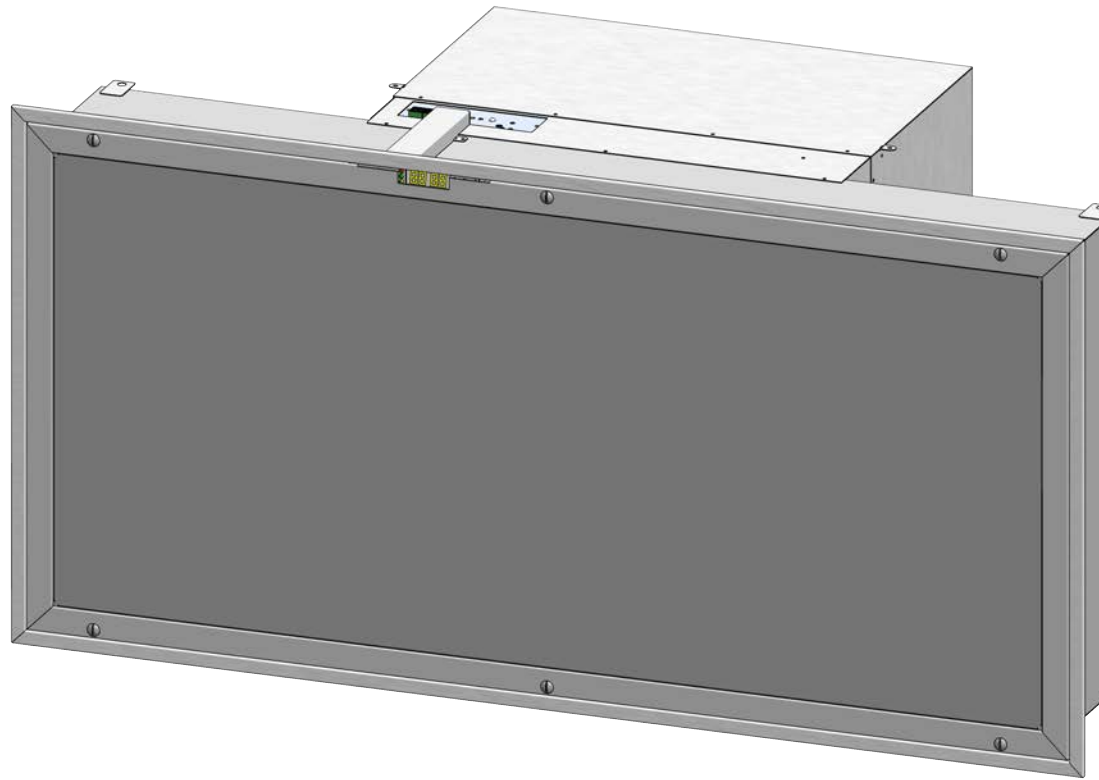


STAINLESS STEEL

CRITI-CLEAN ULTRA

REVERSE FLOW - FAN FILTER UNITS

READ COMPLETELY AND SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE



-These instructions cover fan filter unit models:
- SSLFHFD-FFU-RF-MEA (Motor/Electronics Accessible, room side access)



AJ Manufacturing

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www.AJmfg.com

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CHKD	PRODUCT SSLFHFD-FFU-RF-MEA	DRAWING NAME		SHT 1/27
APRVD 06/13/22	SIZE			SCL 1:8
				DO NOT SCALE

CRITI-CLEAN ULTRA

REVERSE FLOW - FAN FILTER UNITS

Critical operation conditions of the Fan Filter Unit

- DO NOT TOUCH the HEPA filter media. Damage to filter media may void the filter warranty. The screen is to protect against accidental contact with the filter. Never place objects on the filter. Always transport or lift the filter by its frame.
- Prior to powering the unit, verify that it is wired to the correct power supply. The rating plate label located on the electrical box shows the electrical data.
- For replacement parts refer to the model number and serial number on the rating plate label located on the electrical box.

Replacement Part numbers

FFU-RP11 - 48 x 24 x 3.5" High-Flow HEPA filter
 FFU-RP12 - 36 x 24 x 3.5" High Flow HEPA filter
 FFU-RP13- 24 x 24 x 3.5" High Flow HEPA filter
 FFU-RP14 - 14 x 14 x 3/8 Expanded aluminum pre-filter (2-ply)
 FFU-RP21 - Variable speed motorized impeller (120 VAC)
 FFU-RP22 -Variable speed motorized impeller (208, 240, 277 VAC)
 FFU-RP31 - Main control board
 FFU-RP32 - Airflow measure and display system
 FFU-RP33 - Face control/display board (board only)
 FFU-RP34 - 120 -- 24 VAC transformer
 FFU-RP35 - 208/240 -- 24 VAC transformer
 FFU-RP36 - 277 -- 24 VAC transformer
 FFU-RP37 - Network power control circuit board
 FFU-RP38 - PAO challenge system
 FFU-RP39 - Safety shut-off switch

FPH-RP40 - Resetable fuse (8A up to 240 VAC)
 FPH-RP41 - Fuse holder with fuse (5A @ 277 VAC)
 FPH-RP42 - Cartridge fuse (5A @ 277 VAC)

WHEN ORDERING REPLACEMENT PARTS, PLEASE INCLUDE UNIT MODEL & SERIAL NUMBER AND PO # IF AVAILABLE.



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CHKD	PRODUCT SSLFHFDD-FFU-RF-MEA	DRAWING NAME		SHT 2/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

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REVERSE FLOW - FAN FILTER UNITS

READ COMPLETELY AND SAVE THESE INSTRUCTIONS

WARNING - TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, ALLOW ONLY QUALIFIED TECHNICIANS TO INSTALL AND SERVICE THE UNIT. ALL PERSONS SHOULD OBSERVE THE FOLLOWING:

- a) Use this unit only in a manner intended by the manufacturer. If you have questions, contact the manufacturer.
- b) Before servicing or cleaning unit, switch power off at the servicepanel and lock-out the service in accordance with OSHA (LOTO) practices and procedures to prevent power from being accidentally switched on avoiding accidental electric shock and injury. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
- Installation work and electrical wiring must be completed by qualified personnel in accordance with all applicable codes and standards, to include fire-rated constructions.
 - When cutting or drilling into walls and ceilings, be careful not to damage electrical wiring and other hidden utilities.
 - If this unit is to be installed within close proximity to water, mark the unit in accordance with applicable codes and standards.
 - This unit is to be used only as intended by the manufacturer. If you have any questions regarding the use, installation, or operation of this unit, contact the manufacturer:

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8701 Elmwood Avenue; Suite 400
Kansas City, MO 64132
Tel: 816-231-5522



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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 3/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

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REVERSE FLOW - FAN FILTER UNITS

INSTALLATION CHECKLIST

This is to provide a general overview of what steps should be taken to achieve a successful installation of the fan filter unit. These steps should be performed in the order listed. For more detail see applicable section in this instruction manual. Read the entire manual before beginning installation.

- ☐ Prepare the installation site with appropriate power, data cabling, support structure, and openings as needed.
- ☐ Unbox and inspect the fan filter unit.
- ☐ Install the fan unit into the ceiling. Support its weight from structure above.
- ☐ Connect ductwork to fan unit (if applicable).
- ☐ Seal the fan filter unit to the ceiling using gasketing and caulking.
- ☐ If the unit is to be ducted, set upstream air device to produce 0.0" W.C. static pressure at the fan unit inlet.
Use dampers if necessary if installing multiple fan units on the same duct line.
- ☐ Verify incoming power matches the rating plate then connect main power wiring.
- ☐ Connect control wiring (if applicable).
- ☐ Run the unit and/or upstream air device to flush out construction debris.
- ☐ Install the pre-filter (if applicable).
- ☐ Install the HEPA/ULPA filter.
- ☐ Turn unit on and adjust airflow to design CFM.
- ☐ Turn on the upstream airflow device.
- ☐ Leak test the fan unit and filter per local codes and building procedures.
- ☐ Calibrate airflow sensor, if equipped, to flow hood.
- ☐ Install the perforated face screen.



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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 4/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

Installation

The terminal unit is fully assembled from the factory with the exception of the HEPA filter. Filter is shipped in a separate box.

Step 1 -- Carefully remove the unit from the shipping carton and inspect for damage that may have occurred during shipping. If shipping damage is found, do not install. Call the supplier to report damage.

Step 2 -- Wipe down unit to remove shipping dust and debris.

Step 3 -- Raise unit into position and secure using the hanger tabs. Alternately it can be secured a framed opening through the frame if care is taken not to damage the knife edge and all penetrations are sealed. Any gasket should be a closed-cell material approved for the environmental conditions. Sealant used to seal the unit to the ceiling should be approved for the application and conditions.

Step 4 -- A qualified technician should connect the unit to the appropriate power supply per applicable codes and standards. Verify circuit and rating plate voltages match. Refer to the wiring diagrams included in these instructions.
-FFU-RF-MEA units: the electrical box will be accessible from the room side.

SSLFHFD-FFU-120 --- 120 VAC SUPPLY, 2.8 FLA

SSLFHFD-FFU-208 --- 208 VAC SUPPLY, 2.6 FLA

SSLFHFD-FFU-240 --- 240 VAC SUPPLY, 2.3 FLA

SSLFHFD-FFU-277 --- 277 VAC SUPPLY, 1.9 FLA

Step 5 -- Blow out / clean entire duct system leading to unit to remove construction debris. This is especially important for motor accessible units as they do not have a pre-filter.

