ECOSMART LCD/ COMMISSIONING TOOL GUIDE

1.0 IMPORTANT SAFETY INFORMATION

- This appliance should not be used by children or persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning the safe use of the appliance by a person responsible for their safety. Children shall not play with the appliance. Cleaning and user maintenance shall not be carried out by children.

1.1 HAZARD SYMBOLS

REFER TO INSTRUCTION MANUAL

Read and understand the installation and maintenance manual before installing, operating or maintaining this product.

1.2 IMPORTANT INFORMATION

This manual contains important information on the safe and appropriate assembly, transport, commissioning, operation, maintenance, disassembly and simple troubleshooting of the product.

While the product has been manufactured according to the accepted rules of current technology, there is still a danger of personal injury or damage to equipment if the following general safety instructions and the warnings contained in these instructions are not complied with.

- **Read these instructions completely and thoroughly before working with the product.**
- **Keep these instructions in a location where they are always accessible to all users.**
- **Always include the operating instructions when you pass the product on to third parties.**

1.3 PERSONAL PROTECTIVE EQUIPMENT

The following minimum Personal Protective Equipment (PPE) is recommended when interacting with Nuaire product:

- **Protective Steel Toed Shoes**: When handling heavy objects.
- **Full Finger Gloves (Marigold PU800 or equivalent)**: When handling sheet metal components.
- **Semi Fingerless Gloves (Marigold PU3000 3DO or equivalent)**: When conducting light work on the unit requiring tactile dexterity.
- **Safety Glasses**: When conducting any cleaning/cutting operation or exchanging filters.
- **Reusable Half Mask Respirators**: When replacing filters which have been in contact with normal room or environmental air.

Nuaire would always recommend a site specific risk assessment by a competent person to determine if any additional PPE is required.

2.0 INTRODUCTION

The ESCO-CT is a communications converter that provides a temporary wireless connection between a host device and equipment controllers that support the BACnet® MS/TP protocol. Through the ESCO-CT, the host device application can discover controllers connected to the MS/TP trunk, download applications, and commission the equipment. The ESCO-CT supports a Bluetooth wireless connection to Apple™ iOS® and Android™ mobile devices that run the Connected Workflow Application (CWa). The ESCO-CT also supports a Wi-Fi wireless connection for Windows computers that run Johnson Controls® BAS Tools such as the Controller Configuration Tool (CCT), System Configuration Tool (SCT), or Application, Parameter, Loading Tool (APLT).

The ESCO-CT supports the following wireless connection modes:

- Bluetooth low energy mode (BLE Router)
- Wi-Fi access point mode (Wi-Fi AP Router) You can discover devices connected to the MS/TP bus, download applications, and commission the equipment with both wireless modes

2.1 FEATURES

The ESCO-CT has several features and benefits:

- Johnson Controls mobile Connected Workflow Application (CWa) connection to BACnet MS/TP controllers through Bluetooth communication.
- Colour LCD display that shows wireless and MS/TP connection status.
- Powered through an RJ12 adapter. Alternately powered by a standard USB Battery Pack (user supplied through the USB-C port).

The built-in LCD panel on the front of the controller can also be used for commissioning but is a little more tricky to navigate.

2.2 ECOSMART CONNECT COMPATIBILITY

The ESCO-CT commissioning tool is compatible with FAC and PEAK variants of the EcoSmart Connect Controllers using BACnet®.

The LCD panel is only available on the PEAK / VERASYS variants of controller.

3.0 GETTING STARTED

1. Connect one end of the provided RJ12 cable to the ESCO-CT.
2. Connect the other end of the RJ12 cable to the Sensor Actuator (SA) bus port on the front of the controller. The RJ12 connection supplies both power and MS/TP communication to the ESCO-CT.
3. On the ESCO-CT By default, BLE Router mode is selected. If this is not the active mode, hold B until the mode is displayed then release the B. Press B once more the confirm the mode choice.
4. Download the Johnson Controls CWa App from the Google Play Store / Apple App Store using one of the QR codes below:

Fig 1: Johnson Controls CWa App-Android

CLICK HERE TO GET IT ON Google Play

https://shorturl.at/5qrnu

Fig 2: Johnson Controls CWa App-Apple

CLICK HERE TO GET IT ON App Store

https://shorturl.at/oluUi

5. Once the App is Installed login with an email address of your choice, the sign in will accept all major email address types.
6. In the App select **"CWa for Technician"** then select **"Via JCI BLE"** & press Discover.
7. If the app request access to Bluetooth, Allow it.
8. A device should be shown with a **"CWCVT-**:**:**:**"** style name. Press Connect.
9. The phone will display a pairing request and will ask for a code. Press A on the ESCO-CT device until **"Pairing Info"** is displayed. Enter the PIN on the App to pair with the device. The **"BLE No Conn"** will change from Black to Blue and now read **"BLE Conn'd"**.
10. The App will automatically start to scan for BACnet® devices on the network.
11. Select the device you wish to connect to, to download the language files & the configuration details for the controller.

