

O X Y G E N 8

VENTUM+

Installation Manual

TABLE OF CONTENTS

1. General Information	3	8. Wiring Diagrams	30
2. Unit Specifications	4	8.1 External Stop/Start Alarm	31
2.1 Dimensions	4	8.2 External Stop/Start	32
2.2 Access Requirements	5	8.3 Occupancy Mode	33
2.2.1 Electrical Panel Access	6	8.4 SA Duct Temp and Reheat Sensor	34
3. Installation	7	8.5 EC Smart Vue	35
3.1 Unwrapping the Product	7	8.6 Allure Touch Sensor	36
3.2 General Material Handling	8	8.7 HMI	37
3.3 Crane or Gantry	9	8.8 Room Sensors and HMI (Subnet)	38
3.4 Ground-Level Module Handling	9	8.9 Duct Pressure Sensor	39
3.5 Wiring Connection	10	8.10 CO ₂ & VOC Sensor	40
3.6 Dampers	11	8.11 SA Duct Temp & Reheat Duct Temp Sensor	41
3.7 Bolted Module Connection	12		
3.8 External Rear Connectors	14		
3.9 Core Removal	16		
4. Outdoor Installation	17		
4.1 Hood Installation	17		
4.2 Roof Installation Option	19		
4.2.1 Roof Curb	19		
4.2.2 Sleepers	19		
4.2.3 Structural Beams	19		
4.3 Roof Curb Installation	20		
4.3.1 Removable Plate Installation	21		
4.4 Outdoor Unit Split Connections	22		
5. External Sensors	23		
5.1 SA Temperature + Humidity Sensor	23		
5.2 Constant Pressure Regulation	24		
5.2.1 Typical Installation	24		
5.2.2 Wiring and Pressure Tubing	25		
6. Condensate Drain P-Trap	27		
6.1 Blow-Through Configuration	27		
6.2 Draw-Through Configuration	28		
6.3 Condensate Pump	28		
7. Electrical Information	29		

1.0 GENERAL INFORMATION

This manual includes important instructions for safe connection of the Energy Recovery Ventilator (ERV). Before connecting the unit, please read carefully and follow the instructions.

The manufacturer reserves the right to make changes, including changes in the technical documentation, without previous notification. Please keep this manual for future reference. Consider this manual a permanent part of the product.

This manual will show the manufacturers' recommended installation method. Please note that local codes and regulations may override these recommendations. The installation must follow local codes and standards.

The National Electric Code (NEC), the National Fire Protection Agency (NFPA), and the Canadian Electrical Code (CEC) must be followed. Installation of this product must be performed by a qualified and accredited professional in conformance with local and national codes, standards and licensing requirements.



Caution: This sign indicates a potentially hazardous situation, which may result in minor or moderate injury if not avoided. It may also alert against unsafe practices.



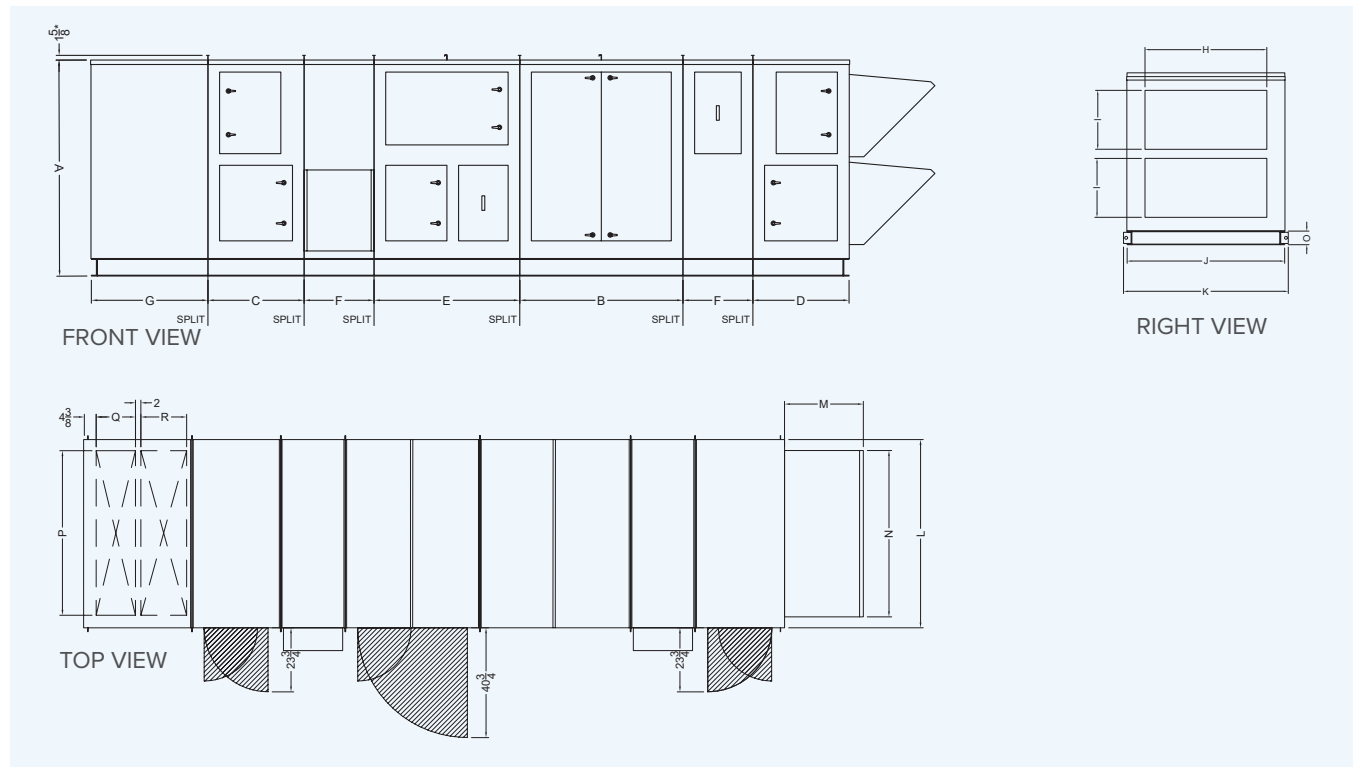
Warning: This sign indicates a situation that may result in equipment or property damage accidents.



Danger: This sign indicates a potentially hazardous situation, which could result in death or serious injury if not avoided.

2.0 UNIT SPECIFICATIONS

2.1 Dimensions

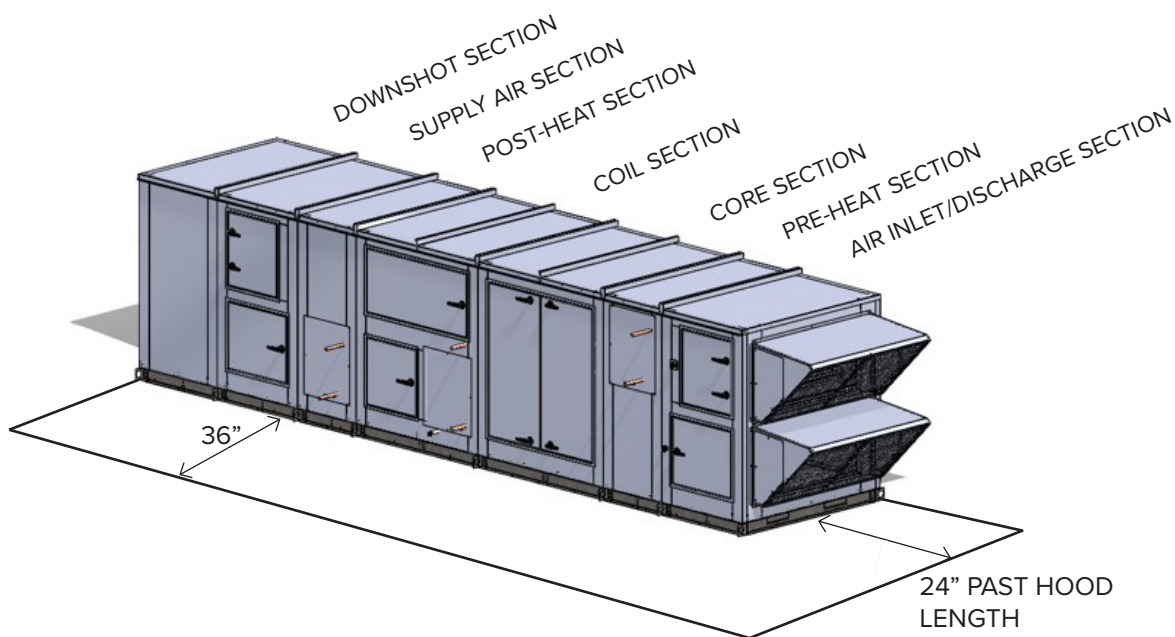


Size	Description	V20	V25	V30	V40	V50	V60	V80	V100
A	Overall Height	56	62	66	74	84	84	100	100
B	Core Section	51.5	51.5	51.5	56	65	65	72.5	72.5
C	Supply Section	33	33	33	33	33	33	33	33
D	Exhaust Section	33	33	33	33	33	33	33	33
E	Coil Section	50	50	50	50	50	55	55	55
F	Heater (EC/HWC) Section	24	24	24	24	36	36	36	36
G	Downshot Section	32	32	32	40	40	40	44	44
H	Duct Opening Width	40.6	40.6	53.8	53.8	53.8	61.9	61.9	74.1
I	Duct Opening Height	18	21	22	26	31	31	38	38
J	Base Width	56.4	56.4	69.5	69.5	69.5	85.6	85.6	101.9
K	Lug-Lug Width	59.6	59.6	72.8	72.8	72.8	88.9	88.9	105.1
L	Casing Width	56.9	56.9	70	70	70	86.1	86.1	102.4
M	Hood Length	38.1	43.9	53.4	61.4	71.9	77.8	94.6	104.7
N	Hood Width	48.625	48.6	61.8	61.8	61.8	69.9	69.9	82.1
O	Base Height	4	4	6	6	6	6	8	8
P	Downshot Opening Width	48	48	61.1	61.1	61.1	77.3	77.3	93.5
Q	Downshot RA Length	10.625	10.6	10.6	14.6	14.6	14.6	16.6	16.6
R	Downshot SA Length	13	13	13	17	17	17	19	19

2.2 Access Requirements

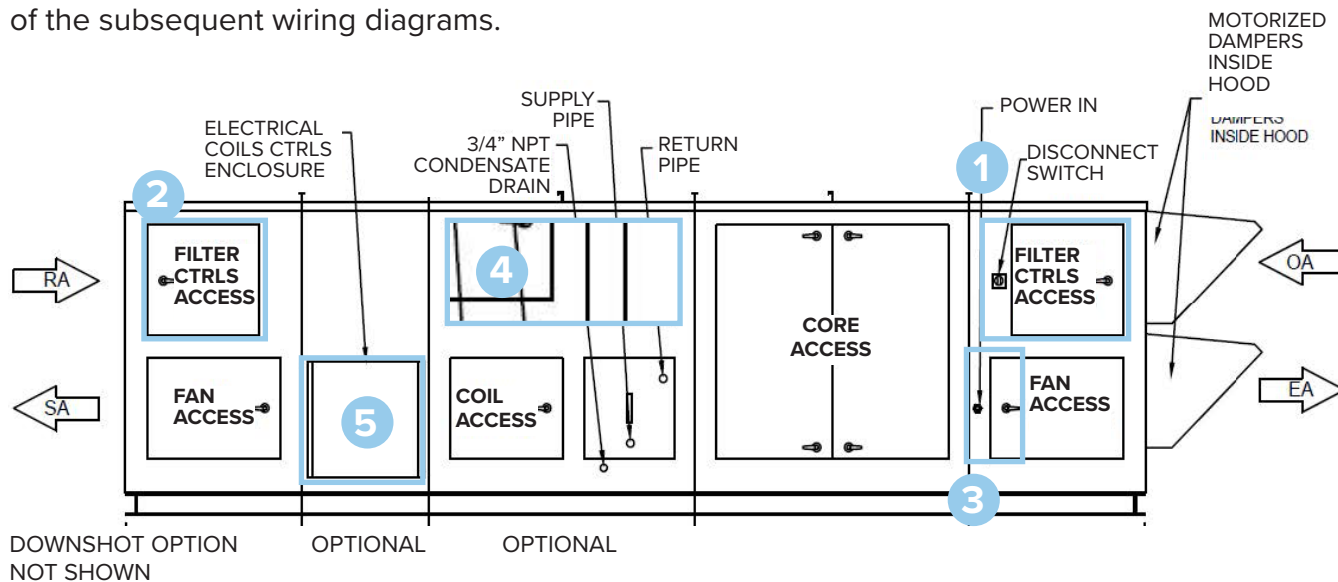
The National Electrical Code (NEC) requires 36 inches of clearance from an electrical connection. For Ventum+, with front-facing integral electrical panels, the 3' must be measured from the front of the unit. The unit should be positioned such that all access doors are unrestricted. Since there are multiple control panels in the unit, it is generally recommended to provide 3' clearance along the length of the front of the unit.

When selecting an installation location for the Ventum+ unit, please refer to the following diagram and adhere to the clearance requirements for access to components for maintenance and NEC guidelines for electrical component access.



2.2.1 Electrical Panel Access

The following image provides an example unit layout of the access locations to electrical components in Ventum+ for reference and context with understanding of the subsequent wiring diagrams.



1. Main controls cabinet c/w Distech controller and disconnect switch

2. Secondary electrical panel through RA filter access

3. Electrical panel through EA fan access

Transformers and fuses are located here.

4. VRV control enclosure (optional)

Fused protection of EKEQ Controllers located here with EKEQs.
EKEQV valve kits located here and below via "COIL ACCESS".

5. Electric heater control panel

Electric heater may also be located between OA Filter and Core modules.
For SPP applications, Main power enters here before routing to panel 1.

3.0 INSTALLATION

3.1 Unwrapping the Product

When removing the shrink wrap, be cautious with knives and sharp tools to prevent scratching the paint. The HMI, temperature + humidity sensor, external duct pressure sensor and all other optional field components will be found in the electrical box or fan compartment. They are secured there for transport and to easily find them on the job site.

