



# Protocol Implementation Conformance Statement (PICS)

## Trane<sup>®</sup> Symbio<sup>®</sup> 210 Controller BACnet Protocol Implementation Conformance Statement (PICS)

**Vendor Name:** Trane

**Product Name:** Symbio

**Product Model Number:** 210, 210e

**Product Version:** 1.0

**BACnet Protocol Revision:** 15

**Product Description:** The Trane<sup>®</sup> Symbio<sup>®</sup> 210 family of VAV controllers are BTL certified as Building Controller (B-BC) profile devices. The Symbio 210 supports BACnet MS/TP communication, while the Symbio 210e supports BACnet IP. Both devices support the Trane Air-Fi<sup>®</sup> BACnet wireless solution.

Either controller can be factory-mounted and programmed to simplify installation and eliminate field issues, or used for VAV field applied installations. Trane factory programs have been fully tested to ensure trouble free, optimized equipment control and support space temperature control, flow tracking and ventilation flow control sequences.

The Symbio 210 is field-programmable. Using the device with I/O expansion modules, additional programs can be added to control auxiliary equipment or, for the ultimate in flexibility, factory programs can be modified or replaced completely to achieve any desired custom sequence of operation.

### SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

## Standardized Device Profile (Annex L)

BACnet Operator Workstation (B-OWS)	<input type="checkbox"/>
BACnet Building Controller (B-BC)	<input checked="" type="checkbox"/>
BACnet Advanced Application Controller (B-AAC)	<input type="checkbox"/>
BACnet Application Specific Controller (B-ASC)	<input type="checkbox"/>
BACnet Smart Sensor (B-SS)	<input type="checkbox"/>
BACnet Smart Actuator (B-SA)	<input type="checkbox"/>
BACnet Router (B-RTR)	<input type="checkbox"/>
BACnet Broadcast Management Device (B-BBMD)	<input type="checkbox"/>

## Interoperability Building Blocks (Annex K)

	<b>Supported</b>
<b>Data Sharing</b>	
Data Sharing-Read Property-A (DS-RP-A)	<input checked="" type="checkbox"/>
Data Sharing-Read Property-B (DS-RP-B)	<input checked="" type="checkbox"/>
Data Sharing-Read Property Multiple-A (DS-RPM-A)	<input checked="" type="checkbox"/>
Data Sharing-Read Property Multiple-B (DS-RPM-B)	<input checked="" type="checkbox"/>
Data Sharing-Write Property-A (DS-WP-A)	<input checked="" type="checkbox"/>
Data Sharing-Write Property-B (DS-WP-B)	<input checked="" type="checkbox"/>
Data Sharing-Write Property Multiple-A (DS-WPM-A)	<input checked="" type="checkbox"/>
Data Sharing-Write Property Multiple-B (DS-WPM-B)	<input checked="" type="checkbox"/>
Data Sharing-Change Of Value-A (DS-COV-A)	<input checked="" type="checkbox"/>
Data Sharing-Change Of Value-B (DS-COV-B)	<input checked="" type="checkbox"/>
<b>Alarm and Event Management</b>	<b>Supported</b>
Alarm and Event-Notification-A (AE-N-A)	<input checked="" type="checkbox"/>
Alarm and Event-Notification-Internal-B (AE-N-I-B)	<input checked="" type="checkbox"/>
Alarm and Event-Acknowledge Alarm-A (AE-ACK-A)	<input checked="" type="checkbox"/>
Alarm and Event-Acknowledge Alarm-B (AE-ACK-B)	<input checked="" type="checkbox"/>
Alarm and Event-Alarm Summary-B (AE-ASUM-B)	<input checked="" type="checkbox"/>
Alarm and Event-Enrollment Summary-B (AE-ESUM-B)	<input checked="" type="checkbox"/>
Alarm and Event-Information-B (AE-INFO-B)	<input checked="" type="checkbox"/>
Alarm and Event-Event Log-Internal-B (AE-EL-I-B)	<input checked="" type="checkbox"/>
<b>Scheduling</b>	<b>Supported</b>
Scheduling-Internal-B (SCHED-I-B)	<input checked="" type="checkbox"/>
Scheduling-External-B (SCHED-E-B)	<input checked="" type="checkbox"/>
<b>Trending</b>	<b>Supported</b>
Trending-Viewing and Modifying Trends-Internal-B (T-VMT-I-B)	<input checked="" type="checkbox"/>
Trending-Viewing and Modifying Trends-External-B (T-VMT-E-B)	<input checked="" type="checkbox"/>
Trending-Automated Trend Retrieval-B (T-ATR-B)	<input checked="" type="checkbox"/>

