SIEMENS

Start-up Procedures for Project NYK-101597-1

TEC 0327.11

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Fan Coil Controller with 3-Speed Fan – Electronic Output

This document presents start-up procedures for the Fan Coil Controller with 3-Speed Fan – Electronic Output. Refer to Figure 1.

NOTE: Update each controller at the field panel immediately after you have completed the controller start-up procedures and have made all other changes to the controller's point database (including balancing, tuning, etc.).

Verify power to controller

Verify that the controller is powered up. Check that the BST LED on the controller is flashing. If the BST LED does not flash ON/OFF once per second, then refer to the *Apogee Automation Service Procedures Manual* (125-3013) for troubleshooting information.

NOTE: The Controller Interface Software (CIS) used with the Fan Coil Controller with 3-Speed Fan – Electronic Output (firmware revision FY10 or higher) must be Rev. 2.0 or greater. Voyager's point database may also be used for start-up.

Verify slave mode application number

1. Verify that the point APPLICATION (number 2) is set to 2090 (slave mode).

2. Display the STARTUP report.

Enable actuators

Enable the actuators by setting the points for motor setup, motor timing, and actuator setup verification as follows:

MTR SETUP

The point MTR SETUP (number 58) determines which actuators will be controlled by the application and whether they are direct or reverse acting. Refer to Table 1. Select the value that represents the actuators used on Motor 1 and Motor 2. Set MTR SETUP to this value.

Table 1. Motor Enable/Reverse Values for MTR SETUP (number 58).

	Motor 1 Not Used	Motor 1 Enabled	Motor 1 Enabled and Reversed
Motor 2 Not Used	0	1	3
Motor 2 Enabled	4	5	7
Motor 2 Enabled and Reversed	12	13	15

Set Motor Timing

The run time of each actuator is indicated by the points MTR 1 TIMING (number 51) and MTR 2 TIMING (number 55).

Use Table 2 to select the values of MTR 1 TIMING and MTR 2 TIMING.

Table 2. Valve Actuator Run Time.

Valve Actuator	Setting (seconds)	
	50 Hz	60 Hz
SQS 82	155	130
Powers VE 339 series actuator with a 1/2 in. (13 mm) stroke (used with Powertop valves)	25	21
Powers VE 339 series actuator with a 3/4 in. (19 mm) stroke[1]	38	32

[1] Settings given are for Johnson and Honeywell valves with 3/4" stroke. Stroke may be from 1/2" to 3/4", depending on the model. Consult the manufacturer's valve literature for the actual stroke and calculate the setting accordingly.

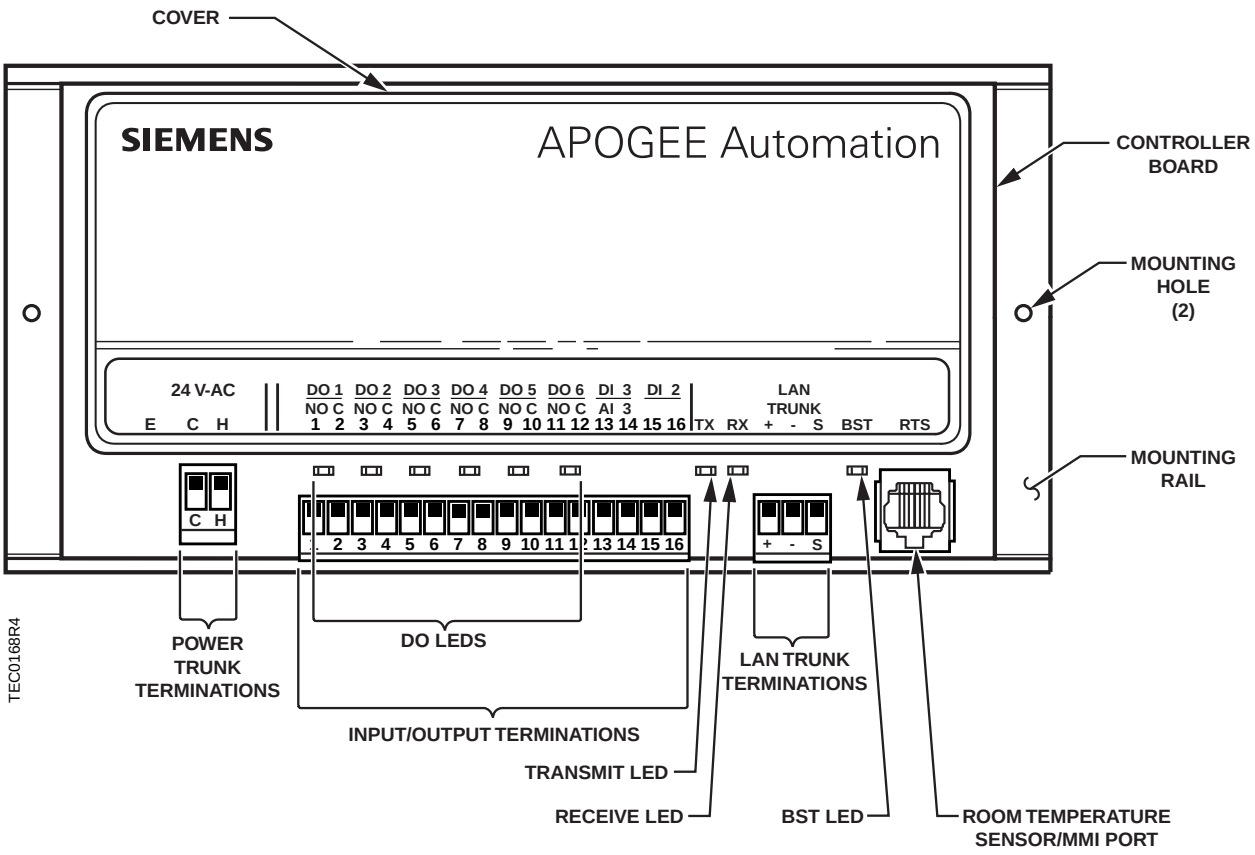

Figure 1. Fan Coil Controller with 3-Speed Fan – Electronic Output.

