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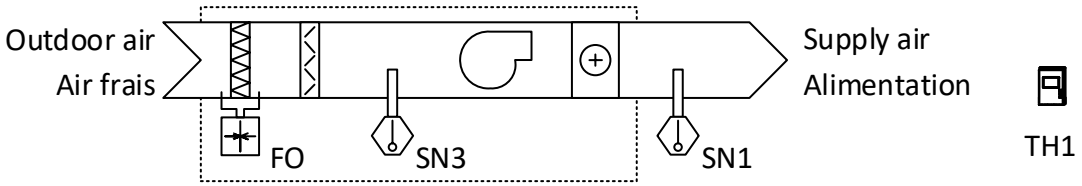
Sainte-Julie, Québec. J3X 1P7

DTHe V2.0.0
USER GUIDE

INDEX

1. SEQUENCE OF OPERATION

1.1 CONTROL DIAGRAM



Note that the supply air temperature SN1 and control thermostat TH1 (EC-Smart-Vue) are supplied by Nagas Innovation and are field installed by-others.

Parameters and control modes are pre-configure at factory, see electrical diagram for configuration.

1. **Local mode**: In local mode, the unit is fully operational as per sequence of Operation. The EC-Smart-Vue (TH1) installed by-others controls the unit operation.

2. **Remote mode:** In remote mode, the unit is fully operational as per sequence of Operation. The analog and digital signals (by-others) controls the unit operation.

3. **BACnet mode**: In BACnet mode, the unit is fully operational as per sequence of Operation. The BMS (BACnet) controls the unit operation.

1.2 LOCAL MODE

1.2.1 Unit Start mode

- The unit is started by the EC-Smart-Vue.

1.2.2 Blower speed control

If unit is equipped with a variable frequency drive (NC3D):

- Variable speed: Fan speed is set on the EC-Smart-Vue.
- Two speeds: Blower goes on high speed with the I/O between terminal (66-67).
- Duct pressure: The supply fan speed will be controlled to maintain a duct static set point by using a duct static pressure transducer. The static pressure probe is field mounted 2/3 of the way of the longest duct.

1.2.3 Burner control mode

- Local mode: In local mode, the burner can be controlled in two ways:
  - By setting a supply temperature set point on the EC-Smart-Vue.
  - By the room temperature measurement at the EC-Smart-Vue. In this mode, the supply setpoint is automatically readjusted between 50°F|10°C and 90°F|32°C to maintain room temperature set point.
- At unit start-up, if burner is allowed, pre-purge begin on start-up if after a delay of 117 seconds the command is sent to the unit and the blower status is not coming back the burner stops immediately.

1.3 REMOTE MODE

1.3.1 Unit Start mode

- The unit is started via a start/stop contact - dry contact provided by others.

1.3.2 Blower speed control

If unit is equipped with a variable frequency drive (NC3D):

- Variable speed: Fan speed is control by a 0-10 Vdc signal – by others.
- Two speeds: Blower goes to high-speed on closing of high-speed digital input.

1.4 BURNER CONTROL MODE

- A 2-10 Vdc signal controls the burner in one of two ways:
  - Readjustment of supply temperature set point, 2 Vdc = 50°F|10°C and 10 Vdc = 90°F|32°C.
  - Burner capacity modulation, the burner starts at low fire at 2.3 Vdc and when burner enable contact is closed. The modulation is linear from 2.3 to 10 Vdc.
- At unit start-up, if burner is allowed, pre-purge begin on start-up if after a delay of 117 seconds the command is sent to the unit and the blower status is not coming back the burner stops immediately.

1.5 BACNET MODE

1.5.1 Unit Start mode

- The unit is started thru the BACnet network. If you need to start the unit while the BACnet is not active, simply put an electrical element between terminals 55 and 75 to bypass the BACnet mode.

1.5.2 Blower speed control

If unit is equipped with a variable frequency drive (NC3D):

- Variable speed: Fan speed is control by a speed set point received through the BACnet.
- Two speeds: Blower goes on high-speed on high-speed variable activation.

1.5.3 Burner control mode

- The burner is control via a supply temperature setpoint (between 50°F|10°C and 90°F|32°C) received through the BACnet.
- At unit start-up, if burner is allowed, pre-purge begin on start-up if after a delay of 117 seconds the command is sent to the unit and the blower status is not coming back the burner stops immediately.

1.6 CONTROL SEQUENCE

1.6.1 Unit stopped

- Blower is shutdown.
- Fresh air damper is closed.
- Burner is off.

1.6.2 At Startup

- Upon start command, outdoor air damper opens.
- On proof of opening of outdoor air damper (60%), blower is energized.

1.6.3 Heating and supply air temperature control

- Burner control is achieved to comply with control mode that is set (local mode or remote mode or BACnet mode).
- In every control mode, supply air temperature is limited so the temperature rise through the burner may not exceed 150°F|66°C.

1.6.4 Protection

- A low supply temperature limit stops the unit when supply temperature is below 40°F|4°C for 7 minutes. Low limit reset occurs when the start/stop command is reset.
- Optional: Fire alarm system can stop unit in case of fire detection. Customer shall remove factory installed jumper and connect a dry contact. Opening of the contact cause unit to stop.

1.6.5 Supervision

Following dry contacts are available for supervision:

- Blower on – dry contact
- Burner on – dry contact
- General failure – dry contact
- Clogged filter – dry contact

1.6.6 Warning

Faults listed below are notified on EC-Smart-Vue, in embedded Web server and through BACnet. Unit continues to operate.

- Control thermostat unplug or fault of the embedded room temperature sensor.
  - If unit is not in local mode, supply air temperature set point will be fixe at 72°F|22°C.
- Clogged filter
- Outdoor air temperature sensor fault or unplugged, the burner is enabled.

1.6.7 Failure

Failures listed below are notified on EC-Smart-Vue, in embedded Web server, through BACnet and causes general alarm contact to open and the unit to stop:

- Supply air temperature sensor fault or unplugged.
- Control thermostat unplug or fault of the embedded room temperature sensor and in local mode.
- Low supply air temperature protection.
- Burner fault.
- Damper and/or blower status fault.
- Blower motor overload or VFD fault.
- High supply temperature, if supply temperature is greater than 140°F |60°C for more than 5 minutes.
- Fire alarm detection – if wired.

2. THERMOSTAT

This part of the document covers information about the thermostat features of the unit.

The following diagram describes the structure of different sections present in the thermostat.

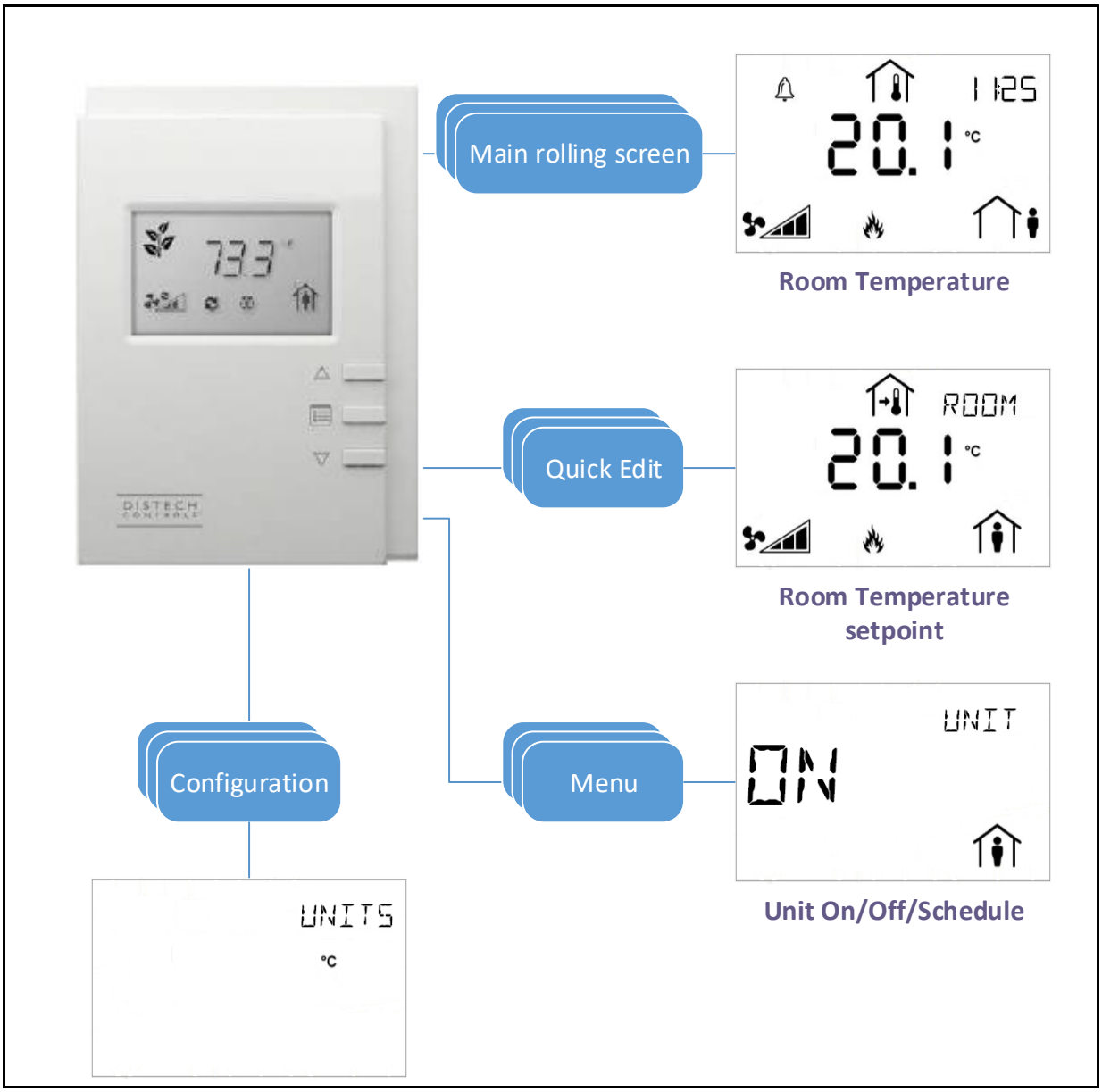


Figure 1. Thermostat display structure

2.1 THERMOSTAT ICONS

The following figure shows the different icons used on the thermostat.