3.1 TIME SYNCHRONISATION

At the **"Controllers"** screen on the App. Select the three dots at the top right and select **"Time sync"** all of the listed BACnet devices should now share the same time as the mobile device.

4.0 NAVIGATION

4.1 OPERATION

1. Select the device you wish to control from the list on the **"Controllers"** page on the App. The layout of the **"Configuration Details"** tab is the same as the layout on the built in LCD on the Peak.
2. First navigate to a Group then press (esc) to enter that group and view the values within.
3. Press (^) or (v) to navigate each group.
4. Press (esc) to return to the previous menu. When editing a value, the LCD will flash till (esc) is pressed.

4.2 ESCO-CT / LCD LAYOUT

4.2.1 GROUP OPTIONS

Below is the table of available groups of values. To view the values, navigate to the group you require and press **"View"** to view the values within the group.

Alarm	Summary	Commissioning (See 4.2.10)	Set Schedule (See 4.2.22)	Controller (See 4.2.23)	Trend (See 4.2.28)
All Active / Inactive Alarms	**Active Alarms** (4.2.2)	**Setup** ▾ (4.2.11)	**Enable Schedule**	**Details** (4.2.24)	**Room Temperature**
	Unit Enable (4.2.3)	Setup Options (4.2.12)	**Alarm Reset**	**Time** (4.2.25)	**Eff CO2**
	Inputs (4.2.4)	IN16-IN17 Input Setup (4.2.13)	**Purge Schedule**	**Network** (4.2.26)	**Effective Zone Humidity**
	Effective Values (4.2.5)	Fan Commissioning (4.2.14)	**Night Cooling Schedule**	**Firmware** (4.2.27)	**Effective Setpoint**
	Outputs (4.2.6)	Operation Settings (4.2.15)			**Supply Air Temp**
	Zone Sensors ▾ (4.2.7)	Wiring Verification (4.2.16			**Return Air Temp**
	Zone Sensor Status (4.2.8)	**Advanced Setup** ▾ (4.2.17)			**Fresh Air Temperature**
	Zone 1 (4.2.9)	Setup Options (4.2.18)			
	Zone 2 (4.2.9)	Fan Settings (4.2.19)			
	Zone 3 (4.2.9)	Operators Settings (4.2.20)			
	Zone 4 (4.2.9)	Night Cool & Purge (4.2.21)			
	Zone 5 (4.2.9)				
	Zone 6 (4.2.9)				
	Zone 7 (4.2.9)				
	Zone 8 (4.2.9)				

4.2.2 SUMMARY → ACTIVE ALARMS

Name	Description	Value Range
Alarm Reset	Resets all active alarms	Normal / Alarm
Critical Alarm	Critical Alarm only occurs when a safety critical Alarm is triggered.	Normal / Alarm
Maintenance Alarm	Maintenance Alarm occurs when a non-safety maintenance Alarm is triggered.	Normal / Alarm
Condensate Status	Condensate status indicates if there's an active fault with the condensation pump	Normal / Alarm
Heat Pump Status	Heat pump status indicates if there is an active fault with the heat pump.	Normal / Alarm
Supply Filter	Supply filter status indicates if the supply filter is dirty and requires replacement.	Normal / Alarm
Extract Filter	Extract filter status indicates if the extract filter is dirty and requires replacement.	Normal / Alarm
Supply Air Damper Status	Supply Air Damper Status indicates if there is a problem with the Supply Damper.	Normal / Alarm
Supply Fan Alarm	Supply fan alarm triggers if the supply fan stops running when it should be running.	Normal / Alarm
Extract Fan Alarm	Extract fan alarm triggers if the extract fan stops running when it should be running.	Normal / Alarm
Overheat Alarm	Alarm triggers if the electric heater overheats. Manual reset required.	Normal / Alarm
Tacho Feedback	Tacho feedback is used for fan faults when the fan has no fault relay. (XBC10/15)	Normal / Alarm
Thermal Wheel Alarm	Alarm is if the thermal wheel has stopped running when its expected to run.	Normal / Alarm
Sensor Alarm	Alarm triggers if there is an issue with one of the internal temperature sensors.	Normal / Alarm
Fire Alarm	Alarm is manually triggered by	Normal / Alarm
Frost Alarm	Alarm triggers if the temperature falls below	Normal / Alarm
Low SA-T Alarm	Alarm triggers if the inlet temperature falls below Frost Protect Temp.	Normal / Alarm
PAC Board Alarm	Alarm triggers if the DX coil controller has a fault.	Normal / Alarm

