



# NRF-VS Variable Speed Control



The B&G NRF-VS Control is a versatile variable speed control designed for use in hydronic heating and cooling applications. This simple all-in-one control can be used as either a set point control or a signal follower. It is ideal for applications requiring a variable speed controller including primary-secondary injection and bypass boiler injection. No need to stock different models for different applications. One control does it all!

## One simple control has two options, with just a flip of a switch.

- Follows analog signal 4-20mA or 2-10V
  - Perfect for systems where a signal is provided by a Building Management System.
  - Either 4-20mA or 2-10V. No need to install a resistor.
- Setpoint control
  - Dial in the desired setpoint temperature
  - Heating or cooling option

## Additional features

- External LEDs: Easy diagnostics
- Pump exercise: Avoids seasonal freeze up
- Linear or Logarithmic output mode to maximize flow relationship to output
- Response time can be adjusted to best fit the application

The NRF-VS Control is available either installed on a B&G NRF-22 or as a field mountable controller that can be installed onto a B&G wet rotor in the field. The snap-on design allows the NRF-VS to be quickly attached to a standard B&G wet rotor circulator.



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## DESCRIPTION

The NRF-VS is a variable speed control for use in hydronic heating and cooling applications. The temperature of the water is controlled by regulating the speed of the pump which injects water from a different temperature water loop (Primary loop) into a controlled loop (Secondary loop). As the speed of the pump increases, more water is sent into the Secondary loop, resulting in a secondary loop water temperature change.

The NRF-VS can be used with an external analog signal (4-20mA or 2-10V) or with a sensor as a set point control.

## FEATURES:

- 4-20mA or 2-10V external signal
- Setpoint control: Heating (70°F to 200°F) or cooling (30°F to 100°F) using factory supplied sensor.
- External LEDs for power and pump speed
- Linear or logarithmic output
- Normal or fast gain: response time to temperature changes
- Pump exercise (10 seconds after 3 days of no operation)
- Can be used with NRF-22, NRF-9, NRF-33, NBF-8S, NBF-9U, NBF-10S, NBF-12F, NBF-12U, NBF-18S, NBF-22, NBF-22U, NBF-33, SSF-9U, SSF-12F, SSF-12U, SSF-22, SSF-22U

## OPERATING DATA

Input Signal: External 4-20mA or 2-10V or factory supplied sensor

Maximum working pressure: 150 psi

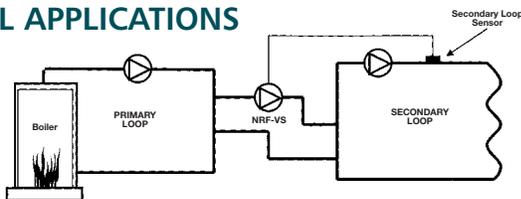
Maximum operating temperature: 240°F with iron body circulator, 230°F with brass and stainless steel body circulator

Electronic rating: 115V, 60 Hz, 1Ø

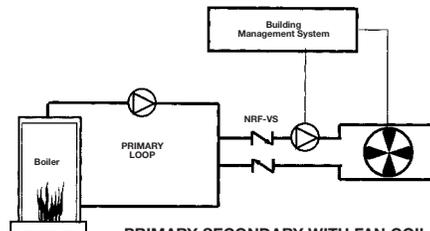
Suitable for use with B&G wet rotor pump with less than 1.1 amps pump nameplate reading.

MODEL NO.	PART NO.	DESCRIPTION	POWER INPUT
NRF-VS	109410	Field mountable control with (1) sensor	115V/60 Hz/1 phase
NRF-22VS	103416	NRF-VS control installed on NRF-22 with (1) sensor	115V/60 Hz/1 phase

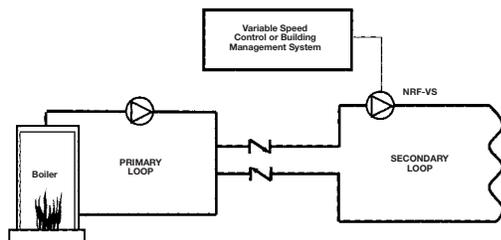
## TYPICAL APPLICATIONS



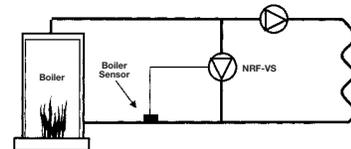
PRIMARY-SECONDARY INJECTION



PRIMARY-SECONDARY WITH FAN COIL



PRIMARY-SECONDARY



BYPASS BOILER INJECTION

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