



# Protocol Implementation Conformance Statement (PICS)

## Tracer™ UC210 Controller

### BACnet Protocol Implementation Conformance Statement (PICS)

<b>Vendor Name:</b>	Trane
<b>Product Name:</b>	Tracer™ UC210 VAV Controller
<b>Product Model Number</b>	Tracer™ UC210
<b>Product Version:</b>	Version 1
<b>BACnet Protocol Revision:</b>	Revision 4
<b>Product Description:</b>	The Tracer™ UC210 VAV controller is a fully programmable controller that can be shipped with optional pre-loaded, standard VAV applications. The controller has additional input/output points for auxiliary equipment control and may have an integrated damper actuator, depending on the specific product model.

### Standardized Device Profile (Annex L)

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

## Interoperability Building Blocks (Annex K)

<b>Data Sharing</b>	<b>Supported</b>
Data Sharing-ReadProperty-A (DS-RP-A)	<input checked="" type="checkbox"/>
Data Sharing-WriteProperty-A (DS-WP-A)	<input checked="" type="checkbox"/>
Data Sharing-ReadProperty-B (DS-RP-B)	<input checked="" type="checkbox"/>
Data Sharing-ReadPropertyMultiple-B (DS-RPM-B)	<input checked="" type="checkbox"/>
Data Sharing-WriteProperty-B (DS-WP-B)	<input checked="" type="checkbox"/>
Data Sharing-WritePropertyMultiple-B (DS-WPM-B)	<input checked="" type="checkbox"/>
<b>Alarm and Event Management</b>	<b>Supported</b>
Alarm and Event-Notification Internal-B (AE-N-I-B)	<input checked="" type="checkbox"/>
Alarm and Event-ACKI-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"/>
<b>Trending</b>	<b>Supported</b>
Trending-viewing and Modifying Trends Internal-B (T-VMT-I-B)	<input checked="" type="checkbox"/>
Trending-Automated Trend Retrieval-B (T-ATR-B)	<input checked="" type="checkbox"/>
<b>Device Management Description</b>	<b>Supported</b>
Device Management-Dynamic Device Binding-A (DM-DDB-A)	<input checked="" type="checkbox"/>
Device Management-Dynamic Device Binding-B (DM-DDB-B)	<input checked="" type="checkbox"/>
Device Management-Dynamic Object Binding-B (DM-DOB-B)	<input checked="" type="checkbox"/>
Device Management-Device Communication Control-B (DM-DCC-B)	<input checked="" type="checkbox"/>
Device Management- Private Transfer-A (DM-PT-A)	<input checked="" type="checkbox"/>
Device Management- Private Transfer-B (DM-PT-B)	<input checked="" type="checkbox"/>
Device Management-TimeSynchronization-B (DM-TS-B)	<input checked="" type="checkbox"/>
Device Management-Reinitialize Device-B (DM-RD-B)	<input checked="" type="checkbox"/>
Device Management-Backup and Restore-B (DM-BR-B)	<input checked="" type="checkbox"/>
Device Management-List Manipulation-B (DM-LM-B)	<input checked="" type="checkbox"/>
Device Management-Object Creation and Deletion-B (DM-OCD-B)	<input checked="" type="checkbox"/>

## Segmentation Capability

<b>Segmentation</b>	<b>Supported</b>
Segmented Requests/ Window Size: 1	<input checked="" type="checkbox"/>
Segmented Responses/ Window Size: 1	<input checked="" type="checkbox"/>

## Object Types

**Note:** For objects that contain the **Present\_Value** and **Reliability** properties, these properties are only writable when the **Out\_Of\_Service** property is **True**.