Ventum+ units will ship one of two ways. On a tarped flat bed or a covered trailer:

Tarped Flat Bed

When the consignee needs to unload from ground level or via crane. This is also the case if the height of the unit exceeds the height of the trailer or bay door (Usually around 96 to 105 inches)

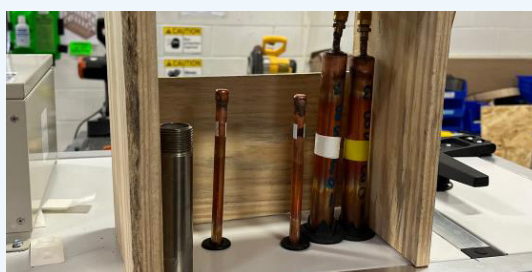
Units are split into sections and wrapped first in cardboard, then 6mil blue poly. A wood frame is secured on top to distribute the load of the flatbed straps and protection when using a crane.

Once strapped to the bed of the trailer, heavy tarps are used to protect from moisture and debris.

It is recommended to remove the external packaging using scissors rather than a knife to avoid scratching the unit.

For outdoor units, there are no slots in the baserail and blocks will be used to raise the unit off the ground. Use extra care when moving outdoor units and there is nothing preventing the unit from tipping off the forks.

Once external packaging is removed, there may be additional wood bracing or supports inside the section to prevent misalignment and bending. All external piping is also protected.



Note: These sections are not placed on pallets and must be moved using the fork slots in the baserail.

Covered Trailer

Units is below height limits and consignee has a loading bay.

Units are packaged in the same way as above; however, they are secured to a two-way pallet.

These pallets ship inside a trailer and are screwed down to the trailer bed along with being strapped to the walls to prevent sliding during transit.

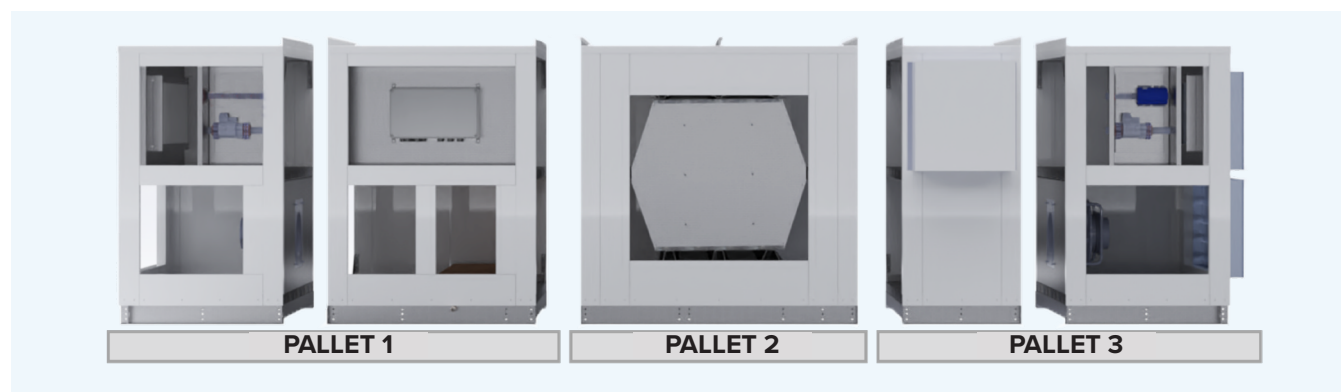
3.2 General Material Handling

All Ventum+ modules are shipped in separate pieces, sometimes with multiple modules on one pallets. Do not remove screws or straps until modules are being set in their install location. An example set of pallets can be seen below.

Modules must be lifted individually after they are removed from skid.

Do not lift modules after bolting together.

Each module is complete with a layer gasketing to seal the unit at each split (one layer per split). **Ensure this gasketing is not damaged during handling.**



Modules on pallets (crates not shown)

3.3 Crane or Gantry

When lifting the individual modules with a gantry or crane, first remove unit packaging, remove tie-down straps, unscrew the module's baseframe from the skid and use the provided lifting lugs at each corner of the baseframe.

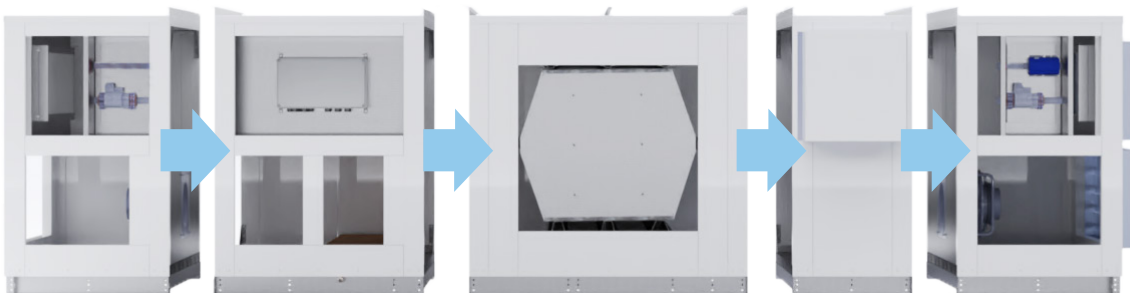
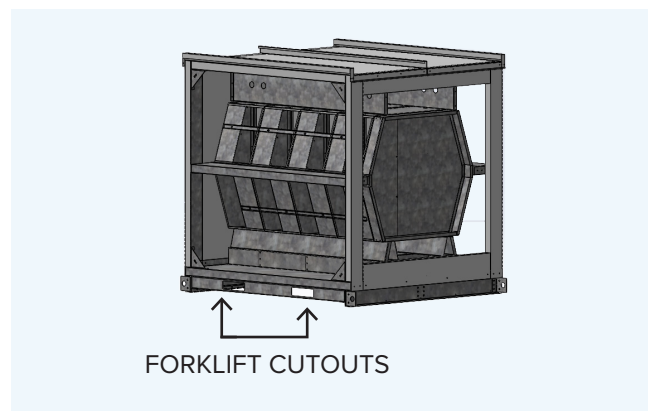
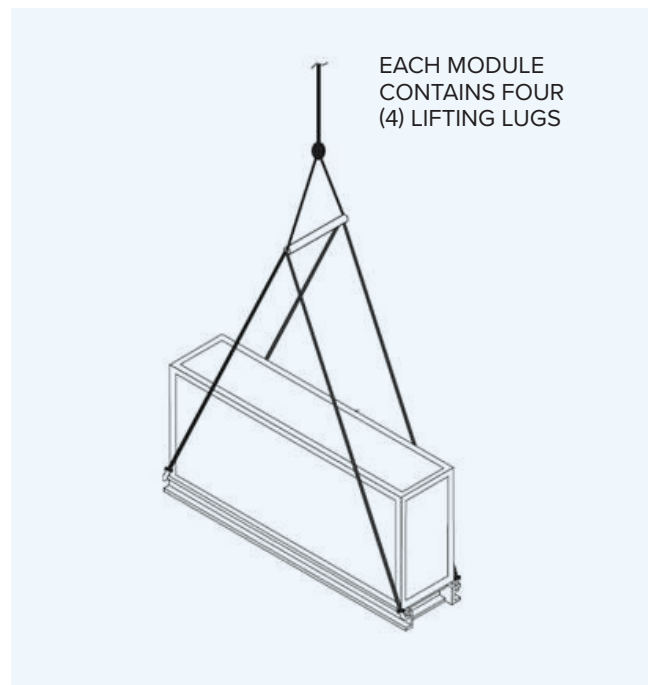
Provide appropriate cross-bracing to ensure no damage to the unit modules occur while lifting.

3.4 Ground Level Module Handling

To remove from the shipping skid, individual modules should be lifted by the provided forklift openings in the baseframe (see figure on right). Ensure that the forklift is supporting the full width of the module when lifting.

Using the provided forklift cutouts will help with positioning the modules to be connected. The sections are placed as close to the adjacent section as possible using a forklift then brought together using the lifting lugs. At this point, the top internal brackets pull the tops of the sections together to create a seal.

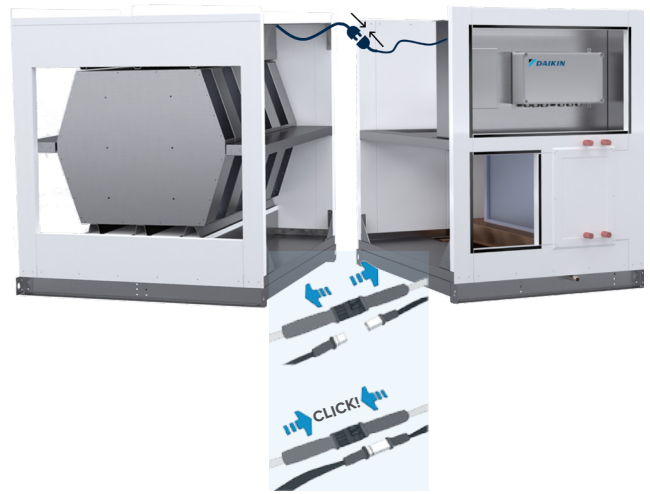
Modules will be shipped in order of final installation. If the modules become separated and disorganized, refer to the shop drawings for guidance.



3.5 Wiring Connections

Wire connections and bolted cabinet connections must be completed one module at a time.

Do not pull wiring taught when connecting quick connects – if this cannot be achieved, move the modules closer together and try again. Ensure all wiring connections are fully secured.



3.6 Dampers

For units with OA/EA shut-off dampers, the top damper ships loose but wired with quick connects. The top damper must be attached on site after all modules are connected.

Ensure the damper actuator faces the front of the unit and is centered on the opening.

Dampers are not factory installed to provide access to frame coupling corner brackets during installation. If the dampers are factory-mounted, they may need to be removed and re-attached to allow for coupling of the unit modules

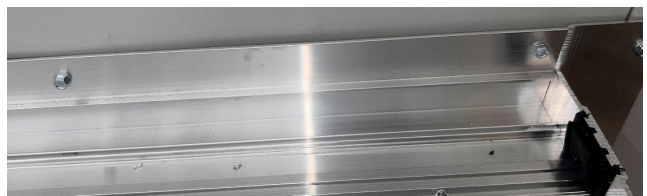
1. Connect electrical quick connector.



2. Looking at the damper from inside the unit, align the damper evenly in the centre of the opening.



3. Using self-tapping screws, fasten the damper flange



4. Attach loose cable.

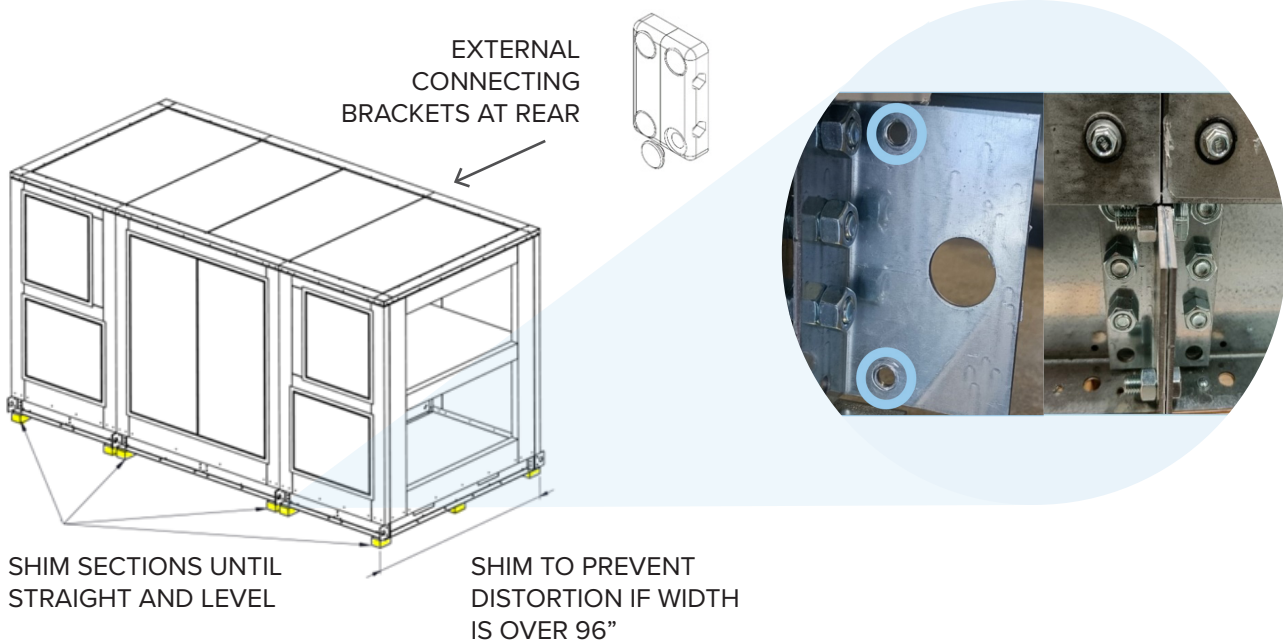


3.7 Bolted Module Connections

Module Assembly

Inspect the gasketing on the modules; there should be a layer on one of the two faces as seen in the adjacent image.

Note: If any gasket is damaged, please contact Oxygen8 for replacement. Repair any damages prior to assembly.



Prior to bolting units together, remove skid and wood blocks and align all modules.

Ensure the modules are level over the entire unit length and wedge using shims (shims are not provided with unit).

Using the hardware provided, align the sections together at the holes in all four lifting lugs (see images above).

