

Merlin IAQ Series



BACnet Functionality

This document provides details on BACnet functionality of the Merlin IAQ range.

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BACnet Interoperability Building Blocks Supported

Description	BIBB	Comments
Read Property	DS-RP-B	
Read Property Multiple	DS-RPM-B	
Write property	DS-WP-B	
Dynamic Device Binding	DM-DDB-B	Execute who is / Initiate I am
Dynamic Object Binding	DM-DOB-B	
Device Comm Control	DM-DCC-B	
Reinitialize Device	DM-RD-B	

BACnet Standard Object Types Supported

Object	No Of Instance	Instance Assignments
Device Object	1	
Analog Input (AI)	10	AI-1: CO2 AI-2: Temperature AI-3: Humidity AI-4: PM 2.5 AI-5: TVOC AI-6: AQIndex AI-7: PM 1.0 AI-8: PM 10 AI-9: 1 Hr AVG Index AI-10: 8 Hr AVG Index
Analog Value (AV)	23	AV-1: CO2 Pre-Alarm AV-2: CO2 Alarm AV-3: CO2 Offset AV-4: Temperature Min AV-5: Temperature Max AV-6: Temperature Offset AV-7: Humidity Min AV-8: Humidity Max

		AV-9: Humidity Offset AV-10: PM 1.0 Pre-Alarm AV-11: PM 1.0 Alarm AV-12: PM 1.0 Offset AV-13: PM 2.5 Pre-Alarm AV-14: PM 2.5 Alarm AV-15: PM 2.5 Offset AV-16: PM 10 Pre-Alarm AV-17: PM 10 Alarm AV-18: PM 10 Offset AV-19: TVOC Pre-Alarm AV-20: TVOC Alarm AV-21: TVOC Offset AV-22: IAQ Fair Score AV-23: IAQ Poor Score
Multi-State Value (MSV)	4	MSV-1: Temperature Unit MSV-2: Error Codes MSV-3: Score words displayed MSV-4: Audible Alarm

BACnet Standard Object Types Supported

Property Name / ID	Default	Read/Write
Object Identifier	OBJECT_DEVICE: Vendor No x1000 & Mac Address	R/W
Object Name	IAQ Series	R/W
Object Type	8: Object Device	R
System Status	0: Operational	R
Vendor Name	S&S Northern Ltd	R
Vendor Identifier	1448	R
Model Name	IAQ	R
Firmware Revision	Reserved	R
Application SW Version	Reserved	R
Protocol Version	1	R
Protocol Revision	18	R
Protocol Services Supported	Binary List	R
Object List	Object Array	R
Max APDU Length	480	R
Segmentation Support	3: None	R
APDU Timeout	3000	R
Number APDU Retries	3	R
Database Revision	0	R
Description	IAQ Sensor	R/W
Location	UK	R/W
Max Master	127	R/W
Max Info Frames	1-16	R/W
Serial Number	000000000000	R
Link Speed	(Baud Rate Indicator)	R
Mac Address	(Network ID)	R
1000-Proprietary (Factory Reset)	0 (AI / AO / AV / BO / MSV ONLY) 1: Prompt Reset	R/W

Analog Input Objects (AI)

Property Name / ID	Default	R/W
Object Identifier	OBJECT_ANALOG_INPUT: #	R
Object Name	AI-1: CO2 AI-2: Temperature AI-3: Humidity AI-4: PM 2.5	R

	AI-5: TVOC AI-6: AQIndex AI-7: PM 1.0 AI-8: PM 10 AI-9: 1 Hr AVG Index AI-10: 8 Hr AVG Index	
Object Type	0	R
Present Value	REAL	R
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Description		R/W
Units	AI-1: PART PER MILLION AI-2: DEGREES CELSIUS AI-3: PERCENT RELATIVE HUMIDITY AI-4: MICROGRAMS PER CUBIC METER AI-5: PARTS PER BILLION AI-6: NO UNITS AI-7: MICROGRAMS PER CUBIC METER AI-8: MICROGRAMS PER CUBIC METER AI-9: NO UNITS AI-10: NO UNITS	R

Analog Value Objects (AV)

