

HVAC CONTROL PRODUCTS  
Valves

## Plant Valves

## VGS800

DN15...50, PN16

These valves are primarily designed to regulate the flow of water in response to the demand of a controller in zone and terminal unit applications.

Following electric actuators are available:

VA-77xx and VA78xx electric valve actuators.

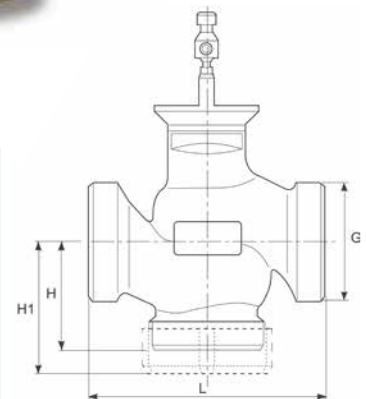
## Features

- Cast bronze body
- Kvs 0.63...40
- 2-way PDT0 (normally closed) using 3-way mixing valve with modkit, 3-way mixing configuration
- Fluid temperature 2...130 °C
- BSPP male threaded body connections



## Dimensions in mm

Body Size	G	L	H	H1
DN15	1 1/8	80	55	65
DN20	1 1/4	90	55	65
DN25	1 1/2	110	55	66
DN32	2	120	55	67
DN40	2 1/4	130	60	72
DN50	2 3/4	150	65	77



## 3-way mixing configuration

Ordering Codes	Body Size	Kvs	Nominal Stroke (mm)	Close-off Pressure kPa	
				VA-77x820x 500 N	VA-78xx-xxx-12 1000 N
VGS8A5W1N	DN15	0.63	13	958	1600
VGS8A4W1N		1.0			
VGS8A3W1N		1.6			
VGS8A2W1N		2.5			
VGS8A1W1N		4.0			
VGS8B1W1N	DN20	6.3		605	1600
VGS8C1W1N	DN25	10		280	1046
VGS8D1W1N	DN32	16		176	744
VGS8E1W1N	DN40	25		54	369
VGS8F1W1N	DN50	40		---	208

## Note

Ordering of factory mounted valves and electric actuators.  
The valves and actuators can be ordered separately or factory mounted.  
When factory mounted, please add "+M" to the order code for the actuator.

## Pipe mufflers

Ordering Codes	Mufflers
121 4935 151	DN15 / Rp 1/2
121 4935 201	DN20 / Rp 3/4
121 4935 251	DN25 / Rp 1
121 4935 321	DN32 / Rp 1 1/4
121 4935 401	DN40 / Rp 1 1/2
121 4935 501	DN50 / Rp 2

## Note

3 pipe mufflers are needed for the mixing valves

Modkit for transformation  
of 3-way into 2-way valves

Ordering Codes	Mod kit for:
121 4930 151	DN15 / Rp 1/2
121 4930 201	DN20 / Rp 3/4
121 4930 251	DN25 / Rp 1
121 4930 321	DN32 / Rp 1 1/4
121 4930 401	DN40 / Rp 1 1/2
121 4930 501	DN50 / Rp 2

## Note

2 pipe mufflers and 1 modkit are required to alter a 3-way valve into a 2-way valve

HVAC CONTROL PRODUCTS  
Valves

## Plant Valves

## VG7000

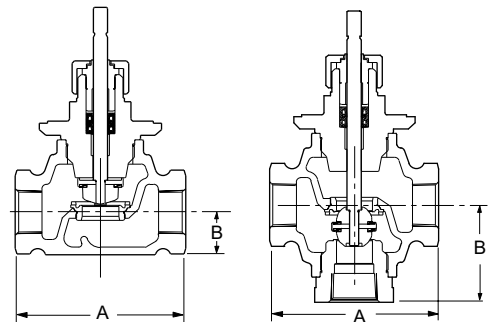
DN15...50, PN16

VG7000 Series Bronze Control Valves are designed primarily to regulate the flow of water and steam in response to the demand of a controller in Heating, Ventilating and Air Conditioning (HVAC) systems.

These valves are available in Push-Down-To-Close (PDTC), Push-Down-To-Open (PDTO), and three-way mixing configurations. Both electric and pneumatic actuators are available for factory or field mounting.

