

## Brass Trim Globe Valves with VA-4233 Series Electric Actuators

### Description

VG7000 Series Brass Trim Globe Valves with VA-4233 Series Electric Actuator control hot or chilled water, or steam.

### Features

- spring return – stem up
- 61 lb force – provides tight shutoff
- manual opener
- fits VG7000 valves 1/2 through 1-1/4 in.
- valve body static pressure rating: ANSI Class 250
- optional auxiliary switches available
- factory or field assembly
- voltage: 20 to 30 VAC, 50/60 Hz, 12 VA

### Repair Information

If the VG7000 Series Brass Trim Globe Valve Assembly with VA4233 Series Spring Return Electric Actuator fails to operate within its specifications, replace the unit. For a replacement valve or actuator, contact the nearest Johnson Controls® representative.



VA-4233 Electric Actuator mounted on VG7441 Brass Globe Valve

### Selection Charts

#### VG7000 Series Brass Trim Globe Valve Assemblies with VA-4233 Series Electric Actuators, Less Auxiliary Switches (Part 1 of 2)

Actuator Code				VA-4233-AGA-2	VA-4233-BGA-2	VA-4233-GGA-2
Actuator Input				Floating	On/Off	0 to 10 VDC Proportional
Temperature Range				35 to 250°F (2 to 121°C), 15 psig Saturated Steam		
Valve	Size	Cv	Closeoff	Spring Return – Stem Up		
<b>Two-Way Push-Down-to-Close – NPT End Connections</b>						
VG7241CT	1/2"	0.73	345	VG7241CT+423AGA	VG7241CT+423BGA	VG7241CT+423GGA
VG7241ET	1/2"	1.8	345	VG7241ET+423AGA	VG7241ET+423BGA	VG7241ET+423GGA
VG7241GT	1/2"	4.6	208	VG7241GT+423AGA	VG7241GT+423BGA	VG7241GT+423GGA
VG7241LT	3/4"	7.3	132	VG7241LT+423AGA	VG7241LT+423BGA	VG7241LT+423GGA
VG7241NT	1"	11.6	63	VG7241NT+423AGA	VG7241NT+423BGA	VG7241NT+423GGA
VG7241PT	1-1/4"	18.5	38	VG7241PT+423AGA	VG7241PT+423BGA	VG7241PT+423GGA
<b>Two-Way Push-Down-to-Open – NPT End Connections</b>						
VG7441CT	1/2"	0.73	345	VG7441CT+423AGA	VG7441CT+423BGA	VG7441CT+423GGA
VG7441ET	1/2"	1.8	345	VG7441ET+423AGA	VG7441ET+423BGA	VG7441ET+423GGA
VG7441GT	1/2"	4.6	173	VG7441GT+423AGA	VG7441GT+423BGA	VG7441GT+423GGA
VG7441LT	3/4"	7.3	103	VG7441LT+423AGA	VG7441LT+423BGA	VG7441LT+423GGA
VG7441NT	1"	11.6	66	VG7441NT+423AGA	VG7441NT+423BGA	VG7441NT+423GGA
VG7441PT	1-1/4"	18.5	38	VG7441PT+423AGA	VG7441PT+423BGA	VG7441PT+423GGA
<b>Three-Way Mixing – NPT End Connections</b>						
VG7842CT	1/2"	0.73	345 / 345	VG7842CT+423AGA	VG7842CT+423BGA	VG7842CT+423GGA
VG7842ET	1/2"	1.8	345 / 345	VG7842ET+423AGA	VG7842ET+423BGA	VG7842ET+423GGA
VG7842GT	1/2"	4.6	208 / 173	VG7842GT+423AGA	VG7842GT+423BGA	VG7842GT+423GGA
VG7842LT	3/4"	7.3	132 / 103	VG7842LT+423AGA	VG7842LT+423BGA	VG7842LT+423GGA
VG7842NT	1"	11.6	63 / 66	VG7842NT+423AGA	VG7842NT+423BGA	VG7842NT+423GGA
VG7842PT	1-1/4"	18.5	38 / 38	VG7842PT+423AGA	VG7842PT+423BGA	VG7842PT+423GGA
<b>Two-Way Push-Down-to-Close – Union Sweat End Connections</b>						
VG7281CT	1/2"	0.73	345	VG7281CT+423AGA	VG7281CT+423BGA	VG7281CT+423GGA
VG7281ET	1/2"	1.8	345	VG7281ET+423AGA	VG7281ET+423BGA	VG7281ET+423GGA
VG7281GT	1/2"	4.6	208	VG7281GT+423AGA	VG7281GT+423BGA	VG7281GT+423GGA
VG7281LT	3/4"	7.3	132	VG7281LT+423AGA	VG7281LT+423BGA	VG7281LT+423GGA
VG7281NT	1"	11.6	63	VG7281NT+423AGA	VG7281NT+423BGA	VG7281NT+423GGA
VG7281PT	1-1/4"	18.5	38	VG7281PT+423AGA	VG7281PT+423BGA	VG7281PT+423GGA

