

ANNEX A - PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (NORMATIVE)

BACnet Protocol Implementation Conformance Statement

Date: Dec 6, 2016 **Revision:** 1.4
Vendor Name: Opera Electronics Inc.
Product Name: GAS Detector
Product Model Number: Opera 6000
Applications Software Version: BB4
Firmware Revision: 2x28 (x is either A or B to indicate the hardware type)
BACnet Protocol Revision: 9

Product Description:

The Opera 6000 is a family of indoor air quality sensors. In terms of the BACnet protocol is an end device. There are two models available with minor hardware differences.

‘A’ models have 2 output relays.

‘B’ models have 1 output relay, 2 analog 4-20mA or 0-10V outputs and a Binary Input.

BACnet Standardized 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)

List all BACnet Interoperability Building Blocks Supported (Annex K):

Data Sharing – Read Property – B	DS-RP-B
Data Sharing – Write Property – B	DS-WP-B
Device Management – Dynamic Device Binding-B	DM-DDB-B
Device Management-Dynamic Object Binding-B	DM-DOB-B

Segmentation Capability:

- Segmented requests supported Window Size
- Segmented responses supported Window Size

Standard Object Types Supported:

- Analog Input
- Analog Output
- Analog Value
- Averaging
- Binary Input
- Binary Output
- Binary Value
- Calendar
- Command
- Device
- Event Enrollment
- File
- Group
- Life Safety Point
- Life Safety Zone
- Loop
- Multistate Input
- Multistate Output
- Multistate Value
- Notification Class
- Program
- Schedule
- Trend Log

Analog Value:			
Dynamically Creatable	Dynamically Deletable	Optional Properties Supported	Writable Properties
<input type="checkbox"/>	<input type="checkbox"/>		

Binary Input:			
Dynamically Creatable	Dynamically Deletable	Optional Properties Supported	Writable Properties
<input type="checkbox"/>	<input type="checkbox"/>		

Binary Output:			
Dynamically Creatable	Dynamically Deletable	Optional Properties Supported	Writable Properties
<input type="checkbox"/>	<input type="checkbox"/>		Present Value

Device:			
Dynamically Creatable	Dynamically Deletable	Optional Properties Supported	Writable Properties
<input type="checkbox"/>	<input type="checkbox"/>		Max Master Object Identifier Object Name (22 characters max)

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): 9600, 19200, 38400, 76800
- 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:

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

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

Character Sets Supported:

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

- | | | |
|---|---|-------------------------------------|
| <input checked="" type="checkbox"/> ANSI X3.4 | <input type="checkbox"/> IBM™/Microsoft™ DBCS | <input type="checkbox"/> ISO 8859-1 |
| <input type="checkbox"/> ISO 10646 (UCS-2) | <input type="checkbox"/> ISO 10646 (UCS-4) | <input type="checkbox"/> JIS C 6226 |

