

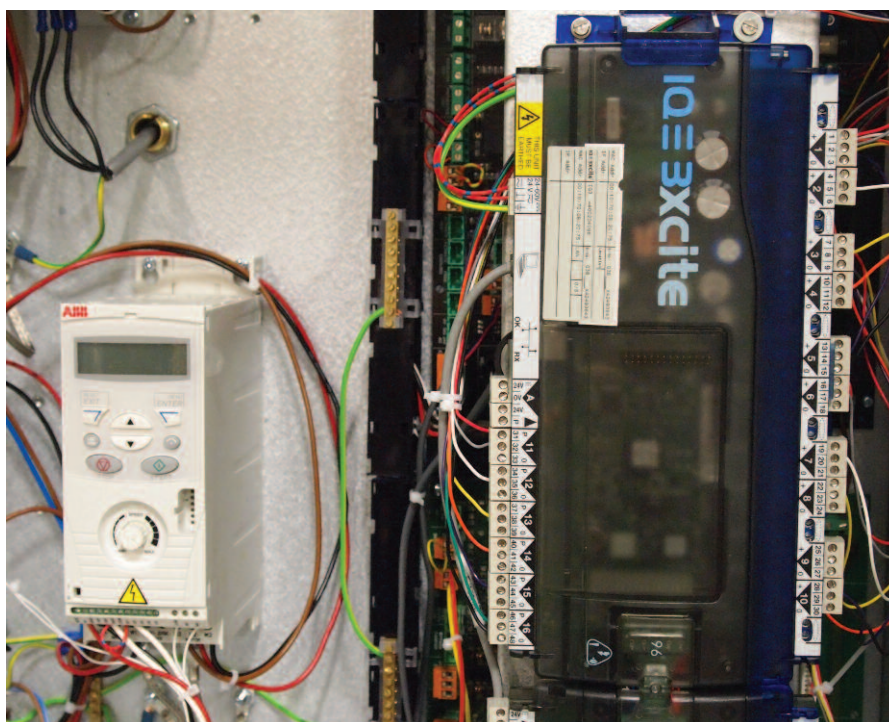
## DESCRIPTION OF CONTROL



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### NUAIRE UNIT CONTROLLED BY AN ECOSMART2 CONTROLLER

A comprehensive unit control specification - factory fitted and tested to provide guaranteed operation from a single supplier – one who will take responsibility.



ECOSMART2 - ENHANCED DEMAND CONTROLLED VENTILATION

#### GENERAL

The Nuaire unit contains the following controllable items:

- Inlet Damper (if fitted).
- Exhaust Damper (if fitted).
- Heat Recovery and Bypass Damper.
- Frost Heating coil (if fitted).
- Heating Coil.
- Cooling Coil.
- Supply Fan Speed.
- Extract Fan Speed.

All setpoints are user adjustable.

Heating and Cooling can be manually overridden off.

Software designed for ETHERNET connection to main head end.

#### RUN DEMANDS

The unit can be enabled in one of two ways, selectable via software switch:

- Local Control.
- Remotely enabled.

Should the emergency input not be healthy, the unit is disabled immediately.

#### LOCAL CONTROL (IQVIEW4 / SDU)

Under local control the unit will be enabled in the following conditions:

- Optimum Start Stop (OSS).
- Override Extension.
- Fabric Protection
- Night Cooling mode.
- Boost Mode.

In OSS the unit is enabled so that the space temperature should reach setpoint by the users defined time profile (Occupation times). The unit will continue to run until the end of these times.

Override Extension is selectable via software switch and will enable the plant as if in OSS for an hour.

In Fabric Protection should the space temperature drop below the Fabric Protection setpoint then the unit is also enabled until it rises 1° C above this setpoint.

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The unit integrated Ecosmart2 system provides the facility for operational efficiency and energy saving by allowing a comprehensive range of unitary control functions and / or full BMS integration (by others) via standard BACnet configuration.

Night Cooling mode is initiated when the following conditions are met:

- Average inlet temperature between 1pm and 6pm above space heating setpoint.
- Average daytime space temperature above the space cooling setpoint.
- The intake temperature is at least 2° C less than the space.
- The space temperature is above the heating setpoint.
- The inlet temperature is above the low limit supply setpoint.
- Outside of OSS times.

