Application 2591: BACnet MS/TP Fan Coil Controller – Slave Mode

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Overview

Slave mode is the default application that comes up when power is first applied to the controller. Slave mode provides no control. Its purpose is to allow the operator to perform equipment checkout before a control application is put into effect and to set some basic controller parameters (CTLR ADDRESS, APPLICATION, etc.).

Using Auxiliary Points

It is possible to have extra points available in addition to the ones used by the current application that is running in the controller. If these extra points are to be controlled by a field panel, they must be unbundled at the field panel.

Using the Controller as a Point Extension Device

If the controller is used *only* as a point extension device, with no control application in effect, then its application must be set to slave mode *and* the points must be unbundled at the field panel. All of these points must be controlled from the field panel in order to be used. See Table 2591-3 for point database information.

All Digital Outputs (DOs) may be used as separate DOs. They may also be used in pairs, (DO 1 and DO 2), (DO 3 and DO 4), and (DO 5 and DO 6), to control a motor as shown in the example.

NOTE: If using either a motor or DOs as auxiliary points, be sure to set MTR SETUP (Point 58) to the correct value. See Table 2591-1. If using a pair of DOs to control a motor, the DOs cannot be unbundled or commanded separately. Only MTR 1 COMD (Point 48), MTR 2 COMD (Point 52), and MTR3 COMD (Point 37) can be unbundled to control the motors.

Table 2591-1. Motor Enable/Reverse Values for MTR SETUP (Point 58).

	Motor 1 Enabled			**Motor 1 Enabled and Reversed**			**Motor 1 Not Used**		
	Motor 2 Not Used	**Motor 2 Enabled**	**Motor 2 Enabled and Reversed**	**Motor 2 Not Used**	**Motor 2 Enabled**	**Motor 2 Enabled and Reversed**	**Motor 2 Not Used**	**Motor 2 Enabled**	**Motor 2 Enabled and Reversed**
Motor 3 Not Used	1	5	13	3	7	15	0	4	12
Motor 3 Enabled	17	21	29	19	23	31	16	20	28
Motor 3 Enabled and Reversed	49	53	61	51	55	63	48	52	60

Example

If using DO 1 and DO 2 as the physical terminations for a direct acting motor, follow these steps:

1. Set MTR SETUP to **1** to enable the motor.
2. Unbundle MTR 1 COMD at the field panel to command the motor from the field panel.

BACnet

The BACnet MS/TP Unit Conditioner Controller communicates using BACnet MS/TP protocol for open communications on BACnet MS/TP networks.

Table 2591-2. Supported BIBBs

Product	Supported BIBBs	BIBB Name
BTEC	DS-RP-B	Data Sharing-Read Property-B
	DS-RPM-B	Data Sharing-Read Property Multiple-B
	DS-WP-B	Data Sharing-Write Property-B
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DDC-B	Device Management-Device Communication Control-B

Room Temperature Offset

NOTE: The Room Temperature Offset feature is optional.

RMTMP OFFSET (Point 3) is a user-adjustable offset that will compensate for deviations between the value of ROOM TEMP (Point 4) and the actual room temperature. This corrected value is displayed in CTL TEMP (Point 78).

CTL TEMP (Point 78) = ROOM TEMP (Point 4) + RMTMP OFFSET (Point 3)

EXAMPLE: If the actual room temperature is 72.0°F, and the value of ROOM TEMP is 73.0°F, then the value entered into RMTMP OFFSET is –1.0. In this case, the value of ROOM TEMP would read 73.0°F, but the value of CTL TEMP would read 72.0°F.

Table 2591-3. Point Database for Application 2591.

Object Type [a]	Object Instance (Point Number) [b]	Object Name (Descriptor)	Factory Default (SI Units) [c]	Engr Units (SI Units) [c]	Range	Active Text	Inactive Text
AO	01	CTLR ADDRESS	99	--	0 to 255	--	--
AO	02	APPLICATION	2591	--	0 to 32767	--	--
AO	03	RMTMP OFFSET	0.0 (0.0)	DEG F (DEG C)	-31.75 to 32.0	--	--
AI	{04}	ROOM TEMP	74.0 (23.44888)	DEG F (DEG C)	48.0 to 111.75	--	--
BI	{10}	DI 6	OFF	--	Binary	ON	OFF
AI	{13}	RM STPT DIAL	74.0 (23.44888)	DEG F (DEG C)	48.0 to 111.75	--	--

a Object Types are; Analog Input (AI), Analog Output (AO), Binary Input (BI) and Binary Output (BO).
b Points not listed are not used in this application.
c A single value in a column means that the value is the same in English units and in SI units.
d Point numbers that appear in brackets { } may be unbundled at the field panel.

Table 2591-3. Point Database for Application 2591.

Object Type [a]	Object Instance (Point Number) [b]	Object Name (Descriptor)	Factory Default (SI Units) [c]	Engr Units (SI Units) [c]	Range	Active Text	Inactive Text
AI	{15}	AUX TEMP AI5	74.0 (23.495556)	DEG F (DEG C)	37.5 to 165.0	--	--
BO	18	WALL SWITCH	NO	--	Binary	YES	NO
BI	{19}	DI OVRD SW	OFF	--	Binary	ON	OFF
BI	{24}	DI 2	OFF	--	Binary	ON	OFF
BI	{25}	DI 5	OFF	--	Binary	ON	OFF
BO	{29}	DAY.NGT	DAY	--	Binary	NIGHT	DAY
AO	{37}	MTR 3 COMD	0.0	PCT	0.0 to 102.0	--	--
AO	{38}	MTR 3 POS	0.0	PCT	0.0 to 102.0	--	--
AO	39	MTR 3 TIMING	130	SEC	0 to 511	--	--
BO	{41}	DO 1	OFF	--	Binary	ON	OFF
BO	{42}	DO 2	OFF	--	Binary	ON	OFF
BO	{43}	DO 3	OFF	--	Binary	ON	OFF
BO	{44}	DO 4	OFF	--	Binary	ON	OFF
BO	{45}	DO 5	OFF	--	Binary	ON	OFF
BO	{46}	DO 6	OFF	--	Binary	ON	OFF
AO	{48}	MTR 1 COMD	0.0	PCT	0.0 to 102.0	--	--
AO	{49}	MTR 1 POS	0.0	PCT	0.0 to 102.0	--	--
AO	51	MTR 1 TIMING	130	SEC	0 to 511	--	--
AO	{52}	MTR 2 COMD	0.0	PCT	0.0 to 102.0	--	--
AO	{53}	MTR 2 POS	0.0	PCT	0.0 to 102.0	--	--
AO	55	MTR 2 TIMING	130	SEC	0 to 511	--	--
AO	56	MTR1 ROT ANG	90	--	0 to 255	--	--
AO	57	MTR2 ROT ANG	90	--	0 to 255	--	--
AO	58	MTR SETUP	0	--	0 to 255	--	--
AO	59	DO DIR. REV	0	--	0 to 255	--	--
AO	{78}	CTL TEMP	74.0 (23.44888)	DEG F (DEG C)	48.0 to 111.75	--	--
AO	96	CAL TIMER	12	HRS	0 to 255	--	--
AO	{99}	ERROR STATUS	0	--	0 to 255	--	--

a Object Types are; Analog Input (AI), Analog Output (AO), Binary Input (BI) and Binary Output (BO).
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c A single value in a column means that the value is the same in English units and in SI units.
d Point numbers that appear in brackets { } may be unbundled at the field panel.