

Pneumatic Cast Iron Flanged Globe Valves



MP8000 Series Actuators
Mounted to VG2231 Two-Way Normally Open Valves



MP8000 Series Actuators
Mounted to VG2431 Two-Way Normally Closed Valves

Description

VG2x31 Series Valve

VG2000 Series cast Iron Flanged Globe Valves are designed primarily to regulate the flow of water and steam to the demand of a controller. For complete details refer to *VG2000 Series Cast Iron Flanged Globe Valve Product Bulletin LIT-977133*.

MP8000 Series Actuators

MP8000 Series Pneumatic Actuators are designed to accurately position chilled water, hot water, and steam control valves in response to a pneumatic signal from a controller. For complete details refer to *MP8000 Series Pneumatic Valve Actuators Product Bulletin, LIT-977257*.

Features

VG2x31 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 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

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



MP8000 Series Actuators
Mounted to VG2831 Three-Way Mixing Valves

VG2x31 Series Pneumatic Cast Iron Flanged Globe Valves (Continued)

Selection Charts

VG2231 Series Two-Way Normally Open Pneumatic Cast Iron Flanged Globe Valves

Spring Range			3 to 7 psig		4 to 8 psig		9 to 13 psig	
Valve	Size	Cv	Closeoff	Code Number	Closeoff	Code Number	Closeoff	Code Number
with MP82 Series Actuators – 25 sq in. Effective Diaphragm Area								
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
with MP84 Series Actuators – 50 sq in. Effective Diaphragm Area								
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
with MP86 Series Actuators – 100 sq in. Effective Diaphragm Area								
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

VG2431 Series Two-Way Normally Closed Pneumatic Cast Iron Flanged Globe Valves

Spring Range			3 to 7 psig		4 to 8 psig		9 to 13 psig	
Valve	Size	Cv	Closeoff	Code Number	Closeoff	Code Number	Closeoff	Code Number
with MP84 Series Actuators – 50 sq in. Effective Diaphragm Area								
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
with MP86 Series Actuators – 100 sq in. Effective Diaphragm Area								
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

VG2831 Series Three-Way Mixing Pneumatic Cast Iron Flanged Globe Valves

Spring Range			3 to 7 psig		4 to 8 psig		9 to 13 psig	
Valve	Size	Cv	Closeoff	Code Number	Closeoff	Code Number	Closeoff	Code Number
with MP84 Series Actuators – 50 sq in. Effective Diaphragm Area								
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
with MP86 Series Actuators – 100 sq in. Effective Diaphragm Area								
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" Barbed Fitting	"01"
EPP-1000-8	MP8000-6003	Electro-Pneumatic	0 to 10 VDC 4 to 20 mA 135 ohm Slidewire	476 scim	"02"

Repair Information

If the VG2x31 Series Pneumatic Cast Iron Flanged Globe Valve fails to operate within its specifications, replace the unit. For a replacement valve or actuator, contact the nearest Johnson Controls® representative. For complete details about VG2000 Series Cast Iron Flanged Valve repair parts refer to *VG2000 Series Cast Iron Flanged Valve Product Bulletin, LIT-977133*. For complete details about MP8000 Series Pneumatic Actuator repair parts refer to *MP8000 Series Pneumatic Actuator Product Bulletin, LIT-977257*.

VG2x31 Series Pneumatic Cast Iron Flanged Globe Valves (Continued)

Technical Specifications

VG2x31 Series Pneumatic Cast Iron Flanged Globe Valves		
Service¹		Hot Water, Chill Water, 50/50 Glycol Solutions and Steam for HVAC Systems
Fluid Temperature Limits	Water	35 to 281°F (2 to 138°C)
	Steam	35 psig (241 kPa) Saturated Steam
Maximum Allowable Pressure Temperature	Water	175 psig (1,206 kPa) Up to 150°F (66°C) decreasing to 125 psig (861 kPa) at 281°F (138°C)
	Steam	35 psig (241 kPa) Saturated Steam at 281°F (138°C)
Valve Body Pressure/ Temperature Rating		Meets Requirements of ANSI B16.15, Class 125
Maximum Recommended Operating Pressure Drop		35 psig (241 kPa)
Flow Characteristics		Modified Linear
Rangeability²	2-1/2 in. Valves	6.5:1
	3 in. Valves	7.7:1
	4 in. Valves	9.3:1
	5 in. Valves	10.7:1
	6 in. Valves	10.4:1
Leakage		0.1% of Maximum Flow per ANSI/FCI 70-2, Class 3
Actuator Ambient Operating Temperature Limits		-20 to 150°F (-29 to 66°C)
Maximum Actuator Supply Pressure		25 psig (172 kPa) Maximum
Materials	Body	Cast Iron with Black Lacquer Finish
	Stem	Stainless Steel
	Plug	Brass
	Packing	Ethylene Propylene Terpolymer (EPT) Rink Packs

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