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**Now you can turn down the**  
**flame without turning down the**  
**efficiency. Indirect fired heaters**  
**with 20% to 100% modulation\***  
**for better control of discharge**  
**temperature. PLUS, agency approved,**  
**complete ROOFTOP PACKAGED UNITS**  
**- not just duct furnaces.**

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\*Patent Pending.

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unit heaters • duct furnaces • makeup air systems • infrared heaters • energy recovery units • direct and indirect fired systems • evaporative cooling units

# Gas Control System with Electronic Modulation between 20% and 100% Firing Rate

## Description

Reznor® Option AG39 (patent pending) is an electronic modulation gas control that will provide precise control of discharge air temperature over an increased range of outside air conditions. It is now available on selected Models of Reznor gas furnaces.

This option allows the furnace input ratio to be fully modulated between 100% and 28 to 20%.

The part-load thermal efficiency of this system complies with and exceeds the current seventy-five percent minimum requirement of ASHRAE standard 90.1 for part-load efficiencies. This system offers an average thermal efficiency over the range of modulation that is equal to or exceeds the full input rate thermal efficiency.

## Why Do You Need Reznor's Improved Modulation?

### 1. Improved Comfort

With the New Reznor AG39 and AG40 Modulation Options you get narrower fluctuations in Discharge Temperature over a wide range of inlet air temperatures. These are typical of the field performance variations in Discharge temperature that you receive with common modulation options:

- **Two-Stage Modulation**- plus or minus 5°F
- **Electronic Modulation (100%-50%)**- plus or minus 2°F
- **Reznor's Advanced Modulation**- plus or minus 1°F

With the Reznor system your discharge temperature would have almost no perceivable temperature difference at all!

### 2. Longer Heat Exchanger and Control Life

In extreme cold, most furnaces are always on. In milder conditions when the outside air is cool furnaces will be cycling off and on. Furnace, and furnace heat exchanger life is directly related to the number of on and off cycles. The new Reznor Modulation Option allows the furnace to fire longer and at more mild part load conditions. This means fewer cycles and longer heat exchanger life. This means a reduced total cost of ownership to the building owner and a satisfied customer for you.

## Technical Data

Model	Size	Maximum Turndown Percent	MBH Input Range	Inlet Pressure to Modulating Valve	Gas Supply Pressure Required
SC	100	20%	20 - 100	3.8" w.c.	5" w.c.
RP/RPB	SC/SCE	125	25 - 125	3.9" w.c.	5" w.c.
RP/RPB	SC/SCE	150	40.3 - 150	3.7" w.c.	5" w.c.
RP/RPB	SC/SCE	175	40.3 - 175	3.7" w.c.	5" w.c.
RP/RPB	SC/SCE	200	51.8 - 200	3.9" w.c.	5" w.c.
RP/RPB	SC/SCE	225	51.8 - 225	3.9" w.c.	5" w.c.
RP/RPB	SC/SCE	250	69 - 250	4.0" w.c.	5" w.c.
RP/RPB	SC/SCE	300	69 - 300	4.0" w.c.	5" w.c.
RP/RPB/RPBL	SC/SCE/SSCBL	400	100 - 400	4.4" w.c.	6" w.c.

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**MANUFACTURER OF GAS, OIL, ELECTRIC HEATING AND VENTILATING SYSTEMS**

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Form RZ-F-AG39

### 3. Greater Thermal Efficiency

On typical Electronic modulation control systems the overall thermal efficiency drops dramatically as the unit begins to modulate downward to maximum turndown. The New Patent Pending Reznor Modulation system actually begins to rise in thermal efficiency as it modulates down below 60% and then begins a much gentler decline in efficiency, but still has 80% efficiency at the lowest modulation levels. No other maker of atmospheric burner Makeup Air Rooftop Systems can make this claim!

### 4. Reduced Operating Costs

Higher thermal efficiency means lower costs per hour of operation. You know that if you have a makeup air system, it will typically be running blower on all the time and the furnace will come on at call for heat at full fire. The Reznor system can ignite and fire at any modulation rate. This means that if the discharge sensor only needs 25% fire, the unit will start at that rate. No money up the flue or sudden temperature swings in the building space. No other manufacturer's atmospheric burner furnace system can do this. A Reznor Exclusive!

### 5. Integration With Building Energy Management Systems

The best of controls on a single unit are wasted if it is at odds with your building energy management system. The new Reznor Modulation Option has the ability to be interfaced with the building controls system straight from the factory through the use of a DC voltage or current signal. This is a real plus when you try to commission your installation in the time you budgeted.

## Sample Specification

The unit shall have electronic modulation offering at least full modulation to 20% (28%) of full fire (capacity) input rate.

Modulating gas control shall be certified by CSA for use in The United States and Canada.

The furnace shall maintain an average thermal efficiency over the range of modulation that is equal to or exceeds the full input rate thermal efficiency.

The furnace shall ignite at any fire rate within its modulation range, not just high fire on start.



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