## Interoperability Building Blocks (Annex K) [continued]

Device Management Description	Supported
Device Management-Dynamic Device Binding-A (DM-DDB-A)	☒
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)	☒
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)	☒
Device Management-Backup and Restore-B (DM-BR-B)	☒
Device Management-List Manipulation-B (DM-LM-B)	☒
Device Management-Object Creation and Deletion-B (DM-OCD-B)	☒

## Segmentation Capability

Segmentation	Supported
Segmented Requests/ Window Size: 1	☒
Segmented Responses/ Window Size: 1	☒

## Object Types

The table below lists the properties that are supported for each object type in this control device. The BACnet standard specifies many properties as optional, unless the device supports a particular BACnet feature. If the feature is supported then the optional properties are required. In the table, the properties that are defined as optional but required to support a specific functionality, have been placed in the Required Properties column.

The properties of field created BACnet objects listed in the Write Properties column of Table 1 can be modified by a BACnet client. The properties of factory created BACnet objects may be able to be modified by a BACnet client.

**Table 1. Descriptions and configurations**

Object Type	Required Properties	Optional Properties	Writable Properties <sup>(a)</sup>	Ability to Create	Ability to Delete
Analog Input	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• Present_Value</li> <li>• Status_Flags</li> <li>• Event_State</li> <li>• Out_Of_Service</li> <li>• Units</li> <li>• COV_Increment</li> <li>• Time_Delay</li> <li>• Notification Class</li> <li>• High_Limit</li> <li>• Low_Limit</li> <li>• Deadband</li> <li>• Limit_Enable</li> <li>• Event_Enable</li> <li>• Acked_Transitions</li> <li>• Notify_Type</li> <li>• Event_Time_Stamps</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> <li>• Property List</li> </ul>	<ul style="list-style-type: none"> <li>• Description</li> <li>• Reliability</li> <li>• Min_Pres_Value</li> <li>• Max_Pres_Value</li> </ul>	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Present_Value</li> <li>• Description</li> <li>• Reliability</li> <li>• Out_of_Service</li> <li>• Min_Pres_Value</li> <li>• Max_Pres_Value</li> <li>• COV_Increment</li> <li>• Time_Delay</li> <li>• Notification_Class</li> <li>• High_Limit</li> <li>• Low_Limit</li> <li>• Deadband</li> <li>• Limit_Enable</li> <li>• Event_Enable</li> <li>• Notify_Type</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> </ul>	Yes	Yes, only user created objects
Analog Output	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• Present_Value</li> <li>• Status_Flags</li> <li>• Event_State</li> <li>• Out_Of_Service</li> <li>• Units</li> <li>• Priority_Array</li> <li>• Relinquish_Default</li> <li>• COV_Increment</li> <li>• Time_Delay</li> <li>• Notification Class</li> <li>• High_Limit</li> <li>• Low_Limit</li> <li>• Deadband</li> <li>• Limit_Enable</li> <li>• Event_Enable</li> <li>• Acked_Transitions</li> <li>• Notify_Type</li> <li>• Event_Time_Stamps</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> <li>• Property List</li> </ul>	<ul style="list-style-type: none"> <li>• Description</li> <li>• Reliability</li> <li>• Min_Pres_Value</li> <li>• Max_Pres_Value</li> </ul>	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Present_Value</li> <li>• Description</li> <li>• Reliability</li> <li>• Out_of_Service</li> <li>• Min_Pres_Value</li> <li>• Max_Pres_Value</li> <li>• Relinquish_Default</li> <li>• COV_Increment</li> <li>• Time_Delay</li> <li>• Notification_Class</li> <li>• High_Limit</li> <li>• Low_Limit</li> <li>• Deadband</li> <li>• Limit_Enable</li> <li>• Event_Enable</li> <li>• Notify_Type</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> </ul>	Yes	Yes, only user created objects

