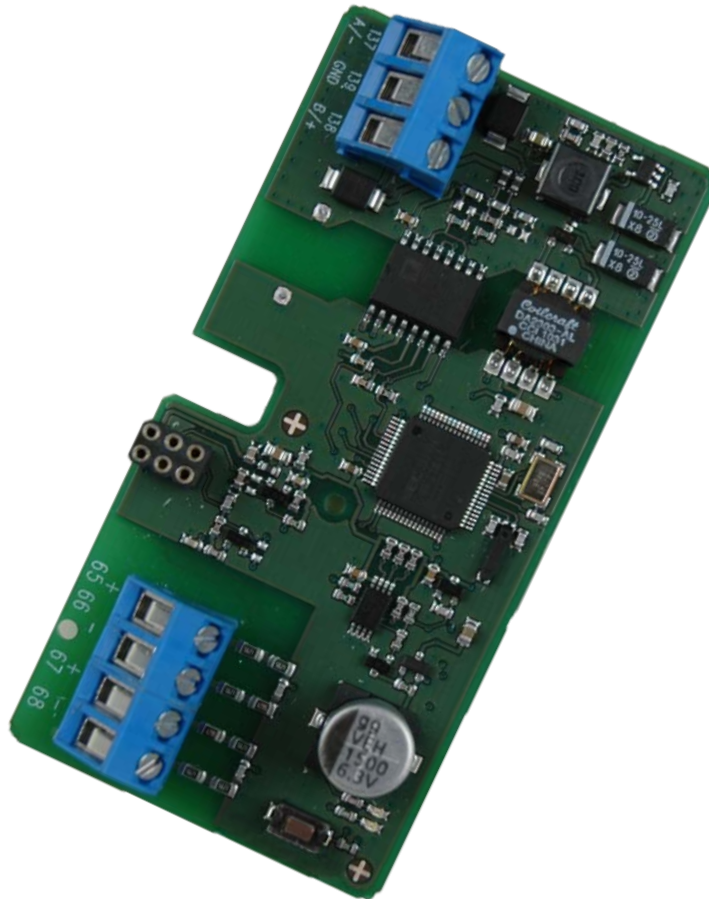


BACnet[®] Protocol Implementation Conformance Statement (PICS) for MULTICAL[®] 62/601/602/801



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Vendor Name: Kamstrup A/S

Vendor ID: 546

Product Name: MULTICAL BACnet

Product Model Number: 5550-1240

Application Software Version: 1.0

Firmware Revision: A1

BACnet Protocol Revision: 9

Product Description:

The BACnet base module for MULTICAL[®] heat cooling and water meters communicates with BACnet on MS/TP via RS-485 as master or slave.

The module is supported by following products: MULTICAL[®] 62/601/602/801

BACnet Standardized Device Profile (Annex L):

- BACnet Operator Workstation (B-OWS)
- BACnet Advanced Operator Workstation (B-AWS)
- BACnet Operator Display (B-OD)
- 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):

| BIBB | Name | BACnet Service | Init | Exec |
|--------------------------|--|----------------------------|------|------|
| Data Sharing | | | | |
| DS-RP-B | Data Sharing - Read Property-B | ReadProperty | | X |
| DS-RPM-B | Data Sharing - Read Property Multiple-B | ReadPropertyMultiple | | X |
| DS-WP-B | Data Sharing - Write Property-B | WriteProperty | | X |
| DS-WPM-B | Data Sharing - Write Property Multiple-B | WritePropertyMultiple | | X |
| Device Management | | | | |
| DM-DDB-B | Device Management - Dynamic Device Binding-B | Who-Is | | X |
| | | I-Am | X | |
| DM-DOB-B | Device Management - Dynamic Object Binding-B | Who-Has | | X |
| | | I-Have | X | |
| DM-DCC-B | Device Management - Device Communication Control-B | DeviceCommunicationControl | | X |
| DM-TS-B | Device Management - Time Synchronization-B | TimeSynchronization | | X |
| DM-UTC-B | Device Management - UTC Time Synchronization-B | UTCTimeSynchronization | | X |
| DM-RD-B | Device Management - Reinitialize Device-B | ReinitializeDevice | | X |

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Segmentation Capability:

Able to transmit segmented messages Window Size _____

Able to receive segmented messages Window Size _____

Standard Object Types Supported:

| Description | ID | Name | Used units | Read/Write |
|--------------|-------------------------------|---------------------------------|------------------------------|------------|
| Device | Last 5 digits of meter number | MULTICAL BACnet | Dimensionless | Read |
| Analog Input | AI-0 | Meter serial number | Dimensionless | Read |
| Analog Input | AI-1 | Accumulated heat energy (E1) | kWh, MWh | Read |
| Analog Input | AI-2 | Accumulated cooling energy (E3) | kWh, MWh | Read |
| Analog Input | AI-3 | Accumulated volume (V1) | l, m ³ | Read |
| Analog Input | AI-4 | Actual flow | l/h, m ³ /h | Read |
| Analog Input | AI-5 | Actual power | W, kW, MW | Read |
| Analog Input | AI-6 | Pulse input A accumulated | l, m ³ , kWh, MWh | Read |
| Analog Input | AI-7 | Pulse input B accumulated | l, m ³ , kWh, MWh | Read |
| Analog Input | AI-8 | Info code | Dimensionless | Read |
| Analog Input | AI-9 | Differential temperature | K | Read |
| Analog Input | AI-10 | Flow temperature | °C | Read |
| Analog Input | AI-11 | Return temperature | °C | Read |

