

FX-PCA Advanced Application Programmable Controller Protocol Implementation Conformance Statement

Technical Bulletin

FX-PCAx6xx-x

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Document Introduction

This document contains the Protocol Implementation Conformance Statement (PICS) and BACnet® Interoperability Building Blocks (BIBBs) for the FX-PCA Advanced Application Programmable Controller (FX-PCA) as required by the American National Standards Institute/American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ANSI/ASHRAE) Standard 135-2010, BACnet protocol.

The PICS is a written document created by the manufacturer of a device to identify the particular options specified in the BACnet standard and implemented in the device.

BACnet interoperability building blocks are collections of one or more BACnet services. This document includes a listing of the BIBBs currently supported by the FX-PCA controller.

Annex A - Protocol Implementation Conformance Statement (Normative)

Table 1: BACnet Protocol Implementation Conformance Statement for FX-PCA26xx Models

Date	October 23, 2014
Vendor Name	Johnson Controls, Inc.
Product Name	FX-PCA Advanced Application Programmable Controller
Product Model Numbers	FX-PCA26xx-xxx
Applications Software Version	Not Applicable
Firmware Version	6.1
BACnet Protocol Revision	Version 1, Revision 7.0

Table 2: BACnet Protocol Implementation Conformance Statement for FX-PCA36xx Models

Date	October 23, 2014
Vendor Name	Johnson Controls, Inc.
Product Name	FX-PCA Advanced Application Programmable Controller
Product Model Numbers	FX-PCA36xx-xxx
Applications Software Version	Not Applicable
Firmware Version	6.1
BACnet Protocol Revision	Version 1, Revision 9.0

Product Description

The FX-PCA controllers are fully programmable I/O controllers for use in a variety of building automation system applications. All variants of the FX-PCA product family conform to the BACnet Advanced Application Controller (B-AAC) profile.

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)

Note: For a complete listing of the additional BIBBs supported (Annex K), see the [BACnet Interoperability Building Blocks \(BIBBs\) \(Annex K\)](#) section of this document.

BACnet Interoperability Building Blocks (BIBBs) (Annex K)

Table 3 lists all the BIBBs that are required for the BACnet Advanced Application Specific Controller (B-AAC) profile and the support for these BIBBs within the Metasys® system. The BIBBs that are not required are also listed.

Table 3: BACnet B-AAC BIBBs Support

Required for B-AAC Profile	Designation	Supported
Data Sharing - Read Property - B	DS-RP-B	☒
Data Sharing - Read Property Multiple - B	DS-RPM-B	☒
Data Sharing - Write Property Multiple - B	DS-WPM-B	☒
Data Sharing - Write Property - B	DS-WP-B	☒
Device Management - Dynamic Device Binding - B	DM-DDB-B	☒
Device Management - Device Object Binding - B	DM-DOB-B	☒
Device Management - Device Communication Control - B	DM-DCC-B	☒
Alarm and Event - Notification Internal - B	AE-N-I-B	☒
Alarm and Event - ACK - B	AE-ACK-B	☒
Alarm and Event - Information - B	AE-INFO-B	☒
Scheduling - Internal - B	SCHED-I-B	☒
Device Management - Time Synchronization - B	DM-TS-B	☒
Device Management - UTC Time Synchronization - B	DM-UTC-B	☒
Device Management - Reinitialize Device - B	DM-RD-B	☒
Not Required for B-AAC Profile		
Data Sharing - Read Property - A	DS-RP-A	☒
Data Sharing - Write Property - A	DS-WP-A	☒
Data Sharing - COV - B	DS-COV-B	☒
Data Sharing - COVP - B	DS-COVP-B	☒
Data Sharing - COVU - Unsolicited - B	DS-COVU-B	☒
Alarm and Event - Alarm Summary - B	AE-ASUM-B	☒
Alarm and Event - Enrollment Summary - B	AE-ESUM-B	☒
Scheduling - External - B	SCHED-E-B	☒
Trending - Viewing and Modifying Trends Internal - B	T-VMT-I-B	☒
Trending - Automated Trend Retrieval - B	T-ATR-B	☒
Device Management - Dynamic Device Binding - A	DM-DDB-A	☒
Device Management - Device Object Binding - A	DM-DOB-A	☒
Device Management - Restart - B	DM-R-B	☒
Device Management - List Manipulation - B	DM-LM-B	☒
Device Management - Private Transfer - B	DM-PT-B	☒

A = Initiates
B = Executes

Standard Object Types Supported

The following is a list of the standard object types as defined by ASHRAE. The objects checked are currently supported by this product. See the appropriate supported object type section in this document for details.