Object Table

Type and Instance	Object Name	Object Property	Parameter
AV 0 ¹	Gas Reading 1	Present_Value (R)	Gas reading local sensor A
AV 1 ^{1,2}	Gas Reading 2	Present_Value (R)	Gas reading local sensor B
AV 2	Ambient Temp.	Present_Value (R)	Temperature in Celsius
BI 0	Input 1	Present_Value (R)	Input State
BO 0	Relay 1	Present_Value (R/W)	Relay 1 Control
BO 1	Relay 2 ⁴ or Alarm L2 ⁵	Present_Value (R/W)	Relay 2 ⁴ or Alarm Indication 2 ⁵ Control
BO 2	Alarm L3	Present_Value (R/W)	Alarm Indication 3 Control
AV 100 ³	Gas Reading 100	Present_Value (R)	Gas reading remote 0A
AV 200 ³	Gas Reading 200	Present_Value (R)	Gas reading remote 0B
AV 101 ³	Gas Reading 101	Present_Value (R)	Gas reading remote 1A
AV 201 ³	Gas Reading 201	Present_Value (R)	Gas reading remote 1B
AV 102 ³	Gas Reading 102	Present_Value (R)	Gas reading remote 2A
AV 202 ³	Gas Reading 202	Present_Value (R)	Gas reading remote 2B
AV 103 ³	Gas Reading 103	Present_Value (R)	Gas reading remote 3A
AV 203 ³	Gas Reading 203	Present_Value (R)	Gas reading remote 3B
AV 104 ³	Gas Reading 104	Present_Value (R)	Gas reading remote 4A
AV 204 ³	Gas Reading 204	Present_Value (R)	Gas reading remote 4B
AV 105 ³	Gas Reading 105	Present_Value (R)	Gas reading remote 5A
AV 205 ³	Gas Reading 205	Present_Value (R)	Gas reading remote 5B
AV 106 ³	Gas Reading 106	Present_Value (R)	Gas reading remote 6A
AV 206 ³	Gas Reading 206	Present_Value (R)	Gas reading remote 6B
AV 107 ³	Gas Reading 107	Present_Value (R)	Gas reading remote 7A
AV 207 ³	Gas Reading 207	Present_Value (R)	Gas reading remote 7B
AV 108 ³	Gas Reading 108	Present_Value (R)	Gas reading remote 8A
AV 208 ³	Gas Reading 208	Present_Value (R)	Gas reading remote 8B
AV 109 ³	Gas Reading 109	Present_Value (R)	Gas reading remote 9A
AV 209 ³	Gas Reading 209	Present_Value (R)	Gas reading remote 9B
AV 110 ³	Gas Reading 110	Present_Value (R)	Gas reading remote 10A
AV 210 ³	Gas Reading 210	Present_Value (R)	Gas reading remote 10B
AV 111 ³	Gas Reading 111	Present_Value (R)	Gas reading remote 11A
AV 211 ³	Gas Reading 211	Present_Value (R)	Gas reading remote 11B
AV 112 ³	Gas Reading 112	Present_Value (R)	Gas reading remote 12A
AV 212 ³	Gas Reading 212	Present_Value (R)	Gas reading remote 12B
AV 113 ³	Gas Reading 113	Present_Value (R)	Gas reading remote 13A
AV 213 ³	Gas Reading 213	Present_Value (R)	Gas reading remote 13B
AV 114 ³	Gas Reading 114	Present_Value (R)	Gas reading remote 14A
AV 214 ³	Gas Reading 214	Present_Value (R)	Gas reading remote 14B
AV 115 ³	Gas Reading 115	Present_Value (R)	Gas reading remote 15A
AV 215 ³	Gas Reading 215	Present_Value (R)	Gas reading remote 15B
AV 116 ³	Gas Reading 116	Present_Value (R)	Gas reading remote 16A
AV 216 ³	Gas Reading 216	Present_Value (R)	Gas reading remote 16B
AV 117 ³	Gas Reading 117	Present_Value (R)	Gas reading remote 17A
AV 217 ³	Gas Reading 217	Present_Value (R)	Gas reading remote 17B
AV 118 ³	Gas Reading 118	Present_Value (R)	Gas reading remote 18A
AV 218 ³	Gas Reading 218	Present_Value (R)	Gas reading remote 18B
AV 119 ³	Gas Reading 119	Present_Value (R)	Gas reading remote 19A
AV 219 ³	Gas Reading 219	Present_Value (R)	Gas reading remote 19B
AV 120 ³	Gas Reading 120	Present_Value (R)	Gas reading remote 20A
AV 220 ³	Gas Reading 220	Present_Value (R)	Gas reading remote 20B
AV 121 ³	Gas Reading 121	Present_Value (R)	Gas reading remote 21A
AV 221 ³	Gas Reading 221	Present_Value (R)	Gas reading remote 21B
AV 122 ³	Gas Reading 122	Present_Value (R)	Gas reading remote 22A
AV 222 ³	Gas Reading 222	Present_Value (R)	Gas reading remote 22B
AV 123 ³	Gas Reading 123	Present_Value (R)	Gas reading remote 23A
AV 223 ³	Gas Reading 223	Present_Value (R)	Gas reading remote 23B
AV 124 ³	Gas Reading 124	Present_Value (R)	Gas reading remote 24A
AV 224 ³	Gas Reading 224	Present_Value (R)	Gas reading remote 24B
AV 125 ³	Gas Reading 125	Present_Value (R)	Gas reading remote 25A
AV 225 ³	Gas Reading 225	Present_Value (R)	Gas reading remote 25B
AV 126 ³	Gas Reading 126	Present_Value (R)	Gas reading remote 26A
AV 226 ³	Gas Reading 226	Present_Value (R)	Gas reading remote 26B
AV 127 ³	Gas Reading 127	Present_Value (R)	Gas reading remote 27A
AV 227 ³	Gas Reading 227	Present_Value (R)	Gas reading remote 27B
AV 128 ³	Gas Reading 128	Present_Value (R)	Gas reading remote 28A
AV 228 ³	Gas Reading 228	Present_Value (R)	Gas reading remote 28B
AV 129 ³	Gas Reading 129	Present_Value (R)	Gas reading remote 29A
AV 229 ³	Gas Reading 229	Present_Value (R)	Gas reading remote 29B
AV 130 ³	Gas Reading 130	Present_Value (R)	Gas reading remote 30A
AV 230 ³	Gas Reading 230	Present_Value (R)	Gas reading remote 30B
AV 131 ³	Gas Reading 131	Present_Value (R)	Gas reading remote 31A
AV 231 ³	Gas Reading 231	Present_Value (R)	Gas reading remote 31B

¹ - Only available if BACnet enable (P46) is set to 1.

² - Only available if a second sensor is fitted.

³ - Only available if BACnet enable (P46) is set to 2.

⁴ - Only on 'A' version hardware.

⁵ - Only on 'B' version hardware.