Property Name / ID	Default	R/W
Object Identifier	OBJECT_ANALOG_VALUE: #	R
Object Name	AV-1: CO2 Pre-Alarm AV-2: CO2 Alarm AV-3: CO2 Offset AV-4: Temperature Min AV-5: Temperature Max AV-6: Temperature Offset AV-7: Humidity Min AV-8: Humidity Max AV-9: Humidity Offset AV-10: PM 1.0 Pre-Alarm AV-11: PM 1.0 Alarm AV-12: PM 1.0 Offset AV-13: PM 2.5 Pre-Alarm AV-14: PM 2.5 Alarm AV-15: PM 2.5 Offset AV-16: PM 10 Pre-Alarm AV-17: PM 10 Alarm AV-18: PM 10 Offset AV-19: TVOC Pre-Alarm AV-20: TVOC Alarm AV-21: TVOC Offset AV-22: IAQ Fair Score AV-23: IAQ Poor Score	R
Object Type	2	R
Present Value	AV-1: 600 AV-2: 1500 AV-3: 0 AV-4: 15 AV-5: 30 AV-6: 0 AV-7: 20 AV-8: 70 AV-9: 0	R/W

	AV-10: 16 AV-11: 57 AV-12: 0 AV-13: 21 AV-14: 76 AV-15: 0 AV-16: 31 AV-17: 114 AV-18: 0 AV-19: 250 AV-20: 350 AV-21: 0 AV-22: 80 AV-23: 40	
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Units	AI-1: PART PER MILLION AI-2: PART PER MILLION AI-3: PART PER MILLION AI-4: DEGREES CELSIUS AI-5: DEGREES CELSIUS AI-6: DEGREES CELSIUS AI-7: PERCENT RELATIVE HUMIDITY AI-8: PERCENT RELATIVE HUMIDITY AI-9: PERCENT RELATIVE HUMIDITY AI-10: MICROGRAMS PER CUBIC METER AI-11: MICROGRAMS PER CUBIC METER AI-12: MICROGRAMS PER CUBIC METER AI-13: MICROGRAMS PER CUBIC METER AI-14: MICROGRAMS PER CUBIC METER AI-15: MICROGRAMS PER CUBIC METER AI-16: MICROGRAMS PER CUBIC METER AI-17: MICROGRAMS PER CUBIC METER AI-18: MICROGRAMS PER CUBIC METER AI-19: PARTS PER BILLION AI-20: PARTS PER BILLION AI-21: PARTS PER BILLION AI-22: NO UNITS AI-23: NO UNITS	R

Multi-State Value (MSV) Temperature Unit

Property Name / ID	Default	R/W
Object Identifier	OBJECT_MULTI_STATE_VALUE:1	R
Object Name	Temperature Unit	R
Object Type	19 Object Multi State Value	R
Present Value	1: (°Celsius)	R/W
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Number of States	2	R
States	1: °C 2: °F	R

Multi-State Value (MSV) Error Codes

Property Name / ID	Default	R/W
Object Identifier	OBJECT_MULTI_STATE_VALUE:2	R
Object Name	Error Codes	R

Object Type	19 Object Multi State Value	R
Present Value	1: (No Error)	R
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Number of States	8	R
States	1: No Error 2: CO2 Sensor Error 3: Temperature Sensor Error 4: Humidity Sensor Error 5: EEPROM Error 6: Display Error 7: VOC Sensor Error 8: PM Sensor Error	R

Multi-State Value (MSV) Score words displayed

Property Name / ID	Default	R/W
Object Identifier	OBJECT_MULTI_STATE_VALUE:1	R
Object Name	Score words displayed	R
Object Type	19 Object Multi State Value	R
Present Value	1: (Disabled)	R/W
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Number of States	2	R
States	1: Disabled 2: Enabled	R

Multi-State Value (MSV) Audible Alarm

Property Name / ID	Default	R/W
Object Identifier	OBJECT_MULTI_STATE_VALUE:1	R
Object Name	Audible Alarm	R
Object Type	19 Object Multi State Value	R
Present Value	1: (Disabled)	R/W
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Number of States	2	R
States	1: Disabled 2: Enabled	R

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