4.2.3 SUMMARY → UNIT ENABLE

Name	Description	Value Range
Enable (Network)	Enable via BMS. The unit can also be enabled via VF Enable (IN5).	Off / On
Enable (Schedule)	Enable via Schedule.	Off / On
Occupancy Mode w Runon	Occupancy mode with Runon	Occupied
Hibernate Mode	Hibernate Mode will stop the fans and open LPHW & CW valves fully.	Off / On

4.2.4 SUMMARY → INPUTS

Name	Description	Value Range
Fresh Air Temp	The temperature of the air entering from outside.	-20°C-40°C
Supply Air Temp	The temperature of the air being supplied to the building.	-20°C-40°C
Return Air Temp	The temperature of the air being returned from the building.	-20°C-40°C
Backup Heater Temp	The temperature of the air being supplied to the building after the backup heater.	-20°C-40°C
IN16 CO2	0-10V CO2 Input	0-10V
IN16 Temperature	0-10V Temperature Input	0-10V
IN16 Humidity	0-10V Humidity Input	0-10V
IN16 Pressure	0-10V Pressure Input	0-10V
IN17 CO2	0-10V CO2 Input	0-10V
IN17 Temperature	0-10V Temperature Input	0-10V
IN17 Humidity	0-10V Humidity Input	0-10V
IN17 Pressure	0-10V Pressure Input	0-10V
IN17 Fan Speed Control	0-10V Fan Speed Input	0-10V
IN17 BMS 0-10V	0-10V BMS Input	0-10V
VF Enable	Zero-Volt Switch 1 (Enable)	0V
VF2 Input	Zero-Volt Switch 2 (Configurable)	0V
Fire Alarm	Fire Alarm Input	0V
IN17 Voltage	0-10V Input Signal	0-10V
IN16 Voltage	0-10V Input Signal	0-10V

4.2.5 SUMMARY → EFFECTIVE VALUES

Name	Description	Value Range
Effective Setpoint	The current setpoint the controller is working to.	12°C - 28°C
Room Temperature	The current room temperature (return temperature, IN16/17 or from Zone sensor if fitted)	-20°C-40°C
Eff CO2	The current CO2 levels (Zone Sensor CO2 or IN16/17)	0-20,000
Effective Zone Humidity	The current Humidity level (Zone Sensor RH% or IN16/IN17)	0-100%
Effective Pressure	The current Pressure level (IN16/IN17)	0-3000Pa

4.2.6 SUMMARY → OUTPUTS

Name	Description	Value Range
Supply Fan Output	The output signal to the supply fan. 0-10V (OUT2).	0-100%
Exhaust Fan Output	The output signal to the exhaust fan. 0-10V (OUT1).	0-100%
Heating Demand	The current heat demand output (OUT3).	0-100%
Cooling Demand	The current cooling demand output (OUT4).	0-100%
Fan Enable Cmd	The current fan status output, normally closed when fans in operation (OUT10).	On / Off
Bypass Damper Cmd	The current bypass command. On = Bypass Mode, Off = Heat Recovery Mode (OUT6).	Inactive / Active
Heating / Recirc Cmd	The current heating/recirc command. On = Heat/Recirc, Off = No Heat/No Recirc (OUT8)	On / Off
Cooling Demand Cmd	The current cooling command. On = Cooling, Off = No Cooling (OUT7)	On / Off
Alarm Circuit 1	Critical Alarms Active.	On / Off
Alarm Circuit 2	Maintenance Alarms Active.	On / Off
Fault Relay Cmd	Critical alarm output is active (OUT9).	On / Off

4.2.7 SUMMARY → ZONE SENSORS

Name	Description	Value Range
Zone Sensor Status	A group for the status of the Zone sensors, if connected.	See section 4.2.8 Zone Sensor Status.
Zone 1	A group for Zone sensor at address 199.	See section 4.2.9 Zone 1-8.
Zone 2	A group for Zone sensor at address 200.	
Zone 3	A group for Zone sensor at address 201.	
Zone 4	A group for Zone sensor at address 202.	
Zone 5	A group for Zone sensor at address 203.	
Zone 6	A group for Zone sensor at address 204.	
Zone 7	A group for Zone sensor at address 205.	
Zone 8	A group for Zone sensor at address 206.	

