

BACnet Protocol Implementation Conformance Statement

Sept 2, 2004

Products

Product	Model Number	Protocol Revision	Software Version	Firmware Version
ISN ConneXsys Router	CX-Router	135-2001 (3)	OCS1.0	

Vendor Information

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Product Description

The CX-Router connects BACnet MS/TP (RS485) networks together using Ethernet. These individual BACnet MS/TP networks then become part of a large internetwork. In addition to Ethernet, the CX-Router provides an RS232 port for Point-to-Point (PTP) communication through a modem. As a router, the CX-Router repacketizes messages destined for devices on other networks based on the destination address within the packet. The message is only passed across the router when the destination device is located on another network. If the receiving device is within the originating network, the message is not passed through the CX-Router, reducing network traffic.

BACnet Standardized Device Profile

Product	Device Profile	Additional BIBBs	Tested
List of products that support this	BACnet Operator Workstation (B-OWS)		
CX -Router	BACnet Building Controller (B-BC)		
List of products that support this	BACnet Advanced Application Controller (B-AAC)		
	BACnet Application Specific Controller (B-ASC)		
List of products that support this	BACnet Smart Sensor (B-SS)		
List of products that support this	BACnet Smart Actuator (B-SA)		

Supported BIBBs

The table below defines the BIBBs supported by the CX-Router.

Application Service	Designation	Supported
Data Sharing – Read Property – A		DS-RP-A
Data Sharing – Read Property – B		DS-RP-B
Data Sharing – Read Property Multiple – A		DS-RPM-A
Data Sharing – Read Property Multiple – B		DS-RPM-B
Data Sharing – Write Property – A		DS-WP-A
Data Sharing – Write Property – B		DS-WP-B

Data Sharing – Write Property Multiple – B	DS-WPM-B	
Data Sharing – COV-A	DS-COV-A	
Data Sharing – COV-B	DS-COV-B	
Data Sharing – COV – Unsubscribed – A	DS-COVU-A	
Data Sharing – COV – Unsubscribed – B	DS-COVU-B	
Alarm and Event – Notification – A	AE-N-A	
Alarm and Event – Notification-Internal – B	AE-N-I-B	
Alarm and Event – Notification-External – B	AE-N-E-B	
Alarm and Event – ACK – B	AE-ACK-B	
Alarm and Event – Alarm Summary – B	AE-ASUM-B	
Alarm and Event – Enrollment Summary – B	AE-ESUM-B	
Alarm and Event – Information – B	AE-INFO-B	
Scheduling – A	SCHED-A	
Scheduling-Internal – B	SCHED-I-B	
Scheduling-External – B	SCHED-E-B	
Trending – Viewing and Modifying Trends-Internal – B	T-VMT-I-B	
Trending – Viewing and Modifying Trends-External – B	T-VMT-E-B	
Trending – Automated Trend Retrieval – B	T-ATR-B	
Device Management – Dynamic Device Binding – A	DM-DDB-A	
Device Management – Dynamic Device Binding – B	DM-DDB-B	
Device Management – Dynamic Object Binding – A	DM-DOB-A	
Device Management – Dynamic Object Binding – B	DM-DOB-B	
Device Management – Device Communication Control - B	DM-DCC-B	
Device Management – Private Transfer – A	DM-PT-A	
Device Management – Private Transfer – B	DM-PT-B	
Device Management – Text Message – A	DM-TM-A	
Device Management – Time Synchronization – A	DM-TS-A	1
Device Management – Time Synchronization – B	DM-TS-B	2
Device Management – UTC Time Synchronization – A	DM-UTC-A	1
Device Management – UTC Time Synchronization – B	DM-UTC-B	2
Device Management – Reinitialize Device – B	DM-RD-B	
Device Management – Backup and Restore – B	DM-BR-B	
Device Management – Object Creation and Deletion – B	DM-OCD-B	
Network Management – Connection Establishment – A	NM-CE-A	
Network Management – Connection Establishment – B	NM-CE-B	

Note 1 – Only supported by B-BC products. When UTC is enabled, DM-TS-A and DM-UTC-A is supported. When UTC is disabled, only DM-TS-A is supported.

Note 2 – Based on the UTC setting in the Device Object. When UTC is enabled, DM-UTC-B is supported. When UTC is disabled, DM-TS-B is supported. Dates before January 1, 2000 or after December 31, 2099 will be ignored.

