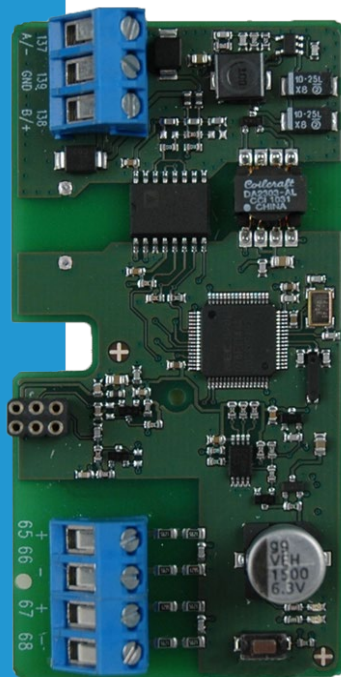


BACnet Protocol Implementation
Conformance Statement (PICS)

MULTICAL[®]
62/601/602/6L2/6M2/801



BACnet Protocol Implementation Conformance Statement (PICS)

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BACnet Protocol Implementation Conformance Statement (PICS)

Date: 10.12.2014

Vendor Name: Kamstrup A/S

Vendor ID: 546

Product Name: MULTICAL BACnet

Product Model Number: 670066

Application Software Version: 1.0

Firmware Revision: F2

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® 62/601/602/6L2/6M2/801.

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 _____

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	Flow temperature	°C	Read
Analog Input	AI-10	Return temperature	°C	Read
Analog Input	AI-11	Differential temperature	°K	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	"F2"
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	9
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,F,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,F,F,F,F,F,F,F,F,F,F,F,F,F,F,F,F, ,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	-780 to 780 (minutes)
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	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, 76800
- MS/TP slave (Clause 9), baud rate(s): 9600, 19200, 38400, 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