Hoffman|Controls
Installation & Operating Instructions

Description

The 202-17-1 Interface allows the marriage of two 200-3 Series Flow Controllers in order to achieve positive or negative room pressurization. Typical applications are hospital or laboratory environments. The Master always refers to the air terminal with the higher airflow of the two air terminals. The Slave is the tracking controller and always refers to the terminal with the lesser flow. The supply terminal can be the Master or the Slave. Most commonly, a positive application has the supply terminal as the Master and the exhaust as the Slave. These are reversed in a negative pressure application. References are made to controllers "A" and "B". There are no restrictions as to which Controller is assigned the Master or Slave status or whether the application is for positive or negative room pressurization.

NOTE

The 207-1FL and 207-2FL thermostats are not applicable with 202-17-1 Interface. All 200-3 Series Flow Controllers must have J1 & J2 shorting clips removed.

Equipment Required

1. Digital Volt Meter (DVM)
2. 207-TSA Thermostat Simulator is required only when the flow limit calibration is in an ambient condition less than 65°F or greater than 85°F.

Procedure

1. When selecting a convenient mounting location, remember there will be wiring leads that connect the 202-17-1 to both 200-3 Series Flow Controllers.
2. Wire the 202-17-1 Interface to the 200-3 Series Flow Controllers as illustrated on the back.
3. Connect either a 207-1 or 207-2 Series Thermostat, or the 207-TSA to the 202-17-1 Interface as follows:
   a. Stat or 207-TSA YEL to 202-17-1 terminal Y.
   b. Stat or 207-TSA BLK to 202-17-1 terminal B.
   c. Stat or 207-TSA RED to 202-17-1 terminal R.

NOTE

If the space temperature during calibration is between 65°F and 85°F the 207 Thermostat can be used. If the temperature is outside of this range the 207-TSA Simulator must be used.

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4. Set the remote switch to your desired Master or Slave status. If the "SW" terminals are open the Controller "A" is the Master. Controller "B" will be the Master when "SW" terminals are shorted.
   a. The Master has the greater velocity of the two air terminals.
   b. The 207 Series Thermostat will control the temperature signal to the Master terminal.
5. Both of the 200-3 Flow Controllers should be programmed for direct acting.
6. Adjust the Min. and Max. potentiometers on the Master control only. The Min and Max. potentiometers assigned to the Slave are not functional. If space temperature during calibration is between 65°F and 85°F the 207 Thermostat can be used. If the temperature is outside this range the 207-TSA Simulator must be used.
   a. The Master flow controller is the only Controller to calibrate. The Slave Min. and Max. settings are controlled by the 202-17-1 Interface.
   b. Connect the DVM to the 202-17-1 terminals.

      Master = Controller terminal 1 & 4.
   c. Apply 24V AC power to the control system.
   d. Maximum Flow Calibration
      1) Adjust the Min. and Max. pots fully CW.
      2) Set the 207 Stat below 65°F (full cooling). If using 207-TSA Simulator set to +5° above setpoint.
      3) Adjust the Max. pot assigned to the Master to the desired voltage for maximum flow as determined by the flow curve for the velocity probe used.
   e. Minimum Flow Calibration
      1) Set 207 Thermostat to 86°F.

         If using 207-TSA Simulator reverse the RED and YEL leads:
         • 207-TSA RED to 202-17-1 terminal Y and 207-TSA YEL to 202-17-1 terminal R.
         • Set 5° below setpoint.

2) Adjust the Min. pot assigned to the Master to the desired voltage for minimum flow as determined by the flow curve for the velocity probe used.

3) Set the percentage CFM (%CFM) potentiometer to the desired flow offset.

Example:

Flow of "A" = 90% of the flow of "B" thus making "B" the Master. The percentage will be nominal from 400 – 4000 FPM.

f. Percent Flow Calibration Check

1) Test Point In Vv — Measures the Master's velocity voltage.

Test Point Out Vt — Measures the Slave's temperature input volts.

• Connect DVM to Vv and GND.

• Observe the voltage reading.

• Connect DVM to Vt and GND.

• Observe the voltage reading.

