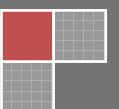


2017

Protocol Implementation Conformance Statement

Setra FLEX Environmental Monitor

This document gives the brief product description and the complete over view of the PICS statement.



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1. Document Introduction

This document contains the Protocol Implementation Conformance Statement (PICS) and BACnet® Interoperability Building Blocks (BIBBs) for the Setra FLEX™ as required by the American National Standards Institute/ American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ANSI/ASHRAE) Standard 135-2012, BACnet protocol. BACnet interoperability building blocks are collections of one or more BACnet services. This document includes a listing of the BIBBs currently supported by the Monitor. FLEX is a native BACnet Application Specific Controller with MS/TP and IP capabilities.

2. Product Description as per Annex A PICS (normative)

Setra FLEX in conjunction with a separate Expansion I/O module (not BACnet) provide a complete solution for monitoring and controlling critical room parameters like pressure, temperature, and humidity in healthcare and laboratory facilities.

3. BACnet Requirements

3.1 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)

3.2 BACnet Interoperability Building Blocks (BIBBs) (Annex K)

Table below lists all the BIBBs that are required for the BACnet Application Specific Controller (B-ASC) profile for FLEX. The BIBBs that are not required for B-ASC Profile but supported in FLEX are also listed.

Application Specific Controller (B-ASC)	Designation
Required for B-ASC Profile	
Data Sharing - Read Property – B	DS-RP-B
Data Sharing - Write Property – B	DS-WP-B
Device Management - Dynamic Device Binding – B	DM-DDB-B
Device Management - Dynamic Object Binding – B	DM-DOB-B
Device Management - Device Communication Control – B	DM-DCC-B
Not Required for B-ASC Profile but supported in FLEX	
Data Sharing - Write Property Multiple – B	DS-WPM-B
Data Sharing - Read Property Multiple – B	DS-RPM-B
Device Management - Reinitialize Device – B	DM-RD-B
Device Management - Time Synchronization – B	DM-TS-B
Device Management-Dynamic Device Binding-A	DM-DDB-A
Device Management – UTC Time Synchronization – B	DM-UTC-B
Data Sharing - Read Property – A	DS-RP-A
Data Sharing - Write Property – A	DS-WP-A
Data Sharing-COV-B	DS-COV-B

3.3 Standard Object Types Supported

3.3.1 Analog Input

Dynamically Creatable: YES NO

Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value	Yes*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Device_Type	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Event_State	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Out_Of_Service	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Units	No+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Min_Pres_Value	No+	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Max_Pres_Value	No+	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Resolution	No+	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COV_Increment	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

*writable only when Out_Of_Service is true

+writable for instances 13-30

3.3.2 Analog Output

Dynamically Creatable: YES NO

Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Event_State	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Out_Of_Service	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Units	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COV_Increment	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Max_Pres_Value	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Min_Pres_Value	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Resolution	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Priority_Array	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Relinquish_Default	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

3.3.3 Analog Value

Dynamically Creatable: YES NO

Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Event_State	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Out_Of_Service	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Units	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COV_Increment	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

3.3.4 Binary Input

Dynamically Creatable: YES NO

Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value*	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Device_Type	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Event_State	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Out_Of_Service	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Polarity	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Inactive_Text	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Active_Text	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

*writable only when Out_Of_Service is true

3.3.5 Binary Output

Dynamically Creatable: YES NO

Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Device_Type	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Event_State	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Out_Of_Service	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Polarity	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Inactive_Text	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Active_Text	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Priority_Array	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Relinquish_Default	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

3.3.6 Binary Value

Dynamically Creatable: YES NO
 Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Event_State	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Out_Of_Service	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Inactive_Text	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Active_Text	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

3.3.7 Device

Dynamically Creatable: YES NO
 Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
System_Status	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Vendor_Name	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Vendor_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Model_Name	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Firmware_Revision	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Application_Software_Version	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Location	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Protocol_Version	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Protocol_Revision	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Protocol_Services_Supported	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Protocol_Object_Types_Supported	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_List	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Max_APDU_Length_Accepted	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Segmentation_Supported	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Local_Time	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Local_Date	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
APDU_Timeout	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Number_Of_APDU_Retries	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Max_Master	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Max_Info_Frames	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Device_Address_Binding	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Database_Revision	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Daylight_Savings_Status	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
UTC_Offset	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Active_COV_Subscriptions	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
MAX_SEGMENTS_ACCEPTED	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

3.3.8 Multi-State Input

Dynamically Creatable: YES NO

Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value*	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Event_State	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Out_Of_Service	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Number_Of_States	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
State_Text	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

*writable only when Out_Of_Service is true

3.3.9 Multi-State Value

Dynamically Creatable: YES NO

Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Event_State	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Out_Of_Service	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Number_Of_States	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
State_Text	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

3.3.10 Loop

Dynamically Creatable: YES NO
 Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value*	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Event_State	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Out_Of_Service	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Update interval	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
OUTPUT UNITS	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Manipulated_Variable_Reference	Yes	<input checked="" type="checkbox"/>		
Controlled_Variable_Reference	Yes	<input checked="" type="checkbox"/>		
Controlled_Variable_Value	No	<input checked="" type="checkbox"/>		
Controlled_Variable_Units	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Setpoint_Reference	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Setpoint	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Action	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Proportional_Constant	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Proportional_Constant_Units	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Integral_Constant	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Integral_Constant_Units	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Priority_For_Writing	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

3.3.11 Character String Value Object

Dynamically Creatable: YES NO
 Dynamically Deletable: YES NO

Property Identifier	Writable	Conformance Code		Range restrictions
		Required	Optional	
Object_Identifier	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object_Name	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Description	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Object_Type	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Present_Value	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Status_Flags	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

3.4 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: 9600, 19200, 38400, 76800
- MS/TP slave (Clause 9), baud rates: 9600, 19200, 38400, 76800
- Point-To-Point, EIA 232 (Clause 10), baud rates:
- Point-To-Point, modem (Clause 10), baud rates:
- LonTalk® protocol (Clause 11), medium:
- Other:

3.5 Segmentation Capability

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

3.6 Device Address Binding

Is static device binding supported? (Required for two-way communication between MS/TP slaves and other devices)

YES NO

3.7 Networking Options

- Router, Clause 6
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)

Does the BBMD support registrations by Foreign Devices? YES NO

3.8 Character Sets Supported

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

- ISO 10646 (UTF-8)
- IBM™/Microsoft™ DBCS)
- ISO 8859-1
- ISO 10646 (UCS-2)
- ISO 10646 (UCS-4)
- JIS X 0208

3.9 Supported Services

Table below lists all the BACnet standard application services. The checked services are supported.

Application Service	Initiates Requests	Executes Requests
ReadProperty Service	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ReadPropertyMultiple Service	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WriteProperty Service	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WritePropertyMultiple Service	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DeviceCommunicationControl Service	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ReinitializeDevice Service	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Timesynchronization Service	<input type="checkbox"/>	<input checked="" type="checkbox"/>
UTCTimesynchronization Service	<input type="checkbox"/>	<input checked="" type="checkbox"/>
who-Is	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Who-Has	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I-Am	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
I-Have	<input checked="" type="checkbox"/>	<input type="checkbox"/>
UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ConfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SubscribeCOV	<input type="checkbox"/>	<input checked="" type="checkbox"/>