Object Type	Required Properties	Optional Properties	Writable Properties <sup>(a)</sup>	Ability to Create	Ability to Delete
Analog Value	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• Present_Value</li> <li>• Status_Flags</li> <li>• Event_State</li> <li>• Out_Of_Service</li> <li>• Units</li> <li>• Priority_Array</li> <li>• Relinquish_Default</li> <li>• COV_Increment</li> <li>• Time_Delay</li> <li>• Notification Class</li> <li>• High_Limit</li> <li>• Low_Limit</li> <li>• Deadband</li> <li>• Limit_Enable</li> <li>• Event_Enable</li> <li>• Acked_Transitions</li> <li>• Notify_Type</li> <li>• Event_Time_Stamps</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> <li>• Property List</li> </ul>	<ul style="list-style-type: none"> <li>• Description</li> <li>• Reliability</li> <li>• Min_Pres_Value</li> <li>• Max_Pres_Value</li> </ul>	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Present_Value</li> <li>• Description</li> <li>• Reliability</li> <li>• Out_of_Service</li> <li>• Min_Pres_Value</li> <li>• Max_Pres_Value</li> <li>• Relinquish_Default</li> <li>• COV_Increment</li> <li>• Time_Delay</li> <li>• Notification_Class</li> <li>• High_Limit</li> <li>• Low_Limit</li> <li>• Deadband</li> <li>• Limit_Enable</li> <li>• Event_Enable</li> <li>• Notify_Type</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> </ul>	Yes	Yes, only user created objects
Binary Input	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• Present_Value</li> <li>• Status_Flags</li> <li>• Event_State</li> <li>• Out_Of_Service</li> <li>• Polarity</li> <li>• Active_Text</li> <li>• Inactive_Text</li> <li>• Change_Of_State_Time</li> <li>• Change_Of_State_Count</li> <li>• Time_of_State_Count_Reset</li> <li>• Elapsed_Active_Time</li> <li>• Time_of_Active_Time_Reset</li> <li>• Time_Delay</li> <li>• Notification Class</li> <li>• Alarm_Value</li> <li>• Event_Enable</li> <li>• Acked_Transitions</li> <li>• Notify_Type</li> <li>• Event_Time_Stamps</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> <li>• Property List</li> </ul>	<ul style="list-style-type: none"> <li>• Description</li> <li>• Reliability</li> </ul>	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Present_Value</li> <li>• Description</li> <li>• Reliability</li> <li>• Out_of_Service</li> <li>• Polarity</li> <li>• Inactive_Text</li> <li>• Active_Text</li> <li>• Change_of_State_Count<sup>(b)</sup></li> <li>• Elapsed_Active_Time<sup>(b)</sup></li> <li>• Time_Delay</li> <li>• Notification_Class</li> <li>• Alarm_Value</li> <li>• Event_Enable</li> <li>• Notify_Type</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> </ul>	Yes	Yes, only user created objects

