

# Hoffman Controls

## Product Data

## 202-14A-1 Series Interface 200-3 Series Flow Controller

### Description

The 202-14A-1 Series Interface cards provide additional zone control functions when used with the 200-3 Series direct acting Flow Controller. These functions include:

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

### Flow Description

Direct acting systems furnish cold conditioned air to the controlled zone. The heating control interface provides one fan control stage and a proportional heating output control signal for heating. The fan control is energized as the zone temperature falls below setpoint. Heating is delivered to the zone: **1)** at the minimum flow limit, or **2)** at an increased flow as set by the dual flow function, or **3)** by the fan powered terminal box blower. Dual flow is typically set at a flow rate higher than minimum flow to meet specific heat requirements when fan control is not used. The Offset function provides a reset of setpoint to a lower temperature to conserve energy during unoccupied times.

#### Zone Fan Control

Direct acting systems of external zones may require auxiliary heat to maintain setpoint. Plenum air by light fixtures and other heat sources may be used to provide some initial heat, as well as reduce stratification. The fan powered terminal box blower is used to deliver this heat to the controlled space. The first stage of heating is accomplished by energizing the fan in the terminal unit when used, sending plenum air to the conditioned space.

|               |              |
|---------------|--------------|
| Start Heating | +1°F to -4°F |
| Hysteresis    | 0.5°F        |
| Factory Std.  | -1°F         |

#### Proportioning Heat

If the introduction of plenum air is not sufficient to maintain setpoint, a second phase of heat is activated. This heating is accomplished by sending a proportional signal to a hot water or steam valve; with a proportional signal, a closer tolerance to setpoint is maintained. Initiation of proportional heating is adjustable from setpoint to -4°F below setpoint, and provides an adjustable span of 2°F up to 4°F. The output of the proportional (heating) signal is 2 – 10V DC, and is field adjustable.

The factory calibration is 6 – 9 volts from -1°F to -4°F. A normally closed proportioning valve is required.

#### Range

|                              |              |
|------------------------------|--------------|
| Volts Span Output, Min./Max. | 3V/9V        |
| Volts Output                 | 2V to 10V    |
| Temp. Span, Min./Max.        | 2°F to 4°F   |
| Temp. Zero                   | S.P. to -2°F |

#### Factory Set

|              |              |
|--------------|--------------|
| Volts Span   | 3 Volts      |
| Volts Output | 6 V to 9V    |
| Temp. Span   | 3°F          |
| Temp. Range  | -1°F to -4°F |

#### 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

#### Dual Flow

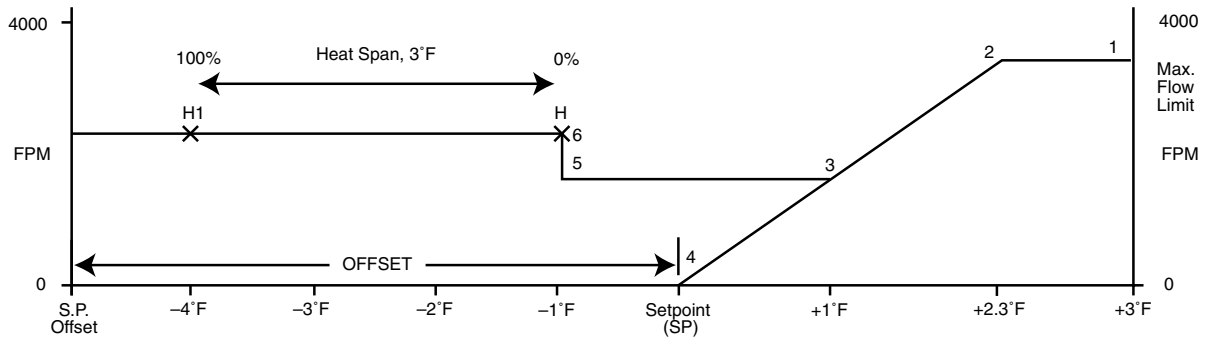
Dual Flow provides an increase minimum flow level setting, above the minimum flow set on the 200-3 Series Flow Controller. This allows the minimum flow to be adjusted for specific heating requirements. Dual minimum flow may be initiated by the zone fan control function or by an external contact closure by others. The dual minimum flow is not factory set and must be field adjusted. Dual Flow is not usually used in conjunction with Zone Fan Control.

### Application

The 202-14A-1 Series Interface cards are used in applications where exterior zones will have varying heat loads and heating control of each zone is required.

All interface functions are in addition to those provided on the 200-3 Series Flow Controller. The interface card is added to the flow controller via a 9 pin plug-in connector. All field wired interface functions will perform in accordance with factory standard calibrations as noted above, unless otherwise field calibrated. Functions may be included only if required.

If control requirements other than factory standards are required, recalibration will be necessary.



