

VR8205; VR4205 Direct Ignition Dual Automatic Valve Combination Gas Controls

The VR8205 and VR4205 Direct Ignition Dual Automatic Valve Combination Gas Controls are for use with direct ignition systems in gas-fired appliances. The controls include a safety shutoff, a manual valve, two automatic operators and a pressure regulator and conduit cover (VR4205 only).



- VR8205 used with S89C,E,F and S87 series 5 and later.
- VR4205 used with 120 Vac direct ignition modules.
- VR8205 for use with 24 Vac heating appliances and VR4205 for use with 120 Vac heating appliances that burn natural or manufactured gas, or liquefied petroleum (LP) gas.
- Capacity rated at 150 cfh at 1 in. wc pressure drop [4.2 m³/h at 0.25 kPa].
- Solenoid operated first automatic valve opens on thermostat call for heat and closes when call for heat ends.
- Diaphragm-operated second automatic valve opens under control of the regulator and closes if gas or power supply is interrupted.
- Two-position gas control knob has ON and OFF positions.
- All adjustments and wiring connections accessible from top of the control.
- Compact size.
- Straight-through body pattern; right angle adapters available for inlet and outlet.
- 1/2 in. inlet and 1/2 in. outlet; adapters available for 3/8 or 3/4 in.

- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- Inlet and outlet screens included.
- Wiring terminal block color-coded brown to indicate direct ignition control.
- May be installed at any angle between 0 and 90 degrees from the upright position, including vertically.
- 1/4 in. male quick-connect terminals for electrical connections.
- 0° F to 175° F [-18° C to +79° C] temperature range standard; -40° F to +175° F [-40° C to +79° C] available.
- Inlet and outlet pressure taps included; both taps accessible from top of control.
- Standard-, slow- and step-opening models available.

CONTENTS

<i>Specifications</i>	2
<i>Ordering Information</i>	2
<i>Installation</i>	4
<i>Startup and Checkout</i>	8
<i>Maintenance</i>	10
<i>Operation</i>	10
<i>Service</i>	12

Specifications

IMPORTANT: *The specifications given in this publication do not include normal manufacturing tolerances. Therefore, this unit may not exactly match the listed specifications. Also, this product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.*

TRADELINE® MODELS

TRADELINE controls are selected and packaged to provide ease of stocking, ease of handling and maximum replacement value. TRADELINE model specifications are the same as those of standard models except as noted below.

TRADELINE MODEL AVAILABLE: VR8205A Dual Automatic Combination Gas Control for Direct Ignition Systems. Models for natural or LP gas.

ADDITIONAL FEATURES:

- 3/8 in. bushing.
- 3/4 in. straight flange assembly (with O-ring and screws).
- Tool for flange hex screws.

STANDARD MODELS

MODELS: VR8205 and VR4205 Dual Automatic Valve Combination Gas Controls for use in Direct Ignition Systems. See Table 1 for specifications.

SUPPLY VOLTAGE:

VR4205: 120 Vac, 60 Hz.

VR8205: 24 Vac, 60 Hz.

(50/60 Hz models available on request.)

CURRENT DRAW:

VR4205: 0.1A

VR8205: 0.5A

TABLE 1—MODEL SPECIFICATIONS.

Model No. Suffix Letter	Opening Characteristic	Type of Gas	Standard Factory Regulator Settings		Optional Factory Regulator Settings		Range of Field Adjustment	
			in. wc	kPa	in. wc	kPa	in. wc	kPa
VR8205A,M	Standard	Natural	3.5	0.9	3 to 5	0.7 to 1.2	3 to 5	0.7 to 1.2
VR4205M		LP	10.0	2.5	8 to 12	2 to 3	8 to 12	2 to 3
VR8205C,P VR4205P	Step-opening	Natural	Step—0.7, 0.9,1.2 or 1.7, as ordered ^a Full Rate— 3.5	Step—0.17, 0.22, 0.30 or 0.48, as ordered ^a Full Rate— 0.9	Step—0.7, 0.9,1.2 or 1.7, as ordered ^a Full Rate— 3 to 5	Step—0.17, 0.22, 0.30 or 0.48, as ordered ^a Full Rate— 0.7 to 1.2	Step—none; Full Rate— 3-5	Step—none; Full Rate— 0.7 to 1.2
		LP	Step—1.4, 2.5, 4.0 or 5.5, as ordered ^a Full Rate—10	Step—0.35, 0.62, 0.99 or 1.37, as ordered ^a Full Rate— 2.5	Step—1.4, 2.5, 4.0 or 5.5, as ordered ^a Full Rate—8 to 12	Step—0.35, 0.62, 0.99 or 1.37, as ordered ^a Full Rate— 2-3	Step—none; Full Rate— 8-12	Step—none; Full Rate— 2 to 3
VR8205H,K	Slow-opening	Natural	3.5	0.9	3 to 5	0.7 to 1.2	3 to 5	0.7 to 1.2
VR4205H		LP	10.0	2.5	8 to 12	2 to 3	8 to 12	2 to 3

