

AHU-Bar

Installation, Operation, and Maintenance Manual

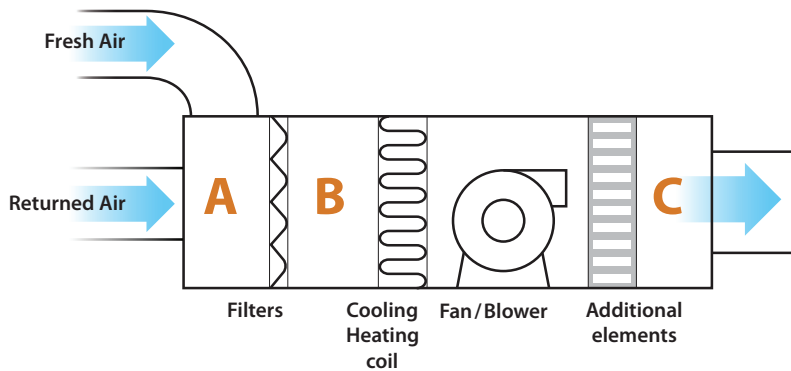


The Sterionizer AHU-Bar is an auto-cleaning, zero-ozone, needlepoint ionizer producing billions of positive and negative ions that deactivate bacteria and viruses, agglomerate particulate, and neutralize other harmful pollutants. No maintenance is required as the needles are cleaned of dirt and dust automatically and programmed from the factory at once per 24 hours of operation and upon start-up.

The AHU-Bar can be installed upstream of the cooling coil in an Air Handling Unit (AHU) or Roof Top Unit (RTU), but a better location is downstream of all coils and filters and near the unit discharge. The goal of this technology is to introduce ions to the airflow and have them delivered to the occupied space. The AHU-Bar is available in lengths from 200mm - 1700mm and from 1-6 ionizer cartridges to cover a wide range of airflows.

The unit can be powered with 24V DC or a power supply can be provided for accessing 120V or 240V AC power circuits. The Ion Bar is powered from a remotely mounted control panel. The control panel can power multiple AHU-Bars. The unit has communication capabilities including a dry contact and data export to the BMS. The Ion Bar provides an electronic signal only when the ionizer is creating ions. This signal is used to initiate a relay that closes the dry contact and powers the ionization LED.

Potential AHU-Bar Installation Locations:



Avoid moisture getting onto the AHU-Bar or any of the ionizing cartridges.

A

Mounting the AHU-Bar before the filter floods the filter with ions which deactivate microorganisms captured by the filter.

B

The AHU-Bar can be mounted before the heating or cooling coils. This allows the flow of ions through the coils reducing the accumulation of bio-films and other pollutants on the coil surfaces.

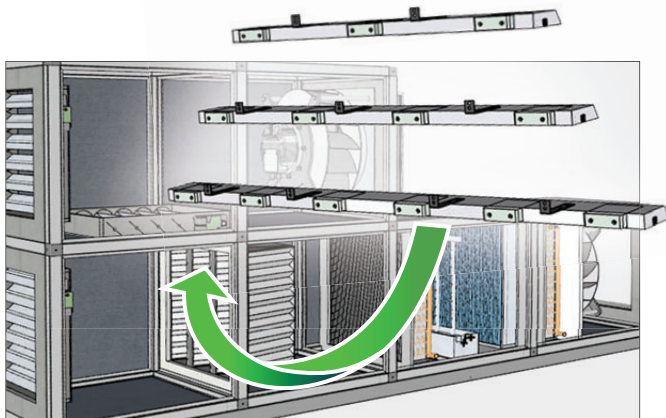
C

Mounting the AHU-Bar downstream of the filter and all coils is the most effective location for treating the occupied spaces. Ions are introduced to the air stream and delivered by the duct system to the space.