Object Type	Required Properties	Optional Properties	Writable Properties <sup>(a)</sup>	Ability to Create	Ability to Delete
Binary Output	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• Present_Value</li> <li>• Status_Flags</li> <li>• Event_State</li> <li>• Out_Of_Service</li> <li>• Polarity</li> <li>• Active_Text</li> <li>• Inactive_Text</li> <li>• Change_Of_State_Time</li> <li>• Change_Of_State_Count</li> <li>• Time_Of_State_Count_Reset</li> <li>• Elapsed_Active_Time</li> <li>• Time_of_Active_Time_Reset</li> <li>• Minimum_Off_Time</li> <li>• Minimum_On_Time</li> <li>• Priority_Array</li> <li>• Relinquish_Default</li> <li>• Time_Delay</li> <li>• Notification_Class</li> <li>• Feedback_Value</li> <li>• Event_Enable</li> <li>• Acked_Transitions</li> <li>• Notify_Type</li> <li>• Event_Time_Stamps</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> <li>• Property_List</li> </ul>	<ul style="list-style-type: none"> <li>• Description</li> <li>• Reliability</li> </ul>	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Present_Value</li> <li>• Description</li> <li>• Reliability</li> <li>• Out_of_Service</li> <li>• Polarity</li> <li>• Inactive_Text</li> <li>• Active_Text</li> <li>• Change_of_State_Count<sup>(b)</sup></li> <li>• Elapsed_Active_Time<sup>(b)</sup></li> <li>• Minimum_Off_Time</li> <li>• Minimum_On_Time</li> <li>• Relinquish_Default</li> <li>• Time_Delay</li> <li>• Notification_Class</li> <li>• Event_Enable</li> <li>• Notify_Type</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> </ul>	Yes	Yes, only user created objects
Binary Value	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• Present_Value</li> <li>• Status_Flags</li> <li>• Event_State</li> <li>• Out_Of_Service</li> <li>• Active_Text</li> <li>• Inactive_Text</li> <li>• Change_Of_State_Time</li> <li>• Change_Of_State_Count</li> <li>• Time_Of_State_Count_Reset</li> <li>• Elapsed_Active_Time</li> <li>• Time_of_Active_Time_Reset</li> <li>• Minimum_Off_Time</li> <li>• Minimum_On_Time</li> <li>• Priority_Array</li> <li>• Relinquish_Default</li> <li>• Time_Delay</li> <li>• Notification_Class</li> <li>• Alarm_Value</li> <li>• Event_Enable</li> <li>• Acked_Transitions</li> <li>• Notify_Type</li> <li>• Event_Time_Stamps</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> <li>• Property_List</li> </ul>	<ul style="list-style-type: none"> <li>• Description</li> <li>• Reliability</li> </ul>	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Present_Value</li> <li>• Description</li> <li>• Reliability</li> <li>• Out_of_Service</li> <li>• Inactive_Text</li> <li>• Active_Text</li> <li>• Change_of_State_Count<sup>(b)</sup></li> <li>• Elapsed_Active_Time<sup>(b)</sup></li> <li>• Minimum_Off_Time</li> <li>• Minimum_On_Time</li> <li>• Relinquish_Default</li> <li>• Time_Delay</li> <li>• Notification_Class</li> <li>• Alarm_Value</li> <li>• Event_Enable</li> <li>• Notify_Type</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> </ul>	Yes	Yes, only user created objects
Calendar	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• Present_Value</li> <li>• Date_List</li> <li>• Property_List</li> </ul>	<ul style="list-style-type: none"> <li>• Description</li> </ul>	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Description</li> <li>• Date_List</li> </ul>	Yes	Yes