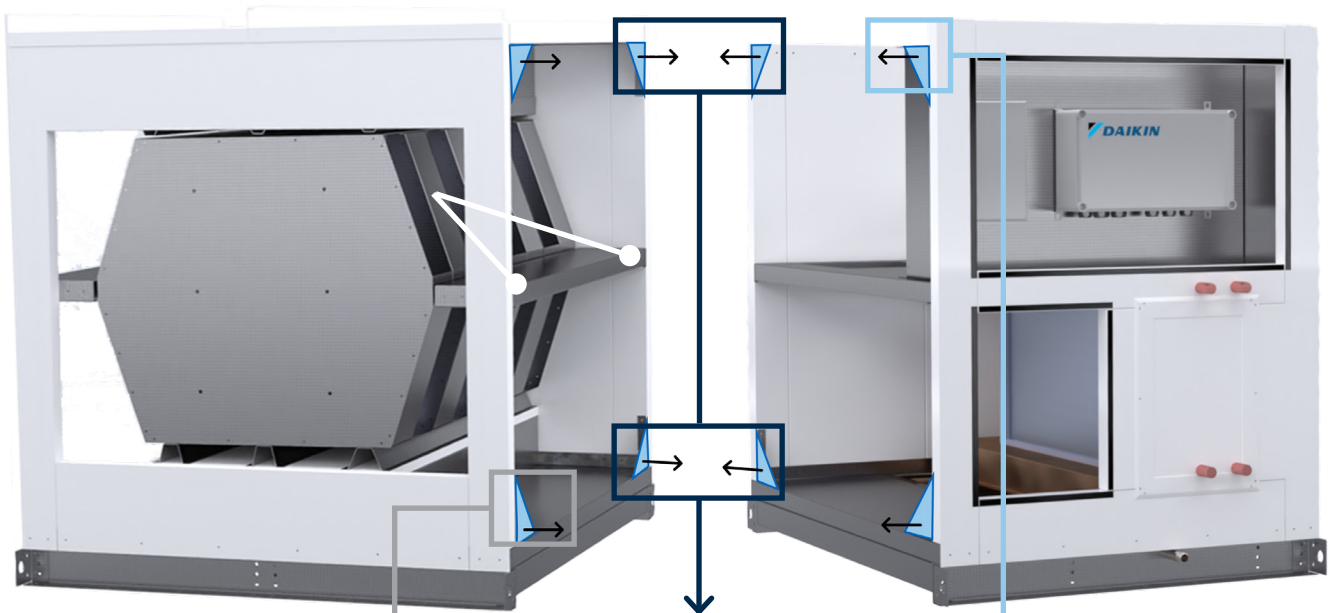
Do not tighten fully.

The frame couplers are complete with M6 bolts. When connecting the frame couplers, it is recommended to use a flexible driver tool extension.

Note: Aluminum connecting brackets are installed at each required module split. Two M6 bolts are provided for each pair of brackets; a M6 bit will be provided.

Once lifting lug holes are bolted together, align brackets to the inside edges of the module openings. See below.

For larger unit sizes, additional split connection brackets are provided at the midpoints of the cabinet openings for added support.



REAR CONNECTORS HAVE LIMITED ACCESS FROM THE FRONT ACCESS DOORS. IF THE CONNECTING BRACKETS ARE NOT PROVIDED AT THE REAR, REFER TO THE CORE REMOVAL SECTION.



ENSURE ALL WIRING IS SECURED AND OUT OF THE WAY OF CABINET CONNECTIONS AND WILL NOT CATCH OR OBSTRUCT ANY PART OF THE UNIT DURING OPERATION.



INSIDE EACH ELECTRICAL BOX THERE IS A HOLE TO ALLOW EASY ACCESS TO THE INTERNAL CORNER BRACKETS. ONCE THE UNIT IS CONNECTED, THESE HOLES MUST BE COVERED BY A PLATE THAT IS SHIPPED INSIDE THE ELECTRICAL BOX.

In some cases, it may not be possible to access the bottom rear connectors. In this case, the internal corner brackets that are inaccessible will be removed by the factory and it is acceptable to only connect the bottom corner with the lifting lugs.

When all connectors are lined up and bolts are hand tightened then they can all be fully tightened to connect the sections together.

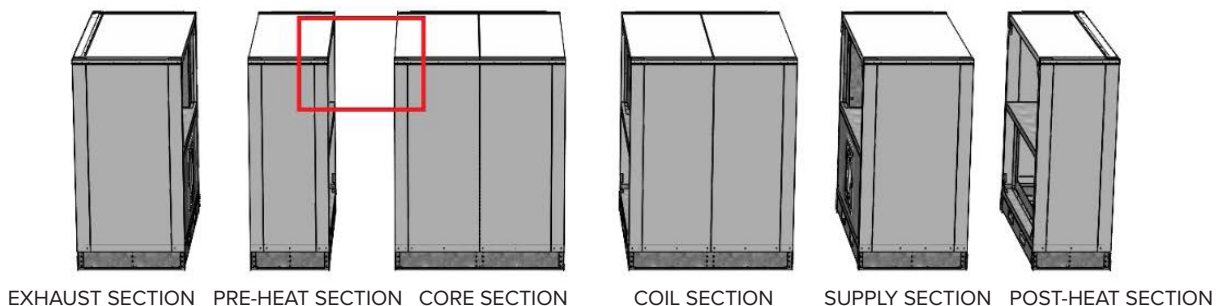
3.8 External Rear Connectors

Follow standard instructions for connecting modules at the base (front and back lifting lugs) and the internal joining brackets at the front of the unit. All these locations are easily accessible from the exterior and through the access doors of the unit.

For joining the sections at the rear of the modules, please use the following instructions outlining the use of external connecting brackets.

Ensure wiring has been connected before proceeding with rear connections.

Instructions are for the highlighted location below. Apply the following steps at all rear splits.



Install the first bolting block onto the rear wall of the first section (Figure A). Locate bolting block flush to the section split and below the internal bracket shown in (Figure B). Use 1/4" -20 x 3"L bolts and 1/4" nut/washer to fasten blocks to the wall panel – fasteners will be provided.

Provided by Oxygen8:

- Bolting Blocks
- 1/4"-20 x 3"L Bolts
- 1/4" Nuts
- 1/4" Washers
- M6 Bolts
- M6 Nuts
- M6 Hex Key
- Installation Instructions

Not Provided by Oxygen8:

- Drill bits for bolt holes
- Clamps

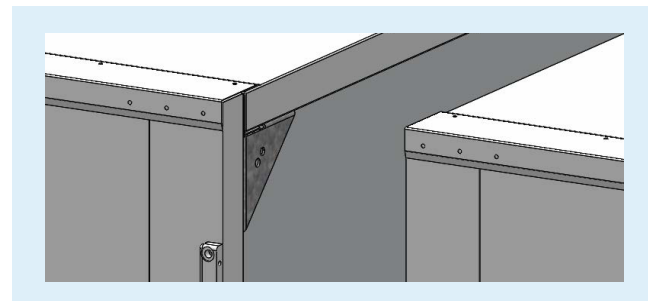


Figure A

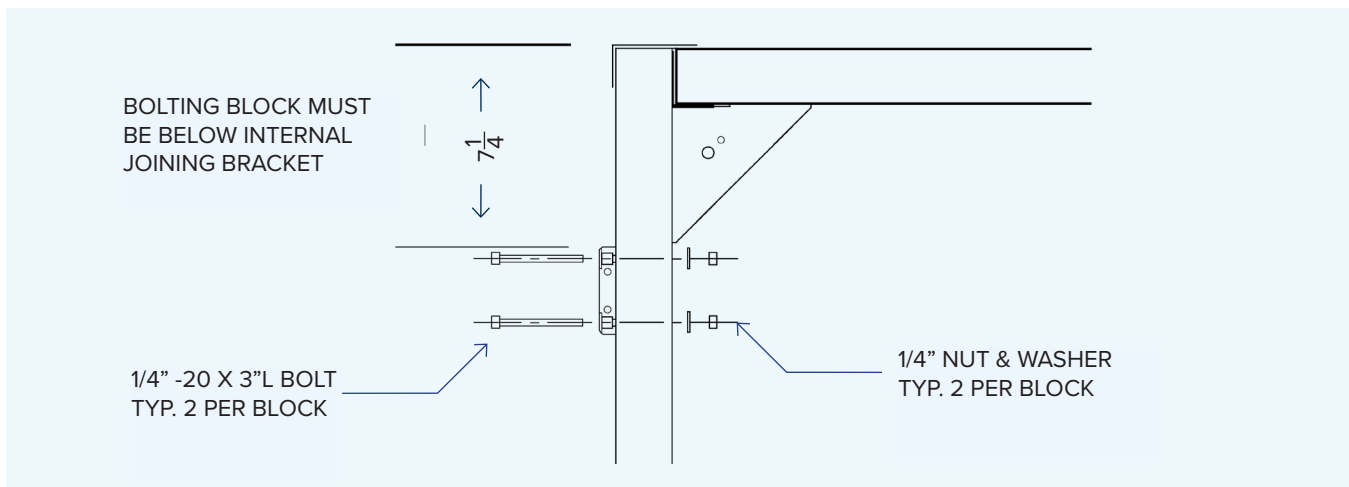


Figure B

Once the first bolting block is installed, push module flush with the second module. Loosely fasten the second bolting block to the already installed one using M6 bolts and nuts (provided with hex key) and fasten to the wall panel of the second module similar to the first (Figure C).

These bolting blocks **are NOT used to pull the modules together**, but only to hold the modules once they have already been pulled together – use clamps or other pulling techniques to bring modules together. Tighten bolts together once the second bolting block is installed.

Repeat procedure for all rear module splits until unit is fully assembled.

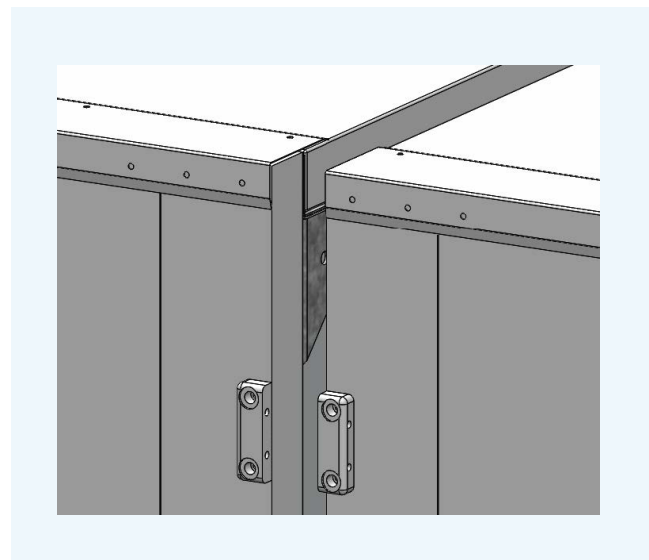


Figure C

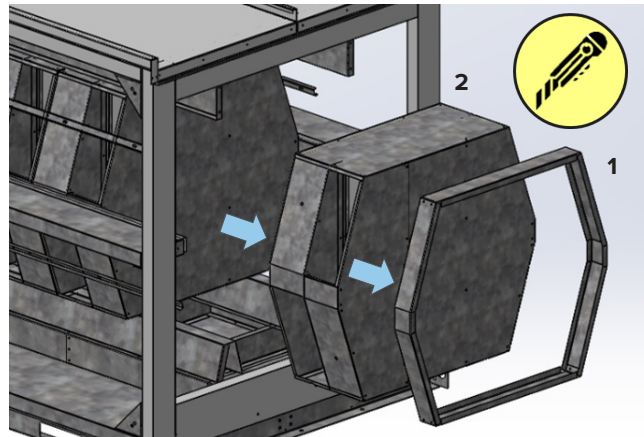
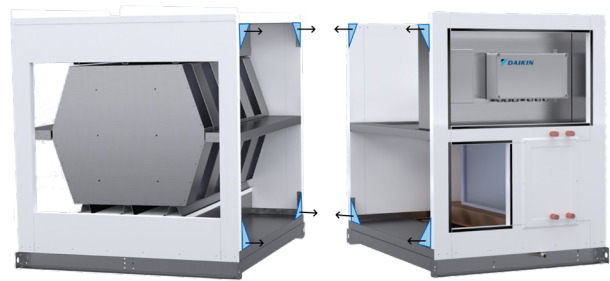
3.9 Core Removal

Where the unit is against a wall and rear access is not possible, it may be necessary to remove the front core stack to access the rear brackets.

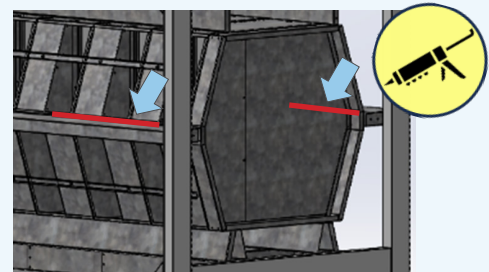
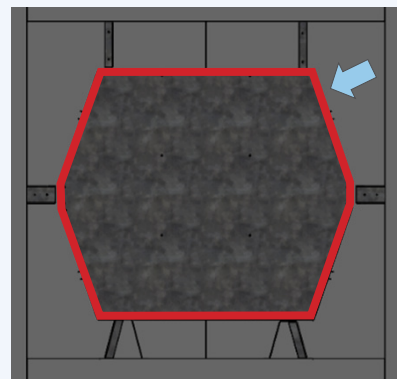
The cores are access through the front door (not shown)

Collar piece (1) will be gasketed and floating between the first core stack (2) and the access door (hidden). Do not remove the gasketing.

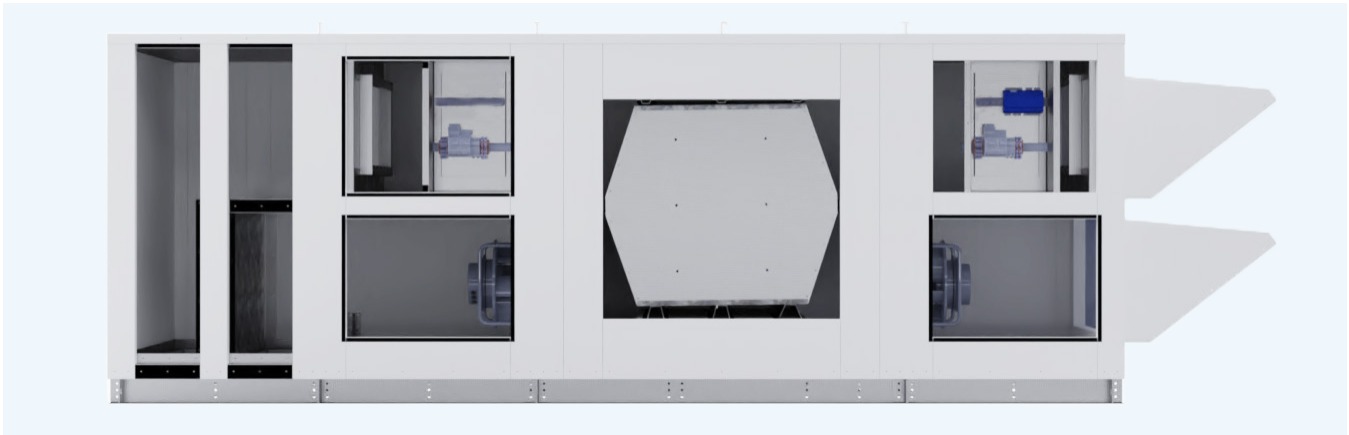
1. Remove the front core spacer (1) and core stack module (2). The core stack sheet metal housing perimeter may require cutting away of silicone prior to removal. **Do not cut away any gasketing.**
2. The rear internal corner brackets can now be accessed through the core section.
3. Once rear brackets are secure, the front core stack and spacer can be re-inserted in reverse order.
4. Prior to inserting, **apply silicone around the edge of each surface that is not gasketed**, as shown (right).
5. Finally, apply silicone along the top edge of the horizontal support rail, as shown (right). Ensure, there is a continuous seal with the existing silicone.



