



Installation, Operation and Maintenance Guide

Bioclimatic ActiveOx™

AOX06F



OUR MISSION

To improve health and wellness by actively restoring indoor air to its pure, natural state where no pollution or contaminants exist, while reducing energy use and emissions in the process.

IMPORTANT

Save this Document for Future Reference & Warranty Information



AtmosAir.com
CAG-24-06-001

!IMPORTANT!

READ THIS BEFORE STARTING INSTALLATION.
DO NOT THROW AWAY THIS GUIDE.

For installation you **MUST**:

- Always disconnect power to the unit before handling any of the components.
 - DO NOT connect to the power before the installation is complete and personnel are aware of the imminent operation.
 - Carefully read this instruction booklet before beginning the installation.
 - Follow each installation or repair step exactly as shown and explained in this guide.
 - Observe all local, state, national and international electrical codes.
 - Pay close attention to all warnings and caution notices given in this guide.
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How to Contact Us: If you need help, please contact a AtmosAir Solutions Representative for technical assistance.

!CAUTION!

Do not touch while in operation shut off electricity before servicing!

This equipment should be inspected frequently and collected dirt removed from it regularly to prevent excessive accumulation that may result in flashover or risk of fire.

!MISE EN GARDE!

Ne touchez pas pendant le fonctionnement couper l'électricité avant l'entretien

Cet équipement doit être inspecté fréquemment et la saleté collectée doit être retirée régulièrement pour éviter toute accumulation excessive pouvant entraîner un court-circuit ou un risque d'incendie.



UL Recognized
Component Mark

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01 INTRODUCTION

1.1 Disclaimer

These instructions are submitted with the implicit understanding that:

1. This manual is to guide the user of AtmosAir Solutions equipment in the proper installation, operation, and maintenance procedures to insure maximum equipment life with efficient operation.
2. The customer has assigned competent maintenance and operating personnel to the system described herein and will assume operational and maintenance responsibility upon start-up of the system.
3. The customer will read and thoroughly examine the foregoing instructions and will notify the seller of any points not fully understood, points of conflict or error.
4. The customer, in lieu of any notification to the contrary, has read and fully understands the operation of the system and is aware of the hazards of corrosion, abrasion and fire or explosion and shall take the necessary steps in the operation of equipment to control such hazards to the maximum extent possible.
5. Start-up assistance or field engineering service provided by AtmosAir Solutions shall in no way relieve the customer of responsibility for the proper operation of the system.



IMPORTANT: Any modifications to the unit by unauthorized personnel will void factory warranty. The unit must be installed in accordance with the manufacturer's instructions to preserve warranty.

1.2 Receiving

Products leaving the AtmosAir factory are inspected and in satisfactory operating condition. All equipment should be thoroughly inspected when received. Although all units are properly packaged, rough handling in transit can cause breakage. Any shortage or damage should be reported at once to the transportation company. Note the damage on the bill of lading before signing for the shipment. **No equipment may be returned to AtmosAir without written authorization. Returned equipment sent without authorization will be refused and returned to sender.**

All products are shipped F.O.B. (Ex Works, FCA) AtmosAir warehouse. Responsibility for all equipment passes to the buyer at the time equipment is loaded onto the carrier's truck.

1.3 Storage

If the generator unit(s) is not installed upon delivery, it should be stored in a cool, dry, weather protected location. Do not stack any other equipment on top of the unit.

