

VR8105, VR8205, and VR8305 Direct Ignition Combination Gas Controls

INSTALLATION INSTRUCTIONS

APPLICATION

These direct ignition gas controls are used in gas-fired appliances with up to 415 ft³/hr capacity at 1 in. wc pressure drop (8.5 m³/hr at 0.24 kPa) on natural gas. They include a manual valve, two automatic operators and a pressure regulator.

These gas controls are available in a range of valve capacities; see Table 1. (Table 2 provides gas capacity conversion factors.) The suffix letter indicates temperature range and regulator type; see Table 3.

Table 1. Valve Capacity.^a

Model	Size Inlet-Outlet (in.)	AGA Certified Capacity for Natural Gas		AGA Certified Minimum Regulation for Natural Gas		AGA Certified Maximum Regulation for Natural Gas	
		ft ³ /hr	m ³ /hr	ft ³ /hr	m ³ /hr	ft ³ /hr	m ³ /hr
VR8105	1/2 x 1/2	85	2.3	10 ^d	0.4	120	3.4
VR8205		150	4.2	20 ^e	0.6	200	5.7
VR8305 ^{b,c}		240	6.8	30 ^f	0.8	340	9.6
VR8305 ^{b,c}	1/2 x 3/4	270	7.6			370	10.5
VR8305 ^{b,c}	3/4 x 3/4	300	8.5			415	11.8

^a Capacity based on 1000 Btu/ft³, 0.64 sp gr natural gas at 1 in. wc pressure drop (37.3 MJ/m³, 0.64 sp gr natural gas at 0.25 kPa pressure drop).

^b Capacity is reduced by 5 percent when using an outlet screen.

^c Valves are guaranteed at only 77 percent of the rating.

^d Minimum regulation for LP gas is 15,000 Btu/h.

^e Minimum regulation for LP gas is 40,000 Btu/h.

^f Minimum regulation for LP gas is 50,000 Btu/h.

Table 2. Gas Capacity Conversion Factor.

Gas	Specific Gravity	Multiply Listed Capacity By
Manufactured	0.60	0.516
Mixed	0.70	0.765
Propane	1.53	1.62

Table 3. Model Number Suffix Letter Designation.

Model No. Suffix Letter	Ambient Temperature Range	Pressure Regulator Type
A	0°F to 175°F (-18°C to +79°C)	Standard
C		Step-opening
H		Slow-opening
K	-40°F to +175°F (-40°C to +79°C)	Standard
M		Step-opening
P		Two-stage
Q		Convertible
R		



SPECIFICATIONS

Body Pattern: Straight through; See Table 1 for inlet and outlet size.

Electrical Ratings:
Voltage and Frequency: 24 Vac, 60 Hz or 50/60 Hz depending on model.
Current Draw: 0.5A with both operators energized.

Capacity: See Table 1.

Conversion:
Use conversion factors in Table 2 to convert capacities for other gases.

Regulation Range: See Table 1.

Natural-LP Gas Conversion Kits: See Table 4.

Pipe Adapters:
Angle and straight adapters available for 3/8-, 1/2- and 3/4-in. pipe. See Table 5. Flange kits include one flange with attached O-ring, four mounting screws, a 9/64 in. hex wrench and instructions.

Approvals:
American Gas Association Design Certificate: L2025006.
Canadian Gas Association Design Certificate: L2025006.
Australian Gas Association Design Certificate: 4214.
Approved for Delta C applications.
European Community (CE) Certificate: Pending.

PLANNING THE INSTALLATION

 WARNING

Fire or Explosion Hazard.
Can cause severe injury, death or property damage.
Follow these warnings exactly:
1. Plan the installation as outlined below.
2. Plan for frequent maintenance as described in the Maintenance section.

Heavy demands are made on the controls when direct ignition systems are used on central heating equipment in barns, greenhouses, and commercial properties and on heating appliances such as commercial cookers, agricultural equipment, industrial heating equipment and pool heaters.

Special steps may be required to prevent nuisance shutdowns and control failures due to frequent cycling, severe environmental conditions related to moisture, corrosive chemicals, dust or excessive heat. These applications require Honeywell Engineering review; contact your Honeywell Sales Representative for assistance.

Review the following conditions that can apply to your specific installation and follow the precautions suggested.

Frequent Cycling

this control is designed for use on appliances that typically cycle three to four times an hour only during the heating season. In year-around applications with greater cycling rates, the control can wear out more quickly. Perform a monthly check.

Table 4. Natural-LP Gas Conversion Kits.

Model No. Suffix Letter	Kit to Convert Natural Gas to LP	Kit to Convert LP to Natural Gas
H, K, M	393691	394588
P	Not field convertible.	Not field convertible.
Q	396021	396025
R	Not required, convertible valve.	Not required, convertible valve.

Table 5. Flange Adapter Part Numbers.

Inlet/Outlet Pipe Size (in. NPT)	Flange Type	Part Number ^{a,b}	
		Without Hex Wrench	With Hex Wrench
3/8	Straight	393690-1	393690-11
3/8	Elbow	393690-2	393690-12
1/2	Straight	393690-6	393690-16
1/2	Elbow	393690-3	393690-13
3/4	Straight	393690-4	393690-14
3/4	Elbow	393690-5	393690-15

^a Flange kits include one flange, one O-ring and four mounting screws.
^b Do not use flanges on control models with 3/4 in. inlet and 3/4 in. outlet. On models with 1/2 in. inlet and 3/4 in. outlet, use flanges only on the 1/2 in. inlet side.

Table 6 shows additional specifications for the CE-only models.