## VG7000 Series Brass Trim Globe Valves with VA-4233 Series Electric Actuators (Continued)

### VG7000 Series Brass Trim Globe Valve Assemblies with VA-4233 Series Electric Actuators, Less Auxiliary Switches (Part 2 of 2)

Actuator Code				VA-4233-AGA-2	VA-4233-BGA-2	VA-4233-GGA-2
Actuator Input				Floating	On/Off	0 to 10 VDC Proportional
Temperature Range				35 to 250°F (2 to 121°C), 15 psig Saturated Steam		
Valve	Size	Cv	Closeoff	Spring Return – Stem Up		
<b>Two-Way Push-Down-to-Open – Union Sweat End Connections</b>						
VG7481CT	1/2"	0.73	345	VG7481CT+423AGA	VG7481CT+423BGA	VG7481CT+423GGA
VG7481ET	1/2"	1.8	345	VG7481ET+423AGA	VG7481ET+423BGA	VG7481ET+423GGA
VG7481GT	1/2"	4.6	173	VG7481GT+423AGA	VG7481GT+423BGA	VG7481GT+423GGA
VG7481LT	3/4"	7.3	103	VG7481LT+423AGA	VG7481LT+423BGA	VG7481LT+423GGA
VG7481NT	1"	11.6	66	VG7481NT+423AGA	VG7481NT+423BGA	VG7481NT+423GGA
VG7481PT	1-1/4"	18.5	38	VG7481PT+423AGA	VG7481PT+423BGA	VG7481PT+423GGA
<b>Three-Way Mixing – Union Sweat End Connections</b>						
VG7882CT	1/2"	0.73	345 / 345	VG7882CT+423AGA	VG7882CT+423BGA	VG7882CT+423GGA
VG7882ET	1/2"	1.8	345 / 345	VG7882ET+423AGA	VG7882ET+423BGA	VG7882ET+423GGA
VG7882GT	1/2"	4.6	208 / 173	VG7882GT+423AGA	VG7882GT+423BGA	VG7882GT+423GGA
VG7882LT	3/4"	7.3	132 / 103	VG7882LT+423AGA	VG7882LT+423BGA	VG7882LT+423GGA
VG7882NT	1"	11.6	63 / 66	VG7882NT+423AGA	VG7882NT+423BGA	VG7882NT+423GGA
VG7882PT	1-1/4"	18.5	38 / 38	VG7882PT+423AGA	VG7882PT+423BGA	VG7882PT+423GGA
<b>Two-Way Push-Down-to-Close – 3/8 in. Union Sweat End Connections</b>						
VG7271CT	1/2"	0.73	345	VG7271CT+423AGA	VG7271CT+423BGA	VG7271CT+423GGA
VG7271ET	1/2"	1.8	345	VG7271ET+423AGA	VG7271ET+423BGA	VG7271ET+423GGA
VG7271GT	1/2"	4.6	208	VG7271GT+423AGA	VG7271GT+423BGA	VG7271GT+423GGA
<b>Two-Way Push-Down-to-Open – 3/8 in. Union Sweat End Connections</b>						
VG7471CT	1/2"	0.73	345	VG7471CT+423AGA	VG7471CT+423BGA	VG7471CT+423GGA
VG7471ET	1/2"	1.8	345	VG7471ET+423AGA	VG7471ET+423BGA	VG7471ET+423GGA
VG7471GT	1/2"	4.6	173	VG7471GT+423AGA	VG7471GT+423BGA	VG7471GT+423GGA
<b>Three-Way Mixing – 3/8 in. Union Sweat End Connections</b>						
VG7872CT	1/2"	0.73	345 / 345	VG7872CT+423AGA	VG7872CT+423BGA	VG7872CT+423GGA
VG7872ET	1/2"	1.8	345 / 345	VG7872ET+423AGA	VG7872ET+423BGA	VG7872ET+423GGA
VG7872GT	1/2"	4.6	208 / 173	VG7872GT+423AGA	VG7872GT+423BGA	VG7872GT+423GGA
<b>Two-Way Push-Down-to-Close – 3/4 in. Union Sweat End Connections</b>						
VG7291CT	1/2"	0.73	345	VG7291CT+423AGA	VG7291CT+423BGA	VG7291CT+423GGA
VG7291ET	1/2"	1.8	345	VG7291ET+423AGA	VG7291ET+423BGA	VG7291ET+423GGA
VG7291GT	1/2"	4.6	208	VG7291GT+423AGA	VG7291GT+423BGA	VG7291GT+423GGA
<b>Two-Way Push-Down-to-Open – 3/4 in. Union Sweat End Connections</b>						
VG7491CT	1/2"	0.73	345	VG7491CT+423AGA	VG7491CT+423BGA	VG7491CT+423GGA
VG7491ET	1/2"	1.8	345	VG7491ET+423AGA	VG7491ET+423BGA	VG7491ET+423GGA
VG7491GT	1/2"	4.6	173	VG7491GT+423AGA	VG7491GT+423BGA	VG7491GT+423GGA
<b>Three-Way Mixing – 3/4 in. Union Sweat End Connections</b>						
VG7892CT	1/2"	0.73	345 / 345	VG7892CT+423AGA	VG7892CT+423BGA	VG7892CT+423GGA
VG7892ET	1/2"	1.8	345 / 345	VG7892ET+423AGA	VG7892ET+423BGA	VG7892ET+423GGA
VG7892GT	1/2"	4.6	208 / 173	VG7892GT+423AGA	VG7892GT+423BGA	VG7892GT+423GGA