## Features

- DN15 through DN50 bronze valves, in two-way PDTC, PDTO and three-way mixing configurations
- Wide range of electric actuators available for all valves
- Every valve tested for tight shutoff
- Uses Standard Johnson Controls U-cup Packing
- Flexible features-and-options ordering template
- Standard Bonnet and stem design
- Leakage
  - Brass Trim: 0.01% of Maximum Flow per EN60534-4, Class IV
  - Stainless Steel Trim: 0.05% of Maximum Flow
- Inherent Flow Characteristics
  - Equal Percentage: 2-way Valves
  - Linear: 3-way Valves in compliance with EN 600534
- Rangeability
  - 25:1 at 0.25...1 kvs and 100:1 at 1.6...40 kvs
  - In accordance with EN 60534-2-4
- Maximum Recommended Operating Pressure Drop
  - 240 kPa for DN15 and DN32 - 200 kPa for DN40 to DN50
- Fluid Temperature Operating Limits
  - Valves with Brass Trim:
    - With V-3801 and VA-731x Actuators: 2 °C to 120 °C water / 100 kPa Saturated Steam
    - With all other Actuators: 2 °C to 140 °C water / 260 kPa Saturated Steam
  - Valves with Stainless Steel Trim: 2 to 170 °C / 690 kPa Saturated Steam



## Dimensions in mm

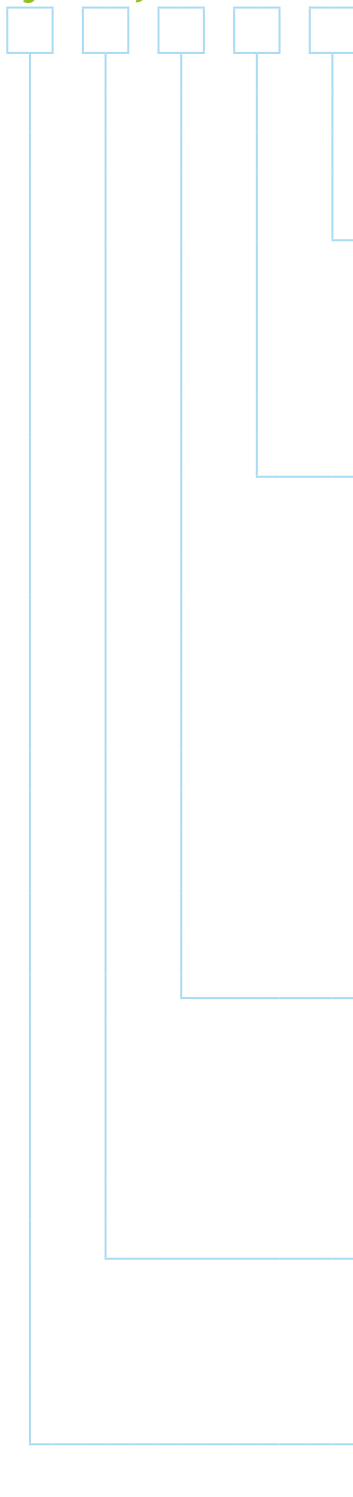
Body Size	A	B		
		2-way PDTC	2-way PDTO	3-way
DN15	76	21	39	46
DN20	81	24	41	54
DN25	104	29	44	65
DN32	119	34	51	70
DN40	130	55	70	85
DN50	150	53	72	95

## HVAC CONTROL PRODUCTS Valves

### Plant Valves VG7000

#### Ordering Codes for Valve Bodies

VG7



#### Stem Type

<b>T</b>	Standard threaded stem
<b>S</b>	Slotted stem and small bonnet (for VA-7310 electric and V-3801 pneumatic actuators only, only available for DN15 and DN20 valves with brass trim)

#### Size

<b>A</b>	DN15	0.25
<b>B</b>	DN15	0.4
<b>C</b>	DN15	0.63
<b>D</b>	DN15	1.0
<b>E</b>	DN15	1.6
<b>F</b>	DN15	2.5
<b>G</b>	DN15	4.0
<b>L</b>	DN20	6.3
<b>N</b>	DN25	10
<b>P</b>	DN32	16
<b>R</b>	DN40	25
<b>S</b>	DN50	40