**Table 1. Descriptions and configurations**

Object Type	Required Properties Read	Properties Written	Optional Properties Read	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> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>Out_Of_Service</li> <li>Present_Value</li> <li>Reliability</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> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Reliability</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>Acked_Transitions</li> <li>Notify_Type</li> <li>Event_Time_Stamps</li> </ul>	Yes	Yes, user-created objects only
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> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>Out_Of_Service</li> <li>Present_Value</li> <li>Reliability</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> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Reliability</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>Acked_Transitions</li> <li>Notify_Type</li> <li>Event_Time_Stamps</li> </ul>	Yes	Yes, user-created objects only
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> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>Out_Of_Service</li> <li>Present_Value</li> <li>Reliability</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> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Reliability</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> </ul>	Yes	Yes, user-created objects only
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> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>Out_Of_Service</li> <li>Inactive_Text</li> <li>Active_Text</li> <li>Present_Value</li> <li>Reliability</li> <li>Change_Of_State_Count</li> <li>Elapsed_Active_Time</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Alarm_Value</li> <li>Event_Enable</li> <li>Polarity</li> <li>Notify_Type</li> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Inactive_Text</li> <li>Active_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>Reliability</li> </ul>	Yes	Yes, user-created objects only

**Table 1. Descriptions and configurations (continued)**

Object Type	Required Properties Read	Properties Written	Optional Properties Read	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>Priority_Array</li> <li>Relinquish_Default</li> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>Out_Of_Service</li> <li>Inactive_Text</li> <li>Active_Text</li> <li>Present_Value</li> <li>Reliability</li> <li>Change_Of_State_Count</li> <li>Elapsed_Active_Time</li> <li>Minimum_On_Time</li> <li>Minimum_Off_Time</li> <li>Relinquish_Default</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Event_Enable</li> <li>Notify_Type</li> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Inactive_Text</li> <li>Active_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_On_Time</li> <li>Minimum_Off_Time</li> <li>Priority_Array</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>Reliability</li> </ul>	Yes	Yes, user-created objects only
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>Polarity</li> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>Out_Of_Service</li> <li>Inactive_Text</li> <li>Active_Text</li> <li>Present_Value</li> <li>Reliability</li> <li>Change_Of_State_Count</li> <li>Elapsed_Active_Time</li> <li>Minimum_On_Time</li> <li>Minimum_Off_Time</li> <li>Relinquish_Default</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Event_Enable</li> <li>Acked_Transitions</li> <li>Notify_Type</li> </ul>	<ul style="list-style-type: none"> <li>Description</li> <li>Inactive_Text</li> <li>Active_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>Priority_Array</li> <li>Relinquish_Default</li> <li>Minimum_On_Time</li> <li>Minimum_Off_Time</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>Reliability</li> </ul>	Yes	Yes, user-created objects only
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>APDU_Timeout</li> <li>Number_Of_APDU_Retries</li> <li>Device_Address_Binding</li> <li>Database_Revision</li> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Location</li> <li>Description</li> <li>APDU_Segment_Timeout</li> <li>APDU_Timeout</li> <li>Number_Of_APDU_Retries</li> <li>Backup_Failure_Timeout</li> <li>Max_Master</li> <li>Max_Info_Frames</li> </ul>	<ul style="list-style-type: none"> <li>Location</li> <li>Description</li> <li>Max_Segments_Accepted</li> <li>APDU_Segment_Timeout</li> <li>Max_Master</li> <li>Max_Info_Frames</li> <li>Local_Time</li> <li>Local_Date</li> <li>Configuration_Files</li> <li>Last_Restore_Time</li> <li>Backup_Failure_Timeout</li> <li>Profile_Name</li> </ul>	None	None
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> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Notify_Type</li> <li>Event_Parameters</li> <li>Object_Property_Reference</li> <li>Event_Enable</li> <li>Notification_Class</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>	Yes	Yes, user-created objects only

