OXYGEN8

VENTUM+

Operations & Maintenance

TABLE OF CONTENTS

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 apotentially 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 CONFIGURATION CHART

2.1 Nomenclature

*The following is a complete description of the range of model numbers and nomenclature.

VENTUM_V20_HRV_B_I_R_S2_DP_14_4603

Submittal Drawings only show highlighted portion.

Model Number
V20, V25, V30, V40, V50, V60, V80, V100

Heat Exchanger Type
HRV, ERV

Heat Exchanger Core Configuration
B = Bypass, S = Standard

Installation
I = Indoor, O = Outdoor

Handing
L = Left, R = Right

Power Options
2083 = 208v 3ph
4603 = 460V 3ph
5753 = 575V 3ph

Accessory Configuration
See Table 1 below.

Drain Pan
DP = Drain Pan is in core module
ND = No Drain Pan in core module

Fan Location
S2 = SA fan below RA filter, S1 is reversed

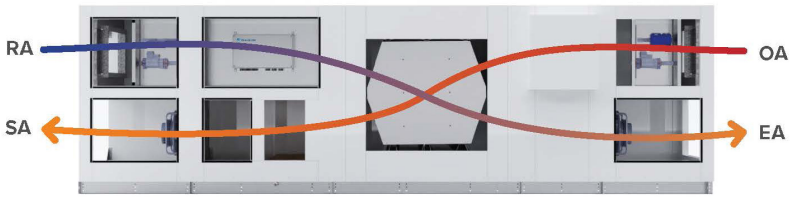
Table 1: Accessory Configuration Numbers

Standard	Downshot	EH		HWC		CWC	DX	HGRH
		PRE	POST	PRE	POST			
0	25							
1	26	x						
2	27			x				
3	28		x					
4	29				x			
5	30	x	x					
6	31			x	x			
7	32						x	
8	33							x
9	34					x		
10	35				x	x		
11	36	x					x	
12	37			x			x	
13	38	x					x	x
14	39			x			x	x
15	40	x				x		
16	41			x		x		
17	42	x			x	x		
18	43			x	x	x		
19	44		x				x	
20	45				x		x	
21	46		x			x		
22	47	x	x				x	
23	48			x	x		x	
24	49	x	x			x		

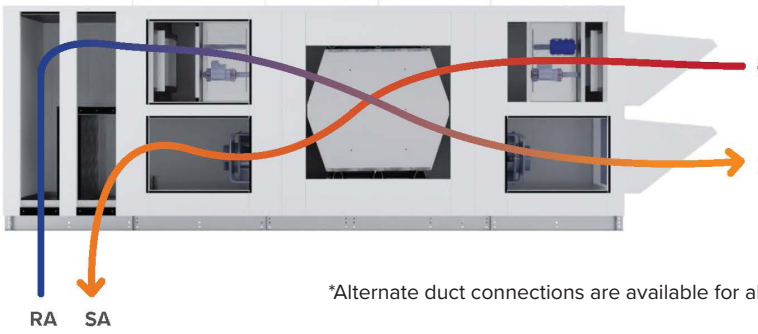
2.2 System Overview

Standard units come complete with ERV or HRV energy recovery option, EC fans, 2” filters, fully integrated controls and casing as outlined in the spec below.

Ventum+ Indoor*



Ventum+ Outdoor with Downshot Module



*Alternate duct connections are available for all indoor units

2.3 General Specifications

Standard Features

Certification
AHRI and ETL Certified

Casing
Double-wall 2” insulation for compact indoor models

Galvanized steel inner panel with pre-painted white outer panel

Electrical and Controls
Configurable integrated controller with BACNet compatibility

Single point power

Filters
4” pleated OA MERV 13, RA MERV 8

Blowers and Motors
High-efficiency variable speed EC direct drive motor
Backward inclined fan

Standard Warranty
Unit - 2 years from shipping

Mounting
Floor or roof curb mounted.

Options

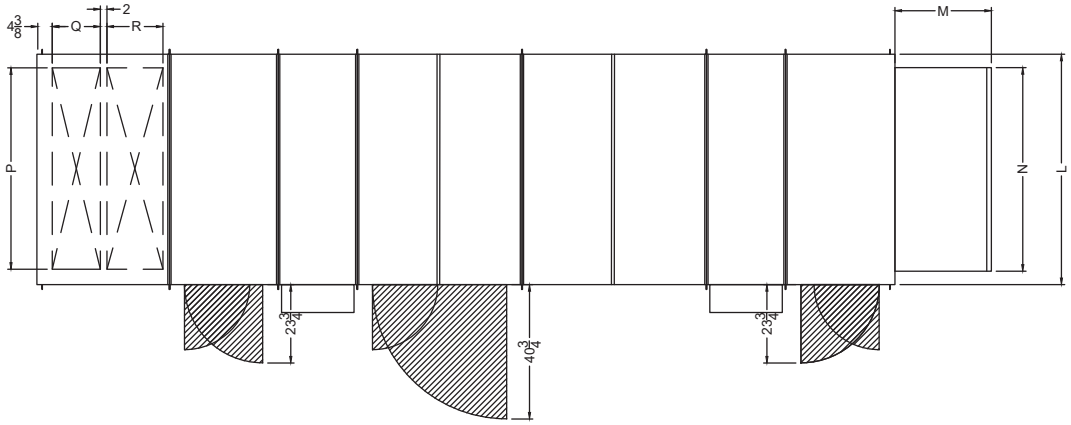
Integrated Heating and Cooling
Hydronic, Electric, DX and Hot Gas Reheat Coils (using EEV kit) and pre-heat available

Bypass Damper
Bypass economizer, bypass defrost

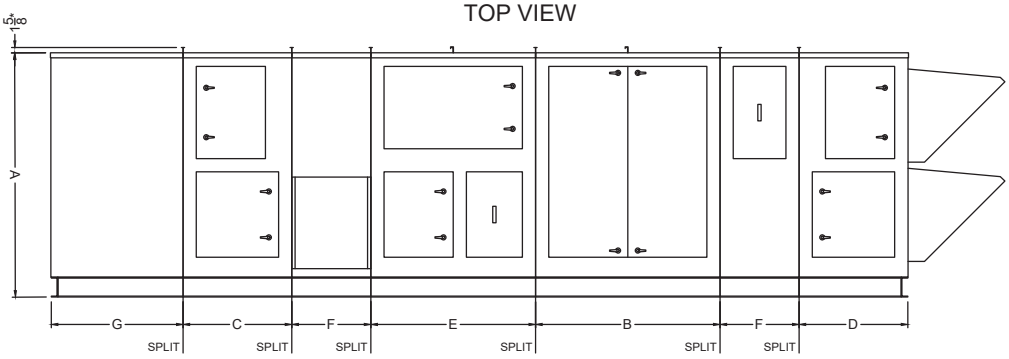
Shut Off Damper
Outdoor and exhaust air dampers (unit or duct mounted)

Frost Control
Electric Preheat or bypass defrost.

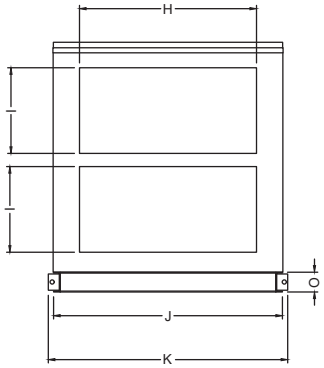
2.4 Dimensions



TOP VIEW



FRONT VIEW



RIGHT VIEW

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	40.625	40.625	53.75	53.75	53.75	61.875	61.875	74.125
I	Duct Opening Height	18	21	22	26	31	31	38	38
J	Base Width	56.375	56.375	69.5	69.5	69.5	85.625	85.625	101.875
K	Lug-Lug Width	59.625	59.625	72.75	72.75	72.75	88.875	88.875	105.125
L	Casing Width	56.875	56.875	70	70	70	86.125	86.125	102.375
M	Hood Length	38.89	43.92	53.42	61.38	71.93	77.81	94.57	104.69
N	Hood Width	48.625	48.625	61.75	61.75	61.75	69.875	69.875	82.125
O	Base Height	4	4	6	6	6	6	8	8
P	Downshot Opening Width	48	48	61.125	61.125	61.125	77.25	77.25	93.5
Q	Downshot Return Air Length	10.625	10.625	10.625	14.625	14.625	14.625	16.625	16.625
R	Downshot Supply Air Length	13	13	13	17	17	17	19	19

* All dimensions are in inches

2.5 Performance

Model	Max Airflow	ERV With Bypass			ERV No Bypass			HRV No Bypass	HRV with Bypass
	cfm	SRE	LRE	TRE	SRE	LRE	TRE	SRE	SRE
V20	1,800	72.5	57.4	63.2	75.7	63.3	68.0	82.5	81.1
V25	2,400	72.5	57.4	63.2	75.7	63.3	68.0	82.5	81.1
V30	3,200	72.5	57.4	63.2	75.7	63.3	68.0	82.2	81.1
V40	4,000	72.5	57.4	63.2	75.7	63.3	68.0	82.2	81.1
V50	4,800	72.7	58.4	63.9	75.8	63.9	68.5	81.4	72.7
V60	6,400	72.7	58.4	63.9	75.1	62.6	67.4	81	72.7
V80	8,000	72.7	58.4	63.9	75.1	62.6	67.4	81	72.7
V100	10,000	72.7	58.4	63.9	74.8	62	66.9	80.7	72.7

2.6 Replacement Filter Sizing

The following include nominal sizes of 4-inch thickness MERV8 or MERV13 filters (depending on the unit specifications). The listed sizes and quantities apply to each filter module; the unit total including Outdoor Air and Return Air filters will be double the listed quantities.

Model #	Thickness [in.]	Filters per module – Size [in.] (quantity)
V20	4	16x16 (1), 16x20 (1)
V25	4	18x18 (1), 18x24 (1)
V30	4	16x20 (1), 20x20 (2)
V40	4	18x24 (3)
V50	4	18x12 (3), 18x18 (3)
V60	4	12x18 (4), 18x18 (4)
V80	4	16x16 (3), 16x20 (4), 20x20 (1)
V100	4	18x18 (2), 18x24 (6)

2.7 Replacement Transformer Fuse Sizes

The following fuses can be accessed through the Exhaust Fan access door. Table 2 below includes ratings for internal mini CC TD style fuses protecting the 24V transformer and the 460-230V stepdown transformer for 460V applications with VRV:

	24V Transformer Fuses			460V Stepdown Transformer Fuses	
Model #	208/60/3	460/60/3	Quantity	460/60/3	Quantity
V20	3/4	3/10	2	3/4	2
V25	3/4	3/10	2	3/4	2
V30	3/4	3/10	2	3/4	2
V40	3/4	3/10	2	3/4	2
V50	3/4	3/10	2	3/4	2
V60	3/4	3/10	2	3/4	2
V80	3/4	3/10	2	3/4	2
V100	3/4	3/10	2	3/4	2

2.8 Replacement Daikin VRV EKEQ (D/W-)Controller Fuse Sizes

Located in the VRV module enclosure with the EKEQs, mini CC TD style fuses protecting the EKEQ controllers (230V) are all sized at 3/4 A, qty two (2) for each EKEQ controller.

3.0 MAINTENANCE

Warning:
During all work on fan in the hazardous area:

Maintenance operation is only to be performed by trained service personnel.

Observe the safety and labor regulations (DIN EN 50110, IEC 364).

No maintenance work on running fan!

Open the electrical circuit and secure against being switched back on.

Verify the absence of voltage.

The rotor must be standing still!

Always wear the appropriate PPE (safety shoes and gloves for handling).

Regular inspection, if necessary with cleaning, is required to prevent imbalance due to ingestion of particles.

Danger:
Clean the fan's flow area:

Wet cleaning under voltage may lead to an electric shock - danger to life!

Do not use any aggressive, paint solventcleaning agents when cleaning.

Never use a high-pressure cleaner or spray jet to clean.

Avoid letting water permeate into the motor and the electrical installation.

After cleaning, the motor must be operated for 30 minutes at 80-100% of the max. rpm to let it dry out. This will allow any possibly penetrated water to evaporate.

Ball-bearings service life

3.1 Fans

The fan or motor is maintenance-free due to the use of ball bearings with "lifetime lubrication". Once the grease operating life F10h has been reached, it may be necessary to replace the bearing. The bearing service life expectation may change compared to the specified value, if operating conditions such as increased vibrations or shocks, increased or too low temperatures, humidity, dirt in the ball bearing or unfavorable control modes are present. A service life calculation for special applications can be provided on request.

3.2 DX Coil

Operation and Maintenance for First Time Use

Air Distribution

- Uniform air flow is crucial to coil performance and should not vary significantly across the coil face
- Air velocities should be maintained between 200 and 550 feet per minute without a mist eliminator and between 200 and 700 feet per minute with a mist eliminator
- The drain pan should be designed and i nstalled such that there is no standing water
- The maximum operating temperature is 350°F for any Direct Coil coils.

Cleaning

- Coils must be cleaned periodically to obtainmaximum performance. Soiled fins reduce the capacity of the coil, and demand more energy from the fan.
- Periodic inspection of the coil for signs of damage, leaks or corrosion is also recommended. Any repair or replacement of parts should be performed by a qualified professional.
- Any fluid passing through the coil should be free of any sort of contaminants. Periodic testing and correction will enable the coil to last longer.
- Fins can be cleaned using spray washers or using commercial cleaners. Care must be taken not to damage the coils and to not allow water to touch any electrical equipment. However, caution should be exercised when working with the fins as the sharp edges can cause serious personal injury.

Note: When the coil surface itself needs cleaning, ensure an appropriate solution and equipment are selected to avoid damage to the coil and/or enabling any health hazards. Cleaning should be done inwards from the air-flow exit so any contaminant will later be pushed out of the coil. Follow the manufacturer's instructions with any cleaning solution or equipment

3.3 Hydronic Coil

Operation and Maintenance

First Use Recommendation

- The air vent (at the uppermost point on theassembly) should be opened during set-up toexhaust any air from the coil. To maintain heat transfer capacity, periodically vent the air in the coil.

Air Distribution

- Uniform air flow is crucial to coil performance and should not vary significantly across the coil face
- The drain pan and its piping should be arranged such that there is not still water in the pan to be blown by the passing flow of air
- The fluid and air velocity should be kept to near the specifications for the coil
- The maximum operating temperature is 350°F for any Direct Coil coils

Winterizing Coils

- During the winter, if the coil is not in use all water should be drained from the coil. The coil should then be thoroughly flushed with a glycol solution.

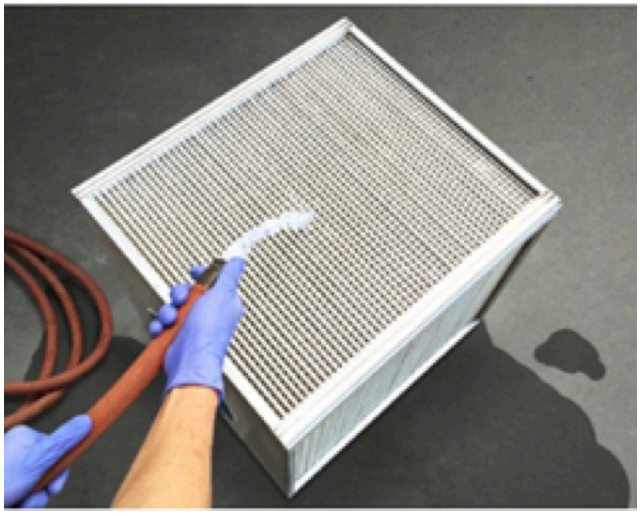
Cleaning

- Coils must be cleaned periodically to obtainmaximum performance. Soiled fins reduce the capacity of the coil, and demand more energy from the fan
- Periodic inspection of the coil for signs of damage, leaks or corrosion is also recommended. Any repair or replacement of parts should be performed by a qualified professional.
- Any fluid passing through the coil should be free of any sort of contaminants. Periodic testing and correction will enable the coil to last longer.
- Fins can be cleaned using spray washers or using commercial cleaners. Care must be taken not to damage the coils and to not allow water to touch any electrical equipment. However, caution should be exercised when working with the fins as the sharp edges can cause serious personal injury.
- When the coil surface itself needs cleaning, ensure an appropriate solution and equipment are selected to avoid damage to the coil and/or enabling any health hazards. Cleaning should be done inwards from the airflow exit so any contaminants will later be pushed out of the coil. Follow the manufacturer's instructions with any cleaning solution or equipment
- Drain-pans in any air conditioning unit contain moisture and must be cleaned regularly

3.4 Counter-flow Core Cleaning

We recommend washing our exchanger at least once per year, using tap water. If the exchanger becomes heavily soiled, a mild detergent such as Dawn®, Palmolive® or equivalent dish soap may be used. While cleaning other adjacent components in the HVAC system, it is possible for our exchanger to come in contact with harsher detergents. The following is a list of coil cleaners and all-purpose cleaners that have been tested with our exchangers and their compatibility. Generally, contact with any coil cleaning product is not recommended and specifically hydroxide-based cleaners should be avoided. If contact does occur, our exchanger should be rinsed immediately as it may void the warranty.

CLEANER	RECOMMENDATION
VIPER EXPANDING FOAM	OK
CALSPRAY-NU-BRITE	AVOID CONTACT
CALSPRAY-EVAP FOAM	OK
HD CALCLEAN 1:40	OK
HD CALCLEAN 1:5	AVOID CONTACT
FANTASTIK W/ BLEACH	AVOID CONTACT
FANTASTIK ORIGINAL	AVOID CONTACT



Core Cleaning Instructions

1. Obtain access to a source of regular tap water. Do not use a high-pressure water source (pressure washer).

2. Remove our exchanger from the system if possible, to facilitate access to all exchanger faces, otherwise wash in place. Ensure adequate drainage is available for waste water.

3. ONLY if the exchanger is heavily soiled, prepare a solution of less than 1:100 parts water to dish soap. Otherwise, clean water is sufficient.

4. Orient the plates vertically for drainage and pour solution (or clean water) through our exchanger, both supply and exhaust paths, ensuring exposure of all layers.

5. Thoroughly rinse with clean tap water if a soapy solution was used until no more bubbles appear in the exiting water.

6. Allow our exchanger to dry (with plates still oriented vertically) until there is no more water\dripping out, then return to service. Cleaner Recommendation

Note: Crossflow core shown; unit will utilize counterflow cores instead, but same maintenance rules apply.

3.5 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)

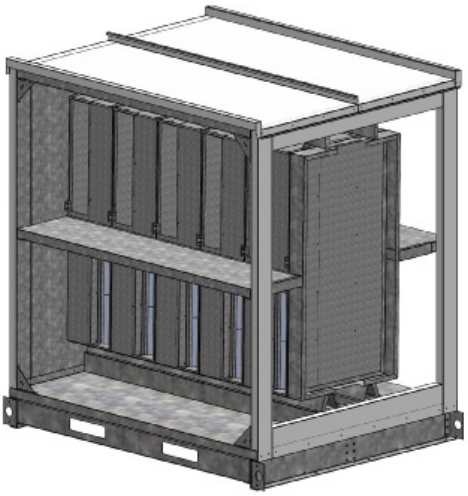
Collar piece (1) will be gasketed and floating between the first core stack (2) and the access door (hidden). Do not remove the gasketing.

1. Remove the front core spacer

2. Remove bolts from all connecting brackets around first core stack. You will need to remove bolts at connecting brackets for each core stack.

3. Remove core stack

4. May need to slice silicone at these locations.



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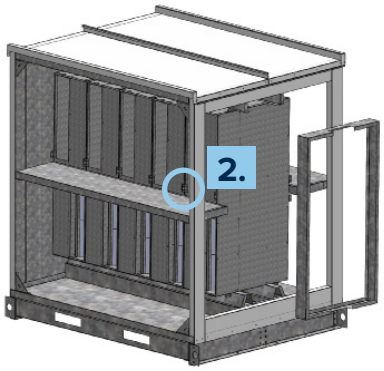

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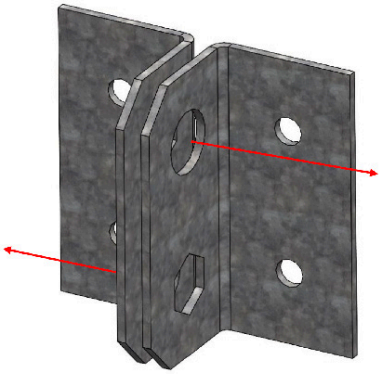

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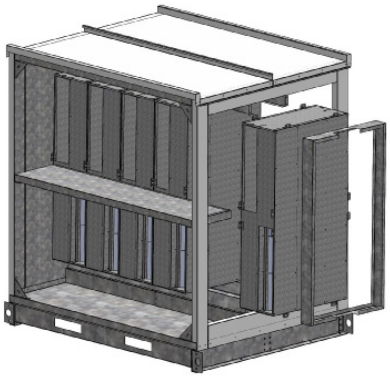
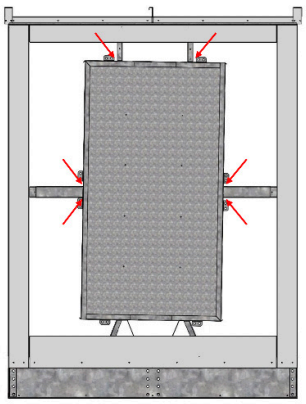
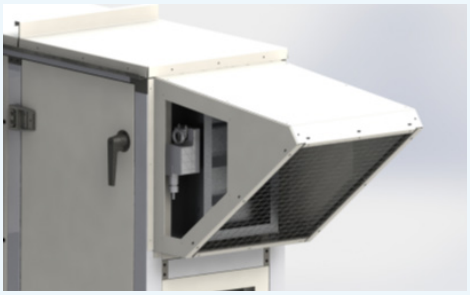


4.



3.6 Actuator Access

If the outdoor or exhaust air shutoff dampers require maintenance, the damper actuators can be accessed through a removable flat panel on the front-facing side of the hood by unscrewing all fasteners.



Shutoff Damper Access (Nova unit shown for illustration purposes)

4.0 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.

5.0 CONFIGURING CONTROLS

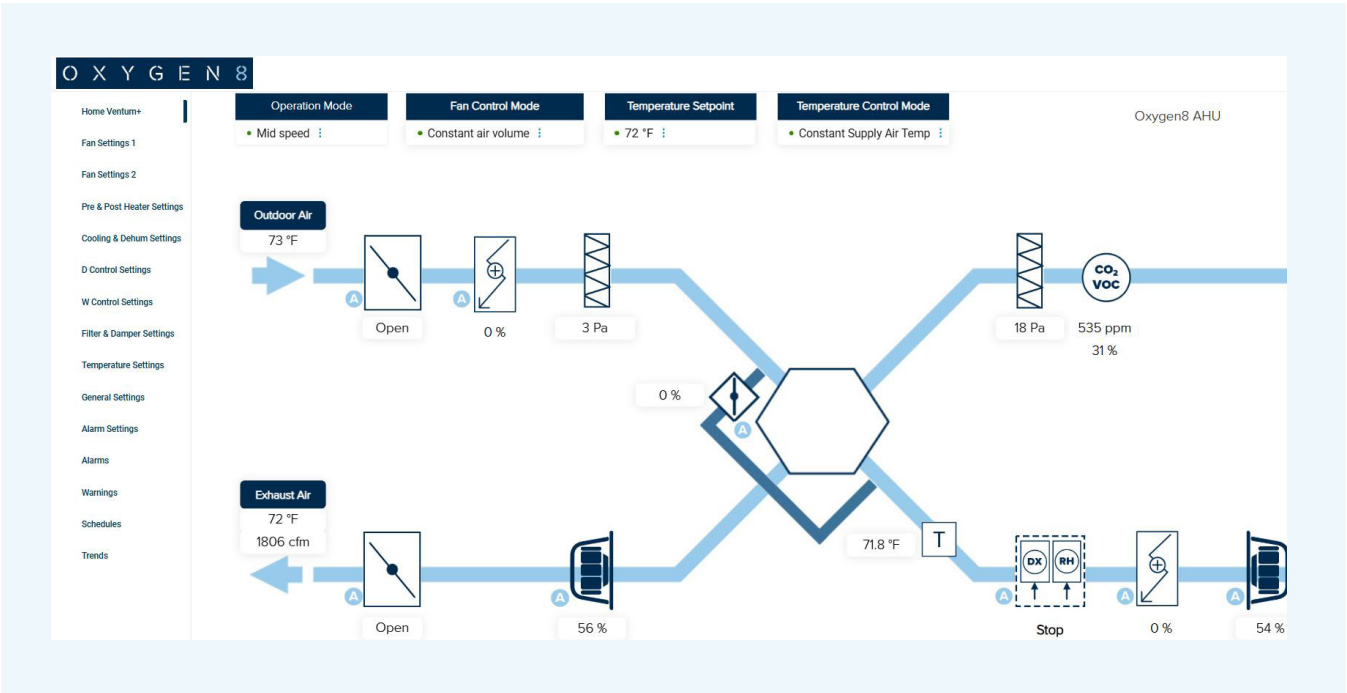
5.1 Setting the Fan Operating Points

Under the “Fan Configuration” and “Fan Settings” screens, you can set the way in which fans and air volumes are to be controlled and regulated. Fans and air volumes can be controlled according to the following operating modes.

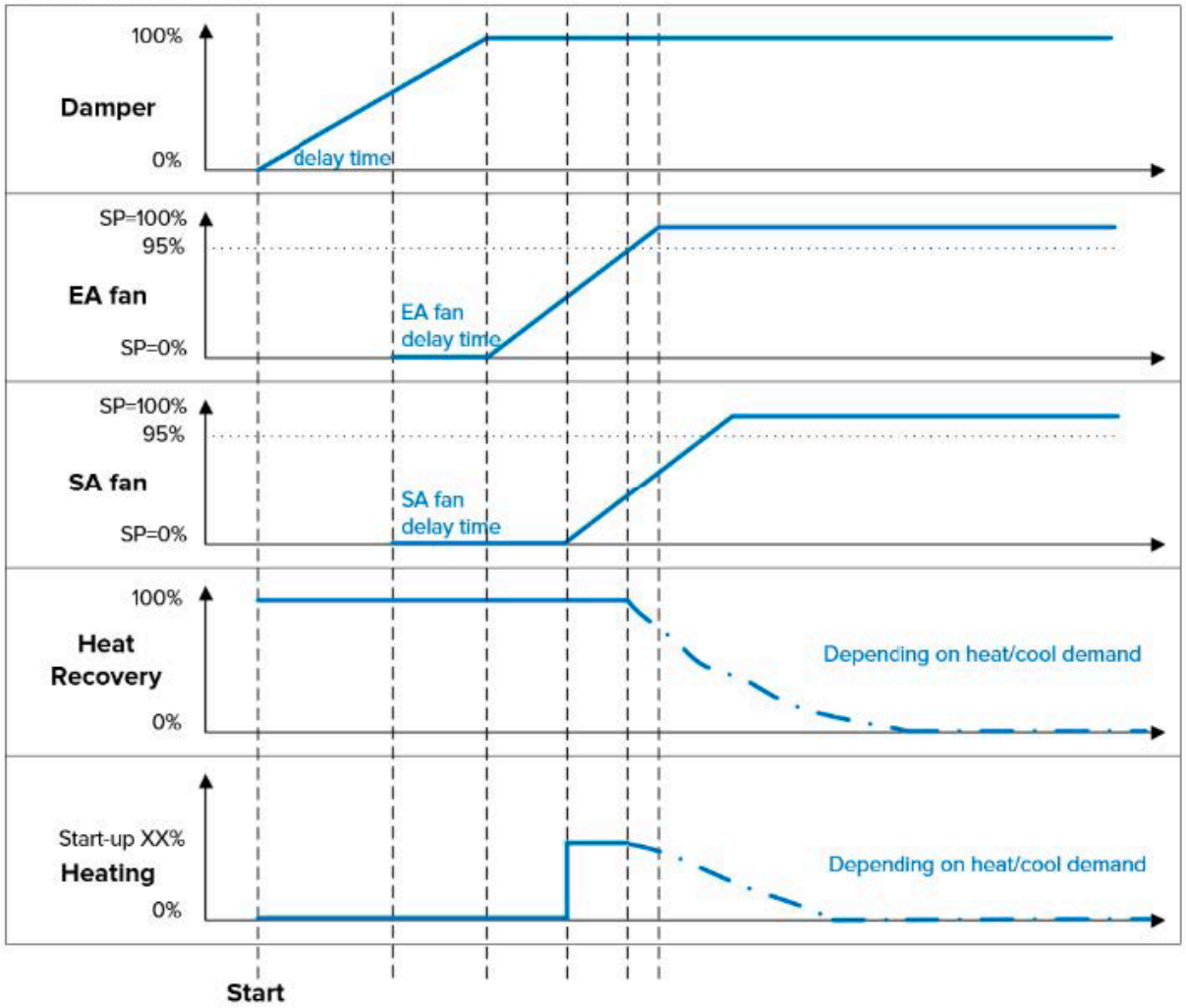
Start-Up Sequence

When the system is activated, the following start-up sequence is followed regardless of the selected control type (constant pressure, constant flow, CO2, VOC, etc.).