Setting DO DIR. REV

If the normal (de-energized) state of all of the devices controlled by DOs is OFF, then leave the point DO DIR. REV (number 59) at its default value of 0.

Otherwise, reverse the action of the devices as follows:

1. Add the values in Table 3 for each DO you wish to make reverse-acting.

2. Set DO DIR. REV to this value.

Table 3. DO DIR. REV Values.

Reverse-Acting DO	Value
DO1	32
DO2	16
DO3	8
DO4	4
DO5	2
DO6	1

NOTE: DO DIR. REV only affects DOs not being used for floating control actuators. Use the point MTR SETUP (number 58) to reverse the operation of an actuator.

Verify actuator setup

Verify that all actuators close and remain closed when commanded closed as follows:

If Motor 1 is enabled and the actuator on Motor 1 does not close, then reverse the action of that actuator by adding the value 2 to the point MTR SETUP (number 58).

If Motor 1 is enabled and reversed and the actuator on Motor 1 does not close, then reverse the action of that actuator by subtracting the value 2 from the MTR SETUP.

If Motor 2 is enabled and the actuator on Motor 2 does not close, then reverse the action of that actuator by adding the value 8 to the MTR SETUP.

If Motor 2 is enabled and reversed and the actuator on Motor 2 does not close, then reverse the action of that actuator by subtracting the value 8 from the MTR SETUP.

If any of the actuators still do not close completely, then the actuators have been installed or set up incorrectly. Refer to the actuator installation instructions, set up information, Table 1, or the *Apogee Automation Service Procedures Manual* (125-3013) for more information.

Set APPLICATION

NOTE: If you are going to enter an LCTLR point at the field panel, then keep track of the application, override time, and controller address you enter at the portable operator's terminal. You will be required to enter these values again at the field panel.

Set the point APPLICATION (number 2) to the appropriate application number. Refer to Table 3.

Table 3. Fan Coil Controller with 3-Speed Fan – Electronic Output Applications.

Application	Revision FY10 or Higher
Four-Pipe Fan Coil Unit with 3-Speed Fan Cooling or Heating	2347
Slave Mode	2090

After you set the application, the controller will go through a shut-down/load sequence as it switches from slave mode to the application selected. After the application loads and the OVERVIEW report appears, continue with the following procedures.

Set CAL TIMER

Set the point CAL TIMER (number 96) to the desired time interval that will trigger calibration of the valves. The default value for CAL TIMER is 12 hours.

Set STAND ALONE

If the TEC is to operate stand-alone, then set STAND ALONE (number 91) to ON. Otherwise, leave STAND ALONE at its default value of OFF.

Set COM FAILTIME

If STAND ALONE is OFF, then determine the amount of time that must pass before an ongoing lack of communication between the TEC and the Field Panel is considered to be a communications failure. Store this time in the point COM FAILTIME (number 31).

Set FAN SPEED

If STAND ALONE is ON, then set FAN SPEED (number 32) according to Table 4. (FAN SPEED is located in the CONTROL report.) This will be the speed at which the fan runs whenever the application determines that the fan should be on. The fan speed will not automatically vary when STAND ALONE is ON.

If STAND ALONE is OFF, then it is possible to vary the fan speed automatically. In order to accomplish this, the point FAN SPEED must be unbundled at the field panel and controlled through PPCL. If FAN SPEED is going to be controlled through PPCL, then do not set it here (i.e., skip this section.)

Table 4. FAN SPEED Values.

FAN SPEED	DO 5	DO 6
0	OFF	OFF
1	OFF	ON
2	ON	OFF
3	ON	ON

Set room temperature set points

Follow these steps to set the room temperature set points:

1. Display the SETPOINTS report.

2. If the room temperature sensor has a set point dial, and if the point RM STPT DIAL (number 13) is to be used by the controller, then set the point STPT DIAL (number 14) to YES; otherwise, set STPT DIAL to NO.

NOTE: If STPT DIAL is set to YES, then the points DAY CLG STPT (number 6) and DAY HTG STPT (number 7) will not be used. The value of RM STPT DIAL will be used instead.

3. If the room temperature sensor has a set point dial and the set point dial is to be used, then set the points RM STPT MIN (number 11) and RM STPT MAX (number 12) for the minimum and the maximum allowable room temperature set point values respectively. Valid values range from 55° to 95°F (13° to 35°C). Common values for these points are 65°F (18°C) for RM STPT MIN and 80°F (27°C) for RM STPT MAX.

4. If there is no set point dial on the room temperature sensor, then verify that STPT DIAL is set to NO.

   Set the following points to the appropriate values:

   - DAY CLG STPT (number 6)
   - DAY HTG STPT (number 7)
   - NGT CLG STPT (number 8)
   - NGT HTG STPT (number 9)

Set override time

Follow these steps to set the override time:

1. Display the STARTUP report.

2. If using night override, then set the point OVRD TIME (number 20) to the number of whole hours that an override should last. If set at zero (the default), then night override is disabled.

Enable wall switch

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

Set controller address

Set the controller address by setting the point CTLR ADDRESS (number 1) to the appropriate number.

NOTE: Update each controller at the field panel immediately after you complete the controller start-up procedures and have made all other changes to the controller's point database (including balancing, tuning, etc.).

Start-up for the Fan Coil Controller with 3-Speed Fan – Electronic Output is complete.