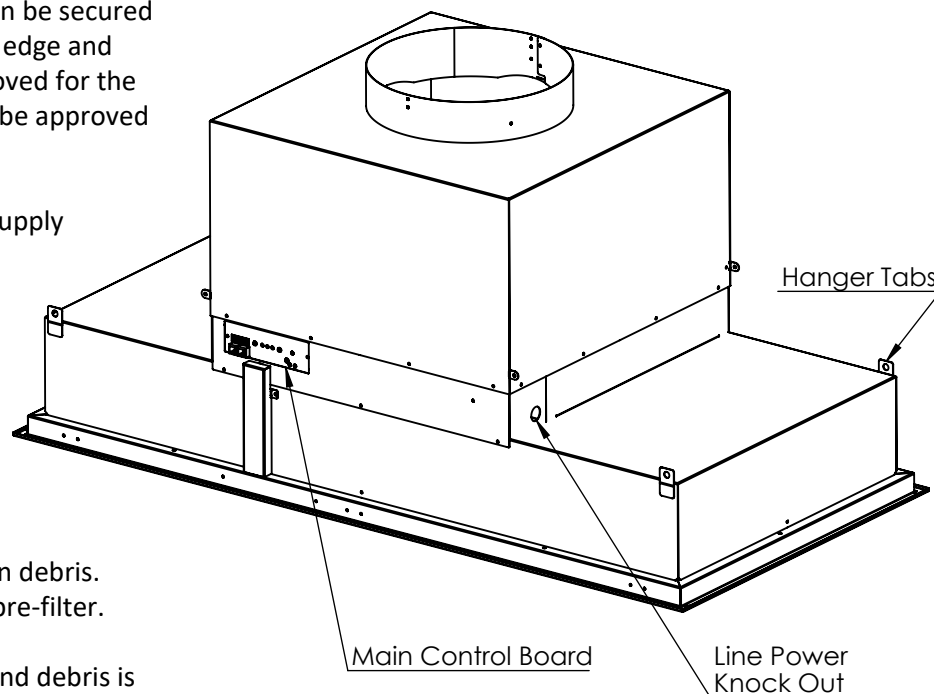
Step 6 -- The unit should be run tested to maximum flow to verify ducts are clear and debris is flushed. Control functions should be tested to verify setpoint can be changed and the fan started and stopped in the intended manner.

Step 7 -- Install the HEPA filter per the "Removal and Replacement of the HEPA Filter with Gel Seal" section.

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REVERSE FLOW - FAN FILTER UNITS

NOTE: An additional disconnect should be added by others per applicable codes and regulations.



NOTE: FOR DUCTED INSTALLATIONS, IT IS RECOMMENDED THAT PRIMARY AIR BALANCING TO ACHIEVE 0.0"WC INLET STATIC PRESSURE BE DONE BEFORE FAN FILTER UNIT IS CONNECTED TO DUCT SYTEM.



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CHKD	PRODUCT SSLFHFD-FFU-RF-MEA	DRAWING NAME		SHT 5/27
APRVD 06/13/22	SIZE			SCL 1:11
				DO NOT SCALE

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REVERSE FLOW - FAN FILTER UNITS

A NOTE ABOUT VAV BOXES AND DUCTED APPLICATIONS

In applications where the fan filter unit will be installed downstream of variable airflow devices such as VAV boxes, air valves, or variable air handlers, proper care in unit set-up needs to be taken.

In these applications the unit should not be programed to run as constant airflow when ordered with the Airflow Sensor.

Two variable controllers trying to reach their respective set point will continuously adjust. This will cause issues such as surging, starving, and eventual shut down of the fan filter unit. In these applications the unit should be placed into "open-loop" control by turning off the S1-1 dip switch (see pict below). This will no longer keep constant airflow automatically. It will also remove the dirty filter ramp-up feature and the HEPA-lert dirty filter indicator (if applicable) will be set as a static timer of 4400 hours (about 6 months). The set point will now be a percentage of motor speed instead of CFM but it will still display CFM during normal operation. The unit in this setting is still preferable to a PSC system due to the energy efficiency of an ECM versus a PSC motor and all control options are still applicable.

DUCTED APPLICATIONS

If ordered with the Airflow Sensor option the condition immediately before the inlet can impact the CFM reading. Use the "C" up and down arrows on the face control to calibrate the airflow sensor to match the balancer's flow hood to insure accurate airflow control. This calibration is best done as near to the operating point as possible. Recalibration may be required if the setpoint changes more than 25%. In extreme cases the inlet conditions may not be able to be compensated for using the calibration adjustment. In these cases CFM controlled operation may have to be forfit and the unit run in open-loop mode.

S1-1



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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 6/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

STAINLESS STEEL

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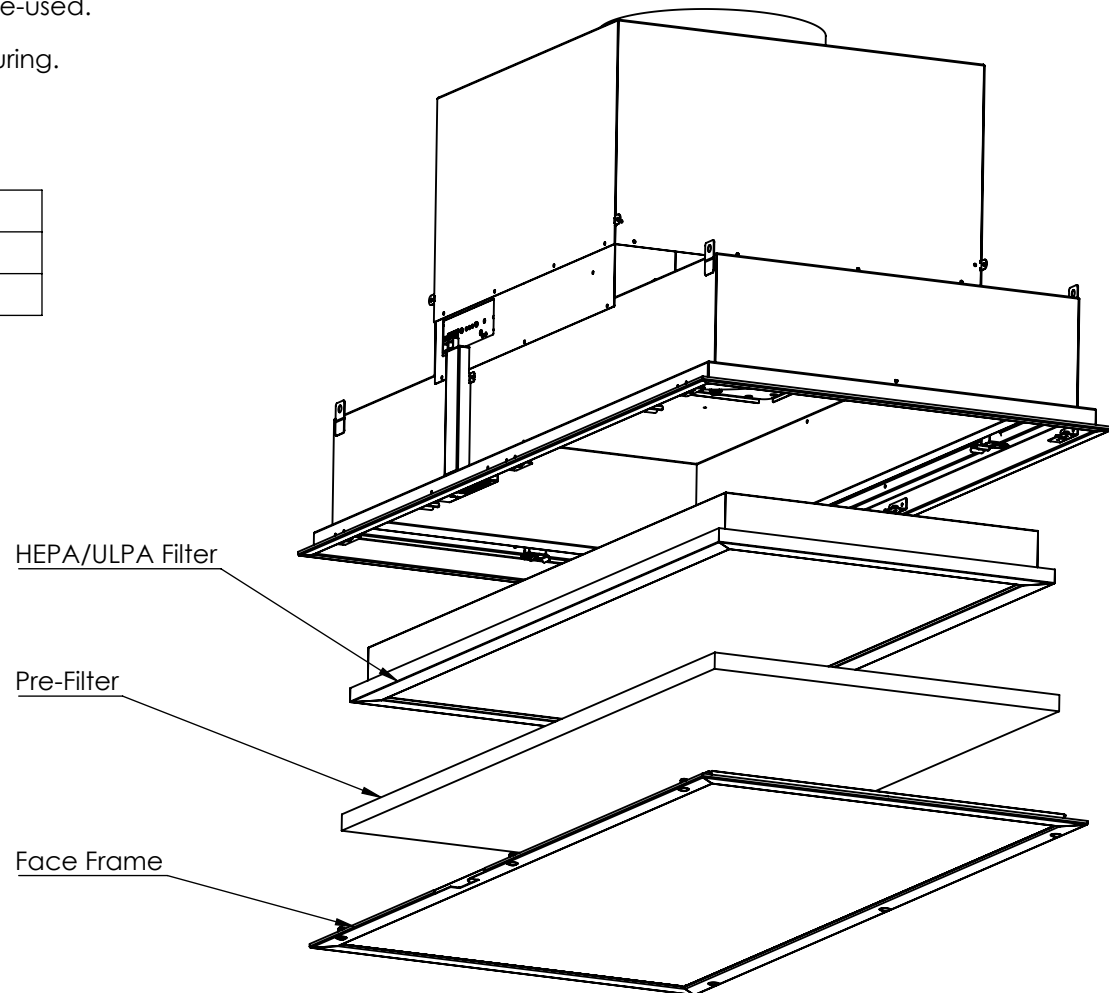
REVERSE FLOW - FAN FILTER UNITS

Reverse Flow Fan Filter Unit Pre-filter

The unit ships with a frameless disposable pre-filter between the face and the HEPA filter.
 *It is Not recommended that this filter be washed or re-used.

Replacement filters are available from AJ Manufacturing.

NOMINAL UNIT SIZE	PART NUMBER
48 x 24	U4A1
24 x 24	U4A2



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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 7/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

Removal and Replacement of the HEPA Filter with Gel Seal

WARNING!

Disconnect the unit from the electrical power source before attempting to service the unit.

WARNING!

The HEPA filter may be protected by an expanded metal screen. The screen prevents accidental contact with the filter media.

It is not meant to allow handling of the filter by the media. Handle the filter **ONLY** by the frame.

NOTE: The manufacturer recommends two people to remove and install the HEPA filter in the unit.

Step 1 -- Using a flat screwdriver, release the face frame by rotating the fasteners a 1/4-turn counter clock-wise. Unhook the safety cables from the filter clips. Set the frame aside.

Step 2 -- Turn the unit off with the switch located on the face of the unit (round, black button).

Step 3 -- Disconnect the unit at the power source or at the service panel in accordance with OSHA (LOTO) practices and procedures.

Step 4 -- USE TWO PEOPLE TO SUPPORT THE FILTER and rotate the swingarm filter clips off of the filter until clip is clear of the filter.

Step 4 ALT (if stud style filter clips) -- Using a 7/16" nut-driver, evenly loosen the nuts holding the filter retaining clips by working your way around the unit loosening the nuts a little at a time. To make installing the new filter easier, loosen the nuts until flush with the end of the threaded stud. USE TWO PEOPLE TO SUPPORT THE FILTER and rotate the filter clips toward the offset hole until clip is clear of the filter.

Step 5 -- Allow gravity to pull the filter away from the unit. If installing a new filter discard the filter in an appropriate manner.

Step 6 -- Unpack the new filter and inspect for shipping damage. If damage is found, do not install in unit; call the vendor for replacement arrangements.

Step 7 -- Using two people, raise the filter into place in between the filter guides (or threaded posts if stud style) assuring the seal edge is approximately in the center of the gel channel.

Step 8 -- While supporting the filter by its frame, rotate the filter clips so that the clips are supporting the frame and are at 90° to the frame. (ALT--Evenly tighten the nuts by working your way around the unit tightening the nuts a little at a time. Stop tightening when the aluminum filter frame contacts the stainless steel housing frame of the unit. **DO NOT OVER TIGHTEN**). Wait at least 30 minutes before performing any challenge testing to allow the gel to fully adhere to the unit.