1. The outdoor/exhaust air dampers are opened.
2. The exhaust fan is started with the delayed time.
3. The supply fan is started with the delayed time.
4. Heat recovery is overridden to 100% (rotary, cross-flow, counter-flow or fluid coupled heat exchanger).
5. The heating valve is overridden to the value (Startup heating: default 50%) set under “Preheat & Heat Configuration” – only applies in the case of a water-based heating battery.
6. Exhaust/Supply fans speed are increased until it reaches the setpoint for air quantity/duct pressure.
7. When the exhaust or supply fan has passed 95% of the setpoint for air quantity/duct pressure, the override signals for heat recovery and heating valves are discontinued.



Start-up procedure



5.1.1 Constant Air Volume

- Supply and return fans are controlled in relation to flow/air volumes in the Supply and return ducts respectively.
- Air volumes are measured/calculated by measuring the difference between static and dynamic pressure across the fan.
- The difference between static and dynamic pressure is measured by means of pressure transmitters, built into the Huba Type 699M pressure sensor.

5.1.2 Constant Pressure Return Slave

- The Supply fan is controlled in relation to the pressure in the Supply duct while the return fan is controlled as a slave of the Supply fan with a freely selected offset
- The system need only be equipped with pressure transmitters in the Supply duct. Pressure transmitter of Huba Type 699M is suitable.
- Pressure transmitters used to measure pressure differences across the fans cannot be omitted as these are used to control the air flow.

5.1.3 Constant Pressure Both

- The Supply fan is controlled in relation to the pressure in the Supply duct and the Return fan is controlled in relation to the pressure in the Return duct.
- The system needs to be equipped with pressure transmitters Huba Type 699M in the Supply duct and in the Return duct.

5.1.4 Constant CO2

- The system must be configured with a CO2 sensor.
- The CO2 sensor can either be positioned in the room as a room sensor or in the return duct as a duct sensor.
- Irrespective of whether the CO2 sensor is a room or duct sensor, the CO2 sensor must be configured under “Fan Configuration – Parameter 1.43”.
- Air volumes are measured/calculated by measuring the difference between static and dynamic pressure across the fan.
- The difference between static and dynamic pressure is measured by means of pressure transmitters, built into the Huba Type 699M pressure sensor.

5.1.5 VOC/CO2 Control

- The CO2 concentration in the room is controlled by regulating air volume via fan speed.
- If the CO2 or VOC level in the room rises, fan speed is increased, thus increasing air volume/air turnover towards the return air fan high speed air volume setting “Fan Configuration – Parameter 1.22”.
- If the CO2 or VOC level in the room falls, fan speed is decreased, thus reducing air volume/air turnover towards the return air fan low speed air

5.1.6 External 0-10V Control

- Supply air fans speed will follow the external 0-10V analog input signal as 0-100% speed.
- External 0-10V signal can be adjusted with offset setting “Fan Configuration – Parameter 1.60”
- If 0V is maintained for over 60 seconds, fans will proceed to stop.

5.2 Fan Control: Constant Air Volume

Supply

1.10 Supply Air Fan Low Speed
Set the required setpoint for supply flow at “Low” speed

1.11 Supply Air Fan Mid Speed
Set the required setpoint for supply flow at “Medium” speed

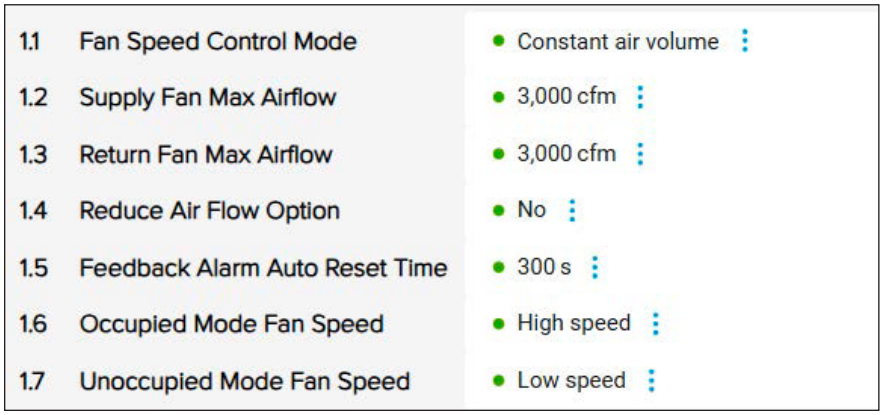
1.12 Supply Air Fan High Speed
Set the required setpoint for supply flow at “High” speed

Return

1.20 Supply Air Fan Low Speed
Set the required setpoint for return flow at “Low” speed

1.21 Supply Air Fan Mid Speed
Set the required setpoint for return flow at “Medium” speed

1.22 Supply Air Fan High Speed
Set the required setpoint for return flow at “High” speed



5.3 Fan Control: Constant Pressure Return Slave

Supply

1.31 Supply Air Fan Low Speed
Set the required setpoint for Supply flow at “Low” speed

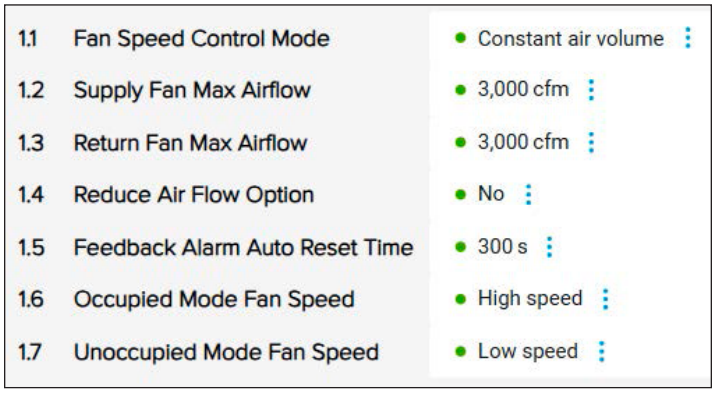
1.31 Supply Air Fan Mid Speed
Set the required setpoint for Supply flow at “Medium” speed

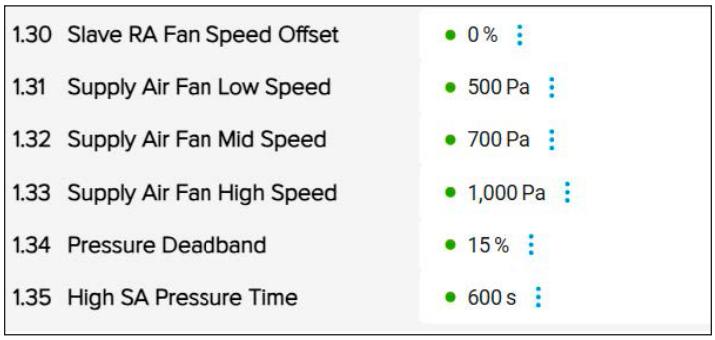
1.33 Supply Air Fan High Speed
Set the required setpoint for Supply flow at “High” speed

1.2 Supply Fan Max. Airflow
Set the required setpoint for maximum air volume in the supply duct.

1.3 Return Fan Max. Airflow
Set the required setpoint for maximum air volume in the return duct.

Air volume has higher priority than the ressure setpoint, i.e., if the pressure setpoint is not achieved before the maximum air volume is reached, the air volume setting will prevent further increases in the fan speed.





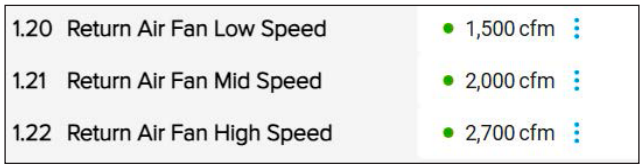
Return

1.30 Return Air Fan Speed Offset
Return air volume follows supply air volume with an offset corresponding to the value set.

5.4 Fan Control: Constant CO2

The function is used to maintain a constant/ maximum CO2 level in a room or return duct.

If the CO2 level is higher than the setpoint, return volume will be increased in a modulated fashion to “Return Air Fan High Speed” – 1.22. If the CO2 level is lower than the setpoint, return volume will be decreased in a modulated fashion to “Return Air Fan Low Speed” – 1.20 (as long as the minimum run time elapsed). If the actual CO2 level is equal to the setpoint, the fan will keep actual fan speed. Supply air volume follows return air volume with an offset corresponding to the set value.



Return Fan

1.40 Return Air CO2 Setpoint
Set the actual scaling factor for the actual connected VOC/CO2 sensor.

1.41 Supply Air Fan Speed Offset
Set the required offset for Supply air volume.

1.42 Min Run Time
Set the minimum time the fan will run at high speed (after exceeding the CO2 setpoint)

1.43 Sensor Selection
Select the location of the CO2 sensor: Duct or Room

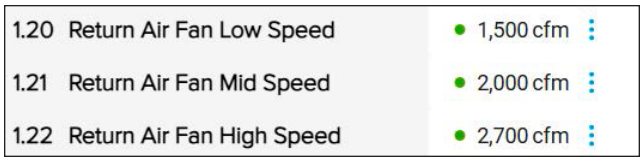
1.20 Return Fan Low Speed
Set the required setpoint for return air at low speed.

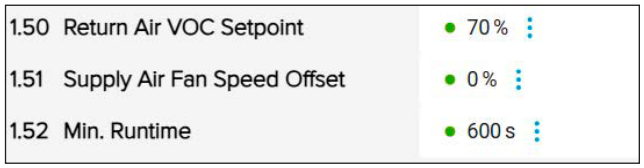
1.22 Return Fan High Speed
Set the required setpoint for return air fan at high speed.

5.5 Fan Control: Constant VOC

The function is used to maintain a constant/ The function is used to maintain a constant/ maximum VOC level in a return duct.

If the VOC level is higher than the setpoint, return volume will be increased in a modulated fashion “Return Air Fan High Speed” – 1.22. If the CO2 level is lower than the setpoint, return volume will be decreased in a modulated fashion to “Return Air Fan Low Speed” – 1.20 (as long as the minimum run time elapsed). If the actual VOC level is equal to the setpoint, the fan will keep actual fan speed. Supply air volume follows return air volume with an offset corresponding to the set value.





Return Fan

1.50 Return Air VOC Setpoint
Set the actual scaling factor for the actual connected VOC/CO2 sensor.

1.51 Supply Air Fan Speed Offset
Set the required offset for Supply air volume.

1.52 Min Run Time
Set the minimum time the fan will run at high speed (after exceeding the VO2 setpoint)

1.43 Sensor Selection
Select the location of the CO2 sensor: Duct or Room

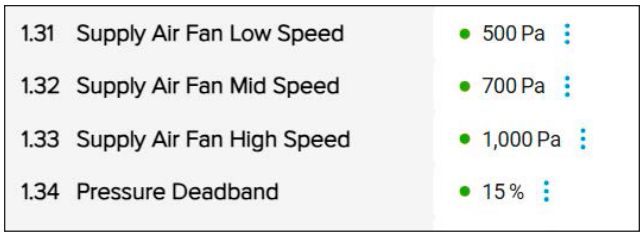
1.20 Return Fan Low Speed
Set the required setpoint for return air at low speed.

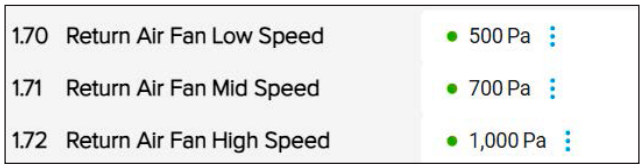
1.22 Return Fan High Speed
Set the required setpoint for return air fan at high speed.

5.6 Constant Pressure Both Fans

The function is used to maintain pressure setpoints (VAV) at the Supply and Return ducts simultaneously.

Set the desired pressure setpoints using parameters 1.31, 1.32 & 1.33 for the Supply Fan and 1.70, 1.71 & 1.72 for the Return Fan





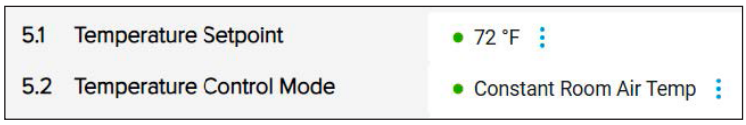
External 0-10V Control

- Supply air fans speed will follow the external 0-10V analog input signal as 0-100% speed.
- External 0-10V signal can be adjusted with offset setting “Fan Configuration – Parameter 1.60”
- If 0V is maintained for over 60 seconds, fans will proceed to stop.

5.7 Constant Room

Temperature is controlled in relation to constant room temperature measured by the room sensor located in the room.

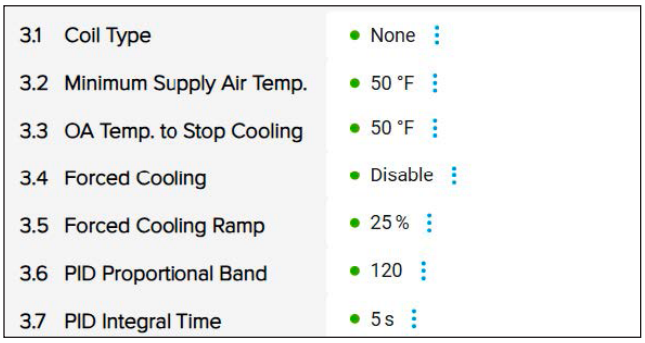
The required room temperature setpoint is set under: “General Configuration > General Temperature Settings”.



5.8 Cooling

The function is only available if active cooling in the form of a cooling element is installed and configured.

The function is used to ensure that active cooling can be used if certain set preconditions are met.



Cooling Settings

3.1 Cooling Type
Select the type of cooling coil installed.

3.2 Minimum Supply Air Temp.
Setpoint for minimum supply tempeature when cooling is active.

3.3 OA Temperature to Stop Cooling
Cooling is stopped at outdoor temperatures below the setpoint.

3.4 Forced Cooling
When activated, air volume will be increased when cooling is active.

3.5 Forced Cooling Ramp
Determines the rate of change of the air volume when Forced Cooling is active.

3.6 PID Proportional Band
Proportional gain for cooling.

3.7 PID Integral Time
Integral time for cooling.

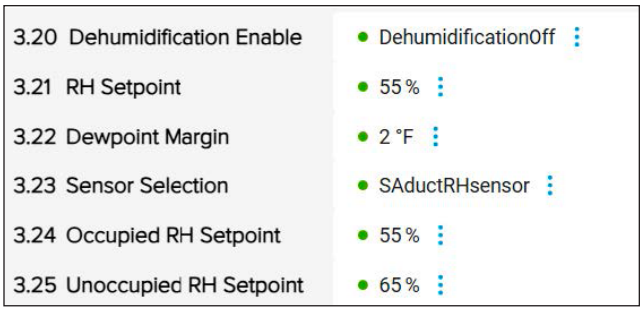
5.9 Dehumidification

The function is used to lower the relative humidity in the room by dehumidification.

When dehumidification of the room is demanded, the energy content of the air (enthalpy) is measured continuously in the fresh air and exhaust air respectively. The air that is dehumidified and supplied to the room will thus always be the air that requires the least energy for dehumidification.

To obtain optimum control, an RH & Temperature sensor is needed to calculate the actual dew point. This sensor can be in SA, RA duct or Room (“Cooling & DX coil Configuration – Parameter 3.34”).

Dehumidification is accomplished by the installed cooling element while the temperature is maintained according to the setpoint by subsequent heating of the supply air by the heating element.



Minimum Configuration
One RH & Temperature sensor and cooling element with post heater.

3.20 Dehumidification Enable
Select whether dehumidification is to be active.

3.21 RH Setpoint
Set setpoint for relative humidity.

3.22 Dewpoint Margin
Dead band for dewpoint. Defines when the humidity level has been satisfied.

3.23 Sensor Selection
Selects where is the Humidity Sensor installed (Supply duct, Return duct, Room or Dewpoint + Supply duct).

3.24 Occupied RH Setpoint
Set setpoint for relative humidity when Occupied mode is selected in the schedule.

3.26 Unoccupied RH Setpoint
Set setpoint for relative humidity when Unoccupied mode is selected in the schedule.

5.10 Summer/Winter Compensation

Under General Temperature Settings, it is possible to set temperature compensation parameters for summer and winter operation.

When selected, compensation offsets the temperature setpoint in relation to outdoor temperature in summer and/or winter.

5.1	Temperature Setpoint	72 °F
5.2	Temperature Control Mode	Constant Supply Air Temp
5.3	Setpoint Compensation	SP CompensationOn
5.4	Winter Start Temperature	32 °F
5.5	Winter Max. Temperature	-4 °F
5.6	Winter Temperature Difference	5 °F
5.7	Summer Start Temperature	77 °F
5.8	Summer Max. Temperature	95 °F
5.9	Summer Temperature Difference	-5 °F

5.3 Setpoint Compensation
Enables/Disables Setpoint Conversation

5.4 Winter Start Temperature
Outdoor temp temperature for start of winter compensation

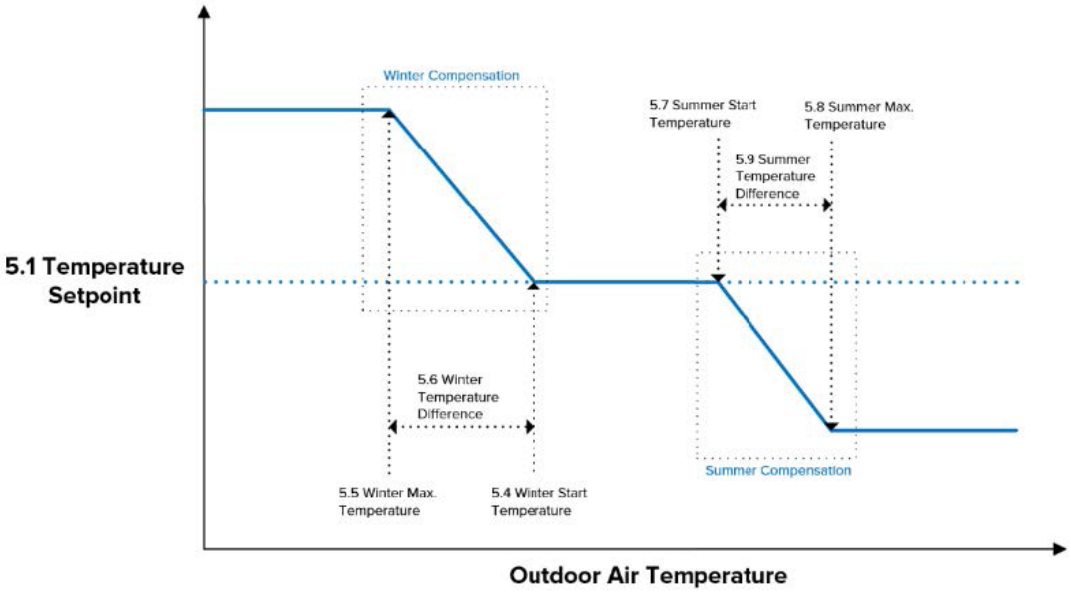
5.5 Winter Max. Temperature
Outdoor temperature for max.winter compensation

5.6 Winter Temperature Difference
Max. winter compensation of setpoint

5.7 Summer Start Temperature
Outdoor temperature for start of summer compensation

5.8 Summer Max. Temperature
Outdoor temperature for max. summer compensation

5.9 Summer Temperature Difference
Max. summer compensation of setpoint



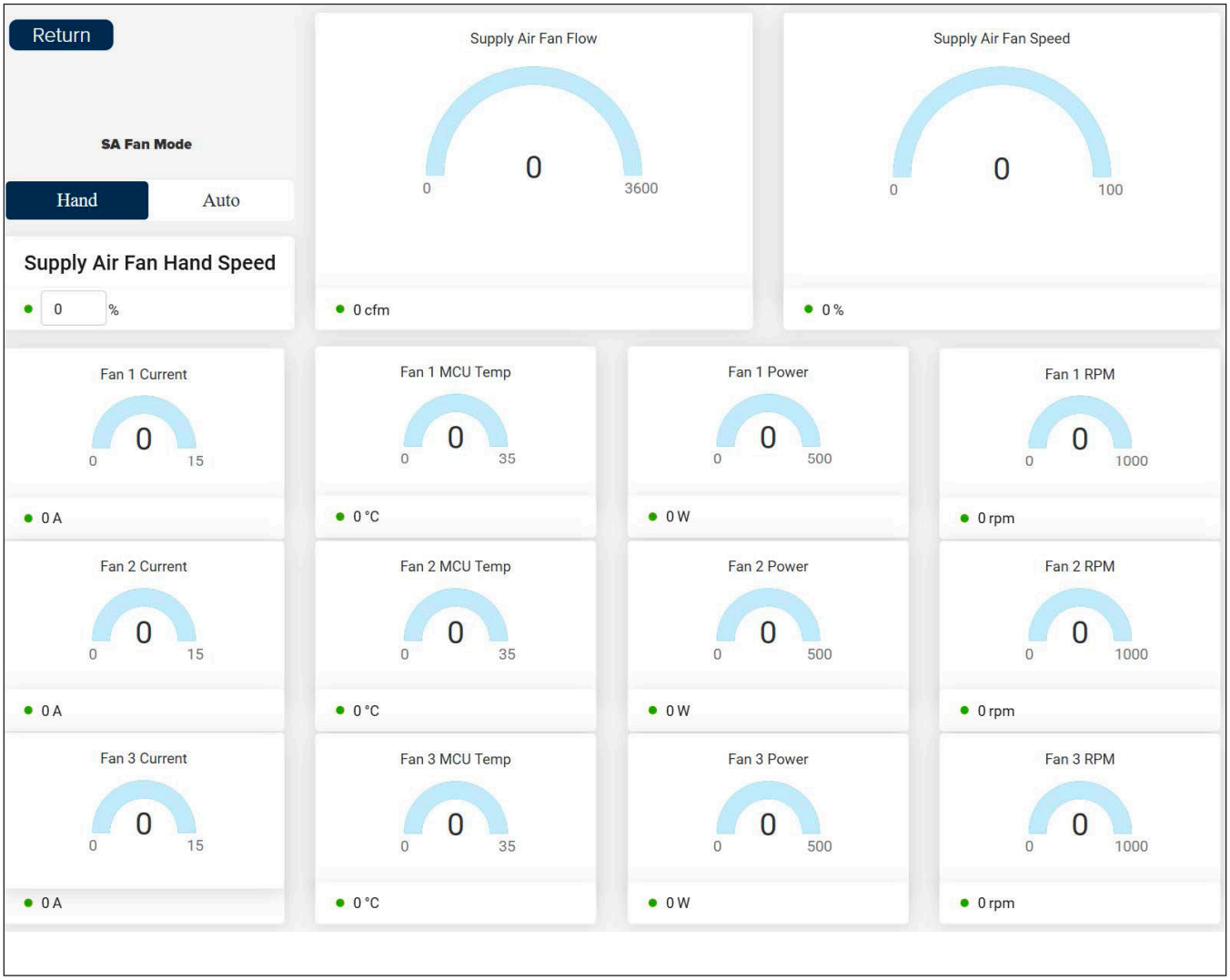
5.11 Locking the Fan Speed

Adjustment

On the Home screen, by clicking on any fan, a popup screen opens. Select Hand on SA Fan Mode (and on RA Fan Mode) and then enter the desired speed on Hand Speed.

The function, which is used for VAV installations, allows the installer to maintain constant air quantity during system adjustment.

The Hand Speed remains until the fans are changed to Auto.