Caution: Exposed sheet metal may be sharp.



4.0 OUTDOOR INSTALLATION



4.1 Hood Installation

Motorized shutoff dampers come factory-installed to the unit. For special requests to have the dampers shipped loose, dampers shall be face-mounted over the labeled exhaust air and outdoor air openings. Actuators are accessed through removable access panels built into the hoods.

Note: If optional shipped-loose hoods for on-site assembly are required, see the steps below. The same steps would be followed for hoods attached to preheater casing modules.

1. Hoods should come prepared with continuous 1" W x 1/8" T foam gaskets along the length of the mounting flanges. If not, apply it to the hood prior to installation.
2. Align the top hood flange under the roof flange, as shown.
3. Fasten the hood centered over the damper onto the outside of the unit using the roofing screws provided. Screw into the roof flange and top hood flange together as shown below. All precut holes in the hood should be screwed with the provided roofing screws.



Hood Installation (Nova unit shown for illustration purposes)



Sealing of Hoods (Nova unit shown for illustration purposes)

4. Apply a thick bead of outdoor-rated caulking around the perimeter flanges of the installed hood to provide a continuous seal. Repeat the same steps for the second damper and hood combination.

5. Repeat the same steps for the second damper and hood combination.

6. Shutoff dampers can be accessed through a removable panel on the hood.



Shutoff Damper Access (Nova unit shown for illustration purposes)

4.2 Roof Installation Options

When considering roof-mounted installations of Ventum+, there are three main recommended options for placement to protect both the unit and the roof. It is up to the engineer to determine the appropriate installation detail for the specific application and the applicable structural, seismic, wind-resistance, and waterproofing requirements. Ensure all installation do not compromise the building envelope.

The following are only illustrations of examples but do not include specific engineered details required for appropriate installation.

4.2.1 Roof Curb

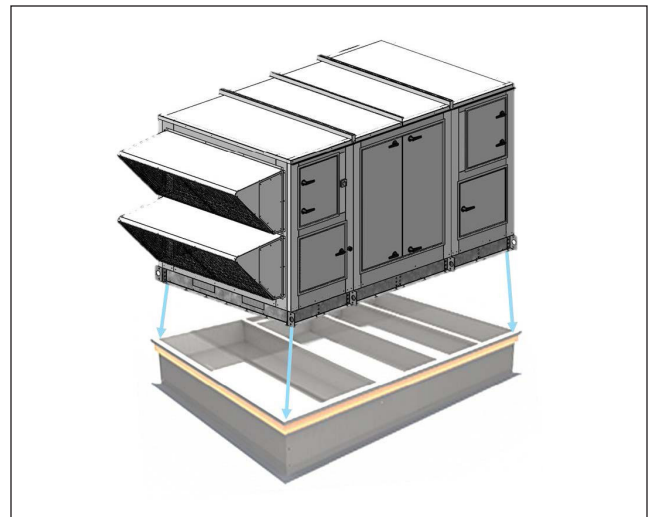
This option is typically required for all downshot (or down discharge) applications, but it can be used for any configuration of Ventum+.

4.2.2 Sleepers

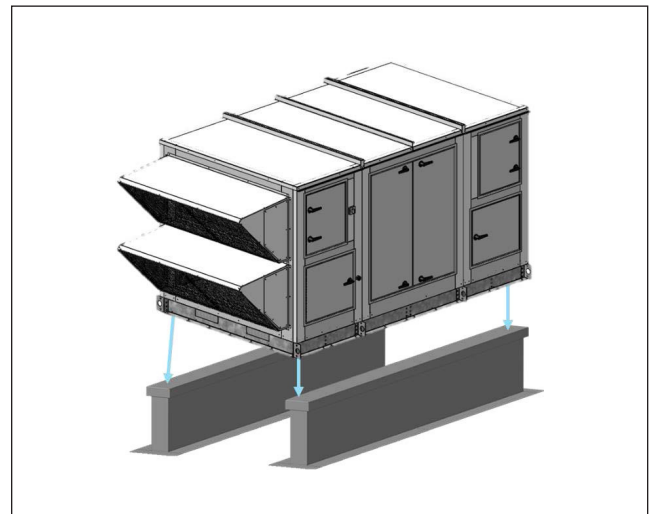
If downshot is not required, a common method is to install roof sleepers, with two sleepers running the full length of the unit: one aligned with the front and one with the back baseframe of Ventum+.

4.2.3 Structural Beams

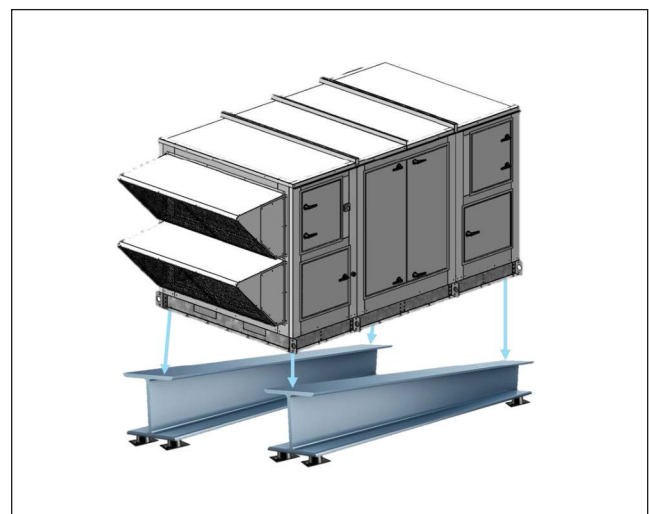
Another option for Ventum+ units, typically without a downshot module, would be to mount directly to a steel beam member.



Roof Curb Option



Sleepers Option

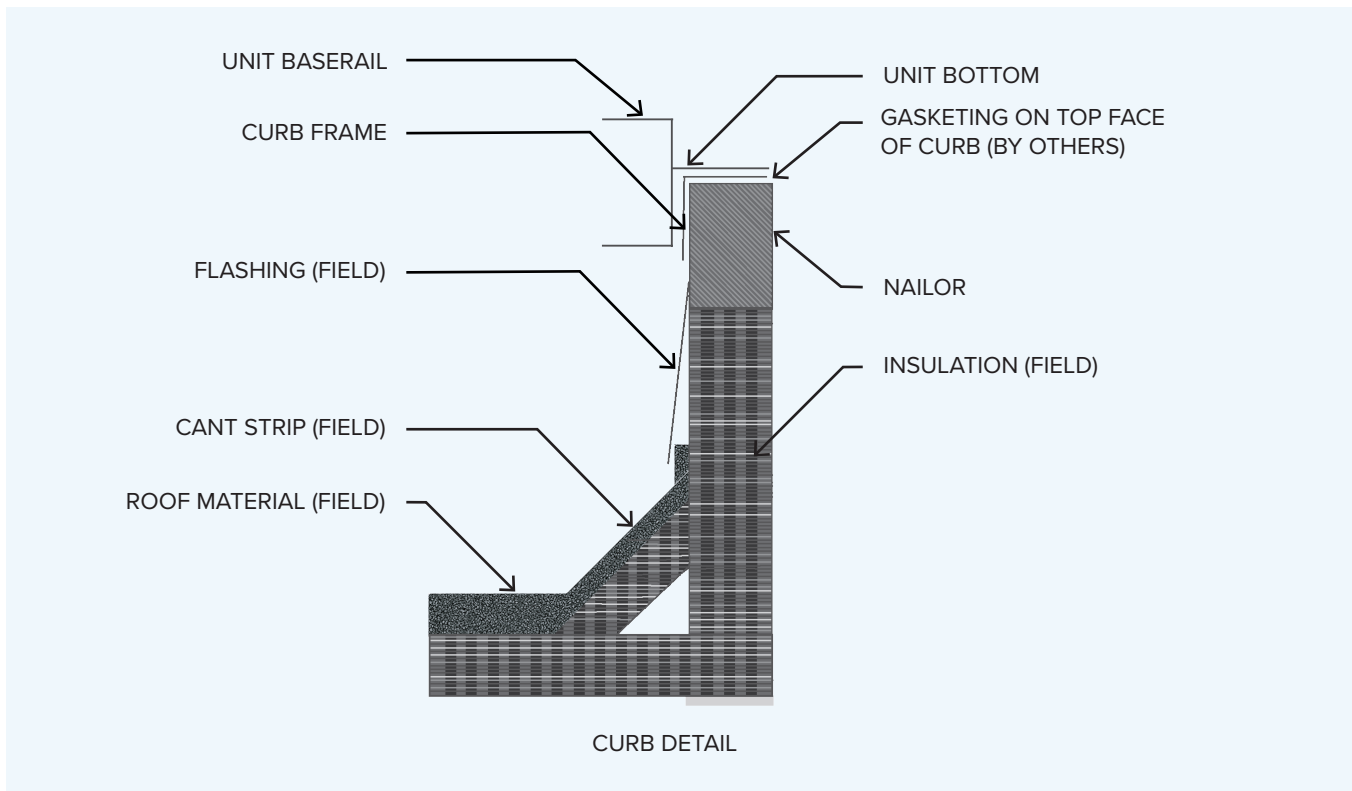


Structural Beams Option

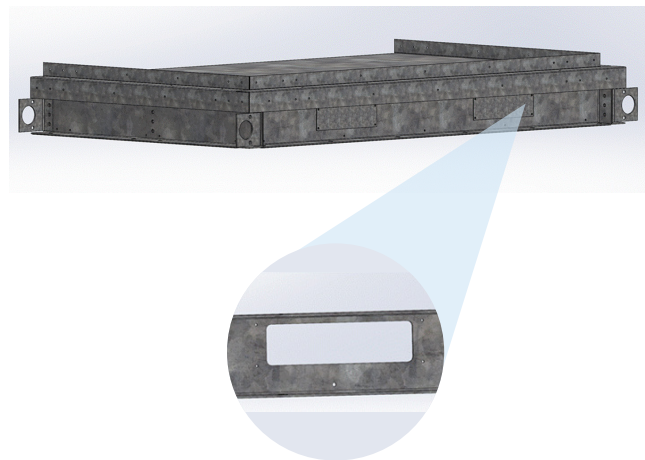
4.3 Roof Curb Installation

The Ventum+ unit, complete with base frame (or baserail), is provided by Oxygen8. Curb engineering and construction, including gasketing (optional) between the roof curb and unit baserail, is provided by others.

The detail below depicts example details of how a roof curb assembly would interface with the "UNIT BASERAIL." For curb installation, refer to the specific curb manufacturer installation manual



After all modules are secured in place on the curb, all forklift cutouts must be sealed with the provided plates and tek screws. All required plates and screws will be packaged in a kit and stored inside the supply air fan section of the unit during shipping, unless noted otherwise.



4.3.1 Removable Plate Installation for Base Rail

Holes are left so forklifts can lift units. However, they allow air/water leakage as well as air mixing so they must be sealed with provided plates.

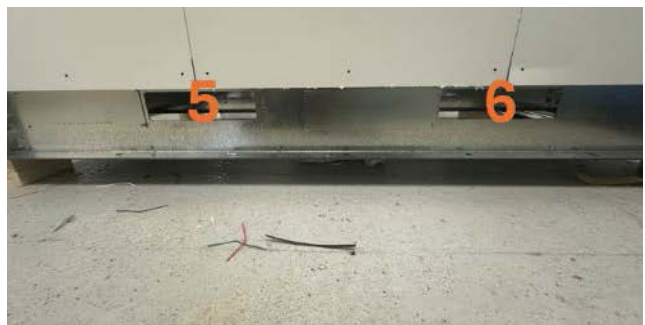
1. Remove the provided plate. Remove screws using ¼" hex socket bit.



2. Reattach the plate using 4x1" Tek screws and ¼" hex socket bit



3. Repeat for all 12 plates (x2 end sections)

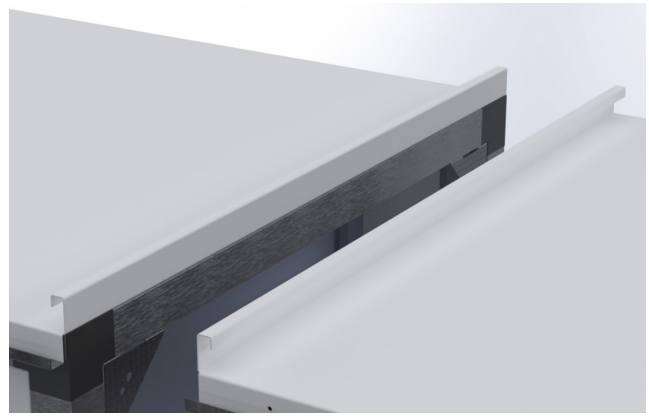


4.4 Outdoor Unit Split Connections

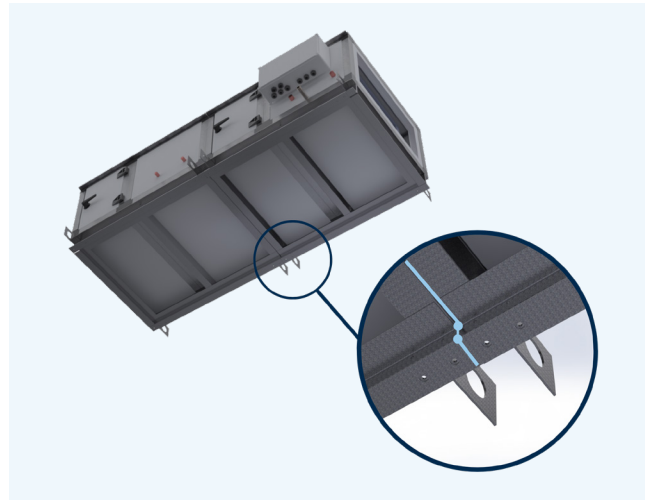
Motorized shutoff dampers come factory-installed to the unit. For special requests to have the dampers shipped loose, dampers shall be face-mounted over the labeled exhaust air and outdoor air openings. Actuators are accessed through removable access panels built into the hoods.

