

Product Implementation Conformance Statement

FCU-2000B

Date : May, 2013

Vendor Name : Shina System Co. Ltd

Product Name : Field Control Unit 2000 for BACnet (B-BC)

Product Model Name : FCU-2000B

BACnet Device Profile : B-BC

BACnet Vendor ID : 578

BACnet Protocol Version : 1

BACnet Protocol Revision : 12

BACnet Application Software Revision : 1.0

BACnet Firmware Revision : 1.0.1

Product Description

ShinaSystem's FCU(Field Control Unit) 2000 series is a basic BACnet Building Controller of SiBAS-5000/2000 System have monitoring and control functions with 32 physical points available(AI:8, BI:8, AO:8, BO:8). Input/output physical points can be expanded up to maximum 160 points(32[basic] + 8[XIM]*16) by connecting expansion modules(XIM Series) up to eight.

BACnet Standardized Device Profile (Annex L)

- BACnet Operator Workstation (B-OWS)
- BACnet Advanced Operator Workstation (B-AWS)
- BACnet Operator Display (B-OD)
- BACnet Building Controller (B-BC)
 - BACnet Advanced Application Controller (B-AAC)
 - BACnet Application Specific Controller (B-ASC)
 - BACnet Smart Sensor (B-SS)
 - BACnet Smart Actuator (B-SA)

List all BACnet Interoperability Building Blocks Supported (Annex K):

BIBB	Name	Supported
DS-RP-A	Data Sharing – ReadProperty-A	X
DS-RP-B	Data Sharing – ReadProperty-B	X
DS-RPM-A	Data Sharing – ReadPropertyMultiple-A	X
DS-RPM-B	Data Sharing – ReadPropertyMultiple-B	X
DS-WP-A	Data Sharing – WriteProperty-A	X
DS-WP-B	Data Sharing – WriteProperty-B	X
DS-WPM-B	Data Sharing – WritePropertyMultiple-B	X
DS-COV-B	Data Sharing – COV-B	X
AE-NI-B	Alarm and Event – Notification-Internal-B	X
AE-ACK-B	Alarm and Event – ACK-B	X
AE-ASUM-B	Alarm and Event – Alarm Summary-B	X
AE-ESUM-B	Alarm and Event – Enrollment Summary-B	X
AE-INFO-B	Alarm and Event – Information-B	X
SCHED-I-B	Scheduling – Internal-B	X
SCHED-E-B	Scheduling – External-B	X
T-VMT-I-B	Trending – View and Modify Trends Internal-B	X
T-ATR-B	Trending – Automated Trend Retrieval-B	X
DM-DDB-A	Device Management – Dynamic Device Binding-A	X
DM-DDB-B	Device Management – Dynamic Device Binding-B	X
DM-DOB-B	Device Management – Dynamic Object Binding-B	X
DM-TS-B	Device Management – Time Synchronization-B	X
DM-UTC-B	Device Management – UTC Time Synchronization-B	X
DM-DCC-B	Device Management – Device Communication Control-B	X
DM-RD-B	Device Management – Reinitialize Device-B	X
DM-BR-B	Device Management – Backup and Restore-B	X

Segmentation Capability:

- Able to transmit segmented messages Window Size : 127
- Able to receive segmented messages Window Size : 127

Standard Object Types Supported:

Object Type	Supported	Creatable	Deletable
Analog Input	X		
Analog Output	X		
Analog Value	X		
Binary Input	X		
Binary Output	X		
Binary Value	X		
Calendar	X		
Device	X		
Multi-state Input	X		
Multi-state Output	X		
Multi-state Value	X		
Notification Class	X		
Schedule	X		
Trend Log	X		

Properties that are Supported(S), Writable(W), Optional(O) are indicated.

