

## VG2000 Series Pneumatic Cast Iron Flanged Globe Valves



**MP8000 Series Actuators  
Mounted on VG2231 Two-Way Normally Open Valves**



**MP8000 Series Actuators  
Mounted on VG2431 Two-Way Normally Closed Valves**

### Description

#### VG2000 Series Valve

VG2000 Series Cast Iron Flanged Globe Valves are designed primarily to regulate the flow of water and steam in response to the demand of a controller.

Refer to the *VG2000 Series Cast Iron Flanged Globe Valve Product Bulletin (LIT-977133)* for important product application information.

#### MP8000 Series Actuators

MP8000 Series Pneumatic Actuators are designed to accurately position hot-water, chilled-water, and steam-control valves in response to a pneumatic signal from a controller.

Refer to the *MP8000 Series Pneumatic Valve Actuators Product Bulletin (LIT-977257)* for important product application information.

### Features

#### VG2000 Series Valve

- controls hot or chilled water, 35 psig saturated steam
- ANSI cast iron 125 flange meets ANSI B16.1
- ANSI III closeoff, leakage: 0.1% of maximum flow
- 175 psig static pressure rating at water temperatures 35°F to 150°F; decreasing to 125 psig at 281°F
- maximum recommended operating pressure drop: 35 psig
- maximum actuator supply pressure: 25 psig

#### MP8000 Series Actuators

- three sizes: 25 sq. in., 50 sq. in., and 100 sq. in. effective diaphragm area
- spring action field reversible
- optional pneumatic or electro-pneumatic positioner

### Repair Information

If the VG2000 Series Globe Valve fails to operate within its specifications, replace the valve body, actuator, or entire assembly. For replacement parts, contact the nearest Johnson Controls® representative.

For complete details about VG2000 Series Cast Iron Flanged Valve repair parts, refer to the *VG2000 Series Cast Iron Flanged Valve Product Bulletin (LIT-977133)*. For complete details about MP8000 Series Pneumatic Actuator repair parts, refer to the *MP8000 Series Pneumatic Actuator Product Bulletin (LIT-977257)*.



**MP8000 Series Actuators  
Mounted on VG2831 Three-Way Mixing Valves**

## VG2000 Series Pneumatic Cast Iron Flanged Globe Valves (Continued)

### Selection Charts

#### Two-Way Normally Open Pneumatic Cast Iron Flanged Globe Valves

Spring Range			3 psig to 7 psig		4 psig to 8 psig		9 psig to 13 psig	
Valve Code Number	Size, in.	Cv	Closeoff psig	Code Number	Closeoff psig	Code Number	Closeoff psig	Code Number
<b>With MP82 Series Actuators — 25 sq. in. Effective Diaphragm Area</b>								
VG2231TL	2-1/2	51	53	VG2231TL+823C00	49	VG2231TL+823D00	28	VG2231TL+823E00
VG2231UL	3	83	37	VG2231UL+823C00	34	VG2231UL+823D00	19	VG2231UL+823E00
<b>With MP84 Series Actuators — 50 sq. in. Effective Diaphragm Area</b>								
VG2231TM	2-1/2	51	109	VG2231TM+843C00	100	VG2231TM+843D00	58	VG2231TM+843E00
VG2231UM	3	83	75	VG2231UM+845C00	70	VG2231UM+845D00	40	VG2231UM+845E00
VG2231VM	4	150	42	VG2231VM+845C00	39	VG2231VM+845D00	23	VG2231VM+845E00
<b>With MP86 Series Actuators — 100 sq. in. Effective Diaphragm Area</b>								
VG2231UN	3	83	152	VG2231UN+865C00	140	VG2231UN+865D00	81	VG2231UN+865E00
VG2231VN	4	150	86	VG2231VN+865C00	79	VG2231VN+865D00	46	VG2231VN+865E00
VG2231WN	5	240	55	VG2231WN+867C00	51	VG2231WN+867D00	29	VG2231WN+867E00
VG2231YN	6	350	38	VG2231YN+867C00	35	VG2231YN+867D00	20	VG2231YN+867E00

#### Two-Way Normally Closed Pneumatic Cast Iron Flanged Globe Valves

Spring Range			3 psig to 7 psig		4 psig to 8 psig		9 psig to 13 psig	
Valve Code Number	Size, in.	Cv	Closeoff psig	Code Number	Closeoff psig	Code Number	Closeoff psig	Code Number
<b>With MP84 Series Actuators — 50 sq. in. Effective Diaphragm Area</b>								
VG2431TM	2-1/2	54	24	VG2431TM+843C00	32	VG2431TM+843D00	75	VG2431TM+843E00
VG2431UM	3	83	17	VG2431UM+845C00	22	VG2431UM+845D00	52	VG2431UM+845E00
VG2431VM	4	150	9	VG2431VM+845C00	13	VG2431VM+845D00	29	VG2431VM+845E00
<b>With MP86 Series Actuators — 100 sq. in. Effective Diaphragm Area</b>								
VG2431UN	3	83	34	VG2431UN+865C00	46	VG2431UN+865D00	105	VG2431UN+865E00
VG2431VN	4	150	19	VG2431VN+865C00	26	VG2431VN+865D00	59	VG2431VN+865E00
VG2431WN	5	237	12	VG2431WN+867C00	17	VG2431WN+867D00	38	VG2431WN+867E00
VG2431YN	6	344	9	VG2431YN+867C00	11	VG2431YN+867D00	26	VG2431YN+867E00