4.2.8 ZONE SENSOR STATUS VALUES (SEE SECTION 4.2.7)

Name	Description	Value Range
Zone 1 Address 199 Online	The status of Zone sensor 1 at address 199.	True / False
Zone 2 Address 200 Online	The status of Zone sensor 2 at address 200.	True / False
Zone 3 Address 201 Online	The status of Zone sensor 3 at address 201.	True / False
Zone 4 Address 202 Online	The status of Zone sensor 4 at address 202.	True / False
Zone 5 Address 203 Online	The status of Zone sensor 5 at address 203.	True / False
Zone 6 Address 204 Online	The status of Zone sensor 6 at address 204.	True / False
Zone 7 Address 205 Online	The status of Zone sensor 7 at address 205.	True / False
Zone 8 Address 206 Online	The status of Zone sensor 8 at address 206.	True / False

4.2.9 ZONE 1-8 VALUES (SEE SECTION 4.2.7)

Name	Description	Value Range
Zone 1-8 Temperature	The current temperature at the Zone sensor.	0-40°C
Zone 1-8 Humidity	The current humidity at the Zone sensor.	0-100%
Zone 1-8 Setpoint	The current setpoint at the Zone sensor.	12-28°C
Zone 1-8 CO2	The current CO2 level at the Zone sensor.	0-2000ppm
Zone 1-8 Fan Speed Request	The current speed request from the Zone sensor.	Auto, Off, Low, Medium, High
Zone 1-8 Occupancy Request	The current occupancy status detected by the Zone sensor.	Occupied / Unoccupied

Note: The Zone sensor must support the mode for it to be fed back to the controller.

4.2.10 COMMISSIONING

Name	Description	Value Range
Setup	A group for basic commissioning values.	See Section 4.2.11
Advanced Setup	A group for advanced commissioning values.	See Section 4.2.17

4.2.11 COMMISSIONING → SETUP

Name	Description	Value Range
Setup Options	A group for the setup options.	See Section 4.2.12
IN16-IN17 Input Setup	A group for IN16 & IN17 Input Setup.	See Section 4.2.13
Fan Commissioning	A group for Fan Commissioning Settings.	See Section 4.2.14
Operation Settings	A group for Operation settings.	See Section 4.2.15
Wiring Verification	A group for Wiring Verification. (Only for Factory Use)	See Section 4.2.16

4.2.12 COMMISSIONING → SETUP → SETUP OPTIONS

Name	Description	Value Range
Unit Selection	Unit Selection. XBC (0), BPS (1), Boxer (2).	States 0-2
Fan Config (Boxer)	The fan configuration (Boxer only). Supply (0), Exhaust (1) or Both (2).	States 0-2
Trickle Mode	Fans will trickle when unit is not enabled & operate in supply temperature mode.	Off / On
IO Damper Fitted	Is Input/Output damper fitted? If so, delay the fan start. See IO Damper Delay.	No / Yes
IO Damper Delay	If an IO damper is fitted, delay the fan startup so the dampers have time to open.	0-120s
VF2 Mode	This allows you to configure the VF2 mode.	States 0-3
Tacho PCB Fitted	Is a tacho PCB fitted for fan fault detection.	No / Yes
PAC Board Fitted	If a PAC board is fitted, this should be enabled to detect a Fault with the board.	No / Yes

