

Hoffman Controls

202-13A-1 and 202-13AE-1 Series Interfaces

Product Data

200-3 Series Flow Controller

Description

The 202-13A-1 and 202-13AE-1 “plug-in” Interface cards provide additional zone control functions when used in conjunction with the 200-3 Series direct acting Flow Controller. These functions include:

- Dual Flow
- Time Proportioning Heat
- Offset (setback)
- Zone Fan Control

Flow Description

Direct acting systems furnish cold conditioned air to the controlled zone. Time Proportional Heating adds auxiliary heat when temperatures are below setpoint. When auxiliary heat is added and fan powered air is not available, an increase flow of primary air may be required. Dual Flow increases the flow level when heating is required. Dual Flow may be initiated by two methods. When the zone is unoccupied the setpoint may be changed by Offset in order to achieve energy savings. When Zone Fan Control is not used this control function can be used to initiate the Dual Flow.

Dual Minimum Flow

This function provides an increased level of flow in addition to the Minimum Flow Limit that is provided for on the 200-3 Series Flow Controller. When fan powered terminals are not available, an increased flow level (above Min. Limit) is usually required of primary (cold air) for heating. This second flow rate is field adjustable to meet specific heating flow requirements.

The method of accomplishing Dual Minimum Flow is determined by the type of auxiliary heat available. For hot water heating, Dual Minimum Flow can be initiated when heating is required. For electric SCR heating the Dual Minimum Flow must be energized on or before proportional heating is required. This can be accomplished by setting the fan zone control to initiate “on or before” the proportional heating is energized.

Time Base Proportioning Heat

The Proportional Heat function energizes a hot water heating valve or a “zero firing” SCR for electric heat over a precise time period. The percentage of “on time” varies as the error increases from setpoint. For hot water applications

the 202-13-1 has a 10 minute time base designed to energize a valve that controls hot water flow through the coil.

For electric resistance heating applications the 202-13E-1 has a 5 second time base. This time base proportions sine wave cycles through a 900 Series “zero voltage firing” SCR to accurately proportion heat to the zone. The SCR increases heat proportionally as the error from setpoint increases and features RFI (Radio Frequency Interference) suppression.

Setpoint, (factory std./adj.)	-1°F/-1°F to -4°F
Span, fixed	3°F
202-13A-1, Hot water valve ht.	10 min. time base
202-13AE, Electric SCR ht.	5 sec. time base

Offset

The temperature Offset (setback) function is initiated by a remote contact closure. Field adjustable Offset from -7°F to -20°F is available. This function is factory set at -20°F. A time clock closure is typically used to provide setback during unoccupied periods to conserve energy.

Offset, (factory std./field adjustable)	-20°F/-7°F to -20°F
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Zone Fan Control

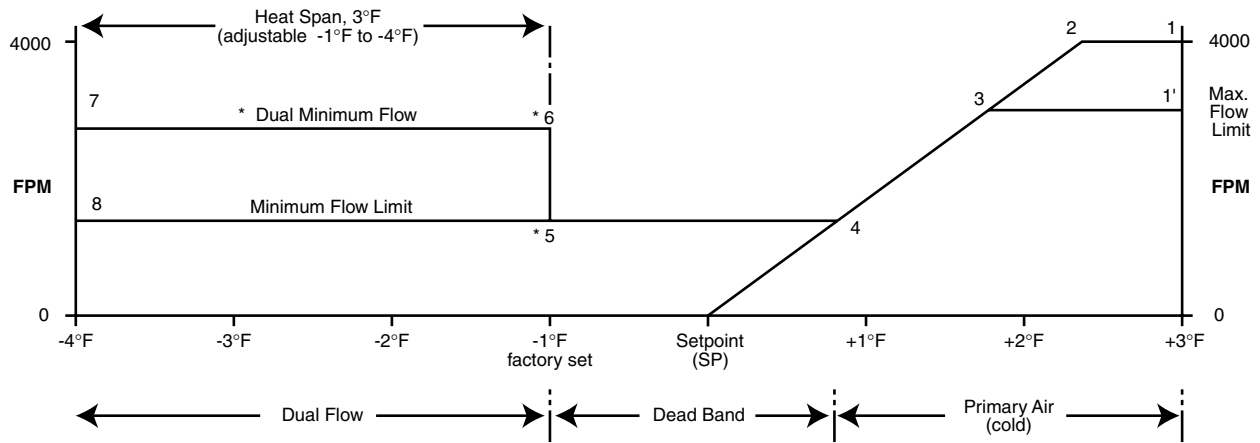
The Zone Fan Control function normally energizes a fan control circuit for furnishing heat. The control circuit is activated by the error from setpoint from the electronic 207 Series Thermostat. When Zone Fan Control is not used to start a fan, it may be used to energize Dual Minimum Flow.

Setpoint, (factory std./adj.)	-1°F/+1°F to -2°F
Hysteresis	0.5°F

Application

The 202-13A-1 (hot water) and 202-13AE-1 (electric SCR heater) Interface cards functions are in addition to the 200-3 Series Flow Controller. These functions are accomplished by inserting the auxiliary cards male connector into the 200-3 female connector. All field wired interface functions will be performed in accordance with the factory standard calibration values as noted in the above specifications.

If control requirements other than factory standard calibration values are required, recalibration of each function used will be required (see 200-3 Series Recalibration Instructions).

