

# Functional Specifications Gateway

## IntesisBox-BACnet-MBUS V4

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# 1. BACnet Protocol Implementation Conformance Statement (PICS)

**Date:** 2011-02-07

**Vendor Name:** Intesis Software SL

**Product Name:** IntesisBox-Bacnet-MBUS

**Product Model Number:** IntesisBox-Bacnet-MBUS

**Application Software Version:** 4.0.5

**Firmware Revision:** 4.0.5

**BACnet Protocol Revision:** 2

## Product Description:

*M-Bus (Metering Bus) to BACnet/IP Gateway*

Mapping of M-Bus registers as Bacnet Objects.

M-Bus mean Metering Bus, normalization ISO-13757-3.

Media used RS232 or RS485.

## 1.1 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)

Additional BACnet Interoperability Building Blocks Supported (Annex K):  
*Reference of BIBBs List*

## 1.2 Segmentation Capability:

Segmented request supported	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	Window Size . . . . .
Segmented responses supported	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	Window Size . . . . .

### 1.3 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):
- 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:

### 1.4 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

### 1.5 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

### 1.6 Character Sets Supported

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

- ANSI X3.4
- IBM™/Microsoft™ DBCS
- JIS C 6226
- ISO 10646 (UCS-4)
- ISO 10646 (UCS-2)
- ISO 8859-1

### 1.7 Gateway

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

**RS232 or RS485 physical layers. To connect to M-BUS physical layer standard is needed a external converter M-BUS to RS232/RS485.**