Continue on Next page

1.4 Warranty

THE SELLER WARRANTS BI-POLAR IONIZATION PRODUCT (EQUIPMENT) AGAINST DEFECTIVE WORKMANSHIP AND MATERIAL FOR **2 YEARS** FROM DATE OF FACTORY SHIPMENT. THE SOLE OBLIGATION OF SELLER SHALL BE TO REPAIR OR REPLACE, AT ITS OPTION, F.O.B. ITS FACTORY, ANY PART OR PARTS WHICH ARE RETURNED F.O.B. ITS FACTORY, SHIPPING CHARGES PREPAID, AND WHICH AFTER INSPECTION BY SELLER ARE FOUND TO BE DEFECTIVE. BUYER SHALL NOTIFY SELLER OF DEFECT IN WRITING, PROMPTLY UPON DISCOVERY AND WITHIN THE WARRANTY PERIOD. THIS WARRANTY DOES NOT COVER DEFECTS CAUSED BY CORROSION OR NORMAL DETERIORATION; IT DOES NOT EXTEND TO CONSEQUENTIAL DAMAGE, LOSS OR DELAY ASSOCIATED WITH A WARRANTY DEFECT; AND IT DOES NOT COVER ANY COST OF LABOR, TRAVEL, OR OTHER EXPENSE ASSOCIATED WITH THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS. SELLER ASSUMES NO LIABILITY FOR PRODUCT LOSS OR OTHER CLAIMS WHATSOEVER ARISING OUT OF THE USE OR APPLICATION OF THE EQUIPMENT IN ANY OPERATIONS, WHETHER THE EQUIPMENT IS USED ALONE OR IN CONJOINT USE WITH OTHER EQUIPMENT OR PROCESSES. NOTWITHSTANDING THE FOREGOING, SELLER'S WARRANTY OBLIGATIONS WITH RESPECT TO ANY ITEMS NOT MANUFACTURED BY SELLER SHALL NOT EXCEED THE OBLIGATIONS UNDERTAKEN BY THE MANUFACTURER THEREOF UNDER EXPRESS WARRANTY TO THE SELLER.

THIS EXPRESS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES OF FITNESS OF THE MACHINE FOR ANY PARTICULAR PURPOSE. THERE ARE NO OTHER REPRESENTATIONS, WARRANTY OF CONDITION IN ANY RESPECT EITHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE IN CONTRACT OR TORT, OTHER THAN WHAT IS STATED ABOVE.

THE SELLER SHALL NOT BE HELD LIABLE IN ANY WAY FOR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED.

THIS WARRANTY WILL NOT APPLY IF THE SELLER'S EQUIPMENT HAS BEEN DAMAGED DUE TO IMPROPER INSTALLATION, ALTERATION, ABUSE OR MISUSE, ACCIDENT, FIRE, FLOOD OR ACT OF GOD. FURTHER, THIS WARRANTY WILL NOT APPLY IF REPAIRS, REPLACEMENTS, OR ALTERATIONS ARE MADE BY OTHERS WITHOUT THE SELLER'S PRIOR WRITTEN AUTHORIZATION.

IN THE EVENT THE STATE IN WHICH THE EQUIPMENT IS INSTALLED DOES NOT PERMIT THE LIMITATION OR EXCLUSION OF IMPLIED WARRANTIES OR CONDITIONS UNDER GIVEN CIRCUMSTANCES, THE PROVISIONS OF THIS WRITTEN WARRANTY ARE IN ADDITION TO AND NOT A MODIFICATION OF THE STATUTORY WARRANTIES AND OTHER RIGHTS AND REMEDIES PROVIDED BY SUCH LAWS.

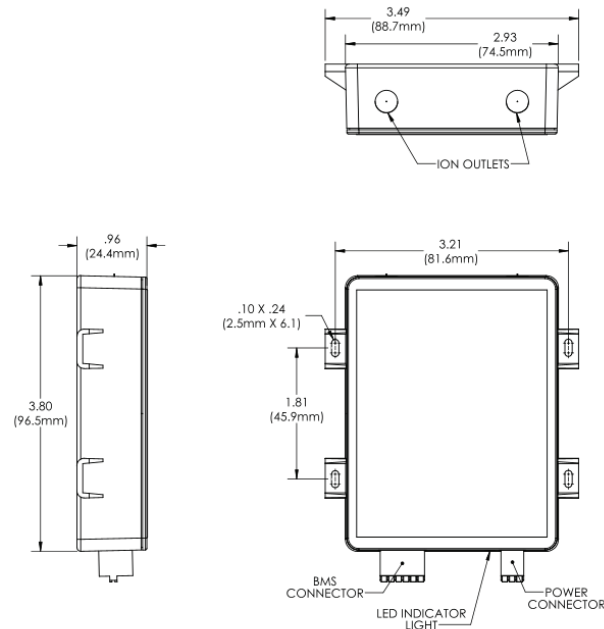
NOTES: "ANY MODIFICATION OR UNAUTHORIZED REPAIR TO ORIGINAL EQUIPMENT BY ANY COMPANY OR PERSON OTHER THAN THE MANUFACTURER WILL SERVE TO VOID THE SELLER'S LIABILITY UNDER THE MANUFACTURER'S WARRANTY. ION GENERATOR, MODULES AND CONTROL ENCLOSURES CONTAINING ELECTRONIC COMPONENTS ARE SEALED TO PREVENT UNAUTHORIZED TAMPERING OR ADJUSTMENTS. ONLY AUTHORIZED SERVICE PROVIDERS MAY BREAK SEALS TO COMPLETE CALIBRATION OR REPAIRS. UNAUTHORIZED TAMPERING OR BREAKING SEALS WILL RELEASE THE SELLER FROM ANY AND ALL LIABILITY UNDER THIS WARRANTY."