Boost Mode is selectable via software switch and will run the unit at maximum heating (with high limit trim) for 1 hour or until the space temperature is 3° C above the heating setpoint.

#### REMOTE CONTROL

Run demands sent from remote controllers via inter controller communications.

Boost mode and Override Extension are still available.

#### CONTROL

Once a run demand is received the Inlet and Exhaust Dampers, if fitted, are opened.

When the open signals are received, the Supply and Extract Fans are enabled at minimum speed.

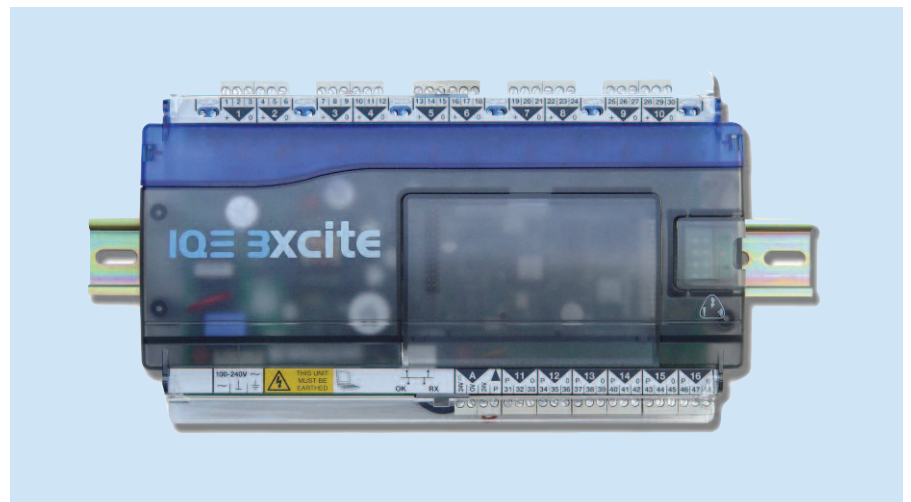
Should either damper not open after a timed setpoint, an alarm is raised.

The alarm has to be reset via software switch.

**Note: Hard re-set - airflow sensor fail = power down reset.**

Should a Damper fail the associated Fan is held off but the other Fan can run at minimum speed.

Once the Supply and Extract Fans give a flow signal then control is enabled (temperature and CO2 control ).



#### TEMPERATURE CONTROL - GENERAL

The space temperature is controlled to setpoint via PI Loops.

With increasing heating demand the following items are staged and modulated open:

- Heat Exchanger if heating mode available.
- Heating valve.

With increasing cooling demand the following items are staged and modulated open:

- Heat Exchanger if cooling mode available.
- Cooling valve.

A space heating and cooling demand cannot happen at the same time.

Should the supply temperature rise above or fall below the high or low temperature limits then the demands shall be backed off.

## DESCRIPTION OF CONTROL -

### NUAIRE UNIT CONTROLLED BY AN ECOSMART2 CONTROLLER

The system incorporates a web enabled Trend IQ3x96/BAC/24 controller, and is augmented by application specific unit interface and diagnostic circuits. Controller software is optimised and pre-configured, and each unit / control assembly is fully functionally tested at works (refer to technical documentation for full controller functional specification).

#### FROST VALVE

If fitted this is controlled whenever the unit is enabled to maintain the off coil temperature to setpoint by modulation of the valve.

The control is via a PI Loop.

If the off coil temperature drops below this setpoint by 1° C for 30 seconds then the unit is held off and an alarm is raised. This Low Intake Temperature Shutdown will require a software restart to enable the unit. When the unit is off the Frost Coil valve will be shut unless a 1st Stage Frost or Low Intake Temperature Shutdown condition exists when it is opened 80%.

#### HEAT EXCHANGER

Should the off frost coil temperature be above the extract temperature by 2° C or more and control is enabled, then the Exchanger is available in Cooling mode.

Should the off frost coil temperature be below the extract temperature by 2° C or more and control is enabled, then the Exchanger is available in Heating mode.