- Accumulator
- Analog Input
- Analog Output
- Analog Value
- Averaging
- Binary Input
- Binary Output
- Binary Value
- Calendar
- Command
- Device
- Event Enrollment
- File
- Group
- Life Safety Point
- Life Safety Zone
- Loop
- Multistate Input
- Multistate Output
- Multistate Value
- Notification Class
- Program
- Pulse Converter
- Schedule
- Trend Log
- Access Door
- Event Log
- Load Control
- Structured View
- Trend Log Multiple

Accumulator

Dynamically Creatable: No

Dynamically Deletable: No

Table 4: Accumulator (Part 1 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
MAX_PRES_VALUE	√			√	0 - 4,294,967,295		
OUT_OF_SERVICE	√			√			
PRESENT_VALUE	√			√ ¹			
UNITS	√			√	0 - 65,535 value		
DESCRIPTION		√		√	40 characters max		
DEVICE_TYPE		√		√	20 characters max		
VALUE_SET		√		√	0 - 4,294,967,295		
RELIABILITY		√		√ ¹			
VALUE_BEFORE_CHANGE		√					
VALUE_CHANGE_TIME		√					
PRESCALE		√		√	1 - 65,535 (each part)		
TIME_DELAY		√ ²		√	0 - 65,535		
LIMIT_ENABLE		√ ²		√			
EVENT_ENABLE		√ ²		√			
ACKED_TRANSITIONS		√ ²					
NOTIFY_TYPE		√ ²		√			
EVENT_TIME_STAMPS		√ ²					
LIMIT_MONITORING_INTERVAL		√ ²		√	60 - 604,800		
HIGH_LIMIT		√ ²		√	0 - 4,294,967,295		
LOW_LIMIT		√ ²		√	0 - 4,294,967,295		
PULSE_RATE		√		√ ¹			
NOTIFICATION_CLASS		√ ²		√	1 - 4,194,302		
ITEM_REFERENCE			√			32527	CharacterString
STATUS			√			512	Enumerated
ENABLED			√	√		673	Boolean
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
ALARM_STATE			√			1006	Enumerated
INSTANCE_NUMBER			√			32589	Unsigned
OFFLINE			√			913	Boolean
PERIODIC_UPDATE			√	√	10 - 10,000 value	2192	Unsigned
SAB_MAC_ADDR			√			3645	Unsigned

Table 4: Accumulator (Part 2 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
SLOT			√			519	Unsigned
GRAPHIC			√ ²	√		32581	CharacterString
GRAPHIC_ALIAS			√ ²	√		32623	CharacterString
ALARM_MESSAGE_TEXT			√ ²	√	255 characters	536	CharacterString
USER_NAME			√			2390	CharacterString

1. Only writable when OUT_OF_SERVICE.
2. Only present when intrinsic alarming is enabled.

Analog Input

Dynamically Creatable: No

Dynamically Deletable: No

Table 5: Analog Input (Part 1 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
OUT_OF_SERVICE	√			√			
PRESENT_VALUE	√			√ ¹			
UNITS	√			√	0 - 65,535 value		
COV_INCREMENT		√		√	any value > = 0		
DESCRIPTION		√		√	40 characters max		
DEVICE_TYPE		√		√	20 characters max		
MAX_PRES_VALUE		√		√			
MIN_PRES_VALUE		√		√			
RELIABILITY		√		√ ¹			
RESOLUTION		√					
UPDATE_INTERVAL		√			0 - 1,000,000		
ACKED_TRANSITIONS		√ ²					
DEADBAND		√ ²					
EVENT_ENABLE		√ ²		√			
EVENT_TIME_STAMPS		√ ²					
HIGH_LIMIT		√ ²		√			
LIMIT_ENABLE		√ ²		√			
LOW_LIMIT		√ ²		√			
NOTIFICATION_CLASS		√ ²		√	1 - 4,194,302		
NOTIFY_TYPE		√ ²		√			
TIME_DELAY		√ ²		√	0 - 65,535		
ALARM_STATE			√			1006	Enumerated
DISPLAY_PRECISION			√	√		661	Enumerated
INTRINSIC_ALARM_DEFINED			√	√		569	Boolean
ENABLED			√	√		673	Enumerated
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
OFFLINE			√			913	Boolean
SAB_MAC_ADDR			√			3645	Unsigned
SLOT			√			519	Unsigned
STATUS			√			512	Enumerated

Table 5: Analog Input (Part 2 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
USE_COV_MIN_SEND_TIME			√	√		3930	Boolean
USER_NAME			√			2390	CharacterString
GRAPHIC			√ ²	√		32581	CharacterString
GRAPHIC_ALIAS			√ ²	√		32623	CharacterString
ALARM_MESSAGE_TEXT			√ ²	√	255 characters	536	CharacterString