#### Flow Coefficient $K_{vs}$

#### Body Configuration

<b>1</b>	2-way	Brass trim
<b>2</b>	3-way mixing	Brass trim
<b>3</b>	2-way	Stainless steel trim
<b>4</b>	3-way mixing	Stainless steel trim
<b>5</b>	3-way mixing	Brass trim

#### Trim Type

#### Inherent Flow Characteristics

Equal percentage

Linear in both ports

Equal percentage

Linear in both ports

Equal percentage in control port, linear in bypass port (only available for VG7x1... valves with BSPP male connection)

#### End Connection

<b>0</b>	BSP Parallel Female Threaded
<b>1</b>	BSP Parallel Male Threaded (only DN15 and DN20, with Brass Trim)

#### Body Configuration

<b>2</b>	2-way PDTC (Normally Open)
<b>4</b>	2-way PDTO (Normally Closed)
<b>8</b>	3-way Mixing

Plant Valves

VG7000

*Maximum Close-off Pressures (in kPa), for Valves with Brass Trim and Electric Actuators*

Size	VA-731x	VA-715x	VA-77xx	VA-720x	VA78xx
DN15	1600	1600		---	
DN15	700	1600		---	
DN15	400	1490		---	
DN20	250	950		---	
DN25	---	595		1235	
DN32	---	360		750	
DN40	---	235		480	
DN50	---	145		310	

*Maximum Close-off Pressures (in kPa), for Valves with Stainless Steel Trim and Electric Actuators*

Size	VA-731x	VA-715x	VA-77xx	VA-720x	VA78xx
DN15	---	1600		1600	
DN15	---	1600		1600	
DN15	---	930		1600	
DN20	---	595		1220	
DN25	---	370		770	
DN32	---	230		470	
DN40	---	145		300	
DN50	---	90		190	

**Plant Valves**  
**VG7000**
**Maximum Close-off Pressures (in kPa), for Valves with Brass Trim and Pneumatic Actuators**

Actuator	Valves	2-way PDTC or 3-way Valves with 138 kPa air supply		2-way PDTO or 3-way Valves with 0 kPa air supply	
	Size	Spring Range kPa *			
		21 to 42	63 to 91	21 to 42	63 to 91
V-3801	DN15	1600	1600	580	1600
	DN15	1180	530	165	715
	DN15	670	300	90	405
	DN20	430	190	55	255
V-3000	DN15	1600	1600	1430	1600
	DN15	1600	1100	405	1450
	DN15	1310	620	230	820
	DN20	835	390	145	525
	DN25	520	240	85	315
	DN32	320	145	50	195
	DN40	200	95	35	125
V-400	DN25	1600	985	400	1275
	DN32	1220	600	240	780
	DN40	785	385	160	495
	DN50	500	250	95	315

**Maximum Close-off Pressures (in kPa), for Valves with Stainless Steel Trim and Pneumatic Actuators**

Actuator	Valves	2-way PDTC or 3-way Valves with 138 kPa air supply		2-way PDTO or 3-way Valves with 0 kPa air supply	
	Size	Spring Range kPa *			
		21 to 42	63 to 91	21 to 42	63 to 91
V-3000	DN15	1600	1600	1090	1600
	DN15	1600	825	300	1085
	DN15	980	470	170	615
	DN20	630	295	110	395
	DN25	385	180	60	240
	DN32	240	110	35	145
V-400	DN15	1600	1600	1600	1600
	DN15	1600	1600	1345	1600
	DN15	1600	1600	760	1600
	DN20	1600	1175	485	1520
	DN25	1510	740	295	960
	DN32	925	450	185	585
	DN40	595	290	115	370
DN50	380	185	75	240	

**Note**

\* The recommended spring ranges for use with a V-9502 Positioner are: 21 to 42 kPa for PDTC valves, 63 to 91 kPa for PDTO valves and 63 to 91 kPa for three way valves.