## 2. BACnet Interoperability Building Blocks Supported (BIBBs)

### 2.1 Data Sharing BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
DS-RP-A	Data Sharing-ReadProperty-A	<input type="checkbox"/>	ReadProperty	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-RP-B	Data Sharing-ReadProperty-B	<input checked="" type="checkbox"/>	ReadProperty	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-RPM-A	Data Sharing-ReadPropertyMultiple-A	<input type="checkbox"/>	ReadPropertyMultiple	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-RPM-B	Data Sharing-ReadPropertyMultiple-B	<input type="checkbox"/>	ReadPropertyMultiple	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-RPC-A	Data Sharing-ReadPropertyConditional-A	<input type="checkbox"/>	ReadPropertyConditional	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-RPC-B	Data Sharing-ReadPropertyConditional-B	<input type="checkbox"/>	ReadPropertyConditional	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-WP-A	Data Sharing-WriteProperty-A	<input type="checkbox"/>	WriteProperty	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-WP-B	Data Sharing-WriteProperty-B	<input checked="" type="checkbox"/>	WriteProperty	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-WPM-A	Data Sharing-WritePropertyMultiple-A	<input type="checkbox"/>	WritePropertyMultiple	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-WPM-B	Data Sharing-WritePropertyMultiple-B	<input type="checkbox"/>	WritePropertyMultiple	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-COV-A	Data Sharing-COV-A	<input type="checkbox"/>	SubscribeCOV	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	ConfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-COV-B	Data Sharing-COV-B	<input checked="" type="checkbox"/>	SubscribeCOV	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	ConfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-COVP-A	Data Sharing-COVP-A	<input type="checkbox"/>	SubscribeCOV	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	ConfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-COVP-B	Data Sharing-COVP-B	<input type="checkbox"/>	SubscribeCOV	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	ConfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-COVU-A	Data Sharing-COV-Unsolicited-A	<input type="checkbox"/>	UnconfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-COVU-B	Data Sharing-COV-Unsolicited-B	<input type="checkbox"/>	UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 2.2 Alarm and Event Management BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
AE-N-A	Alarm and Event-Notification-A	<input type="checkbox"/>	ConfirmedEventNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedEventNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-N-I-B	Alarm and Event-Notification Internal-B	<input type="checkbox"/>	ConfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-N-E-B	Alarm and Event-Notification External-B	<input type="checkbox"/>	ConfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-ACK-A	Alarm and Event-ACK-A	<input type="checkbox"/>	AcknowledgeAlarm	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-ACK-B	Alarm and Event-ACK-B	<input type="checkbox"/>	AcknowledgeAlarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-ASUM-A	Alarm and Event-Summary-A	<input type="checkbox"/>	GetAlarmSummary	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-ASUM-B	Alarm and Event-Summary-B	<input type="checkbox"/>	GetAlarmSummary	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-ESUM-A	Event-Summary-A	<input type="checkbox"/>	GetEnrollmentSummary	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-ESUM-B	Event-Summary-B	<input type="checkbox"/>	GetEnrollmentSummary	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-INFO-A	Alarm and Event-Information-A	<input type="checkbox"/>	GetEventInformation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-INFO-B	Alarm and Event-Information-B	<input type="checkbox"/>	GetEventInformation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-LS-A	Alarm and Event-LifeSafety-A	<input type="checkbox"/>	LifeSafetyOperation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-LS-B	Alarm and Event-LifeSafety-B	<input type="checkbox"/>	LifeSafetyOperation	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 2.3 Scheduling BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
SCHEd-A	Scheduling–A (must support DS-RP-A and DS-WP-A)	<input type="checkbox"/>			
		<input type="checkbox"/>			
SCHEd-I-B	Scheduling-Internal–B (shall support DS-RP-B and DS-WP-B) (shall also support ether DM-TS-B or DS-UTC-B)	<input type="checkbox"/>			
		<input type="checkbox"/>			
SCHEd-E-B	Scheduling-External–B (shall support SCHEd-I-B and DS-WP-A)	<input type="checkbox"/>			
		<input type="checkbox"/>			
T-VMT-A	Trending - Viewing and Modifying Trends–A	<input type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>
T-VMT-I-B	Trending - Viewing and Modifying Trends Inernal–B	<input type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>
T-VMT-E-B	Trending - Viewing and Modifying Trends External–B	<input type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>
T-ATR-A	Trending - Automated Trend Retrieval–A	<input type="checkbox"/>	ConfirmedEventNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	ReadRange	<input checked="" type="checkbox"/>	<input type="checkbox"/>
T-ATR-B	Trending - Automated Trend Retrieval–B	<input type="checkbox"/>	ConfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 2.4 Trending BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
T-VMT-A	Trending - Viewing and Modifying Trends–A	<input type="checkbox"/>	ReadRange	<input checked="" type="checkbox"/>	<input type="checkbox"/>
T-VMT-I-B	Trending - Viewing and Modifying Trends Inernal–B	<input type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>
T-VMT-E-B	Trending - Viewing and Modifying Trends External–B	<input type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>
T-ATR-A	Trending - Automated Trend Retrieval–A	<input type="checkbox"/>	ConfirmedEventNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	ReadRange	<input checked="" type="checkbox"/>	<input type="checkbox"/>
T-ATR-B	Trending - Automated Trend Retrieval–B	<input type="checkbox"/>	ConfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 2.5 Network Management BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