For pre-heaters and decoupled combo coils in outdoor applications, the following instructions shall be followed for sealing the split connection.

1. Prior to installing the split roof cap, bolt the split modules together by referring to the general Ventum+ installation instructions.
2. Once connected, the roof cap can be placed over the seam, and screwed into the front and back pre-cut holes using the roofing screws provided.
3. After placing the unit on top of the gasket-sealed surface of the roof curb, seal the baseframe seam with silicone from the outside to create a sealed environment within the roof curb.



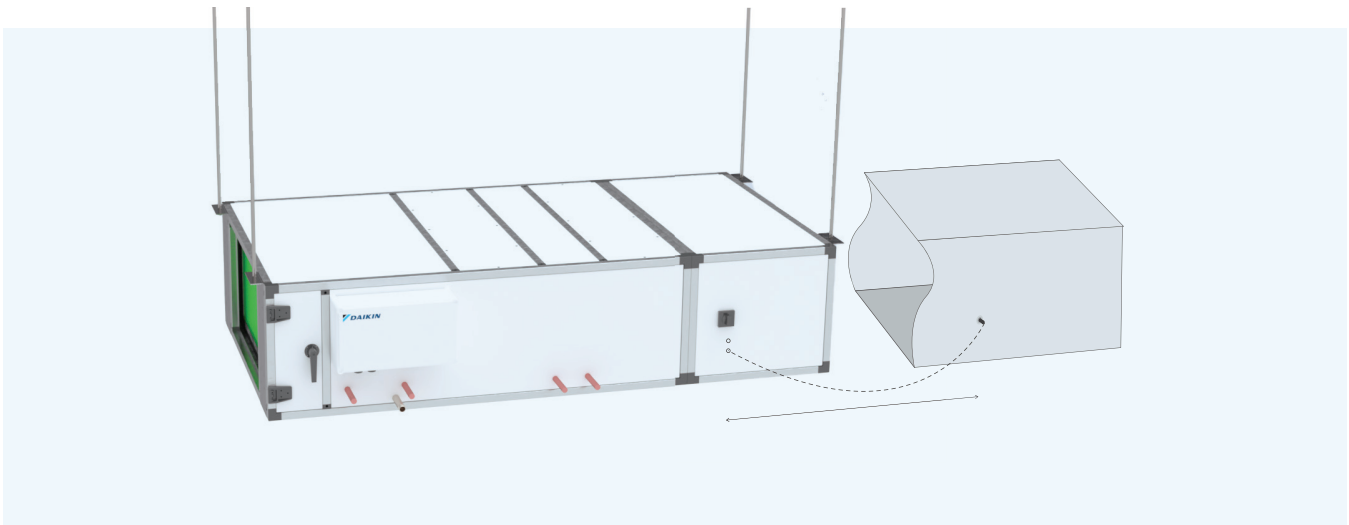
Sealing of Roofs



5.0 EXTERNAL SENSORS

5.1 Supply Air Temperature + Humidity Sensor

Temperature + Humidity sensors are also used when only temperature sensing is required. Temperature + Humidity sensors are installed in the ventilation duct using the accompanying bracket, which must be attached to a firm, level surface by means of two screws. The supply voltage is provided via the Modbus connection. The sensor has a pre-fitted cable, which is equipped with a standard RJ12 connector. The cable may be extended up to 50 m using a Category 3 extension cable. The sensor is adjustable and must be mounted according to, and must be aligned parallel to the air flow in the center of the duct.



Terra shown as reference only. *Sensor must be installed a minimum of 5' from the heating or cooling module.

5.2 Constant Pressure Regulation

For applications including, but not limited to, DOAS integration VRV using constant pressure regulation mode, duct pressure sensing is required. The following is provided loose with the Oxygen8 unit:

Provided by Oxygen8:

- Huba Differential Pressure Sensor
- Pressure Nipple
- 5ft of Tubing
- 30ft of Modbus Cable

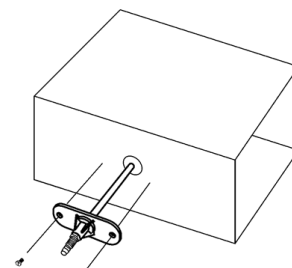


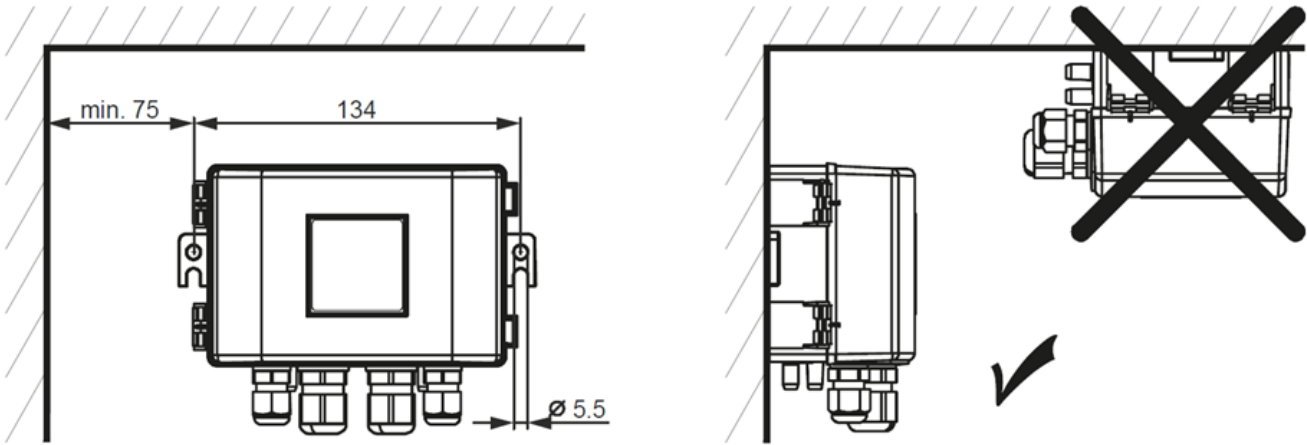
5.2.1 Typical Installation

1. Select an area for the probe 5 to 8 duct diameters from any elbows, obstructions, or significant changes in the duct area.
2. Drill an 5/16" hole and insert the probe.
3. Determine the duct's flow direction and install based on the unit's flow arrow imprint.
4. Install the unit horizontally to assure accurate velocity readings.
5. Attach using two self-tapping screws inserted in the 3/16" mounting holes. The FPP/SPP Series have 1/4" OD and a barbed fitting for use with 3/8" OD tubing.



Caution: During installation check that there are no sharp bends in the tubing at any connection. Bends and creases may leak over time as the tubing ages.





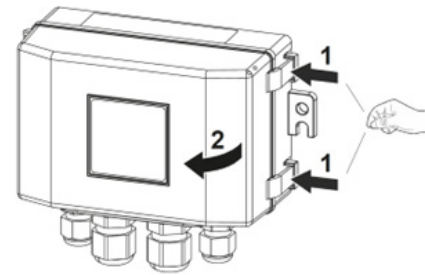
Note: Always mount vertically with pressure connections facing downwards, drain of possible condensed water (factory calibration). For the measurement of relative pressure, the indication ‘connected to ambient atmosphere’ is shown.

5.2.2 Wiring and Pressure Tubing

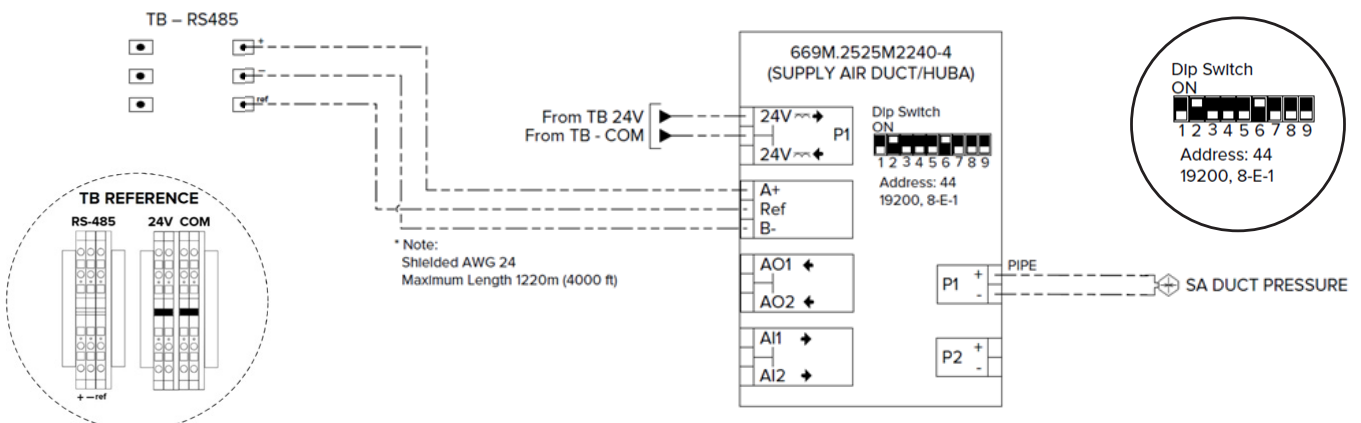
Huba Pressure Sensor features quick release fasteners and a detached cover.

To Open:

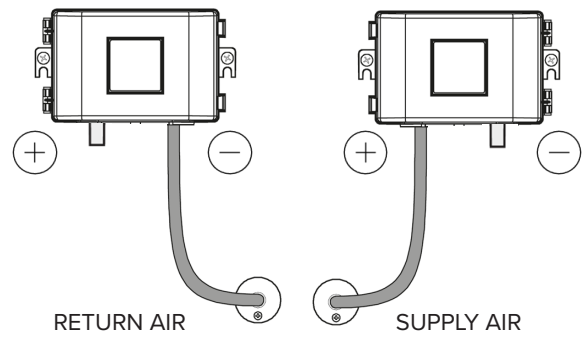
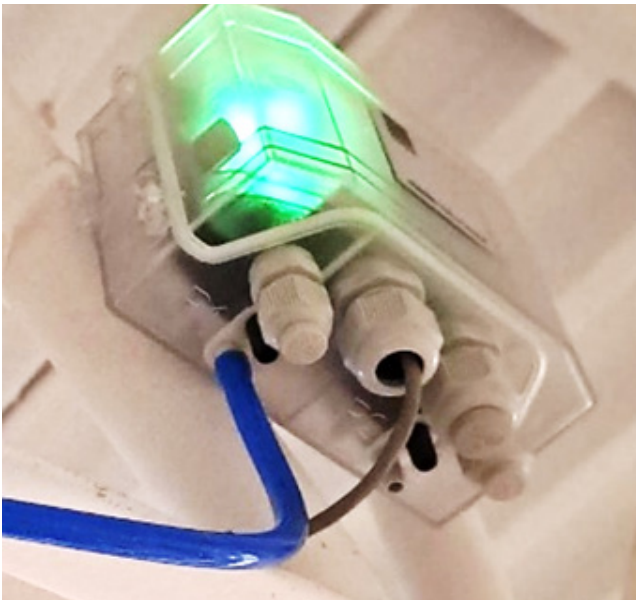
1. Lift the quick release fasteners
2. Swing open the detached cover



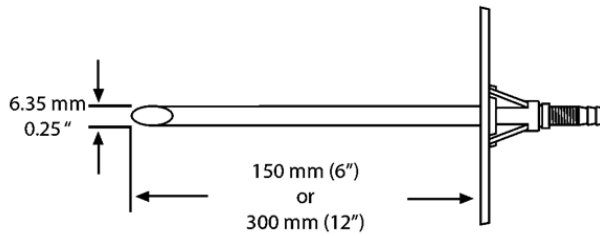
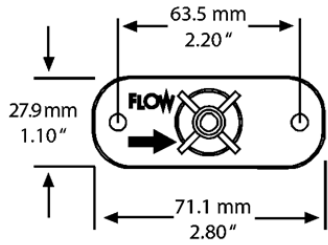
Note: Ensure the dip switch configuration from the factory matches what is shown below:



Tubing (“PIPE”) is coiled and provided loose with the unit.



Note: Ensure you connect the tubing to the correct port of the pressure sensor for your application. Top left (most commonly) is for supply-air ducts.



Bracket Material:

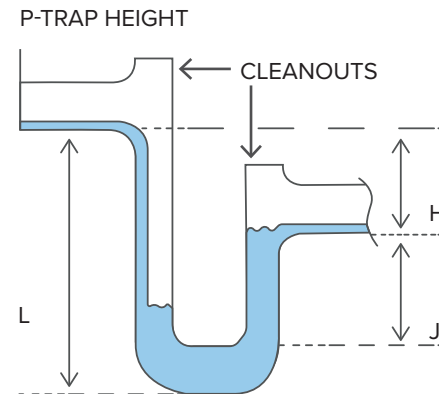
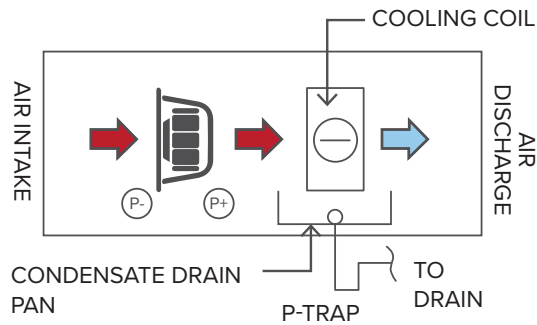
ABS - UL94-5VB. Angled probe tip should be centrally located in the duct. If the probe is not sized correctly, please contact the Oxygen8 Applications team.

6.0 CONDENSATE DRAIN P-TRAP

6.1 Blow-Through Configuration

Fan located upstream of the cooling coil.

NOT STANDARD for Ventrums+ units.



- The water collected in the drain pan below the cooling coil must be removed to prevent overflow, damage, and contamination to the air handler system and building.
- When the fan is ON, it creates **positive** pressure in the drain pan compartment which **aids the drainage of condensate**.