^aStep pressure not adjustable.

Ordering Information

When purchasing replacement and modernization products from your wholesaler or your distributor, refer to the price sheets for complete ordering number, or specify—

1. Order number, TRADELINE® if desired.
2. Natural or LP gas.
3. Step pressure for step-opening gas control.
4. Accessories, if desired.
5. Order separately: transformer, igniter, sensor, module, limit controller, and thermostat or controller as required.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Home and Building Control Sales Office (please check the white pages of your phone directory).
2. Home and Building Control Customer Satisfaction
Honeywell, Inc., 1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386 (612) 951-1000

In Canada—Honeywell Limited/Honeywell Limitee, 740 Ellesmere Road, Scarborough, Ontario M1P2V9. International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

ELECTRICAL CONNECTIONS: 1/4 in. male quick-connects. Two convenience terminals on top of control (optional). Terminal block color-coded brown.

TYPE OF GAS: Separate models for natural (and manufactured) or LP gas.

CAPACITY:

At minimum regulation:

Natural gas: 20,000 Btuh [5860W]^a.

LP gas: 40,000 Btuh [11,700W].

At 1 in. [0.25 kPa] pressure drop: 150,000 Btuh [44,000W]^a.

At maximum regulation: 200,000 Btuh [58,600W]^a.

^a0.64 sp gr natural gas at 1 in. [0.25 kPa] pressure drop; use conversion factors in Table 2 to convert for other gases.

TABLE 2—
GAS CAPACITY CONVERSION FACTORS.

sp gr	Multiply Listed Capacity By
0.60	0.516
0.70	0.765
1.53	1.62

BODY PATTERN: Straight-through with 1/2 in. inlet and 1/2 in. outlet. Flanges available for 3/8, 1/2 and 3/4 in. straight and 90° angle connection. See Table 3.

TABLE 3—FLANGE PART NUMBERS.

Inlet/Outlet Pipe Size	Flange Type	Part No.	
		Less Hex Wrench	With Hex Wrench
3/8 in. NPT	Straight	393690-1	393690-11
	Elbow	393690-2	393690-12
1/2 in. NPT	Straight	393690-6	393690-16
	Elbow	393690-3	393690-13
3/4 in. NPT	Straight	393690-4	393690-14
	Elbow	393690-5	393690-15

NOTE: Flange Kits include one flange with attached O-ring and four mounting screws. TRADELINE® kits include a 9/64 in. hex wrench, as noted.

PRESSURE TAPPING: Inlet and outlet taps standard.

Taps accessible from top of control. Tap is 1/8 in. NPT with plug containing recess for 3/16 in. Allen wrench.

PRESSURE RATING: AGA rating 1/2 psi [3.5 kPa] inlet pressure.

PRESSURE REGULATION: See Table 1. Regulator adjustment accessible from top of control.

MOUNTING: Can be mounted 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

TEMPERATURE RATING:

VR8205A,C,H; VR4205H: 0° F to 175° F [-18° C to +79° C].

VR8205M,P,K; VR4205M,P: -40° F to +175° F [-40° C to +79° C].

DIMENSIONS: See Fig. 1.

APPROVALS:

American Gas Association design certificate: L2025006.

Canadian Gas Association design certificate: L2025006.

Australian Gas Association design certificate: 4214.

Approved for Delta C applications.

ACCESSORIES:

- Flanges; see Table 3.
- 394349 9/64 in. hex tool for flange assembly screws.
- 393691 Natural to LP Conversion Kit.
- 394588 LP to Natural Conversion Kit.

Fig. 1—Dimensions in in. [mm] of VR4205/VR8205 Combination Gas Control.