Disclaimer: The air purification technologies provided by Clean Air Group are intended to improve indoor air quality. They are not intended as a replacement for reasonable precautions aimed at preventing the transmission of contaminants, airborne or otherwise. All persons having access to the serviced premises should comply with applicable public health laws and guidelines issued by federal, state and local governments and health authorities such as the Centers for Disease Control and Prevention (CDC). Clean Air Group does not maintain that its products will protect people from all modes of transmission of bacteria, viruses or other contaminants, and excludes liability for loss or damage arising from any such claims or the consequences arising out of the application, use or misuse of its products.

02 PHYSICAL DESCRIPTION & THEORY OF OPERATION

2.1 Principle of Operation

The Bioclimatic ActiveOx™ 06F unit is a self-cleaning, compact needlepoint ionizer that can be easily mounted at the fan inlet of any air handling system to effectively reduce harmful indoor air pollutants using patented bi-polar ionization technology. The AOX06F generator has an airflow capacity of up to 6,000 CFM per module.



2.1.1 Bioclimatic ActiveOx™ 06F Series

The Bioclimatic ActiveOx™ 06F Series generator produces synchronized bi-polar ionization. Depending upon several variables, including volume and velocity of air, ionization is adjusted by local control to produce the desired volumetric air purification. The generator is designed for installation in air handling unit plenum or fan inlet and roof curbs. The ActiveOx 06F kit includes ionization module, power supply and a wiring harness to connect the module to the power supply.

2.1.2 System Regulation

Power input to ionization generators is not adjustable.

An LED illuminates green indicating power at the unit and orange when the unit is in operation.

2.1.3 Building Management System Control (BMSC)

The ActiveOx 06F generator is equipped with Modbus connections for building management system (BMS) or building automation system (BAS) interface.

The status of the unit is reported as well as the ability to adjust the cleaning cycle interval. The generator comes factory programmed for auto-cleaning once per day and upon unit start up.

03 INSTALLATION

Install the AtmosAir unit in accordance with the following guidelines:

NOTE: Proper filtration is required to remove airborne particulates. AtmosAir systems are compatible with most types of mechanical filtration systems. At minimum, MERV 8 rated prefilter is required. Higher efficiency is a plus.

Generators are normally installed in the supply air side of an air handling unit following the final filter. Alternatively, they can be installed in the return plenum. Minimum clearances between final filter and generators and heating or cooling surfaces shall be four inches (101 mm). Where space permits, increase clearances on the downstream side of the generators to 12 inches (305 mm).

Alternately, the ActiveOx 06F may be installed in the air handling unit supply plenum or ductwork subject to ambient temperature limitations. Allow a minimum of 8 inches (203 mm) clearance between generators and heating surfaces and 12 inches (305 mm) clearance between generators and cooling surfaces. The maximum ambient temperature for the generators is 158°F (70°C). Follow local and national electric codes.



CAUTION: Do not attempt to connect the generator ActiveOx 06F unit(s) across multi-phase 3 or 4 wire circuits or across any electrical service in which pole to pole voltage exceeds 240 Volts RMS.

04 OPERATION

Connect a 24VAC/VDC power supply to the input terminal. This can either be supplied by the customer or ordered as an optional accessory. The green LED will illuminate. After several seconds the LED will turn orange indicating the unit has entered operation mode and is now producing ions. The LED will change back to green two minutes after initial startup when the first cleaning cycle automatically begins. The unit is factory programmed to auto-clean once per day and upon initial start up.

05 MAINTENANCE

The self-cleaning feature on the device eliminates the need for maintenance on the emitters. Over time, a layer of dust may accumulate around the emitter holes, depending upon the application. AtmosAir Solutions recommends semi-annual inspections to be sure the modules are free of debris. **Caution should be taken not to bend the needles.**



WARNING: DO NOT ATTEMPT TO SERVICE ANYTHING WHILE POWER TO THE SYSTEM IS ON. DISCONNECT ALL POWER BEFORE SERVICING ANY UNIT.