HVAC CONTROL PRODUCTS  
Valves

## Plant Valves

## VG9000

DN15...100, PN6 and PN10

These flanged valves are primarily designed to regulate the flow of water and low pressure steam in response to the demand of a controller, in heating, ventilating and air conditioning systems.

Following electric actuators are available:

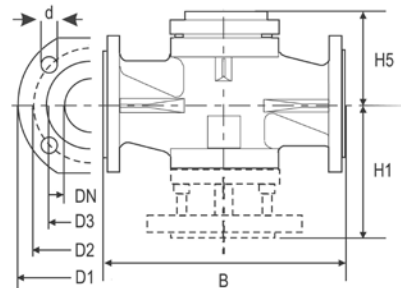
VA-7700 for DN15...50 valves

VA7810 for DN15...65 valves

VA1000 for DN65...100 valves.

## Features

- Nodular cast iron body
- Kvs 0.63...160
- 2-way PDT0 (normally closed) and 3-way mixing configurations
- Fluid temperature 2...140 °C
- DIN flanged



## Dimensions in mm

Body Size	PN6							PN10						
	B	D1	D2	D3	d	H1	Holes	B	D1	D2	D3	d	H1	Holes
DN15	130	80	55	38	11	65	4	130	95	65	46	14	65	4
DN20	140	90	65	48	11	70	4	150	105	75	56	14	75	4
DN25	150	100	75	58	11	75	4	160	115	85	65	14	80	4
DN32	180	120	90	69	14	90	4	180	140	100	76	19	90	4
DN40	180	130	100	78	14	90	4	200	150	110	84	19	100	4
DN50	200	140	110	88	14	100	4	230	165	125	99	19	115	4
DN65	240	160	130	108	14	120	4	290	185	145	118	19	145	4
DN80	260	190	150	124	19	130	4	310	200	160	132	19	155	8
DN100	300	210	170	144	19	150	4	350	220	180	156	19	175	8

**HVAC CONTROL PRODUCTS**  
**Valves**
**Plant Valves**
**VG9000**
**PN6 Series (VG9xxxS1K)**

Ordering Codes*	Body Size	Kvs	Close-off Pressure kPa							
			RA-3000-732x 3000 N	VA-1x20-GGA-1** 2000 N	VA-1125-GGA-1** 2500 N	VA-77xx-820x 500 N	VA78xx-xxx-12 1000 N			
<b>2-way PDT0 (Normally Closed) Configuration</b>										
VG94A5S1K	DN15	0.63	---	---	---	600	600			
VG94A4S1K		1.0								
VG94A3S1K		1.6								
VG94A2S1K		2.5								
VG94A1S1K		4.0								
VG94B1S1K	DN20	6.3								
VG94C1S1K	DN25	10				590	600			
VG94E2S1K	DN32	16				360	600			
VG94E1S1K	DN40	25				190	480			
VG94F1S1K	DN50	40				100	290			
VG94G1S1K	DN65	63				470	620	150		
VG94H1S1K	DN80	100				510	300	400	---	---
VG94J1S1K	DN100	160				320	180	240	---	---
<b>3-way Mixing Configuration</b>										
VG98A5S1K	DN15	0.63				---	---	---	600	600
VG98A4S1K		1.0								
VG98A3S1K		1.6								
VG98A2S1K		2.5								
VG98A1S1K		4.0								
VG98B1S1K	DN20	6.3								
VG98C1S1K	DN25	10	490	600						
VG98E2S1K	DN32	16	280	600						
VG98E1S1K	DN40	25	130	440						
VG98F1S1K	DN50	40	60	260						
VG98G1S1K	DN65	63	470	620	130					
VG98H1S1K	DN80	100	510	300	400				---	---
VG98J1S1K	DN100	160	320	180	240				---	---

**Notes**

- \* For factory mounted valve actuators just add "+M" to the actuator ordering code.
- \*\* For fluid temperature >140 °C the extension kit VA1000-EP must be mounted.