Object Type	Required Properties	Optional Properties	Writable Properties <sup>(a)</sup>	Ability to Create	Ability to Delete
Device	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• System_Status</li> <li>• Vendor_Name</li> <li>• Vendor_Identifier</li> <li>• Model_Name</li> <li>• Firmware_Revision</li> <li>• Application_Software_Version</li> <li>• Protocol_Version</li> <li>• Protocol_Revision</li> <li>• Protocol_Services_Supported</li> <li>• Protocol_Object_Types_Supported</li> <li>• Object_List</li> <li>• Max_APDU_Length_Accepted</li> <li>• Segmentation_Supported</li> <li>• Max_Segments_Accepted</li> <li>• Local_Time</li> <li>• Local_Date</li> <li>• UTC_Offset</li> <li>• Daylight_Savings_Status</li> <li>• APDU_Segment_Timeout</li> <li>• APDU_Timeout</li> <li>• Number_Of_APDU_Retries</li> <li>• Max_Master</li> <li>• Max_Info_Frames</li> <li>• Device_Address_Binding</li> <li>• Database_Revision</li> <li>• Configuration_Files</li> <li>• Last_Restore_Time</li> <li>• Backup_Failure_Timeout</li> <li>• Backup_Preparation_Time</li> <li>• Restore_Preparation_Time</li> <li>• Restore_Completion_Time</li> <li>• Backup_and_Restore_State</li> <li>• Active_COV_Subscriptions</li> <li>• Time_of_Device_Restart</li> <li>• Serial_Number</li> <li>• Property_List</li> <li>• Profile_Name</li> </ul>	<ul style="list-style-type: none"> <li>• Location</li> <li>• Description</li> </ul>	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Location</li> <li>• Description</li> <li>• Backup_Failure_Timeout</li> <li>• APDU_Segment_timeout</li> <li>• APDU_Timeout</li> <li>• Number_Of_APDU_Retries</li> </ul>	No	No
Event Enrollment Object	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• Event_Type</li> <li>• Notify_Type</li> <li>• Event_Parameters</li> <li>• Object_Property_Reference</li> <li>• Event_State</li> <li>• Event_Enable</li> <li>• Acked_Transitions</li> <li>• Notification_Class</li> <li>• Event_Time_Stamps</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> <li>• Status_Flags</li> <li>• Reliability</li> <li>• Property_List</li> </ul>	<ul style="list-style-type: none"> <li>• Description</li> </ul>	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Description</li> <li>• Event_Parameters</li> <li>• Object_Property_Reference</li> <li>• Event_Enable</li> <li>• Notification_Class</li> <li>• Event_Detection_Enable</li> <li>• Event_Algorithm_Inhibit_Ref</li> <li>• Event_Algorithm_Inhibit</li> <li>• Reliability</li> <li>• Notify_Type</li> </ul>	Yes	Yes, only user created objects
Event Log Object	<ul style="list-style-type: none"> <li>• Object_Identifier</li> <li>• Object_Name</li> <li>• Object_Type</li> <li>• Property_List</li> <li>• Status_Flags</li> <li>• Event_State</li> <li>• Enable</li> <li>• Stop_When_Full</li> <li>• Buffer Size</li> <li>• Log_Buffer</li> <li>• Record_Count</li> <li>• Total_Record_Count</li> </ul>	None	<ul style="list-style-type: none"> <li>• Object_Name</li> <li>• Enable</li> <li>• Record_Count</li> </ul>	No	No