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## VG7000 Series Brass Trim Globe Valves with VA-4233 Series Electric Actuators (Continued)

### VG7000 Series Brass Trim Valve Assemblies with VA-4233 Series Electric Actuators and Two Auxiliary Switches (Part 1 of 2)

Actuator Code				VA-4233-AGC-2	VA-4233-BGC-2	VA-4233-GGC-2
Actuator Input				Floating	On/Off	0 to 10 VDC Proportional
Temperature Range				35 to 250°F (2 to 121°C), 15 psig Saturated Steam		
Valve	Size	Cv	Closeoff	Spring Return – Stem Up		
<b>Two-Way Push-Down-to-Close – NPT End Connections</b>						
VG7241CT	1/2"	0.73	345	VG7241CT+423AGC	VG7241CT+423BGC	VG7241CT+423GGC
VG7241ET	1/2"	1.8	345	VG7241ET+423AGC	VG7241ET+423BGC	VG7241ET+423GGC
VG7241GT	1/2"	4.6	208	VG7241GT+423AGC	VG7241GT+423BGC	VG7241GT+423GGC
VG7241LT	3/4"	7.3	132	VG7241LT+423AGC	VG7241LT+423BGC	VG7241LT+423GGC
VG7241NT	1"	11.6	63	VG7241NT+423AGC	VG7241NT+423BGC	VG7241NT+423GGC
VG7241PT	1-1/4"	18.5	38	VG7241PT+423AGC	VG7241PT+423BGC	VG7241PT+423GGC
<b>Two-Way Push-Down-to-Open – NPT End Connections</b>						
VG7441CT	1/2"	0.73	345	VG7441CT+423AGC	VG7441CT+423BGC	VG7441CT+423GGC
VG7441ET	1/2"	1.8	345	VG7441ET+423AGC	VG7441ET+423BGC	VG7441ET+423GGC
VG7441GT	1/2"	4.6	173	VG7441GT+423AGC	VG7441GT+423BGC	VG7441GT+423GGC
VG7441LT	3/4"	7.3	103	VG7441LT+423AGC	VG7441LT+423BGC	VG7441LT+423GGC
VG7441NT	1"	11.6	66	VG7441NT+423AGC	VG7441NT+423BGC	VG7441NT+423GGC
VG7441PT	1-1/4"	18.5	38	VG7441PT+423AGC	VG7441PT+423BGC	VG7441PT+423GGC
<b>Three-Way Mixing – NPT End Connections</b>						
VG7842CT	1/2"	0.73	345 / 345	VG7842CT+423AGC	VG7842CT+423BGC	VG7842CT+423GGC
VG7842ET	1/2"	1.8	345 / 345	VG7842ET+423AGC	VG7842ET+423BGC	VG7842ET+423GGC
VG7842GT	1/2"	4.6	208 / 173	VG7842GT+423AGC	VG7842GT+423BGC	VG7842GT+423GGC
VG7842LT	3/4"	7.3	132 / 103	VG7842LT+423AGC	VG7842LT+423BGC	VG7842LT+423GGC
VG7842NT	1"	11.6	63 / 66	VG7842NT+423AGC	VG7842NT+423BGC	VG7842NT+423GGC
VG7842PT	1-1/4"	18.5	38 / 38	VG7842PT+423AGC	VG7842PT+423BGC	VG7842PT+423GGC
<b>Two-Way Push-Down-to-Close – Union Sweat End Connections</b>						
VG7281CT	1/2"	0.73	345	VG7281CT+423AGC	VG7281CT+423BGC	VG7281CT+423GGC
