

Hoffman Controls

Installation & Operating Instructions

202-16-1 and 706-31/32 Series Interfaces 200-3 Series Flow Controller

Description

The 202-16-1 Series Interface is a “plug-in” interface card that provides a proportional fan speed control signal output to the 706-31/32 Series Motor Speed Controller. In addition, a non-isolated 24V AC output is available to be used to energize or de-energize:

- Fan relay control, (RF) or
- Control one stage of heat (RH)

The interface has three standard calibration features:

1. Fan Start (Zero)
2. Minimum Fan Speed Limit
3. Maximum Fan Speed Limit

The fan speed span (throttling range) is fixed (standard) at 2°F, and adjustable 2°F to 5°F span is available as an option.

A unique feature of the 202-16-1 allows the user to electronically de-energize the motor, and/or disconnect the motor via the Fan Start relay control circuit. Both control functions occur simultaneously. The control relay function is provided for those applications that require a electro-mechanical isolation of motor from the line.

Equipment Required

- HCC 207-TSA Thermostat Simulator.
- True RMS Digital Volt Meter (DVM) to three places.
- Pocket screwdriver.

Pre-Set (Adjust) Potentionmeters

1. Adjust Zero pot full CW.
2. Adjust Min. pot full CCW.
3. Adjust Max. pot full CW.
4. Connect 24V AC to 200-3 terminals #2 and #3. (Motor will start.)

Installation

1. Install the 202-16-1 Interface card to mate with the 200-3 Flow Controller.

NOTE

Additional interface cards may be subsequently plugged into the 202-16-1.

2. Wire the 706-31/32 Series Motor Speed Control to the 202-16-1 terminal block TB1 — YEL & BLU.
3. Connect 207-TSA to 200-3 terminals:

RED	to	#4
YEL	to	#5
BLK	to	#6

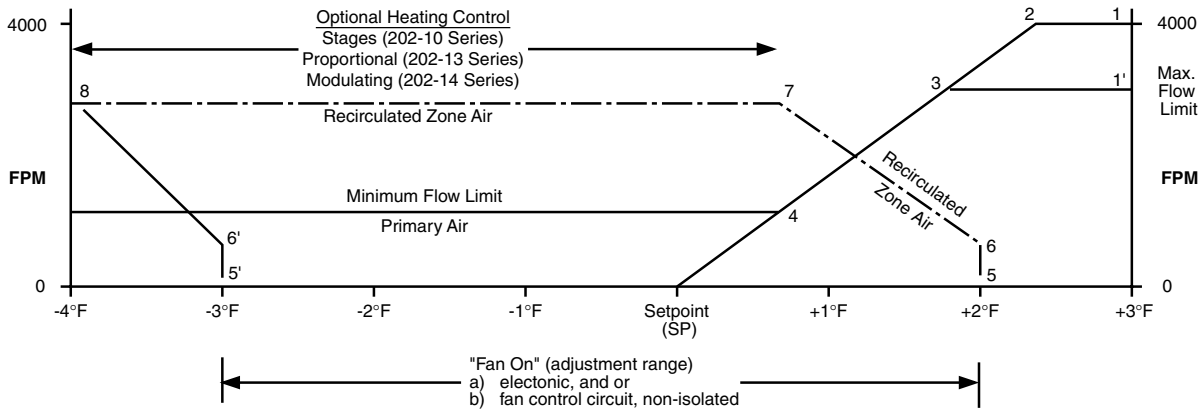
4. Connect DVM to line, across motor.

5. Option:

If fan relay control or heat control function is used, connect SW and COM to 24V AC relay coil (RF or RH as per wiring diagram).

Calibration

1. Zero Adjustment (Start)
 - a. Set 207-TSA Thermostat Simulator to desired °F setpoint to de-energize the 706-31/32 controller and control relay circuit.
 - b. Adjust Zero pot slowly CCW until motor de-energizes.
 - c. Motor will be electronically de-energized from the 706-31/32 Motor Speed Controller and may optionally be electro-mechanically disconnected from the line by the RF relay.
2. Minimum Speed Limit Adjustment
 - a. Adjust 207-TSA Simulator slowly to a lower temperature to start motor. Stop adjusting when motor starts.
 - b. Adjust Min. pot CW until motor is at desired Minimum RPM Speed (Limit).
3. Maximum Speed Limit Adjustment
 - a. Adjust 207-TSA Simulator to lowest maximum temperature. (Motor will run at full RPM).
 - b. Adjust Max. pot CCW until motor is at desired Maximum RPM Speed (Limit).
 - c. **Note:** If motor is required to run at full speed (RPM) Max. pot should be left in the full CCW position.
4. See specific Interface Calibration Instructions for other 202 Series Interfaces.