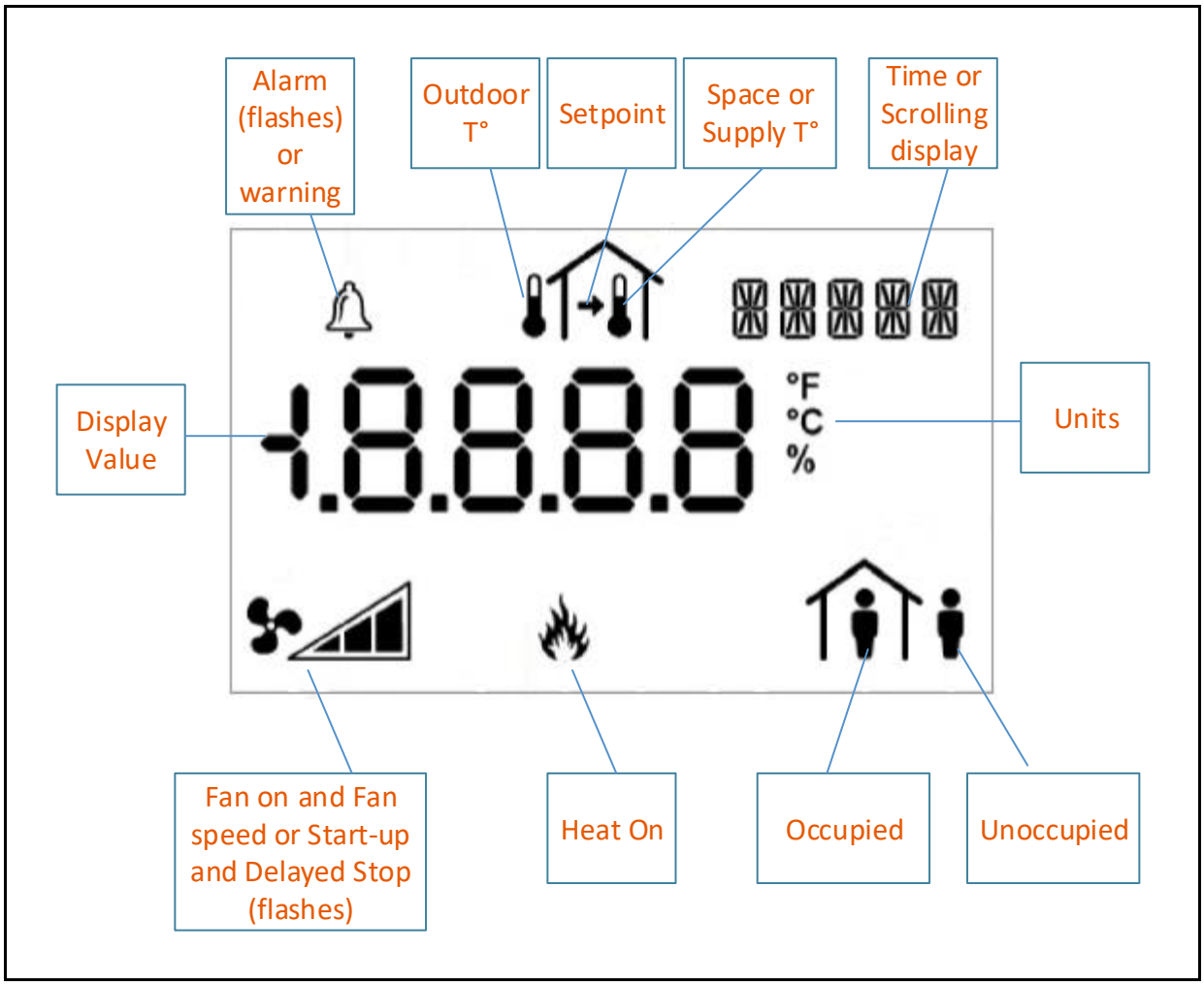


Figure 2. Thermostat icons

2.2 THERMOSTAT BASIC SETUP

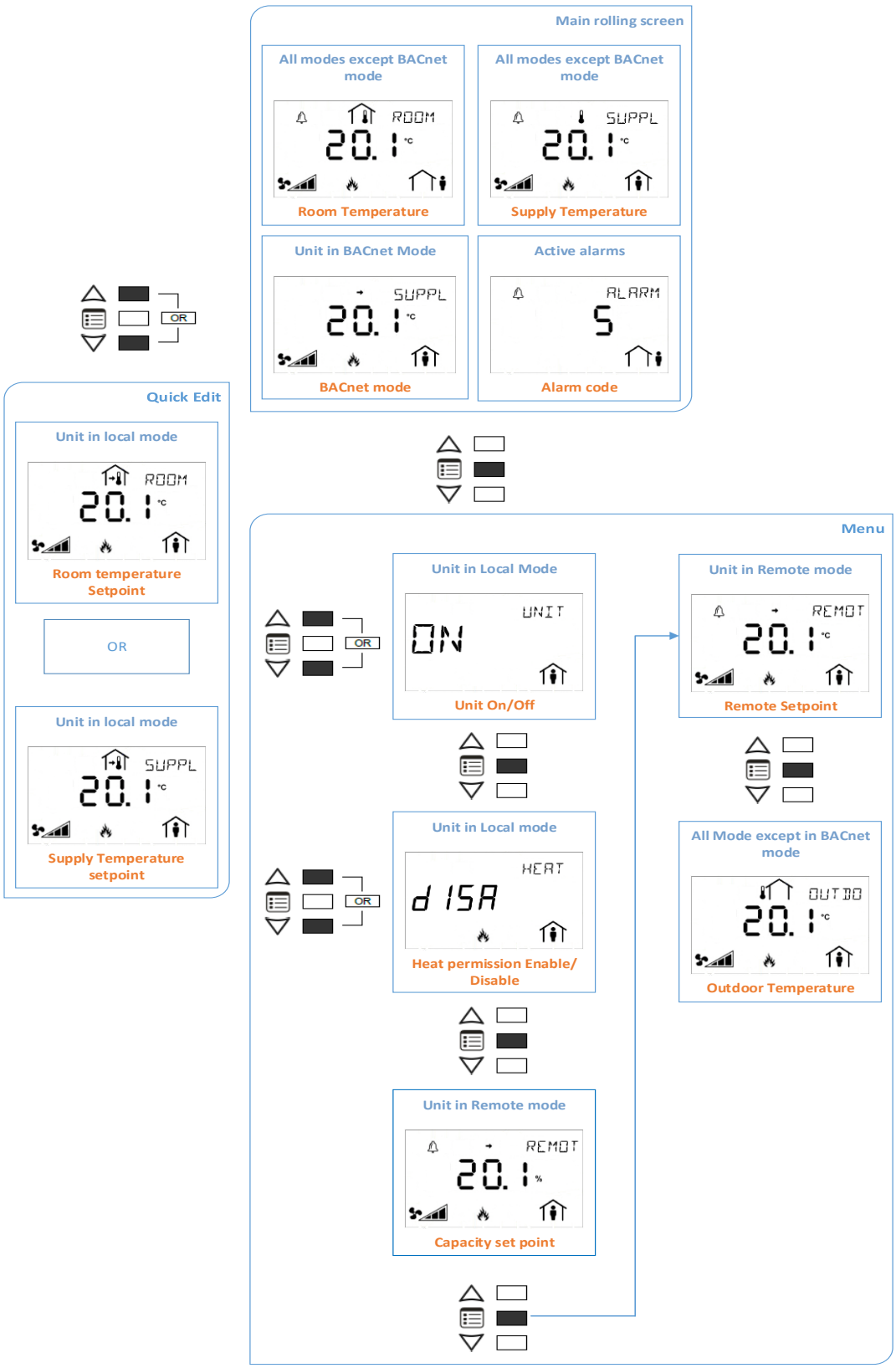


Figure 3. Thermostat Basic Setup

2.2.1 Main rolling screen

The main rolling screens are scrolling automatically depending on the options.

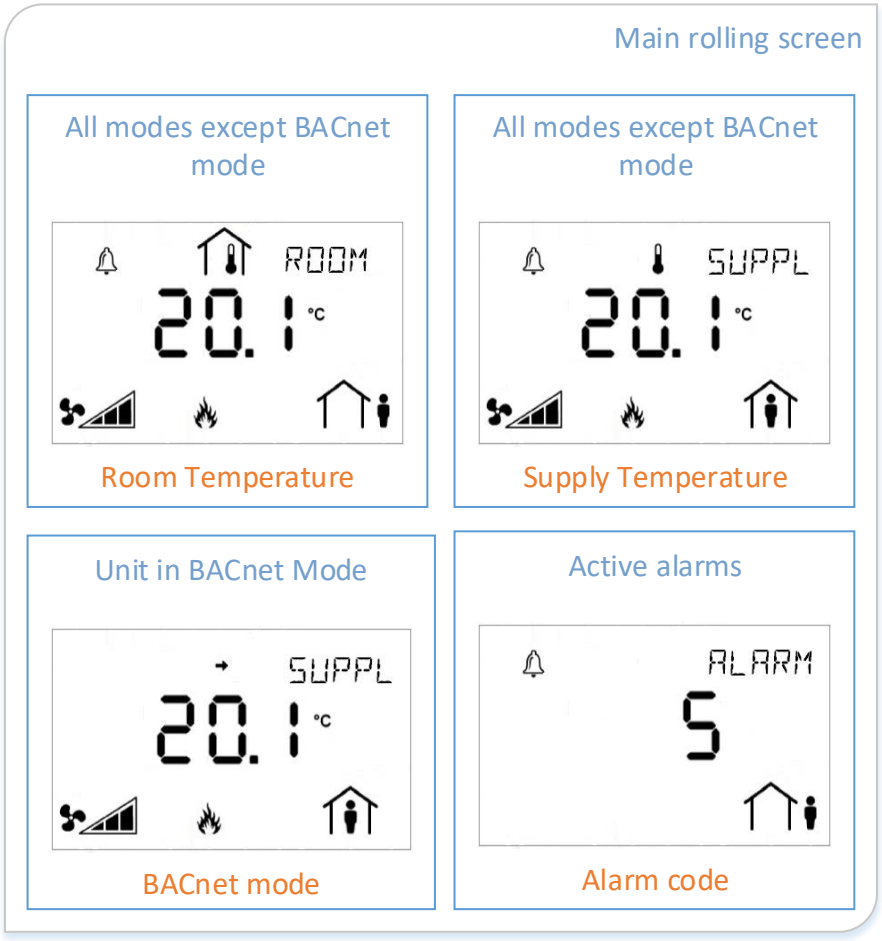


Figure 4. Main rolling screens

The following figures shows the different screens for the Main Rolling group.

2.2.1.1 Room Temperature

The following figure will be displayed in all modes except in BACnet mode.

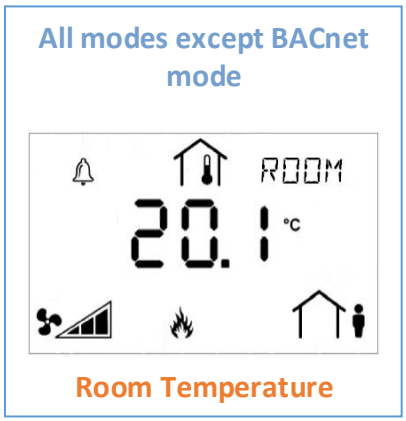


Figure 5. Room temperature

2.2.1.2 Supply Temperature

The following figure will be displayed in all modes except in BACnet mode.

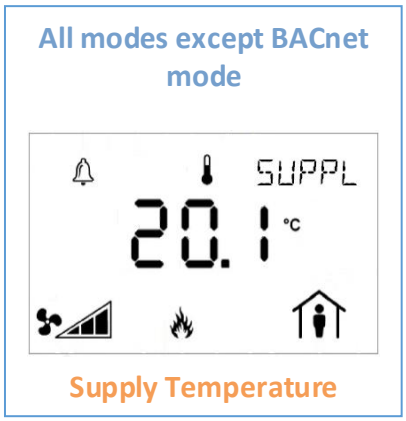


Figure 6. Supply Temperature

2.2.1.3 BACnet Mode

The following figure will be displayed when the burner modulation options is in BACnet mode only.

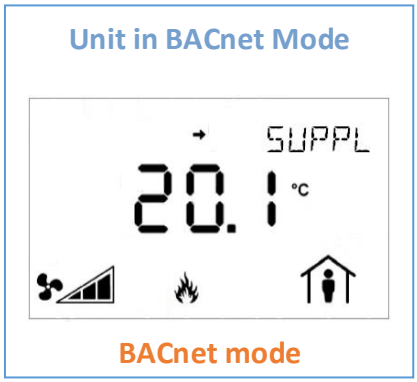


Figure 7. BACnet Mode

2.2.1.4 Alarm Code

The following figure will be displayed when there is an active alarm or warning. See alarm list.

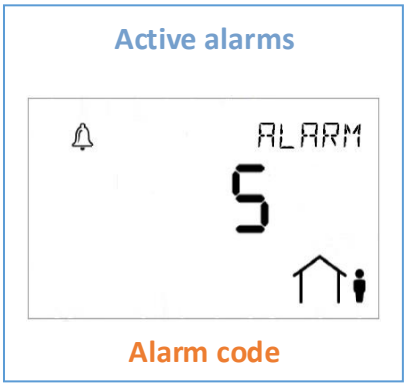


Figure 8. Alarm Code

2.2.2 Quick edit

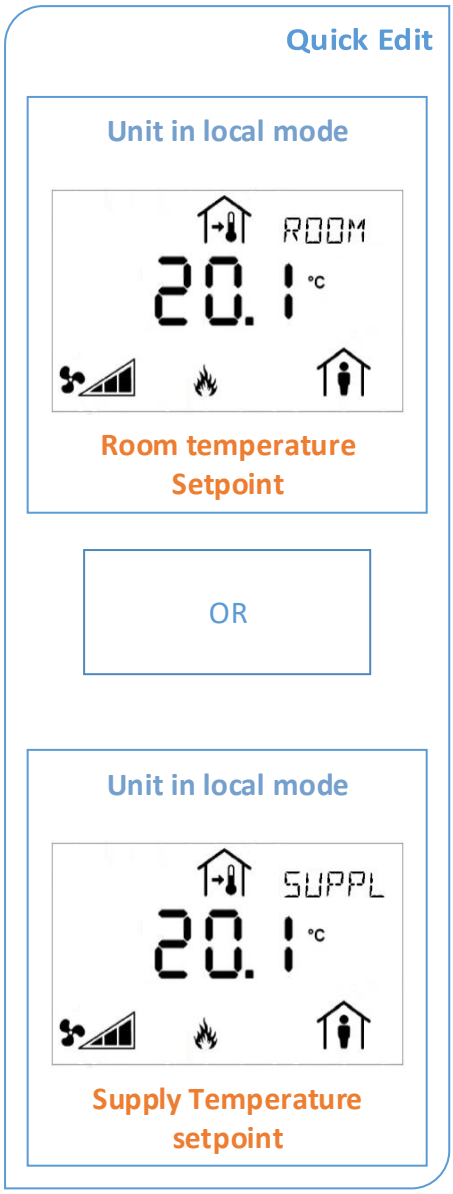


Figure 9. Quick Edit

The following figures shows the different screens for the Quick Edit group.

2.2.2.1 Room Temperature Set point

The following figure will be displayed when the burner modulation options is in room local mode only.

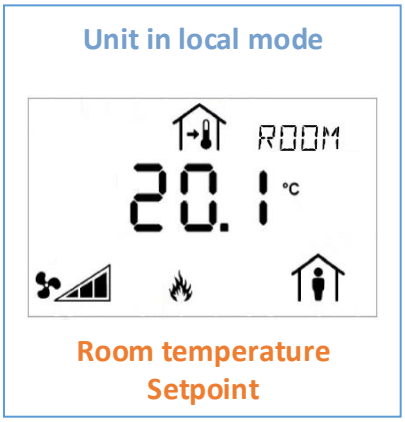


Figure 10. Room temperature setpoint

2.2.2.2 Supply Temperature Set point

The following figure will be displayed when the burner modulation options is in supply local mode only.

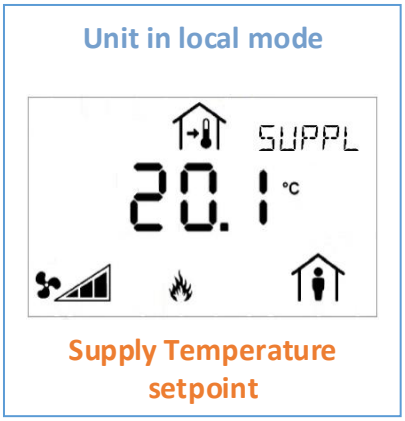


Figure 11. Supply temperature setpoint

2.2.3 Menu

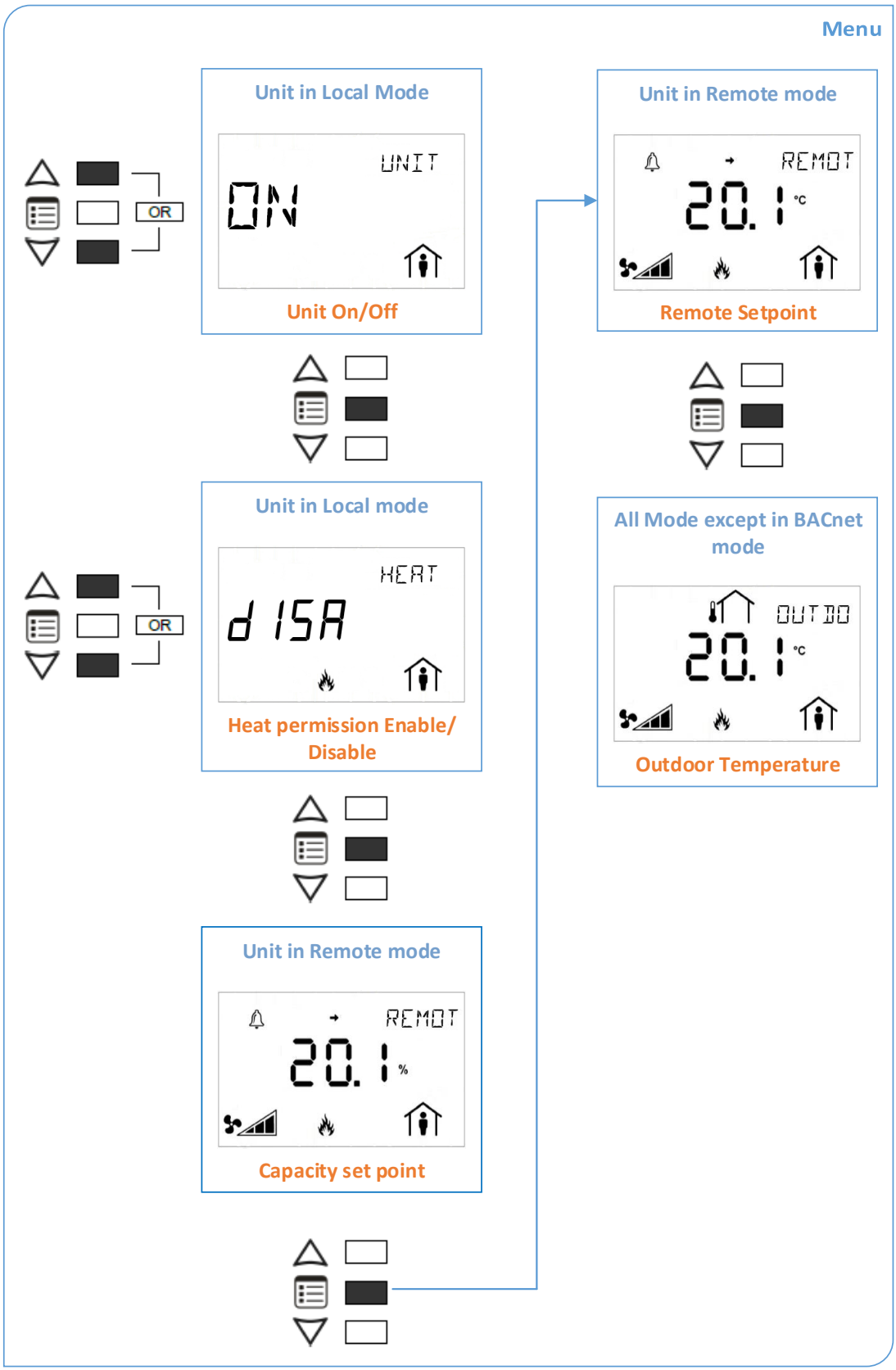


Figure 12. Menu

The following figures shows the different screens for the Menu group.

