

## BACnet Protocol Implementation Conformance Statement

### Product

<b>Date:</b>	03/11/2019	<b>Vendor Name:</b>	Magnum Innovations
<b>Product Name:</b>	Thermostat TS2	<b>Application Software V.:</b>	n/a
<b>Product Model Number:</b>	Mx-TS2	<b>Firmware Revision:</b>	x.x.x.x
<b>Product Description:</b>	EnOcean Thermostat	<b>BACnet Protocol Revision:</b>	n/a

### Vendor Information

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### Product Description

The Magnum Thermostat uses wireless communication to provide quick and easy implementation of energy-saving HVAC controls. Includes a customizable 4.3" LCD display.
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### BACnet Standardized Device Profile (Annex L):

<input type="checkbox"/> BACnet Operator Workstation (B-OWS)	<input type="checkbox"/> BACnet Advanced Application Controller (B-AAC)
<input type="checkbox"/> BACnet Advanced Operator Workstation (B-AWS)	<input type="checkbox"/> BACnet Application Specific Controller (B-ASC)
<input type="checkbox"/> BACnet Operator Display (B-OD)	<input checked="" type="checkbox"/> BACnet Smart Sensor (B-SS)
<input type="checkbox"/> BACnet Building Controller (B-BC)	<input checked="" type="checkbox"/> BACnet Smart Actuator (B-SA)

### BACnet Interoperability Building Blocks Supported (Annex K):

DS-RP-B	Data Sharing, Read Property B
DS-RPM-B	Data Sharing, Read Property Multiple B
DS-WP-B	Data Sharing, Write Property B
DS-WPM-B	Data Sharing, Write Property Multiple B
DS-COV-B	Data Sharing, COV B
DS-COVP-B	Data Sharing, COVP N

**Segmentation Capability:**

<input checked="" type="checkbox"/> Able to transmit segmented messages	Window Size: 1515 bytes
<input checked="" type="checkbox"/> Able to receive segmented messages	Window Size: 1515 bytes

**Standard Object Types Supported (Sensor):**

<b>Object</b>	<b>Optional Properties Supported</b>	<b>Writeable Properties</b>	<b>Property Range Restrictions</b>
Analog Input Set point (linear)	Description	None	0 – 40° C 32 – 104° F
Analog Input Room Temperature (linear)	Description	None	0 – 40° C 32 – 104° F
Analog Input Relative Humidity (linear)	Description	None	0 – 40° C 32 – 104° F
Binary Input Reset	Description Inactive Text Active Text	None	Normal operation Reset
Binary Input Occupancy	Description Inactive Text Active Text	None	Occupied Unoccupied
Binary Input ECO	Description Inactive Text Active Text	None	Normal operation ECO
Binary Input Window status	Description Inactive Text Active Text	None	close open
Binary Input Door status	Description Inactive Text Active Text	None	close open
Binary Input VIP	Description Inactive Text Active Text	None	Normal operation VIP
Binary Input Temperature override	Description Inactive Text Active Text	None	Normal operation Temperature overridden
Binary Input User button	Description Inactive Text Active Text	None	Not pressed Pressed
Analog Input Supply air temperature (linear)	Description	None	0 – 40° C 32 – 104° F
Binary Input Fan 1	Description Inactive Text Active Text	None	Off On

Binary Input Fan 2	Description Inactive Text Active Text	None	Off On
Binary Input Fan 3	Description Inactive Text Active Text	None	Off On
Binary Input Heat 1	Description Inactive Text Active Text	None	Off On
Binary Input Heat 2	Description Inactive Text Active Text	None	Off On
Binary Input Heat 3	Description Inactive Text Active Text	None	Off On
Binary Input Cool 1	Description Inactive Text Active Text	None	Off On
Binary Input Cool 2	Description Inactive Text Active Text	None	Off On
MultiState Input Info Screen	Description	None	No Screen Screen 1 Screen 2 Screen 3 Screen 4 Screen 5
Binary Input Button status	Description Inactive Text Active Text	None	Buttons not active Buttons active
Analog Input 0-10V Output 1	Description	None	0 – 10 V
Analog Input 0-10V Output 2	Description	None	0 – 10 V
Analog Input 0-10V Output 3	Description	None	0 – 10 V
Analog Input Changeover delta (linear)	Description	None	0 – 40° C 32 – 104° F
MultiState Input Display Layout	Description	None	Layout 1 Layout 2 Layout 3 Layout 4 Layout 5
Analog Input Unoccupied delay	Description	None	0 – 255 min
Analog Input Window open delay	Description	None	0 – 255 min
MultiState Input Mode	Description	None	Auto Heating Cooling Off