5.12 Communication Protocols External Communication

Setting communication parameters for TCP/IP, LAN, Web browser and BMS

Set Internet Connection

Static/Dynamic

DHCP = IP address assigned from DHCP server on local network or from the Internet

Static = the installer must set the following communication parameters:

- IP address
- NetMask
- Gateway
- Primary DNS
- Secondary DNS

BACnet

Settings for external BACnet communication

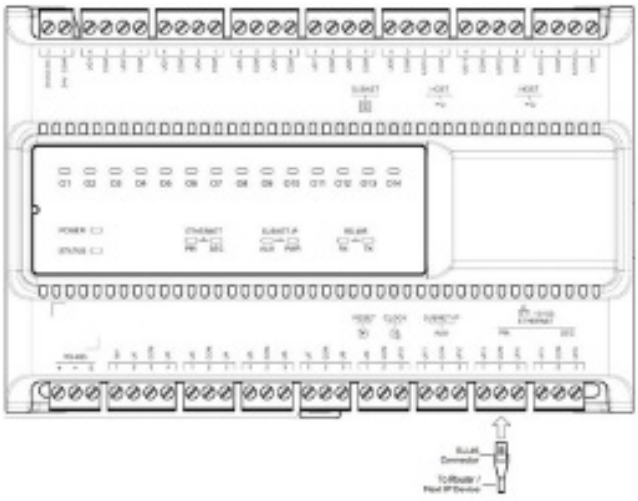
BACnet IP is enabled by default

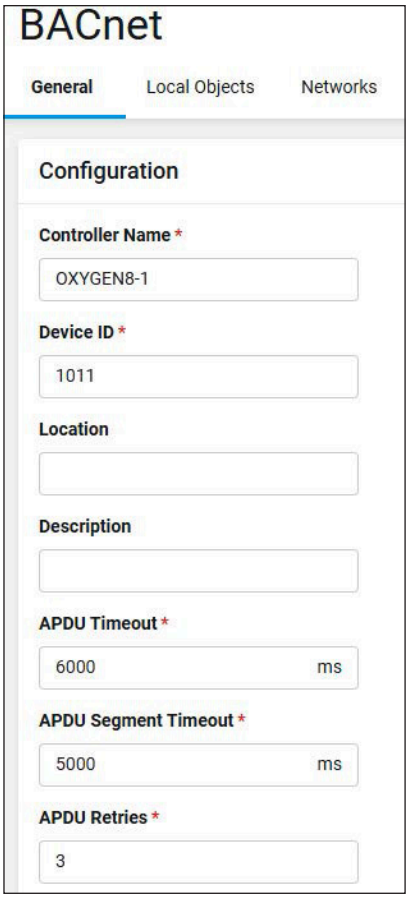
On the General Tab, it is possible to edit:

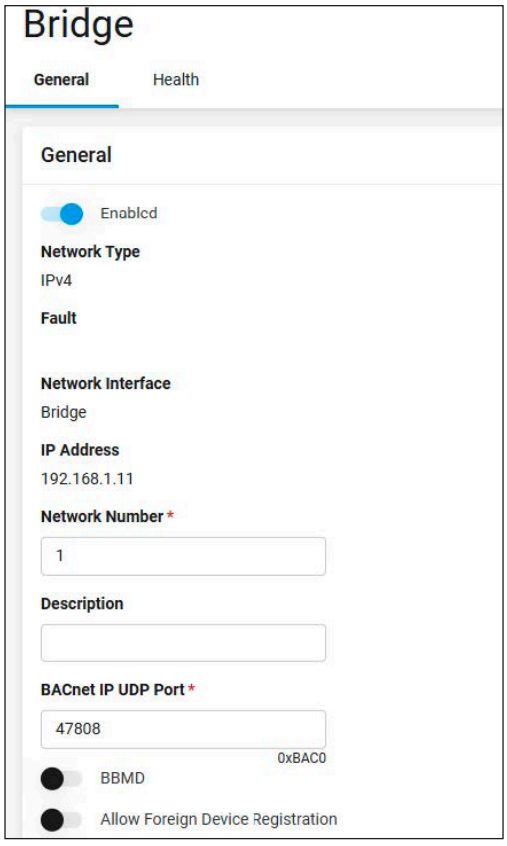
- Controller Name
- Device ID
- Location
- Description
- APDU
- APDU Segment Timeout
- APDU Retries

On Network IP Ports, it is possible to edit:

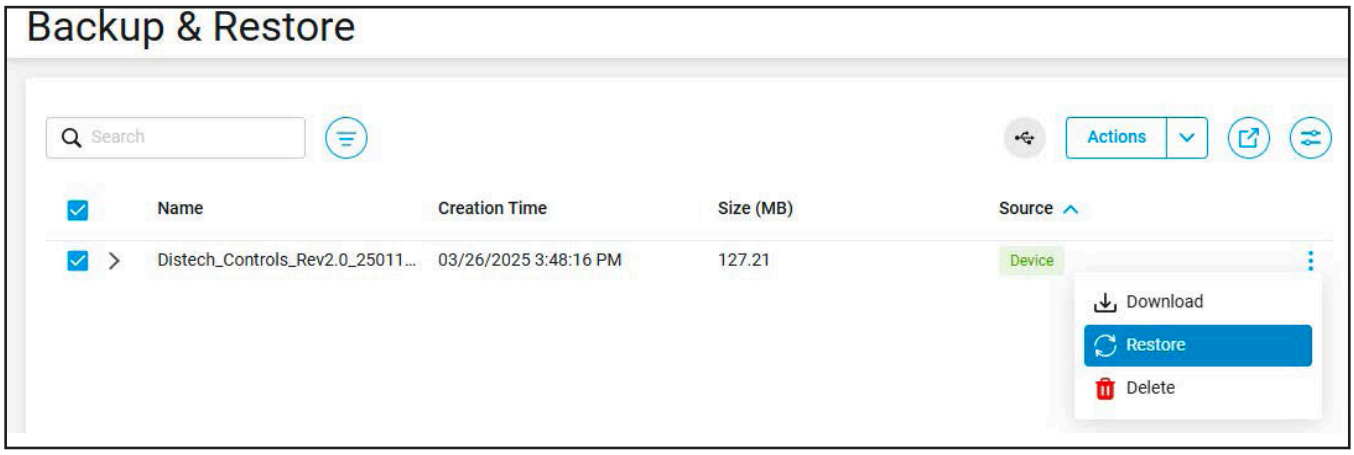
- Network Number
- BACnet IP UDP Port
- Use a standard RJ45 cable External BACnet TCP/IP connects to plug connector “TCP/IP”







5.13 Restore/Back-up Settings



On the “Settings” screen, ad under the “Backup & Restore” tab, it is possible to restore a backup of an existing program and configuration. Contact Oxygen8 for the proper backup file.

To restore:

• Click on “Actions” and then “Upload”

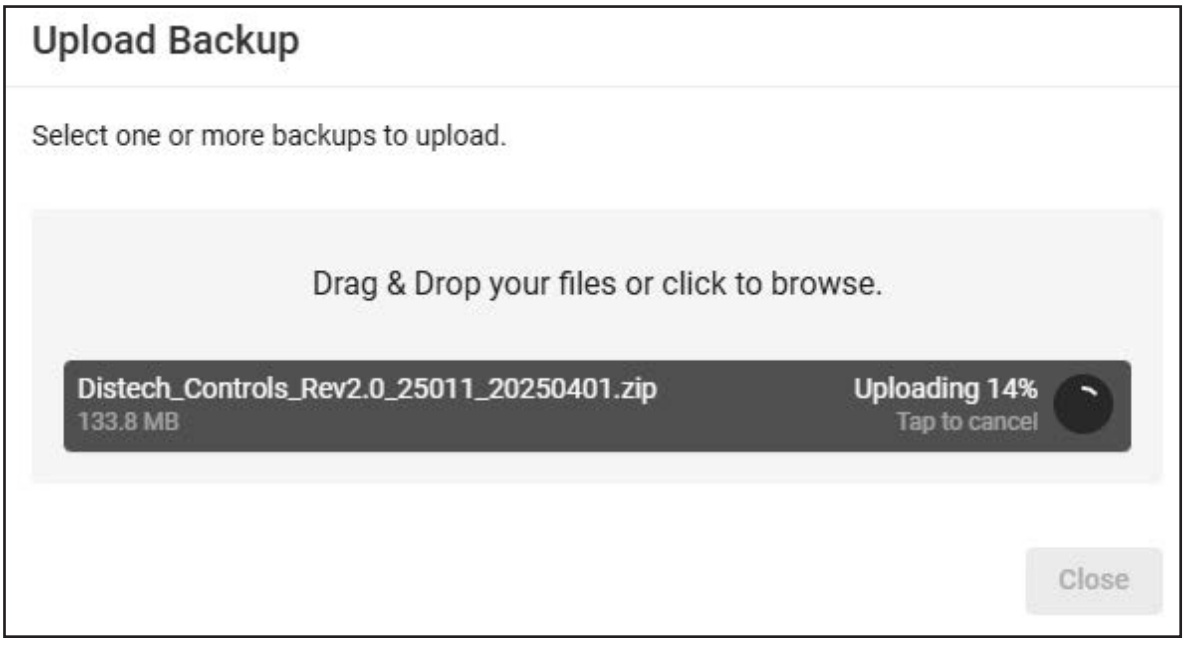
• Click on “Drag & Drop your files or click to browse”

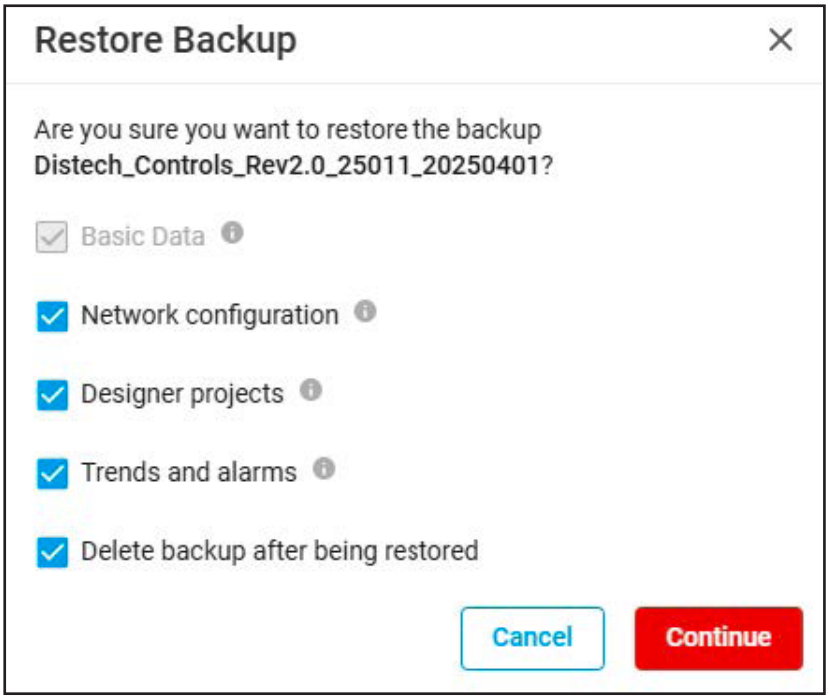
• Navigate to the location where the file is saved and select it. After the upload is complete click on “Close”.

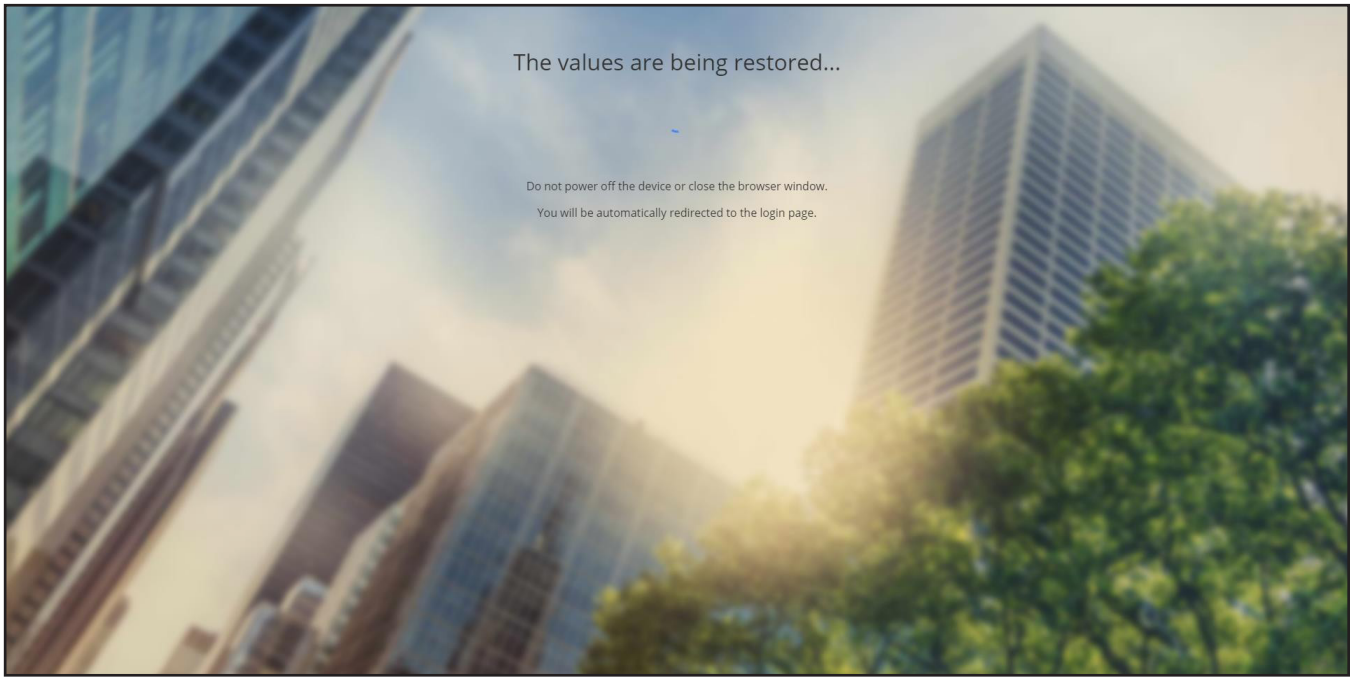
• Hit the “Network configuration”, “Designer projects”, “Trends and alarms” and “Delete backup after being restored” check boxes.

• Click on “Continue” to commit to restoring the backup

The controller will restore the files and reboot. This process takes about 10 minutes.



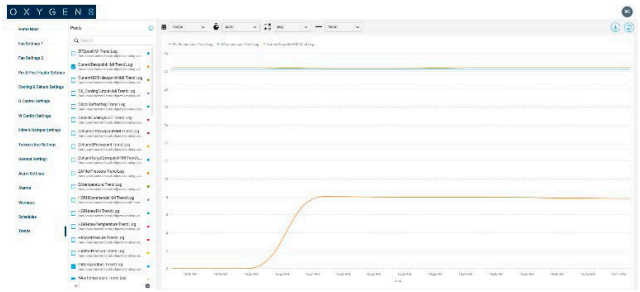

Restore Backup
Are you sure you want to restore the backup
Distech_Controls_Rev2.0_25011_20250401?
Basic Data
Network configuration
Designer projects
Trends and alarms
Delete backup after being restored
Cancel
Continue

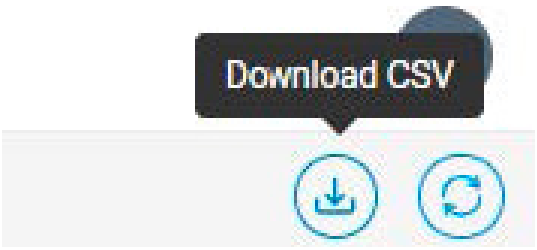

The values are being restored...
Do not power off the device or close the browser window.
You will be automatically redirected to the login page.

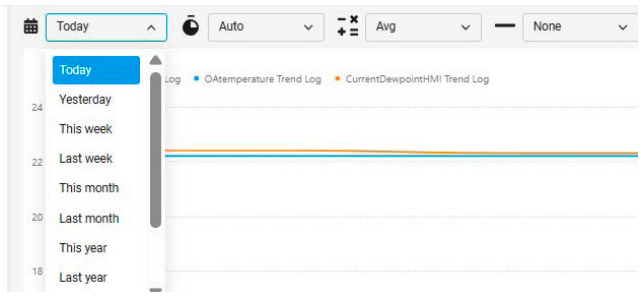
5.14 Trends

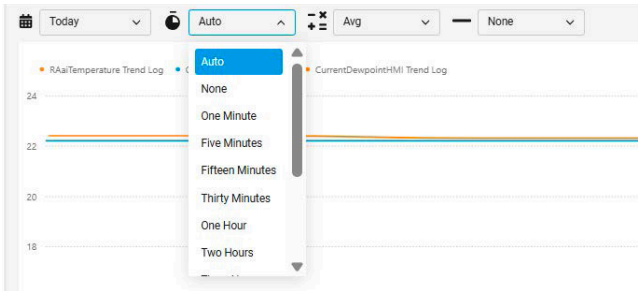
The Trends screen contains the Trend Builder, which the operator can use to view all trend log objects that reside in the data tree of the controller by plotting the data of the selected trend on the chart, along the x and y axes. A list of available trends is provided, and you can select a color for each trend that you wish to plot on the graph to facilitate the viewing of many trends at the same time.

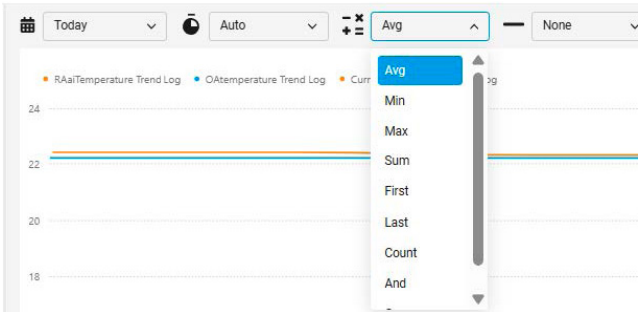
The Trend Builder provides additional functions such as exporting to a csv file, selecting a time range, default intervals, selecting format and typing text in a filter field.









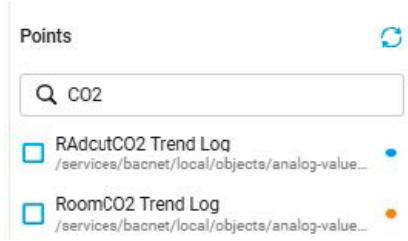


Export to .csv
Click on it and a csv file of the selected trends will be downloaded by your browser.

Time Range
Select a time parameter option from the list (today, last week, etc.)

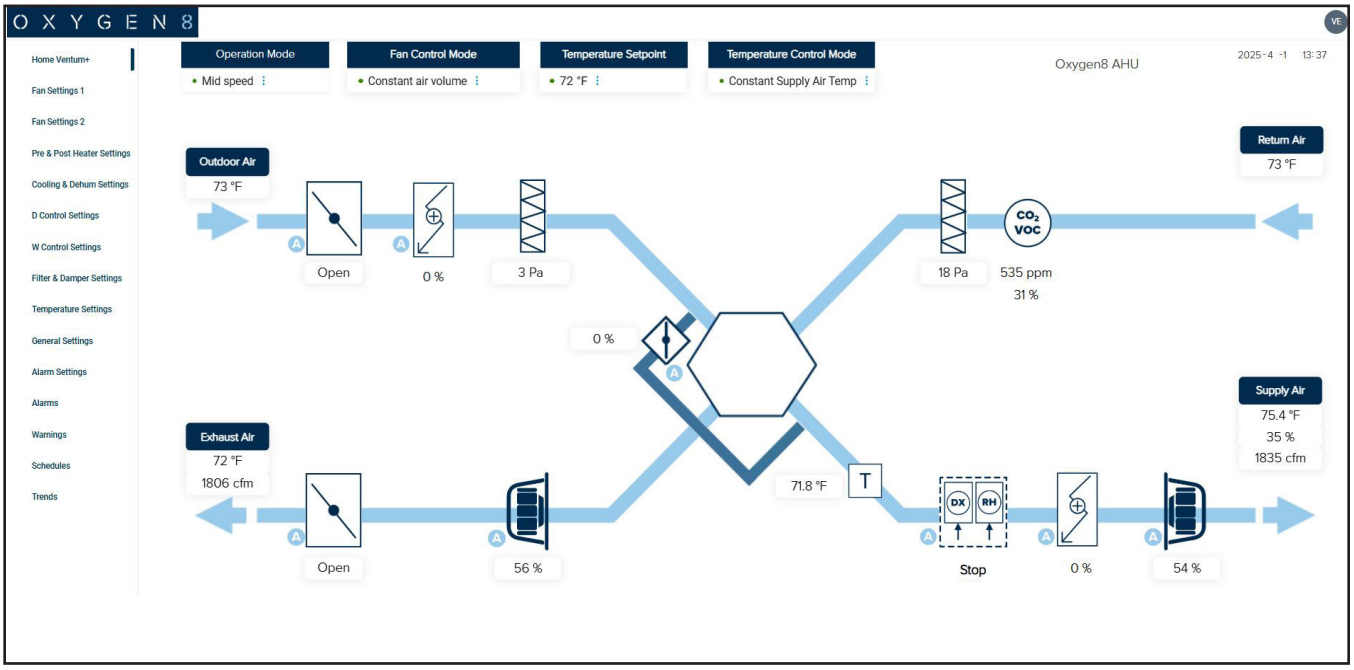
Interval
Select a default interval of time that is used to determine what and how data is presented in your trend chart. For example, an interval value of 1 hour will present data at a granularity level of every one hour, while an interval value of 15 minutes will show data for every 15 minutes of logged data.
In addition, you can also select other interval options such Avg (average value for the selected interval period), Min or Max (minimum or maximum value for the selected interval period), Sum (total of the values in the selected interval period), etc.

Filter
The filter field allows you to filter through a list of trends based on the text that you typed in the field.



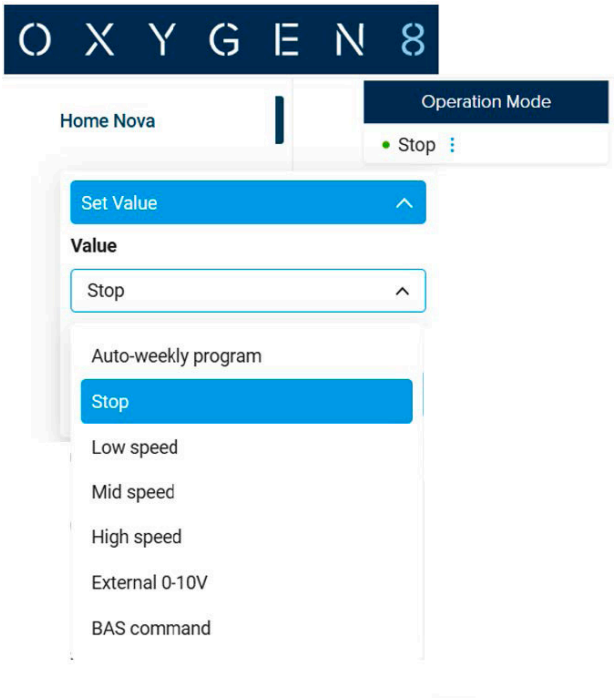
6.0 OPERATION

Setting operating modes and weekly programs.



6.1 Operation Mode

On the Home screen, by clicking on any fan, **Select Fan Speed**



“Stop” = the system is stopped

- Safety functions are active
- Outdoor and exhaust air dampers are closed

“Low speed” = the system runs constantly according to the parameter settings for low speed

- Operating times for the weekly program cannot be accessed

“High speed” = the system runs constantly according to the parameter settings for high speed

- Operating times for the weekly program cannot be accessed

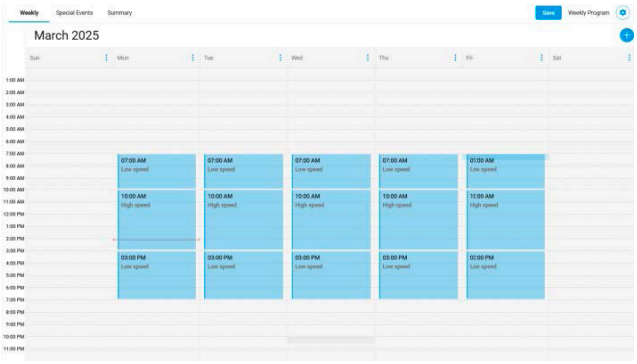
“Auto-Weekly program” = the system runs according to the weekly program settings

- Operating times for the weekly program cannot be accessed and set

“External 0-10V” = the system runs according to the external 0-10V analog input signal as 0-100% speed.

“BAS command” = the system runs according to the Occupied or Unoccupied state. Occupied or Unoccupied can be determined by schedule or by BACnet signal.

6.2 Scheduling Operating Times



Schedules are used to define different weekly events (weekly schedule) and special events also referred to as exceptions.

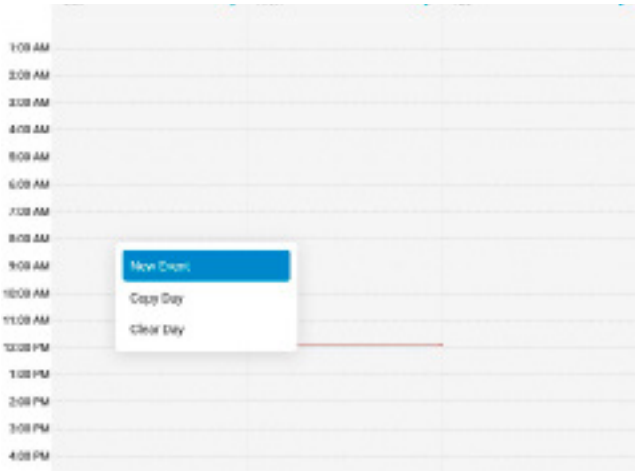
The different options used to configure a schedule are displayed by right-clicking on the Schedule. One menu is displayed when adding a new event and another menu is displayed when editing an existing event.

The following pop-up menu options are available:

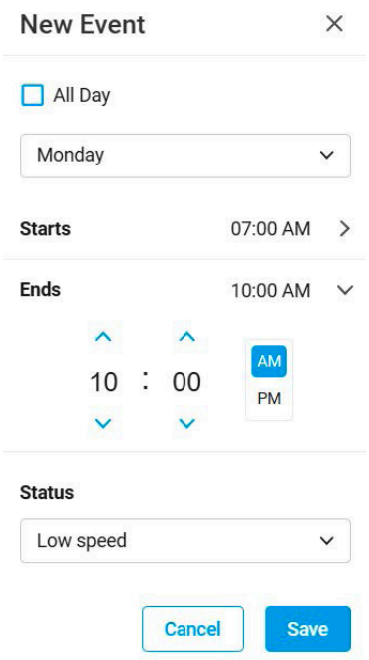
Option	Used to
Create Event	Add a new event
Copy Day	Copy all events in the selected day, to use with Paste Day option, which appears only if Copy Day was used first.
Paste Day	Paste all the events that already copied with the Copy Day option.
Clear Day	Clear all events on the selected day.
Edit Value	Edit an existing event.
Delete Event	Delete the selected event.

6.2.1 Adding a Schedule Event

1. In the Weekly tab, right-click on the weekday in the schedule and from the pop-up menu, select Create Event.



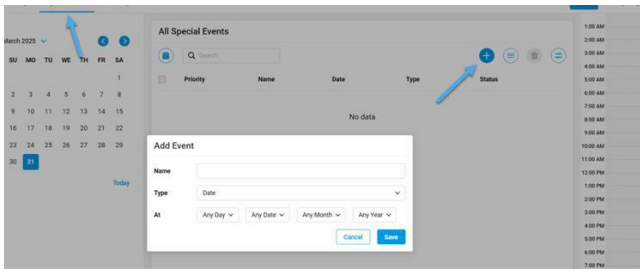
2. Confirm that the correct day of the week is already selected on the pop-up menu or change it to the desired day. Next enter the exact time in the Starts and Ends parameters, also if the All Day parameter at the top of the pop-up menu is selected then the event will be valid for the whole day. Finally, in the Status parameter, select the Fan Mode in which the fans will run.



3. Once the event is created, click and drag the edge of the shaded bar upwards and/or downwards to obtain the exact time frame you wish to assign to that weekday or right-click and select Edit to open a pop-up menu and change the Starts and Ends parameters or any other settings that are available.

6.2.2 Adding an Exception

Exceptions are special events or special days in the currently selected schedule instance. Typically, you use them to define days with scheduling exceptions (for example, holidays).

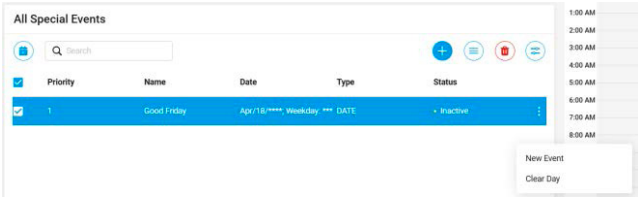


Date	Selects a day or a series of week-days, dates, months, or years.
Date Range	Selects a range of days.
Week & Day	Selects a series of weekdays, week in a calendar month or months
Reference	Select a calendar that will be used as a 'special event reference' in this Schedule

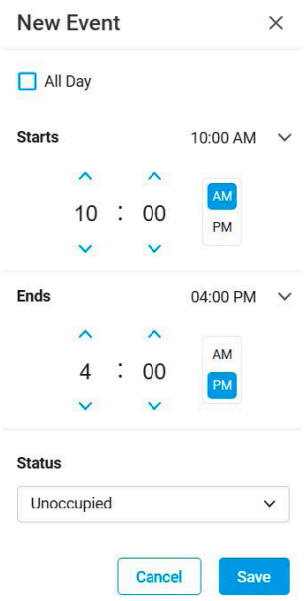
1. In the Exceptions tab, click Add. The Event Editor pop-up is displayed.