NM-CE-A	Network Management - Connection Establishment–A	<input type="checkbox"/>	Establish-Connection-To-Network	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	Disconnect-Connection-To-Network	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NM-CE-B	Network Management - Connection Establishment– B	<input type="checkbox"/>	Establish-Connection-To-Network	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	Disconnect-Connection-To-Network	<input type="checkbox"/>	<input checked="" type="checkbox"/>
NM-RC-A	Network Management - Router Configuration–A	<input type="checkbox"/>	Who-Is-Router-To-Network	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	I-Am-Router-To-Network	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	I-Could-Be-Router-To-Network	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	Initialize-Routing-Table	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	Initialize-Routing-Table-Ack	<input type="checkbox"/>	<input checked="" type="checkbox"/>
NM-RC-B	Network Management - Router Configuration–B	<input type="checkbox"/>	Who-Is-Router-To-Network	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	I-Am-Router-To-Network	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	Initialize-Routing-Table	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	Initialize-Routing-Table-Ack	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## 2.6 Device Management BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
DM-DDB-A	Device Management - Dynamic Device Binding-A	<input type="checkbox"/>	Who-Is	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	I-Am	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-DDB-B	Device Management - Dynamic Device Binding-B	<input checked="" type="checkbox"/>	Who-Is	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	I-Am	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-DOB-A	Device Management - Dynamic Object Binding-A	<input type="checkbox"/>	Who-Has	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	I-Have	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-DOB-B	Device Management - Dynamic Object Binding-B	<input checked="" type="checkbox"/>	Who-Has	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	I-Have	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-DCC-A	Device Management - DeviceCommunicationControl-A	<input type="checkbox"/>	DeviceCommunicationControl	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-DCC-B	Device Management - DeviceCommunicationControl-B	<input type="checkbox"/>	DeviceCommunicationControl	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-PT-A	Device Management - PrivateTransfer-A	<input type="checkbox"/>	ConfirmedPrivateTransfer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedPrivateTransfer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-PT-B	Device Management - PrivateTransfer-B	<input type="checkbox"/>	ConfirmedPrivateTransfer	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedPrivateTransfer	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-TM-A	Device Management - Text Message-A	<input type="checkbox"/>	ConfirmedTextMessage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedTextMessage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-TM-B	Device Management - Text Message-B	<input type="checkbox"/>	ConfirmedTextMessage	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedTextMessage	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-TS-A	Device Management - TimeSynchronization-A	<input type="checkbox"/>	TimeSynchronization	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-TS-B	Device Management - TimeSynchronization-B	<input type="checkbox"/>	TimeSynchronization	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-UTC-A	Device Management - UTCTimeSynchronization-A	<input type="checkbox"/>	UTCTimeSynchronization	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-UTC-B	Device Management - UTCTimeSynchronization-B	<input type="checkbox"/>	UTCTimeSynchronization	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-RD-A	Device Management - ReinitializeDevice-A	<input type="checkbox"/>	ReinitializeDevice	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-RD-B	Device Management - ReinitializeDevice-B	<input checked="" type="checkbox"/>	ReinitializeDevice	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-BR-A	Device Management - Backup and Restore-A	<input type="checkbox"/>	AtomicReadFile	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	AtomicWriteFile	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	CreateObject	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	ReinitializeDevice	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-BR-B	Device Management - Backup and Restore-B	<input type="checkbox"/>	AtomicReadFile	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	AtomicWriteFile	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	ReinitializeDevice	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-R-A	Device Management - Restart-A	<input type="checkbox"/>	UnconfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-R-B	Device Management - Restart-B	<input type="checkbox"/>	UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-LM-A	Device Management - List Manipulation-A	<input type="checkbox"/>	AddListElement	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	RemoveListElement	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-LM-B	Device Management - List Manipulation-B	<input type="checkbox"/>	AddListElement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	RemoveListElement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-OCD-A	Device Management - Object Creation and Deletion-A	<input type="checkbox"/>	CreateObject	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	DeleteObject	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DM-OCD-B	Device Management - Object Creation and Deletion-B	<input type="checkbox"/>	CreateObject	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	DeleteObject	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DM-VT-A	Device Management - Virtual Terminal-A	<input type="checkbox"/>	VT-Open	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	VT-Close	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	VT-Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DM-VT-B	Device Management - Virtual Terminal-B	<input type="checkbox"/>	VT-Open	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	VT-Close	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	VT-Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### 3. Objects