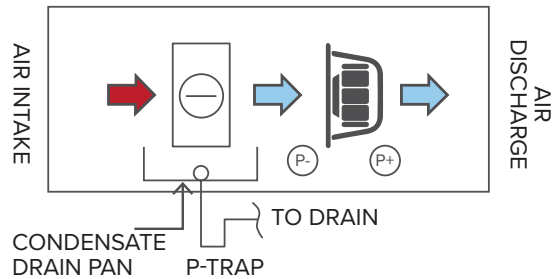
$$H = 1"w$$

$J = 1"$ for each 1" w.g. maximum static pressure (min 1")

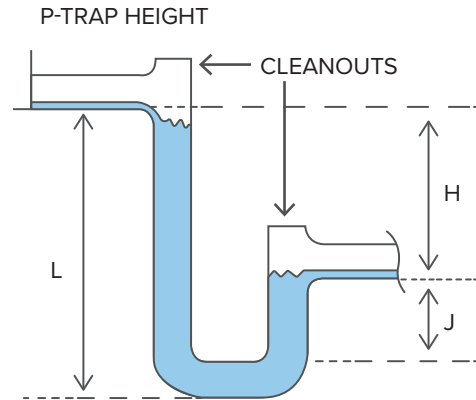
$$L = H + J + \text{Pipe Dia.}$$

6.2 Draw-Through Configuration

Fan located downstream of the cooling coil.
STANDARD for Ventum+ units.



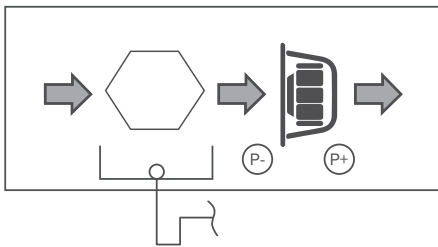
- The water collected in the drain pan below the cooling coil must be removed to prevent overflow, damage, and contamination to the air handler system and building.
- When the fan is ON, it creates **negative** pressure in the drain pan compartment which **can cause the drain to back up and make it harder to be removed.**



$H = (1" \text{ for each } 1" \text{ w.g. maximum static pressure}) + 1"$

$J = H/2; (\text{min } 1")$

$L = H + J + \text{Pipe Dia.}$



6.3 Condensate Pump

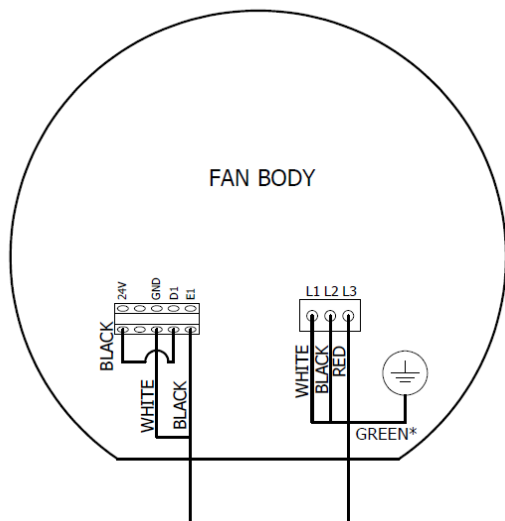
If a condensate pump is required for proper drainage, a P-trap is recommended in all cases; however, a p-trap is not required for blow-through coil applications, depending on the specific conditions and local building codes.

7.0 ELECTRICAL INFORMATION

Model	Airflow	Nom. V (3-Ph)	Motor (kW)	SA Fan Qty	RA Fan Qty	Unit FLA	MCA	MOP/RFS
V20	1800	208	2	1	1	12.33	13.50	15A
		460	2.5	1	1	8.14	9.00	15A
V25	2400	208	2.7	1	1	17.53	19.35	25A
		460	3.7	1	1	11.74	13.05	15A
V30	3200	208	3	1	1	18.33	20.25	25A
		460	3.3	1	1	10.94	12.15	15A
V40	4000	208	2.7	2	2	24.33	25.50	30A
		460	2.5	2	2	16.14	17.00	20A
V50	4800	208	2.7	2	2	34.73	36.55	45A
		460	3.7	2	2	23.34	24.65	30A
V60	6000	208	3	2	2	36.33	38.25	45A
		460	3.3	2	2	21.74	22.95	25A
V80	8000	208	2.7	3	3	51.93	53.75	60A
		460	3.7	3	3	34.94	36.25	40A
V100	10000	208	3	3	3	54.33	56.25	60A
		460	3.3	3	3	32.54	33.75	35A

MCA Minimum Circuit Ampacity

MOP/RFS Maximum Over Current Protective Device / Recommended Fuse Size Data is relevant for all units except single-point power units with an electric heater; in this case, please refer to the project-specific submittal.



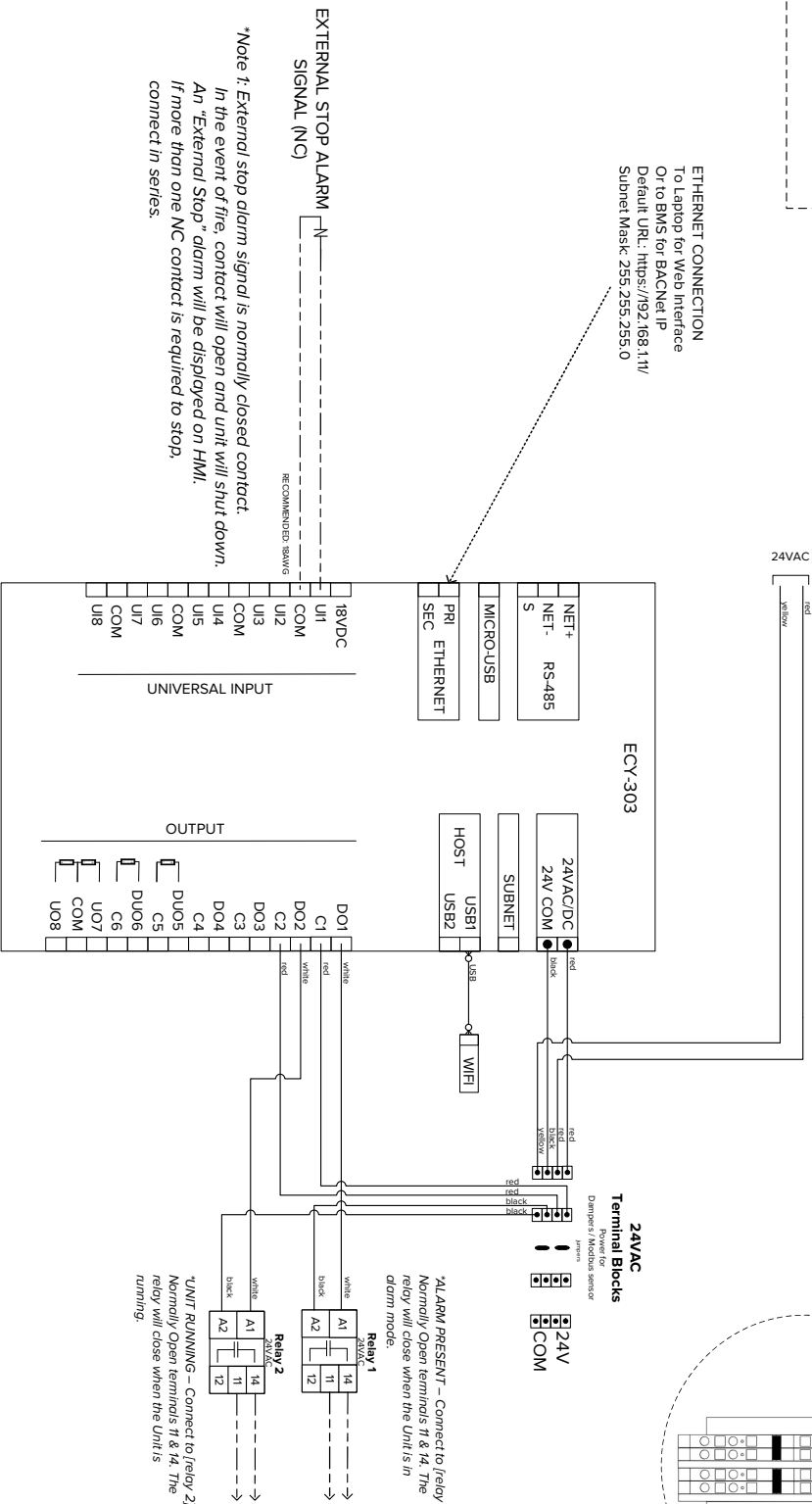
Fan Connection - Three Phase

8.0 WIRING DIAGRAMS

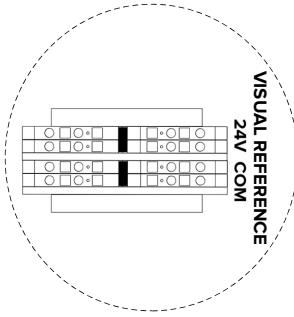
8.1 External Stop Alarm

***NOTE: FOR THE CONNECTIONS BELOW, THE ECY-303 CONTROLLER IS LOCATED ON THE OUTDOOR AIR ELECTRICAL PANEL.**

ETHERNET CONNECTION
 To Laptop for Web Interface
 Or to BMS for BACNet IP
 Default URL: https://192.168.1.1/
 Subnet Mask: 255.255.255.0



***Note 1: External stop alarm signal is normally closed contact.**
 In the event of fire, contact will open and unit will shut down.
 An "External Stop" alarm will be displayed on HMI.
 If more than one NC contact is required to stop, connect in series.



Legend

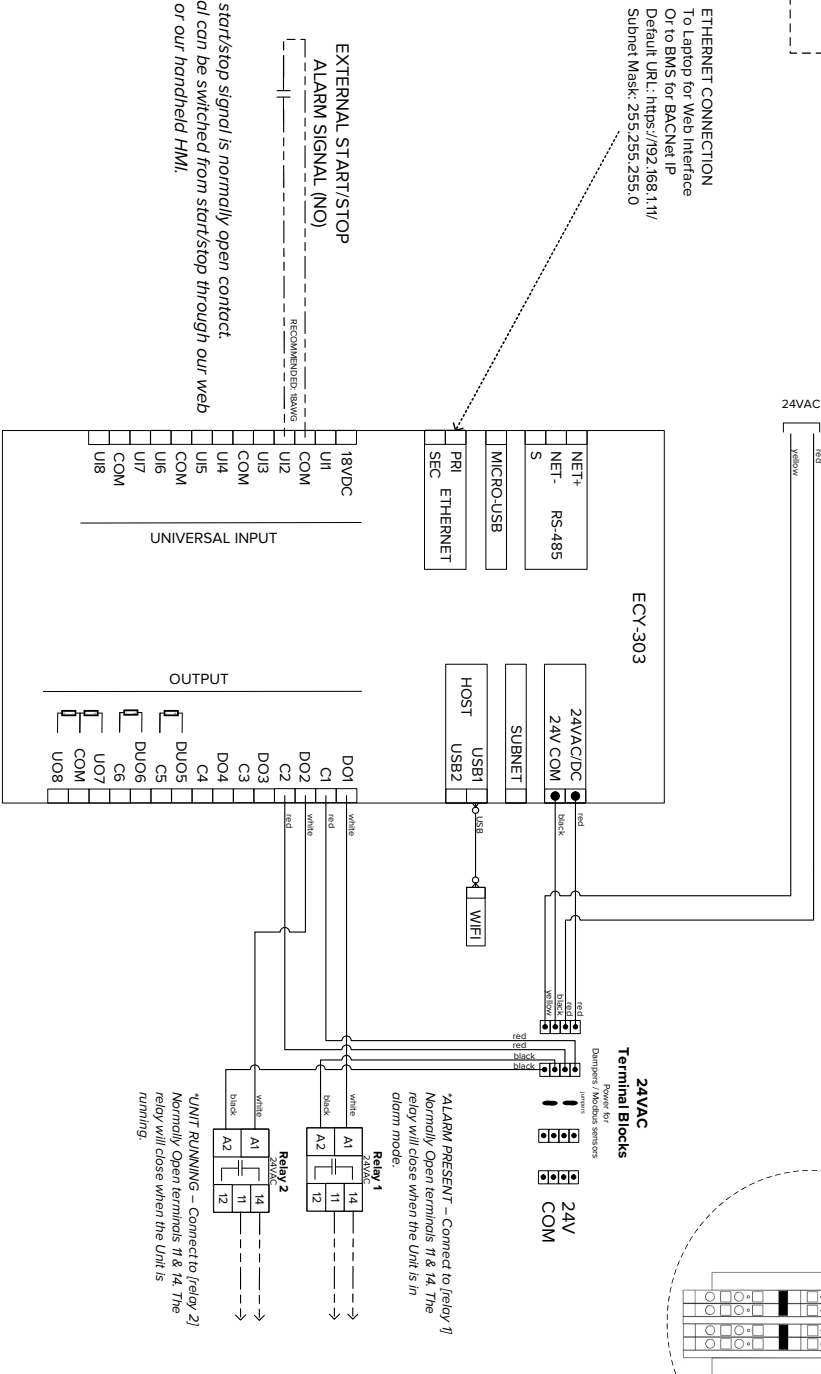
- Factory wired
- - - - - Communication
- Enclosed unit
- - - - - Field wiring required

Note:
 All signal wires are recommended to be sized at 18 AWG only if they are less than 100ft in length. Else, it is recommended to use a thicker wire gauge to prevent signal loss.

DRAWING BY: KC		O X Y G E N 8	
APPROVED: AS	DRAWING TITLE: FIELD WIRING/ EXTERNAL STOP ALARM	SCALE: NTS	SIZE: A3
REVISION: 1.2	DRAWING NUMBER: 028_024_0030_00	SHEET: 1	OF 1
DATE: 01-08-2024	CONTROLLER: ECY-303		

8.2 External Stop/Start

***NOTE: FOR THE CONNECTIONS BELOW, THE ECV-303 CONTROLLER IS LOCATED ON THE OUTDOOR AIR ELECTRICAL PANEL.**



*Note 1: External start/stop signal is normally open contact. This signal can be switched from start/stop through our web interface or our handheld HMI.