2. In the Name, enter the name of the event (e.g., New Year's, Thanksgiving, etc.) for your schedules.

3. In Type, select the type of special event:



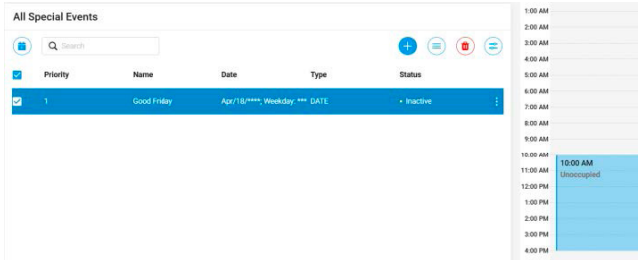
4. Depending on your selection, related parameters will be displayed accordingly. Define the event as needed.



5. Click Save. The pop-up is closed, and the event is displayed.

6. Once the exception is created, right-click on the schedule on the right side of the window and select Create Event.

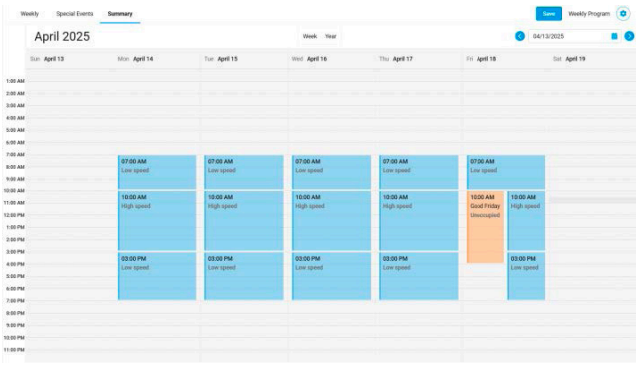
7. Enter the exact time in the Starts and Ends parameters, also if the All Day parameter at the top of the pop-up menu is selected then the event will be valid for the whole day. In the Status parameter, select the Fan Mode in which the fans will run and click on Save.



8. To edit the special event, click Edit. To delete the special event, click Delete.

9. To change the order of multiple events in the list, click on the Reorder Events button and drag and drop the events in the desired order.

10. Once you are done setting up the schedule, hit the Save button. Click on the Summary tab to review all the setup events in the past or in the future.

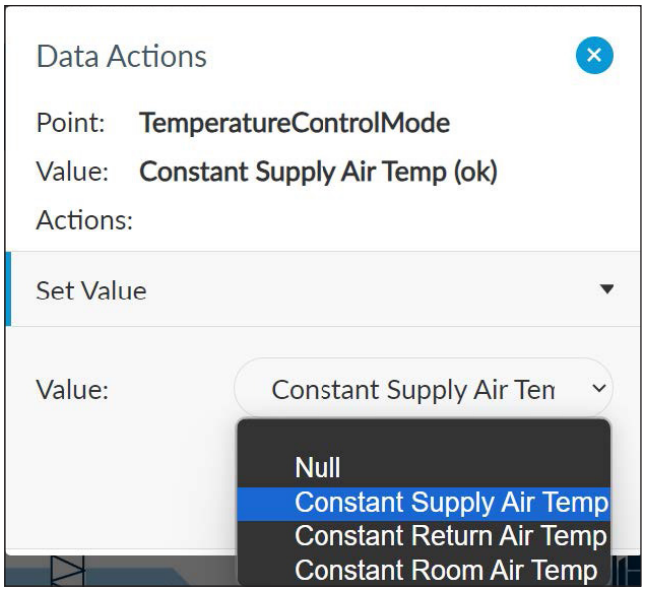


6.3 Temperature Setpoint

The setpoint described in this section is always the temperature setpoint for the control type selected.

The options are:

- Constant Supply Air Temp
- Constant Return Air Temp
- Constant Room Air Temp

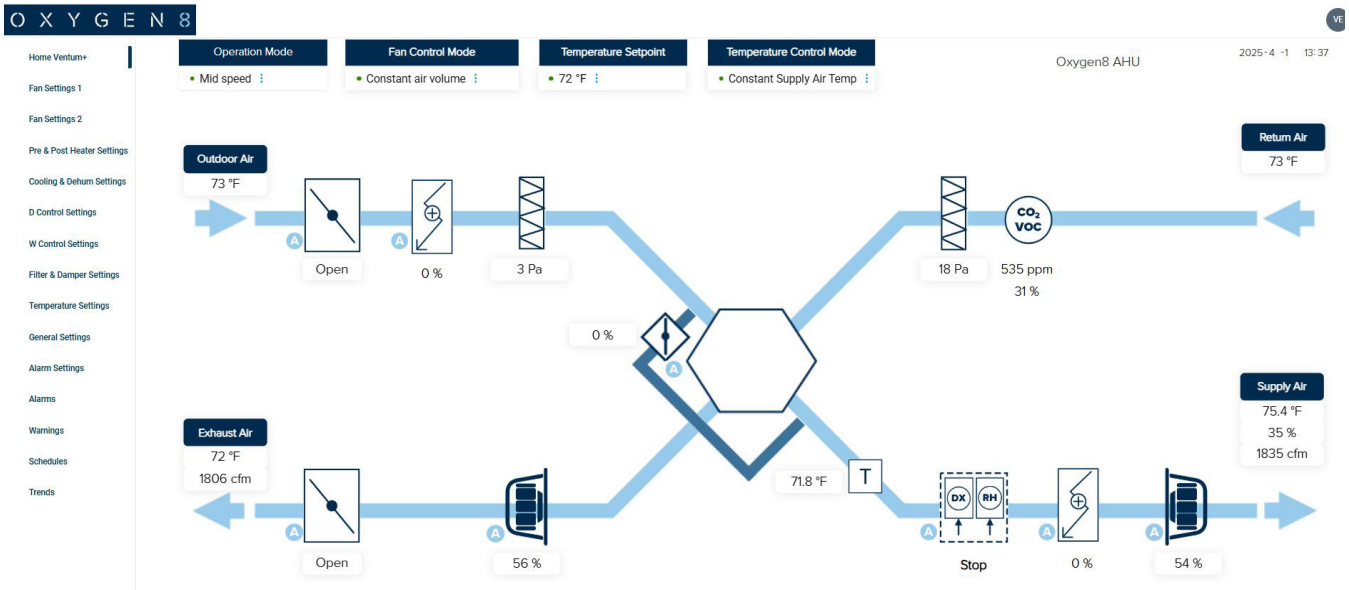


Control Type is Selected Under

Home > Temperature Control Mode and can be selected to:

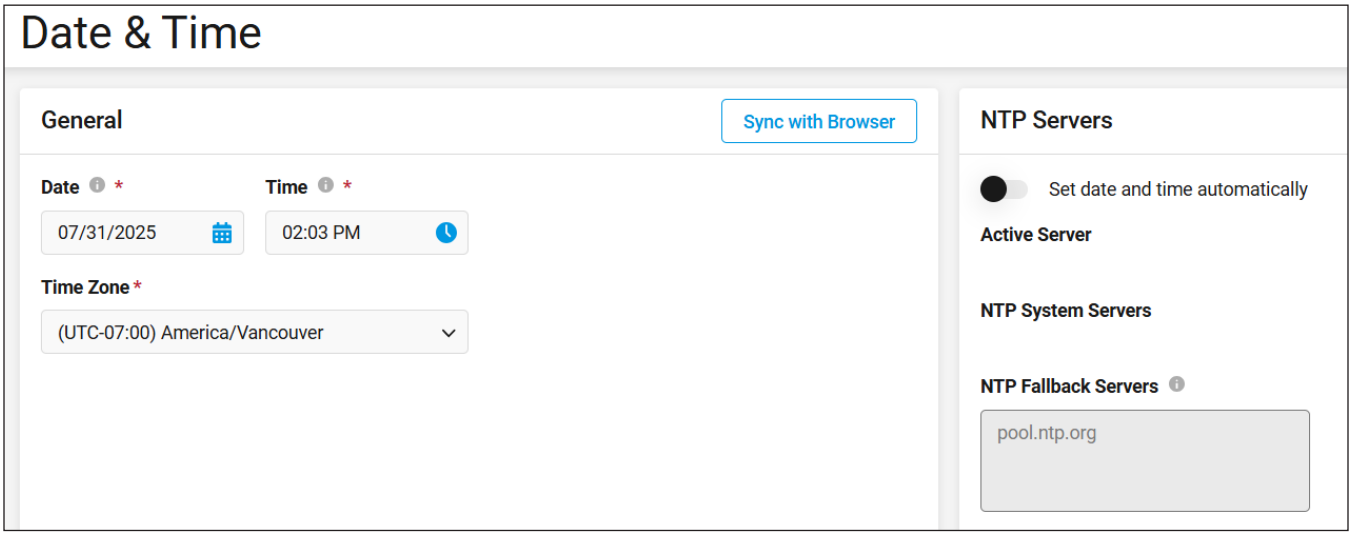
Changing the Temperature Setting (Temperature Setpoint)

Values can be changed by entering a new value in the data-entry field.



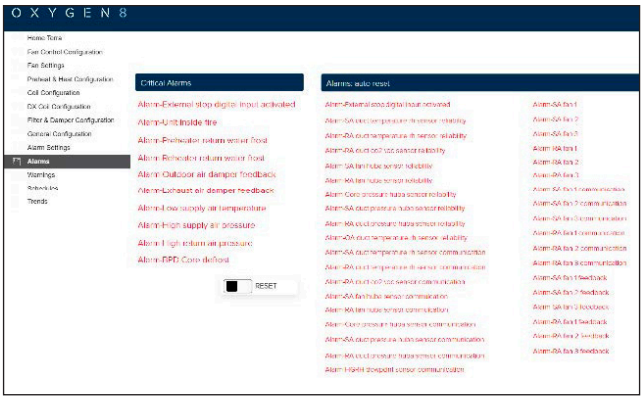
6.4 Time and Date

- On the Date & Time tab you can enter the date and time manually. It is possible to use the Browser time, press the “Sync with Browser” button.
- Also, it is possible to use a NTP Server. Enbale the option “Set date and time automatically” and setup the server of your preference.
- Then press “Save”



6.5 Alarm Console

The Alarm Console allows you to view and reset active alarms. The Alarm Console has two sections: Critical Alarms and Alarms Auto Reset. which will make a system stop procedure. Critical Alarms need to manual reset after they are triggered (except for External Stop Digital Input which can be configured to auto reset).



Critical Alarms:

- External stop digital input activated:
- Unit inside fire
- Preheater return water frost
- Reheater return water frost
- Outdoor air damper feedback
- Exhaust air damper feedback
- Low supply air temperature: 6.3 Enable
- High supply air pressure
- High return air pressure
- BPD Core defrost

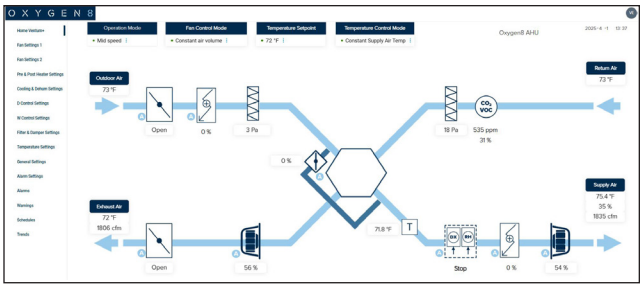
Auto Reset alarms:

- All IO faults
- All Modbus device reliability and communication alarm
- All fans' faults and communication alarm
- All fans' feedback alarm
- External stop digital input activated: 6.13 Enable

Warning Console: The Warning Console allows you to view active warning.
All warnings are auto reset.

Warning Console: The Warning Console allows you to view active warning.
All warnings are auto reset.

6.6 Control Unit Status Display



The display shows an overview of the system's actual status and operating conditions.

The menu on the left allows navigation to the different screens:

- Home Nova (System Overview)
- Configuration screens (more details on section 6.8)
- Schedules
- Alarms
- Trends

There are 4 control options at the top left:

- Operation Mode
- Fan Control Mode
- Temperature Setpoint and
- Temperature Control Mode

If there is an active alarm, a red bell appears on the top right. Click on it to navigate to the Alarm Console.

If there is an active warning, a yellow bell appears on the top right. Click on it to navigate to the Alarm Console.

Clicking on the system components (fans, heaters, dampers) opens a pop-up screen with dedicated controls and more information.

Values in the grey boxes below the system components indicate their current status (i.e. 76.2% below the Supply Air fan indicates its current speed).

There are fields indicating the current system values such as temperatures, air flow, relative humidity, etc.

Hand Mode Operation
Setting equipment in Hand Mode can be used during service and maintenance to test that the outputs work as intended.

To use Hand Mode, from the Home screen, click on the desired system component and in the pop up screen that opens, select Hand Mode.

The examples below illustrate the Hand Mode Operation of the supply fan speed.

1. On the Home Nova screen, click on the Supply Air Fan icon.

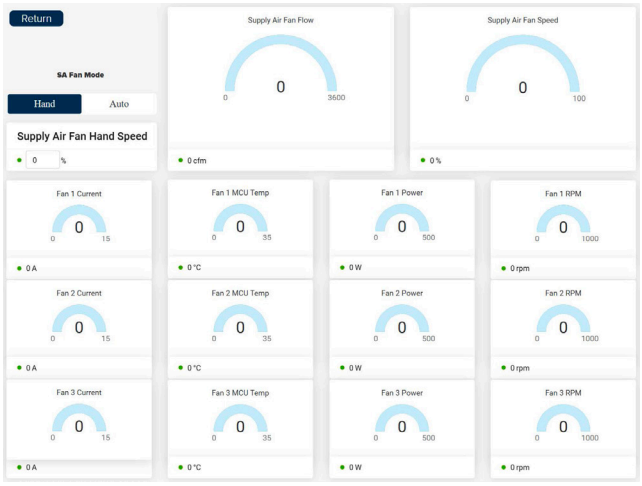
2. Set SA Fan Mode to “Hand”

3. Then below on Supply Air Fan Hand Speed, enter the desired speed in %.

4. The SA Fan will now operate at the speed set.

5. Set SA Fan Mode back to “Auto” for normal operation.

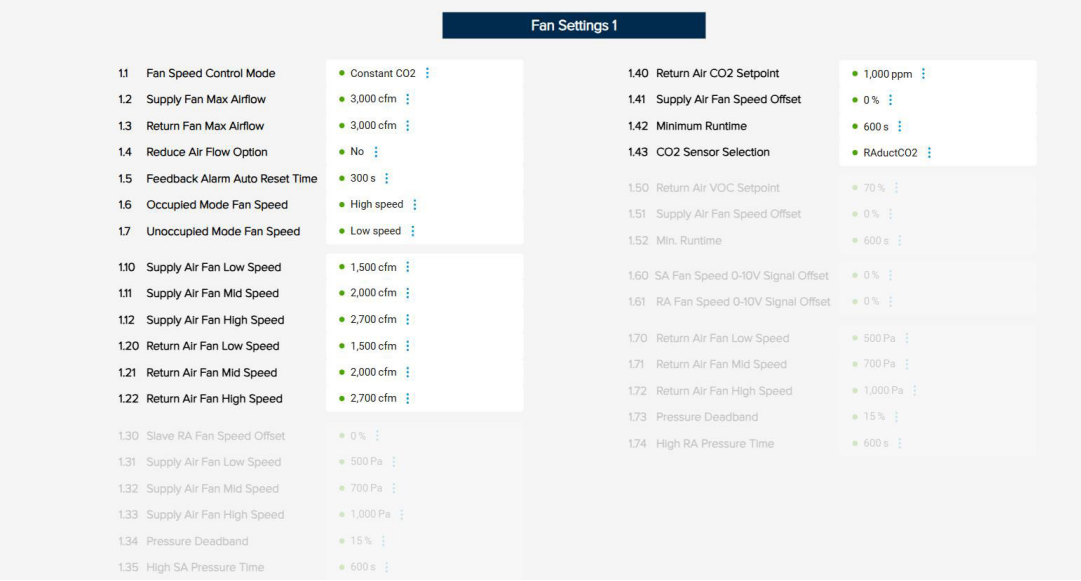
Note: after maintenance and testing, make sure to set all components back to Auto for proper operation. Use the Master Auto button on General Configuration.



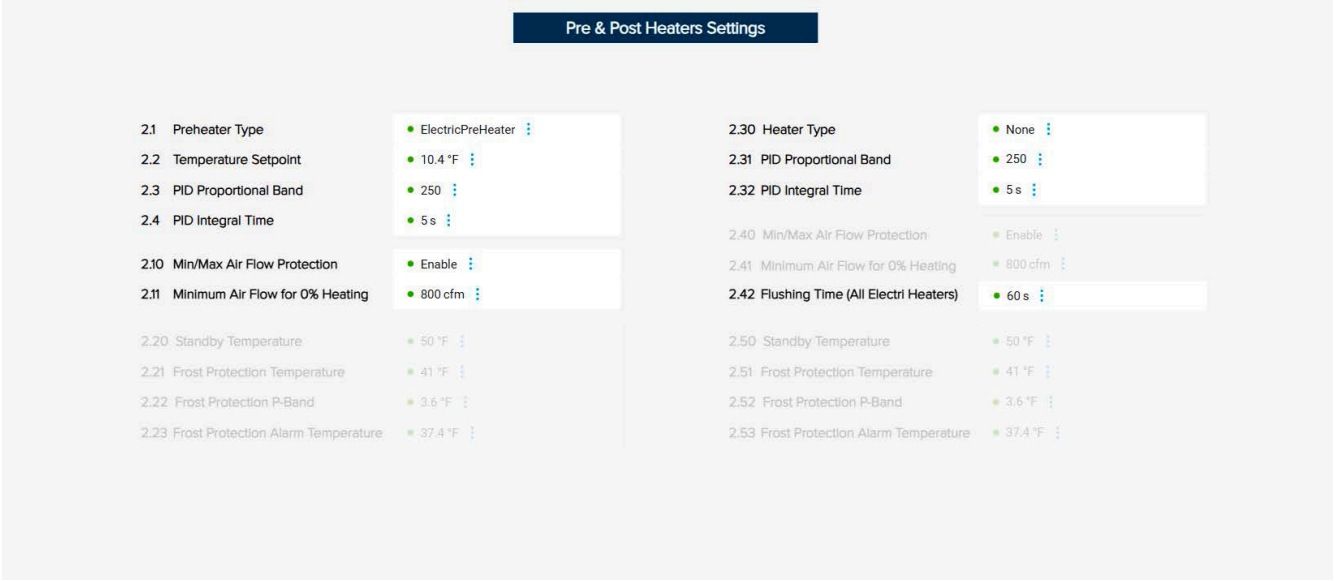
6.7 Configuration Screens

The Configuration screens display and allow modification of all the program settings. They are organized in groups: Fan Settings 1, Fan Settings 2, Pre & Post Heater settings, Cooling & De-hum Settings, D Control Settings, W Control Settings, Filter & Damper Settings, Temperature Settings and General Settings.

All Configuration Screens are already set up so that when you select a certain configuration, the parameters that don't apply are grayed out, for example in the Fan Settings 1 screen, if you select Constant CO2 in the Fan Speed Control Mode parameter, all the settings that work with the other modes are grayed out.

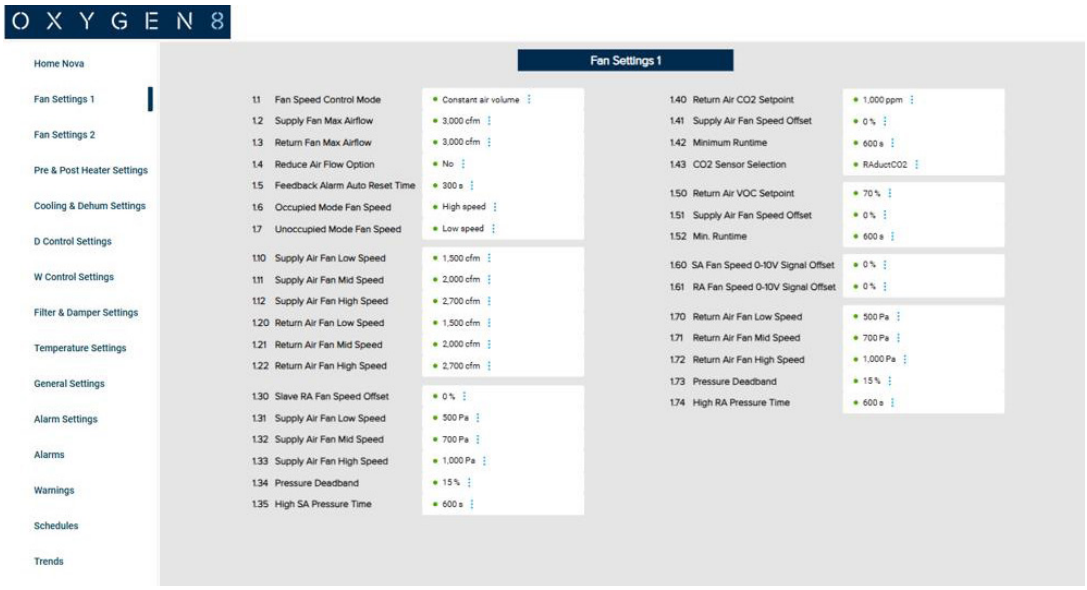


Another example is in the Pre & Post Heater Settings screen, when you only select an Electric Preheater then the parameters that don't apply are grayed out.



6.7.1 Fan Configuration

This screen allows configuration of the fans with the following settings:



1.1 Fan Speed Control Mode
Selects the fan speed control strategy: Constant Air Volume, Constant Pressure RA Slave, Constant CO2, or Constant VOC

1.2 Supply Fan Max Airflow
Set the required setpoint for maximum air volume in the supply duct. This only applies to Constant Pressure RA and Constant Pressure Both control mode.

1.3 Return Fan Max Airflow
Set the required setpoint for maximum air volume in the return duct. This only applies to Constant Pressure RA and Constant Pressure Both control mode.

1.4 Reduced Airflow Option
Safety feature to reduce fan flow if the temperature is below setpoint for 10 minutes. Select if No fan, Supply Air fan or both fans should react to the feature.

1.5 FB Alarm Auto Reset Time
Feedback Alarm auto reset time. If the controller does not detect the expected RPMs when the fan is commanded to run, a Feedback (FB) alarm is triggered. This timer determines the auto reset wait time.

1.6 Occupied Mode Fan Speed
Set the Fan Speed (SA & RA if available) when the space is Occupied.

1.7 Unoccupied Mode Fan Speed
Set the Fan Speed (SA & RA if available) when the space is Unoccupied.

1.12 Supply Air Fan High Speed
Set the required setpoint for Supply flow at “High” speed during Constant Air Volume control.

1.11 Supply Air Fan Mid Speed
Set the required setpoint for Supply flow at “Medium” speed during Constant Air Volume control.

1.12 Supply Air Fan High Speed
Set the required setpoint for Supply flow at “High” speed during Constant Air Volume control.

1.20 Return Air Fan Low Speed
Set the required setpoint for Return flow at “Low” speed during Constant Air Volume control.

1.21 Return Air Fan Mid Speed
Set the required setpoint for Return flow at "Medium" speed during Constant Air Volume control.

1.22 Return Air Fan High Speed
Set the required setpoint for Return flow at "High" speed during Constant Air Volume control.

1.30 Slave RA Fan Speed Offset
Return air fan follows Supply Fan speed with an offset corresponding to the value set during Constant Pressure-RA Slave.

1.31 Supply Air Fan Low Speed
Set the required setpoint for Return flow at "Low" speed during Constant Pressure-RA Slave control.

1.32 Supply Air Fan Mid Speed
Set the required setpoint for Return flow at "Medium" speed during Pressure-RA Slave control.

1.33 Supply Air Fan High Speed
Set the required setpoint for Return flow at "High" speed during Pressure-RA Slave control.

1.34 Pressure Deadband
Set the pressure percentage above setpoint at which the Supply High Pressure Alarm will be triggered

1.35 High SA Pressure Alarm Time
Set the time to wait to trigger the Supply High Pressure Alarm when the pressure exceeds the deadband (1.34 above)

1.40 Return Air CO2 Setpoint
Set the required setpoint for return duct CO2 concentration to run Return Air Fan at the speed set on parameter 1.22.

1.41 Supply Air Fan Speed Offset
Set the required offset for the Supply Air Fan.

1.42 Minimum Runtime
Set the minimum time the fan stays at high speed once it exceeds the setpoint (1.40), once this time elapses and the CO2 concentration is below 1.40, the fan resumes operation at the speed set on 1.20.

1.43 Sensor Selection
Select what sensor is used to measure CO2: RAductCO2 (in the duct) or RoomCO2.

1.50 Return Air VOC Setpoint
Set the required setpoint for return duct VOC concentration to run Return Air Fan at the speed set on parameter 1.22.

1.51 Supply Air Fan Speed Offset
Set the required offset for the Supply Air Fan.

1.52 Minimum Runtime
Set the minimum time the fan stays at high speed once it exceeds the setpoint (1.50), once this time elapses and the VOC concentration is below 1.50, the fan resumes operation at the speed set on 1.20.

