BACnet on tSENSE

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Senseair

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1.   Revision information

Table 1: Document revisions

Rev.	Date:	Author	Status
1.00	Feb 21, 2014	LN/EN	
1.01	May 15, 2014	CB	Appendix B added
1.02	May 05, 2015	LN	3.1 Protocol services supported "Who-Has/I-Have" added
3	Dec 08, 2015	LN/EN	

2.   General

The purpose of this document is to describe implemented BACnet functionality and available BACnet objects on tSENSE. The reader of this document is assumed to have basic knowledge about the BACnet protocol. Information about BACnet can be found at www.bacnet.org.

3.   BACnet protocol services and object types supported

This chapter describes protocol services and object types implemented on tSENSE.

3.1. Protocol services supported

Read property
The read property service is used to read the value of one object property. All object properties are readable.

Read property multiple
Works as "Read property" but makes it possible to read several properties in one request.

Write property
It is possible to change some properties by using "Write property". It is only possible to write one object property at a time. Properties that can be written are marked "RW" (Read/Write) in the Object descriptions. When writing "Present Value" to AI, AV, BI and BV objects, OOS has to be set to "TRUE" for the object otherwise the sensor will not accept the "write" command (MAC address and Baud rate requires Reset (Power OFF – Power ON) to be executed). OOS is always writable for these objects.

Device Communication Control (DCC)
The DCC service makes it possible for other devices to stop the sensor from responding to requests sent to it (no password needed). The sensor will only respond to "DCC enable communication" and "Reinitialise device" after receiving DCC disable. If the "Time duration" parameter (unit minutes) is present in the DCC disable request, the sensor will return to normal operation when the timeout expires. If the "Time duration" parameter is absent the sensor can be returned to its normal state by sending "DCC enable" or "Reinitialise device" to it.

Reinitialise Device
By sending "Reinitialise Device" with the parameter "COLD START", or "WARM START", the sensor will reboot itself. No password is needed for the reinitialise service.

Who-Is/I-Am
The "Who-Is" service can be used to identify devices connected to the network. When the sensor receives "Who-Is", it will answer with "I-Am". At start-up the sensor will also send "I-Am" to notice other devices that it has been connected to the network.

Who-Has/I-Have
If the sensor receives a "Who-Has" request with an Object Name or Object Identifier that matches one of its existing objects, the sensor will respond with a "I-Have" request. For example if the sensor receives a "Who-Has analog-input_1" request it will answer "I-Have, device_xxxxxx, analog-input_1".

3.2. Object types supported

The sensor supports following object types: Analog Input (AI), Analog Value (AV), Binary Input (BI), Binary Value (BV) and Device. Table below gives an overview of available objects.

The numbers in parenthesis in column BACnet Engineering Units correspond to the BACnet official unit list.

BACnet Objects Table

Object Type	Object Name	Description	Range	BACnet Engineering Units	Default
Device		Senseair BACnet transmitter	0 - 4194302		
Analog Inputs	AI-1	CO2	0 - 3000	parts-per-million (96)	
	AI-2	Temperature	0 - 50	degrees-Celsius (62) / degreed-Fahrenheit(64)	
	AI-3	Relative Humidity	0 - 100	percent-relative-humidity (29)	
	AI-4	Out1 voltage	0 - 10	volts (5)	
	AI-5	Out2 voltage	0 - 10	volts (5)	
	AI-6	Out3 voltage	0 - 10	volts (5)	
Analog Values	AV-1	MAC address	0 - 127	no units (95)	10
	AV-2	Baud rate	9600 - 115200	no units (95)	9600
	AV-3	ABC period	0 - 65535	hours (71)	180
	AV-4	Reserved			
	AV-5	Temp offset	-50 to +50	degrees-Celsius (62) / degreed-Fahrenheit(64)	0
	AV-6	RH offset	-100 to +100	percent-relative-humidity (29)	0
	AV-7	Relay setpoint		*	900ppm
	AV-8	Relay hysteresis		*	100ppm
	AV-9	Out1 setpoint		*	0ppm
	AV-10	Out1 prop gain		*	2000ppm
	AV-11	Out1 min voltage	0 – 10	volts (5)	0
	AV-12	Out1 max voltage	0 – 10	volts (5)	10
	AV-13	Out2 setpoint		*	0°C
	AV-14	Out2 prop gain		*	50°C
	AV-15	Out2 min voltage	0 - 10	volts (5)	0
	AV-16	Out2 max voltage	0 -10	volts (5)	10
	AV-17	Out3 setpoint		*	0%RH
	AV-18	Out3 prop gain		*	100%RH
	AV-19	Out3 min voltage	0 - 10	volts (5)	0
	AV-20	Out3 max voltage	0 - 10	volts (5)	10
Binary Inputs	BI-1	Relay state	0/1	OFF/ON	
Binary Values	BV-1	ABC state	0/1	OFF/ON	

All objects are described in detail in chapter 4.