Legend

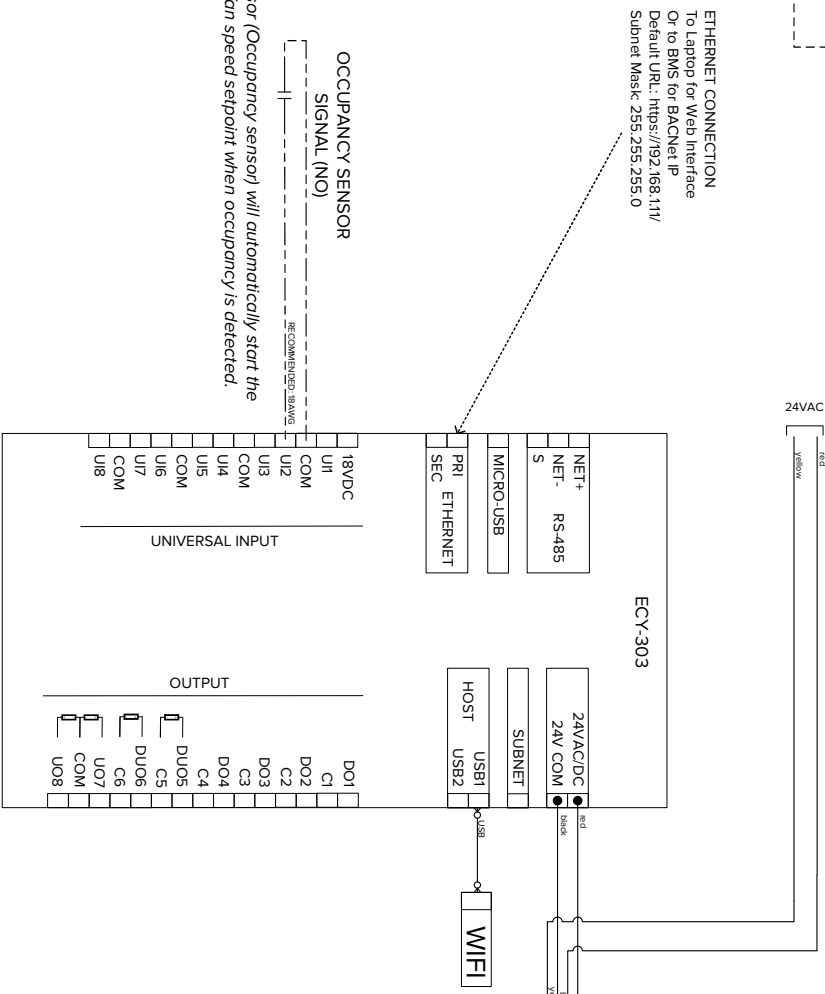
- Factory wired
- - - Communication
- Enclosed unit
- - - Field wiring required

Note:
All signal wires are recommended to be sized at 18 AWG only if they are less than 100ft in length. Else, it is recommended to use a thicker wire gauge to prevent signal loss.

DRAWN BY: KC	DRAWING TITLE: OXYGEN 8
APPROVED: AS	FIELD WIRING/ EXTERNAL START/STOP
REVISION: 1.2	DRAWING NUMBER: O28_024_0030_01
DATE: 20-06-2024	SCALE: NTS
	SIZE: A3
	SHEET: 1 of 1

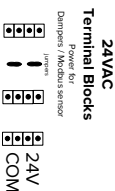
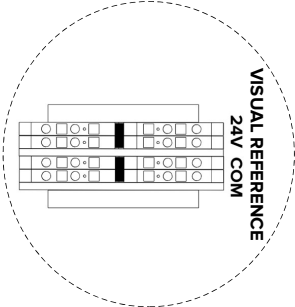
8.3 Occupancy Mode

***NOTE: FOR THE CONNECTIONS BELOW, THE ECVY-303 CONTROLLER IS LOCATED ON THE OUTDOOR AIR ELECTRICAL PANEL.**



**Note 1: PIR sensor (Occupancy sensor) will automatically start the unit at a fan speed setpoint when occupancy is detected.*

ETHERNET CONNECTION
To Laptop for Web Interface
Or to BMS for BACNet IP
Default URL: <https://192.168.1.1/>
Subnet Mask: 255.255.255.0

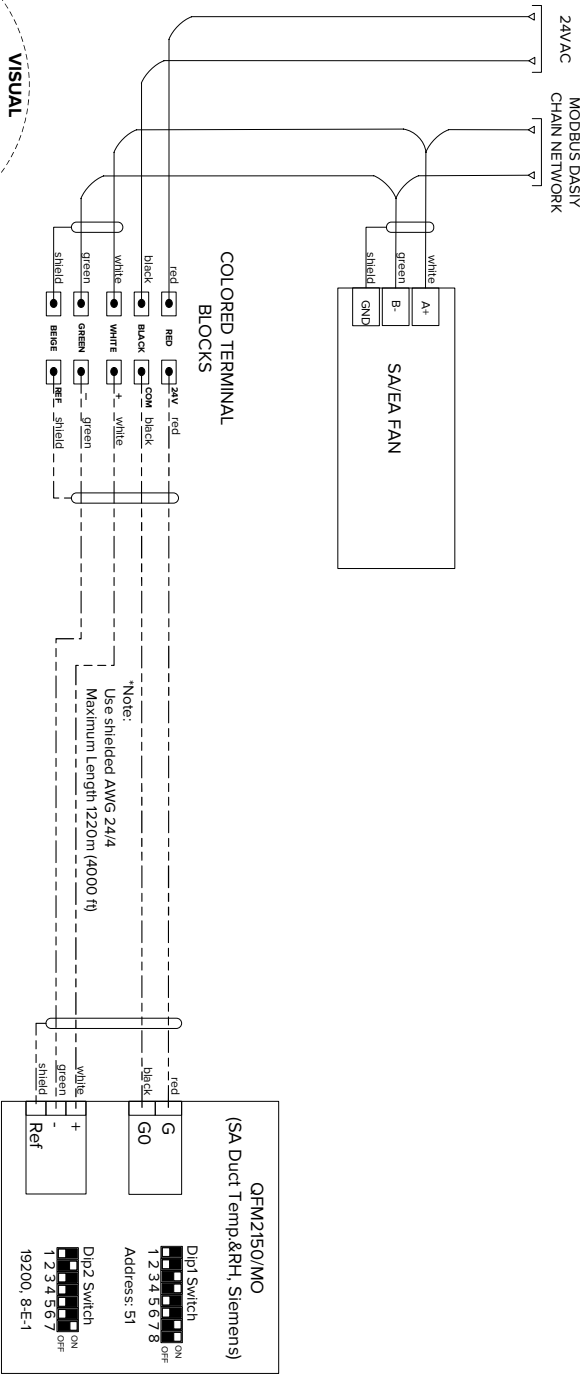


Note:
All signal wires are recommended to be sized at 18 AWG only if they are less than 100ft in length. Else, it is recommended to use a thicker wire gauge to prevent signal loss.

DRAWN BY: KC		O X Y G E N 8	
APPROVED: AS		DRAWING TITLE	
REVISION: 1.2		FIELD WIRING/ OCCUPANCY MODE	
DATE: 20-06-2024	SCALE: NTS	SIZE: A3	SHEET: 1 of 1
DRAWING NUMBER: O28_024_0030_02		CONTROLLER: ECVY-303	

8.4 SA Duct Temperature & Reheat Sensor

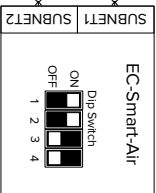
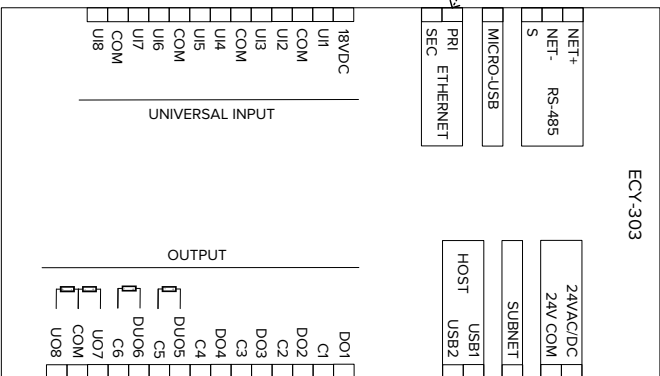
***NOTE: THE TERMINAL BLOCKS ARE PLACED ON THE RETURN AIR ELECTRICAL PANEL LOCATED IN THE RA SECTION.**



DRAWN BY:	KC	DRAWING TITLE:	O X Y G E N 8
APPROVED:	AS	FIELD WIRING/ OPTIONS/MODBUS SENSOR (SA DUCT TEMPERATURE & RH)	
REVISION:	1.2	DRAWING NUMBER:	028_024_0030_03
DATE:	20-06-2024	SCALE:	NTS
		SIZE:	A3
		SHEET:	1 of 1

8.5 EC Smart Vue

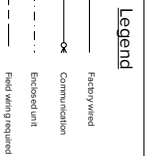
ETHERNET CONNECTION
 To Laptop for Web Interface
 Or to BMS for BACNET IP
 Default URL: https://192.168.111/
 Subnet Mask: 255.255.255.0



***NOTE: FOR THE CONNECTION BELOW, THE ECY-303 CONTROLLER IS LOCATED ON THE OUTDOOR AIR ELECTRICAL PANEL.**

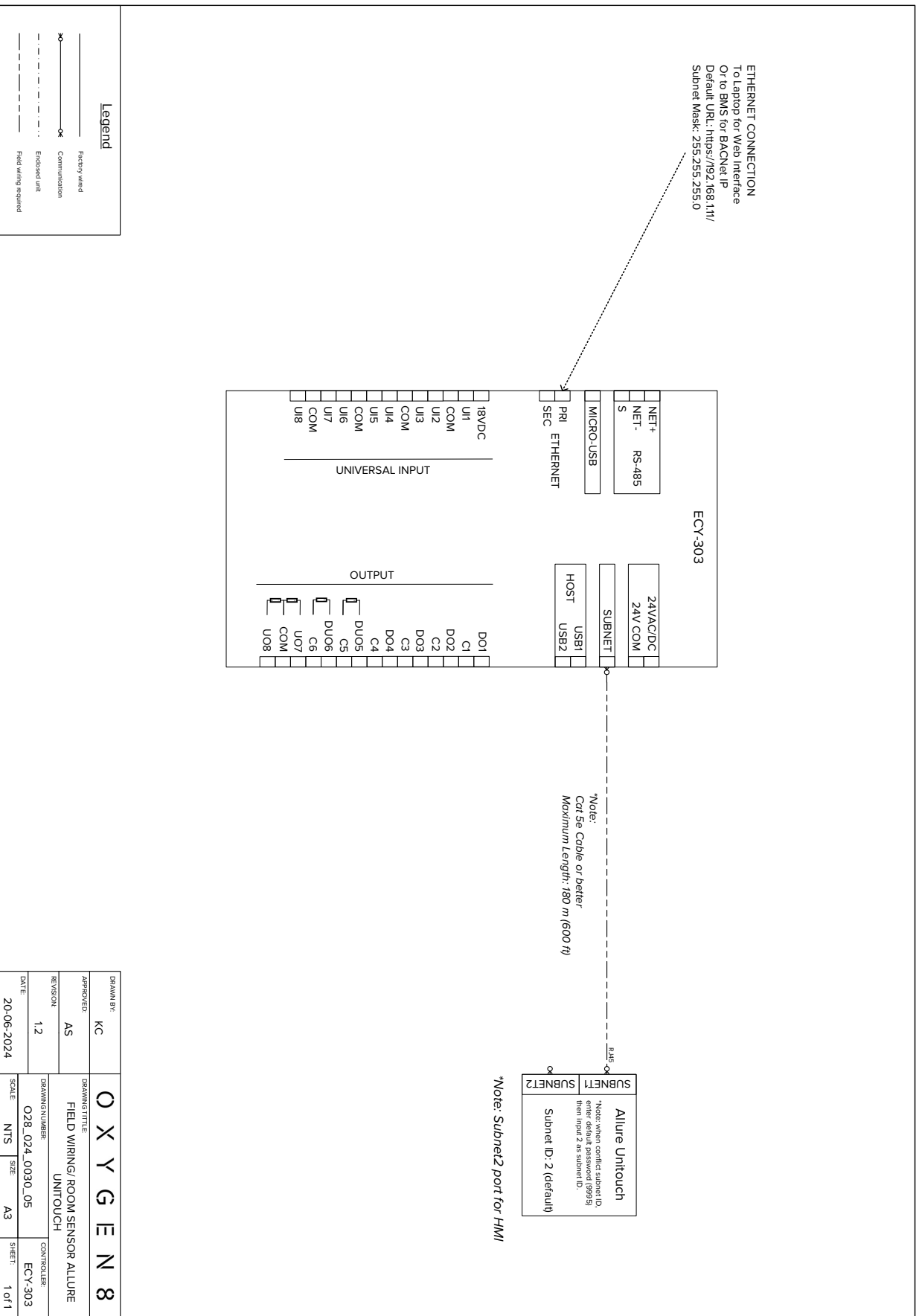
**Note: Cat 5e Cable or better
 Maximum Length: 180 m (600 ft)*

**Note: Subnet2 port for the connection of the next sensor.
 (Allure or HMI)*



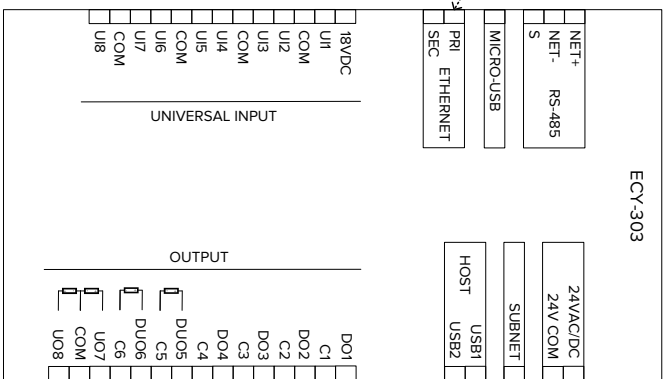
DRAWN BY: KC	DRAWING TITLE: O X Y G E N 8
APPROVED: AS	FIELD WIRING/ ROOM SENSOR EC-SMART
REVISION: 1.2	DRAWING NUMBER: O28_024_0030_04
DATE: 20-06-2024	SCALE: NTS SIZE: A3 SHEET: 1 of 1
CONTROLLER: ECY-303	

8.6 Allure Touch Sensor

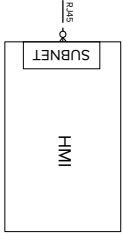


8.7 HMI

ETHERNET CONNECTION
 To Laptop for Web Interface
 Or to BMS for BACNet IP
 Default URL: <https://192.168.1.1/>
 Subnet Mask: 255.255.255.0



Note:
 Cat 5e Cable or better
 Maximum Length: 2m (6.7 ft)



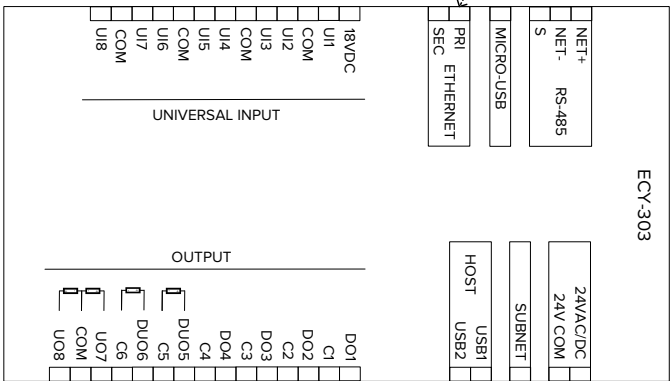
NOTE: FOR THE CONNECTION BELOW, THE ECY-303 CONTROLLER IS LOCATED ON THE OUTDOOR AIR ELECTRICAL PANEL.