2.2.3.1 Unit On/Off

The following figure will be displayed when the Unit options is in local mode only. Used to turn on or off the unit.

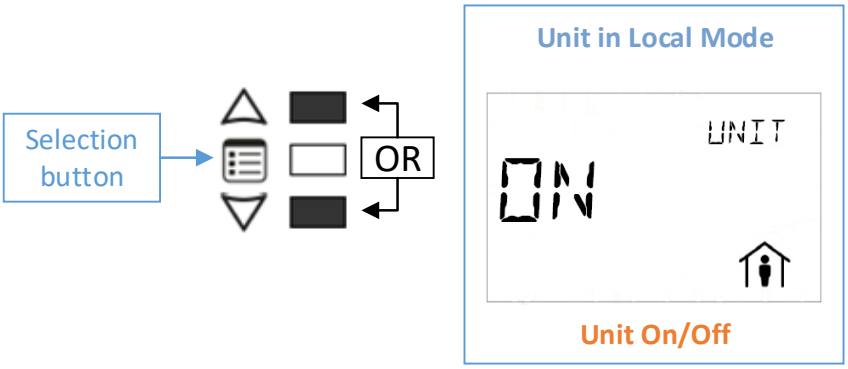


Figure 13. Unit On/Off

2.2.3.2 Heating permission

The following figure will be displayed when the burner on/off options is in local mode only. Used to allow heating.

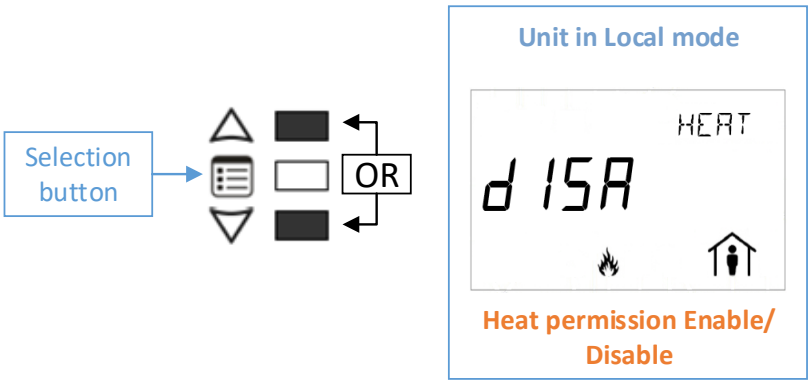


Figure 14. Heating permission

2.2.3.3 Capacity Set point

The following figure will be displayed when the burner modulation options is in remote capacity mode only.

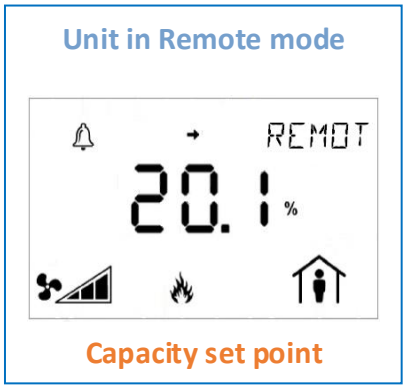


Figure 15. Capacity Setpoint

2.2.3.4 Remote Set point

The following figure will be displayed when the burner modulation options is in remote set point mode only.

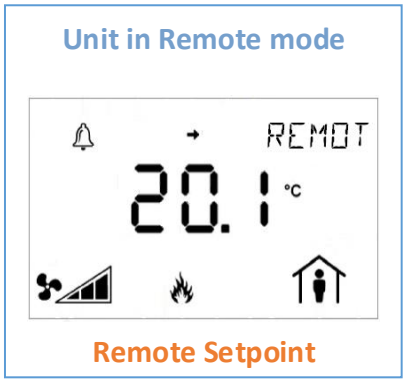


Figure 16. Remote Setpoint

2.2.3.5 Outdoor Temperature

The following figure will be displayed in all mode. It displays the outdoor temperature.

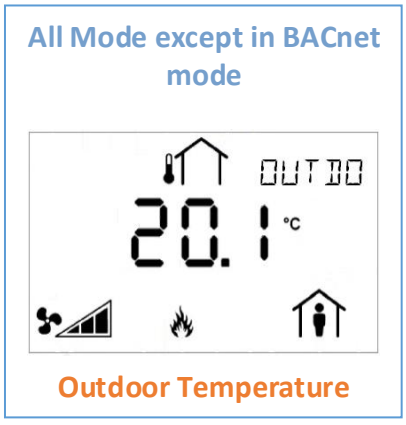


Figure 17. Outdoor temperature

2.3 THERMOSTAT ADVANCED SETUP

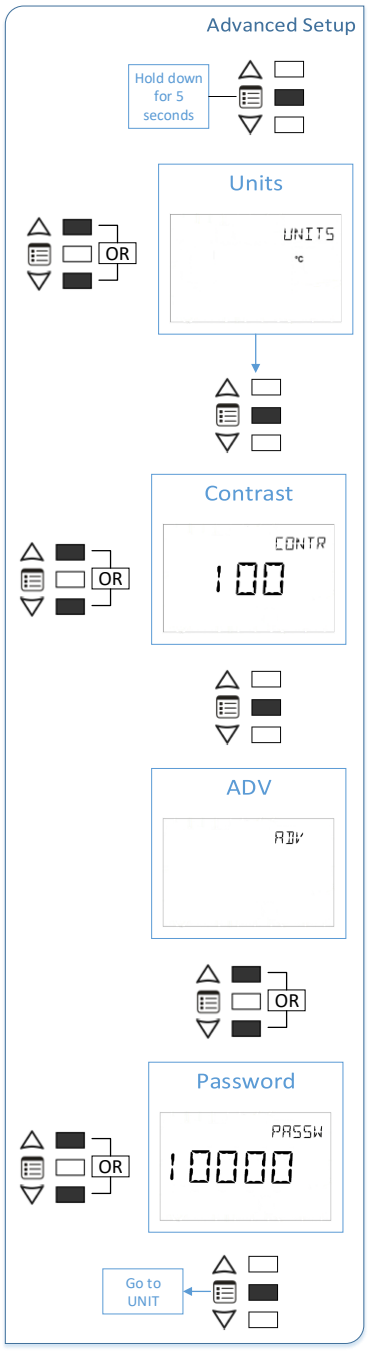


Figure 18. Advanced setup

The following figures shows the different screens for the Advanced Setup group.

2.3.1 Units

In this screen, it is possible to select the temperature units.

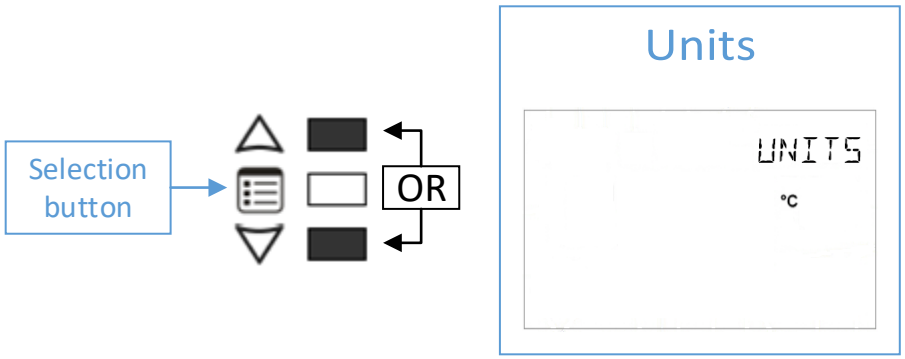


Figure 19. Temperature Units

2.3.2 Contrast

In this screen, it is possible to change the Contrast of the thermostat.

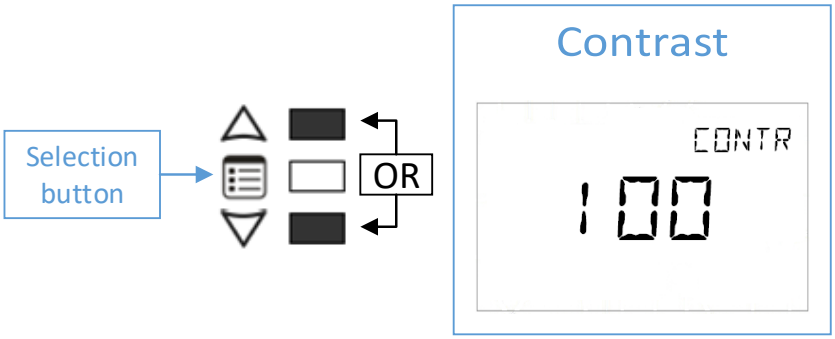


Figure 20. Contrast

2.3.3 Advanced Menu

In this screen, you will access the advanced menu.

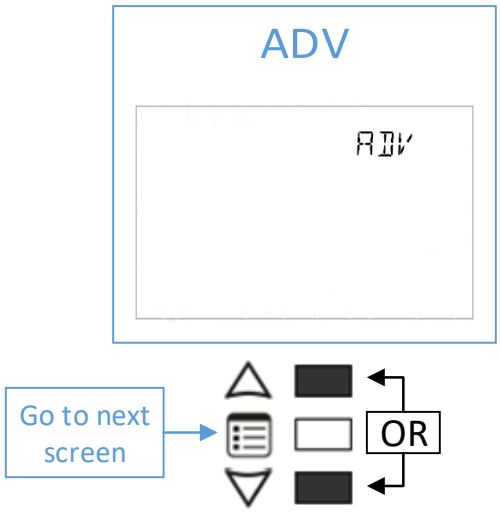


Figure 21. Advanced menu

2.3.4 Password

In this screen, you are asked to enter the Password (10050).

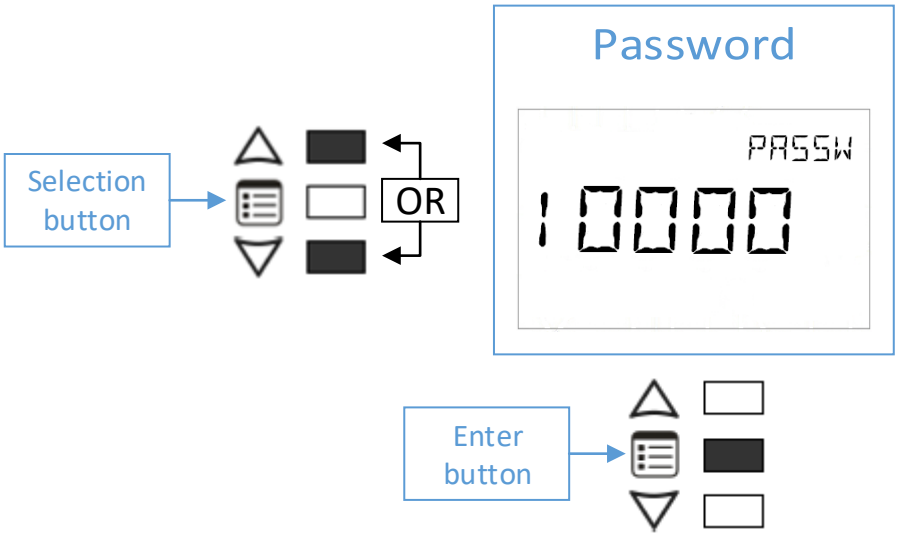


Figure 22. Password

2.4 PRESSURE MENU

This menu is only available in *Duct Pressure mode.*

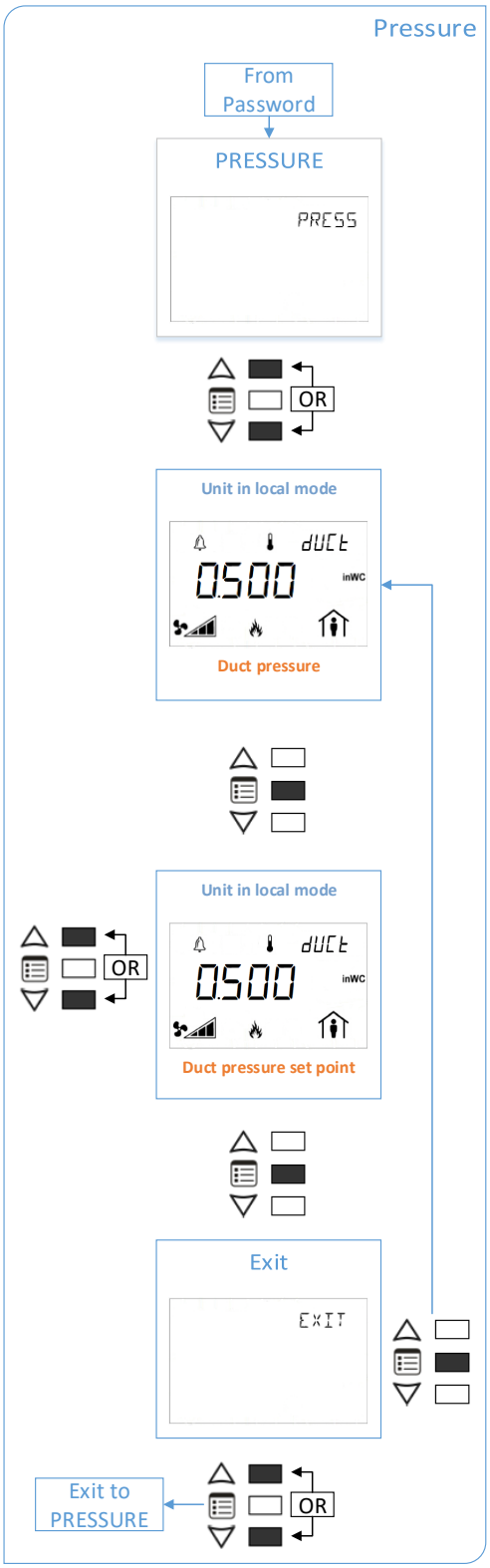


Figure 23. Pressure menu

The following figures shows the different screens for the Pressure Menu group.