06 TROUBLESHOOTING GUIDE

See Appendices for the custom wiring diagram for the specific job being serviced.

6.1 The ActiveOx 06F Generators Will Not Energize

Possible Cause:	Possible Solution:
Facility circuit breaker is tripped or turned off.	Check the circuit breaker and reset it if necessary.
The control power switches are turned to the "Off" position.	Ensure all power switches are activated.
There is a faulty wiring connection between the circuit breaker and the ActiveOx 06F generator.	Ensure all wiring connections between the circuit breaker and ActiveOx 06F generator are secure and correct. See Appendices for custom wiring diagram.

07 SPECIFICATIONS

7.1 Electrical

Modules	24 VAC	120 VAC	240 VAC
1	0.14 A	0.04 A	0.03 A
2	0.28 A	0.08 A	0.06 A
3	0.42 A	0.12 A	0.09 A
4	0.56 A	0.16 A	0.12 A

7.2 Technical

Technical Specifications	
Model	AOX06F
Ion Output	$\leq 10^{12}$ Ion/sec
Emitter cleaning	Self-cleaning - maintenance free
Emitter points	Tungsten
Input voltage	12V AC/DC \pm 10%, 200 mA, isolated
Operating environment	Temp. (-10)-(+70) $^{\circ}$ C, Hum. 20-93% non-condensing
Ambient Airflow	Minimum 0.3 m/sec laminar
Ozone	< 0.005 ppm (according to UL2998)
EMI	Below background levels (rec. 80mm distance)
LED indicator	green: power "on" - orange: "operation"
Connector power	12/24 V - 0 - ground
Connector output	On/Off ; optional I/O ; optional I/O ; optional dry contact; common
Connector interface	RS485 Modbus (up to 247 units)
Enclosure	PC-ABS plastic blend, color grey (black)
Dimensions	96 x 74 x 24.5 mm (L x W x H)
Dimensions mounting	107 x 89 x 24.5mm with bracket and connector
Weight	146 gram
Certifications	EMC, CE, UL, RoHS 2 compliant
For Static Control	
Ion Balance	Inherently self-balancing system $\leq \pm 30V$
Discharge time 1	1000V - 100 V @ < 3 sec at 60cm with airflow 1m/sec
Discharge time 2	1000V - 100 V @ < 6 sec at 60cm with airflow 1m/sec
Discharge voltage 1	< 30 V at 30 cm
Discharge voltage 2	< 10 V at 60 cm
Coverage Area	150 x 150mm at 30 cm distance / 150 x 150mm at 60 cm distance
Range	50-1000 mm application / airflow dependent

7.3 Mechanical

See **Appendices** at the end of this document.