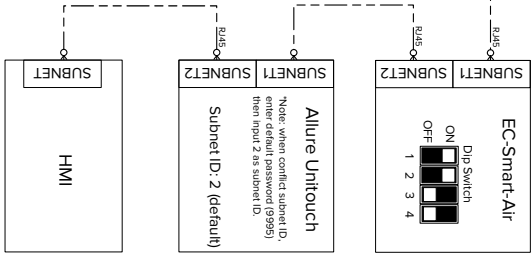
DRAWN BY:	KC	DRAWING TITLE:	O X Y G E N 8		
APPROVED:	AS	FIELD WIRING/ HMI			
REVISION:	12	DRAWING NUMBER:	O28_024_0030_06	CONTROLLER:	ECY-303
DATE:	20-06-2024	SCALE:	NTS	SIZE:	A3
				SHEET:	1 of 1

8.8 Room Sensors and HMI (Subnet Network)

ETHERNET CONNECTION
 To Laptop for Web Interface
 Or to BMS for BACKNET IP
 Default URL: https://192.168.1.1/
 Subnet Mask: 255.255.255.0



Note:
 Cat 5e Cable
 Maximum Length: 100m (328 ft)

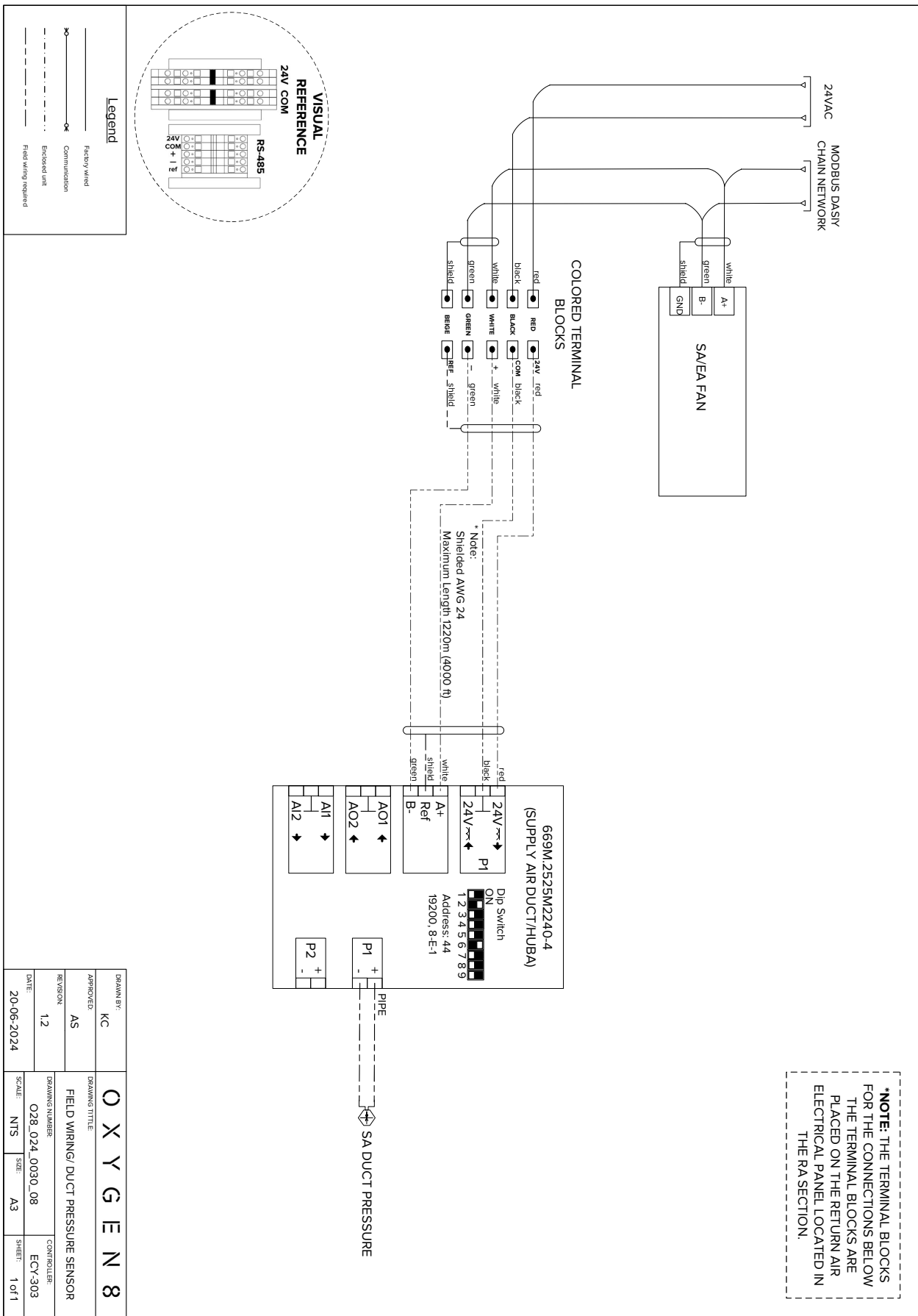


***NOTE 1:**
 FOR THE CONNECTIONS BELOW,
 THE ECY-303 CONTROLLER IS
 LOCATED ON THE OUTDOOR AIR
 ELECTRICAL PANEL.



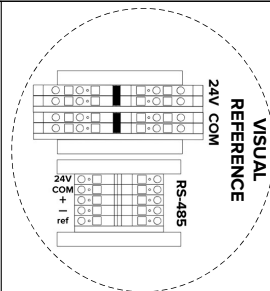
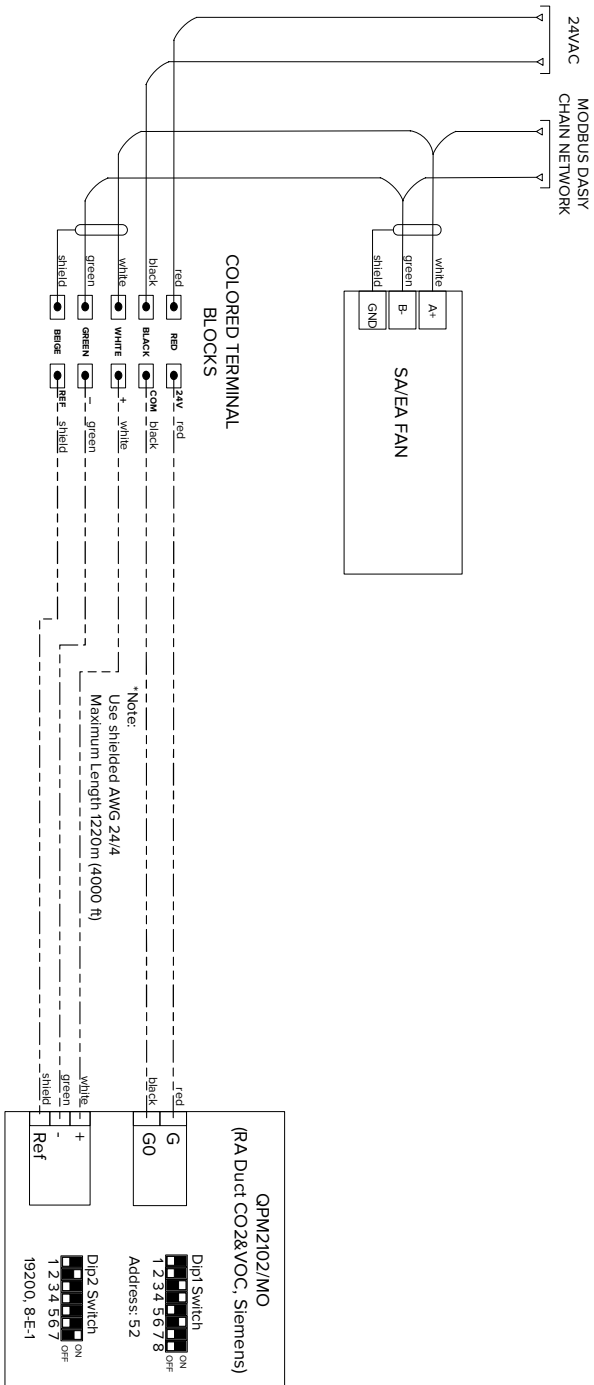
DRAWN BY: KC		DRAWING TITLE: O X Y G E N 8	
APPROVED: AS		VENTUM+ FIELD WIRING	
REVISION: 1.2		ROOM SENSORS & HMI (SUBNET NETWORK)	
DATE: 20-06-2024		DRAWING NUMBER: O28_024_0030_07	
SCALE: NTS		SIZE: A3	
		CONTROLLER: ECY-303	
		SHEET: 1 of 1	

8.9 Duct Pressure Sensor



8.10 CO2 & VOC Sensor

***NOTE:** THE TERMINAL BLOCKS FOR THE CONNECTIONS BELOW THE TERMINAL BLOCKS ARE PLACED ON THE RETURN AIR ELECTRICAL PANEL LOCATED IN THE RA SECTION.

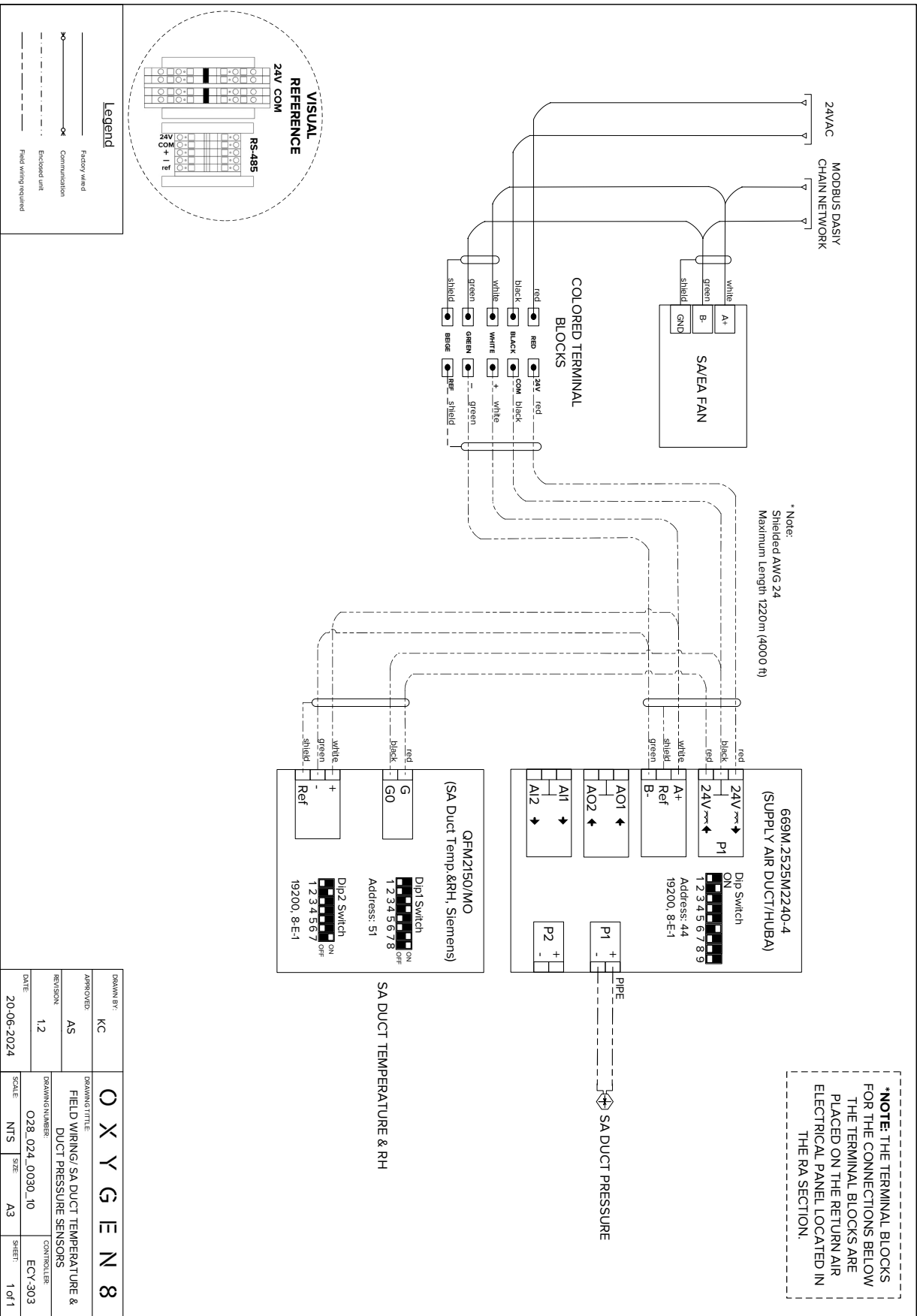


Legend

- Factory wired
- Communication
- Enclosed unit
- Field wiring required

DRAWN BY: KC	OX Y GEN 8
APPROVED: AS	FIELD WIRING / MODBUS SENSOR (RA DUCT CO2 & VOC)
REVISION: 1.2	DRAWING NUMBER: O28_024_0030_09
DATE: 20-06-2024	SCALE: NTS SIZE: A3 SHEET: 1 of 1
	CONTROLLER: ECV-303

8.11 SA Duct Temperature Sensor & Reheat Duct Temperature Sensor



DRAWN BY:	KC	O X Y G E N 8	
APPROVED:	AS	FIELD WIRING/ SA DUCT TEMPERATURE & DUCT PRESSURE SENSORS	
REVISION:	1.2	DRAWING NUMBER:	O28.024.0030.10
DATE:	20-06-2024	CONTROLLER:	ECV-303
SCALE:	NTS	SIZE:	A3
		SHEET:	1 of 1