1.60 Supply Air Fan Speed Offset
Set the fan offset to be subtracted from the external 0 to V signal. Example: If offset is 30% and the external voltage is 10V, the supply fan would run at 70%

1.61 Return Air Fan Speed Offset
Set the fan offset to be subtracted from the external 0 to V signal. Example: If offset is 25% and the external voltage is 8V, the return fan would run at 55%

1.70 Return Air Fan Low Speed
Set the required setpoint for Return flow at “Low” speed during Constant Pressure-RA Salve or Constant Pressure-Both control

1.71 Return Air Mid Speed
Set the required setpoint for Return flow at “Medium” speed during Pressure-Both Slave or Constant Pressure-Both control

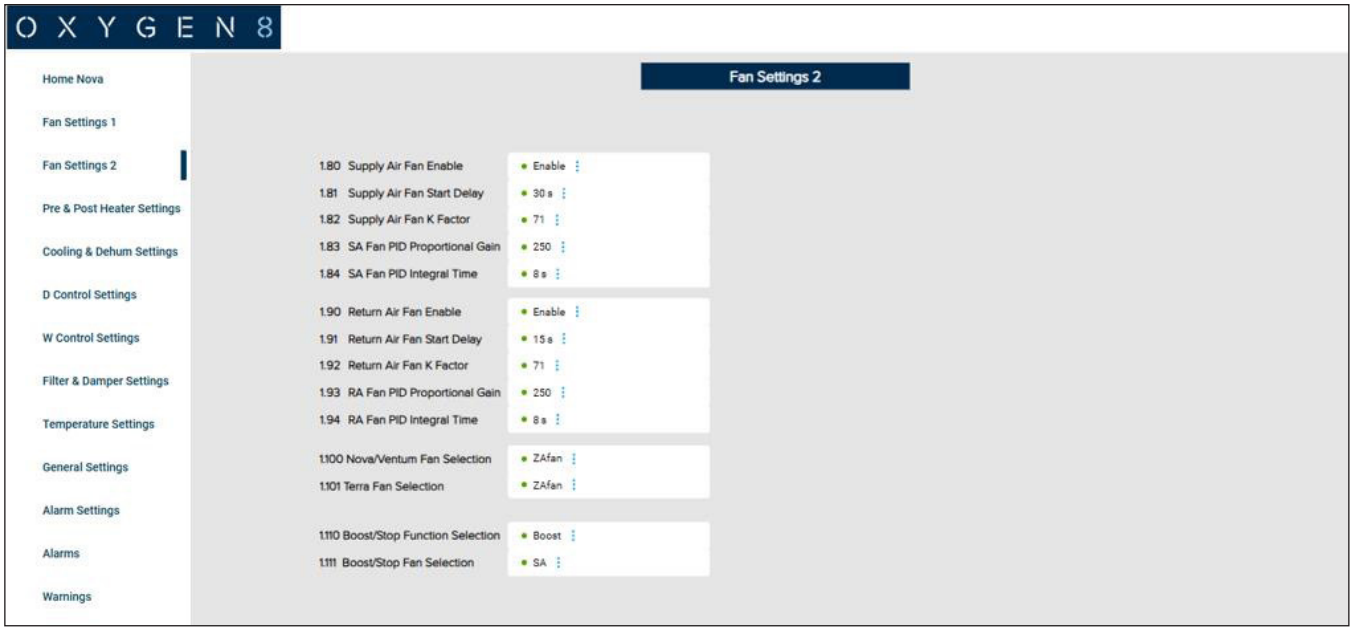
1.72 Return Air High Speed
Set the required setpoint for Return flow at “High” speed during Pressure-Both Slave or Constant Pressure-Both control

1.73 Pressure Deadband
Set the pressure percentage above setpoint at which the Return High Pressure Alarm will be triggered

1.74 High RA Pressure Time
Set the time to wait to trigger the Supply High Pressure Alarm when the pressure exceeds the deadband (1.73 above)

6.7.2 Fan Settings

This screen allows configuration of the fans with the following settings:



1.80 Supply Air Fan Enable
This screen allows configuration of the heating coils (pre and post)

1.81 Supply Air Fan Start Delay
Set delayed start time for the fan. The set time is used for damper opening

1.82 Supply Air Fan K Factor
Set the fan k-factor. Fan k-factor is specified by the fan manufacturer and is used to calculate air volume (CFM) according to the following formula:

$V=\sqrt{\Delta P}\cdot k$

ΔP = difference between stationary pressure and dynamic pressure across the fan; k= fan k-factor

1.83 Supply Air Fan PID Proportional Gain
Set the fan PID proportional gain

1.84 Supply Air Fan PID Integral Time
Set the fan PID integral time

1.90 Return Air Fan Enable
Determines if the Return Fan is present or not

1.91 Return Air Fan Start Delay
Set delayed start time for the fan. The set time is used for damper opening

1.92 Return Air Fan K Factor
Set the fan k-factor. Fan k-factor is specified by the fan manufacturer and is used to calculate air volume (CFM) according to the following formula:

$V=\sqrt{\Delta P}\cdot k$

ΔP = difference between stationary pressure and dynamic pressure across the fan; k= fan k-factor

1.93 Return Air Fan PID Proportional Gain
Set the fan PID proportional gain

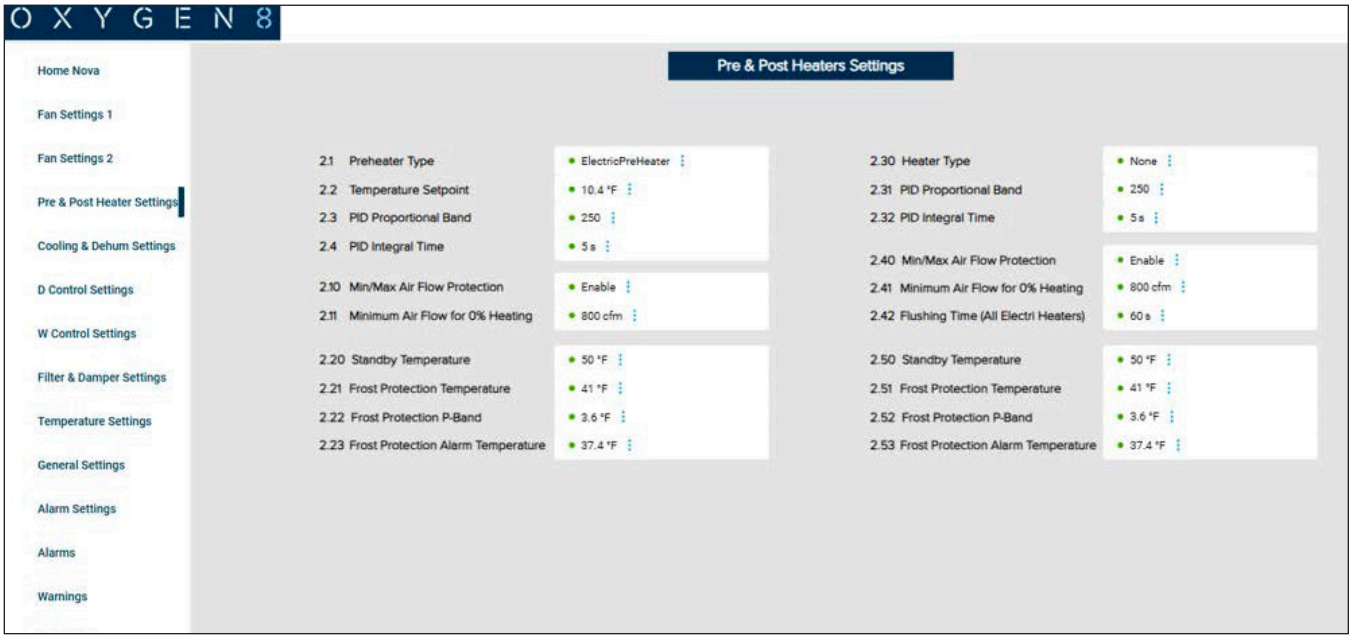
1.94 Return Air Fan PID Integral Time
Set the fan PID integral time

1.110 Boost/Stop Function Selection
Select what function, Boost or Stop, you want to trigger with the Digital Input 107 (4.5 OA Damper Feedback must be Disable).

1.110 Boost/Stop Fan Selection
Select what fan you want affect with the Boost/Stop function: SA Fan, RA Fan or Simultaneous).

6.7.3 Preheat & Post Heat Configuration

This screen allows configuration of the heating coils (pre and post).



2.1 Preheater Type
Selects whether there is no preheater installed or if it is electric or hydronic.

2.2 Temperature Setpoint
Sets the preheater temperature setpoint.

2.3 PID Proportional Band
Set the preheater PID proportional gain.

2.4 PID Integral Time
Set the preheater PID integral time.

2.10 Min/Max Air Flow Protection
Enables or disables flow monitoring to protect the preheater.

2.11 Minimum Air Flow for 0% Heating
If 2.10 is set to Enable, sets the minimum supply flow to engage the preheater.

2.12 Flushing Time
Minimum time to run the fan after the preheater is disengaged to flush any remnant heat.

2.20 Return Water Temp. Control
Enables or disables return water frost protection of the hydronic preheater.

2.21 Startup Heating Percentage
During the system start-up, sets the hydronic preheater output after starting the supply air fan.

2.22 Standby Temperature
When the system is stopped and 2.20 is enabled, if the water temperature falls below this setpoint, heating will be modulated to maintain the temperature above this setpoint.

2.23 Frost Protection Temperature
When the system is running and 2.20 is enabled, frost protection activates on a linear relationship defined by parameters 2.23 & 2.24. This setpoint represents the return water temperature at which the heating will be activated at 100%.

2.24 Frost Protection P-Band
When the system is running and 2.20 is enabled, frost protection activates on a linear relationship defined by parameters 2.23 & 2.24. This setpoint represents the return water temperature at which the heating will be activated at 0%.

2.25 Frost Protection Alarm Temperature
Sets the hydronic return water temperature frost protection alarm setpoint. This alarm stops the unit.

2.30 Post Heater Type
Selects whether there is no post heater installed or if it is electric or hydronic.

2.31 PID Proportional Band
Set the post heater PID proportional gain.

2.32 PID Integral Time
Set the post heater PID integral time.

2.40 Min/Max Air Flow Protection
Enables or disables flow monitoring to protect the post heater.

2.41 Minimum Air Flow for 0% Heating
If 2.40 is set to Enable, sets the minimum supply flow to engage the post heater.

2.42 Flushing Time (All Electric Heaters)
Minimum time to run the fan after the preheater is disengaged to flush any remnant heat.

2.50 Return Water Temp. Control
Enables or disables return water frost protection of the hydronic preheater.

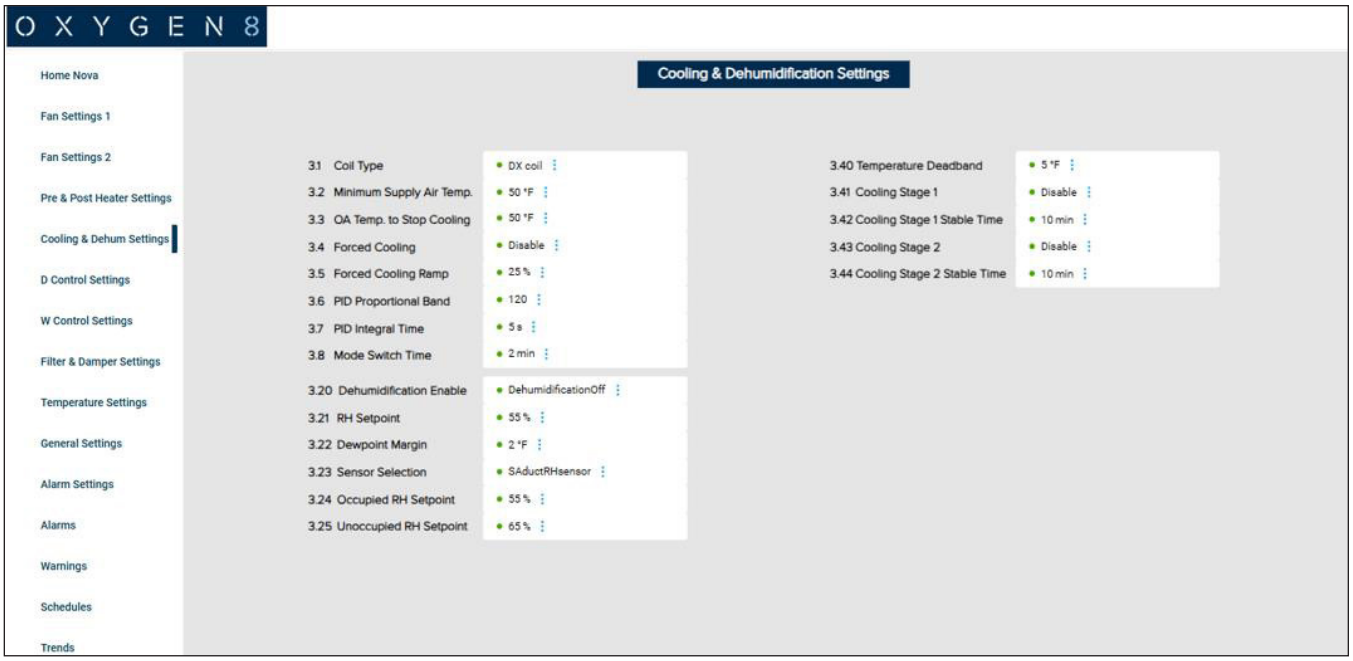
2.51 Startup Heating Percentage
During the system start-up, sets the hydronic preheater output after starting the supply air fan.

2.52 Stanby Temperature
When the system is stopped and 2.50 is enabled, if the water temperature falls below this setpoint, heating will be modulated to maintain the temperature above this setpoint.

2.53 Frost Protection Temperature
When the system is running and 2.50 is enabled, frost protection activates on a linear relationship defined by parameters 2.53 & 2.54. This setpoint represents the return water temperature at which the heating will be activated at 100%.

6.7.4 Cooling & Dehum Settings

This screen allows configuration of the cooling & DX Coils (Heat Pump) and HGRH



3.1 Cooling Type
Selects whether there is no cooling coil installed or if it is a DX coil, Hydronic or HGRH.

3.2 Minimum Supply Air Temp.
Setpoint for minimum supply temperature when cooling is active.

3.3 OA Temp. to Stop Cooling
Cooling is stopped at outdoor temperatures below the setpoint.

3.4 Forced Cooling
When activated, air volume will be increased when cooling is active.

3.5 Forced Cooling Ramp
When Forced Cooling is Active, the total air volume increases at this rate. If the max. air flow is reached, it will be maintained while cooling is active.

3.6 PID Proportional Band
Set the cooling coil PID proportional gain.

3.7 PID Integral Time
Set the cooling coil PID integral time.

3.20 Dehumidification Enable
Select whether dehumidification is to be active.

3.21 RH Setpoint
Sets the desire Relative Humidity Setpoint. Above this value the dehumidification sequence starts.

3.22 Dewpoint Margin
Dead band for the RH setpoint. Defines when the humidity level has been satisfied and cooling returns to normal

3.23 Sensor Selection
Select what sensor to use for dehumidification: SA Duct, RA Duct, Room or Dewpoint + SA Duct.

3.24 Occupied RH Setpoint
Sets the desire Relative Humidity setpoint when Occupied mode is selected in the schedule. Above this value the dehumidification sequence starts.

3.25 Unoccupied RH Setpoint
Sets the desire Relative Humidity setpoint when Unoccupied mode is selected in the schedule. Above this value the dehumidification sequence starts.

3.40 Temperature Deadband
Used for Condensing units. Sets the deadband from Setpoint to enable the Condensing unit. If SA > SP + Deadband Enable Condensing Units. If SA < SP – Deadband Disable Condensing Unit

3.41 Cooling Stage 1
Enables/disables a Condensing unit with 1 Stage of cooling. It will be activated as per 3.40 above

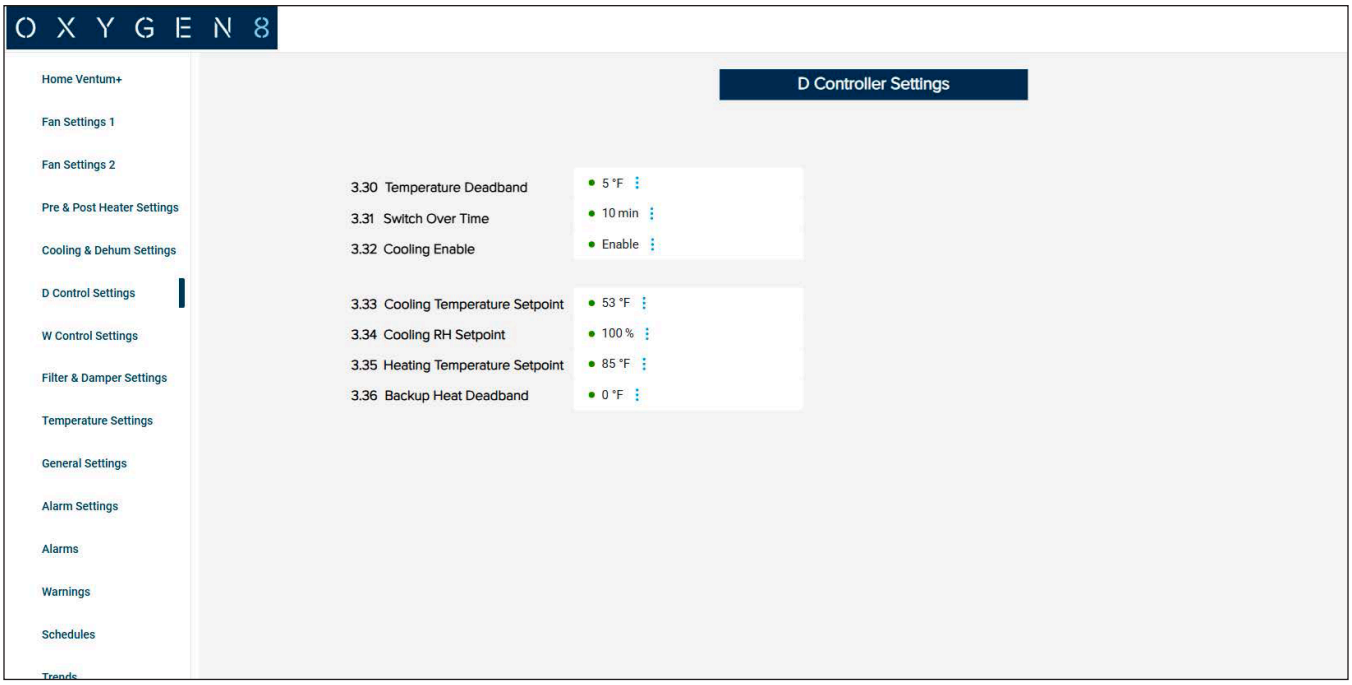
3.42 Cooling Stage 1 Stable Time
Minimum time to run Stage 1. After this time expires the controller looks at the deadband as per 3.40 above to decide the state of Stage 1. If Stage 2 is enabled and SA > SP + Deadband, Stage 2 will be activated

3.43 Cooling Stage 2
Enables/disables a Condensing unit with 2 Stages of cooling. It will be activated if Stage 1 can't keep the SA inside the deadband after the timer expires (3.42)

3.44 Cooling Stage 2 Stable Time
Minimum time to run Stage 2

6.7.5 D Controller Settings

This screen allows configuration of the HGRH coils when a D controller is used.



3.30 Temperature Deadband
Set the HGRH temperature deadband.

3.31 Switch Over Time
Set the HGHR heating/cooling mode switch over time.

3.32 Cooling Enable
Set the cooling enable for HGRH. When enabled, HGRH will work with heating, cooling and dehumidification. When disable, HGRH will work with heating or dehumidification (cooling).

3.33 Cooling Temperature Setpoint
Enabled when a Room sensor and a D Controller are enabled. Set the Temperature Setpoint for the D Controller in Space Control Mode when outside the Neutral Zone and Cooling is needed (Typically 53 F).

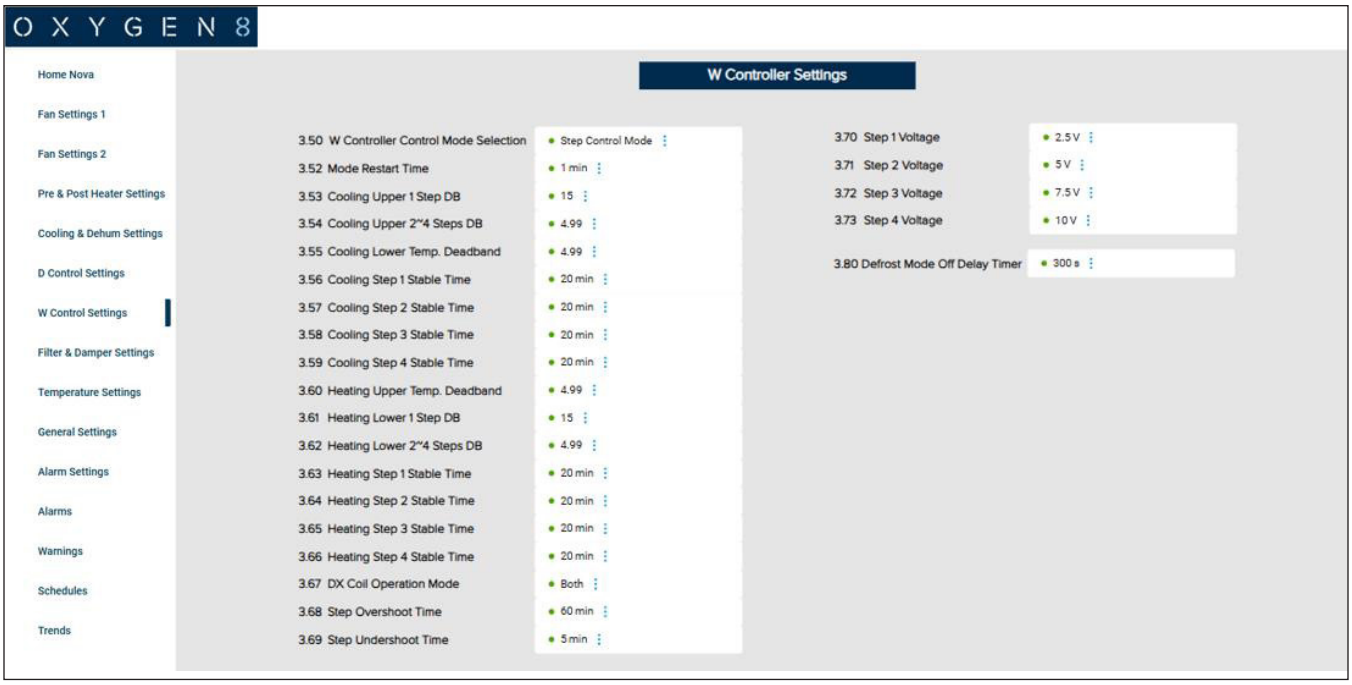
3.34 Cooling RH Setpoint
Enabled when a Room sensor and a D Controller are enabled. Set the Relative Humidity Setpoint for the D Controller in Space Control Mode when Neutral Zone and Cooling is needed (Typically 50%).

3.35 Heating Temperature Setpoint
Enabled when a Room sensor and a D Controller are enabled. Set the Temperature Setpoint for the D Controller in Space Control Mode when outside the Neutral Zone and Heating is needed (Typically 85 F).

3.36 Backup Heat Deadband
Set the deadband that determines when the Heater kicks in as backup heat when HGRH (D controller) is not maintaining setpoint.

6.7.6 W Controller Settings

This screen allows configuration of the DX Coil when a W controller is used.



3.50 Control Mode Selection
Set the DX coil W-controller mode as Step or PI Control Mode

3.51 Mode Switch Time
Set the mode switch time for heating or cooling mode changing conditions

3.52 Mode Restart Time
Set the time to wait after the mode (Heating or Cooling) has changed before allowing another change

3.53 Cooling Upper 1 Step DB
Set the cooling step 1 start deadband

3.54 Cooling Upper 2~4 Steps DB
Set the cooling steps 2~4 start deadband

3.55 Cooling Lower Temp. Deadband
Set the cooling overshoot deadband

3.56 Cooling Step 1 Stable Time
Set the cooling step 1 elapse time before step 2 starts. If during the stable time, the current temperature meets the deadband, time will expire immediately

3.57 Cooling Step 2 Stable Time
Set the cooling step 2 elapse time before step 3 starts. If during the stable time, the current temperature meets the deadband, time will expire immediately

3.58 Cooling Step 3 Stable Time
Set the cooling step 3 elapse time before step 4 starts. If during the stable time, the current temperature meets the deadband, time will expire immediately

3.59 Cooling Step 4 Stable Time
Set the cooling step 4 elapse time. If during the stable time, the current temperature meets the deadband, time will expire immediately

3.60 Heating Upper Temp. Deadband
Set the heating overshoot deadband

3.61 Heating Lower 1 Step DB
Set the heating step 1 start deadband

3.62 Heating Lower 2~4 Steps DB
Set the heating steps 2~4 start deadband

3.63 Heating Step 1 Stable Time
Set the heating step 1 elapse time before step 2 starts. If during the stable time, the current temperature meets the deadband, time will expire immediately

3.64 Heating Step 2 Stable Time
Set the heating step 2 elapse time before step 3 starts. If during the stable time, the current temperature meets the deadband, time will expire immediately

3.65 Heating Step 3 Stable Time
Set the heating step 3 elapse time before step 4 starts. If during the stable time, the current temperature meets the deadband, time will expire immediately

3.66 Heating Step 4 Stable Time
Set the heating step 4 elapse time.
If during the stable time, the current temperature meets the deadband, time will expire immediately

3.67 DX Coil Operation Mode
Set the DX Coil W-Controller operation mode (Both: heating/cooling, Cooling: only cooling)

3.68 Step Overshoot Time
Set the step overshoot time When above the deadband, maintain the current step during the time before stepping down

3.69 Step Undershoot Time
Set the step undershoot time When under the deadband, maintain the current step during the time before stepping up

3.70 Step 1 Voltage
Set the step 1 voltage signal

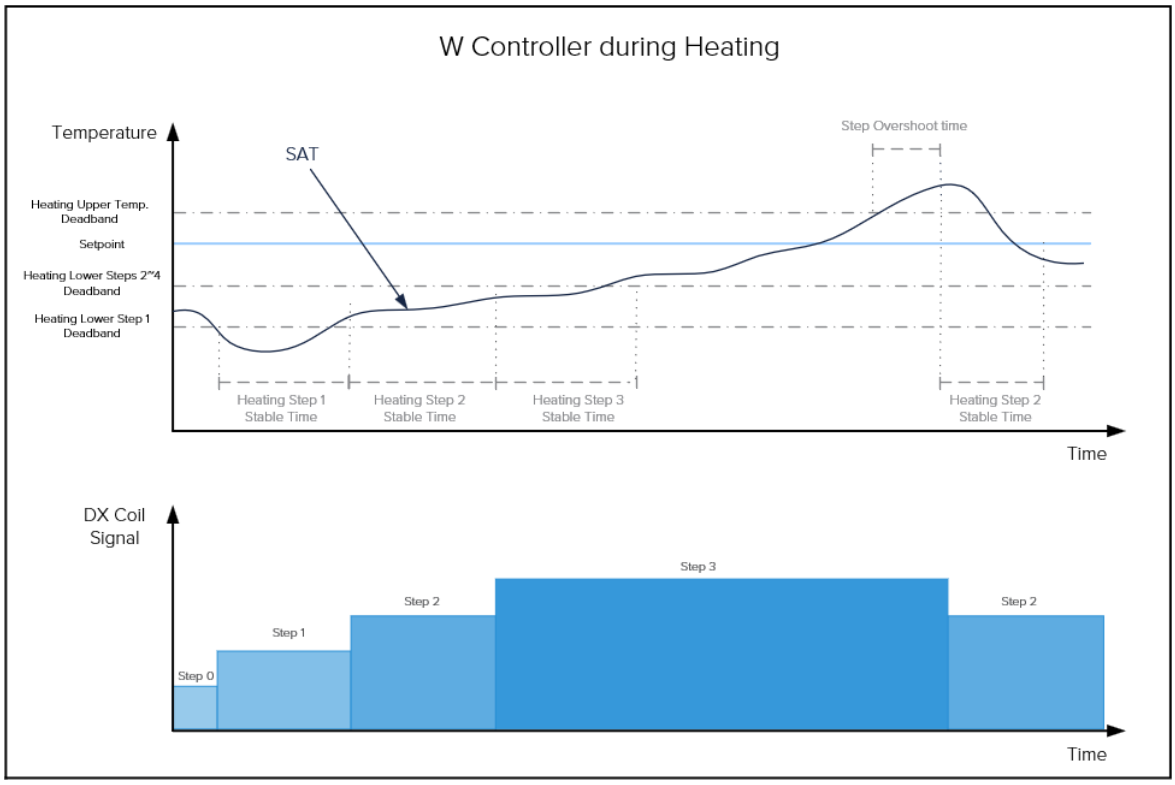
3.71 Step 2 Voltage
Set the step 2 voltage signal

3.72 Step 3 Voltage
Set the step 3 voltage signal

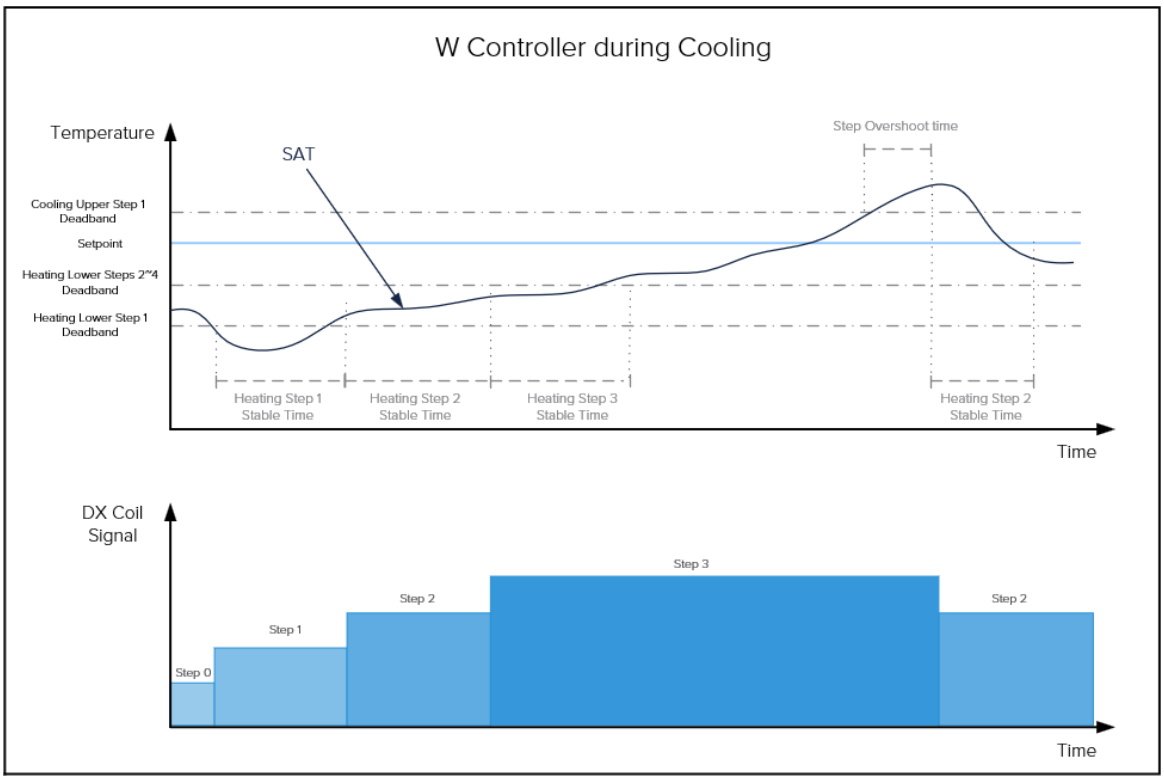
3.73 Step 4 Voltage
Set the step 4 voltage signal

3.80 Defrost Mode Off Delay Timer
Timer that allows Post Heater to stay ON for longer, to help bring heat when DX coil Defrost Mode is active.