Object Type	Required Properties	Optional Properties	Writable Properties <sup>(a)</sup>	Ability to Create	Ability to Delete
File	<ul style="list-style-type: none"> <li>Object_Identifier</li> <li>Object_Name</li> <li>Object_Type</li> <li>File_Type</li> <li>File_Size</li> <li>Modification_Date</li> <li>Archive</li> <li>Read_Only</li> <li>File_Access_Method</li> <li>Property_List</li> </ul>	None	<ul style="list-style-type: none"> <li>File_Size (0 Only)</li> <li>Archive</li> </ul>	No	No
Multistate Input	<ul style="list-style-type: none"> <li>Object_Identifier</li> <li>Object_Name</li> <li>Object_Type</li> <li>Present_Value</li> <li>Status_Flags</li> <li>Event_State</li> <li>Out_Of_Service</li> <li>Number_Of_States</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Alarm_Values</li> <li>Event_Enable</li> <li>Acked_Transitions</li> <li>Notify_Type</li> <li>Event_Time_Stamps</li> <li>Event_Detection_Enable</li> <li>Event_Algorithm_Inhibit_Ref</li> <li>Event_Algorithm_Inhibit</li> <li>Property_List</li> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Reliability</li> <li>State_Text</li> <li>Fault_Values</li> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Present_Value</li> <li>Description</li> <li>Reliability</li> <li>Out_Of_Service</li> <li>Number_Of_States</li> <li>State_Text</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Alarm_Values</li> <li>Fault_Values</li> <li>Event_Enable</li> <li>Notify_Type</li> <li>Event_Detection_Enable</li> <li>Event_Algorithm_Inhibit_Ref</li> <li>Event_Algorithm_Inhibit</li> </ul>	Yes	Yes, only user created objects
Multistate Output	<ul style="list-style-type: none"> <li>Object_Identifier</li> <li>Object_Name</li> <li>Object_Type</li> <li>Present_Value</li> <li>Status_Flags</li> <li>Event_State</li> <li>Out_Of_Service</li> <li>Number_Of_States</li> <li>Priority_Array</li> <li>Relinquish_Default</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Feedback_Value</li> <li>Event_Enable</li> <li>Acked_Transitions</li> <li>Notify_Type</li> <li>Event_Time_Stamps</li> <li>Event_Detection_Enable</li> <li>Event_Algorithm_Inhibit_Ref</li> <li>Event_Algorithm_Inhibit</li> <li>Property_List</li> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Reliability</li> <li>State_Text</li> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Present_Value</li> <li>Description</li> <li>Reliability</li> <li>Out_Of_Service</li> <li>Number_Of_States</li> <li>Relinquish_Default</li> <li>State_Text</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Event_Enable</li> <li>Notify_Type</li> <li>Event_Detection_Enable</li> <li>Event_Algorithm_Inhibit_Ref</li> <li>Event_Algorithm_Inhibit</li> </ul>	Yes	Yes, only user created objects
Multistate Value	<ul style="list-style-type: none"> <li>Object_Identifier</li> <li>Object_Name</li> <li>Object_Type</li> <li>Present_Value</li> <li>Status_Flags</li> <li>Event_State</li> <li>Out_Of_Service</li> <li>Number_Of_States</li> <li>Priority_Array</li> <li>Relinquish_Default</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Alarm_Values</li> <li>Fault_Values</li> <li>Event_Enable</li> <li>Acked_Transitions</li> <li>Notify_Type</li> <li>Event_Time_Stamps</li> <li>Event_Detection_Enable</li> <li>Event_Algorithm_Inhibit_Ref</li> <li>Event_Algorithm_Inhibit</li> <li>Property_List</li> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Reliability</li> <li>State_Text</li> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Present_Value</li> <li>Description</li> <li>Reliability</li> <li>Out_Of_Service</li> <li>Number_Of_States</li> <li>Relinquish_Default</li> <li>State_Text</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Alarm_Values</li> <li>Fault_Values</li> <li>Event_Enable</li> <li>Notify_Type</li> <li>Event_Detection_Enable</li> <li>Event_Algorithm_Inhibit_Ref</li> <li>Event_Algorithm_Inhibit</li> </ul>	Yes	Yes, only user created objects



Object Type	Required Properties	Optional Properties	Writable Properties <sup>(a)</sup>	Ability to Create	Ability to Delete
Notification Class	<ul style="list-style-type: none"> <li>Object_Identifier</li> <li>Object_Name</li> <li>Object_Type</li> <li>Notification_Class</li> <li>Priority</li> <li>Ack_Required</li> <li>Recipient_List</li> <li>Property_List</li> </ul>	None	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Priority</li> <li>Ack_Required</li> <li>Recipient_List</li> </ul>	Yes	Yes, only user created objects
Schedule	<ul style="list-style-type: none"> <li>Object_Identifier</li> <li>Object_Name</li> <li>Object_Type</li> <li>Present_Value</li> <li>Effective_Period</li> <li>Schedule_Default</li> <li>List_Of_Object_Property_Reference</li> <li>Priority_For_Writing</li> <li>Status_Flags</li> <li>Reliability</li> <li>Out_Of_Service</li> <li>Property_List</li> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Weekly_Schedule</li> <li>Exception_Schedule</li> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>Schedule_Default</li> <li>List_of_Property_References</li> <li>Weekly_Schedule</li> <li>Exception_Schedule</li> <li>Priority_for_Writing</li> <li>Out_of_Service</li> </ul>	Yes	Yes
Trend	<ul style="list-style-type: none"> <li>Object_Identifier</li> <li>Object_Name</li> <li>Object_Type</li> <li>Enable</li> <li>Start_Time</li> <li>Stop_Time</li> <li>Log_Device_Object_Property</li> <li>Log_Interval</li> <li>COV_Resubscription_Interval</li> <li>Stop_When_Full</li> <li>Buffer_Size</li> <li>Log_Buffer</li> <li>Record_Count</li> <li>Total_Record_Count</li> <li>Logging_Type</li> <li>Notification_Threshold</li> <li>Records_Since_Notification</li> <li>Last_Notify_Record</li> <li>Event_State</li> <li>Status_Flags</li> <li>Notification_Class</li> <li>Event_Enable</li> <li>Acked_Transitions</li> <li>Notify_Type</li> <li>Event_Time_Stamps</li> <li>Event_Detection_Enable</li> <li>Property_List</li> </ul>	<ul style="list-style-type: none"> <li>Reliability</li> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Enable</li> <li>Start_Time</li> <li>Stop_Time</li> <li>Log_Device_Object_Property</li> <li>Log_Interval</li> <li>COV_Resubscription_Interval</li> <li>Stop_When_Full</li> <li>Buffer_Size</li> <li>Record_Count<sup>(b)</sup></li> <li>Logging_Type</li> <li>Notification_Threshold</li> <li>Notification_Class</li> <li>Event_Enable</li> <li>Notify_Type</li> </ul>	Yes	Yes, only user created objects