FLOW FUNCTION — Primary Airflow (—————)

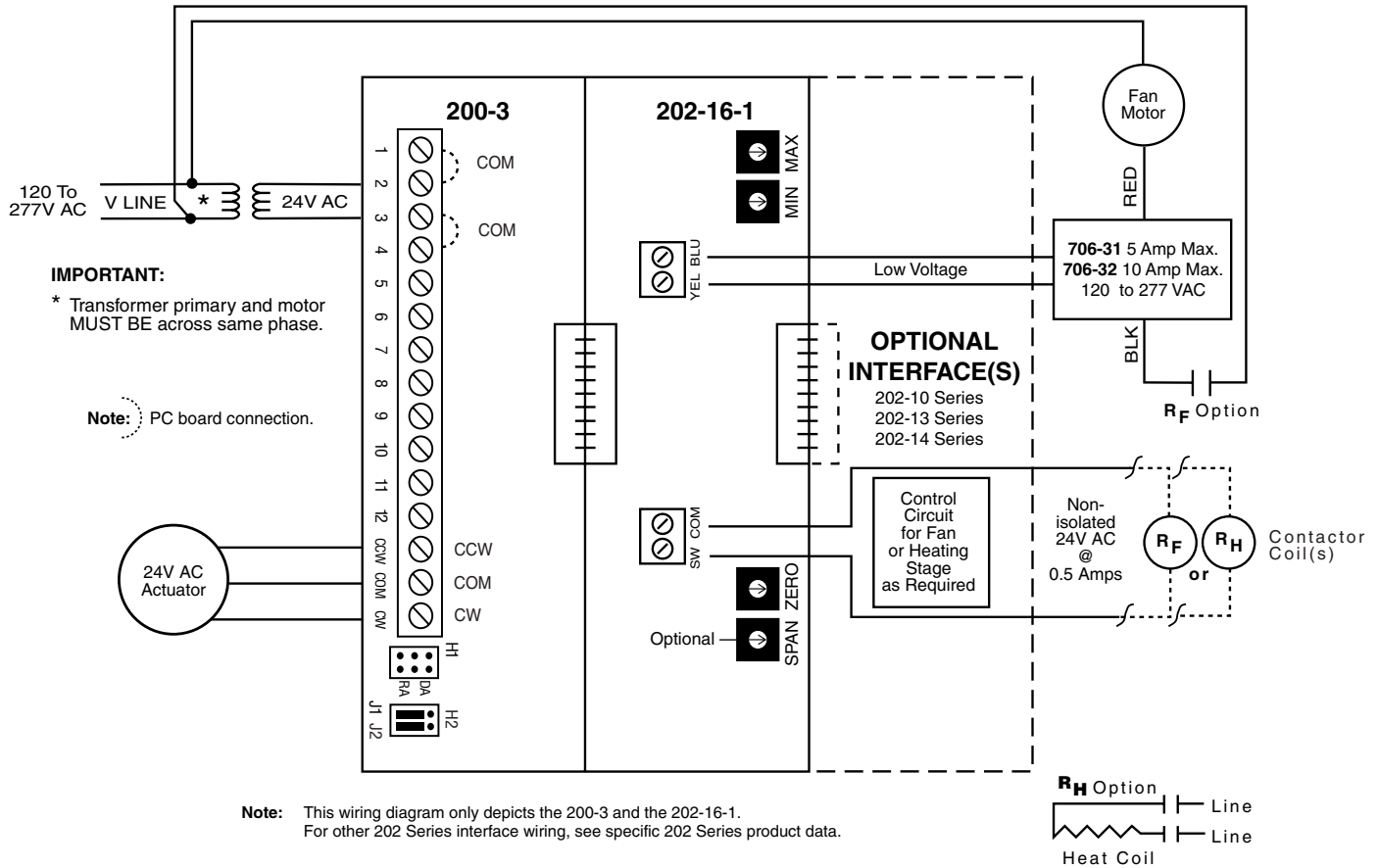
- a. 1 - 2 indicates Maximum Flow at 4000 FPM or Max. Flow Limit 1' - 3 as required adjustable on 200-3 Flow Controller or 207-FL Series Thermostat.
- b. At 2 or 3 throttling of primary air continues until Min. Flow Limit is reached at 4 or "shut-off" is reached at setpoint.
- c. Primary Air Max. Flow Limit (1' - 3) may be independent of Zone Flow Limit (7 - 8).

FLOW FUNCTION — Recirculated Zone Air Flow (- - - - -)

- a. Fan (terminal blower) starts, adjustable between 5 and 5' and obtains Minimum Flow at 6 or 6'.
- b. Fan (terminal blower) varies Recirculated Zone Air proportional to temperature with adjustable start between 6 and 6' (Min. Flow) up to 7 and 8 (Max. Flow).
- c. Min. and Max. Flow Limits for terminal blower are adjustable on 202-16-1 Interface.
- d. Control Circuit (24V AC non-isolated output) field adjustable may be used to:
 - Energize or de-energize fan relay to blower motor (5 to 5') or,
 - Energize or de-energize one stage of heat (5 to 5').

Note: Other 202 Series Interfaces may be added to provide additional functions (not depicted in this flow diagram).

202-16-1 Flow Function



Note: This wiring diagram only depicts the 200-3 and the 202-16-1. For other 202 Series interface wiring, see specific 202 Series product data.

200-3 Series Flow Controller and 202-16-1 Interface Wiring Diagram

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