1. Only writable when OUT_OF_SERVICE.
2. Only present when intrinsic alarming is enabled.

Analog Output

Dynamically Creatable: No

Dynamically Deletable: No

Table 6: Analog Output (Part 1 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
OUT_OF_SERVICE	√			√			
PRESENT_VALUE	√			√			
UNITS	√			√	0 - 65,535 value		
RELINQUISH_DEFAULT	√			√			
COV_INCREMENT		√		√	any value > = 0		
DESCRIPTION		√		√	40 characters max		
DEVICE_TYPE		√		√	20 characters max		
MAX_PRES_VALUE		√		√			
MIN_PRES_VALUE		√		√			
RELIABILITY		√		√ ¹			
RESOLUTION		√					
ACKED_TRANSITIONS		√ ²					
DEADBAND		√ ²		√			
EVENT_ENABLE		√ ²		√			
EVENT_TIME_STAMPS		√ ²					
HIGH_LIMIT		√ ²		√			
LIMIT_ENABLE		√ ²		√			
LOW_LIMIT		√ ²		√			
NOTIFICATION_CLASS		√ ²		√	1 - 4,194,302		
NOTIFY_TYPE		√ ²		√			
TIME_DELAY		√ ²		√	0 - 65,535		
ALARM_STATE			√			1006	Enumerated
DISPLAY_PRECISION			√	√		661	Enumerated
INTRINSIC_ALARM_DEFINED			√	√		569	Boolean
ENABLED			√	√		673	Enumerated
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
OFFLINE			√			913	Boolean
SAB_MAC_ADDR			√			3645	Unsigned
STATUS			√			512	Enumerated
USE_COV_MIN_SEND_TIME			√	√		3930	Boolean
USER_NAME			√			2390	CharacterString

Table 6: Analog Output (Part 2 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
GRAPHIC			√ ²	√		32581	CharacterString
GRAPHIC_ALIAS			√ ²	√		32623	CharacterString
RESTORE_COMMAND_PRIORITY			√	√		721	Bit String
SLOT A			√			990	Unsigned
ALARM_MESSAGE_TEXT			√ ²	√	255 characters	536	CharacterString

1. Only writable when OUT_OF_SERVICE.
2. Only present when intrinsic alarming is enabled.

Analog Value

Dynamically Creatable: No

Dynamically Deletable: No

Table 7: Analog Value (Part 1 of 2)

Property Name					Range	Property ID	Data Type	
	Required	Optional	Proprietary	Writable				
OUT_OF_SERVICE	√							
PRESENT_VALUE	√			√				
UNITS	√			√	0 - 65,535 value			
RELINQUISH_DEFAULT		√		√				
PRIORITY_ARRAY		√						
COV_INCREMENT		√		√ ¹	any value > = 0			
DESCRIPTION		√		√	40 characters max			
RELIABILITY		√		√				
ACKED_TRANSITIONS		√ ²						
DEADBAND		√ ²		√				
EVENT_ENABLE		√ ²		√				
EVENT_TIME_STAMPS		√ ²						
HIGH_LIMIT		√ ²		√				
LIMIT_ENABLE		√ ²		√				
LOW_LIMIT		√ ²		√				
NOTIFICATION_CLASS		√ ²		√	1 - 4,194,302			
NOTIFY_TYPE		√ ²		√				
TIME_DELAY		√ ²		√	0 - 65,535			
ALARM_STATE				√		1006	Enumerated	
DISPLAY_PRECISION				√	√	0 - 12 value	661	Enumerated
INTRINSIC_ALARM_DEFINED				√	√		569	Boolean
ENABLED				√	√		673	Enumerated
EXECUTION_PRIORITY				√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE				√			32527	CharacterString
OBJECT_CATEGORY				√	√	0 - 249 value	908	Enumerated
OFFLINE				√			913	Boolean
STATUS				√			512	Enumerated
USE_COV_MIN_SEND_TIME				√ ³	√		3930	Boolean

Table 7: Analog Value (Part 2 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
USER_NAME			√			2390	CharacterString
GRAPHIC			√ ²	√		32581	CharacterString
GRAPHIC_ALIAS			√ ²	√		32623	CharacterString
RESTORE_COMMAND_PRIORITY			√	√		721	Bit String
ALARM_MESSAGE_TEXT			√ ²	√	255 characters	536	CharacterString