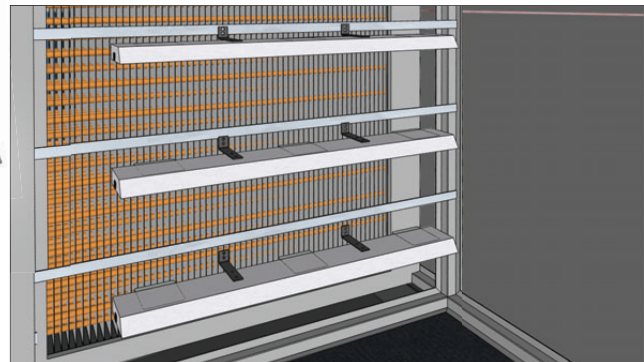
AHU-Bar specifications

Model number	IP11-2402-01	IP11-2402-02	IP11-2402-03	IP11-2402-04	IP11-2402-05	IP11-2402-06
Recommended Airflow (CMH)	6,000	12,000	18,000	24,000	30,000	36,000
Quantity of Ionizer Cartridges	1	2	3	4	5	6
Operating Environment	Temp. (-10) - 70 °C, Hum. 20-93% non-condensing					
Power Supply	120V/240V 1 Phase, 60 Hz to 24V DC					
AHU Bar Input Voltage	24V DC, 50/60 Hz					
Power consumption	4.8 W	9.6 W	14.4 W	19.2 W	24 W	28.8 W
Data Output Protocol	Modbus RTU; RS-485					
Outside Dimensions (mm)	200 x 135 x 28	500 x 135 x 28	800 x 135 x 28	1100 x 135 x 28	1400 x 135 x 28	1700 x 135 x 28
Weight (kg) +/-10%	0.41	0.77	1.27	1.77	2.31	2.72
Recommended Ion Concentration	1,000 to 2,000 ions per cm ³ in the occupied space.					

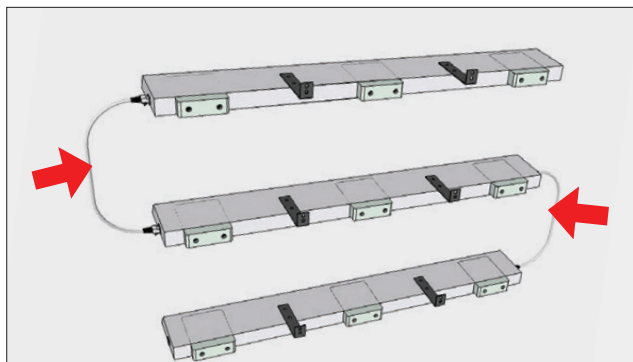
AHU-Bar Installation Steps:



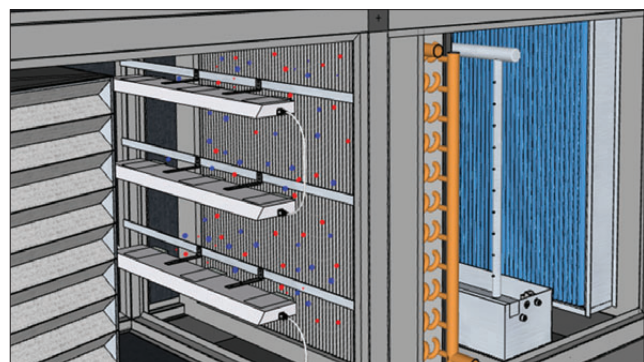
1. The number of AHU-Bars, their length and location need to be defined.



2. Screw the AHU-Bar through the mounting brackets to the coil frame. If there is no frame available, contractor will need to provide a Unistrut or C-channel structure.



3. Multiple AHU-Bars can be daisy chained together using CAT5 cables.



4. The AHU-Bar generates ions which improve air quality and protect the various components of the AHU. Connect the Ion Bar to power. .

Powering the AHU-Bar:

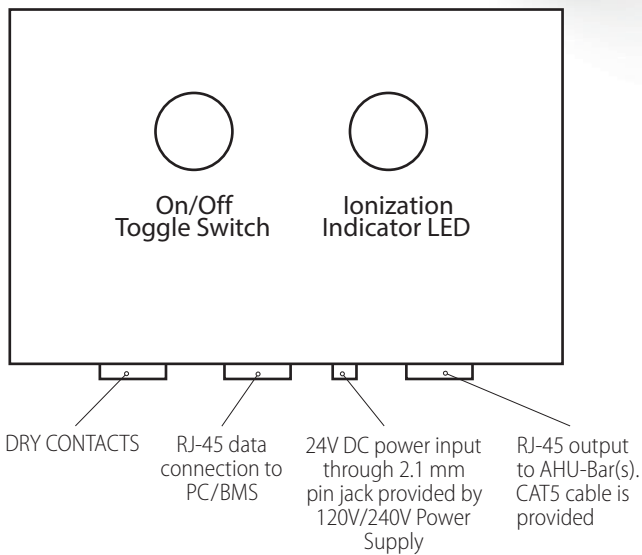


Mount the Control Panel on the outside of the AHU near the Bar mounting location. Wire the 120V/240V AC to 24V DC power supply and insert the 2.1mm pin into the pin jack on the front of the Control Panel. Then connect the Bar using a CAT5 cable and inserting into the RJ-45 jacks on the front of the control panel and on the Ion Bar.