4.2.13 COMMISSIONING → SETUP → IN16-IN17 INPUT SETUP

Name	Description	Value Range
IN16 Type	IN16 Function – None (0), N/A (1), N/A (2),010v CO2 Sensor (3), 0-10v Temp Sensor (4), 0-10v Hum Sensor (5) & 0-10v Press Sensor (6)	States 0-6
IN17 Type	IN17 Function-None (0), FS Control (1), 0-10v BMS (2), 0-10v CO2 Sensor (3), 0-10v Temp Sensor (4), 0-10v Hum Sensor (5) or 0-10v Press Sensor (6)	States 0-6
Temp Range Select	Sets the 0-10v temperature range. 0-50°C (0), 0-40°C (1), 0-100°C (2), 0-80°C (3) or 0-90°C (4)	States 0-4
Pressure Range Select	Sets the 0-10v pressure range. 0-25Pa (0), 0-50Pa (1), 0-100Pa (2), 0-300Pa (3), 0-500Pa (4), 0-1000Pa (5), 0-1600Pa (6), 0-2500Pa (7) or 0-3000Pa (8).	States 0-8
CO2 Range Select	Sets the 0-10v CO2 range. 0-2,000ppm (0), 0-4,000ppm (1), 0-5,000ppm (2), 0-10,000ppm (3), 0-20,000ppm (4)	States 0-4
IN16 Is Temperature	Is IN16 in temperature mode?	False / True
IN16 is Humidity	Is IN16 in Humidity mode?	False / True
IN16 is CO2	Is IN16 in CO2mode?	False / True
IN16 is Pressure	Is IN16 in Pressure mode?	False / True
IN17 Is Temperature	Is IN17 in temperature mode?	False / True
IN17 is Humidity	Is IN17 in Humidity mode?	False / True
IN17 is CO2	Is IN17 in CO2mode?	False / True
IN17 is FSC	Is IN17 in FSC mode?	False / True
IN17 is Pressure	Is IN17 in Pressure mode?	False / True
IN17 is BMS	Is IN17 in BMS mode?	False / True

4.2.14 COMMISSIONING → SETUP → FAN COMMISSIONING

Name	Description	Value Range
Run-on (Enable)	Enable fan run on.	0-120s
Fan Boost	Fan boost enable.	Off / On
Supply Fan Boost Speed	Supply fan boost speed (default 100%).	0-100%
Extract Fan Boost Speed	Extract fan boost speed (default 100%).	0-100%
Extract Fan Max	Maximum extract fan speed (default 100%).	0-100%
Extract Fan Min	Minimum extract fan speed (default 20%).	0-100%
Supply Fan Max	Maximum supply fan speed (default 100%).	0-100%
Supply Fan Min	Minimum supply fan speed (default 20%).	0-100%
Heat Pump Fan Min	Minimum fan speed when Heat Pump is fitted (default 40%).	0-100%

4.2.15 COMMISSIONING → SETUP → OPERATION SETTINGS

Name	Description	Value Range
Software Setpoint	Sets the current temperature setpoint.	12-28°C
Heating Output Type	Sets the heating type. None (0), LPHW (1), Electric Heater (2) or 3rd Party (3)	States 0-3
Cooling Output Type	Sets the cooling type. None (0), LPCW (1), Heat Pump (2) or DX (3)	States 0-3
Setpoint Operation	Setpoint Behaviour - Last Changed (0), Software Only (1) or Last Changed with timeout (2).	States 0-2
CO2 Target	Set the current CO2 target	0-2000ppm
Pressure Target	Set the current pressure target	200-600Pa
Humidity Target	Set the current humidity target	40-60%

4.2.16 COMMISSIONING → SETUP → WIRING VERIFICATION (FOR FACTORY USE ONLY)

Name	Description	Value Range
Wiring Verification Mode	Loops through various modes to test wiring.	Off / On
Test Mode (Fan)	Runs the fans at 100% for test purposes.	Off / On
Test Mode (Heater)	Activates the heating relay & sets heating to 100%.	Off / On
Test Mode (Overheat)	Runs the heater at 100% and fans at 0% for test purposes.	Off / On
Test Mode (Cooling - BPS)	Activates the cooling relay & sets cooling to 100%.	Off / On

4.2.17 COMMISSIONING → ADVANCED SETUP

Name	Description	Value Range
Setup Options	A group for the setup options.	See Section 4.2.18
Fan Settings	A group for the fan settings.	See Section 4.2.19
Operators Settings	A group for the operators' settings.	See Section 4.2.20
Night Cool & Purge	A group for the night cooling & purge settings	See Section 4.2.21

4.2.18 COMMISSIONING → ADVANCED SETUP → SETUP OPTIONS

Name	Description	Value Range
Ignore PIR Occ Sensors	Ignore the PIR occupancy sensors	No / Yes
ESC BMS Thermic Output	BMS Output Mode. Auto (0), None (1), Heating (2) or Cooling (3)	States 0-3