The Heat Exchanger dampers can be modulated between full bypass of the Exchanger to 100% Heat Recovery.

With increasing space heating demand (with high limit trim) the dampers will be modulated towards 100% heat exchange if the Heating mode is available. If not available then it will remain in full by pass mode.

With increasing space cooling demand (with low limit trim) the dampers will be modulated towards 100% heat exchange if the Cooling mode is available. If not available then it will remain in full by pass mode.

In Fabric Protection and when the unit is off, the Heat Exchanger will be in 100% Heat Recovery.

In Night Time Cooling Mode the Heat Exchanger will be in Full Bypass.

#### HEATING VALVE

The heating valve is modulated to meet the space demands providing the following conditions are met.

- Outside Air Temperature below the Hold Off Heating setpoint.
- The control has been enabled.
- The Heating manual override off switch is not selected.

If these are not met then the valve is shut unless the following conditions exist:

- 1st Stage Frost condition
- Low Intake Temperature Shutdown .
- Low Supply Temperature Shutdown.

When the valve will be opened 80%.

#### COOLING VALVE

The cooling valve is modulated to meet the space demands providing the following conditions are met.

- Outside Air Temperature above the Hold Off Cooling setpoint.
- The control has been enabled.
- The Cooling manual override off switch is not selected.

If these are not met then the valve is shut unless the following conditions exist:

- 1st Stage Frost condition
- Low Intake Temperature Shutdown .
- Low Supply Temperature Shutdown.

When the valve will be opened 50%.

#### CO2 CONTROL (NOT STANDARD)

Once control is enabled during OSS, Boost or Extension, with increasing CO2 levels the Supply Fan speed is modulated from the minimum speed up to its maximum speed setpoint.

The Extract Fan tracks the Supply Fan speed by a percentage setpoint.

## DESCRIPTION OF CONTROL - NUAIRE UNIT CONTROLLED BY AN ECOSMART2 CONTROLLER

Units fitted with Ecosmart2 control (code example XBC45-H-LNT) have a 5 year warranty.

### FANS

The Supply and Extract fans are enabled once a run demand is given and the dampers (if fitted) are open. They run at minimum speed setpoint until the flow signals are received when they are controlled as follows:

- During OSS, Heating Boost or Extension, the Supply Fan is modulated from minimum speed to maximum speed to maintain the CO2 Extract level to setpoint. The Extract Fan speed tracks the Supply Fan speed according to the percentage setpoint.
- In Fabric Protection the Fans remain at their minimum speed setpoints.
- In Night Time Cooling the Supply and Extract Fans run at a medium speed setpoint. Should either Fan flow fail the other will run on but at it's minimum speed setpoint. The failed Fan is latched off and has to be reset via software switch.

### SHUTDOWN

Should the following conditions arise the unit is shut down:

- Emergency condition.
- Supply temperature below the low limit supply temperature setpoint for 5 minutes.
- Off Frost Coil 1° C below the Off Frost Coil setpoint for 30 seconds.
- Both Dampers failed to open.
- Both Fans flow failed.

When the Emergency condition clears the unit will restart automatically. All other conditions require a software switch reset to resume.

### FROST PROTECTION

Should the outside air temperature drop below the 1st Stage Frost setpoint then a 1st Stage Frost condition exists. If the unit is off the LTHW valves are driven to 80% open and the ChW valve to 50%. This is to give protection against freezing in the pipes.

### ALARMS

#### Maintenance Alarms

There are the following:

Sensors out of limits or read failures.  
Filter Dirty.  
Supply Fan Service Interval.  
Extract Fan Service Interval

#### Plant Alarms

There are the following:

Intake Damper Failed.  
Exhaust Damper Failed.  
Supply Fan Flow Failed.  
Extract Fan Flow Failed.  
Space Temperature High.  
Space Temperature Low.

#### Critical Alarms

There are the following:

Supply Fan exceeded Service Life.  
Extract Fan exceeded Service Life.  
Low Intake temperature shutdown.  
Low Supply temperature shutdown.  
Both Dampers failed to open.  
Both Fans flow failed.  
Emergency Shutdown.

