

## BACnet Protocol Implementation Conformance Statement

### Products

Product	Model Number	Protocol Revision	Software Version	Firmware Version
MACH-ProAir Building Controller	MPA	14	7.38	7.38

### Vendor Information

Reliable Controls Corporation 120 Hallowell Road Victoria, B.C. Canada V9A 7K2 <a href="http://www.reliablecontrols.com">www.reliablecontrols.com</a>
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### Product Description

Engineered to exceed the specifications for a wide variety of Variable Air Volume (VAV) applications, the Reliable Controls® MACHProAir™ is a fully programmable BACnet® Building Controller (B-BC) with numerous downloadable standard codes and flexible I/O options, all priced to meet a modest budget. Applications range from VVT and standard pressure independent control to dual duct and full demand control ventilation. Models with onboard actuator and flow sensor include a standard VAV algorithm and optimized motor control routine stored in firmware. All models include dynamic database memory, onboard End Of Line switch with LED, auto addressing, non-volatile trend data, optimized network sharing, removable connectors, and support for four SMART-Sensors™.
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### BACnet Standardized Device Profile

Product	Device Profile	Tested
MPA-111-A-F, MPA-12-A-F, MPA-12-F, MPA-33-A, MPA-33-A-F, MPA-34-A, MPA-34-A-F, MPA-35-F, MPA-36-F	BACnet Building Controller (B-BC)	X

### Supported BIBBs

Supported BIBBs	BIBB Name
DS-RP-A	Data Sharing-ReadProperty-A
DS-RP-B	Data Sharing-ReadProperty-B
DS-RPM-A	Data Sharing-ReadPropertyMultiple-A
DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
DS-WP-A	Data Sharing-WriteProperty-A
DS-WP-B	Data Sharing-WriteProperty-B
DS-WPM-B	Data Sharing-WritePropertyMultiple-B
DS-COV-A	Data Sharing-COV-A
DS-COV-B	Data Sharing-COV-B
DS-COVU-A	Data Sharing-COV-Unsolicited-A

<b>Supported BIBBs</b>	<b>BIBB Name</b>
DS-COVU-B	Data Sharing-COV-Unsolicited-B
AE-N-I-B	Alarm and Event-Notification Internal-B
AE-N-E-B	Alarm and Event-Notification External-B
AE-ACK-B	Alarm and Event-ACK-B
AE-ESUM-B	Alarm and Event-Enrollment Summary-B
AE-INFO-B	Alarm and Event-Information-B
SCHEDE-I-B	Scheduling-Internal-B
SCHEDE-E-B	Scheduling-External-B
T-VMT-I-B	Trending-Viewing and Modifying Trends Internal-B
T-VMT-E-B	Trending-Viewing and Modifying Trends External-B
T-ATR-B	Trending-Automated Trend Retrieval-B
T-VMMV-I-B	Trending-Viewing and Modifying Multiple Value Internal-B
T-VMMV-E-B	Trending-Viewing and Modifying Multiple Value External-B
T-AMVR-B	Trending-Automated Multiple Value Retrieval-B
DM-DDB-A	Device Management-Dynamic Device Binding-A
DM-DDB-B	Device Management-Dynamic Device Binding-B
DM-DOB-B	Device Management-Dynamic Object Binding-B
DM-DCC-B	Device Management-Device Communication Control-B
DM-ATS-A	Device Management-Automatic Time Synchronization-A
DM-TS-A	Device Management-Time Synchronization-A
DM-UTC-A	Device Management-UTCTimeSynchronization-A
DM-TS-B	Device Management-Time Synchronization-B
DM-UTC-B	Device Management-UTCTimeSynchronization-B
DM-RD-B	Device Management-Reinitialize Device-B
DM-BR-B	Device Management-Backup and Restore-B
DM-R-B	Device Management-Restart-B
DM-LM-B	Device Management-List Manipulation-B
DM-OCD-B	Device Management-Object Creation and Deletion-B

### Segmentation Capability

Segmentation Type	Supported	Window Size
Able to transmit segmented messages	Yes	8
Able to receive segmented messages	Yes	8

### Standard Object Types Supported

Object Type	Dynamically Creatable	Dynamically Deletable	Optional Properties Supported	Writable Properties
Device	No	No	Local_Time, Local_Date, UTC_Offset, Max_Master, Max_Info_Frames, Description, APDU_Segment_Timeout, Daylight_Savings_Status, Max_Segments_Accepted, Configuration_Files, Last_Restore_Time, Backup_Failure_Timeout,	UTC_Offset, Max_Info_Frames, Object_Name, Description, APDU_Segment_Timeout, APDU_Timeout, Number_Of_APDU_Retries,

