

ANNEX A - PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (NORMATIVE)

(This annex is part of this standard and is required for its use.)

BACnet Protocol Implementation Conformance Statement

Date: 15/02/2022

Vendor Name: Grundfos

Product Name: MIXIT

Product Model Number: A

Application Software Version: 99503129V02.01.00.00762 **Firmware Revision:** V01.01.06 **BACnet Protocol Revision:** 15

Product Description:

The Grundfos MIXIT valve unit is designed for heating and cooling systems. MIXIT features temperature control, application specific settings, eco functions, such as balancing limiters and pressure independence, as well as access to the Grundfos BuildingConnect free monitoring solution. MIXIT integrates the temperature controller, the 2- or 3-way valve, the actuator, the balancing valve and the sensors into one single plug-and-play component, making selection, installation and commissioning much easier. The device has BACnet interfaces built-in which can be activated.

BACnet Standardized Device Profiles Supported (Annex L):

- ☐ BACnet Cross-Domain Advanced Operator Workstation (B-XAWS)
- ☐ BACnet Advanced Operator Workstation (B-AWS)
- ☐ BACnet Operator Workstation (B-OWS)
- ☐ BACnet Operator Display (B-OD)
- ☐ BACnet Advanced Lighting Workstations (B-ALWS)
- ☐ BACnet Lighting Operator Display (B-LOD)
- ☐ BACnet Advanced Life Safety Workstation (B-ALSWS)
- ☐ BACnet Life Safety Workstation (B-LSWS)
- ☐ BACnet Life Safety Annunciator Panel (B-LSAP)
- ☐ BACnet Advanced Access Control Workstation (B-AACWS)
- ☐ BACnet Access Control Workstation (B-ACWS)
- ☐ BACnet Access Control Security Display (B-ACSD)
- ☐ BACnet Advanced Elevator Workstation (B-AEWS)
- ☐ BACnet Elevator Workstation (B-EWS)
- ☐ BACnet Elevator Display (B-ED)
- ☐ BACnet Advanced Lighting Control Station (B-ALCS)
- ☐ BACnet Lighting Control Station (B-LCS)
- ☐ BACnet Building Controller (B-BC)
- ☐ BACnet Advanced Application Controller (B-AAC)
- ☒ BACnet Application Specific Controller (B-ASC)
- ☐ BACnet Smart Actuator (B-SA)
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Lighting Supervisor (B-LS)
- ☐ BACnet Lighting Device (B-LD)
- ☐ BACnet Advanced Life Safety Controller (B-ALSC)
- ☐ BACnet Life Safety Controller (B-LSC)
- ☐ BACnet Advanced Access Control Controller (B-AACC)
- ☐ BACnet Access Control Controller (B-ACC)

- ☐ BACnet Advanced Elevator Controller (B-AEC)
- ☐ BACnet Elevator Controller (B-EC)
- ☐ BACnet Elevator Monitor (B-EM)
- ☐ BACnet Router (B-RTR)
- ☐ BACnet Gateway (B-GW)
- ☐ BACnet Broadcast Management Device (B-BBMD)
- ☐ BACnet Access Control Door Controller (B-ACDC)
- ☐ BACnet Access Control Credential Reader (B-ACCR)
- ☐ BACnet Secure Connect Hub (B-SCHUB)

- ☐ BACnet General (B-GENERAL)

BACnet Interoperability Building Blocks Supported (Annex K): __

ReadProperty DS-RP-B

ReadPropertyMultiple DS-RPM-B

WriteProperty DS-WP-B

WritePropertyMultiple DS-WPM-B

SubscribeCOV /ConfirmedCOVNotification /UnconfirmedCOVNotification DS-COV-B

Dynamic Device Binding DM-DDB-B

Dynamic Object Binding DM-DOB-B

Device communication Control DM-DCC-B

Device Management - Reinitialize Device DM-RD-B

Device Management - Time Synchronization DM-TS-B

Data Sharing - Change Of Value Unsubscribed DS-COVU-B

Data Sharing - Change Of Value Property DS-COVP-B

Segmentation Capability:

- ☐ Able to transmit segmented messages Window Size _____
- ☐ Able to receive segmented messages Window Size _____

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 all properties that are conditionally writable where not otherwise required by this standard
- 6) List of proprietary properties and for each its property identifier, datatype, and meaning
- 7) List of any property range restrictions

<u>Object type</u>	<u>Supported</u>	<u>Dynamically creatable/ deletable</u>
Analog input	●	-
Analog output	●	-
Analog value	●	-
Binary input	●	-
Binary output	●	-
Binary Value	●	-
Multistate input	●	-
Multistate output	●	-
Multistate value	●	-
Device	●	-

The detailed object list can be found in Grundfos manual “BACnet for MIXIT, Functional Profile and user manual”

BACnet Data Link Layer Options:

- ☐ ARCNET (ATA 878.1), 2.5 Mb. (Clause 8)
- ☐ ARCNET (ATA 878.1), EIA-485 (Clause 8), baud rate(s) _____
- ☒ BACnet IP, (Annex J)
- ☐ BACnet IP, (Annex J), BACnet Broadcast Management Device (BBMD)
- ☐ BACnet IP, (Annex J), Network Address Translation (NAT Traversal)
- ☐ BACnet IPv6, (Annex U)
- ☐ BACnet IPv6, (Annex U), BACnet Broadcast Management Device (BBMD)
- ☐ BACnet/ZigBee (Annex O) _____
- ☐ Ethernet, ISO 8802-3 (Clause 7)
- ☐ LonTalk, ISO/IEC 14908.1 (Clause 11), medium: _____
- ☒ MS/TP master (Clause 9)
 - ☒ Master ☐ Slave
 - ☒ Non-isolated transceiver ☐ Isolated transceiver
 - ☐ Local 47K ohms bias resistors ☐ None ☒ Other: __33K ohms__
 - Transceiver unit loading: ☒ 1 ☐ ½ ☐ ¼ ☐ ⅛
 - Data rates: ☒ 9600 ☒ 19200 ☒ 38400 ☐ 57600 ☒ 76800 ☐ 115200
- ☐ Point-To-Point, EIA 232 (Clause 10), baud rate(s): _____
- ☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____
- ☐ BACnet Secure Connect (Annex AB)
 - ☐ BACnet Secure Connect Node
 - If direct connections are supported:
 - Maximum number of simultaneous direct connections initiated: _____
 - Maximum number of simultaneous direct connections accepted: _____
 - ☐ BACnet Secure Connect Hub Function
 - Maximum number of simultaneous hub connections accepted: _____
 - ☐ HTTPS Proxy Support
 - List the types of HTTPS proxies supported: _____
 - ☐ Additional cipher suites supported beyond those required for TLS V1.3
 - The additional cipher suites supported using the cipher suite names as of the TLS Cipher Suite Registry at IANA (See RFC 8446): _____
- ☐ Additional Transport Layer Security versions other than V1.3 supported
 - The TLS versions other than V1.3 that are supported, including the supported cipher suites for the version beyond those required, using the cipher suite names as defined by the TLS version supported: _____
- ☐ Generates private keys internally, and provides matching certificate signing requests.
- ☐ DNS host name resolution supported (RFC 1123)
- ☐ mDNS host name resolution supported (RFC 6762)
- ☐ 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

Character Sets Supported:

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

- | | | |
|---|---|-------------------------------------|
| <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 |

Gateway Options:

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

If this product is a communication gateway which presents a network of virtual BACnet devices, a separate PICS shall be provided that describes the functionality of the virtual BACnet devices. That PICS shall describe a superset of the functionality of all types of virtual BACnet devices that can be presented by the gateway.

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