#### 3.1 Supported Object Types

Every M-Bus register is associated with general object types specified by BACnet. The objects supported are shown in the table below.

Object Type	ID	Supported	Management Point
Analog-Input	0	<input checked="" type="checkbox"/>	User defined
Analog-Output	1	<input checked="" type="checkbox"/>	User defined
Analog-Value	2	<input checked="" type="checkbox"/>	User defined
Averaging	18	<input type="checkbox"/>	
Binary-Input	3	<input checked="" type="checkbox"/>	User defined
Binary-Output	4	<input checked="" type="checkbox"/>	User defined
Binary-Value	5	<input checked="" type="checkbox"/>	User defined
Calendar	6	<input type="checkbox"/>	
Command	7	<input type="checkbox"/>	
Device	8	<input checked="" type="checkbox"/>	
Event-Enrollment	9	<input type="checkbox"/>	
File	10	<input type="checkbox"/>	
Group	11	<input type="checkbox"/>	
Life-Safety-Point	21	<input type="checkbox"/>	
Life-Safety-Zone	22	<input type="checkbox"/>	
Loop	12	<input type="checkbox"/>	
Multistate-Input	13	<input checked="" type="checkbox"/>	User defined
Multistate-Output	14	<input checked="" type="checkbox"/>	User defined
Multistate-Value	19	<input checked="" type="checkbox"/>	User defined
Notification-Class	15	<input type="checkbox"/>	
Program	16	<input type="checkbox"/>	
Schedule	17	<input type="checkbox"/>	
Trend-Log	20	<input type="checkbox"/>	

### 3.2 Device Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACnetObjectIdentifier	R	R	User defined
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	DEVICE
System_Status	BACnetDeviceStatus	R	R	
Vendor_Name	CharacterString	R	R	Intesis Software SL
Vendor_Identifier	Unsigned	R	R	246
Model_Name	CharacterString	R	R	IntesisBox_BACNET_MBUS
Firmware_Revision	CharacterString	R	R	4.0.2
Application_Software_Version	CharacterString	R	R	4.0.2
Location	CharacterString	O	-	
Description	CharacterString	O	-	
Protocol_Version	Unsigned	R	R	1
Protocol_Conformance_Class	Unsigned	R	R	3
Protocol_Services_Supported	BACnetService Supported	R	R	
Protocol_Object_Types_Supported	BACnetObjectTypes Supported	R	R	
Object_List	BACnetARRAY[N] of BACnetObjectIdentifir	R	-	
Max_APDU_Length_Accepted	Unsigned	R	R	
Segmentation_Supported	BACnetSegmentation	R	R	
VT_Class_Supported	List of ACnetVTClass	O1	-	
Active_VT_Sessions	List of BACnetVTSession	O2	-	
Local_Time	Time	O3,4	-	
Local_Date	Date	O3,4	-	
UTC_Offset	Signed	O4	-	
Daylight_Saving_Status	Boolean	O4	-	
APDU_Segment_Timeout	Unsigned	O1	-	
APDU_Timeout	Unsigned	R	R	3000
Number_Of_APDU_Retries	Unsigned	R	R	3
List_Of_Session_Keys	List of BACnetSessionKey	O	-	
Time_Synchronization_Recipients	List of BACnetRecipient	O5	-	
Max_Master	Unsigned	O6	-	
Max_Info_Frames	Unsigned	O6	-	
Device_Adress_Binding	List of BACnetAddress Binding	R	R	.
Database_Revision	Unsigned	R	R	.
Configuration_Files	BACnetARRAY[N] of BACnetObjectIdentifir	O7	-	
Last_Restore_Time	BACnetDateTime	O7	-	
Backup_Failure_Timeout	Unsigned	O8	-	
Active_COV_Subscriptions	List of BACnetCOV Subscription	O9	-	
Profile_Name	CharacterString	O	-	



### 3.3 Analog Input Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACnetObjectIdentifier	R	R	User defined
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	ANALOG INPUT
Present_Value	Real	R1	R	
Description	CharacterString	O	-	Same the object name
Device_Type	CharacterString	O	-	
Status_Flags	BACnetStatusFlags	R	R	All bits: FALSE always.
Event_State	BACnetEventState	R	R	NORMAL: NORMAL (0)
Reliability	BACnetReliability	O	R	NO_FAULT_DETECTED always.
Out_Of_Service	Boolean	R	R	Always FALSE.
Update_Interval	Unsigned	O	-	
Units	BACnetEngineeringUnits	R	R	NULL (no units)
Min_Pres_Value	Real	O	-	
Max_Pres_Value	Real	O	-	
Resolution	Real	O	-	
COV_Increment	Real	O2	R	Any change
Time_Delay	Unsigned	O3	-	
Notification_Class	Unsigned	O3	-	
High_Limit	Real	O3	-	
Low_Limit	Real	O3	-	
Deadband	Real	O3	-	
Limit_Enable	BACnetLimitEnable	O3	-	
Event_Enable	BACnetEventTransitionBits	O3	-	
Acked_Transitions	BACnetEventTransitionBits	O3	-	
Notify_Type	BACnetNotifyType	O3	-	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O3	-	
Profile_Name	CharacterString	O	-	

