

The Temperator is a hybrid gas and electric heating system designed to provide superior control of discharge air temperatures.

The ability to control space and discharge air temperatures in the heating season can be a challenge in high-percentage outdoor air ventilators. Heating elements are sized to temper a large quantity of outdoor air at the prescribed design conditions—often resulting in a large, robust furnace selection. While this type of ventilator operates appropriately at or near the specified design conditions, at less-than peak loads the heating element may not be able to turn down enough to maintain a constant discharge air set point. This type of problem is often amplified in variable air volume applications where the required heating load is further reduced.

In response to these types of control challenges, Valent developed the Temperator—a hybrid gas and electric heating system designed to provide superior control of discharge air temperatures regardless of the entering air conditions.

The Temperator system is comprised of the following components:

Electric Heater

- SCR control
- Sized by matching compressor fusing requirements—addition of electric heater does not effect nameplate fusing requirements

Indirect Gas Furnace

- 4:1 turndown with modulating control
- Sized for the majority or total heating load

Microprocessor Controls

- Operates both IG and electric heater
- Stages heating components based on need

Modes of Operation

Ventilators equipped with Valent's Temperator option maintain the discharge air setpoint using three modes of operation:

Mode 1

- Electric heat modulates from 0-100%
- Engages on an initial call for heat

Mode 2

- Gas heat modulates from 25-100% fire
- Engages if Mode 1 is unable to meet discharge air setpoint

Mode 3

- Gas heat enabled at 100% fire, electric heat modulates from 0-100%
- Engages if Mode 2 is unable to meet discharge air setpoint

Availability and Capacities

Valent offers the Temperator heating system on the VPR, VPRX, and VPRE series ventilators in the following casing and nominal capacities:

| Specifications | 110 | | | 210 | | | | | | 310 | | | |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| Cooling | | | | | | | | | | | | | |
| Nominal tonnage (tons) | 5 | 8 | 10 | 10 | 13 | 16 | 18 | 20 | 25 | 25 | 30 | 35 | 40 |
| Airflow | | | | | | | | | | | | | |
| Volume minimum (cfm) | 650 | 1,040 | 1,300 | 1,300 | 1,690 | 2,080 | 2,340 | 2,600 | 3,250 | 3,250 | 3,900 | 4,550 | 5,200 |
| Volume maximum (cfm) | 2,000 | 3,200 | 4,000 | 4,000 | 5,200 | 6,400 | 7,200 | 8,000 | 10,000 | 10,000 | 12,000 | 12,000 | 12,000 |
| Heating | | | | | | | | | | | | | |
| Indirect gas maximum (mbh) | 150 | 200 | 200 | 350 | 400 | 400 | 400 | 400 | 400 | 700 | 800 | 800 | 800 |
| Temperator electric heat (kW) | 6 | 9 | 12 | 12 | 15 | 18 | 21 | 25 | 28 | 28 | 34 | 44 | 55 |