1. Not writable in all instances.
2. Only present when intrinsic alarming is enabled.
3. Not present in all instances.

Binary Input

Dynamically Creatable: No

Dynamically Deletable: No

Table 8: Binary Input (Part 1 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
OUT_OF_SERVICE	√			√			
PRESENT_VALUE	√			√ ¹			
INACTIVE_TEXT		√					
ACTIVE_TEXT		√					
COS_TIME		√					
COS_COUNT		√		√			
STATE_COUNT_RESET		√					
ELAPSED_ACTIVE_TIME		√		√			
ACTIVE_TIME_RESET		√					
DESCRIPTION		√		√	40 characters max		
DEVICE TYPE		√		√	20 characters max		
RELIABILITY		√		√ ¹			
ACKED_TRANSITIONS		√ ²					
EVENT_ENABLE		√ ²		√			
EVENT_TIME_STAMPS		√ ²					
NOTIFICATION_CLASS		√ ²		√	1 - 4,194,302		
ALARM_VALUE		√ ²		√			
NOTIFY_TYPE		√ ²		√			
TIME_DELAY		√ ²		√	0 - 65,535		
ALARM_STATE			√			1006	Enumerated
INTRINSIC_ALARM_DEFINED			√	√		569	Boolean
ENABLED			√	√		673	Enumerated
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
OFFLINE			√			913	Boolean
STATUS			√			512	Enumerated
SAB_MAC_ADDR			√			3645	Unsigned
SLOT			√			519	Unsigned

Table 8: Binary Input (Part 2 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
STATES_TEXT			√	√		931	Enumerated
USER_NAME			√			2390	CharacterString
GRAPHIC			√ ²	√		32581	CharacterString
GRAPHIC_ALIAS			√ ²	√		32623	CharacterString
ALARM_MESSAGE_TEXT			√ ²	√	255 characters	536	CharacterString

1. Only writable when OUT_OF_SERVICE.
2. Only present when intrinsic alarming is present.

Binary Output

Dynamically Creatable: No

Dynamically Deletable: No

Table 9: Binary Output (Part 1 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
OUT_OF_SERVICE	√			√			
RELINQUISH_DEFAULT	√			√			
PRESENT_VALUE	√			√			
INACTIVE_TEXT		√			40 characters max		
ACTIVE_TEXT		√			40 characters max		
COS_TIME		√					
COS_COUNT		√		√			
STATE_COUNT_RESET		√					
ELAPSED_ACTIVE_TIME		√		√	0 - 4,294,967,295		
ACTIVE_TIME_RESET		√					
MIN_OFF_TIME		√		√	0 - 604,800		
MIN_ON_TIME		√		√	0 - 604,800		
DESCRIPTION		√		√	40 characters max		
DEVICE TYPE		√		√	20 characters max		
RELIABILITY		√		√ ¹			
ACKED_TRANSITIONS		√ ²					
EVENT_ENABLE		√ ²		√			
EVENT_TIME_STAMPS		√ ²					
NOTIFICATION_CLASS		√ ²		√	1 - 4,194,302		
FEEDBACK_VALUE		√ ²		√			
NOTIFY_TYPE		√ ²		√			
TIME_DELAY		√ ²		√	0 - 65,535		
ALARM_STATE			√			1006	Enumerated
INTRINSIC_ALARM_DEFINED			√	√		569	Boolean
ENABLED			√	√		673	Boolean
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
OFFLINE			√			913	Boolean
RESTORE_COMMAND_PRIORITY			√	√		721	Bit String
STATUS			√			512	Enumerated
SAB_MAC_ADDR			√			3645	Unsigned
SLOT A			√			990	Unsigned

Table 9: Binary Output (Part 2 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
SLOT B			√			991	Unsigned
STATES_TEXT			√	√		931	Enumerated
USER_NAME			√			2390	CharacterString
GRAPHIC			√ ²	√		32581	CharacterString
GRAPHIC_ALIAS			√ ²	√		32623	CharacterString
HEAVY_EQUIP_DELAY			√	√	0 - 255	516	Unsigned
HED_CONTROLLER			√	√		517	Unsigned
ALARM_MESSAGE_TEXT			√ ²	√	255 characters	536	CharacterString

1. Only writable when OUT_OF_SERVICE.
2. Only present when intrinsic alarming is present.

Binary Value

Dynamically Creatable: No

Dynamically Deletable: No

Table 10: Binary Value (Part 1 of 2)

Property Name					Range	Property ID	Data Type
	Required	Optional	Proprietary	Writable			
OUT_OF_SERVICE	√						
PRESENT_VALUE	√			√			
INACTIVE_TEXT		√		√	40 characters max		
ACTIVE_TEXT		√		√	40 characters max		
COS_TIME		√ ¹					
COS_COUNT		√ ¹		√			
TIME_OF_STATE_COUNT_RESET		√ ¹					
ELAPSED_ACTIVE_TIME		√ ¹		√			
TIME_OF_ACTIVE_TIME_RESET		√ ¹					
MIN_OFF_TIME		√ ¹		√	0 - 604,800		
MIN_ON_TIME		√ ¹		√	0 - 604,800		
PRIORITY_ARRAY		√ ¹					
RELINQUISH_DEFAULT		√ ¹		√			
DESCRIPTION		√		√	40 characters max		
RELIABILITY		√		√			
ACKED_TRANSITIONS		√ ²					
EVENT_ENABLE		√ ²		√			
EVENT_TIME_STAMPS		√ ²					
NOTIFICATION_CLASS		√ ²		√	1 - 4,194,302		
ALARM_VALUE		√ ²		√			
NOTIFY_TYPE		√ ²		√			
TIME_DELAY		√ ²		√	0 - 65,535		
ALARM_STATE			√			1006	Enumerated
INTRINSIC_ALARM_DEFINED			√	√		569	Boolean
ENABLED			√	√		673	Boolean
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
OFFLINE			√			913	Boolean
RESTORE_COMMAND_PRIORITY			√	√		721	Bit String
STATUS			√			512	Enumerated