### 3.4 Analog Output Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACnetObjectIdentifier	R	R	
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	ANALOG INPUT
Present_Value	Real	R4	RW	
Description	CharacterString	O	R	Same the object name
Status_Flags	BACnetStatusFlags	R	R	All bits: FALSE always.
Event_State	BACnetEventState	R	R	NORMAL: NORMAL (0)
Reliability	BACnetReliability	O	R	NO_FAULT_DETECTED always.
Out_Of_Service	Boolean	R	R	Always FALSE.
Units	BACnetEngineeringUnits	R	R	NULL (no units)
Min_Pres_Value	Real	O	-	
Max_Pres_Value	Real	O	-	
Resolution	Real	O	-	
Priority_Array	BACnetPriorityArray	R	R	Accept all writes as Priority 16
Relinquish_Default	BACnetBinaryPV	R	R	Same Present_Value data
COV_Increment	Real	O2	R	Any change
Time_Delay	Unsigned	O3	-	
Notification_Class	Unsigned	O3	-	
High_Limit	Real	O3	-	
Low_Limit	Real	O3	-	
Deadband	Real	O3	-	
Limit_Enable	BACnetLimitEnable	O3	-	
Event_Enable	BACnetEventTransitionBits	O3	-	
Acked_Transitions	BACnetEventTransitionBits	O3	-	
Notify_Type	BACnetNotifyType	O3	-	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O3	-	
Profile_Name	CharacterString	O	-	

### 3.5 Analog Value Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACnetObjectIdentifier	R	R	
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	ANALOG VALUE
Present_Value	Real	R4	RW	
Description	CharacterString	O	R	Same the object name
Device_Type	CharacterString	O	-	
Status_Flags	BACnetStatusFlags	R	R	All bits: FALSE always.
Event_State	BACnetEventState	R	R	NORMAL: NORMAL (0)
Reliability	BACnetReliability	O	R	NO_FAULT_DETECTED always.
Out_Of_Service	Boolean	R	R	Always FALSE.
Units	BACnetEngineeringUnits	R	R	NULL (no units)
Priority_Array	BACnetPriorityArray	R	R	Accept all writes as Priority 16
Relinquish_Default	BACnetBinaryPV	R	R	Same Present_Value data
COV_Increment	Real	O2	R	Any change
Time_Delay	Unsigned	O3	-	
Notification_Class	Unsigned	O3	-	
High_Limit	Real	O3	-	
Low_Limit	Real	O3	-	
Deadband	Real	O3	-	
Limit_Enable	BACnetLimitEnable	O3	-	
Event_Enable	BACnetEventTransitionBits	O3	-	
Acked_Transitions	BACnetEventTransitionBits	O3	-	
Notify_Type	BACnetNotifyType	O3	-	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O3	-	
Profile_Name	CharacterString	O	-	