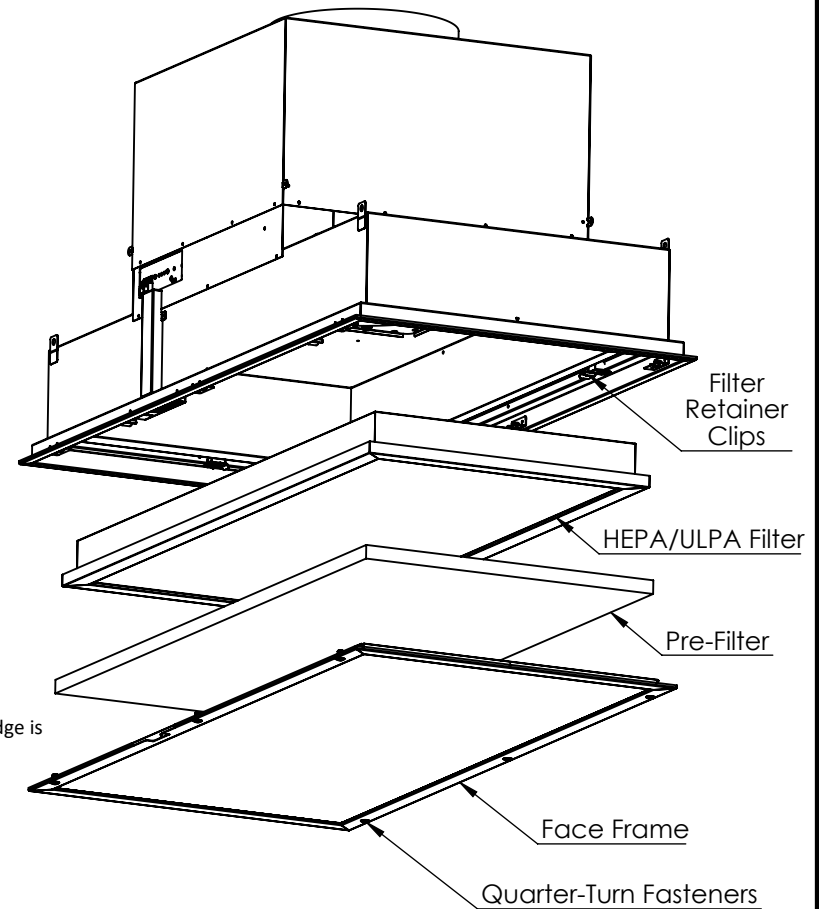
Step 9 -- Inspect all gaskets and seals for integrity. Reconnect power and turn unit power on.

Step 10 -- Raise the face frame back into place, reattach the safety chains, and secure 1/4-turn fasteners.

STAINLESS STEEL

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REVERSE FLOW - FAN FILTER UNITS



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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 8/27
APRVD 06/13/22	SIZE			SCL 1:12
				DO NOT SCALE

Removal and Installation of the Variable Speed Motor (SSLFHD-FFU-RF-MEA)

WARNING!

Disconnect the unit from the electrical power source before attempting to service the unit.

Step 1 -- Using a flat screwdriver, release the face frame by rotating the fasteners a 1/4-turn counter clockwise. Unhook the safety cables from the filter clips. Set the frame aside.

Step 2 -- Turn the unit off with the black button located on the face of the unit next to the display.

Step 3 -- Disconnect the unit at the power source or at the service panel in accordance with OSHA (LOTO) practices and procedures.

Step 4 -- Remove the HEPA filter and set aside. See sections 2 and 3 for instructions.

Step 5 -- If equipped with an Airflow Sensor, make note of the plug into the sensor. Cut any zip-ties holding the wire to the sensor bracket. Unplug the wire and move out of the way.

Step 6 -- Support the weight of the fan assembly and use a 7/16" driver to remove the eight (8) motor mount plate screws.

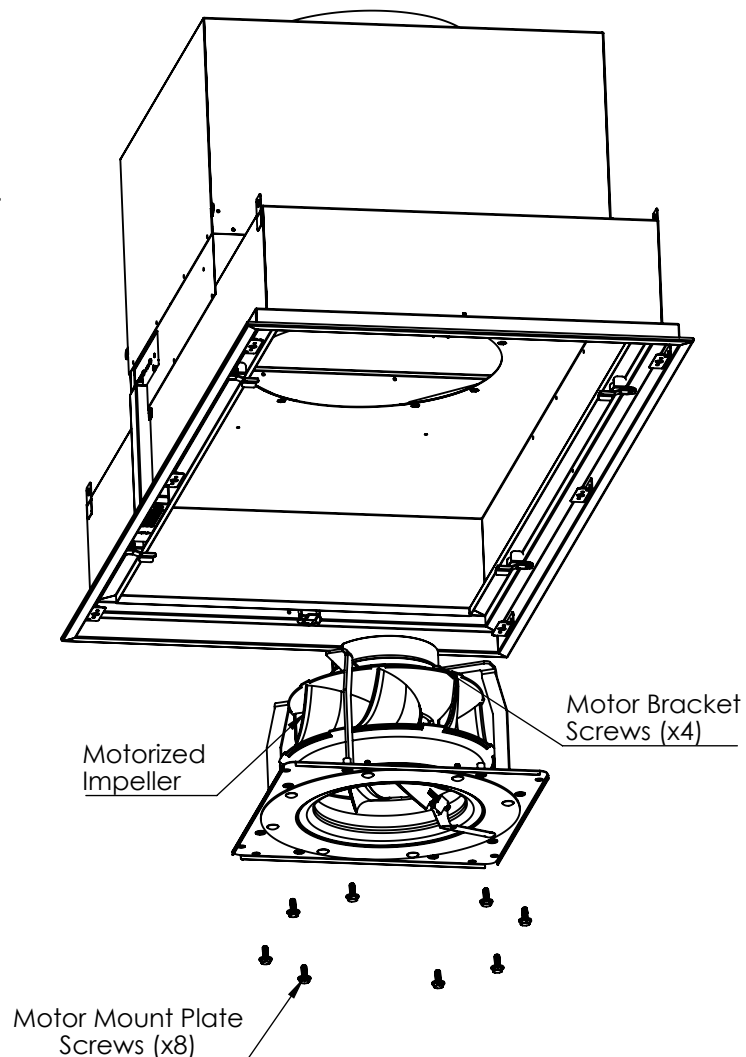
Step 7 -- Carefully lower the motor assembly and disconnect the 3-pin power plug and the 4-pin data plug.

Step 8 -- Remove the assembly from the unit. Remove the nuts holding the motor brackets to the motor plate.

Step 9 -- Use a 4mm hex driver to remove the four (4) screws holding the motor brackets to the motor.

Step 10 -- Reverse above steps to reassemble the motor/fan/ring assembly into the unit.

STAINLESS STEEL CRITI-CLEAN ULTRA REVERSE FLOW - FAN FILTER UNITS



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06/13/22

CATEGORY
CRITI-CLEAN ULTRA INSTALLATION MANUAL

PRODUCT
SSLFHD-FFU-RF-MEA

SIZE

TAG

DRAWING NAME

QTY

REV # F

SHT 9/27

SCL 1:10

DO NOT
SCALE

STAINLESS STEEL

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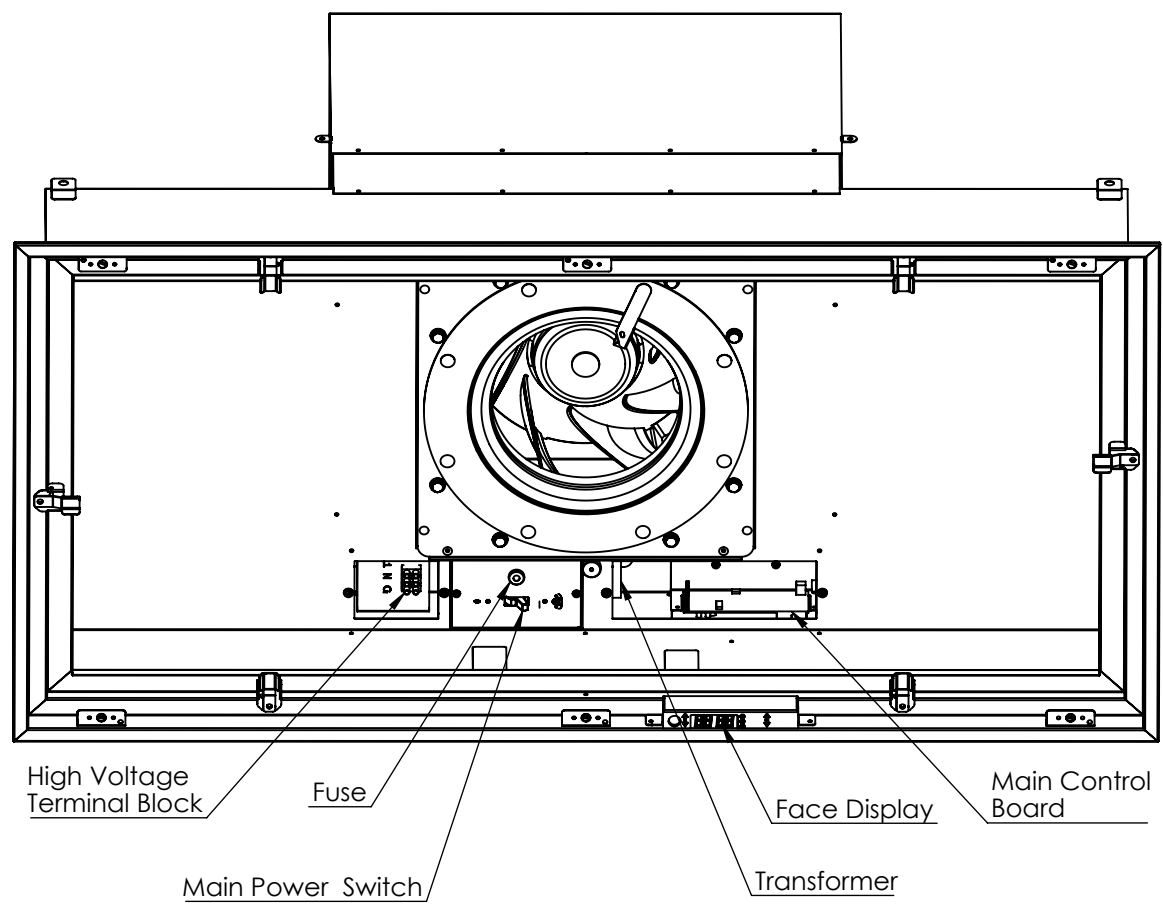
REVERSE FLOW - FAN FILTER UNITS

Access to Electrical Components (SSLFHFD-FFU-RF-MEA)

WARNING!