2) These voltage readings should differ by a CFM percentage as set on the % CFM potentiometer. Due to the changing flow characteristics at different flow rates, this percentage may differ from the % CFM setting. Should there be a difference, adjust the % CFM potentiometer to the desired % offset in voltage.
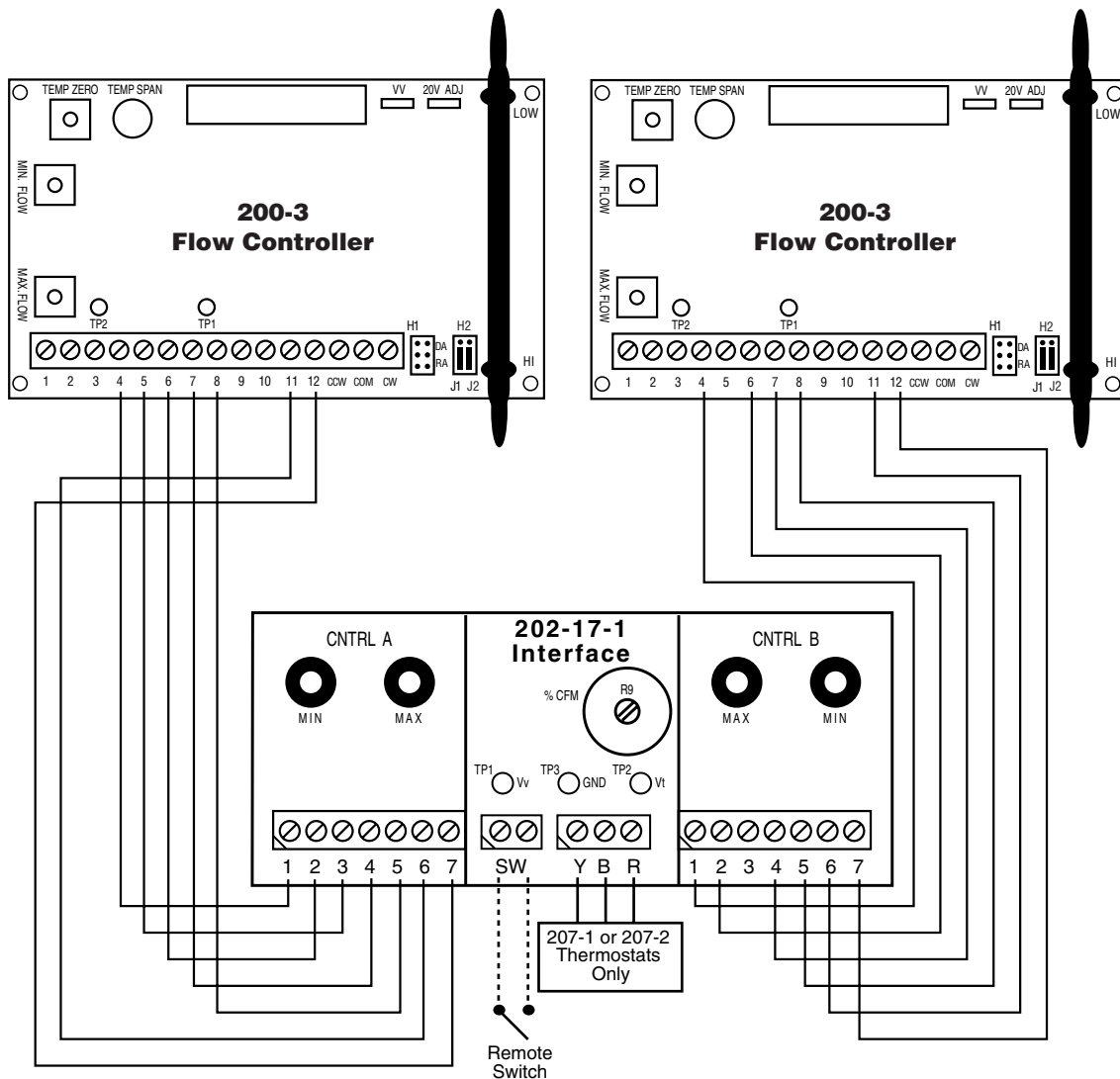
Example:

Desired Master = 3500 FPM X Area

Vv = 16.00V Desired Slave = 1750 FPM X Area

Vv = 14.40V   Dial = 50%

Vv = 16.00V on test point TP1.

Vt = 14.40V on test point TP2.

200-3 Series Flow Controllers and 202-17-1 Interface Wiring Diagram