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* Depending on configuration one of following units:

       parts-per-million (96)

       degrees-Celsius (62)

       degrees-Fahrenheit(64)

       percent-relative-humidity (29)

       no units (95)

4.   BACnet objects

Description of the sensors BACnet objects.

Device Object

Property	Property data type	Comment/Default value	Read/ Write
Object Identifier	BACnetObjectIdentifier	Default = 669010, default Object Identifier number is Vendor Identifier number x 1000 + MAC address. Changing MAC will also change Object Identifier number. After writing desired Object Identifier number to the sensor, the Object Identifier will no longer be based on Vendor Id and MAC address.	RW
Object Name	CharacterString	Default "tSENSE 10": default Object Name is "tSENSE" followed by sensors MAC address. When changing MAC address, Object Name will also change. After writing an Object Name the MAC address will no longer be part of the Object Name.	RW[1]
Object Type	BACnetObjectType	Device (8)	RO
System Status	BACnetDeviceStatus	Operational (0)	RO
Vendor Name	CharacterString	"Senseair"	RO
Vendor Identifier	Unsigned16	669	RO
Model Name	CharacterString	"tSENSE"	RO
Firmware Revision	CharacterString	X.XX (Appears on the display when the power is turned ON)	RO
Application Software Version	CharacterString	"1.0"	RO
Location	CharacterString	"Default Location"	RW[1]
Description	CharacterString	"Senseair BACnet transmitter"	RW[1]
Protocol Version	Unsigned	1	RO
Protocol Revision	Unsigned	12	RO
Protocol Services Supported	BACnetServicesSupported	RP, RPM, WP, DCC, RD, WHO_IS, WHO_HAS	RO
Protocol Object Types Supported	BACnetObjectTypesSupported	AI, AV, BI, BV, DEVICE	RO
Object List	BACnet ARRAY[N] of BACnetObjectIdentifier		RO

[1] Length of character strings must be less than 32 bytes

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Max APDU Length Accepted	Unsigned	480	RO
Segmentation Supported	BACnetSegmentation	No-segmentation (3)	RO
APDU Timeout	Unsigned	3000	RO
Number Of APDU Retries	Unsigned	3	RO
Max Master	Unsigned	127	RW
Max Info Frames	Unsigned	1	RO
Device Address Binding	List of BACnetAddressBinding	Empty	RO
Database Revision	Unsigned	0	RO

Analog inputs

AI-1 CO_2

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-input, 1	RO
Object Name	CharacterString	"AI-1"	RO
Object Type	BACnetObjectType	analog-input (0)	RO
Present Value	REAL	0 - 3000	RW
Description	CharacterString	"CO2"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal	RO
Reliability	BACnetReliability	no-fault-detected(0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	parts-per-million (96)	RO

AI-2 Temperature

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-input, 2	RO
Object Name	CharacterString	"AI-2"	RO
Object Type	BACnetObjectType	analog-input (0)	RO
Present Value	REAL	0.0 - 50	RW
Description	CharacterString	"Temperature"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal	RO
Reliability	BACnetReliability	no-fault-detected(0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	degrees-Celsius (62) or degrees-Fahrenheit (64) depending on configuration. Property is writeable but only units °C (62) and °F (64) are accepted.	RW

AI-3 Relative Humidity

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-input, 3	RO
Object Name	CharacterString	"AI-3"	RO
Object Type	BACnetObjectType	analog-input (0)	RO
Present Value	REAL	0.0 - 100.0	RW
Description	CharacterString	"Relative Humidity"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal	RO
Reliability	BACnetReliability	no-fault-detected(0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	percent-relative-humidity (29)	RO

AI-4 Out1

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-input, 4	RO
Object Name	CharacterString	"AI-4"	RO
Object Type	BACnetObjectType	analog-input (0)	RO
Present Value	REAL	0.0 – 10V	RW
Description	Character String	"Out1 voltage"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal	RO
Reliability	BACnetReliability	no-fault-detected(0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	volts (5)	RO