Disconnect the unit from the electrical power source before attempting to service the unit.

- Turn the unit off with the main power switch located on the electrical box.
- Disconnect the unit at the power source or at the service panel in accordance with OSHA (LOTO) practices and procedures.



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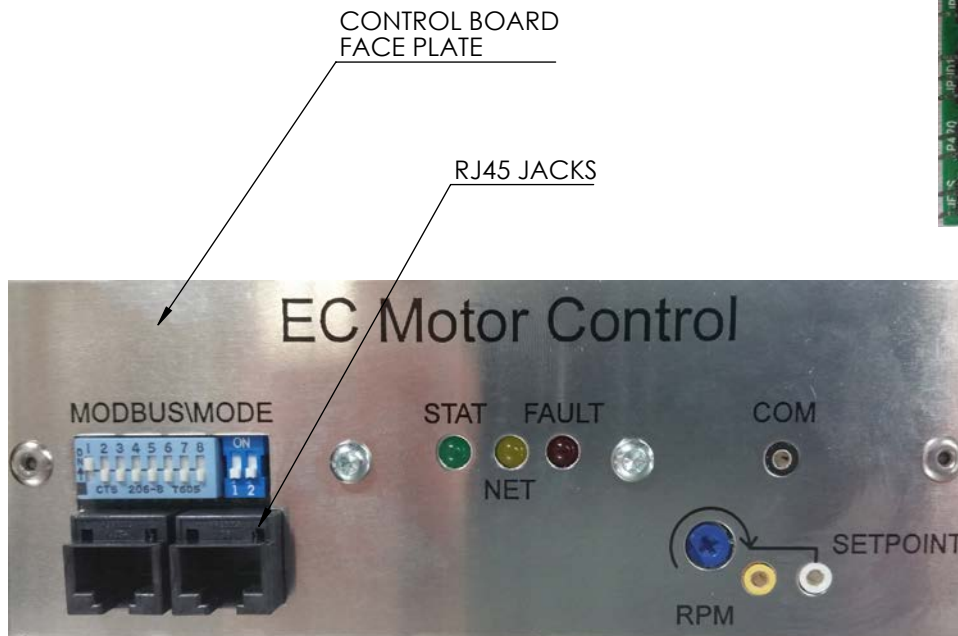
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CHKD	PRODUCT SSLFHFD-FFU-RF-MEA	DRAWING NAME		SHT 10/27
APRVD 06/13/22	SIZE			SCL 1:8
				DO NOT SCALE

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REVERSE FLOW - FAN FILTER UNITS

Disconnect the unit from the electrical power source before attempting to service the unit.

-
- MOTOR PLUG
- POWER TERMINAL BLOCK
- FACE DISPLAY/CONTROL BOARD PLUG

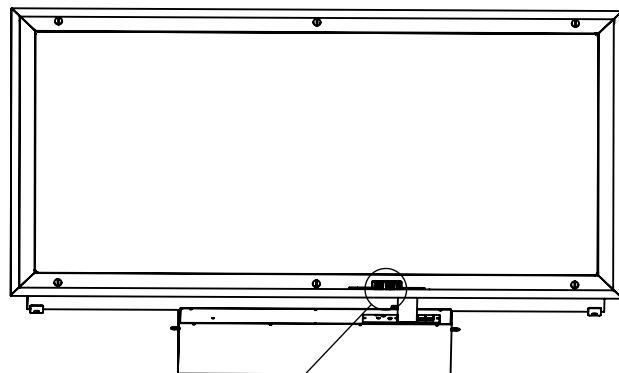


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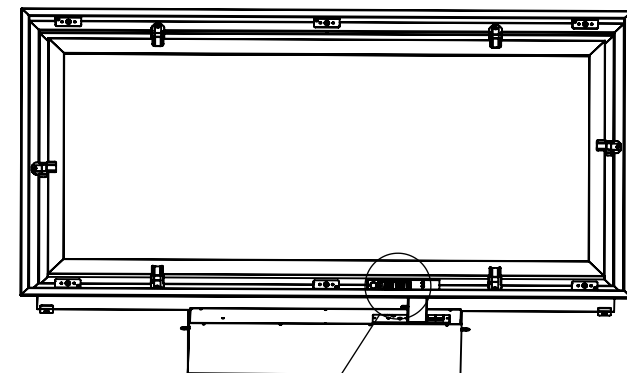
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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 11/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

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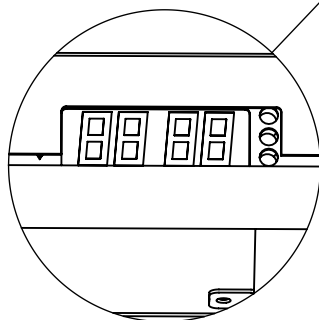
REVERSE FLOW - FAN FILTER UNITS



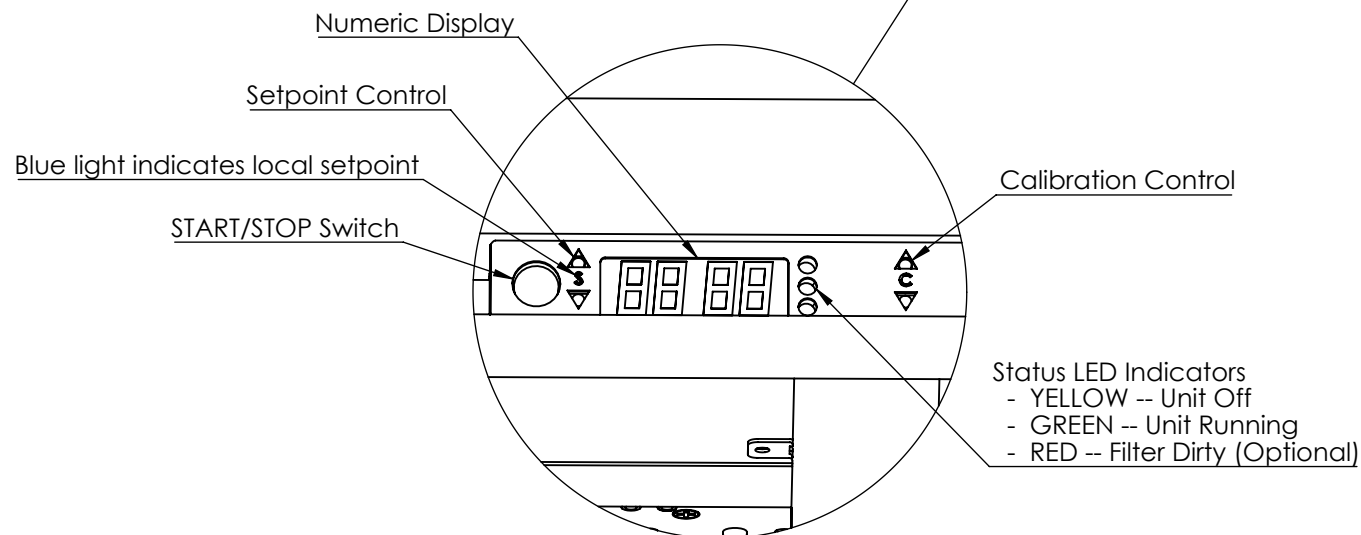
FACE FRAME INSTALLED



FACE FRAME REMOVED



NOTE: ON/OFF SWITCH AND
DIGITAL CONTROL ARE HIDDEN
WHEN FACE FRAME IS IN PLACE.



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CATEGORY
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PRODUCT
SSLFHFDF-FU-RF-MEA

SIZE

TAG

QTY

DRAWING NAME

REV # F

SHT 12/27

SCL 1:15

DO NOT
SCALE

FUSE

Each fan filter is equipped with an 8 Amp resettable or 5 Amp cartridge fuse to protect the unit from electrical spikes. The fuse is located in the electrical box accessible behind the filter.

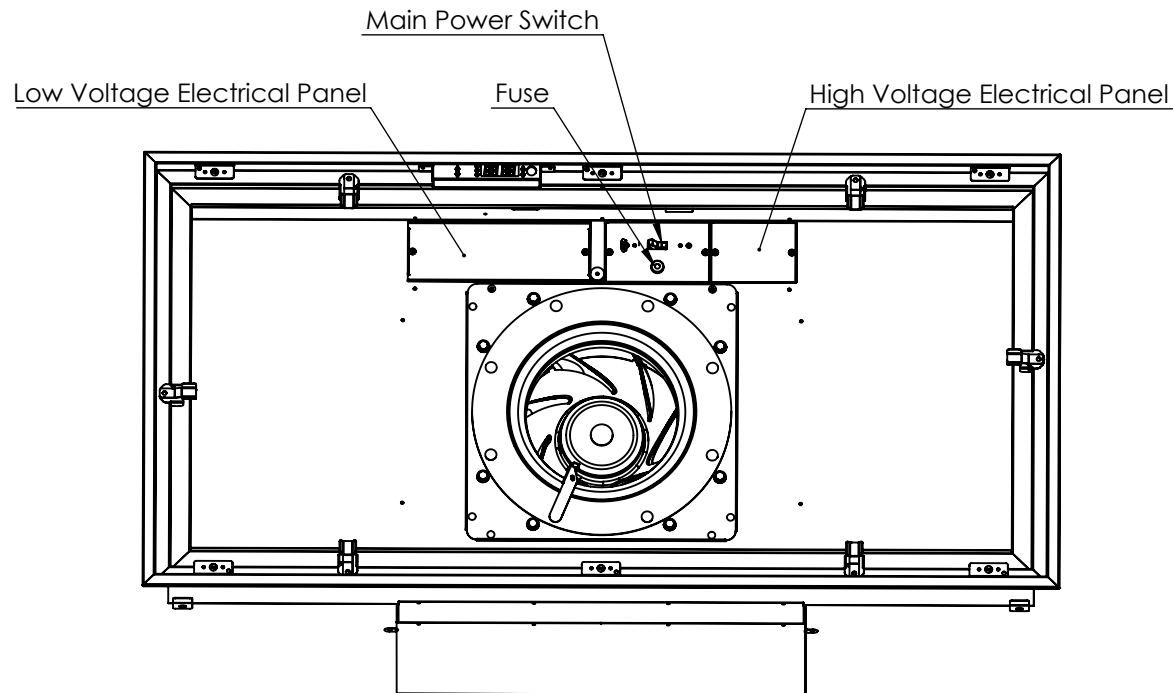
NOTE: Before servicing fuse, cut power to the unit at the disconnect. Turning off the main power switch will not disconnect power from the fuse.