2.4.1 Pressure Menu

In this screen, you will access the advanced menu.

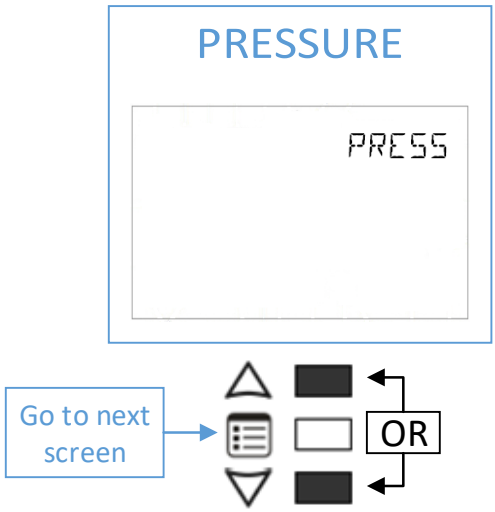


Figure 24. Pressure menu

2.4.2 Duct pressure

The following figure will be displayed when the blower speed options is in variable speed mode and duct pressure mode only.

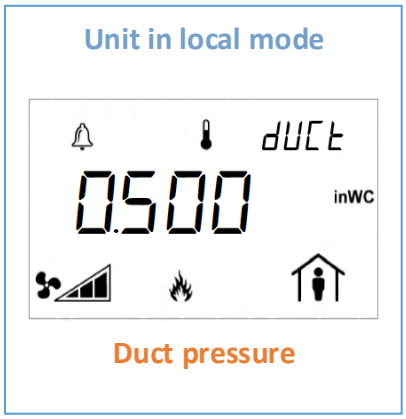


Figure 25. Duct pressure

2.4.3 Duct pressure Set point

The following figure will be displayed when the blower speed options is in variable speed mode and duct pressure mode only. Used to adjust duct pressure.

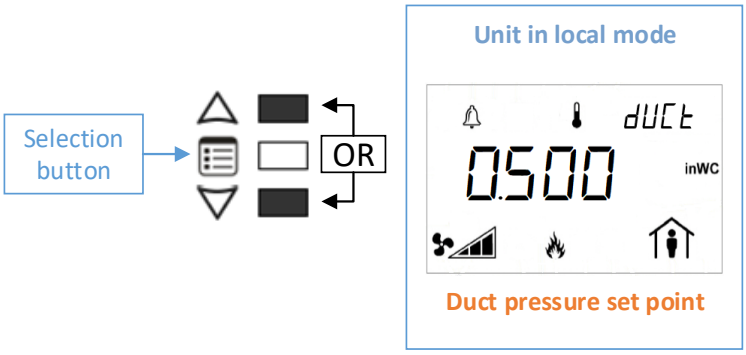


Figure 26. Duct pressure set point

2.4.4 Exit

In this screen, it is possible to exit from this menu or return to first screen.

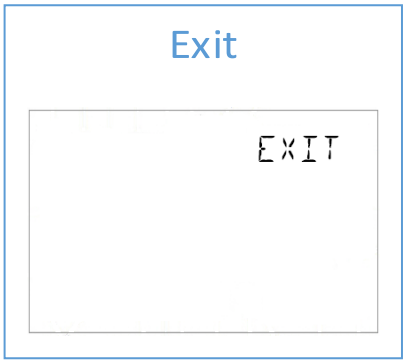


Figure 27. Exit

2.5 BLOWER SETUP

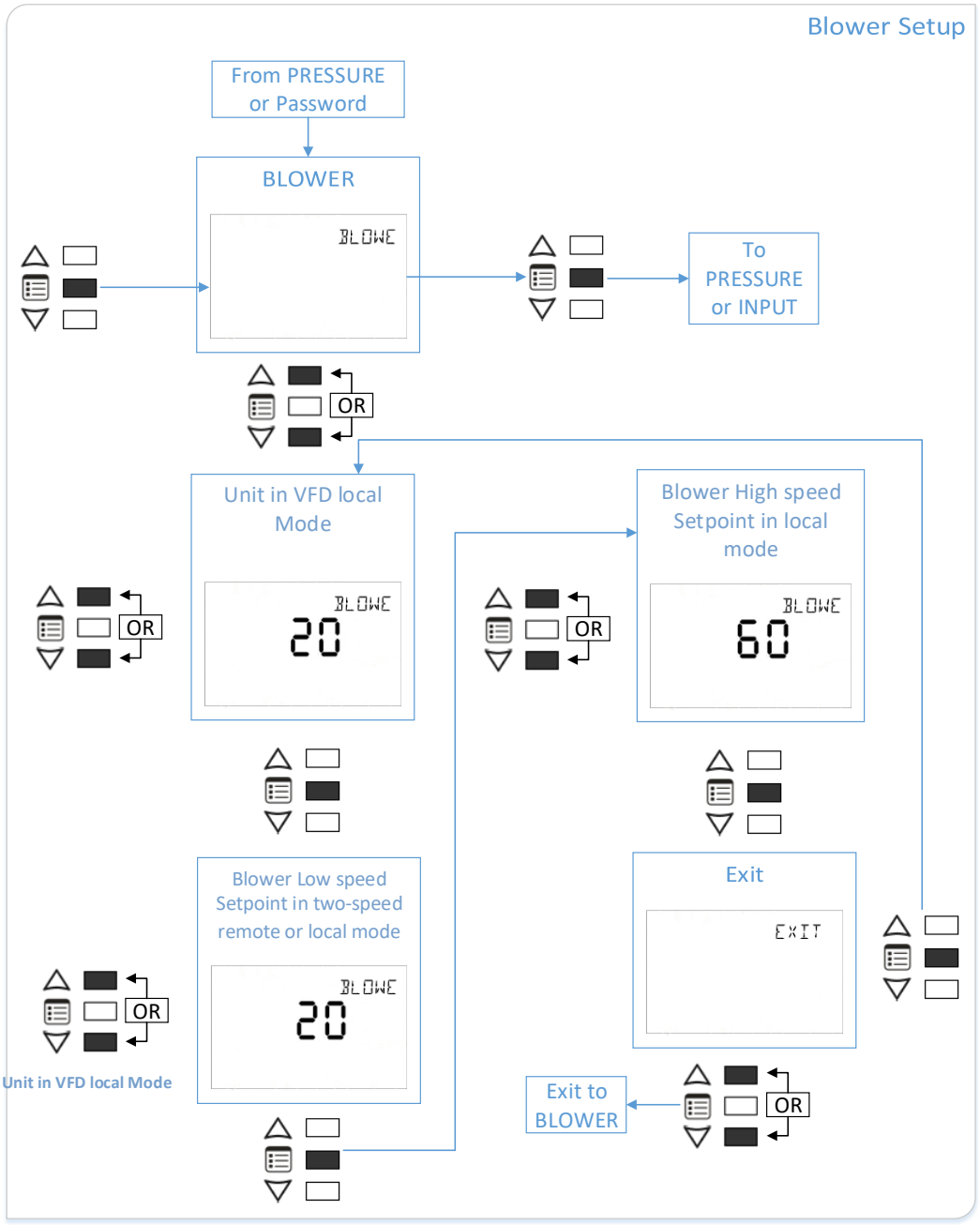


Figure 28. Blower setup

The following figures shows the different screens for the Blower Setup group.

2.5.1 Blower Menu

In this screen, you will access the Blower menu.

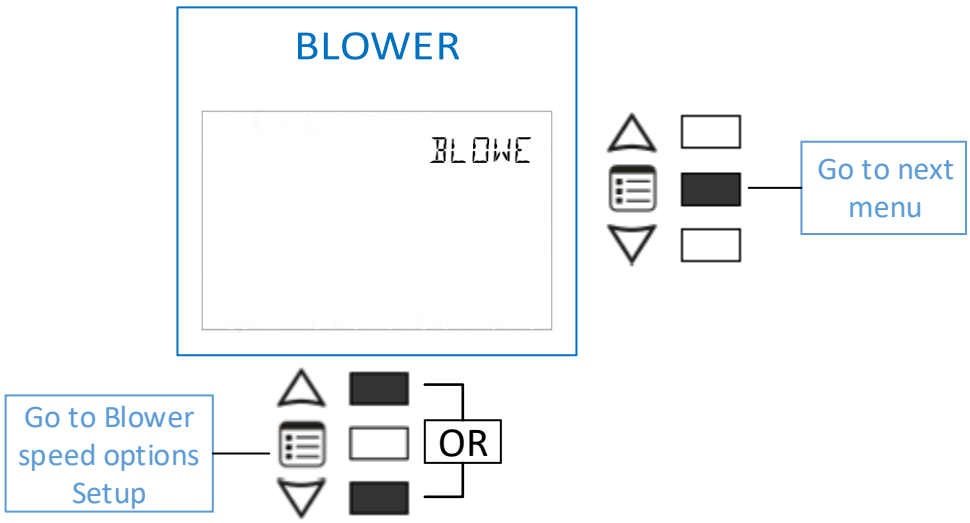


Figure 29. Blower Menu

2.5.2 Blower Speed Set point

The following figure will be displayed when the blower speed options is in VFD local mode only. Used to adjust blower speed (Hz).

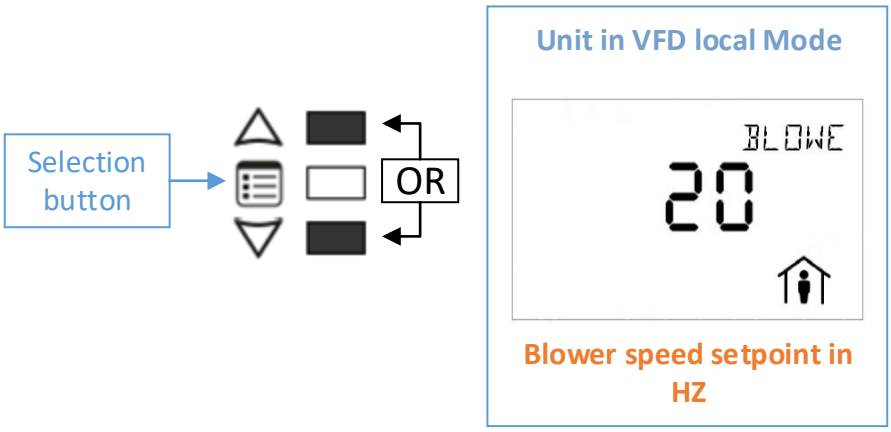


Figure 30. Blower speed setpoint

2.5.3 Blower Low Speed Set point

In this screen, it is possible to change the low speed (Hz) of the blower.

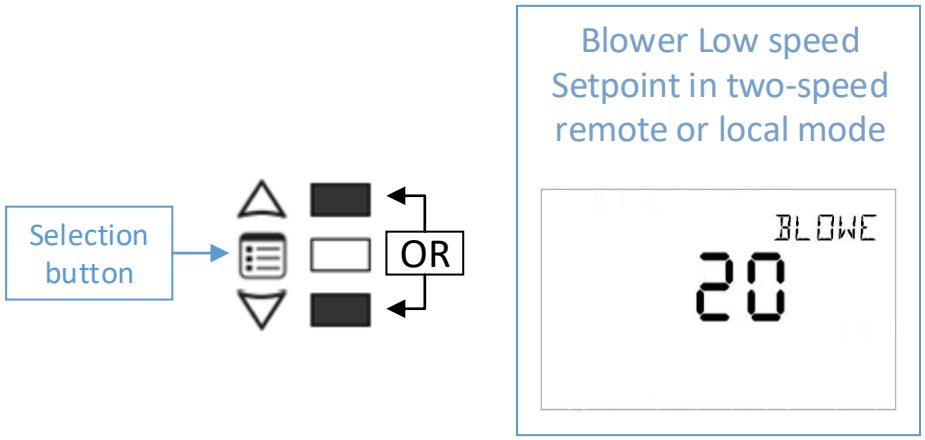


Figure 31. Blower Low Speed Setpoint

2.5.4 Blower High Speed Set point

In this screen, it is possible to change the low speed (Hz) of the blower.

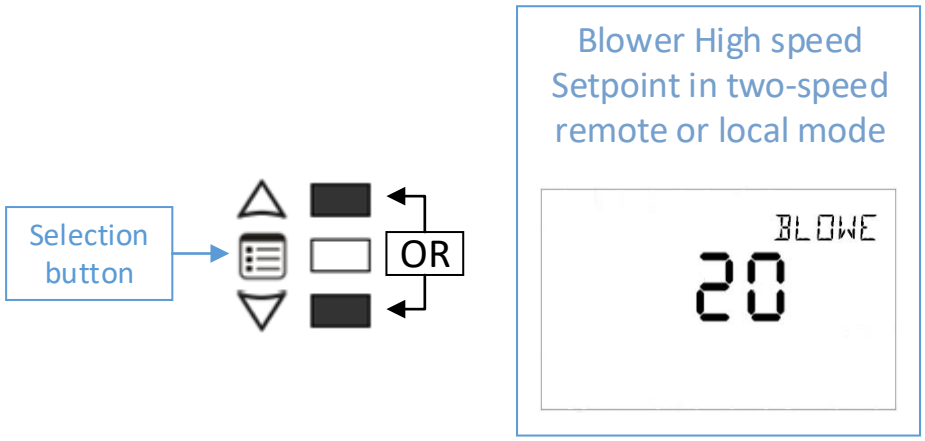


Figure 32. Blower Low Speed Setpoint

2.5.5 Exit

In this screen, it is possible to exit from this menu or return to first screen.