DX Coil W-Controller heating mode

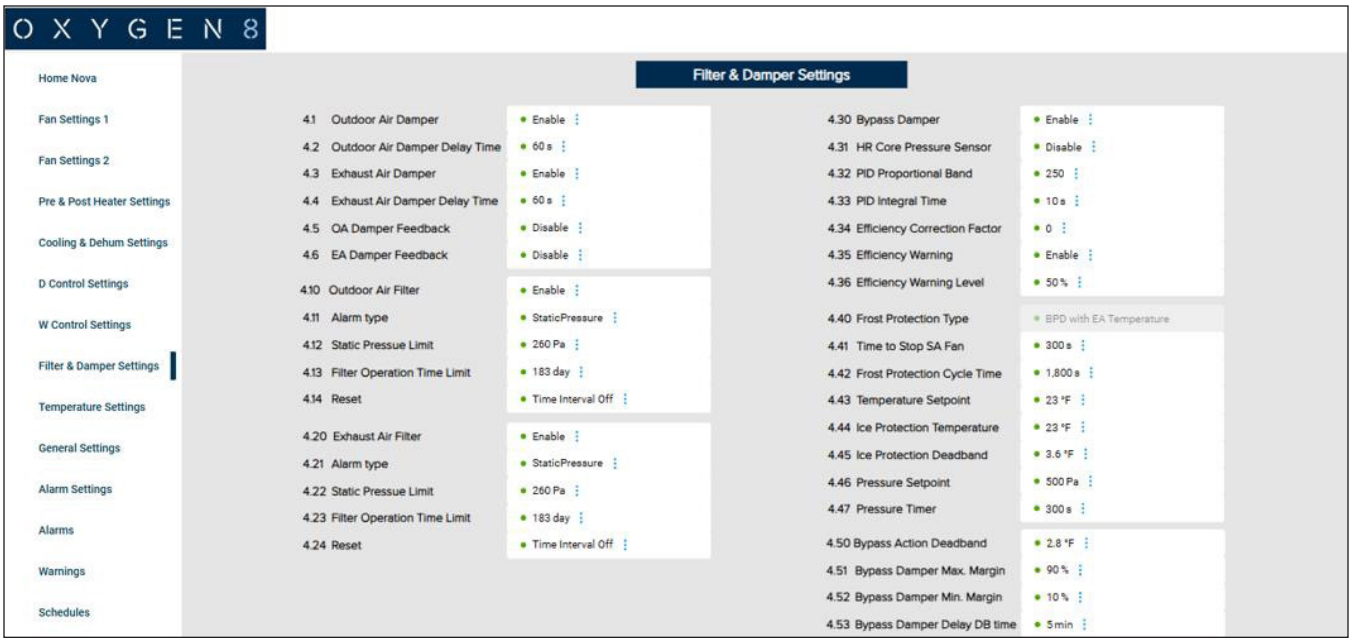


DX Coil W-Controller cooling mode



6.7.7 Filter & Damper Configuration

This screen allows configuration of the filters and dampers.



4.1 Outdoor Air Damper
Selects whether the outdoor damper is present or not.

4.2 Outdoor Air Damper Delay Time
Set the time the damper takes to open.

4.3 Exhaust Air Damper
Selects whether the outdoor damper is present or not.

4.4 Exhaust Air Damper Delay Time
Set the time the damper takes to open.

4.5 OA Damper Feedback
Enables/Disabled damper feedback. If enabled, after the open signal is sent and the delay expires (4.2 above) if the feedback is not detected an alarm is triggered and the fans stop

4.6 EA Damper Feedback
Enables/Disabled damper feedback. If enabled, after the open signal is sent and the delay expires (4.4 above) if the feedback is not detected an alarm is triggered and the fans stop

4.10 Outdoor Air Filter
Selects whether the outdoor air filter is present or not.

4.11 Alarm Type
Select Static Pressure or Time Based for the outdoor air filter.
Static Pressure: A filter warning is activated if the Static Pressure Limit (4.12) is exceeded.
Time Based: A filter warning is activated when the filter operation time limit (4.13) is exceeded.

4.12 Static Pressure Limit
Set the static pressure limit for pressure drops across the outdoor air filter. Alarm Type must be set to “Static Pressure”.

4.13 Filter Operation Time Limit
Set the operation time limit for the outdoor air filter. Alarm Type must be set to “Time Based”.

4.14 Reset
Set the method to reset the outdoor air filter operation time.
Time Interval Off: Time based alarm (set by 4.13) is disregarded.
Time Interval ON: Resets the alarm timer.

4.20 Exhaust Air Filter
Selects whether the exhaust air filter is present or not.

4.21 Alarm Type
Select Static Pressure or Time Based for the exhaust air filter.
Static Pressure: A filter warning is activated if the Static Pressure Limit (4.12) is exceeded.
Time Based: A filter warning is activated when the filter operation time limit (4.13) is exceeded.

4.22 Frost Protection Alarm Temperature
Set the static pressure limit for pressure drop across the exhaust air filter. Alarm Type must be set to “Static Pressure”.

4.23 Filter Operation Time Limit
Set the operation time limit for the exhaust air filter. Alarm Type must be set to “Time Based”.

4.24 Reset
Set the method to reset the exhaust air filter operation time.
Time Interval Off: Time based alarm (set by 4.13) is disregarded.
Time Interval ON: Resets the alarm timer.

4.30 Bypass Damper
Selects whether the bypass damper is present or not.

4.31 HR Core Pressure Sensor
Selects if a pressure sensor is installed across the core.

4.32 PID Proportional Band
Set the bypass damper PID proportional gain.

4.33 PID Integral Time
Set the bypass damper PID integral time.

4.34 Efficiency Correction Factor
Sensible efficiency percent correction between ±5%.

4.35 Efficiency Warning
Enables or disables monitoring of core sensible efficiency.

4.36 Efficiency Warning Level
Sets the sensible efficiency setpoint under which a warning is issued. 4.35 has to be set to Enable.

4.40 Frost Protection Type
Selects what methodology of frost protection is used.
“No Selection”: There is no frost protection.
“Only EA Temperature”: Use exhaust temperature to trigger frost protection, when it drops below 4.43.
“BPD with EA Temperature”: Use exhaust temperature to trigger frost protection (when it drops below 4.44 + 4.45) and the bypass damper to modulate.
“BPD with HR Core Pressure”: Use core pressure to trigger frost protection (when it climbs above 4.46) and the bypass damper to modulate.

4.41 Time to Stop SA Fan
When the frost protection is active this is the time the SA Fan stops while the EA Fan runs to pass warm air through the core. Parameter 4.40 must be set to “Only EA Temperature”.

4.42 Frost Protection Cycle Time
Sets the time to wait to check again the SA temperature after the SA fan completed the stop time determined by 4.43 above. Parameter 4.40 must be set to “Only EA Temperature”.

4.43 Temperature Setpoint
Sets the exhaust air temperature to trigger frost protection, when it falls below this value the sequence set by parameters 4.41 & 4.42 begins. Parameter 4.40 must be set to “Only EA Temperature”.

4.44 Ice Protection Temperature
Sets the exhaust air temperature to trigger ice protection. When the exhaust air temperature falls below this setpoint plus Deadband (parameter 4.45). The bypass damper is open at 100%.

If the exhaust air temperature remains below this setpoint for 10 minutes, the “HR core defrost” alarm is triggered, and the unit stops. Parameter 4.40 must be set to “Only EA Temperature”.

4.45 Ice Protection Deadband
Adding temperature with 4.44, before the reaching frost alarm limit, starting frost protection active. 4.40 “BPD with EA Temperature” option.

4.46 Pressure Setpoint
Sets the core pressure to trigger frost protection, when the pressure exceeds this value, the bypass damper is open at 100% for the duration specified by 4.47 below. Parameter 4.40 must be set to “BPD with HR Core Pressure” option.

4.47 Pressure Timer
Sets the time the bypass damper is kept open at 100% when frost protection is triggered due to high core pressure (see parameter 4.46). Parameter 4.40 must be set to “BPD with HR Core Pressure” option.

4.50 Bypass Action Deadband
Sets the deadband temperature above or below the temperature setpoint for the Bypass start to modulate.

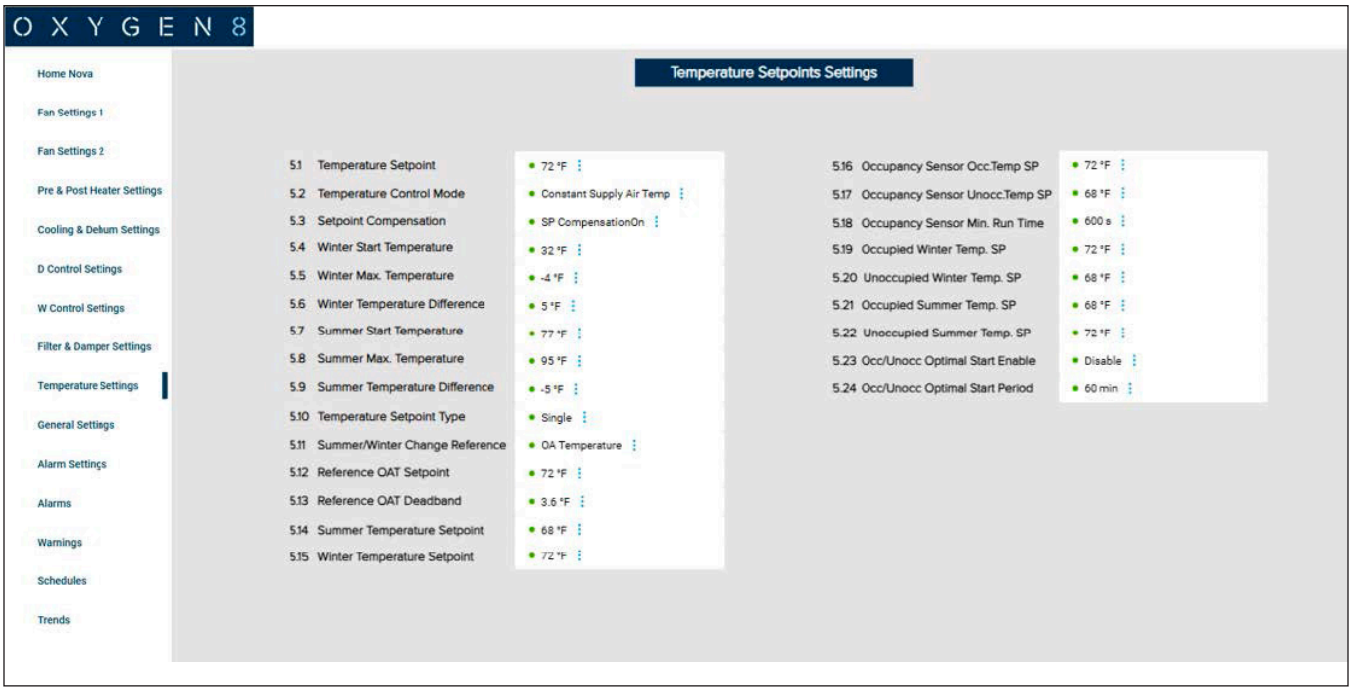
4.51 Bypass Damper Max. Margin
Sets the maximum opening target position for the bypass before triggering the cooler/heater coil start running if one is present.

4.52 Bypass Damper Min. Margin
Sets the minimum closing target position for the bypass before triggering the cooler/heater coil start running if one is present.

4.53 Bypass Damper Delay DB Time
Sets the delay time for the bypass damper starts modulating after the actual temperature is below/above the deadband temperature (4.50)

6.7.8 Temperature Configuration

This screen allows configuration of general temperature settings



5.1 Temperature Setpoint
Sets the required temperature setpoint

5.2 Temperature Control Mode
Selects the temperature control mode, depending on the location of the temperature sensor used for control: Constant Supply Air Temp, Constant Return Air Temp or Constant Room Air Temp

5.3 Setpoint Compensation (See graph)
When Setpoint Compensation is ON, it offsets the temperature setpoint in relation to outdoor temperature in summer and/or winter. Settings 5.4 to 5.9 only apply when Setpoint Compensation is set to ON

5.4 Winter Start Temperature
Outdoor temperature for start of winter compensation

5.5 Winter Max. Temperature
Outdoor temperature for max. winter compensation

5.6 Winter Temperature Difference
Max. winter compensation of setpoint

5.7 Summer Start Temperature
Outdoor temperature for start of summer compensation

5.8 Summer Max. Temperature
Outdoor temperature for max. summer compensation

5.9 Summer Temperature Difference
Max. summer compensation of setpoint

5.10 Temperature Setpoint Type
Select the type of temperature setpoint: Single (One setpoint for all conditions), Summer/Winter or Occupied/Unoccupied

5.11 Summer/Winter Change Reference
Valid only when 5.10 is set to Summer/Winter. Sets the reference to determine when is its winer or summer: OAT Temperature (uses parameters 5.12 & 5.13 below) or External BACnet signal

5.12 Reference OAT Setpoint
Set the OAT to determine the Winter Summer change over

5.13 Reference OAT Deadband
Set the OAT changeover deadband. If OAT > Reference OAT Setpoint + Deadband the Mode is Summer. If OAT < Reference OAT Setpoint - Deadband the Mode is Winter.

5.14 Summer Temperature Setpoint
Set the summer time setpoint. Summer time is defined based on 5.11 above

5.15 Winter Temperature Setpoint
Set the Winter time setpoint. Winter time is defined based on 5.11 above

5.16 Occupied Temperature Setpoint
Set the Occupied temperature setpoint. Occupancy is determined by the Distech EC-Multi-Sensor-BLE

5.17 Unoccupied Temperature Setpoint
Set the Unoccupied temperature setpoint Occupancy is determined by the Distech EC-Multi-Sensor-BLE

5.18 Occupancy Sensor Min. Run Time
Set the minimum time Occupancy mode will be kept once it is triggered (to avoid excessive cycling)

5.19 Occupied Winter Temp. SP
Set the Temperature Setpoint for Occupied Space during Winter

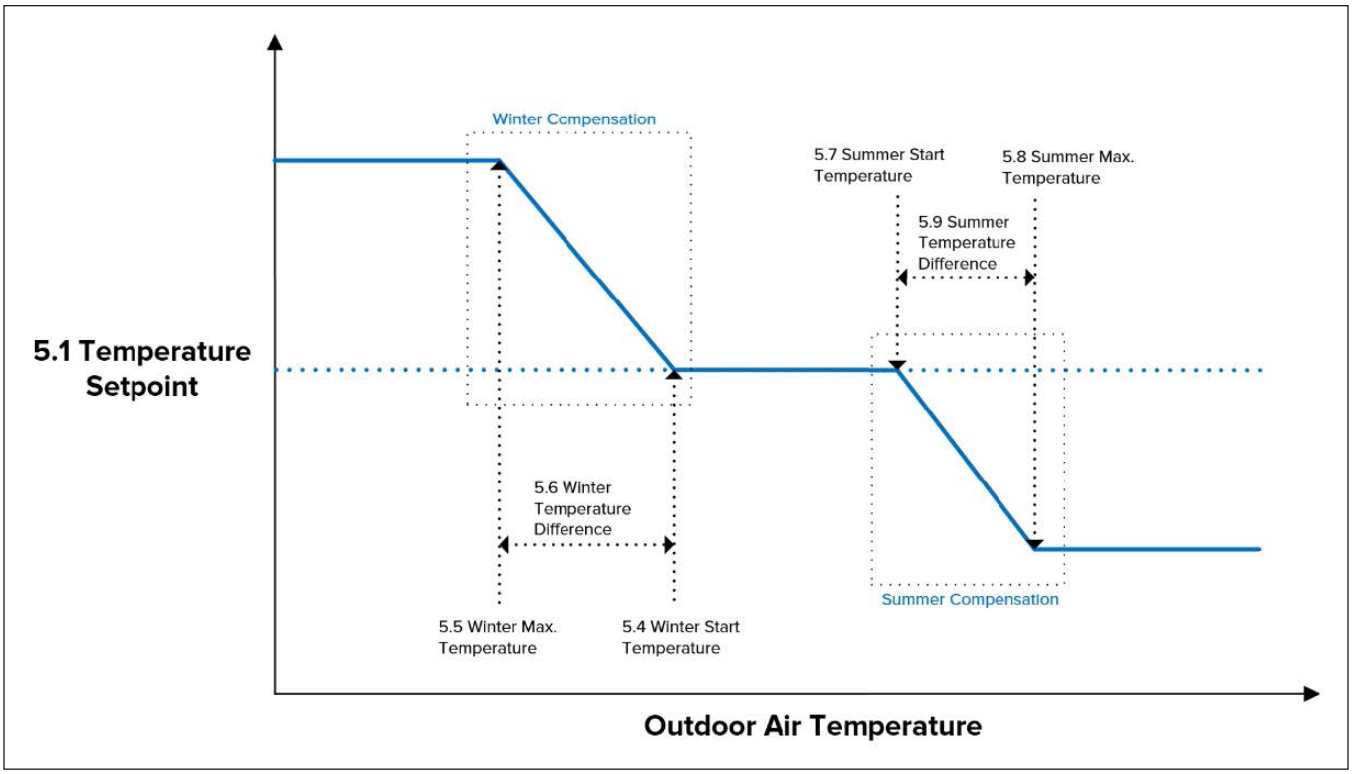
5.20 Unoccupied Winter Temp. SP
Set the Temperature Setpoint for Unoccupied Space during Winter

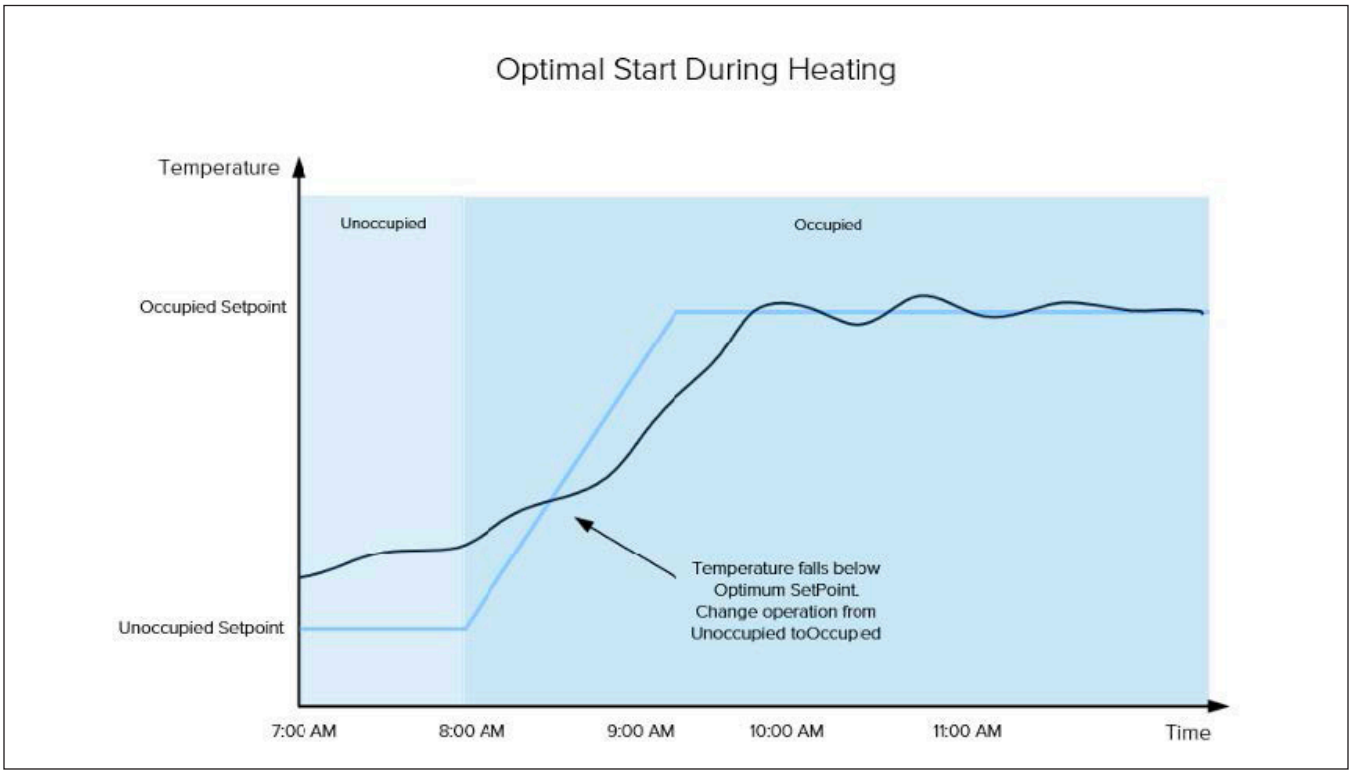
5.21 Occupied Summer Temp. SP
Set the Temperature Setpoint for Occupied Space during Summer

5.22 Unoccupied Summer Temp. SP
Set the Temperature Setpoint for Unoccupied Space during Summer

5.23 Occ/Unocc Optimal Start Enable (See graph below)
Enable/Disable the Optimal Start feature

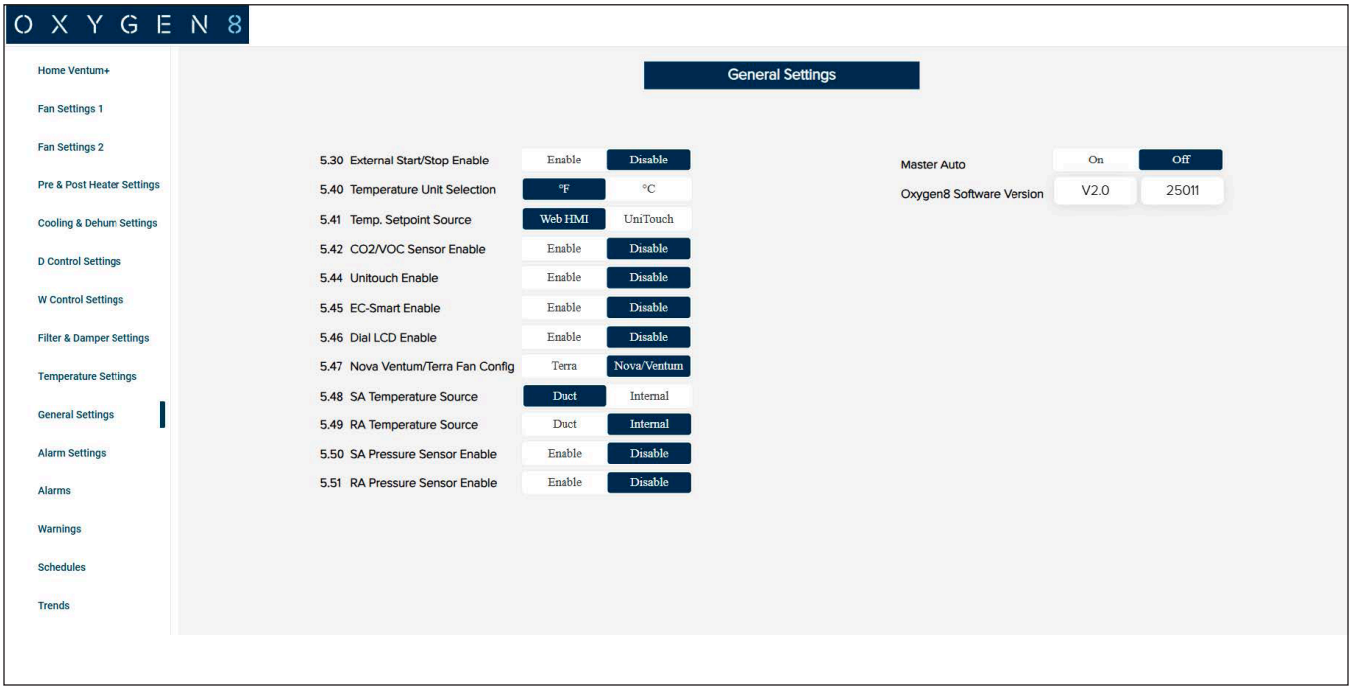
5.24 Occ/Unocc Optimal Start Period
Set the Period for Optimal Start (Period for the linear increment from Unoccupied to Occupied setpoints).


Winter Ccmpensation
5.7 Summer Start Temperature
5.8 Summer Max. Temperature
5.9 Summer Temperature Difference
5.1 Temperature Setpoint
5.6 Winter Temperature Difference
Summer Compensation
5.5 Winter Max. Temperature
5.4 Winter Start Temperature
Outdoor Air Temperature


Optimal Start During Heating
Temperature
Unoccupied
Occupied
Occupied Setpoint
Temperature falls below Optimum SetPoint. Change operation from Unoccupied toOccupied
Unoccupied Setpoint
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
Time

6.7.9 General Configuration

This screen allows configuration of general settings.



5.30 External Start/Stop Enable
Enables/Disabled monitoring of the external start/stop digital input (UI2). When enabled and the input is active (NO contact) the unit will start. When the input is inactive, the unit will stop. If disabled, the digital input is ignored.

5.31 External Start/Stop Mode
Selects the kind of contact connect to the External Start/Stop input (UI2). Start On/Stop Off: Normally Open Contact (units runs when contact is closed). Start Off/ Stop On: Normally Closed Contact (Unit runs when contact is open)

5.40 Temperature Unit Selection
Set the desired temperature units: C° or F°. Note: Units can only be changed when the system is stopped.

