



Protocol Implementation Conformance Statement (PICS)

Tracer[®] UC600 Controller

Vendor Name:	Trane [™]
Product Name:	Tracer [®] UC600
Product Model Number	Tracer [®] UC600
Product Version:	Version 5.0
BACnet Protocol Revision:	Revision 14
Product Description:	The Tracer [®] UC600 terminal unit controller is a multi-purpose, programmable, wireless-compatible device. As a programmable controller, it is ideal for applications such as air-handling (AHUs), central heating and cooling plants, and generic input/output (I/O) control.

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 checked="" 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"/>

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.



Interoperability Building Blocks (Annex K)

Data Sharing	Supported
Data Sharing-ReadProperty-B (DS-RP-B)	<input checked="" type="checkbox"/>
Data Sharing-ReadProperty-A (DS-RP-A)	<input checked="" type="checkbox"/>
Data Sharing_WriteProperty-A (DS-WP-A)	<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"/>
Data Sharing-Change of Value-B (DS-COV-B)	<input checked="" type="checkbox"/>
Alarm and Event Management	Supported
Alarm and Event-Notification Internal-B (AE-N-I-B)	<input checked="" type="checkbox"/>
Alarm and Event-Acknowledgment-B (AE-ACK-B)	<input checked="" type="checkbox"/>
Alarm and Event-Alarm Summary-B (AE-ASUM-B)	<input checked="" type="checkbox"/>
Alarm and Event-Information-B (AE-INFO-B)	<input checked="" type="checkbox"/>
Scheduling	Supported
Scheduling-Internal-B (SCHED-I-B)	<input checked="" type="checkbox"/>
Trending	Supported
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"/>
Device Management Description	Supported
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-TimeSynchronization-B (DM-TS-B)	<input checked="" type="checkbox"/>
Device Management-UTC Time Synchronization (DM-UTC-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

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

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.

Table 1. Descriptions and configurations

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

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Table 1. Descriptions and configurations (continued)

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

Table 1. Descriptions and configurations (continued)

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



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Table 1. Descriptions and configurations (continued)

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

Table 1. Descriptions and configurations (continued)

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



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Table 1. Descriptions and configurations (continued)

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

BACnet Protocol

Data Link Layer Options

Data Link Layer	Options
BACnet IP, (Annex J)	<input checked="" type="checkbox"/>
BACnet IP, (Annex J), Foreign Device	<input checked="" 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	<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"/>
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 checked="" type="checkbox"/>
Does the BBMD Support Registrations by Foreign Devices?	<input checked="" 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 (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
- www.bacnetassociation.org
- www.ashrae.org
- Tracer TU Online Help

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.

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