Primary Air With Dual Flow

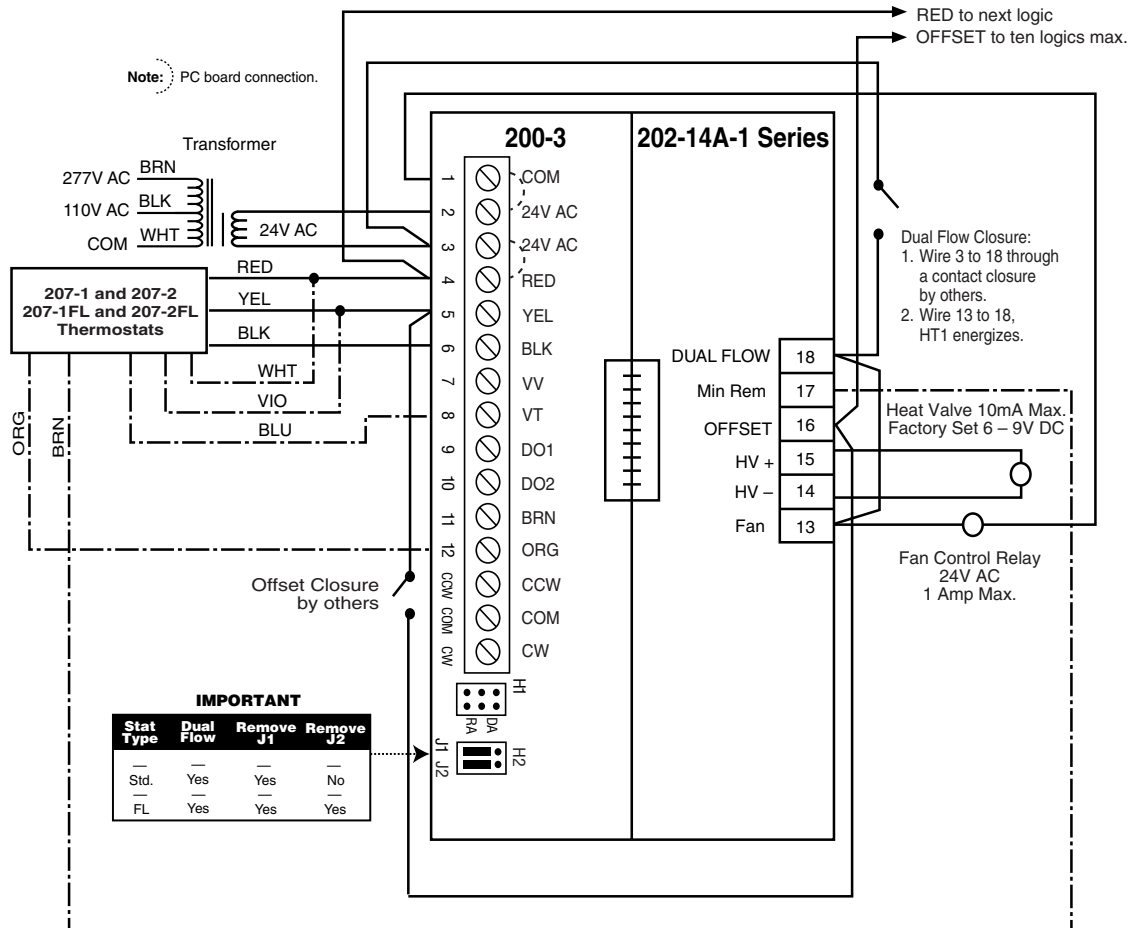
**FLOW FUNCTION**

- a. 1 - 2 indicates Maximum Flow as required at Max. Flow Limit setting until space is under control at 2.
- b. At 2, flow is regulated over the throttling range by the damper until Min. Flow Limit for the primary air at 3 is attained, or "shut-off" is reached at 4.
- c. As space temperature falls, an increase of primary air at 5 - 6 is attained as the result of the Dual Flow function. Select Option #1 or #2.
- d. Heating energized at H. The turn-on is adjustable -1°F to -4°F std. and furnishes a proportional output of 6 - 9 Volts DC standard.
- e. Dual Flow may be energized 5 - 6 by option #1 or option #2 or fan may be energized when used through fan control relay.
- f. When Offset (setback) is initiated by an external contact closure, the set point is lowered -7°F to -20°F, adjustable to setpoint.

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

**NOTE:** Flow diagram depicts factory standard calibration values.

**202-14A-1 Flow Function**



**IMPORTANT**

| Stat Type | Dual Flow | Remove J1 | Remove J2 |
|-----------|-----------|-----------|-----------|
| —         | —         | —         | —         |
| Std.      | Yes       | Yes       | No        |
| FL        | Yes       | 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 Flow Controller & 202-14A-1 Interface Wiring Diagram**

**Hoffman|Controls**