4.2.19 COMMISSIONING → ADVANCED SETUP → FAN SETTINGS

Name	Description	Value Range
Auto Run-on Scale Factor	Auto run on scale factor. Default: 2 x	1-10
BMS 0-10V Input	Input signal from the building management system	0-10V
Supply Setback	Enable / Disable supply setback. Overrides supply speed with its Setback Speed.	Off / On
Supply Setback Speed	Sets the setback speed for the supply fan. Default: 30%	0-100%
Extract Setback	Enable / Disable extract setback. Overrides extract speed with its Setback Speed.	Off / On
Extract Setback Speed	Sets the setback speed for the extract fan. Default: 30%	0-100%
Run-on Time (Boost)	Sets the default run on time for boost. Default: 0s	0-120s
Fan Override Timeout	Sets the fan speed override timeout. Default: 3600s (1 hour)	0-7200s
Fan Speed Schedule	Set the fan speed schedule. Default: 0%	0-100%
Max Auto Run-on	Sets the maximum auto run-on time. Default: 600s	0-1200s
Fan Speed Command	Set the fan speed command. Default: 0%	0-100%
Extract Fan Max Volt	Set the end voltage for 100% extract fan speed.	0-10V
Extract Fan Start Volt	Set the end voltage for 0% extract fan speed.	0-10V
Supply Fan Max Volt	Set the end voltage for 100% supply fan speed.	0-10V
Supply Fan Start Volt	Set the end voltage for 0% supply fan speed.	0-10V
Fan Override Operation	Fan override status. Off (0), On (1)	States 0-1
Auto Run-on	Enable / Disable the auto run-on time	Off / On

4.2.20 COMMISSIONING → ADVANCED SETUP → OPERATION SETTINGS

Name	Description	Value Range
Temperature Control Type	Temperature Control Mode, Supply Temperature (0) & Room Temperature (1)	States 0-1
OUT4 Mode	Output 4 Mode. Cooling Demand (0) or ESC Classic BMS (1)	States 0-1
High Temp Alarm	High temperature alarm trigger temperature. Default: 35 °C	35-60°C
STC H/C Pref	Supply Temperature Control Heating & Cooling Duty Preference. Default: 50%	0-100%
STC HX Efficiency	Supply Temperature Control Heat Exchanger Target Efficiency. Default: 80%	0-100%
Max Supply Temp	Maximum Supply Temperature	30-40°C
Min Supply Temp	Minimum Supply Temperature	10-20°C
Trickle Deadband	Temperature Trickle Deadband. Default 5 °K	0-10°K
Tuning Reset	Resets the PID tuning.	False / True
Heat Boost	Enable/Disable heating boost.	Off / On
Heat Boost Setpoint	Set the heat boost setpoint. Default: 35 °C	30-40°C
Setpoint Timeout	The timeout for Zone sensor setpoint overrides. Default: 3600 =s (1 Hour)	0-7200s
Setpoint Schedule	The setpoint schedule temperature.	12-28°C
Frost Protect Fan Off	Frost protection fan off delay. Default: 300s	0-600s
Frost Prot Temp	Frost protection trigger temperature. Default: 4 °C	0-10°C
Damper Override	HX Damper Override. Auto (0), HX (1) or Bypass (2)	States 0-2
Low Temp Alarm	Low temperature alarm trigger temperature. Default: 8 °C	5-15°C
Low Temp Action	Low temperature alarm action. Alarm Only (0) or Alarm & Stop Fans (1)	States 0-1
Alarm Delay	Duration before triggering an alarm. Default: 60 s	0-120s
Deadband	Temperature setpoint deadband. Default: 3 °K (+/- 1.5 °C of setpoint)	0-18°K
Temp Sensors Operation	Temperature sensor operation mode. Zone Sensor Average (0), Return Temp Only (1), Both (2)	States 0-2
Pressure Sensors Operation	Pressure sensor operation mode. Average (0), Maximum (1) & Ignore (2).	States 0-2
Hum Sensors Operation	Humidity sensor operation mode. Average RH% (0), Minimum RH% (1) or Ignore RH% (2)	States 0-2
CO2 Sensors Operation	CO2 sensor operation mode. Average CO2 (0), Minimum CO2 (1) or Ignore CO2 (2)	States 0-2
Recirc Offset	Recirculation Offset Temperature. Default: 5 °C	0-100°C
Recirc Override	Recirculation damper override. Auto (0), Open (1) or Close (2).	States 0-2
R32 Delay	Fan run-on delay for R32 gas (if heat pump / PAC board fitted). Default: 60s	0-300s
Backup Heater Differential	Backup heater differential temperature target. Default: -2 °C	-20-20°C