The cartridge fuse can be removed by turning the fuse holder counterclockwise a 1/4-turn. Remove the fuse from the fuse holder and discard. Insert new fuse and replace fuse holder.

NOTE: 277VAC units have a 5 A cartridge fuse. Others have a 8 A resettable fuse.

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REVERSE FLOW - FAN FILTER UNITS



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CATEGORY
CRITI-CLEAN ULTRA INSTALLATION MANUAL

PRODUCT
SSLFHFDF-FU-RF-MEA

SIZE

TAG

QTY

REV # F

SHT 13/27

SCL 1:10

DRAWING NAME

DO NOT
SCALE

CONTROLS

The fan filter unit can be controlled through various inputs:

1. Local setpoint control (blue light behind S will be lit on face display)
 - Adjust airflow from the face. When adjusting the setpoint will be displayed and the four decimal points will be lit to indicate setpoint.
 - Local setpoint, no face display. If not equipped with a face display and locally controlled, the POT on the EC Motor Control Board is used.
 - To toggle between local control and external control hold the Start/Stop button for 10 seconds. When released the blue light will change.
2. Individual unit wall mounted control (must be determined before ordering)
3. 0 - 10V/0 - 5V DC Control
4. 0 - 20mA/4 - 20mA Control
5. Full range of network controls including connection to BAS/BMS through MODBUS RTU RS485 control
 - BACNet IP, BACNet MS/TP, & LONWorks available with additional hardware

Additionally, monitoring and control of the FFU can be done through closed loop control from sensors such as pressure transducers, thermostats, particle counters, etc.

This manual will give basic information on how to connect controls and sensors to the unit. For more details refer to the instructions included with the controller or sensors.

SIGNAL BEHAVIOUR

The Network CFM Setpoint is read and written directly in units of CFM.

External analog signals are scaled to a minimum and maximum airflow when in CFM control mode.
IE: 0-5VDC 2.5VDC=0.5 of full range. = 0.5*unit maximum CFM.

When operated from an external setpoint or network value 0-10% is reserved for local over-ride of the EC Motor Control board POT so the unit can be adjusted from the main control board. 10%-20% is reserved for the remote Off Signal.

INP1/ANA1 Input		Control Function: % of Input Range		
Range	Units	ECM Control Pot 0-10%	Remote Off 10-20%	External Setpoint 20-100%
0-5	Volts	0 to 0.5	0.5 to 1.0	1.0 to 5.0
0-10	Volts	0 to 1.0	1.0 to 2.0	2.0 to 10.0
0-20	mA	0 to 2.0	2.0 to 4.0	2.0 to 20.0
4-20	mA	0 to 5.6	5.6 to 7.2	7.2 to 20.0



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CHKD	PRODUCT SSLFHFD-FFU-RF-MEA	DRAWING NAME		SHT 14/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

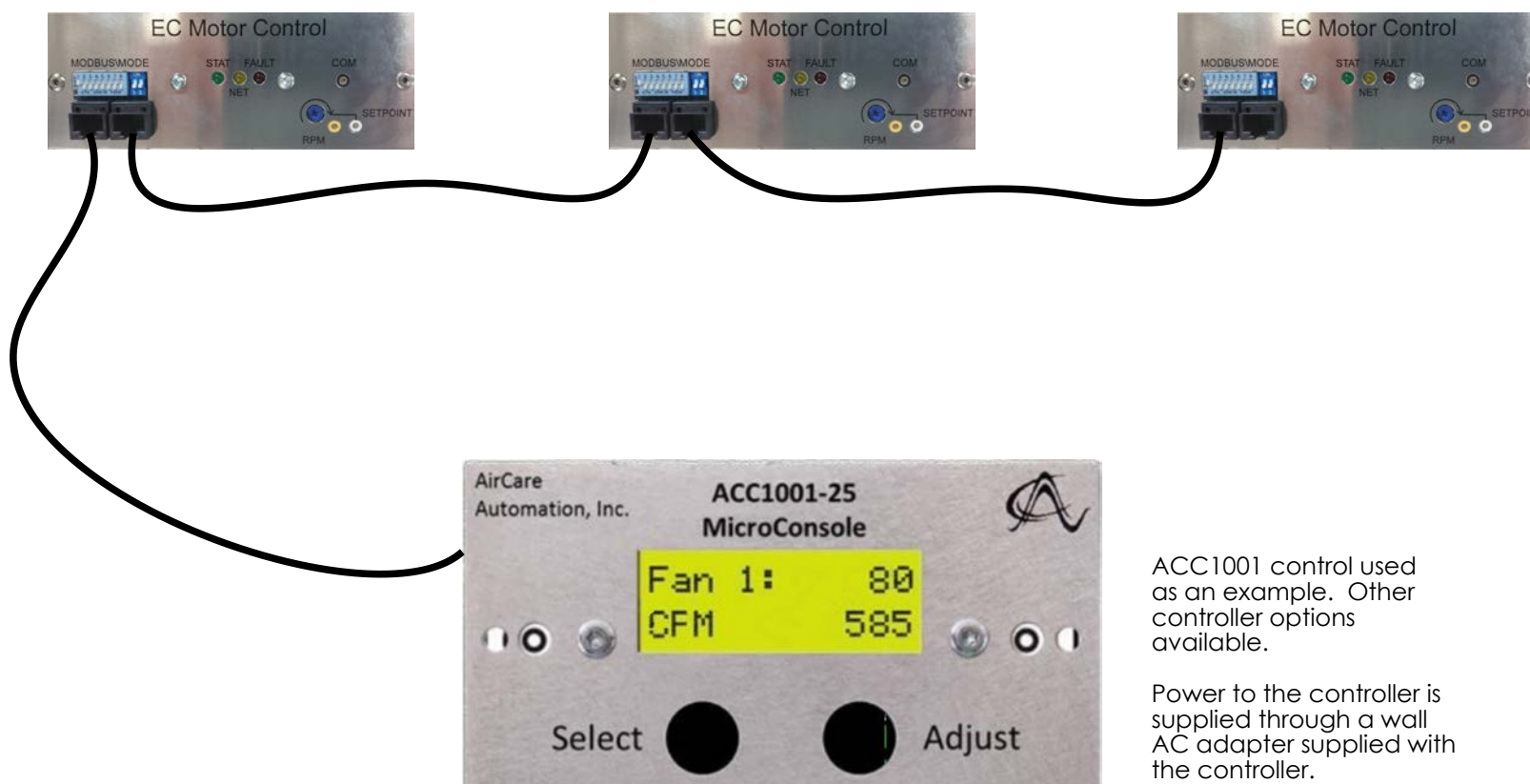
NETWORKING

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REVERSE FLOW - FAN FILTER UNITS

When networking the fan filter units either in a local area network (LAN) or connecting to a BAS/BMS system, each unit is connected in a "straight-through" daisy-chain using Cat5e or Cat6 network cables and the on-board RJ45 connectors.

If field cutting network cables, it is important for each end of the cable to be wired identically. However, assembled network cable are available; field assembled cables are the leading cause of problems in new systems.



ACC1001 control used as an example. Other controller options available.

Power to the controller is supplied through a wall AC adapter supplied with the controller.



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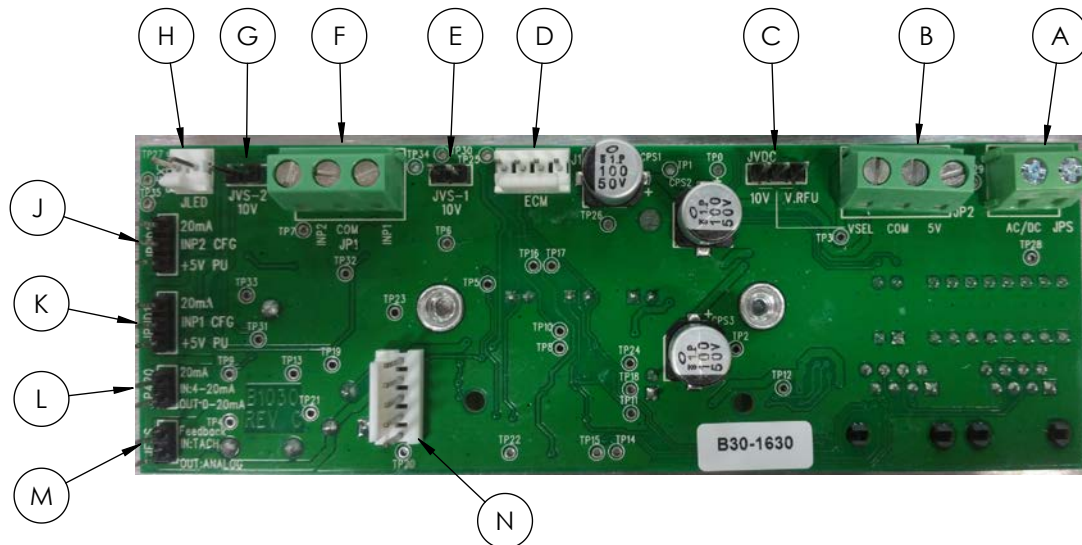
DRAWN BRS/SLG	CATEGORY CRITI-CLEAN ULTRA INSTALLATION MANUAL	TAG	QTY	REV # F
CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 15/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