Segmentation Capability

Segmentation Type	Supported	Window Size	Tested
Able to send segmented messages	Yes	Configurable	
Able to receive segmented messages	Yes	Configurable	

Standard Object Types Supported

Object Type	Optional Properties Supported	Writable Properties
Analog Input	Description Device Type Reliability Min Present Value Max Present Value Update Interval Resolution COV Increment	Object Name Description COV Increment Present Value (conditional) Out of Service Reliability (conditional)
Analog Output	Description Device Type Reliability Min Present Value Max Present Value Resolution COV Increment	Object Name Description Present Value COV Increment Relinquish Default Out of Service Reliability (conditional)
Analog Value	Description Reliability COV Increment	Object Name Description Present Value COV Increment Relinquish Default Out of Service Reliability (conditional)
Binary Input	Description Device Type Reliability Active Text Inactive Text COS Time COS Count COS Time Reset	Object Name Description Polarity COV Increment Out of Service
Binary Output	Description Device Type Reliability Active Text Inactive Text COS Time COS Count COS Time Reset Min On Time Min Off Time	Object Name Description Present Value Polarity Relinquish Default Min On Time Min Off Time Out of Service Reliability (conditional)

Binary Value	Description Reliability Active Text Inactive Text	Object Name Description Present Value (conditional) Out of Service Reliability (conditional)
Calendar	Description	Object Name Description Date List
Device	Description Location APDU Segment Timeout Time Synch Recips Max Masters Max Info Frames Max Segments Accepted Local Time Local Date UTC Offset DST Status Active COV Sub Backup Failure Timeout Last Restore Time Configuration Files	t Name Description Location Time Synch Recips UTC Offset APDU Segment Timeout APDU Timeout Number APDU Retries Max Master Max Info Frames
Event Enrollment	Description Notification Class	Object Name Description Event Type Event Parameters Object Property Reference Event Enable Nofitication Class
File	Description	Object Name Description File Type Archive
Loop	Description Reliability Update Interval Proportional Constant Proportional Units Integral Constant Integral Units Derivative Constant Derivative Units Bias Max Output Min Output COV Increment	Object Name Description Action Manipulated Var Ref Controlled Var Ref Controlled Var Units Setpoint Setpoint Ref Proportional Constant Proportional Constand Units Integral Constant Derivative Constant Bias COV Increment Out of Service Present Value (conditional) Reliability (conditional)

Multistate Input	Description Reliability Device Type State Text	Object Name Description Present Value (conditional) Out of Service Reliability (conditional)
Multistate Output Multistate Value	Description Reliability State Text	Object Name Description Present Value (conditional) Out of Service Reliability (conditional)
Notification Class	Description	Object Name Description Priority Ack Required Recipient List
Program	Description Reliability Description of Halt Reason for Halt	Object Name Description Program Change Out of Service Reliability (conditional)
Schedule	Description Weekly Schedule Exception Schedule	Object Name Description Effective Period Weekly Schedule Exception Schedule List of Object Property Reference Write Priority
Trend Log	Description Start Time Stop Time Log Device Object Prop Log Interval COV Resubscription Interval Notification Threshold Records Since Notification Notification Class Event Enable Acked Transition Notify Type Event Time Stamps	Object Name Description Log Enable Start Time Stop Time Log Device Object Prop Log Interval Stop when Full Buffer Size Record Count
Proprietary		

Data Link Layer Options

Product	Data Link	Options	Tested
CX-Routers	BACnet/IP (Annex J)	Can act as a Direct BACnet/IP device. Yes Can act as a Foreign BACnet/IP device. Yes	
CX-Routers	Ethernet (ISO 8802-3)	10Base-2, 10Base-5, 10Base-T, Fiber	
List of products that support this	ARCNET 2.5 Mb. (ANSI/ATA 878.1)		
List of products that support this	ANSI/ATA 878.1, RS-485 ARCNET	Baud rates supported	
CX-Routers	MS/TP Master (Clause 9)	9600, 19200, 38400.	
List of products that support this	MS/TP Slave	Baud rates supported	
CX-Routers	Point-To-Point (EIA 232)	9600, 19200, 38400.	
CX-Routers	Point-To-Point, modem	9600, 19200, 38400.	
List of products that support this	LonTalk	Media options	
List of products that support this	Other	Data Link and Media description	

Device Address Binding

Product	Static Binding Supported	Tested
CX-Routers	This product supports Static device binding.	

Networking Options

Product	Router Option	Options	Tested
CX-Routers	Router	Provides router capabilities between 1 Ethernet network, 1 BACnet/IP network, 2 MS/TP networks and 1 PTP network.	
List of products that support this	BACnet Tunnelling Router (Annex H)	IP, IPX	
CX-Routers	BBMD (Annex J)	Supports foreign device connections? Yes	

Character Sets

Product	Character Sets supported	Tested
CX-Routers	ANSI X3.4	
List of products that support this	ISO 10646 (UCS-2)	
List of products that support this	IBM™/Microsoft™ DBCS	
List of products that support this	ISO 10646 (UCS-4)	
List of products that support this	ISO 8859-1	