#### Setpoints

All the following are user adjustable within engineered limits:

Space @ 20° C.  
Space deadband @ 2° C.  
Space High Temperature @ 24° C.  
Space Low Temperature @ 16° C.  
Supply Duct Low Limit @ 12° C.  
Supply Duct High Limit @ 34° C.  
Off Frost Coil @ 3° C.  
CO2 @ 500 ppm.  
1st Stage Frost @ 3° C.  
Fabric Protection @ 10° C.  
Extract Fan % of Supply Fan speed @ 90%.  
Supply Fan Minimum Speed @ 20%.  
Extract Fan Minimum Speed @ 20%.  
Supply Fan Medium Speed @ 50%.  
Extract Fan Medium Speed @ 50%.  
Damper Open Grace Time @ 90 seconds.  
Heating Hold Off @ 18° C.  
Cooling Hold Off @ 22° C.

**Note: Settings should be checked /altered to suit the mode of operation required for the application.**



## DESCRIPTION OF CONTROL - SUMMARY SPECIFICATION OF OPTIONS

To help you select the appropriate control solution for your application, simply refer to one of the options below. For the full range and technical details, please visit [www.nuairegroup.com](http://www.nuairegroup.com)



(NT)	
BMS compatible	Y
Commissioning control	Y
Run/fail signal (volt free)	Y
Dirty filter monitor	Y
Inverter control (3 phase)	Y
Speed control (single phase)	Y
Pre-piped coil (C/W DRV)	Y
Motorised control valve (cw actuators)	Y
Air off temp stat	Y
Frost protection	Y
Heat dissipation run on	Y
Plug in sensors	Y
Trickle & boost switch	Y
Automatic bypass	Y
Ethernet connection to Trend or BACnetIP	Y
Time control	Y
Web connectivity	Y
Energy monitoring	Participation via Trend network
Energy metering	Participation via Trend network

### TOUCH SCREEN & MANUAL USER CONTROLS



IQVIEW4 Touch screen display. (6 x 4 inch).  
FPK/Plate-Mounting plate.  
IQVIEW4/SM BOX.  
Surface mount box for wall or panel.  
Transformer for IQVIEW4 included.  
ACC/24V-230/24 VAC, 36 VA



IQVIEW8 Touch screen display. (10 x 6 inch).  
IQVIEW8/SM BOX-Surface mount box  
ECOSMART2DescriptionOfControlfor flat surfaces.  
Transformer for IQVIEW8 included.  
ACC/24V-230/24 VAC, 36 VA



SDU-xcite Display.  
RD/SDU-IQ2COMMSCABLE/3m -  
RJ11 plug to RJ11 plug cable (3m) for  
SDU-xcite.

## DESCRIPTION OF CONTROL - OPTIONAL SENSORS

### Thermistor temperature sensors



Code: TB/T1/S – For duct or immersion use – short 150mm

TB/T1/L – For duct use only – long 400mm

#### DESCRIPTION

Low cost thermistor sensors comprising insertion, clamp-on, and outside air versions.

The insertion sensor may be used for duct or immersion purposes. It has a 6 mm diameter brass probe which is suitable for retrofit immersion applications and will fit most existing pockets (universal fitting kit option).

#### FEATURES

- Low cost
- High quality thermistors
- Brass probes
- M20 conduit entry with M16 cable gland
- IP67 housing
- Quarter turn quick release lid
- Easy to wire
- Universal fitting kit option for retrofit of immersion sensors
- Adjustable insertion depth flange option for duct sensors

### Duct humidity and temperature sensors



Code: HT/D – Duct and thermistor sensor (+/-3%)

#### DESCRIPTION

Duct mounted relative humidity and temperature sensors for HVAC applications. The certified 2% high accuracy (1/2%) and standard 3% versions offer excellent linearity and stability over a wide humidity range (10 to 90 %RH).

#### FEATURES

- Pre-calibrated for ease of commissioning
- IP65
- Operates over 10 to 100 %RH non-condensing
- ± 3% accuracy versions
- 2 part connectors for ease of installation
- Humidity sensor element protected by replaceable filter
- Capacitive humidity sensing element provides excellent long term stability
- Adjustable depth duct mounting flange option

### CO2 sensors



Code: CO2/T/D – Duct sensor  
CO2/T/S – Space carbon dioxide concentration and temperature sensor

#### DESCRIPTION

The CO2 duct and space sensors monitor the carbon dioxide concentration and temperature of the air.