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REVERSE FLOW - FAN FILTER UNITS



1. RJ45 Dual Jacks
2. Modbus Address DIP Switches
3. S1-1 and S1-2 Configuration DIP Switches
4. STATUS LED
5. NET LED (network activity)
6. FAULT LED
7. Multimeter Common
8. Multimeter Setpoint as mVDC
9. Multimeter CFM as mVDC
10. Onboard Setpoint Potentiometer



- A. JPS: Bias input power, isolated
- B. JP2: Accessory output voltages
- C. JVDC: Selector for 10V regulated or unregulated rectified and filtered bus voltage
- D. J1: EC Motor Port
- E. JVS-1: INP1 10V signal range selector
- F. JP1: INP1 and INP2 analog/digital inputs
- G. JVS-2: INP2 10V signal range selector
- H. JLED: External FAULT output
- J. JPUD2: INP2 digital input pull-up or 20mA signal format selector
- K. JPUD1: INP1 digital input pull-up or 20mA signal format selector
- L. JP420: 0-20mA or 4-20mA signal format selector
- M. JFBS: TACH or Analog 2 feedback signal selector
- N. Aux Board Port



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DRAWN BRS/SLG	CATEGORY CRITI-CLEAN ULTRA INSTALLATION MANUAL	TAG	QTY	REV # F
CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 16/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

NETWORKING

CRITI-CLEAN ULTRA REVERSE FLOW - FAN FILTER UNITS

DIP SWITCH SETTINGS

Each fan filter unit in a network must be set to a unique address between 1 and 247. Addresses 248- 255 are declared reserved per MODBUS protocol. A DIP switch block of eight switches are used for addressing. The control board supports Modbus Broadcast Address Zero for single and multiple register write commands (Modbus Function Codes 6 and 16).

Address settings are checked by the board controller only at power-up, so power must be cycled before any changes take effect.

Analog input setpoint modes preserve the ability to monitor and modify register values using a suitable controller console or PLC.

Therefore, addressing may be relevant for configuration, monitoring and/or troubleshooting even when units are intended to be used with analog setpoint input.

Address Selection

When adjusted to the ON position, each DIP switch pole represents a value as follows:

DIP Switch Pole	Value
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128

Calculate the address value of existing switch settings by adding the values of each DIP switch pole in the ON position, per the table at left.

Construct switch settings for a desired address value by successively subtracting the largest pole value that is less than the desired address value, repeating with each remainder until the remainder is zero. An example is provided below.

Example: Desired address is 114

$$114 - 64 = 50 \quad \text{SW1-7 ON}$$

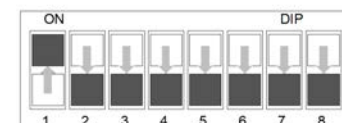
$$50 - 32 = 18 \quad \text{SW1-6 ON}$$

$$18 - 16 = 2 \quad \text{SW1-5 ON}$$

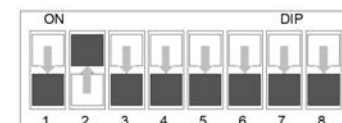
$$2 - 2 = 0 \quad \text{SW1-2 ON}$$

$$64 + 32 + 16 + 2 = 114$$

*See page 26 for more examples



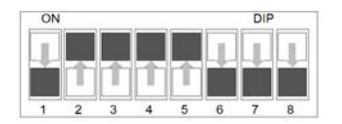
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2



3



30



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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 17/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

STAINLESS STEEL

CRITI-CLEAN ULTRA

REVERSE FLOW - FAN FILTER UNITS

CONFIGURATION DIP SWITCHES S1-1 & S1-2

Switch	S1-1	S1-2
	Control Loop Mode	Setpoint Source
OFF	Open-Loop Control	Analog Setpoint
ON	Closed-Loop Control	Network Setpoint

Open-Loop -- Fan filter unit is controlled by a controller, i.e. on-board potentiometer or network controller.

Closed-Loop -- A sensor is used to maintain airflow, i.e. room pressure, roomtemp, or a particle counter.

Analog Setpoint -- Unit is controlled with an analog controller, i.e. on-board potentiometer or individual wall mounted controller (must be determined before ordering)

Network Setpoint -- Unit is controlled with a networked controller, i.e. ACC1 or ACM7052 touchscreen controller

SENSOR SHUNT TABLES

Shunt	JP420	JFBS	JVS-1*	JVS-2*
OUT	0 - 20mA	ANALOG	0 - 5VDC	0 - 5VDC
IN	4 - 20mA	N/A	0 - 10VDC	0 - 10VDC

*Leave shunt out if using a 0-20mA or 4-20mA sensor.

Shunt Table for JP1 wiring block

Center Pin to...	JPUD1:INP1	JPUD2:INP2
No connection	ANALOG 5V or 10V	ANALOG 5V or 10V
20mA	ANALOG 20mA	ANALOG 20mA
+5V PU	DIGITAL 10kΩ pull-up TO 5V	DIGITAL 10kΩ pull-up TO 5V

Shunt Table for JP2 wiring block

Center Pin to...	JVDC
No Connection	VSEL = no connection; open
10V	VSEL = 10V regulated
V.RFU	VSEL = DC filtered, unregulated, ~33VDC

NOTES:

- JP1 is for signal input
- JP2 is for output power
 - connect COM/5V --> 5V power supplied
 - connect COM/VSEL with 10V shunt --> 10V power supplied
 - connect COM/VSEL with V.RFU shunt --> Full wave rectified power supplied (~33VDC)
- INP1 on JP1 wiring block is for monitoring only
 - 0 - 10VDC
 - 0 - 5VDC
 - 0 - 20mA
 - 4 - 20mA
- INP2 on JP1 wiring block is for closed-loop feedback or monitoring
 - Controlling airflow by room pressure or particle counter



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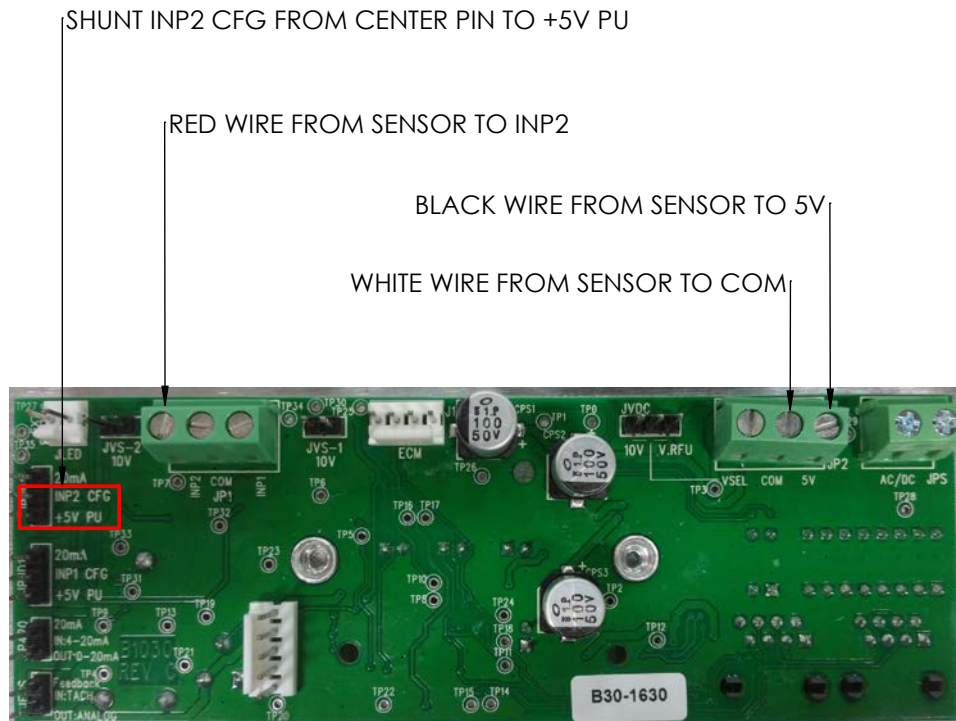
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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 18/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

AIRFLOW SENSOR WIRING

STAINLESS STEEL

CRITI-CLEAN ULTRA

REVERSE FLOW - FAN FILTER UNITS



Switch	S1-1	S1-2
	Control Loop Mode	Setpoint Source
OFF	Open-Loop Control	Analog Setpoint
ON	Closed-Loop Control	Network Setpoint