**Table 1. Descriptions and configurations (continued)**

Object Type	Required Properties Read	Properties Written	Optional Properties Read	Ability to Create	Ability to Delete
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> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>State_Text</li> <li>Out_Of_Service</li> <li>Present_Value</li> <li>Reliability</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>Number_Of_States</li> </ul>	<ul style="list-style-type: none"> <li>State_Text</li> <li>Description</li> <li>Reliability</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> </ul>	Yes	Yes, user-created objects only
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> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>State_Text</li> <li>Out_Of_Service</li> <li>Present_Value</li> <li>Reliability</li> <li>Priority_Array</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Event_Enable</li> <li>Notify_Type</li> <li>Number_Of_States</li> </ul>	<ul style="list-style-type: none"> <li>State_Text</li> <li>Description</li> <li>Reliability</li> <li>Relinquish_Default</li> <li>Time_Delay</li> <li>Notification_Class</li> <li>Feedback_Values</li> <li>Event_Enable</li> <li>Acked_Transitions</li> <li>Notify_Type</li> <li>Event_Time_Stamps</li> </ul>	Yes	Yes, user-created objects only
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> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Description</li> <li>State_Text</li> <li>Out_Of_Service</li> <li>Present_Value</li> <li>Reliability</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>Notify_Type</li> </ul>	<ul style="list-style-type: none"> <li>State_Text</li> <li>Description</li> <li>Reliability</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> </ul>	Yes	Yes, user-created objects only
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> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Priority</li> <li>Ack_Required</li> <li>Recipient_List</li> </ul>	None	Yes	Yes, user-created objects only
Trend	<ul style="list-style-type: none"> <li>Object_Identifier</li> <li>Object_Name</li> <li>Object_Type</li> <li>Log_Enable</li> <li>Stop_When_Full</li> <li>Buffer_Size</li> <li>Log_Buffer</li> <li>Record_Count</li> <li>Total_Record_Count</li> <li>Event_State</li> </ul>	<ul style="list-style-type: none"> <li>Object_Name</li> <li>Log_Enable</li> <li>Start_Time</li> <li>Stop_Time</li> <li>Log_DeviceObjectProperty</li> <li>Log_Interval</li> <li>Stop_When_Full</li> <li>Buffer_Size</li> <li>Record_Count</li> <li>Notification_Threshold</li> <li>Notification_Class</li> <li>Event_Enable</li> <li>Notify_Type</li> </ul>	<ul style="list-style-type: none"> <li>Start_Time</li> <li>Stop_Time</li> <li>Log_DeviceObjectProperty</li> <li>Log_Interval</li> <li>Stop_When_Full</li> <li>Buffer_Size</li> <li>Notification_Threshold</li> <li>Records_Since_Notification</li> <li>Last_Notify_Record</li> <li>Notification_Class</li> <li>Event_Enable</li> <li>Acked_Transitions</li> <li>Event_Time_Stamps</li> <li>Notify_Type</li> </ul>	Yes	Yes, user-created objects only

## BACnet Protocol

### Data Link Layer Options

Data Link Layer	Options
BACnet IP, (Annex J)	<input 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 Master (Clause 9), Baud Rate(s): 9600, 19200, 38400, and 76800; 1.5% nominal baud rate	<input checked="" type="checkbox"/>
MS/TP Slave (Clause 9), Baud Rate(s)	<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"/>
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*).

ANSI X3.4	<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 checked="" type="checkbox"/>
ISO 8859-1	<input checked="" type="checkbox"/>

## Additional Resources

Use the following documents and links as additional resources:

- Product support online:
  - [www.bacnet.org](http://www.bacnet.org)
  - [www.bacnetassociation.org](http://www.bacnetassociation.org)
  - [www.ashrae.org](http://www.ashrae.org)
- TracerTU Help online

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



Trane optimizes the performance of homes and buildings around the world. A business of Ingersoll Rand, the leader in creating and sustaining safe, comfortable and energy efficient environments, Trane offers a broad portfolio of advanced controls and HVAC systems, comprehensive building services, and parts. For more information, visit [www.Trane.com](http://www.Trane.com).

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.