Table 10: Binary Value (Part 2 of 2)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
STATES_TEXT			√			931	Enumerated
USER_NAME			√			2390	CharacterString
GRAPHIC			√ ²	√		32581	CharacterString
GRAPHIC_ALIAS			√ ²	√		32623	CharacterString
ALARM_MESSAGE_TEXT			√ ²	√	255 characters	536	CharacterString

1. Not present in all instances.
2. Only present when intrinsic alarm is enabled.

Calender

Dynamically Creatable: Yes

Dynamically Deletable: Yes

Table 11: Calender

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
DATE_LIST	√			√			
DESCRIPTION		√		√	40 characters max		
ALARM_STATE			√			1006	Enumerated
ENABLED			√	√		673	Boolean
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
STATUS			√			512	Enumerated
USER_NAME			√			2390	CharacterString
GLOBAL_CALENDAR_REFERENCE			√	√		1096	Complex
GLOBAL_CALENDAR_UPDATE			√			1097	Complex
DATE_LIST_CHANGED			√			1098	Unsigned

Device

Dynamically Creatable: No

Dynamically Deletable: No

Table 12: Device (Part 1 of 3)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
BACKUP_FAIL_TIMEOUT	√			√	0 - 65,535		
APPLICATION_SOFTWARE_VERSION	√			√	5 characters		
NUMBER_OF_APDU_RETIRES	√			√ ¹	2 -10		
APDU_TIMEOUT	√			√ ¹	1,000 - 65,535		
LOCATION		√		√	56 characters		
APDU_SEGMENT_TIMEOUT		√		√ ¹	1,000 - 65,535		
MAX_APDU_LENGTH_SUPPORTED		√		√ ¹	Any value > 50		
DAYLIGHT_SAVINGS_STATUS		√					
DESCRIPTION		√		√	40 characters max		
LOCAL_DATE		√					
LOCAL_TIME		√					
MAX_INFO_FRAMES		√		√			
MAX_MASTER		√		√ ¹			
UTC_OFFSET		√		√	-900 to 900		
LAST_RESTART_REASON		√					
TIME_OF_DEVICE_RESTART		√					
RESTART_NOTIFICATION_RECIPIENTS		√		√			
MAX_SEGMENTS_ACCPT		√					
ACTIVE_COV_SUBSCRIPTIONS		√					
CONFIGURATION_FILES		√					
LAST_RESTORE_TIME		√					
ALARM_STATE			√			1006	Enumerated
ARCHIVE_DATE			√			849	Date
ARCHIVE_STATUS			√			1187	Unsigned
ARCHIVE_TIME			√			850	Time
CPU_USAGE			√			2583	Real
ENABLED			√			673	Boolean
EXECUTION_PRIORITY			√		0 - 3 value	2197	Enumerated
EXTENDED_PROTO_VERSION			√			2291	Unsigned
FLASH_USAGE			√			2584	Real
ITEM_REFERENCE			√			32527	String