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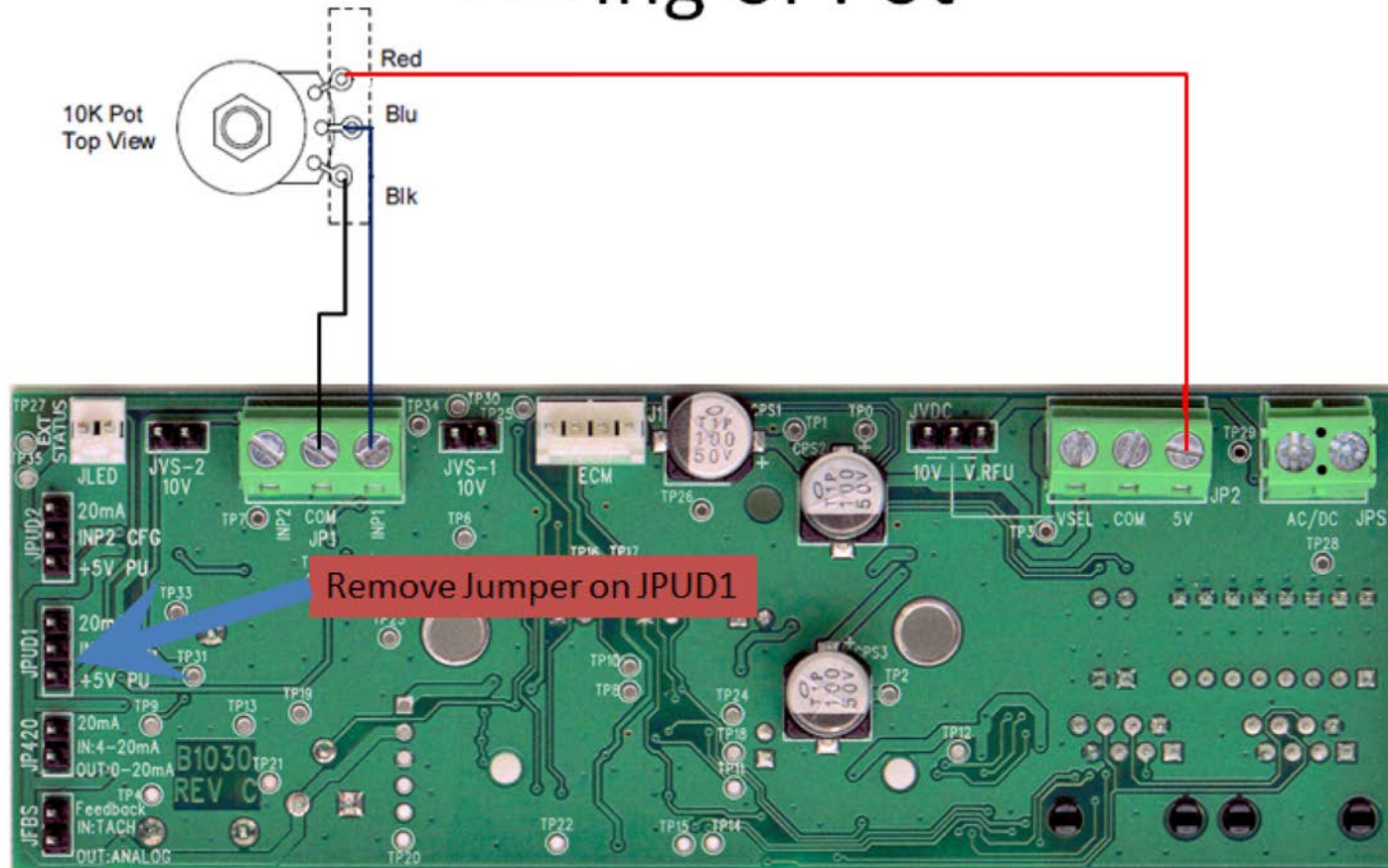
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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 19/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

WIRING A REMOTE MOUNTED POT TO CONTROL BOARD

CRITI-CLEAN ULTRA
REVERSE FLOW - FAN FILTER UNITS

Wiring of Pot



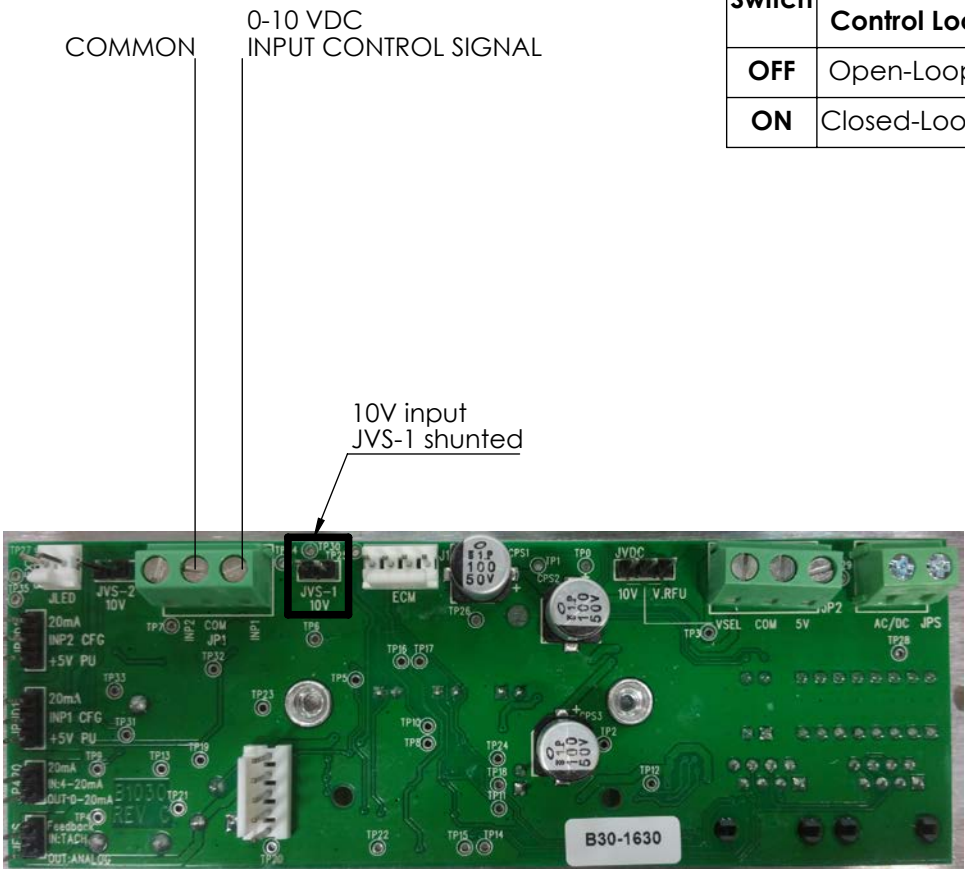
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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 20/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

WIRING OF 0 -10 VDC INPUT SIGNAL TO
CONTROL FAN SPEED

CRITI-CLEAN ULTRA
REVERSE FLOW - FAN FILTER UNITS

Switch	S1-1	S1-2
	Control Loop Mode	Setpoint Source
OFF	Open-Loop Control	Analog Setpoint
ON	Closed-Loop Control	Network Setpoint



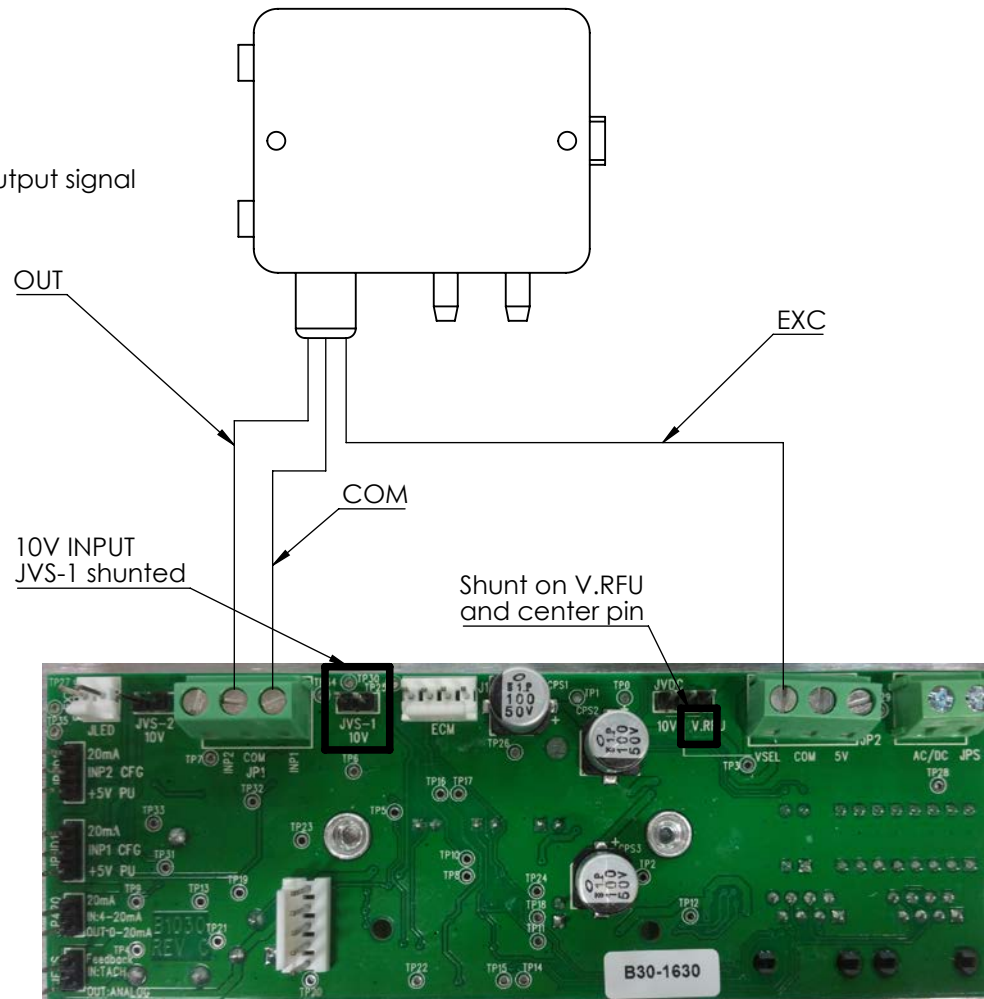
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DRAWN BRS/SLG	CATEGORY CRITI-CLEAN ULTRA INSTALLATION MANUAL	TAG	QTY	REV # F
CHKD	PRODUCT SSLFHFD-FFU-RF-MEA	DRAWING NAME		SHT 21/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

EXAMPLE OF WIRING A PRESSURE TRANSDUCER TO CONTROL BOARD FOR FEEDBACK OR MONITORING THROUGH CONTROLLER

CRITI-CLEAN ULTRA
REVERSE FLOW - FAN FILTER UNITS

- Pressure transducer provides 0-10VDC output signal
- Powered by ~33VDC supply



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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 22/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

CRITI-CLEAN ULTRA

REVERSE FLOW - FAN FILTER UNITS

-
- Provides 4-20mA output signal
- Shunt on V.RFU and center pin
- Shunt Middle and 20mA
- B30-1630



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CHKD	PRODUCT SSLFHFDF-FU-RF-MEA	DRAWING NAME		SHT 23/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

STAINLESS STEEL

CRITI-CLEAN ULTRA

REVERSE FLOW - FAN FILTER UNITS

Testing

Each fan filter unit is thoroughly tested at the factory before shipment. However, many codes and standards require testing for bypass leakage after installation. The manufacturer encourages that the customer contact an independent, certified testing organization with technicians that are trained and experienced in performance, evaluation, and maintenance of clean air equipment.

