

Description

The 202-13-1 and 202-13E-1 Series Interfaces are “plug-in” cards that provide additional zone functions when used in conjunction with the 200-3 Series Direct Acting Flow Controller. These functions include:

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

Flow Description

Direct acting systems furnish cold, conditioned air to the controlled zone. At times, load conditions may require the addition of “waste heat” to maintain setpoint, by introducing plenum heat. This is accomplished with Zone Fan Control. If the addition of waste heat is not sufficient to maintain setpoint, then auxiliary heat may be required. The auxiliary heat may be closely controlled through Time Base Proportional Heating. When the zone is unoccupied the setpoint may be changed by Offset in order to achieve energy savings. Any combination of these three functions may be used. A detailed description of these functions follows.

Zone Fan Control

The zone fan (relay) control provides 24V AC @ 1 amp to energize a fan powered terminal unit for furnishing the initial stage of heat (recirculation of plenum air). This waste heat or recirculated plenum air is initiated by a fall in space temperature from setpoint.

Setpoint, (factory std./adj.)	-1°F/+1°F to -4°F
Hysteresis	0.5°F

Time Base Proportioning Heat

This function provides accurate proportional control of auxiliary zone heating. This function is used when fan induced plenum heat is not sufficient to maintain thermostat setpoint. The auxiliary heat is typically hot water coil or electric resistance heater(s).

Proportioning of heat begins at -1°F (factory set) from thermostat setpoint. Initiation of heat can be field adjusted from setpoint to -4°F. The time base used for energizing the heat source is dependent on the type of heat used.

For hot water heating applications the 202-13-1 has a 10 minute time base designed to energize a valve that controls hot water flow through the coil. As the zone temperature error increases from setpoint, the thermostat signal causes the valve to remain “on” for longer portions of the time base. As the zone temperature approaches setpoint the thermostat causes the valve to open for a shorter portion of the 10 minute time base.

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
202-13-1, Hot water valve ht.	10 min. time base
202-13E-1, Electric SCR ht.	5 sec. time base

Offset

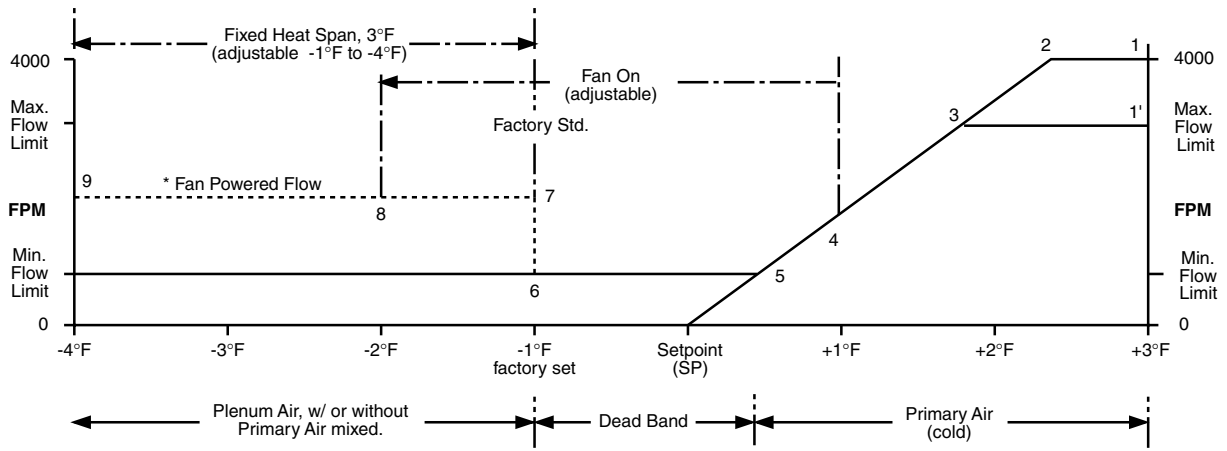
The temperature Offset (setback) function is initiated by a remote contact closure. Field adjustable Offset from -7°F to -20°F is available. This function is factory set at -20°F. A time clock closure is typically used to provide setback during unoccupied periods to conserve energy.

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

The 202-13-1 (hot water) and 202-13E-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 202-3 female connector. All field wired interface functions will be performed in accordance with the factory standard calibration values noted in the above mentioned specifications.