The space sensors have additional options of humidity monitoring and a 4 digit display. The display will show the measured values in succession. The duct sensor has a quick-release lid to facilitate installation.

#### FEATURES

- Low cost, high quality thermistor temperature sensor
- Humidity monitoring option for space sensor
- Optional digital display for space sensor
- IP67 housing (duct sensor)
- Quarter turn quick release lid (duct sensor)
- Two part terminals to facilitate wiring
- 24 Vac/dc supply
- Adjustable depth duct mounting flange option

# DESCRIPTION OF CONTROL - POINTS LIST - CONNECTION CHART

## PCB-A TO IQ3 CONNECTION CHART

MUX		PCB-A		IQ3xcite/96/BAC/24			
Voltage	Description	Terminal No.	Port No.	DI	AI	DO	AO
	Shutdown	A10	1	1			
	Supply Fan Health	A24	2	1			
	Fresh Air Temp	A19	3		1		
	Delivery Air Temp	A20	4		1		
	Preheat Air Temp	A21	5		1		
	Space Temp	A16	6		1		
	Active Sensor Input	A22	7		1		
MUX Input 1	4V	Heating Activate	A13	8		1	
	2V	Switched Live	A01				
		Unit Activate	A11				
	1V	Inlet Filter dP Switch	A17				
	0.5V	Inlet Damper End Switch	A12				
MUX Input 2	4V	Pre-heater Trip	A08	9		1	
	2V	Re-heater Trip	A07				
	1V	Activate Freecooling	A15				
	0.5V	Activate Cooling	A14				
	Not In Use	A18	10		1		
	Supply Fan Drive	A23	11				1
	LPHW Re-Heat Drive	A26	12				1
	Electric Re-Heat Drive	A27					
	Cooling Drive	A25	13				1
	LPHW Pre-Heat Drive	A28	14				1
	Electric Pre-Heat Drive	A29					
MUX Output A	4V	Fault Relay	A03	15			1
	2V	Frost Relay	A06				
	1V	Recirc. Damper Drive	A31				
	0.5V	Inlet Damper Drive	A30				
		Not In Use	A32				

## PCB-B TO 4UI/4AO CONNECTION CHART

MUX		PCB-B		4UI/4AO			
Voltage	Description	Terminal No.	Port No.	DI	AI	DO	AO
	Extract Fan Health	B45	1	1			
	Not In Use	B34	2	1			
	Extract Air Temp	B43	3		1		
MUX Input 3	4V	Condensate Pump Alarm	B33	4		1	
	2V	Thermal Wheel Status	B39				
	1V	Extract Filter dP Switch	B37				
	0.5V	Discharge Damper End Switch	B38				
	Extract Fan Drive	B44	5				1
MUX Output B	2V	Heat Wheel Drive	B47	6			1
	1V	230V Thermal Op Damper	B40				
	1V	Bypass Damper Drive	B41				
	0.5V	Discharge Damper Drive	B42				
		Not In Use	B35				
	Not In Use	B36	8				1

AI = Analogue Input. A physical input to the control module.  
 AO = Analogue Output. A physical output from the control module.  
 DI = Digital Input. A physical input to the control module.  
 DO = Digital Output. A physical output from the control module.



## DESCRIPTION OF CONTROL - IQ3 BACnet PICS - INFORMATION

### BACnet BUILDING CONTROLLER (B-BC)

Product	Model	Version	BTL Listing
Trend Open Network Node	TONN/2xx/15VDC (All Variants), TONN/6xx/15VDC (All Variants)	3.5	April 2008