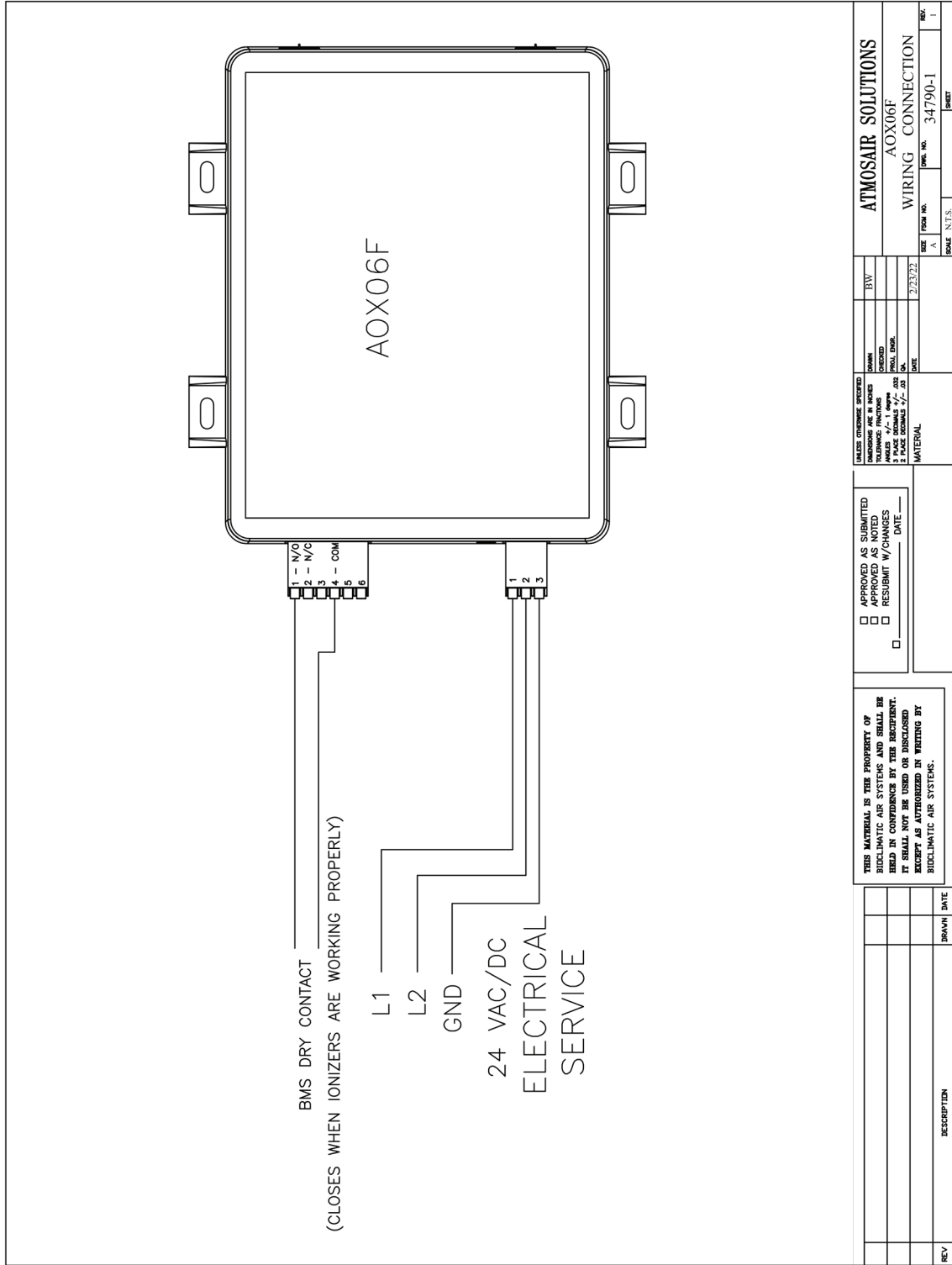
7.4 Storage

Environment: Indoor only

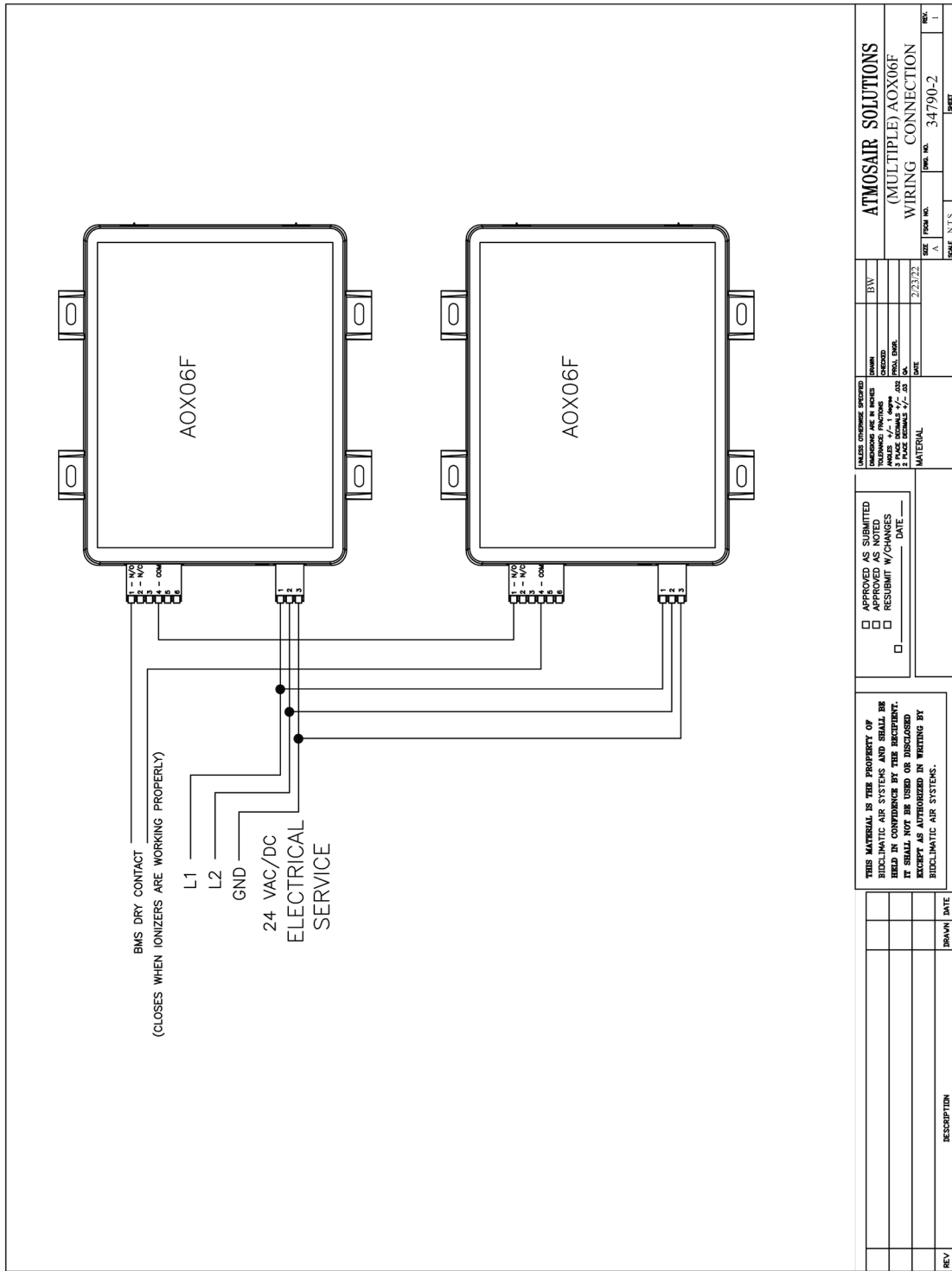
Temperature: 14 $^{\circ}$ F to 158 $^{\circ}$ F (-10 $^{\circ}$ C to 70 $^{\circ}$ C)

Humidity: RH <85%

08 APPENDICES



REV	DESCRIPTION	DRAWN	DATE
<p>THIS MATERIAL IS THE PROPERTY OF BIODECLIMATIC AIR SYSTEMS AND SHALL BE HELD IN CONFIDENCE BY THE RECIPIENT. IT SHALL NOT BE USED OR DISCLOSED EXCEPT AS AUTHORIZED IN WRITING BY BIODECLIMATIC AIR SYSTEMS.</p>			
<p><input type="checkbox"/> APPROVED AS SUBMITTED <input type="checkbox"/> APPROVED AS NOTED <input type="checkbox"/> RESUBMIT W/CHANGES <input type="checkbox"/> _____ DATE _____</p>			
<p>UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES FRACTIONS ANGLES 1/2° - 1 Degree AS SHOWN 2 PLACE DECIMALS 1/16" - 20 MATERIAL</p>			