5.41 Temperature Setpoint Source
Select what device determines the Temperature Setpoint: the controller (through its web HMI or myDC Control App) or a Unitouch wall thermostat.

5.42 CO2/VOC Sensor Enable
Determines if the CO2/VOC sensor (Siemens QPM2102/MO) is present or not.

If the Fan Speed Control Mode (1.1) is set to Constant CO2 or VOC this sensor is mandatory.

If the Fans Speed Mode is another option, the sensor can still be used for the IAQ dashboard.

5.44 Unitouch Enable
Determines if a Unitouch (Thermostat/room sensor) is present or not.

5.45 EC-Smart Enable
Determines if a EC-Smart (room sensor) is present or not

5.46 Dial LCD Enable
Determines if a Distech dial HMI is present or not

If enabled and the HMI is not connected the controller will issue a communication alarm

5.47 Nova Ventum/Terra Fan Config
Determines if the unit is a Nova/Ventum or a Terra. This is to determine if there are Supply & Return Fans or only Supply

5.48 SA Temperature Source
Determines what sensor is used for Supply Air Temperature: Duct Mounted (QFM2150) or Internal to the unit (PT1000)

5.49 RA Temperature Source
Determines what sensor is used for Return Air Temperature: Duct Mounted (QFM2150) or Internal to the unit (PT1000)

5.50 SA Pressure Sensor Enable
Determines if a Supply Air Pressure sensor is present or not.

5.51 RA Pressure Sensor Enable
Determines if a Supply Air Pressure sensor is present or not.

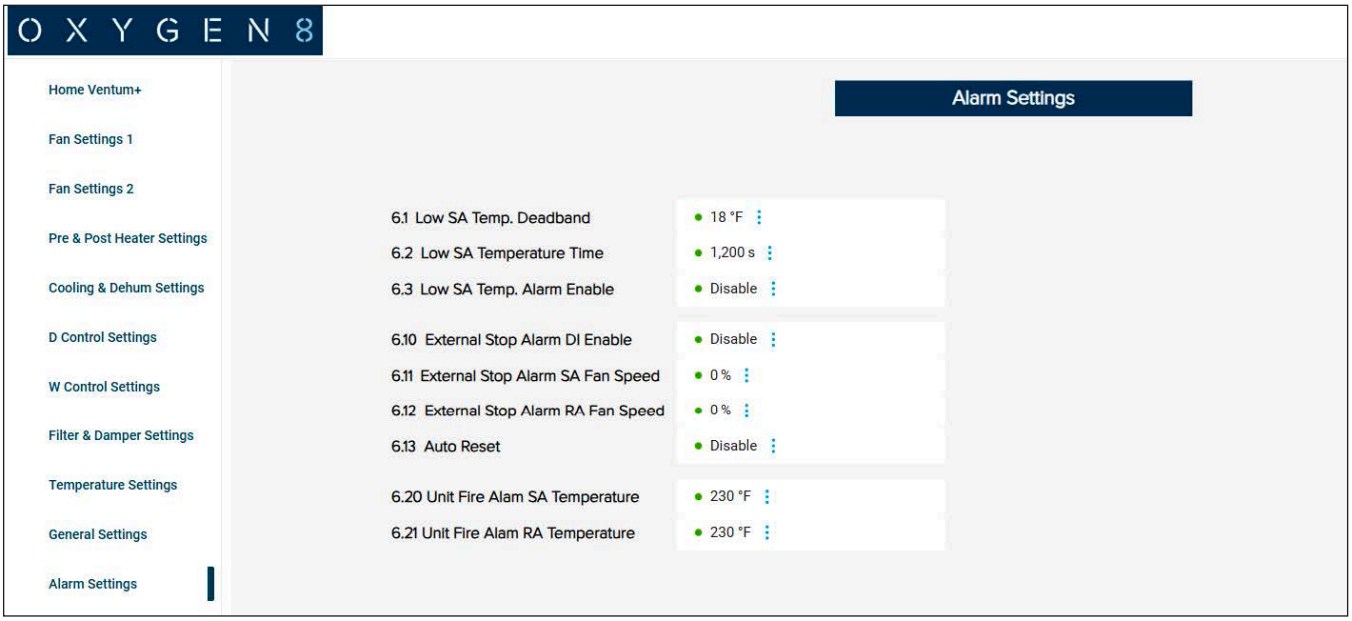
Master Auto button
Setting this button to ON changes the mode of every element to AUTO (Fans, Dampers, Heater, Cooling, HGRH)

Use it if during commissioning some elements were tested in HAND to ensure full auto operation

Oxygen8 Software Version
Indicates the software version installed

6.7.10 Alarm Settings

This screen allows configuration of the alarms



6.1 Low SA Temp. Deadband
Set the low supply air temperature alarm deadband. Low supply air temperature = Temperature SP - Deadband

6.2 Low SA Temperature Time
Set the low supply air temperature alarm delay time

6.3 Low SA Temp. Alarm Enable
Set the low supply air temperature alarm enable. This alarm stops system and manual reset

6.10 External Stop Alarm DI Enable
Set the external stop alarm digital input signal (N/C) enable

6.11 External Stop Alarm SA Fan Speed
Set the external stop alarm supply fan speed. When a value above 0% is set, supply fan maintains that speed while the dampers remain opened.

6.12 External Stop Alarm RA Fan Speed
Set the external stop alarm return fan speed When a value above 0% is set, return fan maintains that speed while the dampers remain opened

6.13 Auto Reset
Set the auto reset

- **Disable:** system stop and manual reset
- **Enable:** system stop and auto reset

6.20 Unit Fire Alarm SA Temperature
Set the unit internal fire alarm supply air temperature. System stops and requires manual reset

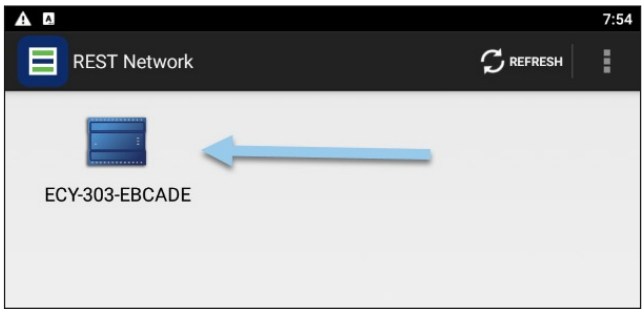
6.21 Unit Fire Alarm RA Temperature
Set the unit internal fire alarm return air temperature. System stops and requires manual reset

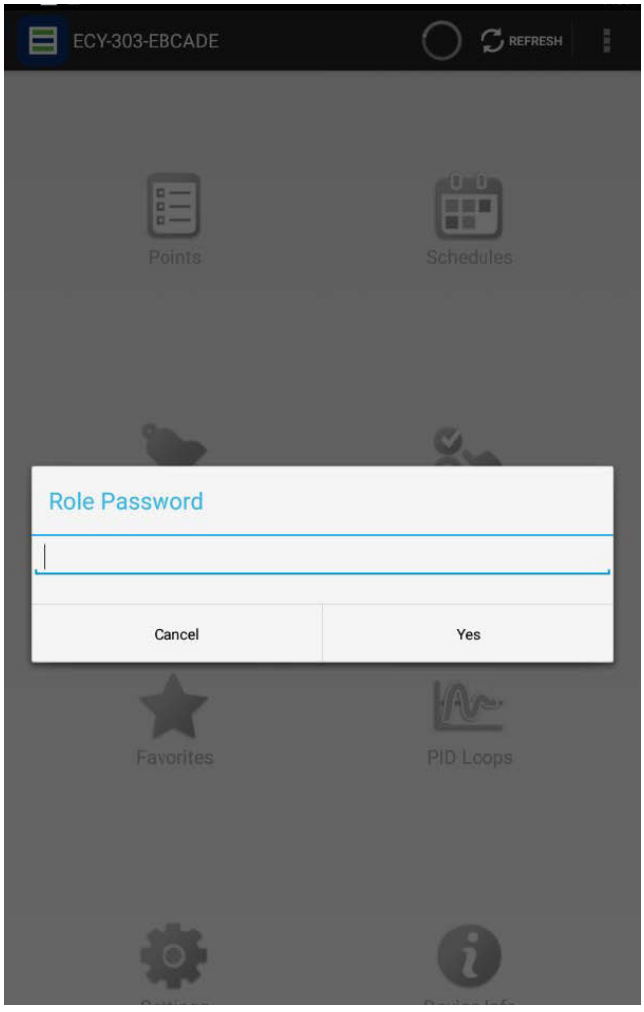
6.7.11 myDC Control App

The myDC Control App from Distech allows control and monitoring of the unit from a mobile phone or tablet.

Once connected to the controller via WiFi (refer to 1.1 for instructions on how to connect), open the App and on the REST Network screen, click on the controller icon to open the main menu.

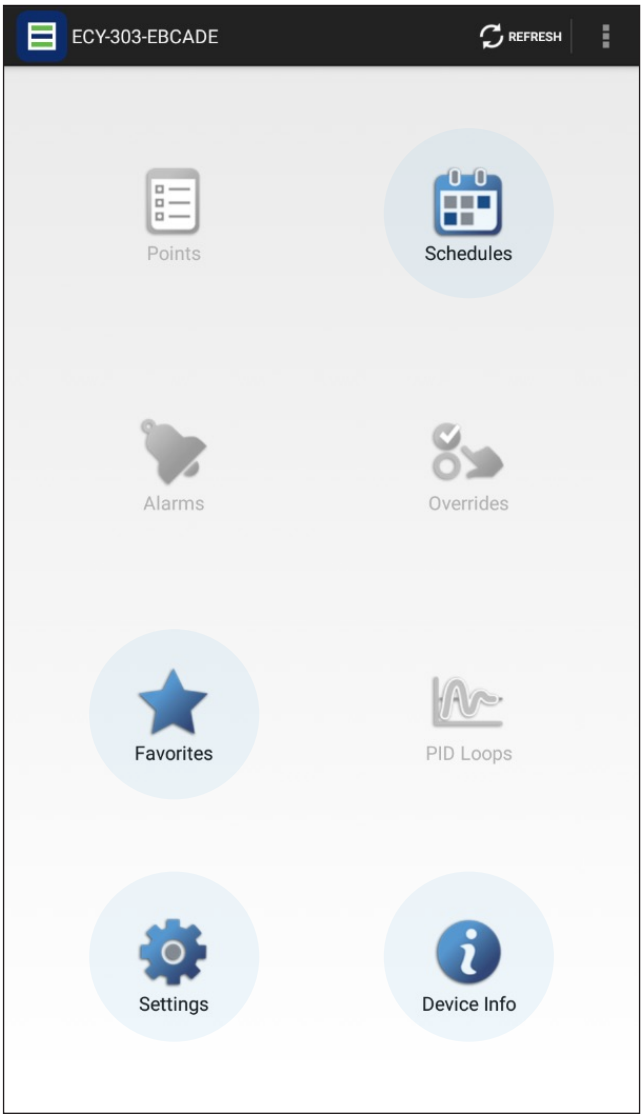
Enter the Role Password: 1111





The main menu of the controller appears with the following options:

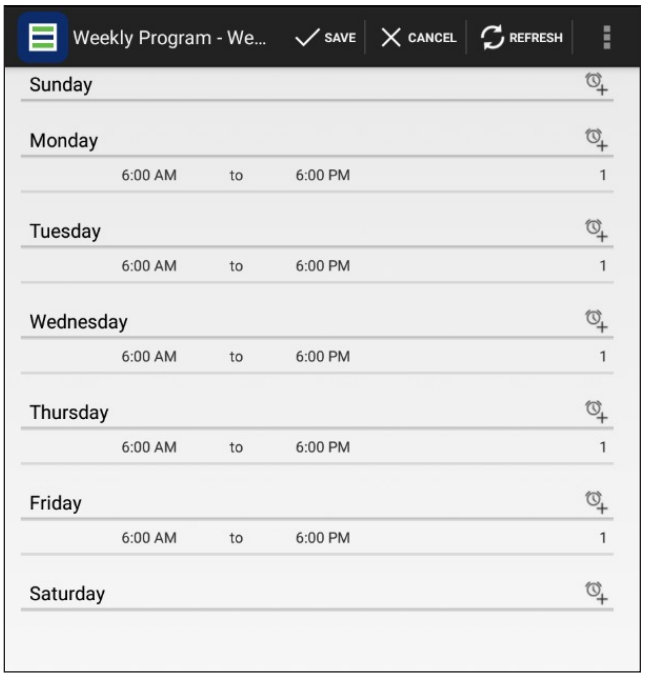
- Schedules
- Favorites
- Settings
- Device Info.



Schedules

Schedules are used to define different weekly events (weekly schedule) and special events also referred to as exceptions. The app allows review or modification of the schedules set on the web HMI.

Refer to section 2.2.



Favourites

The favorites screen allows quick access to the most important settings and data. It has 6 sections: Setpoints, Key Data, Control, Hand/ Auto, Alarms and Warnings

Setpoints

TemperatureSetpoint
Set the required Temperature Setpoint (used for the Single Setpoint option)

SAlowSpeedCfm
Set the required setpoint for Supply flow at “Low” speed for Constant Volume control

SAmidSpeedCfm
Set the required setpoint for Supply flow at “Medium” speed for Constant Volume control

SAhighSpeedCfm
Set the required setpoint for Supply flow at “High” speed for Constant Volume control

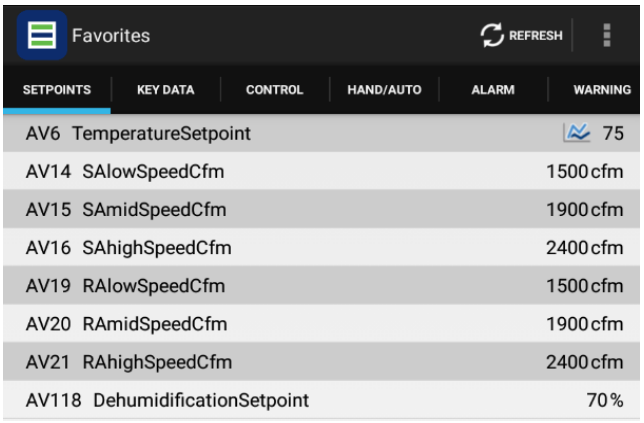
RAlowSpeedCfm
Set the required setpoint for Return flow at “Low” speed for Constant Volume control

RAmidSpeedCfm
Set the required setpoint for Return flow at “Medium” speed for Constant Volume control

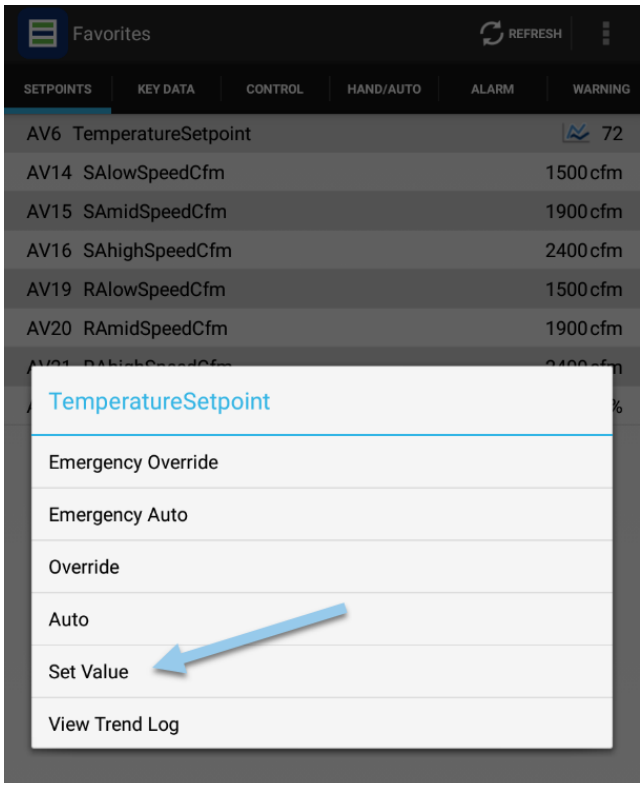
RAhighSpeedCfm
Set the required setpoint for Return flow at “High” speed for Constant Volume control

DehumidificationSetpoint
Sets the desire Relative Humidity target. Above this value the dehumidification sequence starts.

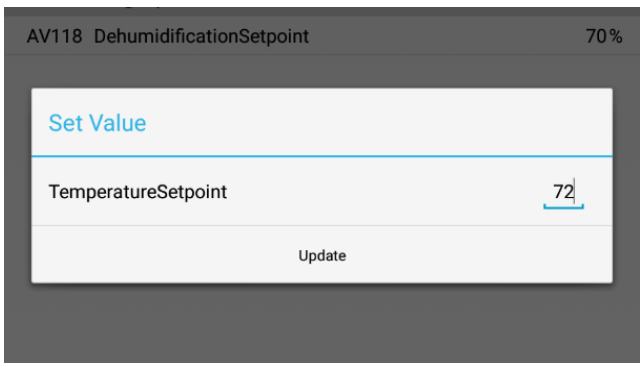
> **Note:** Parameter 3.30 on the web HMI (or BV29 DehumidificationEnable on the Control section) must be set to Enable and the required cooling and post heat coils be configured



To modify at setpoint, touch it and from the popup menu select “Set Value”



Enter the desire value and select “Update”



Key Data

SAfanAirflowCfmHMI
Current Supply Air Fan flow in CFM

RAfanAirflowCfmHMI
Current Return Air Fan flow in CFM

SAtemperature
Current Supply Air temperature in the selected units

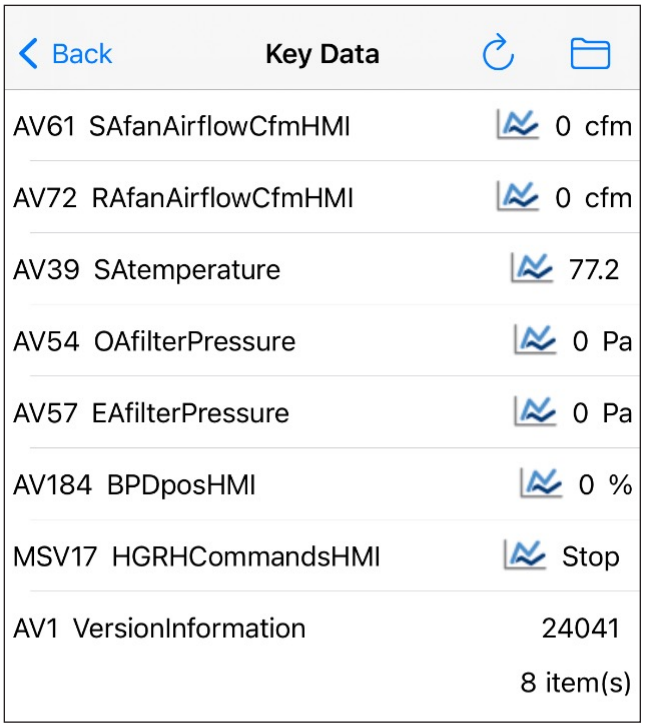
OAfilterPressure
Current Outdoor Air Filter pressure in Pascals

EAfilterPressure
Current Exhaust Air Filter pressure in Pascals

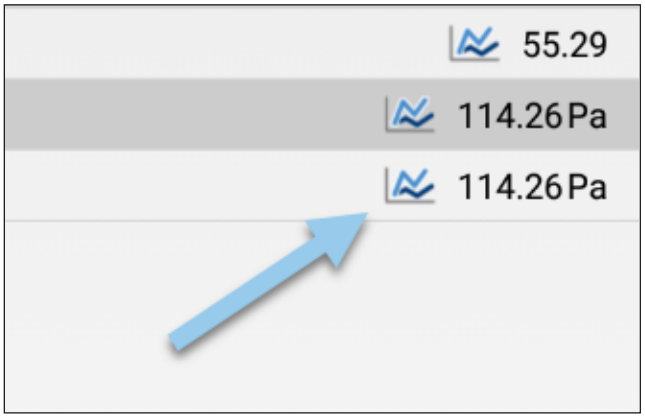
BPDposHMI
Bypass Damper position in %
(0% = fully closed)

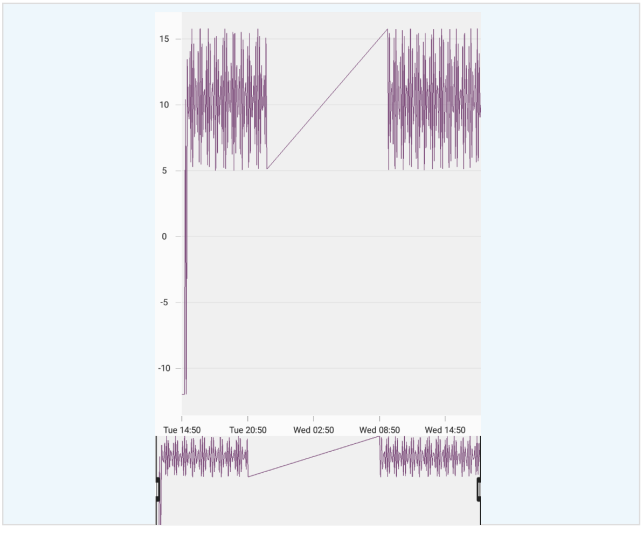
HGRHCommandsHMI
The current command being sent to the Daikn HGRH system (Stop, Heating, Cooling, Dehumidification)

VersionInformation
Displays current SW version loaded



To view trends of each value, touch on the trend icon





Control

OperationModeSelection

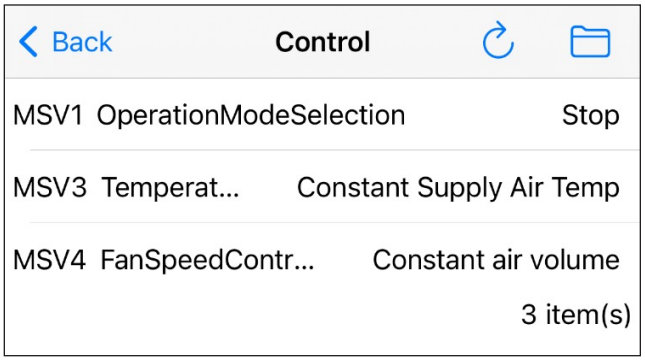
- **Stop:** The system is stopped
- **Low speed:** The system runs constantly according to the parameter settings for low speed
- **Mid speed:** The system runs constantly according to the parameter settings for mid speed
- **High speed:** The system runs constantly according to the parameter settings for high speed
- **Auto-weekly program:** The system runs according to the weekly program settings

TemperatureControlMode

- **Constant Supply Air Temp:** The system maintains Supply Air temperature
- **Constant Return Air Temp:** The system maintains Return Air temperature
- **Constant Room Air Temp:** The system maintains room temperature

FanSpeedControlMode

- **Constant air volume:** Supply and return fans are controlled in relation to flow/air volumes in the Supply and return ducts respectively.
- **Constant pressure-RA slave:** The Supply fan is controlled in relation to the pressure in the Supply duct while the return fan is controlled as a slave of the Supply fan with a freely selected offset.
- **Constant CO2:** If the CO2 level in the room rises, fan speed is increased, thus increasing air volume/air turnover towards the max. air volume setting. When the CO2 level falls fan speed is decreased.
- **Constant VOC:** If the VOC level in the room rises, fan speed is increased, thus increasing air volume/air turnover towards the max. air volume setting. When the VOC level falls fan speed is decreased.