The manufacturer recommends at least 30 minutes elapse after HEPA/ULPA filter installation before performing any type of challenge leak testing. The unit should be sealed to the ceiling and the room should have a positive pressure held during testing and normal operation.

Trouble Shooting

Low Airflow

- If optional red HEPA-lert LED light is on, replace the HEPA filter.
- Inspect the pre-filter. Clean or replace as necessary.
- Adjust the digital speed control for higher airflow output.
- Check the power supply for proper voltage, amperage, and distribution frequency
- Verify dip switches are correct for type of controls used.
- Replace HEPA filter if airflow remains low.

High Airflow

- Adjust digital speed control for lower output.
- Verify dip switches are correct for type of controls used.

Non-Laminar Airflow and/or Excessive Contamination

- Ensure that upstream airstream is clear of large obstructions.
- Ensure that no other air moving devices are operating in such a way to disrupt the room's airflow pattern.
- Check airflow and if not desired airflow see above.
- Conduct smoke or photometer test on HEPA filter and gel seal. Seal or replace the HEPA filter as necessary.



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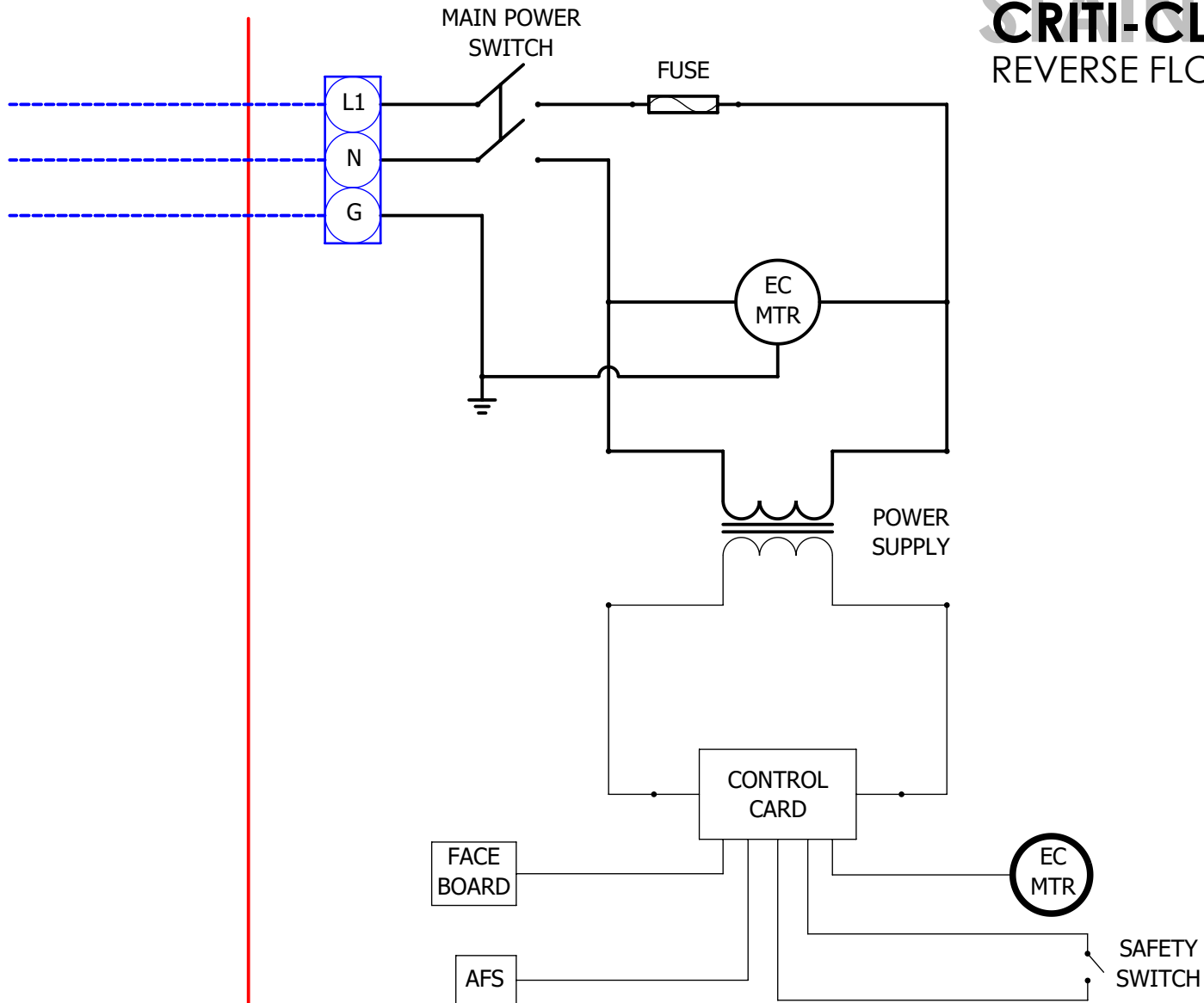
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CHKD	PRODUCT SSLFHFDD-FFU-RF-MEA	DRAWING NAME		SHT 24/27
APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE

CHASSIS

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REVERSE FLOW - FAN FILTER UNITS



- HV WIRING BY OTHERS
- HV WIRING BY AJ MFG
- LV WIRING BY AJ MFG



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DRAWN
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APRVD
06/13/22

CATEGORY
CRITI-CLEAN ULTRA INSTALLATION MANUAL

PRODUCT
SSLFHFDF-FU-RF-MEA

SIZE

TAG

QTY

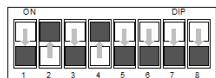
REV # F

SHT 25/27

DRAWING NAME

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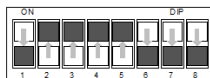
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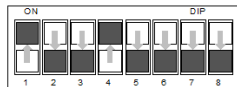
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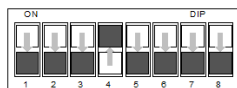
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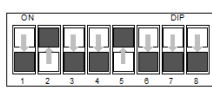
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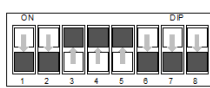
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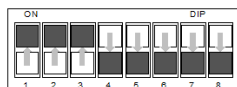
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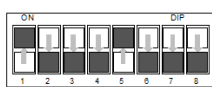
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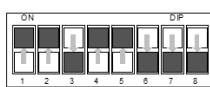
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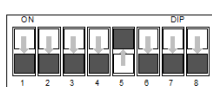
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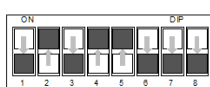
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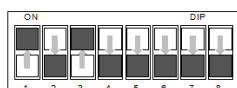
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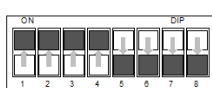
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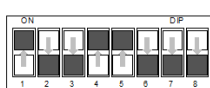
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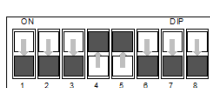
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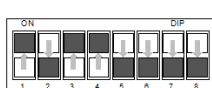
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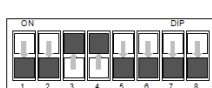
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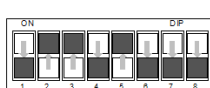
23



2



12



22



1



11



21

CRITI-CLEAN ULTRA

REVERSE FLOW - FAN FILTER UNITS

DIP SWITCH SETTINGS FOR UP TO 30 FAN FILTER UNITS FOR MORE UNITS SEE BELOW.

Calculate the address value of existing switch settings by adding the values of each DIP switch pole in the ON position, per the table below. Construct switch settings for a desired address value by successively subtracting the largest pole value that is less than the desired address value, repeating with each remainder until the remainder is zero. An example is provided below.

DIP Switch Pole	Value
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128

Example: Desired address is 114

114 - 64 = 50 SW1-7 ON
 50 - 32 = 18 SW1-6 ON
 18 - 16 = 2 SW1-5 ON
 2 - 2 = 0 SW1-2 ON

64+32+16+2 = 114



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DRAWN
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CHKD

APRVD
06/13/22

CATEGORY
CRITI-CLEAN ULTRA INSTALLATION MANUAL

PRODUCT
SSLFHFDF-FU-RF-MEA

SIZE

TAG

QTY

REV # F

DRAWING NAME

SHT 26/27

SCL 1:10

DO NOT
SCALE

STAINLESS STEEL

CRITI-CLEAN ULTRA

REVERSE FLOW - FAN FILTER UNITS

WARRANTY

LIMITED WARRANTY

AJ Manufacturing Co. Inc. warrants to Buyer, or any person receiving products originating from our factory, that the goods at time of shipment will be free from defects of material and workmanship for normal use and service. This warranty does not extend to goods subjected to misuse, neglect, accident, or improper installation, or to maintenance of products which have been altered or repaired by anyone except Seller, Buyer, or any persons receiving such a product during the duration of the warranty and shall contact AJ Manufacturing as soon as any defect becomes known. AJ's sole obligation under the foregoing warranty shall be limited to; at its option: Repair or replace defective goods provided, however that if AJ is unable to correct a defective component part or product after a reasonable number of attempts, the Buyer shall be entitled to elect a refund at original Buyer's purchase. CHARGES ACCRUED AGAINST SELLER'S ACCOUNT WITHOUT PRIOR APPROVAL OF SELLER WILL NOT BE PAID BY SELLER. If after notifying AJ of defect, Buyer returns goods to AJ for repair and AJ determines that it has not breached the foregoing warranty, the Buyer will be assessed AJ regular reconditioning charges.

AJ SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING FROM DEFECTIVE EQUIPMENT. THIS EXPRESS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, GUARANTEES, OR REPRESENTATIONS, EXPRESSED OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE.



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APRVD 06/13/22	SIZE			SCL 1:10
				DO NOT SCALE