MultiState Input Fan	Description	None	Auto Continuous Stage 1 Continuous Stage 2 Continuous Stage 3
Analog Input Display brightness	Description	None	0 – 6
Analog Input User limit min (heating)	Description	None	0 – 40° C 32 – 104° F
Analog Input User limit max (heating)	Description	None	0 – 40° C 32 – 104° F
Analog Input User limit min (cooling)	Description	None	0 – 40° C 32 – 104° F
Analog Input User limit max (cooling)	Description	None	0 – 40° C 32 – 104° F
Analog Input Unoccupied Set point (heating)	Description	None	0 – 40° C 32 – 104° F
Analog Input Unoccupied Set point (cooling)	Description	None	0 – 40° C 32 – 104° F
Analog Input ECO set point (heating)	Description	None	0 – 40° C 32 – 104° F
Analog Input ECO set point (cooling)	Description	None	0 – 40° C 32 – 104° F
Analog Input Window open set point (heating)	Description	None	0 – 40° C 32 – 104° F
Analog Input Window open set point (cooling)	Description	None	0 – 40° C 32 – 104° F
Analog Input Comfort set point (heating)	Description	None	0 – 40° C 32 – 104° F
Analog Input Comfort set point (cooling)	Description	None	0 – 40° C 32 – 104° F
Analog Input Freeze Protection	Description	None	0 – 40° C 32 – 104° F
MultiState Input {Manufacturer}	Description	none	EnOcean Manufacturer List
Binary Input {Signal}	Description Inactive Text Active Text Change State Time Change State Count Time State Count Reset	none	Invalid valid
Analog Input {RSSI}	Description	none	0 – 255 dB
Analog Output {HeartBeat}	Description	Present Value	0 – 255 minutes

**Standard Object Types Supported (Actuator):**

<b>Object</b>	<b>Optional Properties Supported</b>	<b>Writeable Properties</b>	<b>Property Range Restrictions</b>
MultiState Output Request status	Description	Present Value	No request All Status 1 Status 2 Set points
Analog Output Set point (linear)	Description	Present Value	0 – 40° C 32 – 104° F
MultiState Output Fan	Description	Present Value	Auto Continuous Stage 1 Continuous Stage 2 Continuous Stage 3
MultiState Output Room status	Description	Present Value	Normal operation Window open Door open Unoccupied ECO mode VIP mode Room temp override
MultiState Output Info Screen	Description	Present Value	No Screen Screen 1 Screen 2 Screen 3 Screen 4 Screen 5
Binary Output Button control	Description Inactive Text Active Text	Present Value	Buttons not active Buttons active
Analog Output 0-10V Output 1	Description	Present Value	0 – 10 V
Analog Output 0-10V Output 2	Description	Present Value	0 – 10 V
Analog Output 0-10V Output 3	Description	Present Value	0 – 10 V
Analog Output Temperature override	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output User limit min (heating)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output User limit max (heating)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output User limit min (cooling)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output User limit max (cooling)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output Unoccupied Set point (heating)	Description	Present Value	0 – 40° C 32 – 104° F

Analog Output Unoccupied Set point (cooling)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output ECO set point (heating)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output ECO set point (cooling)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output Window open set point (heating)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output Window open set point (cooling)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output Comfort set point (heating)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output Comfort set point (cooling)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output Freeze Protection	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output Changeover delta (linear)	Description	Present Value	0 – 40° C 32 – 104° F
Analog Output Unoccupied delay	Description	Present Value	0 – 255 min
Analog Output Window open delay	Description	Present Value	0 – 255 min
Binary Output Reset request	Description Inactive Text Active Text	Present Value	Normal operation Request reset
MultiState Output Layout message	Description	Present Value	Layout 1 Layout 2 Layout 3 Layout 4 Layout 5
Analog Output Display brightness	Description	Present Value	0 – 6
Analog Output Set year	Description	Present Value	2000 – 2255
Analog Output Set month	Description	Present Value	1 – 12
Analog Output Set day	Description	Present Value	0 – 23
Analog Output Set minute	Description	Present Value	0 – 59
MultiStateOutput {Msg.Selector}	Description	Present Value	1 – 26
BinaryOutput {Sending}	Description Inactive Text Active Text	Present Value	Send Suppress
MultiStateInput {Manufacturer}	Description	Present Value	EnOcean Manufacturer List

**Data Link Layer Options:**

<input type="checkbox"/> BACnet IP, (Annex J)	<input type="checkbox"/> MS/TP slave (Clause 9)
<input type="checkbox"/> BACnet IP, (Annex J), Foreign Device	<input type="checkbox"/> Point-To-Point, EIA 232 (Clause 10)
<input type="checkbox"/> ISO 8802-3, Ethernet (Clause 7)	<input type="checkbox"/> Point-To-Point, modem
<input type="checkbox"/> ATA 878.1, 2.5 Mb. ARCNET (Clause 8)	<input type="checkbox"/> LonTalk, (Clause 11)
<input type="checkbox"/> ATA 878.1, EIA-485 ARCNET (Clause 8)	<input type="checkbox"/> BACnet/ZigBee (ANNEX O)
<input type="checkbox"/> MS/TP master (Clause 9)	<input checked="" type="checkbox"/> Other: EnOcean wireless

**Device Address Binding:**

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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**Networking Options:**

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

**Network Security Options:**

<input type="checkbox"/> Non-secure Device - is capable of operating without BACnet Network Security
<input type="checkbox"/> Secure Device - is capable of using BACnet Network Security (NS-SD BIBB)
<input type="checkbox"/> Multiple Application-Specific Keys:
<input type="checkbox"/> Supports encryption (NS-ED BIBB)
<input type="checkbox"/> Key Server (NS-KS BIBB)

**Character Sets Supported:**

<input checked="" type="checkbox"/> ISO 10646 (UTF-8)	<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 X 0208