VG7281ET	1/2"	1.8	345	VG7281ET+423AGC	VG7281ET+423BGC	VG7281ET+423GGC
VG7281GT	1/2"	4.6	208	VG7281GT+423AGC	VG7281GT+423BGC	VG7281GT+423GGC
VG7281LT	3/4"	7.3	132	VG7281LT+423AGC	VG7281LT+423BGC	VG7281LT+423GGC
VG7281NT	1"	11.6	63	VG7281NT+423AGC	VG7281NT+423BGC	VG7281NT+423GGC
VG7281PT	1-1/4"	18.5	38	VG7281PT+423AGC	VG7281PT+423BGC	VG7281PT+423GGC
<b>Two-Way Push-Down-to-Open – Union Sweat End Connections</b>						
VG7481CT	1/2"	0.73	345	VG7481CT+423AGC	VG7481CT+423BGC	VG7481CT+423GGC
VG7481ET	1/2"	1.8	345	VG7481ET+423AGC	VG7481ET+423BGC	VG7481ET+423GGC
VG7481GT	1/2"	4.6	173	VG7481GT+423AGC	VG7481GT+423BGC	VG7481GT+423GGC
VG7481LT	3/4"	7.3	103	VG7481LT+423AGC	VG7481LT+423BGC	VG7481LT+423GGC
VG7481NT	1"	11.6	66	VG7481NT+423AGC	VG7481NT+423BGC	VG7481NT+423GGC
VG7481PT	1-1/4"	18.5	38	VG7481PT+423AGC	VG7481PT+423BGC	VG7481PT+423GGC
<b>Three-Way Mixing – Union Sweat End Connections</b>						
VG7882CT	1/2"	0.73	345 / 345	VG7882CT+423AGC	VG7882CT+423BGC	VG7882CT+423GGC
VG7882ET	1/2"	1.8	345 / 345	VG7882ET+423AGC	VG7882ET+423BGC	VG7882ET+423GGC
VG7882GT	1/2"	4.6	208 / 173	VG7882GT+423AGC	VG7882GT+423BGC	VG7882GT+423GGC
VG7882LT	3/4"	7.3	132 / 103	VG7882LT+423AGC	VG7882LT+423BGC	VG7882LT+423GGC
VG7882NT	1"	11.6	63 / 66	VG7882NT+423AGC	VG7882NT+423BGC	VG7882NT+423GGC
VG7882PT	1-1/4"	18.5	38 / 38	VG7882PT+423AGC	VG7882PT+423BGC	VG7882PT+423GGC
<b>Two-Way Push-Down-to-Close – 3/8 in. Union Sweat End Connections</b>						
VG7271CT	1/2"	0.73	345	VG7271CT+423AGC	VG7271CT+423BGC	VG7271CT+423GGC
VG7271ET	1/2"	1.8	345	VG7271ET+423AGC	VG7271ET+423BGC	VG7271ET+423GGC
VG7271GT	1/2"	4.6	208	VG7271GT+423AGC	VG7271GT+423BGC	VG7271GT+423GGC
<b>Two-Way Push-Down-to-Open – 3/8 in. Union Sweat End Connections</b>						
VG7471CT	1/2"	0.73	345	VG7471CT+423AGC	VG7471CT+423BGC	VG7471CT+423GGC
VG7471ET	1/2"	1.8	345	VG7471ET+423AGC	VG7471ET+423BGC	VG7471ET+423GGC
VG7471GT	1/2"	4.6	173	VG7471GT+423AGC	VG7471GT+423BGC	VG7471GT+423GGC

## VG7000 Series Brass Trim Globe Valves with VA-4233 Series Electric Actuators (Continued)

### VG7000 Series Brass Trim Valve Assemblies with VA-4233 Series Electric Actuators and Two Auxiliary Switches (Part 2 of 2)