**Plant Valves**
**VG9000**
**PN10 Series (VG9xxxS1L)**

Ordering Codes*	Body Size	Kvs	Close-off Pressure kPa					
			RA-3000-732x 3000 N	VA-1x20-GGA-1** 2000 N	VA-1125-GGA-1** 2500 N	VA-77xx-820x 500 N	VA78xx-xxx-12 1000 N	
<b>2-way PDTO (Normally Closed) Configuration</b>								
VG94A5S1L	DN15	0.63	---	---	---	1000	1000	
VG94A4S1L		1.0						
VG94A3S1L		1.6						
VG94A2S1L		2.5						
VG94A1S1L		4.0						
VG94B1S1L	DN20	6.3	---	---	---	980	1000	
VG94C1S1L	DN25	10	---	---	---	640		
VG94E2S1L	DN32	16	---	---	---	400		900
VG94E1S1L	DN40	25	---	---	---	210		510
VG94F1S1L	DN50	40	---	---	---	110		310
VG94G1S1L	DN65	63	---	470	620	---	160	
VG94H1S1L	DN80	100	510	300	400	---	---	
VG94J1S1L	DN100	160	320	180	240	---	---	
<b>3-way Mixing Configuration</b>								
VG98A5S1L	DN15	0.63	---	---	---	1000	1000	
VG98A4S1L		1.0						
VG98A3S1L		1.6						
VG98A2S1L		2.5						
VG98A1S1L		4.0						
VG98B1S1L	DN20	6.3	---	---	---	880	1000	
VG98C1S1L	DN25	10	---	---	---	430		
VG98E2S1L	DN32	16	---	---	---	240		790
VG98E1S1L	DN40	25	---	---	---	110		420
VG98F1S1L	DN50	40	---	---	---	40		240
VG98G1S1L	DN65	63	---	470	620	---	120	
VG98H1S1L	DN80	100	510	300	400	---	---	
VG98J1S1L	DN100	160	320	180	240	---	---	

**Notes**

\* For factory mounted valve actuators just add "+M" to the actuator ordering code.

\*\* For fluid temperature >140 °C the extension Lit VA1000-EP must be mounted.



## HVAC CONTROL PRODUCTS

### Valves

## Plant Valves

### VG8000N

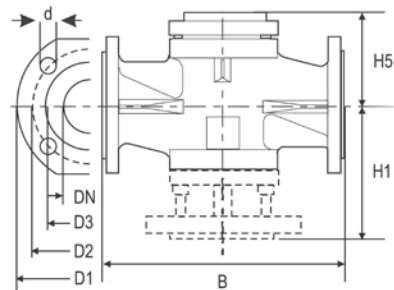
DN15...150, PN16

These electrically and pneumatically operated flanged valves are primarily designed to regulate the flow of water and steam in response to the demand of a controller, in heating, ventilating and air conditioning systems.

A variety of electric and pneumatic actuators are available.

#### Features

- Nodular cast iron body
- Kvs 0.1...350
- 2-way PDTC (normally open),  
3-way mixing and 3-way diverting configurations
- Fluid temperature 0...180 °C  
with Glycerine cup -10...180 °C
- DIN flanged



#### Dimensions in mm

Body Size	B	D1	D2	D3	d	H1	H5	Bolts	Holes
DN15	130	95	65	45	13.5	100	76	M12 x 45	4
DN20	150	105	75	58	13.5	106	76	M12 x 50	4
DN25	160	115	85	68	13.5	106	76	M12 x 50	4
DN32	180	140	100	78	17.5	123	81	M16 x 55	4
DN40	200	150	110	88	17.5	140	78	M16 x 55	4
DN50	230	165	125	102	17.5	145	101	M16 x 60	4
DN65	290	185	145	122	17.5	156	102	M16 x 60	4
DN80	310	200	160	138	17.5	180	108	M16 x 65	8
DN100	350	220	180	158	17.5	225	136	M16 x 70	8
DN125	400	250	210	188	17.5	255	155	M16 x 75	8
DN150	480	285	240	212	22	290	175	M20 x 75	8