### BACnet APPLICATION SPECIFIC CONTROLLER (B-ASC)

Product	Model	Version	BTL Listing
IQeco	IQeco 31, IQeco 35, IQeco 35, IQeco 38, IQeco 39, IQeco VAV P, IQeco VAV P A	2.20	April 2013
TOUCHVIEW Display Americas only	TR-TOUCHVIEW, TR-TOUCHVIEW-W	5.10	February 2012
TOUCHVIEW Display Americas only	TR-TOUCHVIEW, TR-TOUCHVIEW-W	5.10	February 2012
IQ3xcite Controller	IQ3XCITE/.../BAC, (all variants), IQ3XACT/.../BAC, (all variants)	2.1	December 2008

# DESCRIPTION OF CONTROL -

## IQ3 BACnet PICS - INFORMATION

### 1. BACNET PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT

**Date:** 05-Apr-2012  
**Vendor Name:** Trend Control Systems Ltd.  
**Product Name:** IQ3  
**Product Model Number:** IQ3xcite/000/BAC..., IQ3xact/012/BAC., IQ3xcite/016/BAC..., IQ3xcite/096/BAC..., IQ3xcite/128/BAC..., IQ3xcite/... + IQ3xcite/BAC/UP, IQ3xact /... + IQ3xact/BAC/UP  
**Applications Software Version:** N/A **Firmware Revision:** 3.0 **BACnet Protocol Revision:** 4

#### 1.1. PRODUCT DESCRIPTION

The IQ3 is a configurable plant controller using BACnet over IP to interface with 3rd party BACnet systems.

#### 1.2. BACNET STANDARDISED DEVICE PROFILE (ANNEX L)

- BACnet Operator Workstation (B-OWS)
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)

#### 1.3. LIST ALL BACnet INTEROPERABILITY BUILDING BLOCKS SUPPORTED (ANNEX K)

ID	BIBB Title	Title
1.1	DS-RP-A	Data Sharing-ReadProperty-A
1.2	DS-RP-B	Data Sharing-ReadProperty-B
1.4	DS-RPM-B	Data Sharing ReadPropertyMultiple-B
1.7	DS-WP-A	Data Sharing-WriteProperty-A
1.8	DS-WP-B	Data Sharing-WriteProperty-B
1.10	DS-WPM-B	Data Sharing-WritePropertyMultiple-B
1.12	DS-COV-B	Data Sharing-ChangeOfValue-B
2.2	AE-N-I-B	Alarm and Event-Notification Internal-B
2.11	AE-INFO-B	Alarm and Event-Information-B
3.4	SCH-R-B	Scheduling Readable B
4.2	T-VMT-I-B	Trending-Viewing and Modifying Trends Internal- B
4.5	T-ATR-B	Trending_Automated Trend Retrieval-B
5.1	DM-DDB-A	Device Management-Dynamic Device Binding-A
5.2	DM-DDB-B	Device Management-Dynamic Device Binding-B
5.4	DM-DOB-B	Device Management-Dynamic Object Binding-B
5.6	DM-DCC-B	Device Management-DeviceCommunicationControl-B
5.12	DM-TS-B	Device Management-TimeSynchronisation-B
5.14	DM-UTC-B	Device Management-UTCTimeSynchronisation-B

#### 1.4. SEGMENTATION CAPABILITY

- Segmented requests supported      Window Size = 1
- Segmented responses supported      Window Size = 1

#### 1.5. STANDARD OBJECT TYPES SUPPORTED

An object type is supported if it may be present in the device. For each standard Object Type supported provide the following data:

- 1) Whether objects of this type are dynamically creatable using the CreateObject service.
- 2) Whether objects of this type are dynamically deletable using the DeleteObject service.
- 3) List of the optional properties supported.
- 4) List of all properties that are writable where not otherwise required by this standard.
- 5) List of proprietary properties and for each its property identifier, datatype, and meaning.
- 6) List of any property range restrictions.

