Hoffman|Controls
Calibration Instructions

Adjustment on Thermostat with Thermostat Simulator

Equipment Required

1. HCC 207 Series Thermostat Simulator (207-TSA)

2. 207-FL Series Min./Max. thermostat board.

3. Digital Voltmeter (DVM), accurate to three places.

4. Airflow and/or an airflow measuring device not required.

Connections

1. Connect DVM to the Vt (+) test post and GND (−) post on the 207-FL Series board in thermostat.

2. Connect 207-FL thermostat leads and simulator to 200-2 or 200-3 logic terminals as follows:

Simulator to 200-2 or 200-3 Terminals	207-FL Thermostat to 200-2 or 200-3 Terminals
RED #4	ORG #12
YEL #5	BRN #11
BLK #6	BLU #8

If the thermostat and simulator are wired to 200-2 or 200-3 logic at the thermostat:

a. Open BLK lead to wire nut inside the 207-FL thermostat.

b. Connect BLK simulator lead to BLK wire to logic (leave BLK lead to thermostat open).

c. "Piggyback" RED simulator lead to RED test post on the thermostat.

d. "Piggyback" YEL simulator lead to YEL test post in the thermostat.

3. Make sure J1 and J2 jumpers are removed on the 200-2 or 200-3 logics when using 207-FL Series stats.

4. Connect 24V AC supply, 20VA minimum to terminal #2 and #3 on the 200-2 or 200-3 logics. This power requirement does not include interface contactors.

Adjusting Minimum/Maximum Flow Levels

1. Determine the two voltages that correspond to the Min. and Max. velocities from the Velocity (FPM) vs. Velocity Volts Curve. Vv voltages will be the limits to set in for Vt.

2. Set 207-TSA simulator knob so the DVM reads a maximum voltage greater than 16 volts.

3. Adjust Max. Flow pot CCW to set in desired voltage (Step 1). Example: 2500 FPM Max. Limit = 15.3V

4. Set 207-TSA knob so the DVM reads minimum voltage (less than 11.1V DC. If not , reverse the 207-TSA YEL & RED leads & reset knob to less than 11.1V DC. Return connections to original setting after Min. adjustment.

5. Adjust Min. Flow pot CCW until DVM reads the desired voltage of (Step 1).

6. Summary: Max. Vt = 16.0V DC   Min. Vt = 12.2V DC

   For these results, Simulator is turned to its extreme in both directions.

7. Disconnect 207-TSA leads, reconnect BLK thermostat lead in thermostat, and replace wire nut.

Summary

1. Flow Limits may be adjusted without airflow across the sensor.

2. Flow Limits may be adjusted utilizing a 207 or 207-FL Series thermostat connected to the logic in lieu of the Thermostat Simulator. (See 207 Series Installation & Operating Instructions.)

3. The order of Min./Max. adjustment may be reversed.

Adjustments on 200-3 Logic with Thermostat Simulator

Equipment Required

1. HCC 207 Series Thermostat Simulator (207-TSA)

2. Airflow and/or an airflow measuring device not required.

Connections for 200-2 or 200-3 Logic to Simulator

1. Cooling: RED to #4 – BLK to #6 – YEL to #5

2. Heating: RED to #5 – BLK to #6 – YEL to #4

3. DVM to Vt on the 200-3 logic terminal #8.

4. 24V AC supply 20VA minimum to terminal #2 and #3 on 200-2 or 200-3 logics.

5. Only disconnect BLK lead from thermostat (terminal #6) and connect simulator to terminal #6.

   Then Piggyback the simulator terminals #4 and #5 with the YEL and RED thermostat leads respectively.

6. Be sure J1 and J2 are *not* removed on 200-2 or 200-3 when the 207-FL Series stats are not used.

7. Connect 24V AC supply, 20VA minimum to terminal #2 and #3 on the 200-2 or 200-3 logics.

Adjusting Minimum/Maximum Flow Levels

1. Determine the two voltages which correspond to Min. and Max. velocities from the Velocity (FPM) vs. Velocity Volts Curve. Vv voltages will be the limits to be set for Vt.

2. Turn Min./Max. pots to the full CW position.

3. Set the 207-TSA Simulator knob so that the DVM reads maximum voltage greater than 16 volts.

4. Adjust Max. Flow pot CCW to set in desired voltage of Step 1.

5. Set the Simulator knob to opposite end of the scale so that the DVM reads minimum voltage less than 11.1V DC. If it does not, reverse the Simulator YEL and RED leads and reset the knob to less than 11.1V DC. Return connections to original settings after Min. adjustment.

6. Adjust Min. Flow pot CCW until DVM reads the desired voltage in Step 1.

7. Summary:

   Max. Vt > 16.0V DC and Min. Vt < 12.2V DC

   For these results, the Simulator is turned to its extreme positions in both directions.

8. Remove the Simulator leads.

9. Reconnect the thermostat leads to the 200-2 or 200-3 logics.

Adjustments on Thermostat with 207FL Thermostat

NOTE
Thermostat environment must be between 70°F and 80°F.

Equipment Required

1. DVM, accurate to three places.

2. HCC, 207-1FL or 207-2FL Series wall thermostat.

Connections

1. Set DVM to read DC Volts (0 – 20V DC scale).

2. Connect DVM RED (+) meter lead to the Vt test post on the 207-FL board in thermostat.

3. Connect DVM BLK (–) meter lead to GND the test post on 207-FL board in thermostat.

4. Connect 207-1FL or 207-2FL thermostat leads to the 200-2 or 200-3 logic terminals as follows:

Simulator to 200-2 or 200-3 Terminals	207 Thermostat to 200-2 or 200-3 Terminals
RED #4	ORG #12
YEL #5	BRN #11
BLK #6	BLU #8

5. Be sure J1 and J2 jumpers are removed on the 200-2 or 200-3 logics.

6. Connect 24V AC supply, 20VA minimum to 24V AC terminals on 200-2 or 200-3 logics.

7. DVM should read 11.5V DC or less to 16.3V DC or more.

Adjusting Minimum/Maximum Flow Levels

1. Determine the voltage required to limit the Min. and Max. flow levels from the Velocity (FPM) vs. Velocity Volts Curve.

2. Set the 207 Series thermostat setpoint to below 65°F for (DA) and above 85°F for (RA) control.

NOTE
Thermostat environment must be between 70°F and 80°F.

3. Adjust Max. flow pot until DVM reads the desired voltage as required for Max. Flow Limit.

   Example: 2500 FPM Max. Limit = 15.3 volts.

4. Set the 207 Series thermostat setpoint to above 85°F for (DA) and below 65°F for (RA) control.

5. Adjust Min. Flow Limit pot until DVM reads the desired voltage as required for Min. Flow Limit as selected from the Velocity (FPM) vs. Velocity Volts Curve.

   Example: 400 FPM Min. Flow Limit = 11.8 volts