4.2.21 COMMISSIONING → ADVANCED SETUP → NIGHT COOL & PURGE

Name	Description	Value Range
Night C Mode	Night cooling mode	Off / On
Night C Min Temp	Night cooling minimum temperature. Default: 12°C	0-100°C
Night C Schedule	Night cooling schedule active.	Off / On
Night C Fan Speed	Night cooling fan speed.	0-100%
Purge Schedule	Purge schedule	Off / On
Purge Active	Purchase active	Off / On
Purge Min Temp	Purge minimum temperature	0-100°C
Purge Fan Speed	Purge fan speed.	0-100%
Purge Low SA-T Setpoint	Purge low supply air temperature setpoint.	5-15°C

4.2.22 SET SCHEDULE

Name	Description	Value Range
Enable Schedule	A 7 day schedule for enable signal.	See Section 4.3
Alarm Reset	A 7 day schedule to reset alarms.	
Purge Schedule	A 7 day schedule for fan purge.	
Night Cooling Schedule	A 7 day schedule for night cooling.	

4.2.23 CONTROLLER

Name	Description	Value Range
Details	A group for the controller details.	See Section 4.2.24
Time	A group for the controller's time and date settings.	See Section 4.2.25
Network	A group for the controller's network settings.	See Section 4.2.26
Firmware	A group for the controller's firmware information.	See Section 4.2.27

4.2.24 CONTROLLER → DETAILS

Name	Description	Value Range
Units	Change the unit system for the controller. Imperial (0), Metric (1)	States 0-1
Language	Change the language. English highly recommended.	States 0-30
Model Name	The controllers model name.	Text
Hardware Version	The controller's hardware version.	Text
Application Name	The controller's application name.	Text
Equipment Template Version	The controller's equipment template version.	Text
Equipment Archive Version	The controller's equipment archive version.	Text
Equipment View Version	The controller's equipment view version.	Text
Unit Serial Number	The controller's serial number.	Text
Device Status	The controller's device status.	States 0-43
Display Contrast	The controller's LCD display contrast.	2-6
Relearn System	Force controller to relearn the system.	False / True

4.2.25 CONTROLLER → TIME

Name	Description	Value Range
Time	Set the time.	See Section 3.1 Time Synchronisation
Date	Set the date.	
Time Zone	Set the time zone.	

4.2.26 CONTROLLER → NETWORK

Name	Description	Value Range
Device ID	The network device ID for the controller.	0-4194302
Device Name	The network device name for the controller.	Text
Description	The network device description for the controller.	Text
Software Version	The current version of the software on the controller.	Number
N2 Address	The N2 address.	1-253
Modbus Address	The Modbus Address	1-247
BACnet Address	The BACnet address.	4-127
FC Comm mode	Set current FC Bus communication mode.	States 0-4
Communication Status	The current network communication status.	States 0-4
Baud Rate	Set the FC Bus Baud rate for RS485 connections.	States 0-4
Operating Baud Rate	The operating board rate.	States 0-4
BACnet Encoding Type	Set the BACnet encoding type to use.	States 0-3

4.2.27 CONTROLLER → FIRMWARE

Name	Description	Value Range
Firmware Status	Firmware checks. Firmware Versions OK (0) or Firmware Versions Not OK (1)	States 0-1
Firmware Main Version	The main firmware version	Text
Equipment Template Version	The equipment template version	Text
Equipment Archive Version	The equipment archive version	Text
Equipment View Version	The equipment view version	Text

4.2.28 TREND

Name	Description	Value Range
Room Temperature	View the trend graph for room temperature.	Chart
Eff CO2	View the trend graph for effective CO2 (if fitted).	Chart
Effective Zone Humidity	View the trend graph for zone humidity (if fitted).	Chart
Effective Setpoint	View the trend graph for effective setpoint.	Chart
Supply Air Temperature	View the trend graph for supply air temperature.	Chart
Return Air Temperature	View the trend graph for return air temperature.	Chart
Fresh Air Intake	View the trend graph for fresh air temperature.	Chart

4.3 SCHEDULES

In order to set a schedule, first select a schedule from the Set Schedule section of the app. Click View on the schedule you wish to set. Press + Add and the schedule dialog will appear.