## DESCRIPTION OF CONTROL - IQ3 BACnet PICS - INFORMATION

### 1.5.1. ANALOGUE INPUT OBJECT TYPE

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported:
  - BP\_DEVICE\_TYPE
  - BP\_RELIABILITY
  - BP\_EVENT\_ENABLE
  - BP\_HIGH\_LIMIT
  - BP\_LIMIT\_ENABLE
  - BP\_LOW\_LIMIT
  - BP\_NOTIFICATION\_CLASS
  - BP\_TIME\_DELAY
  - BP\_ACKED\_TRANSITIONS
  - BP\_NOTIFY\_TYPE
  - BP\_DEADBAND
  - BP\_EVENT\_TIMESTAMPS
  - BP\_COV\_INCREMENT
4. Writeable Properties:
  - BP\_EVENT\_ENABLE
  - BP\_HIGH\_LIMIT
  - BP\_LIMIT\_ENABLE
  - BP\_LOW\_LIMIT
  - BP\_NOTIFICATION\_CLASS
  - BP\_TIME\_DELAY
  - BP\_COV\_INCREMENT
5. Proprietary Properties: None
6. Property Range Restrictions:
 

BP_HIGH_LIMIT	-1e20 to 1e20, resolution: 7 digits
BP_LOW_LIMIT	-1e20 to 1e20, resolution: 7 digits
BP_TIME_DELAY	0 to 172800, resolution: 1

### 1.5.2. ANALOGUE OUTPUT OBJECT TYPE

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported:
  - BP\_DEVICE\_TYPE
  - BP\_RELIABILITY
  - BP\_COV\_INCREMENT
4. Writeable Properties:
  - BP\_PRESENT\_VALUE
  - BP\_COV\_INCREMENT
5. Proprietary Properties: None
6. Property Range Restrictions:
 

BP_PRESENT_VALUE	-1e20 to 1e20, resolution: 7 digits
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### 1.5.3. ANALOGUE VALUE OBJECT TYPE

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported:
  - BP\_RELIABILITY
  - BP\_COV\_INCREMENT
4. Writeable Properties:
  - BP\_PRESENT\_VALUE
  - BP\_COV\_INCREMENT
  - BP\_UNITS
5. Proprietary Properties: None
6. Property Range Restrictions:
 

BP_PRESENT_VALUE	-1e20 to 1e20, resolution: 7 digits
BP_UNITS	0 to 255 bytes

### 1.5.4. BINARY INPUT OBJECT TYPE

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported:
  - BP\_DEVICE\_TYPE
  - BP\_ALARM\_VALUE
  - BP\_ELAPSED\_ACTIVE\_TIME
  - BP\_EVENT\_ENABLE
  - BP\_NOTIFICATION\_CLASS
  - BP\_NOTIFY\_TYPE
  - BP\_RELIABILITY
  - BP\_TIME\_DELAY
  - BP\_ACKED\_TRANSITIONS
  - BP\_EVENT\_TIME\_STAMPS
  - BP\_TIME\_OF\_ACTIVE\_TIME\_RESET
4. Writeable Properties:
  - BP\_ALARM\_VALUE
  - BP\_ELAPSED\_ACTIVE\_TIME
  - BP\_EVENT\_ENABLE
  - BP\_NOTIFICATION\_CLASS
  - BP\_TIME\_DELAY
5. Proprietary Properties: None
6. Property Range Restrictions: None
 

BP_ELAPSED_ACTIVE_TIME	0 to 235926008, resolution: 1
BP_TIME_DELAY	0 to 172800, resolution: 1

### 1.5.5. BINARY OUTPUT OBJECT TYPE

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported:
  - BP\_DEVICE\_TYPE
  - BP\_CHANGE\_OF\_STATE\_COUNT
  - BP\_ELAPSED\_ACTIVE\_TIME
  - BP\_RELIABILITY
  - BP\_CHANGE\_OF\_STATE\_TIME
  - BP\_TIME\_OF\_STATE\_COUNT\_RESET
  - BP\_TIME\_OF\_ACTIVE\_TIME\_RESET
  - BP\_TIME\_DELAY
  - BP\_NOTIFICATION\_CLASS
  - BP\_FEEDBACK\_VALUE
  - BP\_EVENT\_ENABLE
  - BP\_ACKED\_TRANSITIONS
  - BP\_NOTIFY\_TYPE
  - BP\_EVENT\_TIME\_STAMPS
4. Writeable Properties:
  - BP\_PRESENT\_VALUE
  - BP\_CHANGE\_OF\_STATE\_COUNT
  - BP\_ELAPSED\_ACTIVE\_TIME
  - BP\_TIME\_DELAY
  - BP\_NOTIFICATION\_CLASS
  - BP\_EVENT\_ENABLE
5. Proprietary Properties: None
6. Property Range Restrictions:
 

