

BACnet MS/TP Fan Coil TEC Startup Procedures

TEC 0849FC.11

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Before You Begin



Do not perform an update command on a BACnet MS/TP TEC from the Field Panel or from within Insight. This feature is not currently supported.

NOTES: WinCIS version 2.1.4 or later must be used to configure Siemens Building Technologies BACnet TECs.

If WinCIS does not communicate (through the MMI port / RTS sensor), try a different MMI baud rate. The default MMI baud rate is 1200.

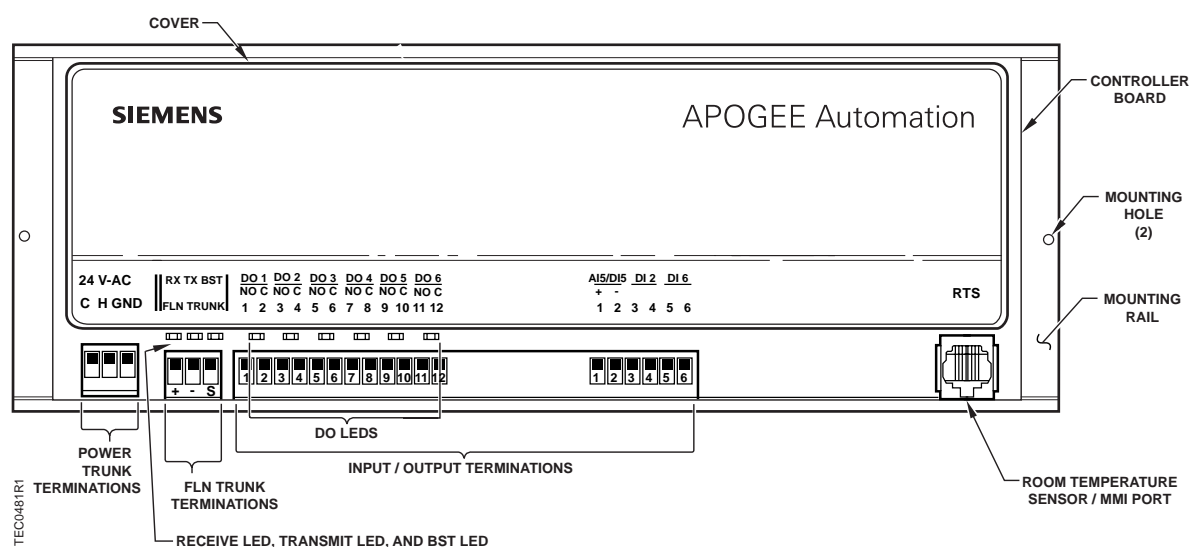


Figure 1. BACnet MS/TP Fan Coil TEC.

Setting Controller Address

Set CTLR ADDRESS (Point 1) to the BACnet MAC address.

Setting MTR SETUP

MTR SETUP (Point 58) determines which actuators are controlled by the application and whether they are direct or reverse acting. See Table 3 for standard configurations and Table 4 for non-standard configurations.

NOTE: When MTR SETUP is changed, all enabled actuators will calibrate. Wait until each actuator has completed calibration before continuing.

Table 1. MTR SETUP Value for Most Common Configurations.

Application	Configurations			Value for MTR SETUP
	Motor 1	Motor 2	Motor 3	
2540	damper (normally closed)	spare	spare	1
2541	damper (normally closed)	heating valve 1 (normally open)	heating valve 2 (normally open) (optional)	for one valve: 13 for two valves: 61
2550	heating/cooling valve 1 (normally open)	heating valve 2 (normally open) (optional)	N/A	for one valve: 3 for two valves: 15
2551	cooling valve 1 (normally closed)	heating valve 2 (normally open)	N/A	13
2552	N/A	N/A	N/A	0
2553	N/A	heating valve (normally open)	N/A	12
2554	cooling valve (normally closed)	N/A	N/A	1

Table 2. Motor Enable/Reverse Values for MTR SETUP.

	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

Setting Motor Timing

The points that determine actuator run times are:

- MTR 1 TIMING (Point 51)
- MTR 2 TIMING (Point 55)
- MTR 3 TIMING (Point 39)

Your application may not have or use all three points.

1. Use Table 1 and/or Table 2 to set run time(s) for the actuator(s) used by your application.
2. For damper rotation angles other than 90°, set Point 56 (and/or 57 if present) to the appropriate value. The names of these points vary. (PTS4 rotation angle is 90°.)

Table 3. Damper Actuator Run Time.

Damper Actuator	Setting (seconds)	
	50 Hz	60 Hz
GDE131.1	125	90
GLB131.1	150	125
PTS4 electronic-to-pneumatic transducer from ACT	–	90

Table 4. Valve Actuator Run Time.

Valve Actuator	Setting (seconds)	
	50 Hz	60 Hz
SSB81U, floating control fail in place	180	150
SSC81U, floating control fail in place	150	125
SSC81.5U, floating control fail-safe	125	125
SQS85.53U, floating control spring return	35	30
PTS4 electronic-to-pneumatic transducer from ACT	–	90

Verifying Actuator Setup

Verify that all actuators close and remain closed when commanded closed.

If an actuator does not close when commanded, try reversing its action by changing the value of MTR SETUP (Point 58) as per Table 2.