Property (Analog Input)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Device_Type	X		X
Status_Flags	X		
Event_State	X		
Reliability	X		X
Out_Of_Service	X	X	
Units	X	X	
Min_Pres_Value	X	X	X
Max_Pres_Value	X	X	X
COV_Increment	X	X	X
Time_Delay	X	X	X
Notification_Class	X	X	X
High_Limit	X	X	X
Low_Limit	X	X	X
Deadband	X	X	X
Limit_Enable	X	X	X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X

Proprietary Property (Analog Input)		
Property Identifier	Datatype	Meaning
9997	Double	for BTL Test
9998	OctetString	for BTL Test
9999	Signed	for BTL Test

Property (Analog Output)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Device_Type	X		X
Status_Flags	X		
Event_State	X		
Reliability	X		X
Out_Of_Service	X	X	
Units	X	X	
Min_Pres_Value	X		X
Max_Pres_Value	X		X
Priority_Array	X		
Relinquish_Default	X	X	
COV_Increment	X	X	X
Time_Delay	X	X	X
Notification_Class	X	X	X
High_Limit	X	X	X
Low_Limit	X	X	X
Deadband	X	X	X
Limit_Enable	X	X	X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X

Property (Analog Value)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Status_Flags	X		
Event_State	X		
Reliability	X		X
Out_Of_Service	X	X	
Units	X	X	
Priority_Array	X		
Relinquish_Default	X	X	
COV_Increment	X	X	X
Time_Delay	X	X	X
Notification_Class	X	X	X
High_Limit	X	X	X
Low_Limit	X	X	X
Deadband	X	X	X
Limit_Enable	X	X	X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X

Property (Binary Input)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Status_Flags	X		
Event_State	X		
Reliability	X		X
Out_Of_Service	X	X	
Polarity	X	X	
Inactive_Text	X	X	X
Active_Text	X	X	X
Time_Delay	X	X	X
Notification_Class	X	X	X
Alarm_Value	X	X	X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X

Property (Binary Output)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Status_Flags	X		
Event_State	X		
Reliability	X		X
Out_Of_Service	X	X	
Polarity	X	X	
Inactive_Text	X	X	X
Active_Text	X	X	X
Priority_Array	X		
Relinquish_Default	X	X	
Time_Delay	X	X	X
Notification_Class	X	X	X
Feedback_Value	X		X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X

Property (Binary Value)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Status_Flags	X		
Event_State	X		
Reliability	X		X
Out_Of_Service	X	X	
Inactive_Text	X	X	X
Active_Text	X	X	X
Priority_Array	X		X
Relinquish_Default	X	X	X
Time_Delay	X	X	X
Notification_Class	X	X	X
Alarm_Value	X	X	X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X

Property (Calendar)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Description	X	X	X
Present_Value	X		
Date_List	X	X	

Property (File)	S	W	O
Object_Identifier	X		
Object_Name	X		
Object_Type	X		
Description	X		X
File_Type	X		
File_Size	X	X	
Modification_Date	X		
Archive	X	X	
Read_Only	X		
File_Access_Method	X		

Property (Device)	S	W	O
Object_Identifier	X	X	
Object_Name	X	X	
Object_Type	X		
System_Status	X		
Vendor_Name	X		
Vendor_Identifier	X		
Model_Name	X		
Firmware_Revision	X		
Application_Software_Version	X		
Location	X	X	X
Description	X	X	X
Protocol_Version	X		
Protocol_Revision	X		
Protocol_Services_Supported	X		
Protocol_Object_Types_Supported	X		
Object_List	X		
Max_APDU_Length_Accepted	X		
Segmentation_Supported	X		
Max_Segments_Accepted	X		X
Local_Time	X	X	X
Local_Date	X	X	X
UTC_Offset	X	X	X
Daylight_Savings_Status	X		
APDU_Segment_Timeout	X		
APDU_Timeout	X	X	
Number_Of_APDU_Retries	X	X	
Device_Address_Binding	X		
Database_Revision	X		
Configuration_Files	X		X
Last_Restore_Time	X		X
Backup_Failure_Timeout	X	X	X
Backup_Preparation_Time	X		X
Restore_Preparation_Time	X		X
Restore_Completion_Time	X		X
Backup_And_Restore_State	X		X
Active_COV_Subscriptions	X		X

Property (Multi-state Input)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Status_Flags	X		
Event_State	X		
Reliability	X		X
Out_Of_Service	X	X	
Number_Of_States	X	X	
State_Text	X	X	X
Time_Delay	X	X	X
Notification_Class	X	X	X
Alarm_Value	X	X	X
Fault_Value	X	X	X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X

Property (Multi-state Output)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Status_Flags	X		
Event_State	X		
Reliability	X		X
Out_Of_Service	X	X	
Number_Of_States	X	X	
State_Text	X	X	X
Priority_Array	X		
Relinquish_Default	X	X	
Time_Delay	X	X	X
Notification_Class	X	X	X
Feedback_Value	X		X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X