When wiring the 2.1mm pin connector to the power supply, please ensure that the black wire with the white striping is wired to the V+ terminal and the other black wire to the V-.

Control Panel

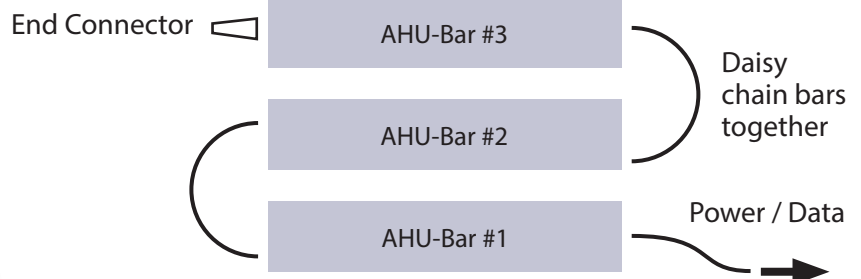


The control panel is used to provide power to the AHU-Bar or multiple Bars. It is also used to accept data from the Bar such as operating characteristics or status. Mount the control panel on the outside of an AHU in an easily accessible location, while the AHU-Bar is mounted inside the AHU.

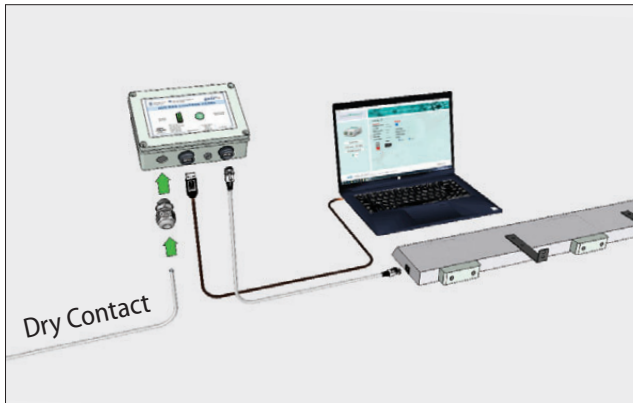
In order to access the available data from the individual ionizer cartridges, an "End Connector" must be plugged into the end of the last AHU-Bar being used.



End Connector



Controlling the AHU-Bar(s):

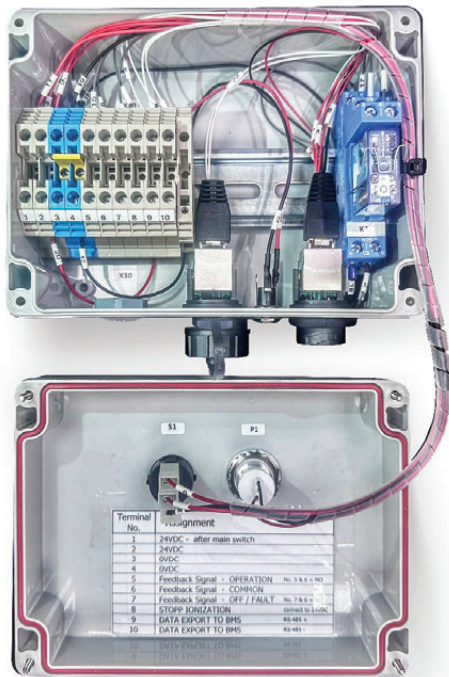


To control and monitor the bars, there are :

1. A serial interface (RJ-45 connector) for connecting a PC with associated software or a controller with serial RS-485 input
2. A Dry contact inside the box, which indicates the operating status of the bars
3. An input which, when connected to 24VDC, interrupts ion output

Connecting the Dry Contact:

1. Insert the connection cable through the cable gland into the inside of the box.
2. Connect the wires to terminals 5, 6 & 7 in accordance with the terminal assignment list on the inside of the cover.
 - Terminals 5 & 6 = NO.
 - Terminal 7 & 6 = NC.
3. Correct operation of all connected ionizers = terminals 5 & 6 are connected via the relay contact.
4. In any other case, terminals 6 & 7 are connected through the relay contact.



Contact Specifications of the dry contact of the control box IP9

Contact configuration		1 CO (SPDT)
Rated current/Maximum peak current	A	16
Rated voltage/Maximum switching voltage	V AC	250/400
Breaking capacity DC1: 30/110/220 V	A	16/0.6/0.25

AHU-Bar wiring diagram