Table 12: Device (Part 2 of 3)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
JCI_STATUS			√			847	Enumerated
MEMORY_USAGE			√			2581	Real
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
OBJECT_MEMORY_USAGE			√			2582	Real
STATUS			√			512	Enumerated
BACNET_BROADCAST_RECEIVE_RATE			√			745	Unsigned
DEFAULT_BASE_UNITS			√			2206	Enumerated
ESTIMATED_FLASH_AVAILABLE			√			2395	Real
LAST_IDLE_SAMPLE			√			30082	Real
MAX_MESSAGE_BUFFER			√	√	98 - 65,535	848	Unsigned
NAME			√			2390	String
PCODE			√			1320	String
SAB_DEVICE_STATUS_LIST			√			4513	Complex
SAB_DEVICE_STATUS_LIST_CHANGED			√			4514	Unsigned
EVENTS_LOST			√			1479	Unsigned
STANDARD_TIME_OFFSET			√	√	-900 - 900	1017	Signed
DAYLIGHT_SAVING_TIME_OFFSET			√	√	-900 - 900	1093	Signed
STANDARD_TIME_START			√	√		988	Complex
DAYLIGHT_SAVING_TIME_START			√	√		1040	Complex
ACCEPT_BACNET_TIME_SYNC			√			4970	Boolean
LAST_BACNET_TIME_SYNC_RECEIVED			√			5728	Complex
SUPERVISOR_DEVICE_ONLINE			√	√		3653	Boolean
SUPERVISOR_OFFLINE_TIMEOUT			√	√	1 - 255	6002	Unsigned
NEXT_AVAILABLE_OID			√	√	30,000,001 - 41,799,991	787	Unsigned
HAS_UNBOUND_REFERENCES			√			767	Boolean
SURROGATE_CACHE_CNT			√			571	Unsigned
SURROGATE_CACHE_MAX			√			639	Unsigned
ASSET_VERSIONS			√			4960	Complex
LOAD_BALANCER_LEVEL			√			4722	Enumerated
TIMER_DB_SIZE			√			733	Unsigned
TIMER_USED			√			734	Unsigned
TIMER_PEAK			√			735	Unsigned
TIMER_MESSAGES_ABORTED			√			4959	Unsigned
BACNET_OID_ALLOCATED			√			1291	Unsigned
BACNET_OID_USED			√			1292	Unsigned
SIGN_PRI_DB_SIZE			√			730	Unsigned

Table 12: Device (Part 3 of 3)

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
SIGN_PRI_USED			√			731	Unsigned
SIGN_PRI_PEAK			√			732	Unsigned
BACNET_ENCODE_TYPE			√	√	0 - 2	32578	Enumerated
ROUTING_MODE			√	√	0 - 2	4307	Enumerated
BACNET_INTEGRATED_OBJECTS			√			4302	Enumerated
BACNET_COMPATIBLE			√	√		4581	Boolean
SEND_I_AM_RATE			√	√	60 - 86,400	579	Unsigned
BACNET_ROUTED_MESSAGES_RATE			√			4310	Unsigned
DEFAULT_TIME_ZONE			√	√	1 - 1,101	32583	Enumerated
TIME_ZONE			√	√	1 - 1,101	1403	Enumerated
LOCAL_TIME_ZONE			√			1404	Enumerated
FC_MULTICAST_REPONDER			√	√		3390	Unsigned
FC_WAIT_BEFORE_POLLING			√	√		3391	Unsigned
SUPERVISOR_MAC_ADDRESS			√			3652	Unsigned
LIBRARY_PART_ID			√			3925	String
APPLICATION_CLASS_SET_VERSION			√			4128	Unsigned
DEVICE_MODEL_CLASS_SET_VERSION			√			4129	Unsigned
COV_MIN_SEND_TIME			√	√	10 - 255	3929	Unsigned
END_OF_LINE			√			603	Boolean
DEVICE_ADDRESS			√			876	Unsigned
FC_BUS_COMMUNICATION_MODE			√			4400	Enumerated
SYSTEM_TYPE			√			3900	Unsigned
SYSTEM_CONFIGURATION			√			3899	Unsigned

1. Write does not take effect until after restart.

File

Dynamically Creatable: No

Dynamically Deletable: No

Table 13: File

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
ARCHIVE	√			√			
FILE_SIZE	√			√ ¹			
DESCRIPTION		√		√	40 characters max		
ITEM_REFERENCE			√			32527	CharacterString
USER_NAME			√			2390	CharacterString
STATUS			√			512	Enumerated
ENABLED			√	√		673	Boolean
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
ALARM_STATE			√			1006	Enumerated
MAX_FILE_SIZE			√			3380	Unsigned

1. You can write zero (0) to the file size but arbitrary truncation or expansion is not supported.

Note: File objects can be modified by replacing the entire file.

File objects must be written sequentially.

File objects may only be visible during a backup or restore operation.

Multistate Value

Dynamically Creatable: No

Dynamically Deletable: No

Table 14: Multistate Value

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
NUMBER_OF_STATES	√			√ ¹	2 - 500 value		
STATE_TEXT		√		√	40 characters max		
PRIORITY_ARRAY		√ ²					
RELINQUISH-DEFAULT		√ ²		√			
DESCRIPTION		√		√	40 characters max		
RELIABILITY		√					
NOTIFICATION_CLASS		√ ³		√	1 - 4,194,302		
ALARM_VALUES		√ ³		√	0 - 500		
FAULT_VALUES		√ ³		√	0 - 500		
NOTIFY_TYPE		√ ³		√			
TIME_DELAY		√ ³		√	0 - 65,535		
ACKED_TRANSITIONS		√ ³					
EVENT_ENABLE		√ ³		√			
EVENT_TIME_STAMPS		√ ³					
ALARM_STATE			√			1006	Enumerated
INTRINSIC_ALARM_DEFINED			√	√		569	Boolean
ENABLED			√	√		673	Enumerated
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
OFFLINE			√			913	Boolean
STATUS			√			512	Enumerated
USER_NAME			√			2390	CharacterString
GRAPHIC			√ ³	√		32581	CharacterString
GRAPHIC_ALIAS			√ ³	√		32623	CharacterString
RESTORE_COMMAND_PRIORITY			√	√		721	Bit String
STATES_TEXT			√	√		931	Enumerated
ALARM_MESSAGE_TEXT			√ ³	√	255 characters	536	CharacterString