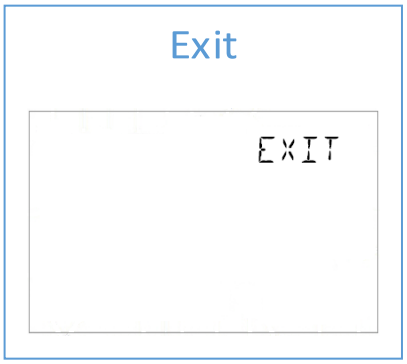


Figure 33. Exit

2.6 THERMOSTAT SERVICE

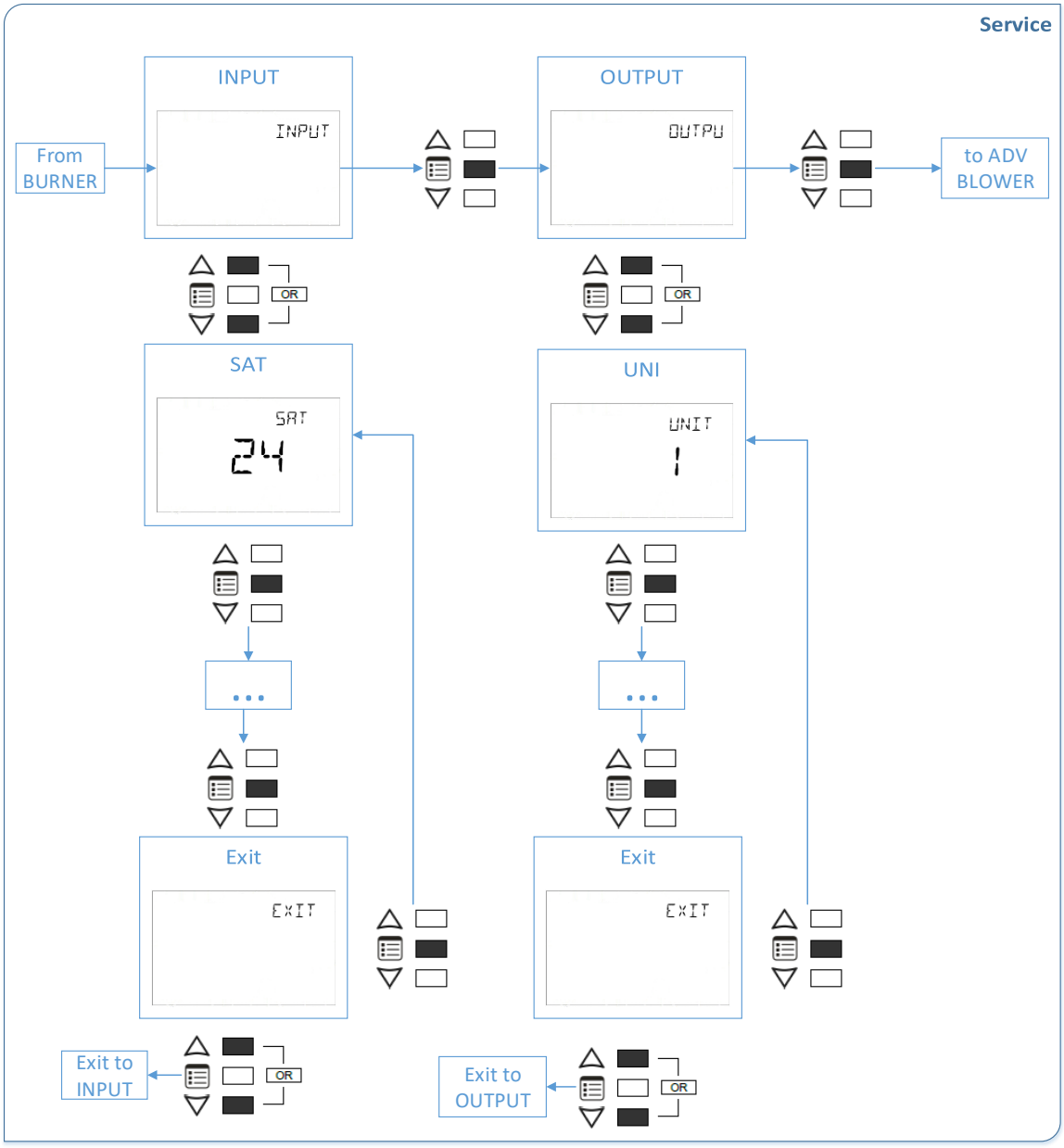


Figure 34. Service

The following figures shows the different screens for the Service group.

2.6.1 Input Menu

In this screen, you will access the Input menu.

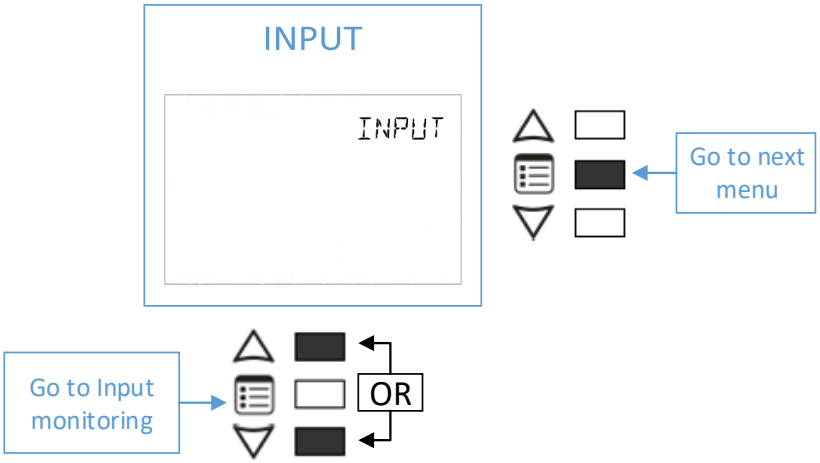


Figure 35. Input Menu

2.6.2 Input Monitoring

In this screen, you will access the Input monitoring.

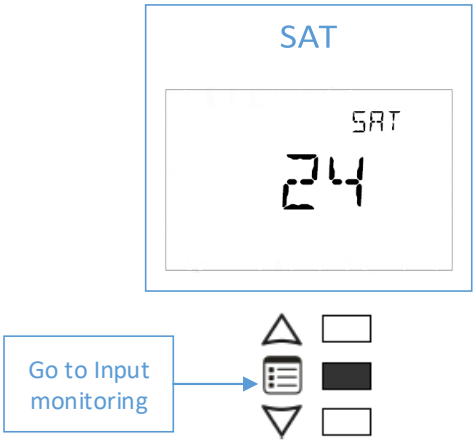


Figure 36. Input Monitoring Menu

Display	Description
SAT	Supply air temperature
OAT	Outside air temperature
VFD MOD	VFD modulation input
BURNER MOD	Burner modulation input
BACNET BYPASS	BACnet mode bypass
BLOWER STATUS	Blower status
FILTER CLOGGED	Filter clogged
BURNER ALARM	Burner alarm status
BURNER STATUS	Burner status
HIGH SPEED	High speed
BURNER ON/OFF	Burner on/off input
UNIT ON/OFF	Unit on/off input
EXIT	Exit

Table 1. Input Monitoring Menu

2.6.3 Output Menu

In this screen, you will access the Output menu.

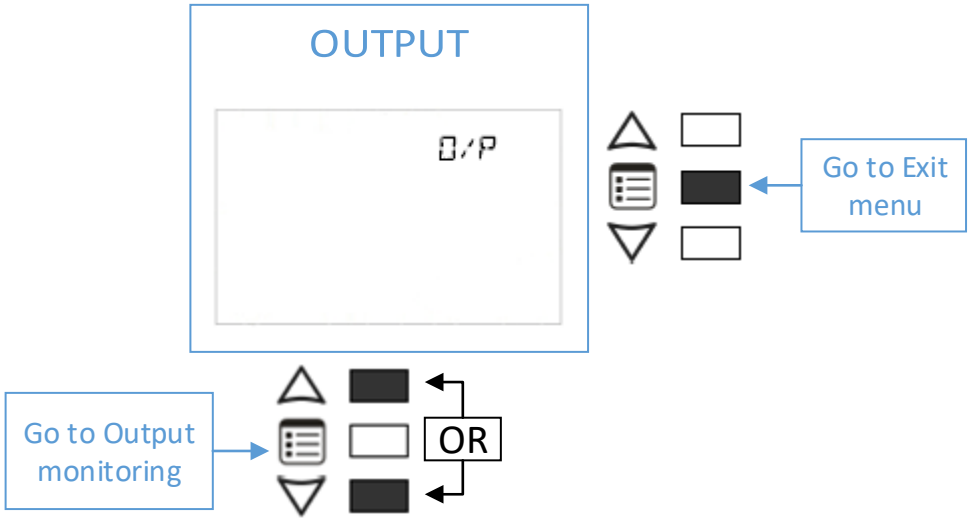


Figure 37. Output Menu

2.6.4 Output Monitoring

In this screen, you will access the Output monitoring.

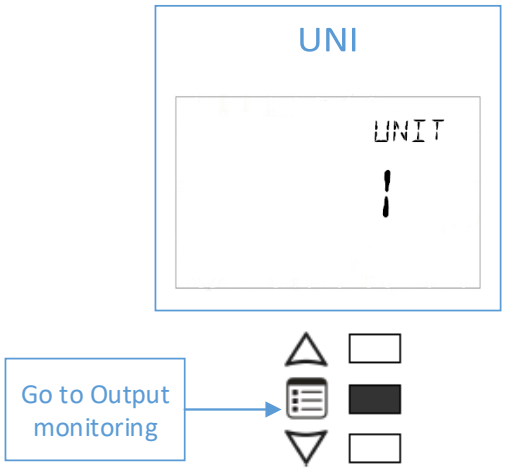


Figure 38. Output monitoring Menu

Display	Description
UNIT CMD	Unit output command
BURNER CMD	Burner output command
GEN ALARM	General alarm
VFD MOD CMD	Blower modulation output command
BURNER MOD CMD	Burner modulation output command
EXIT	Exit

Table 2. Output monitoring Menu

2.7 ADVANCED BLOWER SETUP

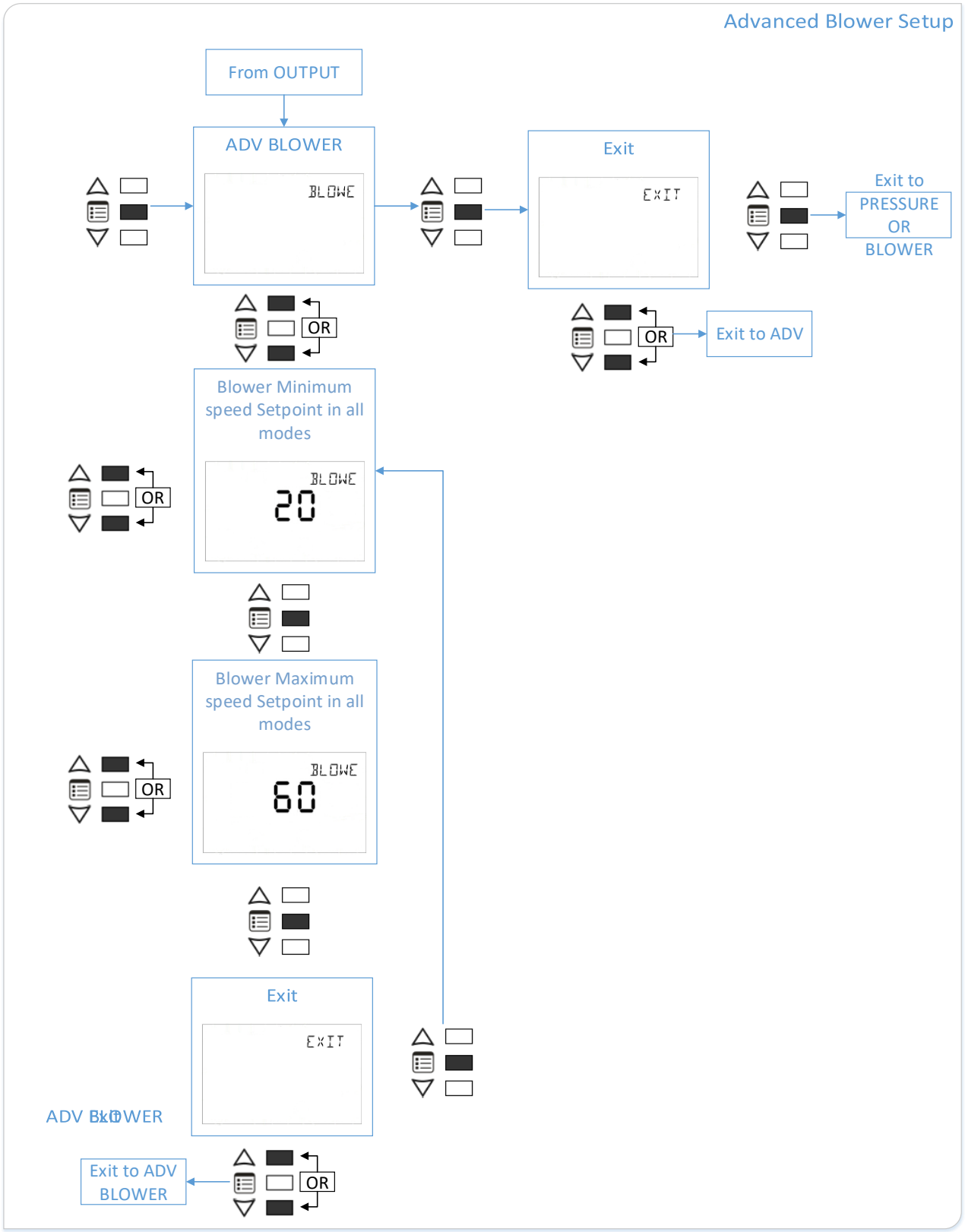


Figure 39. Advanced Blower setup

The following figures shows the different screens for the Blower Setup group.

2.7.1 Blower Minimum Speed Set point

In this screen, it is possible to change the minimum speed (Hz) of the blower.

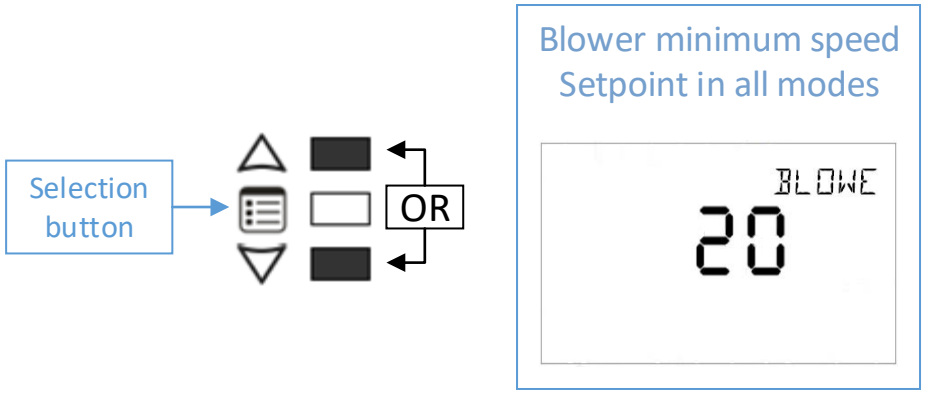


Figure 40. Blower Minimum Speed Setpoint

2.7.2 Blower Maximum Speed Set point

In this screen, it is possible to change the maximum speed (Hz) of the blower.

