

Controller Start-up for Custom
Solutions Application 2406
Unit Conditioner Cooling with Motion Sensor

TEC-0348.11

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Verifying Power to the Controller

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

Verify that the Unit Conditioner Controller is powered up. Check that the BST LED on the controller is flashing (see Figure 1). If the BST LED does not flash on/off once per second, then refer to the *APOGEE Automation Service Procedures* on InfoLink for troubleshooting information.

NOTE: The Controller Interface Software (CIS), used with the Unit Conditioner Controller with Cooling and Motion Sensor — Electronic Output (Firmware Revision FG10), must be Rev. 2.0 or greater.

1. Verify that APPLICATION (Point 02) is set to **2090** (slave mode) for Revision FG10 or higher.
2. Display the STARTUP report.

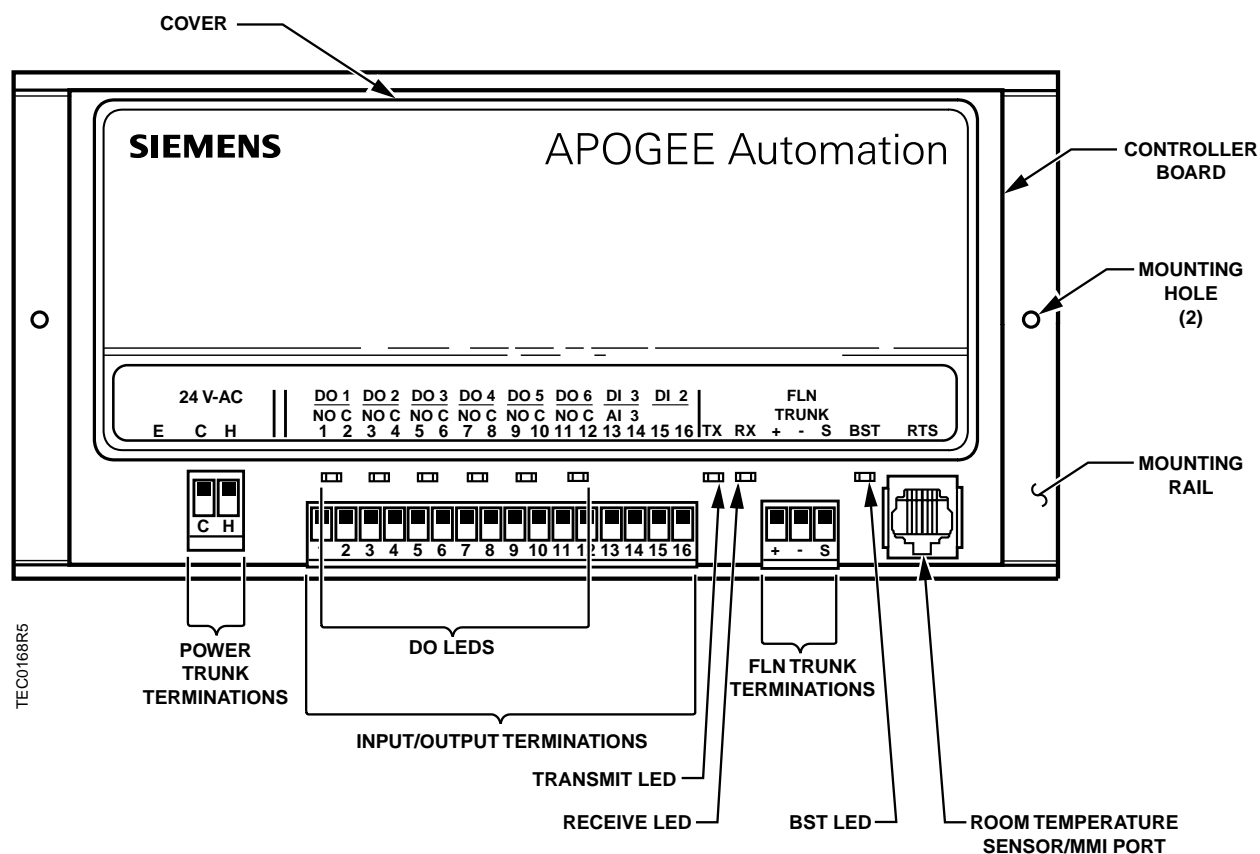


Figure 1. Unit Conditioner Controller with Cooling and Motion Sensor – Electronic Output.

Enabling Actuators

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

Setting MTR SETUP

MTR SETUP (Point 58) determines which actuators will be controlled by the application and whether they are direct or reverse acting.

Standard Configuration

Refer to Table 1 for the MTR SETUP value(s) for the most common configuration and set MTR SETUP to the value given for the application.