### 3.6 Binary Input Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACnetObjectIdentifier	R	R	
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	BINARY INPUT
Present_Value	BACnetBinaryPV	R1	R	
Description	CharacterString	O	R	Same the object name
Device_Type	CharacterString	O	-	
Status_Flags	BACnetStatusFlags	R	R	All bits: FALSE always.
Event_State	BACnetEventState	R	R	Always NORMAL: NORMAL (0)
Reliability	BACnetReliability	O	R	NO_FAULT_DETECTED always.
Out_Of_Service	Boolean	R	R	Always FALSE.
Polarity	BACnetPolarity	R	R	NORMAL
Inactive_Text	CharacterString	O2	-	
Active_Text	CharacterString	O2	-	
Change_Of_State_Time	BACnetDateTime	O3	-	
Change_Of_State_Count	Unsigned	O3	-	
Elapsed_Active_Time	Unsigned	O4	-	
Time_Of_Active_Time_Reset	BACnetDateTime	O5	-	
Time_Delay	Unsigned	O5	-	
Notification_Class	Unsigned	O5	-	
Alarm_Value	BACnetBinaryPV	O5	-	
Event_Enable	BACnetEventTransitionBits	O5	-	
Acked_Transitions	BACnetEventTransitionBits	O5	-	
Notify_Type	BACnetNotifyType	O5	-	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O5	-	
Profile_Name	CharacterString	O	-	

### 3.7 Binary Output Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACnetObjectIdentifier	R	R	
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	BINARY INPUT
Present_Value	BACnetBinaryPV	W	RW	
Description	CharacterString	O	R	Same the object name
Device_Type	CharacterString	O	-	
Status_Flags	BACnetStatusFlags	R	R	All bits: FALSE always.
Event_State	BACnetEventState	R	R	Always NORMAL: NORMAL (0)
Reliability	BACnetReliability	O	R	NO_FAULT_DETECTED always.
Out_Of_Service	Boolean	R	R	Always FALSE.
Polarity	BACnetPolarity	R	R	NORMAL
Inactive_Text	CharacterString	O1	-	
Active_Text	CharacterString	O1	-	
Change_Of_State_Time	BACnetDateTime	O2	-	
Change_Of_State_Count	Unsigned	O2	-	
Time_Of_State_Count_Reset	BACnetDateTime	O2	-	
Elapsed_Active_Time	Unsigned	O3	-	
Time_Of_Active_Time_Reset	BACnetDateTime	O3	-	
Minimum_Off_Time	Unsigned	O	-	
Minimum_On_Time	Unsigned	O	-	
Priority_Array	BACnetPriorityArray	R	R	Accept all writes as Priority 16
Relinquish_Default	BACnetBinaryPV			Same Present_Value data
Time_Delay	Unsigned	O4	-	
Notification_Class	Unsigned	O4	-	
Feedback_Value	BACnetBinaryPV	O4	-	
Event_Enable	BACnetEventTransitionBits	O4	-	
Acked_Transitions	BACnetEventTransitionBits	O4	-	
Notify_Type	BACnetNotifyType	O4	-	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O4	-	
Profile_Name	CharacterString	O	-	

### 3.8 Binary Value Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACneObjectIdentifier	R	R	
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	BINARY VALUE
Present_Value	BACnetBinaryPV	W	RW	
Description	CharacterString	O	R	Same the object name
Status_Flags	BACnetStatusFlags	R	R	All bits: FALSE always.
Event_State	BACnetEventState	R	R	Always NORMAL: NORMAL (0)
Reliability	BACnetReliability	O	R	NO_FAULT_DETECTED always.
Out_Of_Service	Boolean	R	R	Always FALSE.
Inactive_Text	CharacterString	O1	-	
Active_Text	CharacterString	O1	-	
Change_Of_State_Time	BACnetDateTime	O2	-	
Change_Of_State_Count	Unsigned	O2	-	
Time_Of_State_Count_Reset	BACnetDateTime	O2	-	
Elapsed_Active_Time	Unsigned	O3	-	
Time_Of_Active_Time_Reset	BACnetDateTime	O3	-	
Minimum_Off_Time	Unsigned	O	-	
Minimum_On_Time	Unsigned	O	-	
Priority_Array	BACnetPriorityArray	R	R	Accept all writes as Priority 16
Relinquish_Default	BACnetBinaryPV			Same Present_Value data
Time_Delay	Unsigned	O4	-	
Notification_Class	Unsigned	O4	-	
Alarm_Value	BACnetBinaryPV	O4	-	
Event_Enable	BACnetEventTransitionBits	O4	-	
Acked_Transitions	BACnetEventTransitionBits	O4	-	
Notify_Type	BACnetNotifyType	O4	-	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O4	-	
Profile_Name	CharacterString	O	-	