			Time_Synchronization_Recipients, UTC_Time_Synchronization_Recipients, Time_Synchronization_Interval, Interval_Offset, Align_Intervals, Last_Restart_Reason, Time_Of_Device_Restart, Restart_Notification_Recipients, Active_COV_Subscriptions, Location	Backup_Failure_Timeout, Time_Synchronization_Recipients, UTC_Time_Synchronization_Recipients, Time_Synchronization_Interval, Interval_Offset, Align_Intervals, Restart_Notification_Recipients, Location
Analog Input	Yes	Yes	COV_Increment, Description, Event_Enable, Reliability, High_Limit, Low_Limit, Deadband, Limit_Enable, Time_Delay, Notification_Class, Notify_Type, Acked_Transitions, Event_Time_Stamps, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Present_Value, COV_Increment, Object_Name, Units, Description, Event_Enable, Out_Of_Service, High_Limit, Low_Limit, Deadband, Limit_Enable, Time_Delay, Notification_Class, Notify_Type, Acked_Transitions Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Analog Output	Yes	Yes	COV_Increment, Description, Event_Enable, Reliability, High_Limit, Low_Limit, Deadband, Limit_Enable, Time_Delay, Notification_Class, Notify_Type, Acked_Transitions, Event_Time_Stamps, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Present_Value, Relinquish_Default, COV_Increment, Object_Name, Description, Event_Enable, Out_Of_Service, High_Limit, Low_Limit, Deadband, Limit_Enable, Time_Delay, Notification_Class, Notify_Type, Acked_Transitions Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Analog Value	Yes	Yes	Priority_Array, Relinquish_Default, COV_Increment, Description, Event_Enable, Reliability, High_Limit, Low_Limit, Deadband, Limit_Enable, Time_Delay, Notification_Class, Notify_Type, Acked_Transitions, Event_Time_Stamps, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Present_Value, Relinquish_Default, COV_Increment, Object_Name, Description, Event_Enable, Out_Of_Service, Units, High_Limit, Low_Limit, Deadband, Limit_Enable, Time_Delay, Notification_Class, Notify_Type, Acked_Transitions Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Binary Input	Yes	Yes	Description, Event_Enable, Reliability, Inactive_Text, Active_Text, Elapsed_Active_Time, Change_Of_State_Count, Change_Of_State_Time, Time_Of_State_Count_Reset, Time_Of_Active_Time_Reset, Alarm_Value, Time_Delay, Notification_Class, Notify_Type, Acked_Transitions, Event_Time_Stamps, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Object_Name, Description, Event_Enable, Out_Of_Service, Inactive_Text, Active_Text, Alarm_Value, Polarity, Time_Delay, Notification_Class, Notify_Type, Acked_Transitions, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Binary Output	Yes	Yes	Minimum_Off_Time, Minimum_On_Time, Description, Reliability, Event_Enable, Inactive_Text, Active_Text, Time_Delay, Elapsed_Active_Time, Change_Of_State_Count, Change_Of_State_Time, Time_Of_State_Count_Reset, Time_Of_Active_Time_Reset, Notification_Class, Feedback_Value, Acked_Transitions, Notify_Type, Event_Time_Stamps, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Present_Value, Relinquish_Default, Minimum_Off_Time, Minimum_On_Time, Object_Name, Description, Event_Enable, Out_Of_Service, Inactive_Text, Active_Text, Elapsed_Active_Time, Time_Delay, Polarity, Feedback_Value, Notification_Class, Notify_Type, Acked_Transitions, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Binary Value	Yes	Yes	Priority_Array, Relinquish_Default, Minimum_Off_Time, Minimum_On_Time, Description, Event_Enable, Reliability, Inactive_Text, Active_Text, Elapsed_Active_Time, Change_Of_State_Count, Change_Of_State_Time, Time_Of_State_Count_Reset, Time_Of_Active_Time_Reset, Alarm_Value, Time_Delay, Notification_Class, Notify_Type, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref,	Present_Value, Relinquish_Default, Minimum_Off_Time, Minimum_On_Time, Object_Name, Description, Event_Enable, Out_Of_Service, Inactive_Text, Active_Text, Elapsed_Active_Time, Alarm_Value, Time_Delay, Notification_Class, Acked_Transitions, Notify_Type, Time_Delay_Normal,