(a) The following properties are only writable when the Out\_Of\_Service property is set to TRUE: **Reliability** property for all objects and the **Present\_Value** property for the Analog Input, Binary Input, and Multistate Input objects.

(b) This property accepts a value of zero only. All other values are rejected.

## BACnet Protocol

### Data Link Layer Options

Data Link Layer	Options
BACnet IP, (Annex J)	(Symbio 210e only) <input checked="" type="checkbox"/>
BACnet IP, (Annex J), Foreign Device	<input type="checkbox"/>
ISO 8802-3, Ethernet (Clause 7)(10Base2, 10Base5, 10BaseT, Fiber)	<input type="checkbox"/>
ANSI/ATA 878.1, 2.5 Mb ARCNET (Clause 8)	<input type="checkbox"/>
ANSI/ATA 878.1, RS-485 ARCNET (Clause 8), Baud Rate(s)	<input type="checkbox"/>
MS/TP, Manager (Clause 9), Baud Rate(s): 9600, 19200, 38400, and 76800	(Symbio 210 only) <input checked="" type="checkbox"/>
MS/TP, Subordinate (Clause 9)	<input type="checkbox"/>
Point-to-Point, EIA 232 (Clause 10), Baud Rate(s): 9600, 19200, 38400	<input type="checkbox"/>
Point-to-Point, Modem (Clause 10), Baud Rate(s): 9600, 19200, 38400	<input type="checkbox"/>
LonTalk, (Clause 11), Medium	<input type="checkbox"/>
BACnet ZigBee (Annex O)	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

### Device Address Binding

Is static device binding supported?  Yes  No

### Networking Options

Router	<input type="checkbox"/>
Annex H, BACnet Tunneling	<input type="checkbox"/>
BACnet IP Broadcast Management Device (BBMD)	<input type="checkbox"/>
Does the BBMD Support Registrations by Foreign Devices?	<input type="checkbox"/>

### Character Sets

Indicating support for multiple characters sets does not imply that all character sets are supported simultaneously. Maximum supported string length is 64 bytes (*any character set*).

ISO-10646 UTF-8	<input checked="" type="checkbox"/>
IBM/Microsoft DBCS	<input type="checkbox"/>
JIS C 6226	<input type="checkbox"/>
ISO 10646 (UCS-4)	<input type="checkbox"/>
ISO 10646 (UCS2)	<input type="checkbox"/>
ISO 8859-1	<input type="checkbox"/>

## Additional Resources

- [www.bacnet.org](http://www.bacnet.org)
- [www.bacnetinternational.org](http://www.bacnetinternational.org)
- [www.ashrae.org](http://www.ashrae.org)

*For further assistance, contact your local Trane sales office.*

Trane - by Trane Technologies (NYSE: TT), a global climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit [trane.com](http://trane.com) or [tranetechnologies.com](http://tranetechnologies.com).

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