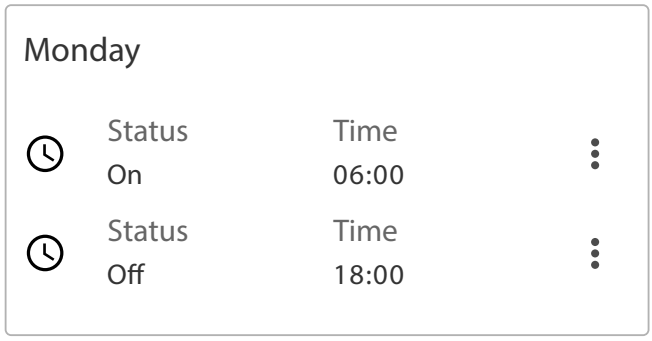
4.3.1 ADD SCHEDULE

1. First, choose a day by selecting the calendar icon next to **"Choose day of week"**.
2. Select the day of week you wish to set the enable/disable signal on.
3. Choose a time you wish for that signal to be set. For example, 6:00 am Monday.
4. Set the Enable state to **"On"** to turn on the Unit. This state will remain until another instruction occurs changing it to **"Off"**. For example, an additional schedule object for 18:00 to **"Off"** for Monday will turn the unit back off at 6:00pm.

You should now see a schedule for Monday (See Fig 3).

5. Repeat this process for the remaining days of the week.

Fig 3: Schedule Example



4.3.2 DELETE/EDIT SCHEDULE

To remove a schedule object from the schedule click ⋮ next to the object you wish to modify.

5.0 BASIC COMMISSIONING

5.1 BASE CONFIGURATION

Name	Description	Value Range
Unit Selection	Select the unit type.	See Section 4.2.12
Heating Type	Select the heating type.	See Section 4.2.15
Cooling Type	Select the cooling type.	
Supply Fan Min	Set the minimum supply fan speed. (Default 20%)	See Section 4.2.14
Supply Fan Max	Set the minimum supply fan speed. (Default 100%)	
Extract Fan Min	Set the minimum extract fan speed. (Default 20%)	
Extract Fan Max	Set the minimum extract fan speed. (Default 100%)	

6.0 MAINTENANCE

It is important that maintenance checks are recorded and that the schedule is always adhered to, in all cases, the previous report should be referred to.

6.1 ROUTINE MAINTENANCE

Clean all areas of unit by removing any accumulated dust with a low power vacuum cleaner and use a damp cloth to clean the control. Do not spray any cleaning agent directly onto the control.

7.0 WARRANTY

The 5-year warranty starts from the day of delivery and includes parts and labour for the first year. The remaining period covers replacement parts only.

This warranty is void if the equipment is modified without authorisation, is incorrectly applied, misused, disassembled, or not installed, commissioned and maintained in accordance with the details contained in this manual and general good practice.

The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuaire International Sales office for further details.

Failure to maintain the unit as recommended will invalidate the warranty.

8.0 END-OF-LIFE AND RECYCLING

Ensure that Nuaire product is made safe from any electrical / water / refrigerant supplies before dismantling commences. This work should only be undertaken by a qualified person in accordance with local authority regulations and guidelines, taking into account all site based risks.

Where possible Nuaire use components which can be largely recycled when the product reaches its end-of-life:

- Fans, motors, controls, actuators, cabling and other electrical components can be segregated into WEEE recycling streams.
- Sheet metal parts, aluminium extrusion, heating/cooling coils and other metallic items can be segregated and fully recycled.
- EPP, plastic ducting, nylon corner pieces, plastic heat exchangers, packaging material and other plastic components can be segregated into mixed plastic and widely recycled.
- Cardboard packaging, wood, used filters and other paper components can be largely recycled or fully processed in energy from waste centres.
- Remaining Items can be further segregated and processed in accordance with the zero waste hierarchy. Please call After Sales Support for further information on items not listed above.
- Batteries should be removed and disposed of in accordance with local regulations for battery recycling

9.0 AFTER SALES AND REPLACEMENT PARTS

For technical assistance or further product information, including spare parts and replacement components, please contact the After Sales Department.

If ordering spares please quote the serial number of the unit together with the part number, if the part number is not known please give a full description of the part required. The serial number will be found on the identification plate attached to the unit casing.

Telephone 02920 858 400
aftersales@nuaire.co.uk

Technical or commercial considerations may, from time to time, make it necessary to alter the design, performance and dimensions of equipment and the right is reserved to make such changes without prior notice.

10.0 NOTES