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Detailed Object information

Device Object:

| Property Identifier | Property Datatype | Conformance Code | Value |
|---------------------------------|--|------------------|---|
| Object_Identifier | BACnetObjectIdentifier | W | (Device, last 5 digits of meter number) |
| Object_Name | CharacterString | W | "MULTICAL BACNet" |
| Object_Type | BACnetObjectType | R | Device |
| System_Status | BACnetDeviceStatus | R | OPERATIONAL |
| Vendor_Name | CharacterString | R | "Kamstrup A/S" |
| Vendor_Identifier | Unsigned16 | R | 546 |
| Model_Name | CharacterString | R | "670066" |
| Firmware_Revision | CharacterString | R | "A1" |
| Application_Software_Version | CharacterString | R | "1.0" |
| Description | CharacterString | O | "BACnet MS/TP base module for MULTICAL" |
| Protocol_Version | Unsigned | R | 1 |
| Protocol_Revision | Unsigned | R | 10 |
| Protocol_Services_Supported | BACnetServicesSupported | R | {F,F,F,F,F,F,F,F,F,F,F,F,T,F,T,T,T,T,F,F,T,F,F,F,F,F,F,F,F,F,T,T,T,T,F,T,F,F,F} ReadProperty ReadPropertyMultiple WriteProperty WritePropertyMultiple DeviceCommunicationControl ReinitializeDevice TimeSynchronization Who-Has Who-Is UtcTimeSynchronization |
| Protocol_Object_Types_Supported | ProtocolObjectTypes Supported | R | {T,F,F,F,F,F,F,F,T,F} Analog_Input Device |
| Object_List | BACnetARRAY[N] of BACnetObjectIdentifier | R | { (device, last 5 digits of meter number) (analog-input, 0), (analog-input, 1), (analog-input, 2), (analog-input, 3), (analog-input, 4), (analog-input, 5), (analog-input, 6), (analog-input, 7), (analog-input, 8), (analog-input, 9), (analog-input, 10), (analog-input, 11), } |
| Max_APDU_Length_Accepted | Unsigned | R | 206 |
| Segmentation_Supported | BACnetSegmentation | R | no-segmentation |
| Local_Time | Time | O | hh:mm:ss:ms |
| Local_Date | Date | O | yy:mm:dd, wday |
| UTC_Offset | INTEGER | W | - |
| Daylight_Savings_Status | BOOLEAN | O | FALSE |
| APDU_Timeout | Unsigned | R | 3000 |
| Number_Of_APDU_Retries | Unsigned | R | 3 |
| Max_Master | Unsigned(1..127) | W | 127 |
| Max_Info_Frames | Unsigned | W | 2 |
| Device_Address_Binding | List of DeviceAddressBinding | R | () |
| Database_Revision | Unsigned | R | 0 |

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Analog-input Object:

| Property Identifier | Property Datatype | Conformance Code | Value |
|---------------------|------------------------|------------------|--|
| Object_Identifier | BACnetObjectIdentifier | R | (analog-input, 0-11) |
| Object_Name | CharacterString | R | See standard object table above |
| Object_Type | BACnetObjectType | R | analog-input |
| Present_Value | REAL | R (W) | - |
| Status_Flags | BACnetStatusFlags | R | { IN_ALARM, FAULT, OVERRIDDEN, OUT_OF_SERVICE } |
| Event_State | BACnetEventState | R | NORMAL |
| Out_Of_Service | BOOLEAN | R(W) | TRUE or FALSE |
| Unit | BACnetEngineeringUnits | R | See standard object table above |

Data Link Layer Options:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ATA 878.1, EIA-485 ARCNET (Clause 8), baud rate(s) _____
- MS/TP master (Clause 9), baud rate(s): 9600, 19200, 38400, 57600, 76800**
- MS/TP slave (Clause 9), baud rate(s): 9600, 19200, 38400, 57600, 76800**
- Point-To-Point, EIA 232 (Clause 10), baud rate(s): _____
- Point-To-Point, modem, (Clause 10), baud rate(s): _____
- LonTalk, (Clause 11), medium: _____
- BACnet/ZigBee (ANNEX O)
- 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

Does the BBMD support network address translation? Yes No

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Network Security Options:

- Non-secure Device - is capable of operating without BACnet Network Security
- Secure Device - is capable of using BACnet Network Security (NS-SD BIBB)
 - Multiple Application-Specific Keys:
 - Supports encryption (NS-ED BIBB)
 - Key Server (NS-KS BIBB)

Character Sets Supported:

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

- ISO 10646 (UTF-8)
- IBM[™]/Microsoft[™] DBCS
- ISO 8859-1
- ANSI X3.4**
- ISO 10646 (UCS-2)
- ISO 10646 (UCS-4)
- JIS X 0208

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