AI-5 Out2

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-input, 5	RO
Object Name	CharacterString	"AI-5"	RO
Object Type	BACnetObjectType	analog-input (0)	RO
Present Value	REAL	0.0 - 10V	RW
Description	CharacterString	"Out2 voltage"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEvent State	normal	RO
Reliability	BACnetReliability	no-fault-detected(0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	Volts (5)	RO

AI-6 Out3

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-input, 6	RO
Object Name	CharacterString	"AI-6"	RO
Object Type	BACnetObjectType	analog-input (0)	RO
Present Value	REAL	0.0 - 10V	RW
Description	CharacterString	"Out3 voltage"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal	RO
Reliability	BACnetReliability	no-fault-detected (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	volts (5)	RO

Analog values

AV-1 MAC address

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnet ObjectIdentifier	analog-value, 1	RO
Object Name	CharacterString	"AV-1"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	Default = 10, range 0 - 127, address 0 is usually used by the BACnet router.	RW
Description	CharacterString	"MAC address"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	no-units (95)	RO

AV-2 Baud

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 2	RO
Object Name	CharacterString	"AV-2"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	Default = 9600 When writing baud only values 9600, 19200, 38400, 57600, 76800 and 115200 are accepted.	RW
Description	CharacterString	"Baud rate"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	no-units (95)	RO

AV-3 ABC period

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 3	RO
Object Name	CharacterString	"AV-3"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	180	RW
Description	CharacterString	"ABC period"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	hours (71)	RO

AV-4 Reserved

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AV-5 Temp offset

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 5	RO
Object Name	CharacterString	"AV-5"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	0	RW
Description	CharacterString	"Temp offset"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	degrees-Celsius (62) or degrees-Fahrenheit (64) depending on configuration	RO

AV-6 RH offset

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 6	RO
Object Name	CharacterString	"AV-6"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	0	RW
Description	CharacterString	"RH offset"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	percent-relative-humidity (29)	RO

AV-7 Relay setpoint

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 7	RO
Object Name	CharacterString	"AV-7"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	900	RW
Description	CharacterString	"Relay setpoint"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW

Units	BACnetEngineeringUnits	One of following depending on configuration:
		  parts-per-million (96)
		  degrees-Celsius (62)
		  degrees-Fahrenheit(64)
		  percent-relative-humidity (29)
		  no units (95)
			RO

AV-8 Relay hysteresis

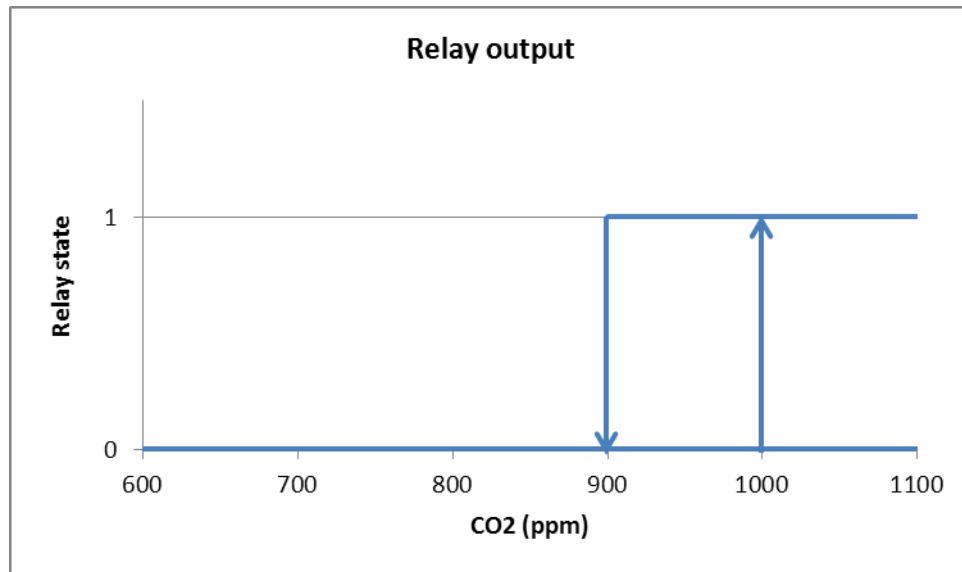| Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 8	RO
Object Name	CharacterString	"AV-8"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	100	RW
Description	CharacterString	"Relay hysteresis"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW

Units	BACnetEngineeringUnits	One of following depending on configuration:
		  parts-per-million (96)
		  degrees-Celsius (62)
		  degrees-Fahrenheit(64)
		  percent-relative-humidity (29)
		  no units (95)
			RO

Figure 1, Relay output configured with setpoint = 900 and hysteresis = 100

AV-9 Out1 RDB (regulator deadband)

Property	Property data type	Comment/Default value	Read/ Write
Object Identifier	BACnetObjectIdentifier	analog-value, 9	RO
Object Name	CharacterString	"AV-9"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	0	RW
Description	CharacterString	"Out1 setpoint"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW

Units	BACnetEngineeringUnits	One of following depending on configuration:
		  parts-per-million (96)
		  degrees-Celsius (62)
		  degrees-Fahrenheit(64)
		  percent-relative-humidity (29)
		  no units (95)
			RO

AV-10 Out1 PRC (proportional regulator gain constant)

Property	Property data type	Comment/Default value	Read/ Write
Object Identifier	BACnetObjectIdentifier	analog-value, 10	RO
Object Name	CharacterString	"AV-10"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	2000	RW
Description	CharacterString	"Out1 prop gain"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW

Units	BACnetEngineeringUnits	One of following depending on configuration:
		  parts-per-million (96)
		  degrees-Celsius (62)
		  degrees-Fahrenheit(64)
		  percent-relative-humidity (29)
		  no units (95)
			RO

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AV-11 Out1 min voltage

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 11	RO
Object Name	CharacterString	"AV-11"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	0	RW
Description	CharacterString	"Out1 min voltage"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	volts (5)	RO

AV-12 Out1 max voltage

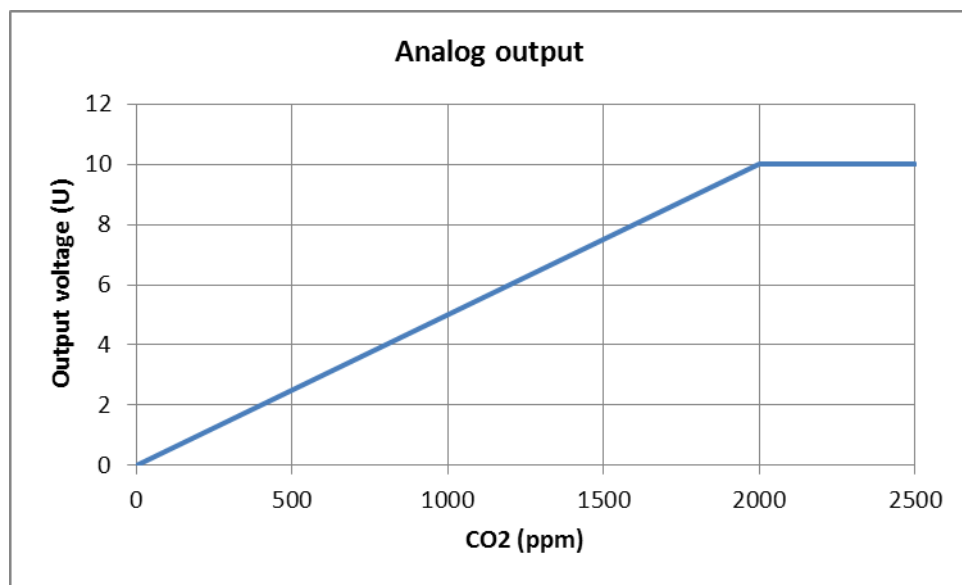| Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 12	RO
Object Name	CharacterString	"AV-12"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	10.0	RW
Description	CharacterString	"Out1 max voltage"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	volts (5)	RO

Figure 2, Out1 configured with RDB = 0, PRC = 2000, min voltage = 0 and max voltage = 10

AV-13 Out2 RDB

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 13	RO
Object Name	CharacterString	"AV-13"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	0	RW
Description	CharacterString	"Out2 setpoint"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	One of following depending on configuration: parts-per-million (96) degrees-Celsius (62) degrees-Fahrenheit(64) percent-relative-humidity (29) no units (95)	RO

AV-14 Out2 PRC

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 14	RO
Object Name	CharacterString	"AV-14"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	50	RW
Description	CharacterString	"Out2 prop gain"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	One of following depending on configuration: parts-per-million (96) degrees-Celsius (62) degrees-Fahrenheit(64) percent-relative-humidity (29) no units (95)	RO