## HVAC CONTROL PRODUCTS Valves

### Plant Valves

#### VG8000N

#### 2-way PDTC (Normally Open) Configuration

Ordering Codes*	Body Size	Kvs	Close-off Pressure kPa						
			FA-2000-741x 2400 N	FA-2000-751x 2200 N	FA-3300 6000 N	RA-3100-8226 2700 N	VA1x20** 2000 N	VA1125** 2500 N	VA78xx 1000 N
VG82A4S1N	DN15	1.0	---	---	---	---	1600	1600	1600
VG82A3S1N		1.6							
VG82A2S1N		2.5							
VG82A1S1N		4.0							
VG82B1S1N	DN20	6.3	---	---	---	650	800	1080	---
VG82C1S1N	DN25	10							
VG82D1S1N	DN32	16							
VG82E1S1N	DN40	25							
VG82F1S1N	DN50	40	---	---	---	500	630	830	---
VG82G1S1N	DN65	63							
VG82H1S1N	DN80	100							
VG82J1S1N	DN100	160							
VG82K1S1N	DN125	250	190	---	---	740	120	160	230
VG82L1S1N	DN150	350	110						
			50						
						460	---	90	140
						280	---	40	75

#### Notes

- \* For factory mounted valve actuators just add "+M" to the actuator ordering code  
For ordering a valve with Glycerine cup packing, add suffix "20" to the ordering code: i.e. VG8xxxS1H20.  
Teflon free model are available on request.
- \*\* For fluid temperature >140 °C the extension kit VA1000-EP must be mounted.

## HVAC CONTROL PRODUCTS Valves

### Plant Valves

#### VG8000N

#### 3-way Mixing Configuration

Ordering Codes*	Body Size	Kvs	Close-off Pressure kPa						
			FA-2000-741x 2400 N	FA-2000-751x 2200 N	FA-3300 6000 N	RA-3100-8226 2700 N	VA1x20** 2000 N	VA1125** 2500 N	VA78xx 1000 N
VG88A4S1N	DN15	1.0	---	---	---	---	1600	1600	1600
VG88A3S1N		1.6							
VG88A2S1N		2.5							
VG88A1S1N		4.0							
VG88B1S1N	DN20	6.3	---	---	---	650	800	1080	---
VG88C1S1N	DN25	10							
VG88D1S1N	DN32	16							
VG88E1S1N	DN40	25							
VG88F1S1N	DN50	40	---	---	---	500	630	830	---
VG88G1S1N	DN65	63							
VG88H1S1N	DN80	100							
VG88J1S1N	DN100	160							
VG88K1S1N	DN125	250	---	---	---	460	90	140	---
VG88L1S1N	DN150	350							
VG88L1S1N	DN150	350	190	---	740	120	160	230	---
VG88K1S1N	DN125	250	110	---	460	---	90	140	---
VG88L1S1N	DN150	350	50	---	280	---	40	75	---

#### Notes

- \* For factory mounted valve actuators just add "+M" to the actuator ordering code  
For ordering a valve with Glycerine cup packing, add suffix "20" to the ordering code: i.e. VG8xxxS1H20.  
Teflon free model are available on request.
- \*\* For fluid temperature >140 °C the extension kit VA1000-EP must be mounted.

## HVAC CONTROL PRODUCTS

### Valves

#### Plant Valves

#### VG8000N

#### 3-way Diverting Configuration

Ordering Codes*	Body Size	Kvs	Close-off Pressure kPa						
			FA-2000-741x 2400 N	FA-2000-751x 2200 N	FA-3300 6000 N	RA-3100-8226 2700 N	VA1x20** 2000 N	VA1125** 2500 N	VA78xx 1000 N
VG89A4S1N	DN15	1.0	---	---	---	---	1600	1600	1600
VG89A3S1N		1.6							
VG89A2S1N		2.5							
VG89A1S1N		4.0							
VG89B1S1N	DN20	6.3	---	---	---	1600	1600	1600	
VG89C1S1N	DN25	10							
VG89D1S1N	DN32	16							
VG89E1S1N	DN40	25							
VG89F1S1N	DN50	40	---	---	---	650	800	1080	
VG89G1S1N	DN65	63							
VG89H1S1N	DN80	100							
VG89J1S1N	DN100	160							
VG89K1S1N	DN125	250	190	---	740	120	160	230	
VG89L1S1N	DN150	350							
			110	---	460	---	90	140	---
			50	---	280	---	40	75	---

#### Notes

\* For factory mounted valve actuators just add "+M" to the actuator ordering code  
For ordering a valve with Glycerine cup packing, add suffix "20" to the ordering code: i.e. VG8xxxS1H20.  
Teflon free model are available on request.