NOTE: In this table, it is assumed that chilled water valves are normally closed (NC).

Table 1. MTR SETUP (Point 58) Value for Most Common Configurations.

Application	Configurations			Value for MTR SETUP
	Motor 1	Motor 2	Motor 3	
2406	cooling valve (normally closed)	N/A	N/A	1

Non-Standard Configuration – If your application does not use one of the listed actuators in Table 1, or if one of your actuators has a different normal position than that listed in Table 1, then refer to Table 2 to set MTR SETUP as follows:

Choose the column that corresponds to how Motor 1 will be used and set MTR SETUP to the value of the number in the row and column you have chosen.

Table 2. Motor Enable/Reverse Values for MTR SETUP (Point 58).

Motor 1 Not Used	Motor 1 Enabled	Motor 1 Enabled and Reversed
0	1	3

Setting Motor Timing

MTR 1 TIMING (Point 51) indicates the run time of each actuator.

- If Motor 1 is a damper actuator, then use Table 3 to set MTR 1 TIMING. Continue with the following:
 - If the damper rotation angle is a value other than 90°, then set MTR1 ROT ANG (Point 56) to the appropriate value.
- If Motor 1 is a valve actuator, then use Table 4 to set MTR1 TIMING.

Table 3. Damper Actuator Run Time.

Damper Actuator	Setting (seconds)	
	50 Hz	60 Hz
349-0101	106	88
GDE 131.1U	108	90
GDE 131.1P	108	90
GLB 131.1P	150	125
¹ GBB 171.1U	150	150
² GDE 161.1P	108	90
² GLB 161.1P	150	125

¹ GBB 171.1U run time is independent of Hz.

² Analog output 0-10V.

See the Manufacturer Installed Controls (MIC) web page on Landscape (<http://landscape.us.abatos.com/mic/>) for specific manufacturers' damper opening details (90°/60°/etc.).

Table 4. Valve Actuator Run Time.

Valve Actuator	Setting (seconds)	
	50 Hz	60 Hz
SSB81U (Powermite – MZ Series)	180	150
SQS 82	155	130
SQS 65U (analog output 0 to 10V)	35	30
SQS 65.5U (analog output 0 to 10V)	35	30
SSB 61U (analog output 0 to 10V)	N/A	150

Verifying Actuator Setup

Verify that all actuators close when commanded and remain 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 MTR SETUP (Point 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 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 2, or the *APOGEE Automation Service Procedures* on InfoLink for more information.

Setting 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 APPLICATION (Point 02) to **2406**.

After you set the application, the controller goes 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.

Setting CAL TIMER

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

Setting 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 RM STPT DIAL (Point 13) is to be used by the controller, then set STPT DIAL (Point 14) to **YES**; otherwise, set STPT DIAL to **NO**.

NOTE: If STPT DIAL is set to YES, then OCC CLG STPT (Point 06) is not used. Instead, the value of RM STPT DIAL is used.

3. If there is no set point dial on the room temperature sensor, then verify that STPT DIAL is set to **NO** and set the following points to the appropriate values:
 - OCC CLG STPT (Point 06)
 - UOC CLG STPT (Point 08)

4. If the room temperature sensor has a set point dial and the set point dial will be used, then set RM STPT MIN (Point 11) and RM STPT MAX (Point 12) for the minimum and the maximum allowable room temperature set point values, respectively. Valid values range from **55°F** to **95°F** (13°C 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.

Setting Override Time

1. Display the STARTUP report.
2. If using night override, set OVRD TIME (Point 20) to the number of whole hours an override should last. If set at zero (the default), night override is disabled.

Setting OCC TIME

Set OCC TIME (Point 87) to the desired value. (OCC TIME is the amount of time that must pass after the door closes before OCC.UNOCC is set to UNOCC.)

Setting MOTION DELAY

Set MOTION DELAY (Point 91) to the desired value. (MOTION DELAY is the amount of time that the door must be closed before the motion sensor is activated.)

Setting the Normal States of DI 2 and DI 3

1. If DI 2 is opened when the door is opened, then set DI2 CONTACT (Point 26) to **NOOPEN**. Otherwise, set DI2 CONTACT to **NCLOSE**.
2. If DI 3 is opened when the motion sensor does not sense motion, then set DI3 CONTACT (Point 27) to **NOOPEN**. Otherwise, set DI3 CONTACT to **NCLOSE**.

Setting Controller Address

Set the controller address by setting CTLR ADDRESS (Point 01) to the appropriate number. Each controller must have a unique address. Normal values are **00** to **31**, but the controller will accept values as high as 98.

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

The start-up is complete.