If an actuator does not close completely, make sure the motor timing point is set to the right value and that MTR SETUP (Point 58) is set to the right value (see *Setting Motor Timing* and *Setting MTR SETUP*), and refer to the actuator installation instructions for proper installation of the actuator.

Setting APPLICATION

Set APPLICATION (Point 2) to the desired application number in Table 5.

NOTE: The controller will go through a shut-down/load sequence as it switches from slave mode to the selected application.

Table 5. BACnet MS/TP Fan Coil Applications

Application Description	Application Number
VAV Pressure Dependent Cooling or Heating (Unit Conditioner application)	2540
VAV Pressure Dependent with Hot Water Heat (Unit Conditioner application)	2541
Two Pipe Fan Coil Unit Cooling or Heating	2550
Fan Coil Unit Cooling and Heating	2551
Fan Coil Unit 2—Stage Cooling and Electric Heat	2552
Fan Coil Unit 2—Stage Cooling and Hot Water Heat	2535
Fan Coil Unit Cooling and Electric Heat or VAV Pressure Dependent with Electric Heat	2554
Slave Mode	2591

Setting Calibration Interval

Set CAL TIMER (Point 96) to the time interval that will trigger calibration of the damper and/or valve(s). The default is 12 hours.

Setting Room Temperature Setpoints

Points 6, 7, 8, and 9 are the room temperature setpoints.

- Point 6 – DAY (or OCC) cooling setpoint.
 - Point 7 – DAY (or OCC) heating setpoint.
 - Point 8 – NGT (or UOC) cooling setpoint.
 - Point 9 – NGT (or UOC) heating setpoint.
1. If the room temperature sensor has a setpoint dial that will be used, set STPT DIAL (Point 14) to YES. Otherwise set STPT DIAL to NO.
 2. Set points 6 through 9 to desired values. (Points 7 and 9 are not present in certain cooling only applications.)

NOTE: If STPT DIAL is set to YES, do not set points 6 and 7; the value of RM STPT DIAL (Point 13) will be used for these points.

3. Set RM STPT MIN (Point 11) and RM STPT MAX (Point 12) for the minimum and maximum allowable room temperature setpoint values, respectively. Valid values range from 55° to 95°F (13° to 35°C). Default values are 55°F (13°C) for RM STPT MIN and 90°F (32°C) for RM STPT MAX.

Setting Room Temperature Offset

NOTE: The Room Temperature Offset feature is optional.

When the room has stabilized to within 5°F, take a precision temperature reading at the room temperature sensor. Record any difference between this reading and the value of ROOM TEMP (Point 4) and set this difference value (to the nearest 0.25°F) into 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.

$$\text{CTL TEMP (Point 78)} = \text{ROOM TEMP (Point 4)} + \text{RMTMP OFFSET (Point 3)}$$

Setting Override Time

If using night/unoccupied override, set OVRD TIME (Point 20) to the number of whole hours that an override should last. If OVRD TIME equals 0 (default), this feature is disabled.

Enabling Wall Switch

If a wall switch is used for day/night (occ/unocc) control, enable it by setting WALL SWITCH (Point 18) to YES.

Setting Number of Heat Stages or Valves

Depending on the application, Point 88 (if present) refers to electric heat stages or valves used (enabled).

- For water or steam valve applications, set Point 88 to the number of valves used (1 to 2).
- For electric heat applications, check the hardware to verify the number of electric heat stages wired to the controller (1 to 3) and set Point 88 to this value.



Insufficient airflow across energized electric heating coils can cause equipment damage or a fire hazard. Always set minimum heating flow or total airflow setpoints to provide adequate airflow across energized electric heating coils.

Setting Cooling Stages

Applications 2552 and 2553: Check the hardware to verify the number of number of cooling stages (1 to 2) used and set CLG STG CNT (Point 75) to this value.

Configuring BACnet Parameters

NOTES: WinCIS version 2.1.4 or later must be used to configure Siemens Building Technologies BACnet MS/TP TECs.

Do not check the Metric checkbox in the Device Properties dialogue if the controller is communicating through the MS/TP driver in the Field Panel. Metric can be checked only if the controller is communicating through a router. If you need metric and the controller is communicating through the MS/TP driver in the Field Panel, then the Metric checkbox in the Device Properties dialogue must be unchecked and the conversion must be handled in the Field Panel.

Using WinCIS: From the Device menu, select Device Properties to configure BACnet parameters.

1. Object Name — unique to BACnet network, default = FANCOIL CTLR (12 character RAD50 limit).
2. Object ID — unique to BACnet network, valid values = 0 to 4,194,303.
3. Description — description of controller (60 character limit).
4. Location — physical location of controller (60 character limit).
5. Baud Rate — options: 9600, 19200, 38400 or 76800; default = 19200.
6. MSTP Master/Slave — Do one of the following:
 - If using an MS/TP driver in a Field Panel, check the Slave checkbox.
 - If using a router, uncheck the Slave checkbox.
7. Press the '**Write**' button – the controller accepts the configuration values and then resets.

The startup is complete upon completion of BACnet parameters configuration.

NOTE: When the BACnet MS/TP TEC is successfully installed, the RX and TX LEDs flash On/Off very rapidly and *continuously*.