BP_CHANGE_OF_STATE_COUNT	0 to 1,000,000,000
BP_ELAPSED_ACTIVE_TIME	0 to 235926008, resolution 1
BP_TIME_DELAY	0 to 172800, resolution: 1

# DESCRIPTION OF CONTROL -

## IQ3 BACnet PICS - INFORMATION

### 1.5.6. BINARY VALUE OBJECT TYPE

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported:
  - BP\_RELIABILITY
4. Writeable Properties:
  - BP\_PRESENT\_VALUE
5. Proprietary Properties: None
6. Property Range Restrictions: None

### 1.5.7. DEVICE OBJECT TYPE

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported:
  - BP\_LOCATION
  - BP\_MAX\_SEGMENTS\_ACCEPTED
  - BP\_LOCAL\_DATE
  - BP\_LOCAL\_TIME
  - BP\_UTC\_OFFSET
  - BP\_DAYLIGHT\_SAVINGS\_STATUS
  - BP\_APDU\_SEGMENT\_TIMEOUT
  - BP\_ACTIVE\_COV\_SUBSCRIPTIONS
4. Writeable Properties:
  - BP\_LOCAL\_DATE
  - BP\_LOCAL\_TIME
  - BP\_UTC\_OFFSET
5. Proprietary Properties: None
6. Property Range Restrictions:
  - BP\_UTC\_OFFSET - 780 to +780, resolution: 1
  - BP\_LOCAL\_DATE 01/01/2000 to 12/31/2099

### 1.5.8. NOTIFICATION CLASS OBJECT TYPE

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported: None
4. Writeable Properties:
  - BP\_RECIPIENT\_LIST
5. Proprietary Properties: None
6. Property Range Restrictions: None

### 1.5.9. SCHEDULE OBJECT TYPE

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported:
  - BP\_WEEKLY\_SCHEDULE
  - BP\_EXCEPTION\_SCHEDULE
4. Writeable Properties: None
5. Proprietary Properties: None
6. Property Range Restrictions: None

### 1.5.10. TREND LOG OBJECT

1. Creatable: No
2. Deletable: No
3. Optional Properties Supported:
  - BP\_RECORDS\_SINCE\_NOTIFICATION
  - BP\_LAST\_NOTIFY\_RECORD
  - BP\_NOTIFICATION\_CLASS
  - BP\_EVENT\_ENABLE

- BP\_ACKED\_TRANSITIONS
- BP\_NOTIFY\_TYPE
- BP\_EVENT\_TIME\_STAMPS

4. Writeable Properties:
  - BP\_NOTIFICATION\_THRESHOLD
  - BP\_LOG\_INTERVAL
  - BP\_RECORD\_COUNT
  - BP\_LOG\_ENABLE

5. Proprietary Properties: None

6. Property Range Restrictions:
  - BP\_LOG\_INTERVAL 0 to 235926000, resolution 1
  - BP\_RECORD\_COUNT 0 to 235926000, resolution 1

### 1.6. DATA LINK LAYER OPTIONS:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ANSI/ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s):
- MS/TP master (Clause 9), baud rate(s):
- MS/TP slave (Clause 9), baud rate(s):
- Point-To-Point, EIA 232 (Clause 10), baud rate(s):
- Point-To-Point, modem, (Clause 10), baud rate(s):
- LonTalk, (Clause 11), medium:
- Other:

### 1.7. DEVICE ADDRESS BINDING:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.)  Yes  No.

### 1.8. NETWORKING OPTIONS

- Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)  
Does the BBMD support registrations by Foreign Devices?  Yes  No

### 1.9. CHARACTER SETS SUPPORTED

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

- ANSI X3.4
- IBM™/Microsoft™ DBCS
- ISO 8859-1
- ISO 10646 (UCS-2)
- ISO 10646 (UCS-4)
- JIS C 6226

If this product is a communication gateway, describe the types of non-BACnet equipment/network(s) that the gateway supports:

N/A

For further information contact:

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