			Event_Detection_Enable, Event_Message_Text_Config	Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Multi-State Output	Yes	Yes	Description, Reliability, Event_Enable, State_Text, Time_Delay, Notification_Class, Feedback_Value, Acked_Transitions, Notify_Type, Event_Time_Stamps, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Present_Value, Relinquish_Default, Object_Name, Description, Event_Enable, Out_Of_Service, State_Text, Time_Delay, Notification_Class, Feedback_Value, Acked_Transitions, Notify_Type, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Multi-State Value	Yes	Yes	Priority_Array, Relinquish_Default, Description, Event_Enable, Reliability, State_Text, Time_Delay, Notification_Class, Alarm_Values, Fault_Values, Acked_Transitions, Notify_Type, Event_Time_Stamps, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Present_Value, Relinquish_Default, Object_Name, Description, Event_Enable, Out_Of_Service, State_Text, Number_Of_States, Time_Delay, Notification_Class, Alarm_Values, Fault_Values, Acked_Transitions, Notify_Type, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Program	Yes	Yes	Description, Reliability	Object_Name, Description, Out_Of_Service, Program_Change
Loop	Yes	Yes	Proportional_Constant, Integral_Constant, Derivative_Constant, COV_Increment, Reliability, Bias, Description, Proportional_Constant_Units, Integratl_Constant_Units, Derivative_Constant_Units, Time_Delay, Notification_Class, Error_Limit, Deadband, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Present_Value, Proportional_Constant, Integral_Constant, Derivative_Constant, COV_Increment, Object_Name, Out_Of_Service, Output_Units, Controlled_Variable_Reference, Setpoint, Setpoint_Reference, Action, Bias, Description, Manipulated_Variable_Reference, Priority_For_Writing, Proportional_Constant_Units, Integral_Constant_Units, Derivative_Constant_Units, Time_Delay, Notification_Class, Error_Limit, Deadband, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps, Time_Delay_Normal, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
File	No	No	Record_Count	File_Size, Record_Count
Notification Class	Yes	Yes	Description	Priority, Ack_Required, Recipient_List, Object_name, Description
Schedule	Yes	Yes	Weekly_Schedule, Exception_Schedule, Description	Present_Value, Priority_For_Writing, Object_Name, Weekly_Schedule, Out_Of_Service, Effective_Period, Exception_Schedule, Schedule_Default, Description, List_Of_Object_Property_References
Trend Log	Yes	Yes	Log_Device_Object_Property, Records_Since_Notification, Notification_Threshold, Last_Notify_Record, Stop_Time, Client_COV_Increment, Event_Enable, Reliability, Log_Interval, Trigger, Start_Time, Notification_Class, Acked_Transitions, Notify_Type, Event_Time_Stamps, Description, Interval_Offset, Align_Intervals, COV_Resubscription_Interval, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Buffer_Size, Log_Device_Object_Property, Notification_Threshold, Last_Notify_Record, Object_Name, Stop_Time, Client_COV_Increment, Stop_When_Full, Enable, Event_Enable, Logging_Type, Log_Interval, Trigger, Start_Time, Notification_Class, Acked_Transitions, Notify_Type, Description, Interval_Offset, Align_Intervals, COV_Resubscription_Interval, Event_Algorithm_Inhibit,

				Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Trend Log Multiple	Yes	Yes	Records_Since_Notification, Notification_Threshold, Last_Notify_Record, Event_Enable, Reliability, Start_Time, Trigger, Stop_Time, Notification_Class, Acked_Transitions, Notify_Type, Event_Time_Stamps, Description, Interval_Offset, Align_Intervals, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Buffer_Size, Log_Device_Object_Property, Notification_Threshold, Last_Notify_Record, Enable, Event_Enable, Start_Time, Log_Interval, Trigger, Stop_Time, Stop_When_Full, Notification_Class, Acked_Transitions, Notify_Type, Object_Name, Description, Interval_Offset, Align_Intervals, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Event Enrolment	Yes	Yes	Description, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config	Object_Property_Reference, Event_Parameters, Object_Name, Event_Enable, Notify_Type, Event_Type, Notification_Class, Acked_Transitions, Description, Event_Algorithm_Inhibit, Event_Algorithm_Inhibit_Ref, Event_Detection_Enable, Event_Message_Text_Config
Calendar	Yes	Yes	Description	Present_Value, Object_Name, Description, Date_List
Global Group	Yes	Yes	Description	Object_Name, Description, Group_Members, Out_Of_Service

### Data Link Layer Options

Data Link	Options
MS/TP-Net Master	9600, 19200, 38400, 76800

### Device Address Binding

Static Binding Supported
No

### Character Sets

Character Sets supported
UTF-8