#### Three-Way Mixing Pneumatic Cast Iron Flanged Globe Valves

Spring Range			3 psig to 7 psig		4 psig to 8 psig		9 psig to 13 psig	
Valve Code Number	Size, in.	Cv	Closeoff psig	Code Number	Closeoff psig	Code Number	Closeoff psig	Code Number
<b>With MP84 Series Actuators — 50 sq. in. Effective Diaphragm Area</b>								
VG2831TM	2-1/2	54	65/14	VG2831TM+843C00	60/19	VG2831TM+843D00	35/45	VG2831TM+843E00
VG2831UM	3	80	45/10	VG2831UM+845C00	42/13	VG2831UM+845D00	24/31	VG2831UM+845E00
VG2831VM	4	157	25/6	VG2831VM+845C00	23/8	VG2831VM+845D00	14/18	VG2831VM+845E00
<b>With MP86 Series Actuators — 100 sq. in. Effective Diaphragm Area</b>								
VG2831UN	3	80	91/21	VG2831UN+865C00	84/28	VG2831UN+865D00	49/63	VG2831UN+865E00
VG2831VN	4	157	51/12	VG2831VN+865C00	47/16	VG2831VN+865D00	27/35	VG2831VN+865E00
VG2831WN	5	238	33/7	VG2831WN+867C00	30/10	VG2831WN+867D00	18/23	VG2831WN+867E00
VG2831YN	6	347	23/5	VG2831YN+867C00	21/7	VG2831YN+867D00	12/16	VG2831YN+867E00

#### Optional Positioner — Change the 00 at the end of the code number to either 01 or 02

Optional Positioner	Mounting Bracket	Type	Control Input	Output Capacity	Ordering Code
V-9502-95	MP8000-6002	Pneumatic	2 to 12 psig Start 3 to 13 psig Span	1,000 scim — Dual Barbed Fitting 1,600 scim — 1/4 in. Barbed Fitting	01
EPP-1000-8	MP8000-6003	Electro-Pneumatic	0 to 10 VDC 4 to 20 mA 135 Ohm Slidewire	476 scim	02

## VG2000 Series Pneumatic Cast Iron Flanged Globe Valves (Continued)

### Technical Specifications

VG2000 Series Pneumatic Cast Iron Flanged Globe Valves		
<b>Service<sup>1</sup></b>		Hot Water, Chilled Water, 50/50 Glycol Solutions, and Steam for HVAC Systems
<b>Fluid Temperature Limits</b>	<b>Water</b>	35°F to 281°F (2°C to 138°C)
	<b>Steam</b>	35 psig (241 kPa) Saturated Steam
<b>Maximum Allowable Pressure/Temperature</b>	<b>Water</b>	175 psig (1,206 kPa) up to 150°F (66°C) Decreasing to 125 psig (861 kPa) at 281°F (138°C)
	<b>Steam</b>	35 psig (241 kPa) Saturated Steam at 281°F (138°C)
<b>Valve Body Pressure/Temperature Rating</b>		Meets Requirements of ANSI B16.15, Class 125
<b>Maximum Recommended Operating Pressure Drop</b>		35 psig (241 kPa)
<b>Flow Characteristics</b>		Modified Linear
<b>Rangeability<sup>2</sup></b>	<b>2-1/2 in. Valves</b>	6.5:1
	<b>3 in. Valves</b>	7.7:1
	<b>4 in. Valves</b>	9.3:1
	<b>5 in. Valves</b>	10.7:1
	<b>6 in. Valves</b>	10.4:1
<b>Leakage</b>		0.1% of Maximum Flow per ANSI/FCI 70-2, Class 3
<b>Actuator Ambient Operating Temperature Limits</b>		-20°F to 150°F (-29°C to 66°C)
<b>Maximum Actuator Supply Pressure</b>		25 psig (172 kPa) Maximum
<b>Materials</b>	<b>Body</b>	Cast Iron with Black Lacquer Finish
	<b>Stem</b>	Stainless Steel
	<b>Plug</b>	Brass
	<b>Packing</b>	Ethylene Propylene Terpolymer (EPT) Rink Packs
<b>Compliance</b>	<b>Canada</b>	CRN: 0C1100.9087YTN

1. Refer to the VDI 2035 Guideline for recommended proper water treatment.
2. Rangeability is defined as the ratio of maximum controllable flow to minimum controllable flow.



**WARNING** This product is made of copper alloy, which contains lead. The product is therefore not to be used on drinking water.



**WARNING** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### **WARNING: BRASS MAY CONTAIN LEAD**

To fulfill our obligations towards Article 33, in accordance to the European REACH Regulation No 1907/2006 EC, we hereby inform you that this article contains the following Substances of Very High Concern mentioned on the Candidate list:

- Lead