

# Functional Specifications

## Gateway

### IntesisBox-BACnet-ModBusRTU V4

1. BACnet Protocol Implementation Conformance Statement (PICS) .....	2
1.1 BACnet Standardized Device Profile (Annex L): .....	2
1.2 Segmentation Capability: .....	2
1.3 Data Link Layer Options: .....	3
1.4 Device Address Binding: .....	3
1.5 Networking Options: .....	3
1.6 Character Sets Supported .....	3
1.7 Gateway .....	3
2. BACnet Interoperability Building Blocks Supported (BIBBs) .....	4
2.1 Data Sharing BIBBs .....	4
2.2 Alarm and Event Management BIBBs .....	4
2.3 Scheduling BIBBs .....	5
2.4 Trending BIBBs .....	5
2.5 Network Management BIBBs .....	5
2.6 Device Management BIBBs .....	6
3. Objects .....	7
3.1 Supported Object Types .....	7
3.2 Device Object Type .....	8
3.3 Analog Input Object Type .....	9
3.4 Analog Output Object Type .....	10
3.5 Analog Value Object Type .....	10
3.6 Binary Input Object Type .....	12
3.7 Binary Output Object Type .....	13
3.8 Binary Value Object Type .....	13
3.9 Multistate Input Object Type .....	15
3.10 Multistate Output Object Type .....	16
3.11 Multistate Value Object Type .....	17

# 1. BACnet Protocol Implementation Conformance Statement (PICS)

**Date:** 2011-02-07

**Vendor Name:** Intesis Software SL

**Product Name:** IntesisBox-Bacnet-ModBusRTU

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

**Application Software Version:** 4.1.19

**Firmware Revision:** 4.1.19

**BACnet Protocol Revision:** 2

## Product Description:

*ModBus RTU (RS232 or RS485) to BACnet/IP Gateway*

Mapping of modbus registers as Bacnet Objects to enable read and/or write this registers.

## 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 in ModBus RTU.**

## 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 ModBus 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_MODBUS
Firmware_Revision	CharacterString	R	R	4.0.9
Application_Software_Version	CharacterString	R	R	4.0.9
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	-	