Actuator Code				VA-4233-AGC-2	VA-4233-BGC-2	VA-4233-GGC-2
Actuator Input				Floating	On/Off	0 to 10 VDC Proportional
Temperature Range				35 to 250°F (2 to 121°C), 15 psig Saturated Steam		
Valve	Size	Cv	Closeoff	Spring Return – Stem Up		
<b>Three-Way Mixing – 3/8 in. Union Sweat End Connections</b>						
VG7872CT	1/2"	0.73	345 / 345	VG7872CT+423AGC	VG7872CT+423BGC	VG7872CT+423GGC
VG7872ET	1/2"	1.8	345 / 345	VG7872ET+423AGC	VG7872ET+423BGC	VG7872ET+423GGC
VG7872GT	1/2"	4.6	208 / 173	VG7872GT+423AGC	VG7872GT+423BGC	VG7872GT+423GGC
<b>Two-Way Push-Down-to-Close – 3/4 in. Union Sweat End Connections</b>						
VG7291CT	1/2"	0.73	345	VG7291CT+423AGC	VG7291CT+423BGC	VG7291CT+423GGC
VG7291ET	1/2"	1.8	345	VG7291ET+423AGC	VG7291ET+423BGC	VG7291ET+423GGC
VG7291GT	1/2"	4.6	208	VG7291GT+423AGC	VG7291GT+423BGC	VG7291GT+423GGC
<b>Two-Way Push-Down-to-Open – 3/4 in. Union Sweat End Connections</b>						
VG7491CT	1/2"	0.73	345	VG7491CT+423AGC	VG7491CT+423BGC	VG7491CT+423GGC
VG7491ET	1/2"	1.8	345	VG7491ET+423AGC	VG7491ET+423BGC	VG7491ET+423GGC
VG7491GT	1/2"	4.6	173	VG7491GT+423AGC	VG7491GT+423BGC	VG7491GT+423GGC
<b>Three-Way Mixing – 3/4 in. Union Sweat End Connections</b>						
VG7892CT	1/2"	0.73	345 / 345	VG7892CT+423AGC	VG7892CT+423BGC	VG7892CT+423GGC
VG7892ET	1/2"	1.8	345 / 345	VG7892ET+423AGC	VG7892ET+423BGC	VG7892ET+423GGC
VG7892GT	1/2"	4.6	208 / 173	VG7892GT+423AGC	VG7892GT+423BGC	VG7892GT+423GGC

### Technical Specifications

VG7000 Brass Trim Globe Valves with VA4233 Series Spring Return Electric Actuators		
<b>Service<sup>1</sup></b>	Hot Water, Chill Water, 50/50 Glycol Solutions and Steam for HVAC Systems	
<b>Fluid Temperature Limits</b>	<b>Water</b>	35 to 250°F (2 to 121°C)
	<b>Steam</b>	15 psig (103 kPa) Saturated Steam
<b>Maximum Allowable Pressure Temperature</b>	<b>Water</b>	400 psig (2,756 kPa) Up to 150°F (66°C) decreasing to 365 psig (2,515 kPa) at 248°F (120°C)
	<b>Steam</b>	15 psig (103 kPa) Saturated Steam at 250°F (121°C)
<b>Valve Body Pressure/ Temperature Rating</b>	Meets Requirements of ANSI B16.15, Class 250	
<b>Maximum Recommended Operating Pressure Drop</b>	<b>Water</b>	35 psig (241 kPa) for 1/2 through 1-1/4 in. valves
	<b>Steam</b>	15 psig (103 kPa)
<b>Flow Characteristics</b>	<b>Two-Way Valves</b>	Equal Percentage
	<b>Three-Way Valves</b>	Linear Flow Characteristics
<b>Rangeability<sup>2</sup></b>	25:1	
<b>Leakage</b>	0.01% of Maximum Flow per ANSI/FCI 70-2, Class 4	
<b>Actuator Ambient Operating Temperature Limits</b>	-4 to 122°F (-20 to 50°C)	
<b>Actuator Input Signal</b>	<b>VA-4233-AGx-2</b>	24 VAC or 24 VDC Three-Wire Floating Control
	<b>VA-4233-BGx-2</b>	24 VAC or 24 VDC Two-Wire On/Off Control
	<b>VA-4233-GGx-2</b>	0(2) to 10 VDC Proportional Control, 0 to 10 VDC Feedback
<b>Actuator Power Requirements</b>	24 VAC (20 to 30 VAC), 50/60 Hz, 12 VA Nominal	
<b>Materials</b>	<b>Body</b>	Cast Bronze
	<b>Bonnet</b>	Brass
	<b>Stem</b>	Stainless Steel
	<b>Plug</b>	Brass
	<b>Seat</b>	Brass Against Molded Elastomeric Disk
	<b>Packing</b>	Self Adjusting Ethylene Propylene Rubber (EPR) Ring Pack U-Cups

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.



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