<p>DATE: 2/23/23 DRAWN BY: BW CHECKED BY: _____ DATE: _____</p>			
<p>FORM NO. 34790-1 SCALE: N.T.S. SHEET 1</p>			
<p>ATMOSAIR SOLUTIONS AOx06F WIRING CONNECTION</p>			



REV	DESCRIPTION	DRAWN DATE	DATE
<p>THIS MATERIAL IS THE PROPERTY OF ATMOSAIR SOLUTIONS. IT SHALL NOT BE USED OR REPRODUCED EXCEPT AS AUTHORIZED IN WRITING BY ATMOSAIR SOLUTIONS.</p>			
<p><input type="checkbox"/> APPROVED AS SUBMITTED <input type="checkbox"/> APPROVED AS NOTED <input type="checkbox"/> RESUBMIT W/CHANGES</p> <p>DATE: _____ DATE: _____</p>			
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS 1/8" MINIMUM DECIMALS 1/32" MINIMUM TOLERANCES ±.015</p>			
DATE	2/23/22	SCALE	N.T.S.
DRAWN	TBW	SIZE	FROM NO. 34790-2
CHECKED		SHEET	1
APPROVED		<p>ATMOSAIR SOLUTIONS (MULTIPLE) AOX06F WIRING CONNECTION</p>	