AV-15 Out2 min voltage

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 15	RO
Object Name	CharacterString	"AV-15"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	0	RW
Description	CharacterString	"Out2 min voltage"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	volts (5)	RO

AV-16 Out2 max voltage

Property	Property data type	Comment/Default value	Read/ Write
Object Identifier	BACnetObjectIdentifier	analog-value, 16	RO
Object Name	CharacterString	"AV-16"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	10.0	RW
Description	CharacterString	"Out2 max voltage"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	volts (5)	RO

AV-17 Out3 RDB

Property	Property data type	Comment/Default value	Read/ Write
Object Identifier	BACnetObjectIdentifier	analog-value, 17	RO
Object Name	CharacterString	"AV-17"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	0.0	RW
Description	CharacterString	"Out3 setpoint"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW

Units	BACnetEngineeringUnits	One of following depending on configuration:
		  parts-per-million (96)
		  degrees-Celsius (62)
		  degrees-Fahrenheit(64)
		  percent-relative-humidity (29)
		  no units (95)
			RO

AV-18 Out3 PRC

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 18	RO
Object Name	CharacterString	"AV-18"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	50.0	RW
Description	CharacterString	"Out3 prop gain"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW

Units	BACnetEngineeringUnits	One of following depending on configuration:
		  parts-per-million (96)
		  degrees-Celsius (62)
		  degrees-Fahrenheit(64)
		  percent-relative-humidity (29)
		  no units (95)
			RO

AV-19 Out3 min voltage

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 19	RO
Object Name	CharacterString	"AV-19"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	0.0	RW
Description	CharacterString	"Out3 min voltage"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	volts (5)	RO

AV-20 Out3 max voltage

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	analog-value, 20	RO
Object Name	CharacterString	"AV-20"	RO
Object Type	BACnetObjectType	analog-value (2)	RO
Present Value	REAL	10.0	RW
Description	CharacterString	"Out3 max voltage"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Units	BACnetEngineeringUnits	volts (5)	RO

Binary input

BI-1 Relay state

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	binary-input, 1	RO
Object Name	CharacterString	"BI-1"	RO
Object Type	BACnetObjectType	binary-input (3)	RO
Present Value	BACnetBinaryPV	See figure 1	RW
Description	CharacterString	"Relay state"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW
Polarity	BACnetPolarity	normal (0)	RO

Binary values

BV-1 ABC state (on/off)

Property	Property data type	Comment/Default value	Read/Write
Object Identifier	BACnetObjectIdentifier	binary-value, 1	RO
Object Name	CharacterString	"BV-1"	RO
Object Type	BACnetObjectType	binary-value (5)	RO
Present Value	BACnetBinaryPV	active (1)	RW
Description	CharacterString	"ABC state"	RO
Status Flags	BACnetStatusFlags	FFFF	RO
Event State	BACnetEventState	normal (0)	RO
Out Of Service	BOOLEAN	FALSE	RW

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Appendix A: Conformance statement

Vendor Name: Senseair

Product Name: tSENSE

Product Model Number: -   070-8-XXXX

BACnet Protocol Version: 1

BACnet Protocol Revision: 12

Product description: CO_2, Temperature and Humidity sensor

BACnet Standardised Device Profile:
                                      BACnet Application Specific Controller (B-ASC)

BACnet Interoperability Building Blocks Supported:
                                      DS-RP-B, DS-RPM-B, DS-WP-B, DM-DDB-B, DM-DOB-B,
                                      DM-DCC- B, DM-RD-B

Standard Object Type Supported:
                                      Analog Input (AI), Analog Value (AV), Binary Input (BI),
                                      Binary Value (BV) and Device

Data Link Layer Options: MS/TP master, baud rates: 9600, 19200, 38400, 57600,
                                      76800, 115200

Character Sets Supported: ANSI X3.4

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Appendix B: Application examples

Device installation

When the sensors RS-485 Protocol parameter is set to "Auto", the sensor selects protocol depending on the protocol used on the network the sensor is connected to. After power on the sensor then listens to the traffic on the RS-485 network and if the sensor detects valid BACnet or Modbus messages, the sensor will start to use the detected protocol.

The product and product specification are subject to change without notice. Contact Senseair to confirm that the information in this product description is up to date.

www.senseair.com

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