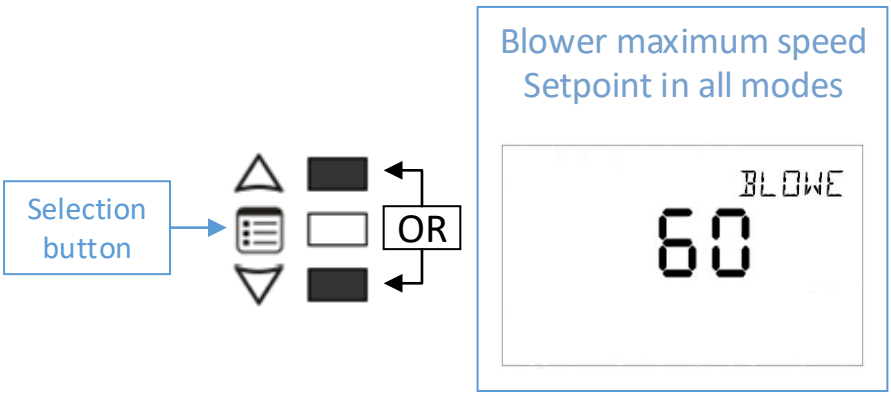


Figure 41. Blower Maximum Speed Setpoint

2.7.3 Exit

In this screen, it is possible to exit from this menu.

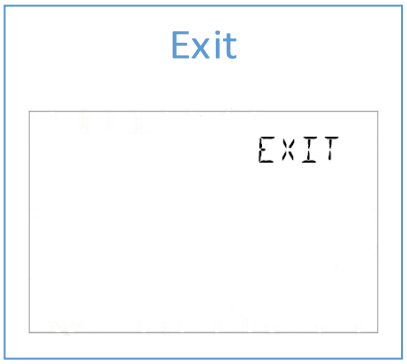


Figure 42. Exit

3. WEB INTERFACE

In this section, we explain how to use the Web interface. The Web interface uses BACnet IP communication.

3.1 CONNECTION

Here is how to access the interface using an Ethernet cable:

- Connect an Ethernet cable from your computer to the PLC port “PRI” or “SEC”.
- Configure a local IP address on your computer on the same network (eg. 10.0.0.123)
- Open a web browser (e.g. Chrome)
- Enter the Unit IP address in the top search bar: https://10.0.0.2
- Login screen will open.

Here is how to access the interface using Wi-Fi:

- Connect the Distech Wi-Fi dongle (optional) to the USB port of the PLC.
- Connect your computer or smart device to this network “DTHe-NC3D_V200”.
- Open a web browser (e.g. Chrome)
- Enter the Unit IP address in the top search bar: https://10.0.1.1
- Login screen will open.

3.2 LOGIN SCREEN

Enter login username and password (see login section).

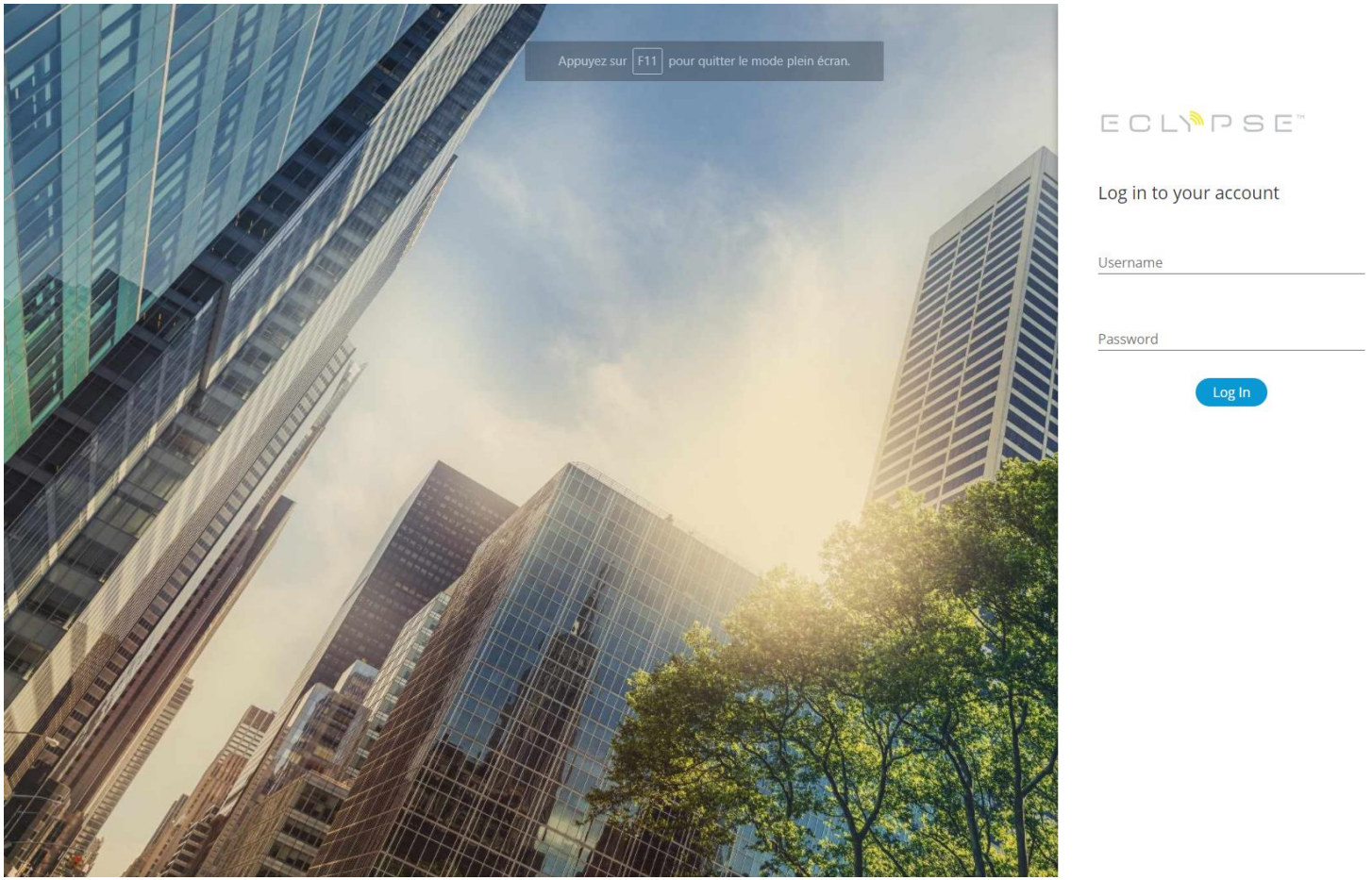


Figure 43. Login screen

3.3 HOME SCREEN

This is the Home screen only accessible by “oper” user.

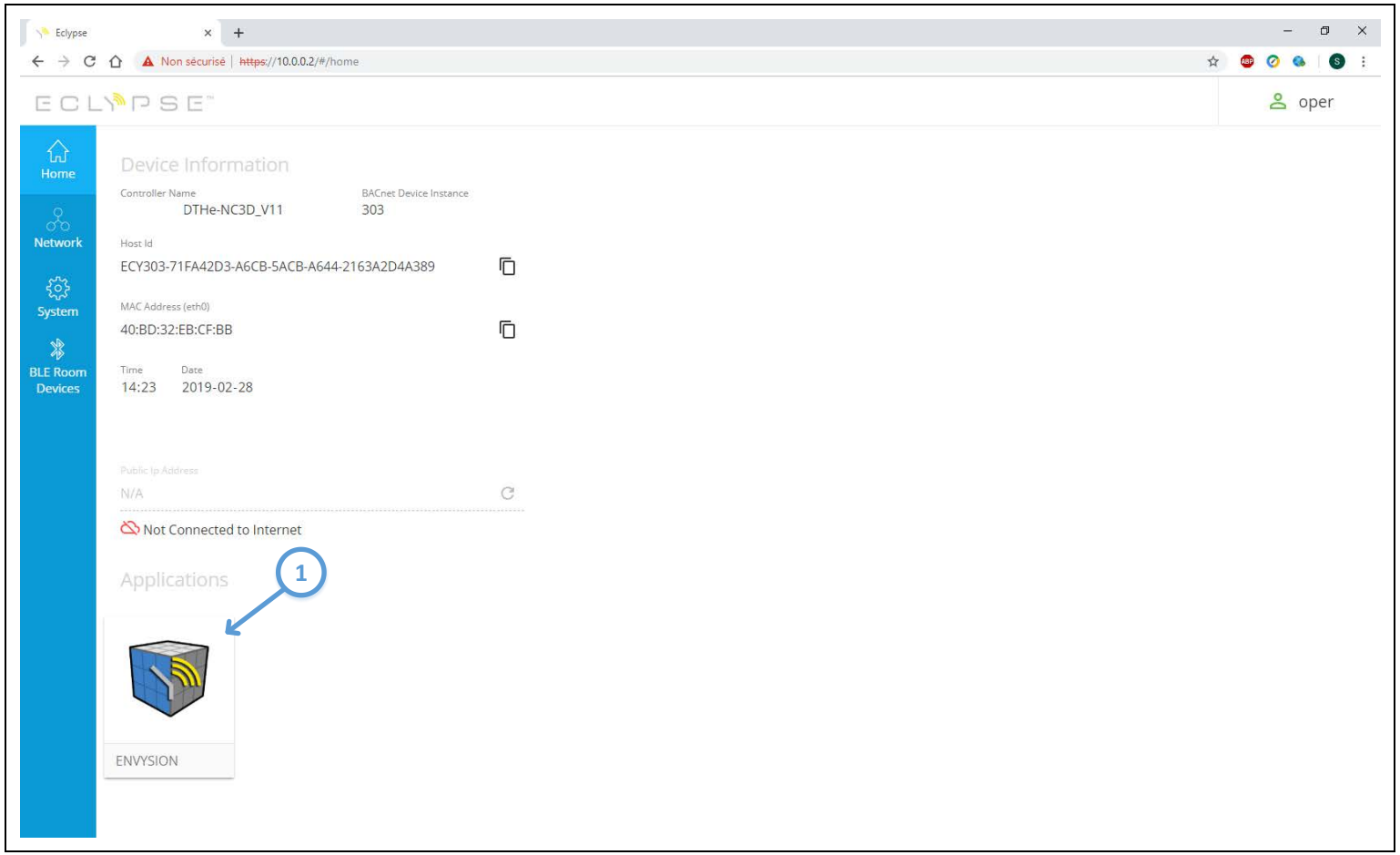


Figure 44. Home Screen

Applications	Description
ENVYSION	Opens the web interface

Table 3. Access to the web interface

3.4 NETWORK SCREEN

This is the Network screen only accessible by “oper” user. In this screen, you can modify the Ethernet and Wireless (with the optional dongle) address and diagnostic the communication.

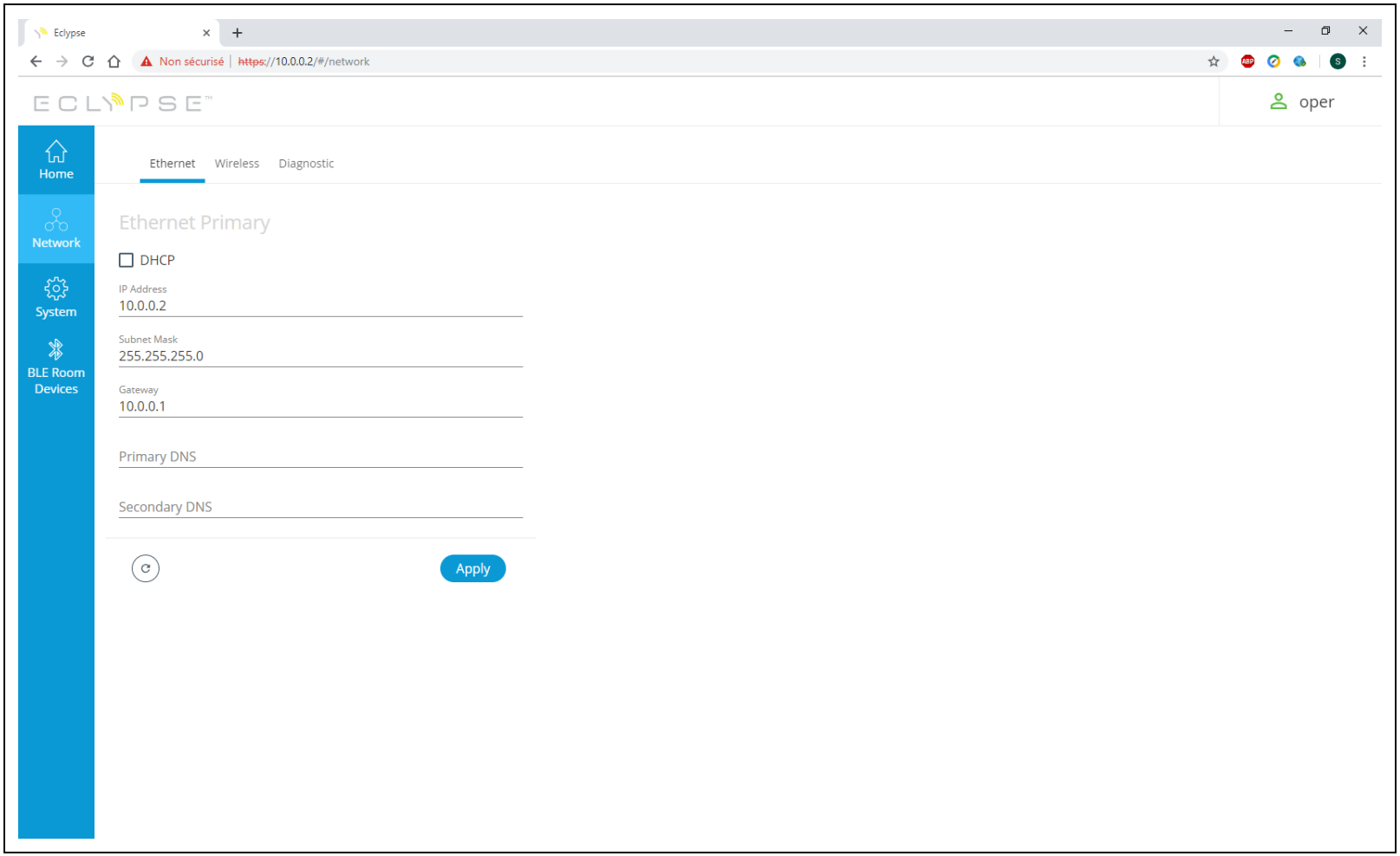


Figure 45. Network Screen

3.5 SYSTEM SCREEN

This is the System screen only accessible by “oper” user. In this screen, you can modify the Date and Time and get information about the system.