Property (Multi-state Value)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Status_Flags	X		
Event_State	X		
Reliability	X		X
Out_Of_Service	X	X	
Number_Of_States	X	X	
State_Text	X	X	X
Priority_Array	X		
Relinquish_Default	X	X	
Time_Delay	X	X	X
Notification_Class	X	X	X
Alarm_Value	X	X	X
Fault_Value	X	X	X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X

Property (Notification Class)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Description	X	X	X
Notification_Class	X		
Priority	X	X	
Ack_Required	X	X	
Recipient_List	X	X	

Property (Schedule)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Present_Value	X	X	
Description	X	X	X
Effective_Period	X	X	
Weekly_Schedule	X	X	X
Exception_Schedule	X	X	X
Schedule_Default	X	X	
List_Of_Object_Property_References	X	X	
Priority_For_Writing	X	X	
Status_Flags	X		
Reliability	X		
Out_Of_Service	X	X	

Property (Trend Log)	S	W	O
Object_Identifier	X		
Object_Name	X	X	
Object_Type	X		
Description	X	X	X
Enable	X	X	
Start_Time	X	X	X
Stop_Time	X	X	X
Log_DeviceObjectProperty	X	X	X
Log_Interval	X	X	X
Stop_When_Full	X	X	
Buffer_Size	X	X	
Log_Buffer	X		
Record_Count	X	X	
Total_Record_Count	X		
Notification_Threshold	X	X	X
Records_Since_Notification	X		X
Last_Notify_Record	X		X
Event_State	X		
Notification_Class	X	X	X
Event_Enable	X	X	X
Acked_Transitions	X		X
Notify_Type	X	X	X
Event_Time_Stamps	X		X
Logging_Type	X	X	
Align_Intervals	X	X	X
Interval_Offset	X	X	X
Trigger	X	X	X
Status_Flags	X		

Range Restrictions

Object-Type	Property	Range Restriction
All Object Types	Object_Name	[1, 64] printable ASCII characters, inclusive
All Object Types		CharacterString & OctetString Value are limited to 64 characters
Analog Output	Min_Pres_Value	Fixed to 0.0
Analog Output	Max_Pres_Value	Fixed to 100.0
Analog Input, Binary Input, Multi-state Input	Present Value	Writable only when Out_Of_Service is True
Calendar	Date_List	Max. number of Data_List : 50
Device	Device_Address_Binding	Max. number of Address_Binding : 255
Device	Active_COV_Subscriptions	Max. number of COV_Subscription : 80 Max. lifetimes : 86,400 second (24hour)
Multi-state Input Multi-state Output Multi-state Value	State_Text	Max. 10 (max. Number_Of_States is 10)
Multi-state Input Multi-state Value	Alarm_Values Fault_Values	Max. 10
Notification Class	Receipient List	Max. number of Receipient_List : 10
Schedule	Exception_Schedule	Max. number of BACnetSpecialEvent : 10
Schedule	List_Of_Object_Property_R eferences	Max. number of List : 10
Trend Log	Buffer_Size	Max. buffer size is 1000
Trend Log	Interval_Offset	Min. step is 100
File	File_Size	File_Size is writable when ins Restore mode. Value limited to zero and current file size.

Data Link Layer Options:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ATA 878.1, EIA-485 ARCNET (Clause 8), baud rate(s) _____
- MS/TP master (Clause 9), baud rate(s):
- 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: _____
- BACnet/Zigbee (Annex O) _____
- Other:

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain

other devices.) Yes No

Networking Options:

- Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)

Does the BBMD support registrations by Foreign Devices? Yes No

Does the BBMD support network address translation? Yes No

Character Sets Supported:

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

- ISO 10646 (UTF-8) ANSI X3.4 ISO 8859-1
- ISO 10646 (UCS-2) ISO 10646 (UCS-4) JIS X 0208

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

Network Security Options:

- Non-secure Device - is capable of operating without BACnet Network Security
- Secure Device - is capable of using BACnet Network Security (NS-SD BIBB)
 - Multiple Application-Specific Keys
 - Supports encryption (NS-ED BIBB)
 - Key Server (NS-KS BIBB)