### 3.9 Multistate Input Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACnetObjectIdentifier	R	R	
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	MULTISTATE INPUT
Present_Value	Unsigned	R1	R	
Description	CharacterString	O	R	Same the object name
Device_Type	CharacterString	O	-	
Status_Flags	BACnetStatusFlags	R	R	All bits: FALSE always.
Event_State	BACnetEventState	R	R	Always NORMAL: NORMAL (0)
Reliability	BACnetReliability	O2	R	NO_FAULT_DETECTED always.
Out_Of_Service	Boolean	R	R	Always FALSE.
Number_Of_States	Unsigned	R	-	Unreliable
State_Text	BACnetARRAY[N] of CharacterString	O	-	
Time_Delay	Unsigned	O3	-	
Notification_Class	Unsigned	O3	-	
Alarm_Values	List of Unsigned	O3	-	
Event_Enable	BACnetEventTransitionBits	O3	-	
Acked_Transitions	BACnetEventTransitionBits	O3	-	
Notify_Type	BACnetNotifyType	O3	-	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O3	-	
Profile_Name	CharacterString	O	-	

### 3.10 Multistate Output Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACnetObjectIdentifier	R	R	
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	MULTISTATE OUTPUT
Present_Value	Unsigned	R1	RW	
Description	CharacterString	O	R	Same the object name
Device_Type	CharacterString	O	-	
Status_Flags	BACnetStatusFlags	R	R	All bits: FALSE always.
Event_State	BACnetEventState	R	R	Always NORMAL: NORMAL (0)
Reliability	BACnetReliability	O2	R	NO_FAULT_DETECTED always.
Out_Of_Service	Boolean	R	R	Always FALSE.
Number_Of_States	Unsigned	R	-	Unreliable
State_Text	BACnetARRAY[N] of CharacterString	O	-	
Priority_Array	BACnetPriorityArray	R	R	Accept all writes as Priority 16
Relinquish_Default	Unsigned	R	R	Same Present_Value data
Time_Delay	Unsigned	O1	-	
Notification_Class	Unsigned	O1	-	
Feedback_Values	Unsigned	O1	-	
Event_Enable	BACnetEventTransitionBits	O1	-	
Acked_Transitions	BACnetEventTransitionBits	O1	-	
Notify_Type	BACnetNotifyType	O1	-	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O1	-	
Profile_Name	CharacterString	O	-	



### 3.11 Multistate Value Object Type

Property Identifier	Property Datatype	BACnet	IntesisBox	Remarks
Object_Identifier	BACnetObjectIdentifier	R	R	
Object_Name	CharacterString	R	R	User defined
Object_Type	BACnetObjectType	R	R	MULTISTATE OUTPUT
Present_Value	Unsigned	R1	RW	
Description	CharacterString	O	R	Same the object name
Status_Flags	BACnetStatusFlags	R	R	All bits: FALSE always.
Event_State	BACnetEventState	R	R	Always NORMAL: NORMAL (0)
Reliability	BACnetReliability	O2	R	NO_FAULT_DETECTED always.
Out_Of_Service	Boolean	R	R	Always FALSE.
Number_Of_States	Unsigned	R	-	Unreliable
State_Text	BACnetARRAY[N] of CharacterString	O	-	
Priority_Array	BACnetPriorityArray	O3	R	Accept all writes as Priority 16
Relinquish_Default	Unsigned	O3	R	Same Present_Value data
Time_Delay	Unsigned	O4	-	
Notification_Class	Unsigned	O4	-	
Alarm_Values	List of Unsigned	O4	-	
Fault_Values	List of Unsigned	O4	-	
Acked_Transitions	BACnetEventTransitionBits	O4	-	
Notify_Type	BACnetNotifyType	O4	-	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O4	-	
Profile_Name	CharacterString	O	-	