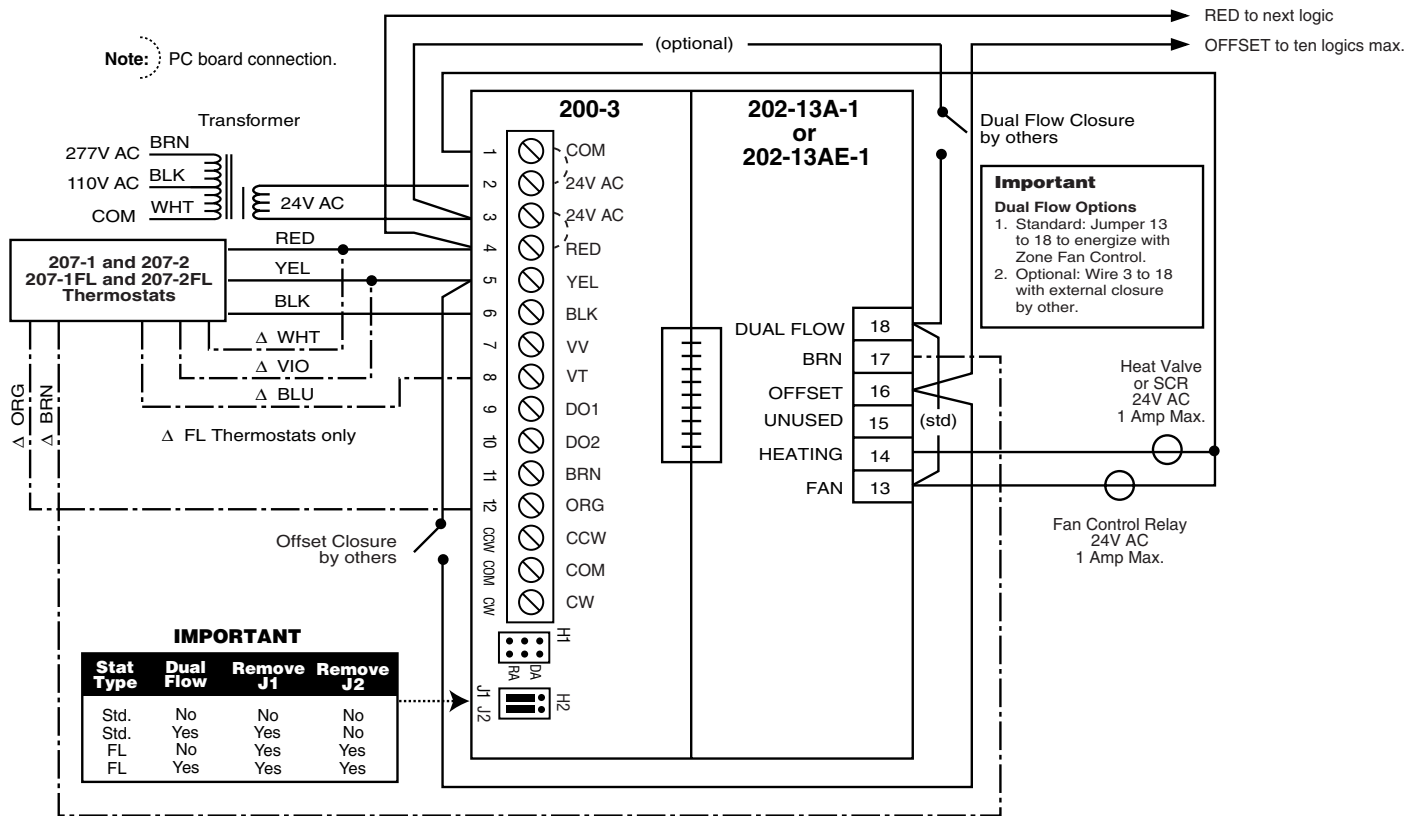


FLOW FUNCTION

- a. 1 - 2 indicates Maximum Flow at 4000 FPM (or Max. Flow Limit 1' - 3 as req.) adjustable on 200-3 Flow Controller. Zone comes under control at 2 or 3.
- b. At 2 or 3 throttling begins and continues until Minimum Flow Limit is reached at 4, or "shut-off" is reached at setpoint.
- c. Dual Minimum Flow is energized at 5 from Minimum Flow Limit level or "shut-off", and increases flow to 6. Dual Minimum Flow level remains 6 - 7.
- d. Dual Flow 6 - 7 can be externally controlled with Fan Relay Control by jumper 13 to 18 (std.) or closure energized by others (optional).
- e. When Dual Flow functions 6 - 7 are used, fan powered terminals are not applicable, and Zone Fan Control may be used to energize Dual Minimum Flow (std.).
- f. Offset adjustable from -7°F to -20°F not shown, factory set at -20°F.

* When SCR controls are used for heating applications, Dual Minimum Flow must be energized on or before proportional heat begins.

202-13A-1 or 202-13AE-1 Flow Function



Notes:

- 1. When 207-1FL or 207-2FL Series Thermostats are used, additional wiring required indicated by - - - - -
- 2. Terminals (#1 and #2) and (#3 and #4) are internally connected indicated by - - - - -
- 3. Wiring shown for all functions. Wire only those functions required.

200-3 Series Flow Controller & 202-13A-1 or 202-13AE-1 Interface Wiring Diagram

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