\*\* For fluid temperature >140 °C the extension kit VA1000-EP must be mounted.

## HVAC CONTROL PRODUCTS

### Valves

## Plant Valves

### VG8000H

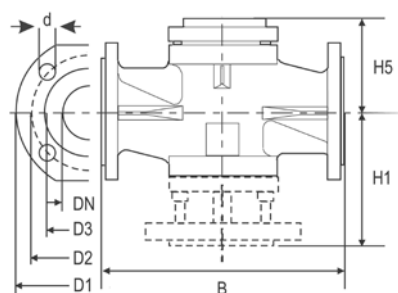
DN15...150, PN25

These flanged valves are primarily designed to regulate the flow of water and steam in response to the demand of a controller, in heating, ventilating and air conditioning systems.

A variety of electric and pneumatic actuators are available.

#### Features

- Nodular cast iron body
- Kvs 0.4...350
- 2-way PDTC (normally open),  
3-way mixing and 3-way diverting configurations
- Fluid temperature 2...200 °C,  
with glycerin cup: -20...200 °C  
with cooling fins: up to 280 °C
- DIN Flanged



#### Dimensions in mm

Body Size	B	D1	D2	D3	d	H1	H5	Bolts	Holes
DN15	130	95	65	45	13.5	100	76	M12 x 45	4
DN20	150	105	75	58	13.5	106	76	M12 x 50	4
DN25	160	115	85	68	13.5	106	76	M12 x 50	4
DN32	180	140	100	78	17.5	123	81	M16 x 55	4
DN40	200	150	110	88	17.5	140	78	M16 x 55	4
DN50	230	165	125	102	17.5	145	101	M16 x 60	4
DN65	290	185	145	122	17.5	156	102	M16 x 60	8
DN80	310	200	160	138	17.5	180	108	M16 x 65	8
DN100	350	235	190	162	22	225	136	M20 x 70	8
DN125	400	270	220	188	26	255	155	M24 x 75	8
DN150	480	300	250	218	26	290	175	M24 x 80	8

## HVAC CONTROL PRODUCTS Valves

### Plant Valves VG8000H

#### 2-way PDTC (Normally Open) Configuration

Ordering Codes*	Body Size	Kvs	Close-off Pressure kPa							
			FA-2000-741x 2200 N	FA-2000-751x 2400 N	FA-3300-741x 6000 N	RA-3000-732x 3000 N	RA-3100-8226 1700 N	VA1x20** 2000 N	VA1125** 500 N	VA78xx 1000 N
VG82A4S1H	DN15	1.0	---	---	---	---	---	2500	2500	2500
VG82A3S1H		1.6								
VG82A2S1H		2.5								
VG82A1S1H		4.0								
VG82B1S1H	DN20	6.3	---	---	---	---	---	---	---	2030
VG82C1S1H	DN25	10	---	---	---	---	---	---	---	1360
VG82D1S1H	DN32	16	---	---	---	---	---	---	---	660
VG82E1S1H	DN40	25	---	---	---	---	---	1550	2000	370
VG82F1S1H	DN50	40	---	920	---	1300	600	750	1020	---
VG82G1S1H	DN65	63	---	710	---	1010	450	580	750	
VG82H1S1H	DN80	100	---	330	---	480	200	260	370	
VG82J1S1H	DN100	160	180	---	720	290	100	140	210	
VG82K1S1H	DN125	250	100	---	450	170	---	80	120	---
VG82L1S1H	DN150	350	50	---	270	100	---	40	70	

#### Notes

- \* For factory mounted valve actuators just add "+M" to the type model number  
 For ordering a valve with Cooling fin, add suffix "10" to the ordering code: i.e. VG8xxxS1H10  
 For ordering a valve with Glycerine cup packing, add suffix "20" to the ordering code: i.e. VG8xxxS1H20.  
 Reduced kvs coefficients are available on request.