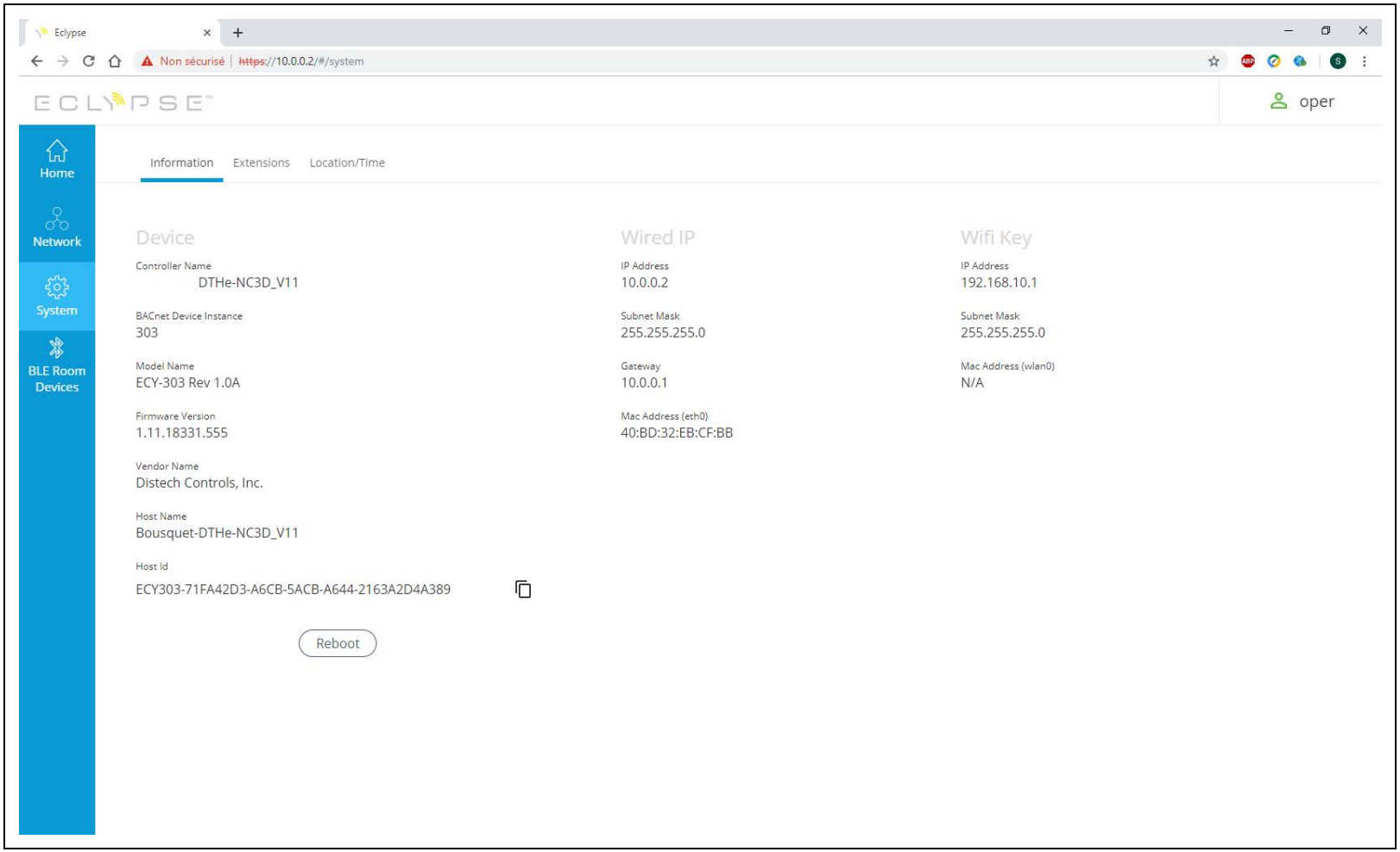


Figure 46. System Screen

4. ENVYSION

4.1 UNIT SCREEN

After you login this screen will open.

Figure 47. Unit Screen

#	Item	Description
1	Screen selection	Select Unit, Settings, Alarms, Trends and Schedule.
2	Unit and burner permission command	Stop/start the unit and burner permission when the unit on/off and the burner on/off option are on BACnet mode.
3	Unit	Animated according to the status of each equipment.
4	Information message	Warnings.
5	Unit set points	It will change accordingly to the unit options.
6	Information	All set points are in metric units.
7	Operating mode	See operating mode list below.
8	Unit options	It will change accordingly to the unit options.
9	Active alarms	It appears when an alarm is active.
10	Exit	Logout
11	Trend button	When you click this button trend chart will appear.
12	Trend	It trends the value you selected, you can change date range and type.
13	BACnet bypass mode	If unit is in BACnet mode this bypass will start the unit with blower at maximum speed and heating enable at a fix temperature of 22°C| 72°F.

Table 4. Unit Screen

Operating Mode	Description
FanAlarm	The dampers and/or fan is faulty.
FreezeAlarm	Unit is in a freeze alarm state
HeaterAlm	The burner is faulty.
DischTempAlarm	The discharge temperature sensor is unplugged or faulty.
Sensor error	The thermostat TH1 is unplugged or faulty
DelayedStop	Unit is in delayed mode state to unload the burner, blower stays on for 15 seconds.
Start-up	Unit is in start-up mode, it is waiting for the dampers to open and or the fan to start.
Running	Unit is in running mode, the dampers are opened and the fan is started.
UnitOff	Unit is off.

Table 5. Operating mode list

4.2 SETTINGS SCREEN

In this screen, you will access the Unit settings.

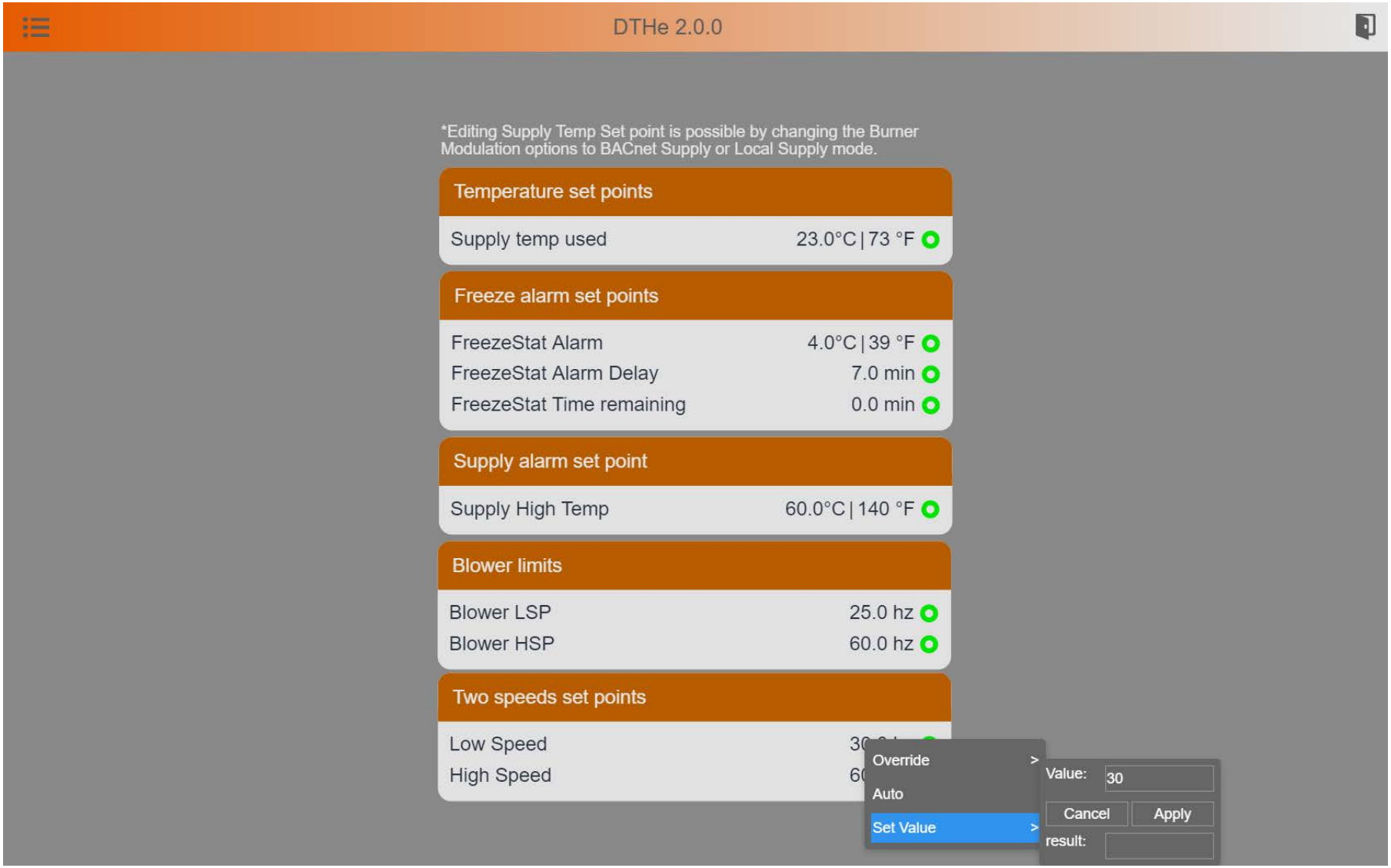


Figure 48. Settings Screen

Group	Item	Description
Temperature	Supply Temp Set point Used	Supply temperature set point used to modulate the burner.
Freeze Alarm	FreezeStat Alarm Set point	FreezeStat alarm set point readout.
	FreezeStat Alarm Delay Set point	FreezeStat alarm delay set point readout.
	FreezeStat Time remaining	FreezeStat time remaining before the alarm readout.
Supply Alarm	Supply High Temp Alarm SP	High Supply temperature alarm set point.
Blower limits	Blower LSP	Minimum speed the blower can run.
	Blower HSP	Maximum speed the blower can run.
Two speeds	Low speed	Low-speed set point will be editable only when the two speeds option is in *BACnet* or *Local* mode.
	High speed	High-speed set point will be editable only when the two speeds option is in *BACnet* or *Local* mode.
Modification	Modification box	User “Oper” only. When you click on a changeable value. You can set a value, you can override a value and when you select “Auto” it will remove the override that you’ve applied (if it’s the case).

Table 6. Settings Screen

4.3 ADVANCED SCREEN

In this screen, you will access the Unit advanced settings in read only.

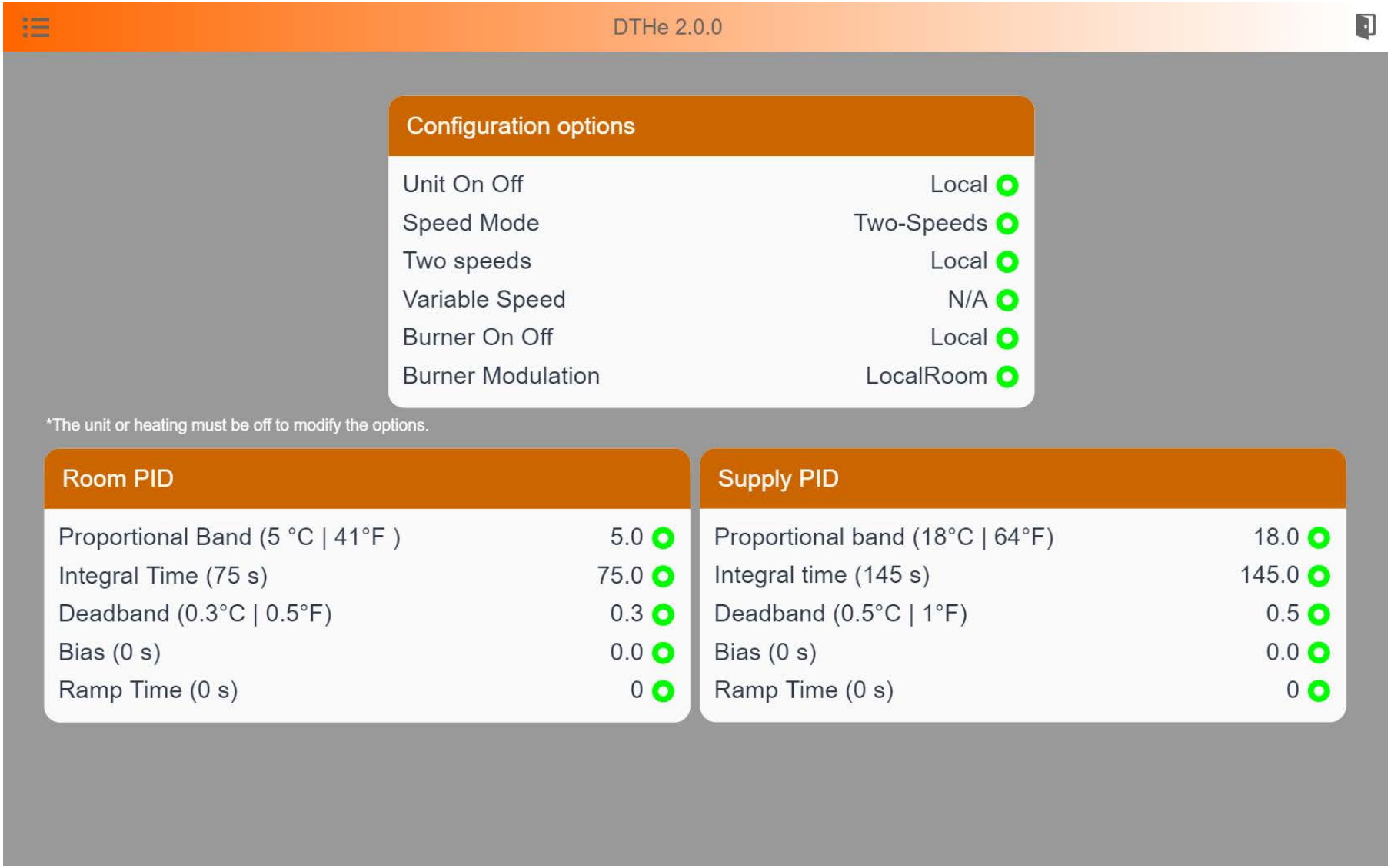


Figure 49. Advanced Settings Screen

Group	Item	Description
Configuration options	Unit on off	Unit on/off command. Local (Control by thermostat TH1), Remote (Control by others), BACnet (Control by BACnet communication).
	Speed mode	Blower controls. N/A (Contactor), Two-speeds, Variable
	Two-speeds	Blower two-speeds controls. N/A (Contactor), Remote (Control by others), BACnet (Control by BACnet communication).
	Variable speed	Blower variable speed controls. N/A (Contactor), VFD Local (Control by thermostat TH1), VFD Remote (Control by others), VFD BACnet (Control by BACnet communication), Duct pressure (Control by thermostat TH1).
	Burner on off	Burner on/off command. Local (Control by thermostat TH1), Remote (Control by others), BACnet (Control by BACnet communication).
	Burner modulation	Burner modulation control. Local room (Control by thermostat TH1), Supply room (Control by thermostat TH1), Remote capacity (Control by others), Remote setpoint (Supply set point controlled by others), BACnet (Supply set point controlled by BACnet communication).
Room PID	PID controlled by room temperature	PID settings.
Supply PID	PID controlled by supply temperature	PID settings.