Hand/Auto

This screen allows selecting the operation mode of the unit's elements. In Auto they follow the controller algorithms, in Hand they allow manual commands for commissioning and testing purposes. The elements are the following:

SAfanHandAuto: Supply Air Fan mode

SAfanHandSpeed: Supply Air Fan speed when in Hand mode

RAfanHandAuto: Return Air Fan mode

RAfanHandSpeed: Return Air Fan speed when in Hand mode

PreHeaterHandAuto: Pre heater mode

PreHeaterHandOutput: Preheater output (in percentage) when in Hand mode

ReHeaterHandAuto: Post heater mode

ReHeaterHandOutput: Post heater output (in percentage) when in Hand mode

CoolingHandAuto: Cooling coil or DX coil mode

CoolingHandOutput: Cooling coil or DX coil output (in percentage) when in Hand mode

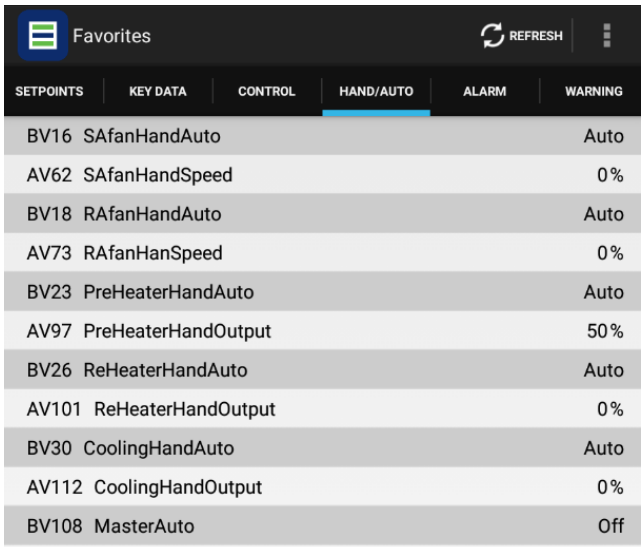
DamperHandAuto: Damper (both OA and EA) mode

DamperHandOpenClose: Damper (both OA and EA) command to open or close in Hand

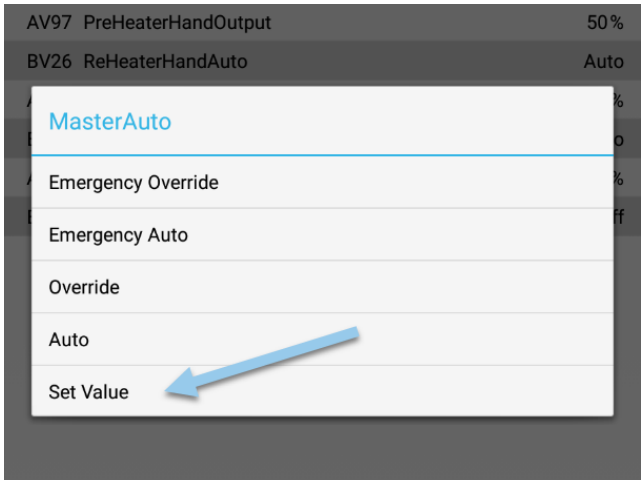
BPDamperHandAuto: Bypass Damper mode

DamperHandOpenClose: Damper (both OA and EA) command to open or close in Hand

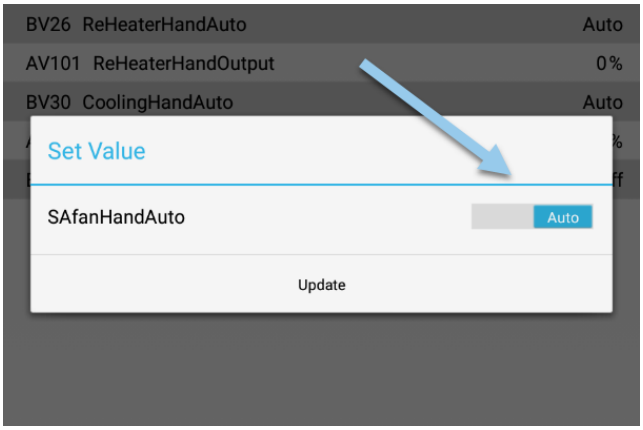
MasterAuto: Toggle On and Off to set all elements in Auto



To change the mode of a element, touch it and from the popup menu select "Set Value"



Select "Auto"/"Hand" and press "Update"

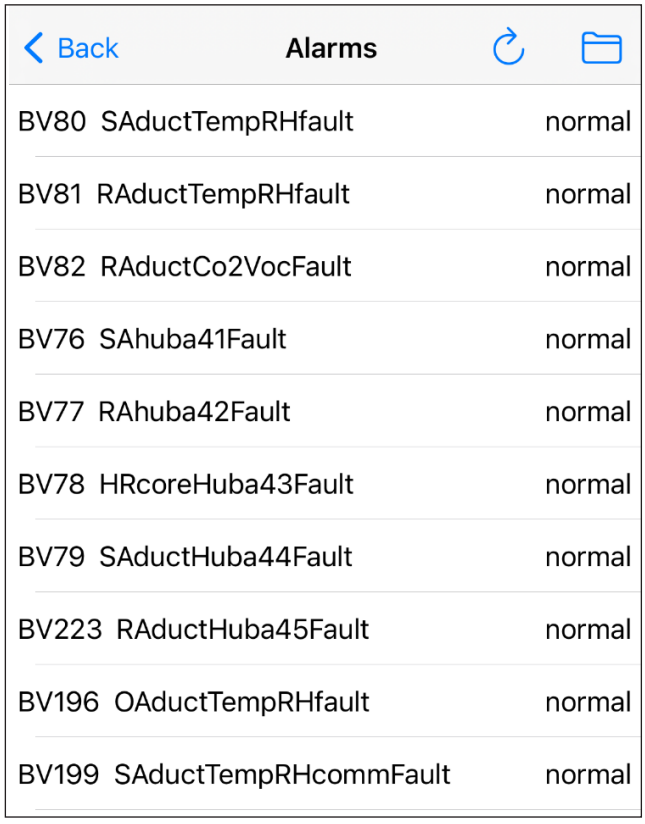


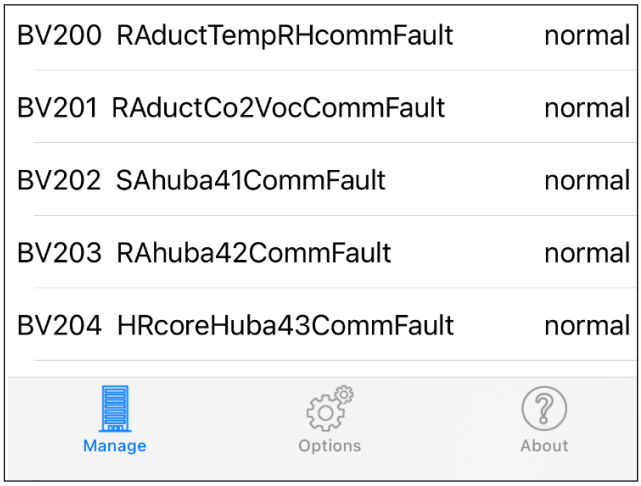
Alarms

These alarms auto-rest when the condition that causes them disappears

ALARM	STATE
H101dinFault	External stop alarm io fault
H101doutFault	G-Alarm io fault
H102dinFault	External start stop io fault
H102doutFault	Unit operation and fan run signal io fault
H103ainFault	Preheater return water temprature io fault
H103doutFault	Damper open close signal io fault
H104ainFault	Reheater return water temperature io fault
H104doutFault	Water cooling or Dx heating, cooling signal io fault
H105ainFault	PM2.5 sensor io fault
H105aoutFault	Bypass damper output signal io fault
H106ainFault	W controller 0-10V io fault
H106aoutFault	Cooling or Dx heating, cooling output signal io fault
H107aoutFault	Preheater output signal io fault
H107dinFault	OA damper feedback io fault
H108aoutFault	Reheater output signal io fault
H108dinFault	EA damper feedback io fault
HGRHdewpointSenCommFault	HGRH dewpoint Temp RH sensor fault
HRcoreHuba43CommFault	HR core huba sensor fault
HRcoreHuba43Fault	HR core huba sensor fault
ManualResetAlarmButton	
OAductTempRHfault	OA duct Temp RH sensor fault
RAductCo2VocCommFault	sensor fault
RAductCo2VocFault	sensor fault
RAductHuba45CommFault	RA duct huba sensor fault
RAductHuba45Fault	RA duct huba sensor fault
RAductTempRHcommFault	sensor fault
RAductTempRHfault	sensor fault
RAfan1CommFault	RA fan 1 comm fault
RAfan1Fault	RA fan 1 alarm
RAfan1FBalarm	RA fan 1 FB alarm
RAfan2CommFault	RA fan 2 comm fault
RAfan2Fault	RA fan 2 alarm
RAfan2FBalarm	RA fan 2 FB alarm
RAfan3CommFault	RA fan 3 comm fault
RAfan3Fault	RA fan 3 alarm

ALARM	STATE
RAfan3FBalarm	RA fan 3 FB alarm
RAhuba42CommFault	RA huba sensor fault
RAhuba42Fault	RA huba sensor fault
SAductHuba44CommFault	SA duct huba sensor fault
SAductHuba44Fault	SA duct huba sensor fault
SAductTempRHcommFault	sensor fault
SAductTempRHfault	sensor fault
SAfan1CommFault	SA fan 1 comm fault
SAfan1Fault	SA fan 1 alarm
SAfan1FBalarm	SA fan 1 FB alarm
SAfan2CommFault	SA fan 2 comm fault
SAfan2Fault	SA fan 2 alarm
SAfan2FBalarm	SA fan 2 FB alarm
SAfan3CommFault	SA fan 3 comm fault
SAfan3Fault	SA fan 3 alarm
SAfan3FBalarm	SA fan 3 FB alarm
SAhuba41CommFault	SA huba sensor fault
SAhuba41Fault	SA huba sensor fault
StopAlarmExternalAreset	External stop auto reset alarm

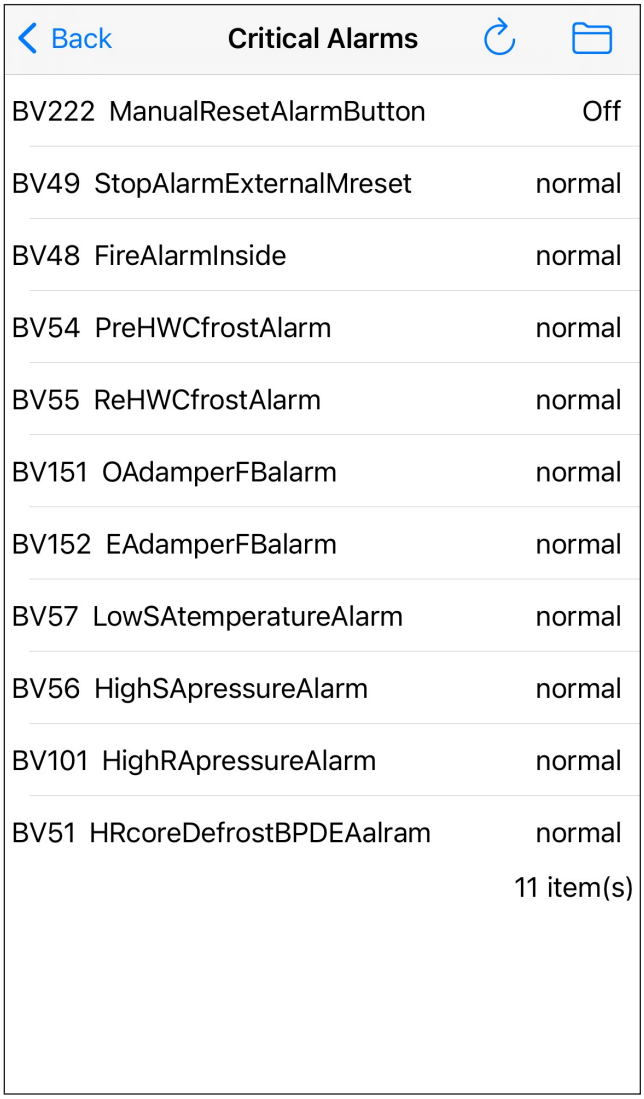




Critical Alarms

These are the most critical alarms and their state. These alarms stop the unit and require manual reset.

CRITICAL ALARM	STATE
EAdamperFBalarm	Exhaust Air damper no open feedback detected
FireAlarmInside	Intrenal fire alarm
HighRApressureAlarm	High Return Air pressure alarm
HighSApressureAlarm	High Return Air pressure alarm
HRcoreDefrostBPDEAalram	High core pressure sensor alarm
LowSAtemperatureAlarm	Low Supply Air temperature alarm
OAdamperFBalarm	Outdoor Air damper no open feedback detected
PreHWCfrostAlarm	Preheater return water frost alarm
ReHWCfrostAlarm	Post heater return water frost alarm
StopAlarmExternalMreset	External stop manual reset alarm



Warnings

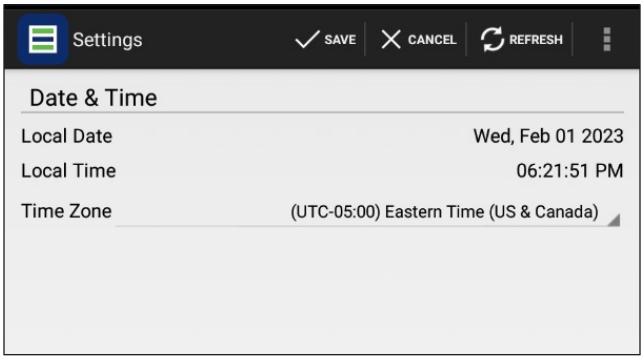
This is the list of the most critical alarms and their state.

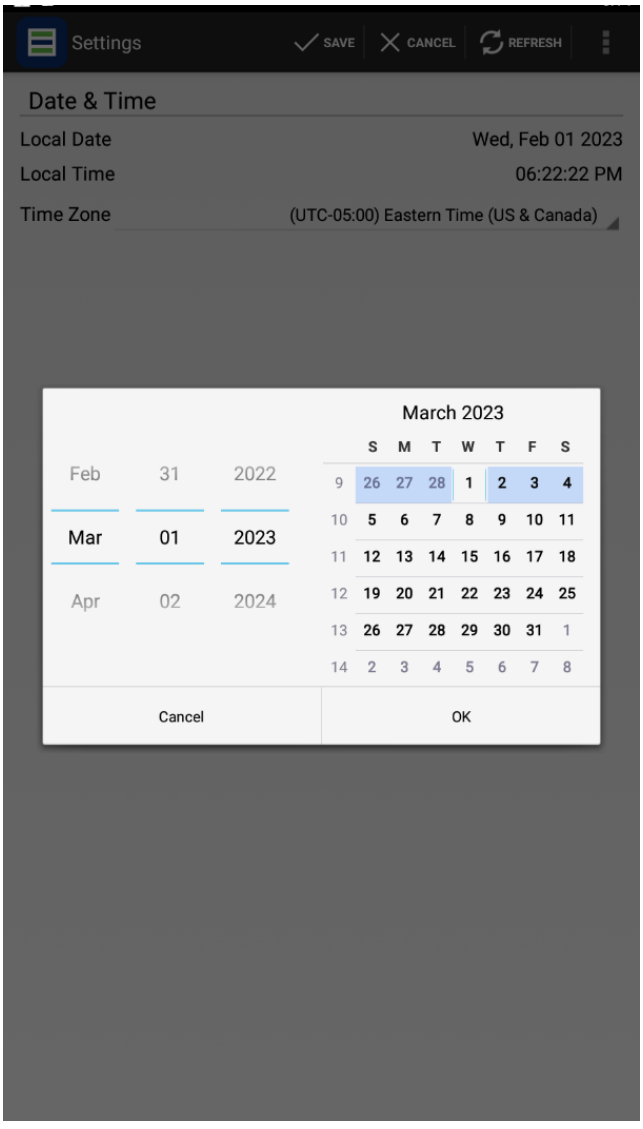
ALARM	STATE
CombiDefrostOnMsg	DX coil OD defrost signal
EAfilterPressWarning	EA filter high pressure
ECsmartWarning	ECSmart sensor disconnected or fault
HGRH1systemCommFault	Daikin D Controller 1 Comm Fault
HGRH1systemFault	Daikin D Controller 1 Fault
HGRH2systemCommFault	Daikin D Controller 2 Comm Fault
HGRH2systemFault	Daikin D Controller 2 Fault
HGRH3systemCommFault	Daikin D Controller 3 Comm Fault
HGRH3systemFault	Daikin D Controller 3 Fault
HGRH4systemCommFault	Daikin D Controller 4 Comm Fault
HGRH4systemFault	Daikin D Controller 4 Fault
HGRHdefrostOnMsg	HGRH OD defrost signal
HighCO2warning	High CO2 level detected
HighIAQwarning	High VOC level detected
HighRAflowWarning	High Return Air flow
HighRAtemperatureWarning	High Return Air temperature
HighSAflowWarning	High Supply Air flow
HighSAtemperatureWarning	High Supply Air temperature
HMIwarning	LCD HMI disconnected or fault
HRcoreDefrostCoreDPmsg	Core sensor high pressure
HRcoreDefrostEAtempMsg	Core sensor EA low temperature
HRcoreDefrostPressureBPDmsg	Core sensor high pressure
HRcoreEfficiencyWarning	Core low efficiency
LowRAflowWarning	Low Return Air flow
LowRApressureWarning	Low Return Air pressure
LowRAtemperatureWarning	Low Return Air temperature
LowSAflowWarning	Low Supply Air flow
LowSApressureWarning	Low Supply Air pressure
OAfilterPressWarning	Outdoor Air pressure
OccupancySenWarning	Occupancy Sensor disconnected or fault
UnitouchWarning	Unitouch sensor disconnected or fault


Favorites
REFRESH
SETPOINTS
KEY DATA
CONTROL
HAND/AUTO
ALARMS
WARNINGS
BV4 ExternalStartMsg None
BV5 ExternalStopMsg None
BV87 HRcoreEfficiencyWarning Normal
BV101 CombiDehumidOnMsg Normal
BV102 HGRHdehumidOnMsg Normal
BV88 OAfilterPressWarning OAFilterNormal
BV89 EAfilterPressWarning EAFilterNormal
BV90 HighSAtemperatureWarning Normal
BV91 LowRAtemperatureWarning Normal
BV92 HighRAtemperatureWarning Normal
BV93 HighCO2warning Normal
BV94 HighIAQwarning Normal
BV95 LowSAflowWarning Normal
BV96 LowRAflowWarning Normal
BV97 HighSAflowWarning Normal
BV98 HighRAflowWarning Normal
BV99 LowSApressureWarning Normal
BV83 HGRH1systemFault Normal
BV115 HGRH2systemFault Normal
BV116 HGRH3systemFault Normal

Settings

This screen allows setup of the date, time and time zone. Touch each section, and use the popup to set the desired date, time and zone.

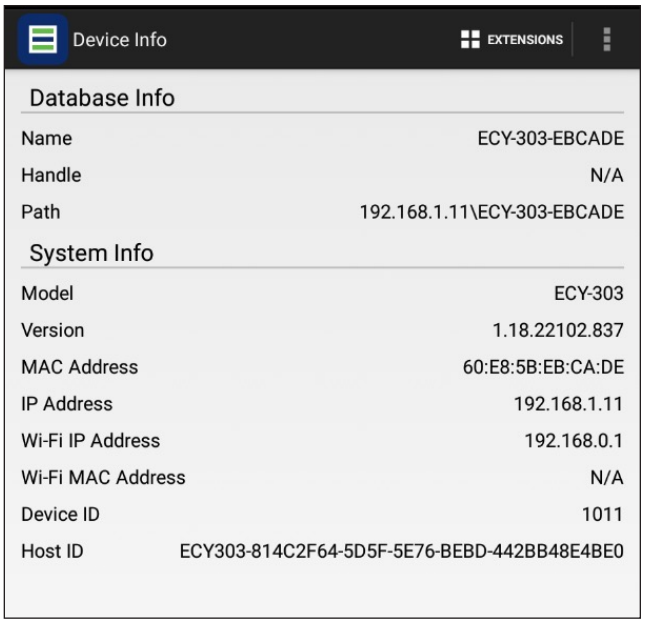




Device Information

Contains information about the controller. The most relevant information is:

- **Version:** This is the firmware installed on the controller. Consult with Oxygen8 for the recommend firmware
- **IP Address:** IP address of the Ethernet adapter for wired communication with the controller
- **Wi-Fi IP Address:** Wi-Fi IP address
- **Device ID:** BACnet Device ID



7.0 ALARM LIST

NO.	TYPE	DELAY SEC.	LIMIT	AUTO RESET	UNIT STOP	ALARM/ WARNING	DESCRIPTION	ALARM NO.
1	A	10	N/A		X	Inside fire alarm	Internal fire alarm	Alarm 1
2	A	10	N/A		X	External fire alarm	External fire alarm	Alarm 2
3	A	600	N/A		X	HR core defrost alarm	Core defrost alarm-bypass damper with EA temperature	Alarm 3
4	W		N/A	X		HR core defrost - SA fan stop	Core defrost active-EA temperature	Warning 1
5	W		N/A	X		HR core defrost - bypass damper open	Core defrost active-core pressure	Warning 2
6	A	10	N/A		X	Water Pre-Heater Return water frost alarm	Hydronic preheater return water frost alarm	Alarm 4
7	A	10	N/A		X	Water Re-Heater Return water frost alarm	Hydronic post heater return water frost alarm	Alarm 5
8	A	600	SP+10%		X	High supply air pressure alarm	Over 10% of pressure setpoint	Alarm 6
9	A	600	SP-5°C		X	Low supply air temperature alarm	Post heater exist: Less 5°C of temperature setpoint	Alarm 7
10	A	10	N/A	X	X	Hardware Input 101 Alarm	Universal input 1 fault	Alarm 8
11	A	10	N/A	X	X	Hardware Input 102 Alarm	Universal input 2 fault	Alarm 9
12	A	10	N/A	X	X	Hardware Input 103 Alarm	Universal input 3 fault	Alarm 10

NO.	TYPE	DELAY SEC.	LIMIT	AUTO RESET	UNIT STOP	ALARM/ WARNING	DESCRIPTION	ALARM NO.
13	A	10	N/A	X	X	Hardware Input 104 Alarm	Universal input 4 fault	Alarm 11
14	A	10	N/A	X	X	Hardware Input 105 Alarm	Universal input 5 fault	Alarm 12
15	A	10	N/A	X	X	Hardware Input 106 Alarm	Universal input 6 fault	Alarm 13
16	A	10	N/A	X	X	Hardware Input 107 Alarm	Universal input 7 fault	Alarm 14
17	A	10	N/A	X	X	Hardware Input 108 Alarm	Universal input 8 fault	Alarm 15
18	A	10	N/A	X	X	Hardware Output 101 Alarm	Digital Output 1 fault	Alarm 16
19	A	10	N/A	X	X	Hardware Output 102 Alarm	Digital Output 2 fault	Alarm 17
20	A	10	N/A	X	X	Hardware Output 103 Alarm	Digital Output 3 fault	Alarm 18
21	A	10	N/A	X	X	Hardware Output 104 Alarm	Digital Output 4 fault	Alarm 19
22	A	10	N/A	X	X	Hardware Output 105 Alarm	Universal Output 5 fault	Alarm 20
23	A	10	N/A	X	X	Hardware Output 106 Alarm	Universal Output 6 fault	Alarm 21
24	A	10	N/A	X	X	Hardware Output 107 Alarm	Universal Output 7 fault	Alarm 22
25	A	10	N/A	X	X	Hardware Output 108 Alarm	Universal Output 8 fault	Alarm 23
26	A	30	N/A	X	X	SA fan 1 Alarm	Supply air fan 1 Modbus communication fault	Alarm 24
27	A	30	N/A	X	X	RA fan 1 Alarm	Return air fan 1 Modbus communication fault	Alarm 25
28	A	30	N/A	X	X	SA fan 2 Alarm	Supply air fan 2 Modbus communication fault	Alarm 26
29	A	30	N/A	X	X	RA fan 2 Alarm	Return air fan 2 Modbus communication fault	Alarm 27

NO.	TYPE	DELAY SEC.	LIMIT	AUTO RESET	UNIT STOP	ALARM/ WARNING	DESCRIPTION	ALARM NO.
30	A	30	N/A	X	X	SA fan 3 Alarm	Supply air fan 3 Modbus communication fault	Alarm 28
31	A	30	N/A	X	X	RA fan 3 Alarm	Return air fan 3 Modbus communication fault	Alarm 29
32	A	10	N/A	X	X	SA Huba sensor Alarm	SA fan pressure sensor reliability or Modbus communication fault	Alarm 30
33	A	10	N/A	X	X	RA Huba sensor Alarm	RA fan pressure sensor reliability or Modbus communication fault	Alarm 31
34	A	10	N/A	X	X	HR Huba sensor Alarm	HR core pressure sensor reliability or Modbus communication fault	Alarm 32
35	A	10	N/A	X	X	SA duct Huba sensor Alarm	SA duct pressure sensor reliability or Modbus communication fault	Alarm 33
36	A	10	N/A	X	X	SA duct Temp/RH Reliability Alarm	SA duct temperature/ RH sensor reliability or Modbus communication fault	Alarm 34
37	A	10	N/A	X	X	RA duct Temp/RH Reliability Alarm	RA duct temperature/ RH sensor reliability or Modbus communication fault	Alarm 35
38	A	10	N/A	X	X	RA duct CO2/VOC Reliability Alarm	RA duct CO2/ VOC sensor reliability or Modbus communication fault	Alarm 36
39	W	30	N/A	X		HGRH 1 Fault	Daikin D-controller 1 fault	Warning 3
40	W	30	N/A	X		HGRH 2 Fault	Daikin D-controller 2 fault	Warning 4
41	W	30	N/A	X		HGRH 3 Fault	Daikin D-controller 3 fault	Warning 5
42	W	30	N/A	X		HGRH 4 Fault	Daikin D-controller 4 fault	Warning 6
43	W	60	N/A	X		HMI communication warning	Dial LCD communication fault	Warning 7
44	W	30	N/A	X		EC Smart communication warning	EC Smart room sensor communication fault	Warning 8
45	W	30	N/A	X		Unitouch communication warning	Unitouch room sensor communication fault	Warning 9

NO.	TYPE	DELAY SEC.	LIMIT	AUTO RESET	UNIT STOP	ALARM/ WARNING	DESCRIPTION	ALARM NO.
46	W	300	N/A	X		Low efficiency level warning	Core sensible efficiency lower than setpoint	Warning 10
47	W	10	N/A	X		After cooling mode	Electric post heater remnant heat flushing before unit stop	Warning 11
48	W	10	N/A	X		Dehumidification mode	DX coil/ HGRH dehumidification active	Warning 12
49	W	600	N/A	X		Outdoor air filter pressure warning	OA filter pressure higher than setpoint	Warning 13
50	W	600	N/A	X		Exhaust air filter pressure warning	EA filter pressure higher than setpoint	Warning 14
51	W	600	SP+5°C	X		High supply air temperature warning	Supply air temperature higher than SP+5°C	Warning 15
52	W	1200	SP-5°C	X		Low return air temperature warning	Return air temperature lower than SP-5°C	Warning 16
53	W	1200	SP+5°C	X		High return air temperature warning	Return air temperature higher than SP+5°C	Warning 17
54	W	600	SP+10%	X		High return air CO2 warning	Return air CO2 level higher than SP+10%	Warning 18
55	W	600	SP+10%	X		High return air VOC warning	Return air VOC level higher than SP+10%	Warning 19
56	W	600	SP-10%	X		Low supply airflow warning	Supply airflow lower than SP-10%	Warning20
57	W	600	SP-10%	X		Low return airflow warning	Return airflow lower than SP-10%	Warning21
58	W	600	SP+10%	X		High supply airflow warning	Supply airflow higher than SP+10%	Warning22
59	W	600	SP-10%	X		Low supply air pressure warning	Supply air pressure lower than SP-10%	Warning23

Oxygen8 Solutions Inc. Standard Limited Warranty

DOAS Systems

Product Type:	DOAS Systems	**Unit Location:**	
Contract No.:	0679	**Project Name:**	École Mountainview
Unit Model Number:	H10IN-BP	**Installation Address:**	444, RUE MOUNTAINVIE
Unit Serial Number:	910004560944	**Startup Date:**	
Unit Tag ID:	VRC-1	**Shipping Date:**	

Limited Warranty

Subject to the terms, conditions, exclusions, and other limitations set forth in the Standard Terms and Conditions, when properly endorsed, this protection plan between Oxygen8 Solutions, Inc. ("Seller") and the undersigned Customer ("Buyer") warrants that each new Direct Outdoor Air System ("DOAS") manufactured by the Seller and materials, or installation, or start-up services performed by Oxygen8 Solutions in connection therewith, are free from defects in material and workmanship for twenty-four (24) months from the date of shipment from Seller's facility.

The ERV core found in the Nova units will come with a sixty (60) month warranty from date of shipment.

The H/ERV cores found in the Ventum units will come with a twenty-four (24) month warranty from date of shipment.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, EXPRESS OR IMPLIED IN LAW OR IN FACT, INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE WARRANTIES CONTAINED HEREIN SET FORTH BUYER'S SOLE AND EXCLUSIVE REMEDY IN THE EVENT OF A DEFECT IN WORKMANSHIP OR MATERIALS. IN NO EVENT SHALL OXYGEN8 SOLUTIONS' LIABILITY FOR DIRECT OR COMPENSATORY DAMAGES EXCEED THE PAYMENTS RECEIVED BY OXYGEN8 SOLUTIONS FROM BUYER FOR THE MATERIALS OR EQUIPMENT INVOLVED. NOR SHALL OXYGEN8 SOLUTIONS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. THESE LIMITATIONS ON LIABILITY AND DAMAGES SHALL APPLY UNDER ALL THEORIES OF LIABILITY OR CAUSES OF ACTION, INCLUDING, BUT NOT LIMITED TO, CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE) OR STRICT LIABILITY. THE ABOVE LIMITATIONS SHALL INURE TO THE BENEFIT OF OXYGEN8 SOLUTIONS' SUPPLIERS AND SUBCONTRACTORS.

Notification of defect and any warranty claim must be made in writing, with a brief written description of the problem to Buyer's local sales/service office. Nothing herein is intended to provide warranty coverage to lessees or anyone other than Buyer and no third-parties are intended to be beneficiaries of this warranty. Seller does not take responsibility for any changes in sequence of operation by Buyer, that may cause physical damage to the unit.

BRANCH SERVICE OFFICE:

OFFERED BY: _____ _____
Oxygen8 Selling Representative Print/Sign — Date

APPROVED BY: Matthew Doherty _____ _____
Oxygen8 Signing Officer or other authorized individual Print/Sign — Date

ACCEPTED BY: _____ _____
Customer Signature — Date

OXYGEN8

Title			
RMA Request Form			
Doc. Number 028-FRM-001	Effective date 07/01/2020	Prepared/Signature Petr Mikula	Date 06/20/2020

Company / Contact Name	
Ship-back address	
Oxygen8 serial number on the unit	
Purchase Order #	
Reason for return / Repair	
Application:	Indoor / Outdoor
Power supply:	single-phase / 3-phase
Field failure:	Yes / No
Repair request	Yes / No
Damaged in transit?	No / Yes If yes, please attach BOL (Bill of Landing)

Send us picture attachments:

1) Unit Label
2) Damage / Issue from distance
3) Damage / Issue detail

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