

2018

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 BACnet/IP capabilities.

2. Product Description

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.

The Setra FLEX™ conforms to the BACnet Application Specific Controller (B-ASC) device profile.

3. BACnet Requirements

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

Support for the following BACnet Interoperability Building Blocks (BIBBs) is provided by the FLEX.

Application Specific Controller (B-ASC)	Designation
Data Sharing – Read Property – B	DS-RP-B
Data Sharing – Write Property – B	DS-WP-B
Data Sharing – Change of Value – B	DS-COV-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
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 – UTC Time Synchronization – B	DM-UTC-B
Device Management – Dynamic Device Binding – A	DM-DDB-A
Data Sharing – Read Property – A	DS-RP-A
Data Sharing – Write Property – A	DS-WP-A

3.2 Standard Object Types Supported

3.2.1 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

3.2.2 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"/>	
COV_Increment	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

3.2.3 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"/>	

3.2.4 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

3.2.5 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"/>	

3.2.6 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"/>	

3.2.7 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	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Local_Date	Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
APDU_Timeout	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Number_Of_APDU_Retries	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Max_Master	Yes*	<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	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Max_Segments_Accepted	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

*only present when MS/TP mode is enabled

3.2.8 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

3.2.9 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"/>	

3.2.10 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"/>	<input type="checkbox"/>	
Controlled_Variable_Reference	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Controlled_Variable_Value	No	<input checked="" type="checkbox"/>	<input 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"/>	

3.2.11 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"/>	

3.3 Data Link Layer Option

- BACnet IP, (Annex J)
- MS/TP Master (Supported baud rates: 9600, 19200, 38400, 76800)

3.4 Segmentation Capability

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

3.5 Device Address Binding

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

YES NO

3.6 Character Sets Supported

- ISO 10646 (UTF-8)
- ISO 10646 (UCS-2)

3.7 Supported Services

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"/>
SubscribeCOV	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ConfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input 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"/>