Table 7. Advanced Settings Screen

4.4 ALARM SCREEN

In this screen, you will access the Alarms.

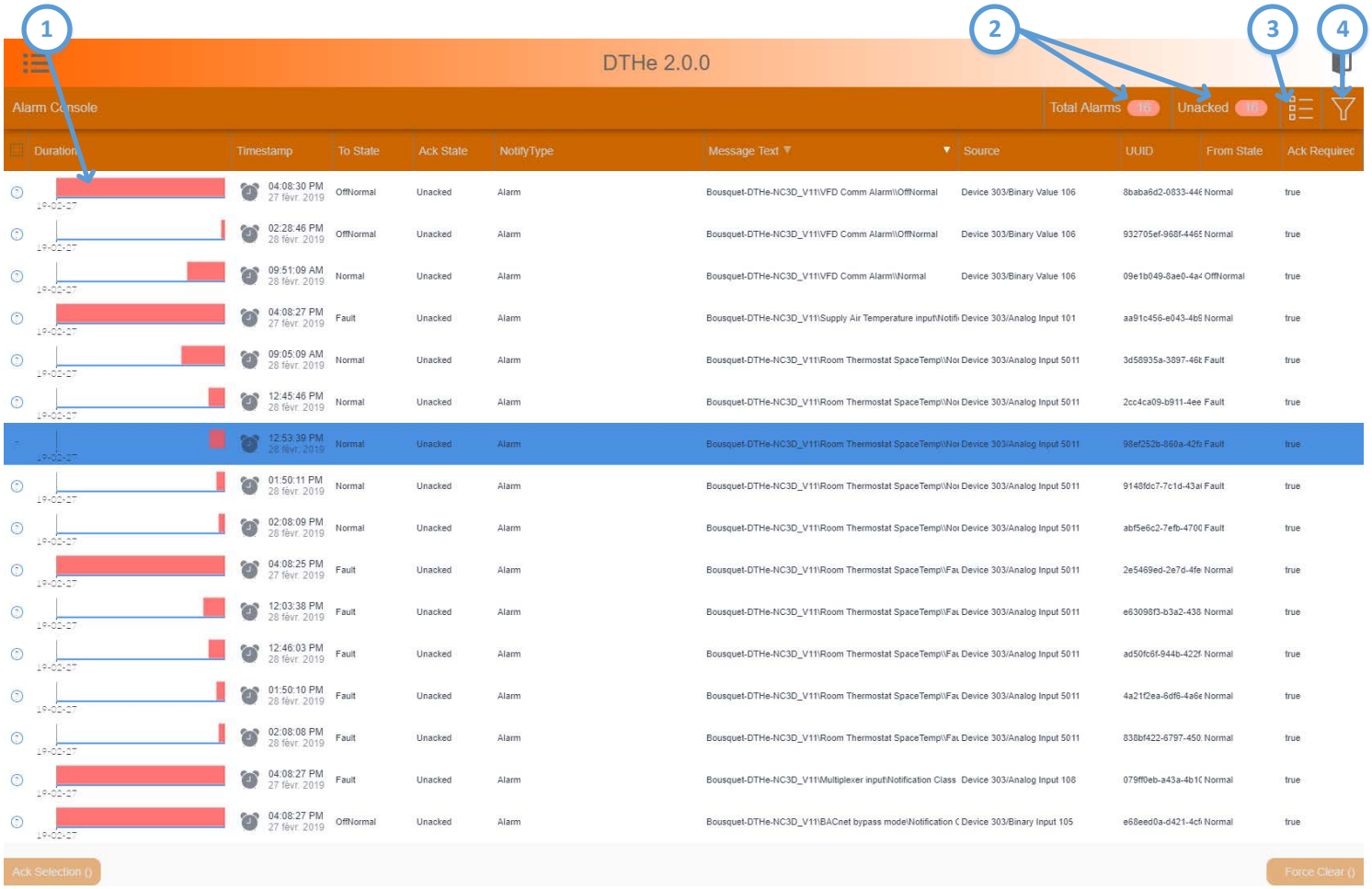


Figure 50. Alarm Screen

#	Description
1	Move the mouse cursor over the question mark to get more information on the alarm.
2	Total alarms and total unacknowledged alarms.
3	Show/hide an alarm data column.
4	Filter alarm data.

Table 8. Alarm Screen

4.5 STATUS TRENDS SCREEN

In this screen, you will access the unit status Trends.

Figure 51. Status Trends Screen

#	Description
1	Export the trends to a csv (comma-separated variable) file.

Table 9. Status Trends Screen

4.6 ADV. TRENDS SCREEN

In this screen, you will access the Trends.

Figure 52. Adv. Trends Screen

#	Description
1	Select a trend and its color.
2	Export the trends to a csv (comma-separated variable) file.
3	Select a time parameter option from the list (today, last week, etc.)
4	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.
5	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.
6	Select the variable's trend you want to see and choose a color.

Table 10. Adv. Trends Screen

5. SYSTEM LOGIN

The thermostat has one security password defined. To access the advanced setup, you must have the right password.

The following table shows the security Login for the Thermostat.

Password	Access to Advanced settings screens
10050	√

Table 11. Thermostat Security Login

The web interface has two security users defined. To access a secured page, you must have the right credentials.

The following table shows the security login for the Web interface.

Username	Password	Access to Unit, settings, Trends, Alarm and Schedule screens	Access to advanced screen	Access to Web Configuration Interface (Home, network, system)
user	Default1	Read	Read	**X**
oper	Oper10050	Read/Write	Read	√

Table 12. Web Interface Security Login

6. ALARM LIST

Codes	Display	Description	Reaction	Reset
5	Freezestat alarm	If the supply temperature fall below 4°C | 40°F and the blower is running for 7 minutes.	A message is displayed. Unit is shut down	Manual
7	Burner faulty	Signal coming from the burner or if a command is send to the burner but the running signal is not coming back after a delay of 140 seconds.	A message is displayed. Unit is shut down	Manual (DTHR)
10	Supply air temp probe error	Sensor disconnected or loss of signal	A message is displayed. Unit is shut down.	Automatic
11	Outdoor air temp probe error	Sensor disconnected or loss of signal	A message is displayed. Heating is enable.	Automatic
12	Room thermostat error	Sensor disconnected or loss of signal	A message is displayed. Unit is shut down if on local mode.	Automatic
13	Duct pressure probe error	Sensor disconnected or loss of signal	A message is displayed. Blower speed is running at minimum speed.	Automatic
16	Damper Blower Alarm	At start-up if a command is send to the damper but the open signal is not coming back after 100 seconds. Or if the input is loss while running, the burner is disable and the alarm comes up after 120 seconds.	A message is displayed. Unit is shut down	Manual
28	Supply air filter clogged	Detected by a differential pressure transmitter after a delay of 5 minutes	A message is displayed.	Manual
31	VFD alarm status	Detected by the VFD.	A message is displayed. Unit is shutdown.	Automatic
32	VFD communication alarm	Communication wire disconnected or loss of signal.	A message is displayed. Unit is shutdown.	Automatic
43	Supply high temp alarm	If the supply temperature is greater than 60°C | 140°F after 1 minutes.	A message is displayed. Unit is shutdown. After 3 times in an hour it locks out.	Manual

Table 13. Alarm list

*To manually reset an alarm you need to turn the unit from off to on.

7. BACNET LIST

PLC IP address | Subnet: 10.0.0.2 | 255.255.255.0	Default Gateway: 10.0.0.1		Device Name | ID: DTHe-NC3D-V200| 10002	
object-name	object-type	object-instance	present-value-default	unit-code
Supply Air Temperature input	Analog Input	101	-40	ohms
Outdoor Air Temperature input	Analog Input	102	-20	ohms
VFD Modulation SP input	Analog Input	103	0	volts
Burner Modulation SP input	Analog Input	104	0	volts
BACnet bypass mode	Binary Input	105	0	
Blower Status Input	Binary Input	107	0	
Multiplexer input	Analog Input	108	350000	ohms
Unit Command output	Binary Output	101	0	
Burner Command output	Binary Output	102	0	
General alarm	Binary Output	103	0	
Unit Start Stop Input	Binary Value	1	FALSE	
Burner Start Stop Input	Binary Value	2	FALSE	
Burner Status Input	Binary Value	4	FALSE	
Room Thermostat_Room Thermostat SpaceTemp	Analog Input	5011	0	degrees-Celsius
Room Pid Loop	Loop	1		percent
Supply Pid Loop	Loop	2		percent
Blower Modulation Cmd	Analog Output	107	0	percent
Burner Modulation Cmd	Analog Output	108	0	percent
Temp Unit selection	Multistate Value	1	1	
VFD Speed	Analog Value	11	0	hertz
Blower Speed SP Low Limit	Analog Value	13	25	hertz
Unit On Off Options	Multistate Value	2	1	
Blower Speed Mode options	Multistate Value	3	3	
Two speeds Options	Multistate Value	4	1	
Max Rise Pid Loop	Loop	3		percent
Burner Alarm Status Input	Binary Value	100	FALSE	
Filter Clogged Input	Binary Value	101	FALSE	
FreezeStat Alarm	Binary Value	103	FALSE	

PLC IP address | Subnet: 10.0.0.2 | 255.255.255.0	Default Gateway: 10.0.0.1		Device Name | ID: DTHe-NC3D-V200| 10002	
object-name	object-type	object-instance	present-value-default	unit-code
Damper Blower Alarm	Binary Value	104	FALSE	
Burner Fault	Binary Value	105	FALSE	
VFD Comm Alarm	Binary Value	106	FALSE	
Supply High Temp Alarm	Binary Value	107	FALSE	
Blower speed SP BMS	Analog Value	12	60	hertz
Blower Speed SP High Limit	Analog Value	14	60	hertz
Alarm Actives	Binary Value	50	FALSE	
Warning Actives	Binary Value	51	FALSE	
General Alarm	Binary Value	52	FALSE	
Heating Permission BMS	Binary Value	21	FALSE	
Variable Speed Options	Multistate Value	5	2	
FreezeStat Alarm SP	Analog Value	51	4	degrees-Celsius
FreezeStat Alarm Delay SP	Analog Value	52	7	minutes
Supply Temp Setpoint BMS	Analog Value	31	23	degrees-Celsius
Supply SP Low Scaling Limit	Analog Value	32	10	degrees-Celsius
Supply SP High Scaling Limit	Analog Value	33	32	degrees-Celsius
Supply High Temp Alarm SP	Analog Value	53	60	degrees-Celsius
Room Temp Setpoint	Analog Value	21	23	degrees-Celsius
Room Temp SP Low Limit	Analog Value	22	16	degrees-Celsius
Room Temp SP High Limit	Analog Value	23	32	degrees-Celsius
Mot De Passe	Analog Value	1000	0	no-unit
User Level 5	Binary Value	1000	FALSE	
VFD Alarm Status	Binary Value	108	FALSE	
Supply temp SP used	Analog Value	34	0	degrees-Celsius
High Supply Temp Pid Loop	Loop	4		percent
Duct Pressure PID	Loop	5		percent
Duct Pressure	Analog Value	41	0	inches-of-water
Duct Pressure SP	Analog Value	42	0.5	inches-of-water
Duct Pressure Min Range SP	Analog Value	43	0.25	inches-of-water
Duct Pressure Max Range SP	Analog Value	44	1.5	inches-of-water
Low Speed SP	Analog Value	61	30	hertz

PLC IP address | Subnet: 10.0.0.2 | 255.255.255.0	Default Gateway: 10.0.0.1		Device Name | ID: DTHe-NC3D-V200| 10002	
object-name	object-type	object-instance	present-value-default	unit-code
High Speed SP	Analog Value	62	60	hertz
High Speed Input	Binary Value	5	FALSE	
Version	Multistate Value	100	3	
VFD Mains Voltage	Analog Value	15	0	volts
VFD Motor Power	Analog Value	16	0	percent
Override Switch	Binary Value	1002	FALSE	
Remote VFD Modulation SP	Analog Value	17	0	hertz
Supply Air Temperature	Analog Value	1	0	degrees-Celsius
Operating Mode	Multistate Value	21	1	
Burner On Off Options	Multistate Value	6	1	
Burner Modulation Options	Multistate Value	7	1	
Outdoor Air Temperature	Analog Value	2	0	degrees-Celsius
VFD Modulation SP	Analog Value	3	0	volts
Burner Mod Capacity SP	Analog Value	4	0	percent
Unit Command out	Binary Value	15	FALSE	
Burner Command out	Binary Value	16	FALSE	
Burner Mod Temperature SP	Analog Value	5	0	degrees-Celsius
Unit start stop BMS	Binary Value	20	FALSE	
Blower Status	Binary Value	6	FALSE	
Alarm code number	Analog Value	100	0	no-unit
FreezeStat Alarm Delay	Analog Value	200	0	minutes
Two speed high low BMS	Binary Value	41	FALSE	
Filter clogged Alarm	Binary Value	109	FALSE	
Alarm history selection	Analog Value	500	0	no-unit
Alarm history counter	Analog Value	501	0	no-unit
Alarm history Msg No	Analog Value	502	0	no-unit
Alarm history year	Analog Value	503	0	no-unit
Alarm history month	Analog Value	504	0	no-unit
Alarm history day	Analog Value	505	0	no-unit
Alarm history hour	Analog Value	506	0	hours
Alarm history minute	Analog Value	507	0	minutes

PLC IP address | Subnet: 10.0.0.2 | 255.255.255.0	Default Gateway: 10.0.0.1		Device Name | ID: DTHe-NC3D-V200| 10002	
object-name	object-type	object-instance	present-value-default	unit-code
Alarm history second	Analog Value	508	0	seconds

Table 14. Liste BACnet

Tel.: 1 888 514 8007

1385, Lionel-Boulet
Varennes, Québec. J3E 1Z9