1. Not writable in all instances.
2. Not present in all instances.
3. Only present when intrinsic alarming is enabled.

Notification Class

Dynamically Creatable: No

Dynamically Deletable: No

Table 15: Notification Class

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
PRIORITY	√			√			
ACK_REQUIRED	√			√			
RECIPIENT_LIST	√			√			
DESCRIPTION		√		√	40 characters max		
ALARM_STATE			√			1006	Enumerated
ENABLED			√	√		673	Enumerated
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
ROUTE_TO_METASYS			√	√		32580	Boolean
STATUS			√			512	Enumerated
USER_NAME			√			2390	CharacterString
SEND_NOTIFICATIONS_TO_SUPERVISOR			√	√		1095	Boolean
SUPERVISORY_DEVICE_PROCESS_ID			√			3052	Unsigned

Schedule

Dynamically Creatable: No

Dynamically Deletable: No

Table 16: Schedule

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
PRESENT_VALUE	√			√ ¹			
EFFECTIVE_PERIOD	√			√			
SCHEDULE_DEFAULT	√			√			
LIST_OF_OBJECT_PROPERTY_REFERENCE	√			√			
PRIORITY_FOR_WRITING	√			√			
OUT_OF_SERVICE	√			√			
DESCRIPTION		√		√	40 characters		
WEEKLY_SCHEDULE		√		√			
EXCEPTION_SCHEDULE		√		√			
ALARM_STATE			√			1006	Enumerated
ENABLED			√	√		673	Boolean
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
STATUS			√			512	Enumerated
USER_NAME			√			2390	CharacterString
PERFORM_INDEX			√			965	Unsigned
TODAYS_SCHEDULE			√			4198	List

1. Writable when OUT_OF_SERVICE is true.

Trend Log

Dynamically Creatable: No

Dynamically Deletable: No

Table 17: Trend Log

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
STOP_WHEN_FULL	√			√			
RECORD_COUNT	√			√ ¹			
LOG_ENABLE	√			√			
LOGGING_TYPE	√						
DESCRIPTION		√		√	40 characters max		
START_TIME		√		√			
STOP_TIME		√		√			
LOG_DEVICE_OBJECT_PROPERTY		√					
LOG_INTERVAL		√		√	0 - 60,480,000		
COV_RESUBSCRIPTION_INTERVAL		√		√			
CLIENT_COV_INCREMENT		√		√			
TOTAL_RECORD_COUNT		√					
NOTIFICATION_THRESHOLD		√ ²		√			
RECORDS_SINCE_NOTIFICATION		√ ²					
ACKED_TRANSITIONS		√ ²					
EVENT_ENABLE		√		√			
EVENT_TIME_STAMPS		√ ²					
NOTIFICATION_CLASS		√ ²		√	1 - 4,194,302		
NOTIFY_TYPE		√ ²		√			
TRIGGER		√		√			
ALARM_STATE			√			1006	Enumerated
BUFFER_STATE			√			2565	Enumerated
INTRINSIC_ALARM_DEFINED			√			569	Boolean
ENABLED			√	√		673	Boolean
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Enumerated
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Enumerated
SAMPLE_INTERVAL			√	√	0 - 604,800	2566	Unsigned
STATUS			√			512	Enumerated
USER_NAME			√			2390	CharacterString