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

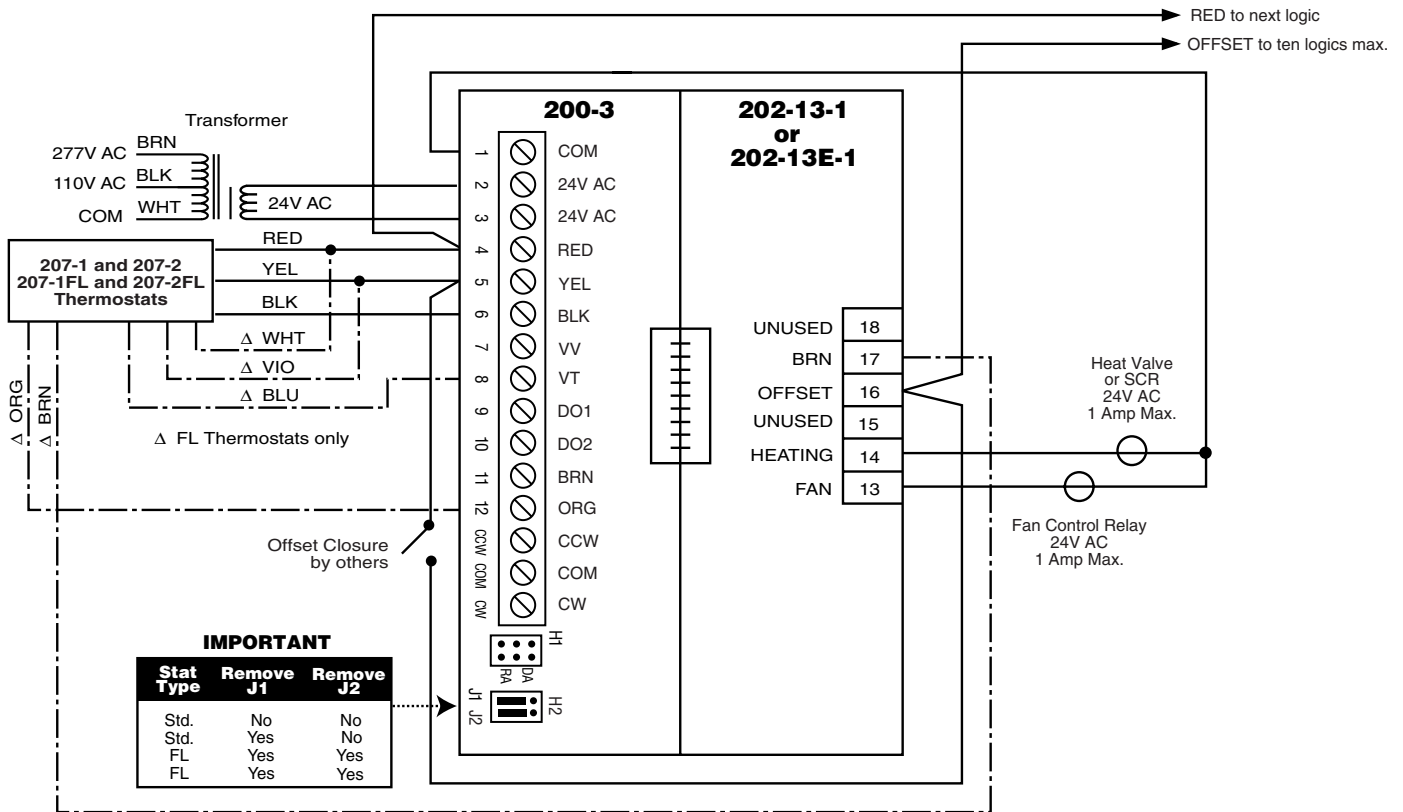


FLOW FUNCTION

- 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 Maximum Flow Limit is reached at 5, or "shut-off" is reached at setpoint.
- c. Fan Powered Flow is energized at 6 from Minimum Flow Limit level or "shut-off", and increases flow to 7. Fan Powered Flow level remains 7 - 9.
- d. Fan Powered Flow 7 - 9 can be adjusted from +1°F to -2°F, factory set -1°F (std.).
- e. Heating Span 3°F (adjustable -1°F down to -4°F) provides proportional heat.

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

202-13-1 or 202-13E-1 Flow Function



IMPORTANT

Stat Type	Remove J1	Remove J2
Std.	No	No
Std.	Yes	No
FL	Yes	Yes
FL	Yes	Yes

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 & 202-13-1 or 202-13E-1 Interface Wiring Diagram

Hoffman|Controls