1. Only writes of the value zero are allowed.
2. Only present when intrinsic alarming is enabled.

Event Log

Dynamically Creatable: No

Dynamically Deletable: No

Table 18: Event Log

Property Name	Required	Optional	Proprietary	Writable	Range	Property ID	Data Type
LOG_ENABLE	√			√			
STOP_WHEN_FULL	√			√			
RECORD_COUNT	√			√ ¹			
DESCRIPTION		√		√	40 characters max		
START_TIME		√		√			
STOP_TIME		√		√			
NOTIFICATION_THRESHOLD		√ ²		√	2 - 100		
RECORDS_SINCE_NOTIFICATION		√ ²					
LAST_NOTIFY_RECORD		√ ²					
RELIABILITY		√					
ACKED_TRANSITIONS		√ ²					
EVENT_ENABLE		√ ²		√			
EVENT_TIME_STAMPS		√ ²					
NOTIFICATION_CLASS		√ ²		√	1 - 4,194,302		
NOTIFY_TYPE		√		√			
ALARM_STATE			√			1006	Enumerated
BUFFER_STATE			√			2565	Enumerated
INTRINSIC_ALARM_DEFINED			√	√		569	Boolean
ENABLED			√	√		673	Boolean
EXECUTION_PRIORITY			√	√	0 - 3 value	2197	Unsigned
ITEM_REFERENCE			√			32527	CharacterString
OBJECT_CATEGORY			√	√	0 - 249 value	908	Unsigned
STATUS			√			512	Enumerated
USER_NAME			√			2390	CharacterString

1. Only writes of the value zero are allowed.
2. Only present when intrinsic alarming is enabled.

Data Link Layer Option

- BACnet Internet Protocol (IP) (Annex J)
- BACnet IP (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ANSI/ATA 878.1, 2.5 MB ARCNET network (Clause 8)
- ANSI/ATA 878.1, RS-485 ARCNET network (Clause 8), baud rates: _____
- Master-Slave/Token-Passing (MS/TP) master (Clause 9), baud rates: Auto (default), 9600; 19,200; 38,400; 76,800
- MS/TP slave (Clause 9), baud rates:¹ Auto (default), 9600; 19,200; 38,400; 76,800
- Point-To-Point, EIA 232 (Clause 10), baud rates: _____
- Point-To-Point, modem (Clause 10), baud rates: _____
- LonTalk® protocol (Clause 11), medium: _____
- Other: _____

1. For internal testing only.

Segmentation Capability

- Segmented requests supported: Window Size: 1
- Segmented responses supported: Window Size: 1

Device Address Binding

- Yes No **Is static device binding supported?** (required for two-way communication between MS/TP slaves and other devices)

Networking Options

- Router, Clause 6: IP/MSTP MSTP/MSTP
 - Annex H, BACnet Tunneling Router over IP
 - BACnet/IP Broadcast Management Device (BBMD)
- Does the BBMD support registrations by Foreign Devices? Yes No

Character Sets Supported

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

- ANSI X3.4
- IBM®/Microsoft® Double-Byte Character Set (DBCS)
- ISO 8859-1
- ISO 10646 Universal Character Set-2 (UCS-2)
- ISO 10646 (UCS-4)
- Japanese Industrial Standard (JIS) C 6226

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

None

FX-PCA Supported Services

Table 19 lists all the BACnet standard application services. The checked services are supported by the FX-PCA.

Table 19: BACnet Standard Application Services Support (Part 1 of 2)

Application Service	Initiates Requests	Executes Requests
AcknowledgeAlarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AddListElement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AtomicReadFile	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AtomicWriteFile	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Authenticate	<input type="checkbox"/>	<input type="checkbox"/>
ConfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ConfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ConfirmedPrivateTransfer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ConfirmedTextMessage	<input type="checkbox"/>	<input type="checkbox"/>
CreateObject	<input type="checkbox"/>	<input type="checkbox"/>
DeleteObject	<input type="checkbox"/>	<input type="checkbox"/>
DeviceCommunicationControl	<input type="checkbox"/>	<input checked="" type="checkbox"/>
GetAlarmSummary	<input type="checkbox"/>	<input checked="" type="checkbox"/>
GetEnrollmentSummary	<input type="checkbox"/>	<input checked="" type="checkbox"/>
GetEventInformation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I-Am	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I-Have	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LifeSafetyOperation	<input type="checkbox"/>	<input type="checkbox"/>
ReadProperty	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ReadPropertyConditional	<input type="checkbox"/>	<input type="checkbox"/>
ReadPropertyMultiple	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ReinitializeDevice	<input type="checkbox"/>	<input checked="" type="checkbox"/>
RemoveListElement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
RequestKey	<input type="checkbox"/>	<input type="checkbox"/>
SubscribeCOV	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SubscribeCOVProperty	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TimeSynchronization	<input type="checkbox"/>	<input checked="" type="checkbox"/>
UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
UnconfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
UnconfirmedPrivateTransfer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
UnconfirmedTextMessage	<input type="checkbox"/>	<input type="checkbox"/>

Table 19: BACnet Standard Application Services Support (Part 2 of 2)

Application Service	Initiates Requests	Executes Requests
UTCTimeSynchronization	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VT-Close	<input type="checkbox"/>	<input type="checkbox"/>
VT-Data	<input type="checkbox"/>	<input type="checkbox"/>
VT-Open	<input type="checkbox"/>	<input type="checkbox"/>
Who-Has	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Who-Is	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WriteProperty	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WritePropertyMultiple	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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