- \*\* For fluid temperature >140 °C the extension kit VA1000-EP must be mounted. Max-Fluid temperature must not exceed 200 °C.

## HVAC CONTROL PRODUCTS Valves

### Plant Valves

#### VG8000H

#### 3-way Mixing Configuration

Ordering Codes*	Body Size	Kvs	Close-off Pressure kPa											
			FA-2000-741x 2200 N	FA-2000-751x 2400 N	FA-3300-741x 6000 N	RA-3000-732x 3000 N	RA-3100-8226 1700 N	VA1x20** 2000 N	VA1125** 500 N	VA78xx 1000 N				
VG88A4S1H	DN15	1.0	---	---	---	---	---	2500	2500	2500				
VG88A3S1H		1.6												
VG88A2S1H		2.5												
VG88A1S1H		4.0												
VG88B1S1H	DN20	6.3	---	---	---	---	1550	2000	370					
VG88C1S1H	DN25	10												
VG88D1S1H	DN32	16												
VG88E1S1H	DN40	25												
VG88F1S1H	DN50	40	---	---	---	---	---	---	---					
VG88G1S1H	DN50	40								920	1300	600	750	1020
VG88H1S1H	DN65	63								710	1010	450	580	750
VG88I1S1H	DN80	100								330	480	200	260	370
VG88J1S1H	DN100	160	180	---	720	290	100	140	210	---				
VG88K1S1H	DN125	250	100		450	170	---	80	120					
VG88L1S1H	DN150	350	50		270	100	---	40	70					

#### Notes

- \* For factory mounted valve actuators just add "+M" to the type model number  
For ordering a valve with Cooling fin, add suffix "10" to the ordering code: i.e. VG8xxxS1H10  
For ordering a valve with Glycerine cup packing, add suffix "20" to the ordering code: i.e. VG8xxxS1H20.  
Reduced kvs coefficients are available on request.
- \*\* For fluid temperature >140 °C the extension kit VA1000-EP must be mounted. Max-Fluid temperature must not exceed 200 °C.

## HVAC CONTROL PRODUCTS Valves

### Plant Valves

#### VG8000H

#### 3-way Diverting Configuration

Ordering Codes*	Body Size	Kvs	Close-off Pressure kPa							
			FA-2000-741x 2200 N	FA-2000-751x 2400 N	FA-3300-741x 6000 N	RA-3000-732x 3000 N	RA-3100-8226 1700 N	VA1x20** 2000 N	VA1125** 500 N	VA78xx 1000 N
VG89A4S1H	DN15	1.0	---	---	---	---	---	2500	2500	2500
VG89A3S1H		1.6								
VG89A2S1H		2.5								
VG89A1S1H		4.0								
VG89B1S1H	DN20	6.3	---	---	---	---	---	---	---	2030
VG89C1S1H	DN25	10	---	---	---	---	---	---	---	1360
VG89D1S1H	DN32	16	---	---	---	---	---	---	---	660
VG89E1S1H	DN40	25	---	---	---	---	---	1550	2000	370
VG89F1S1H	DN50	40	---	920	---	1300	600	750	1020	---
VG89G1S1H	DN65	63	---	710	---	1010	450	580	750	
VG89H1S1H	DN80	100	---	330	---	480	200	260	370	
VG89J1S1H	DN100	160	180	---	720	290	100	140	210	
VG89K1S1H	DN125	250	100	---	450	170	---	80	120	---
VG89L1S1H	DN150	350	50	---	270	100	---	40	70	

#### Notes

- \* For factory mounted valve actuators just add "+M" to the type model number  
For ordering a valve with Cooling fin, add suffix "10" to the ordering code: i.e. VG8xxxS1H10  
For ordering a valve with Glycerine cup packing, add suffix "20" to the ordering code: i.e. VG8xxxS1H20.  
Reduced kvs coefficients are available on request.
- \*\* For fluid temperature >140 °C the extension kit VA1000-EP must be mounted. Max-Fluid temperature must not exceed 200 °C.



HVAC CONTROL PRODUCTS  
Valves

## Plant Valves

## VG8300N

DN40...150, PN16 Pressure Balanced

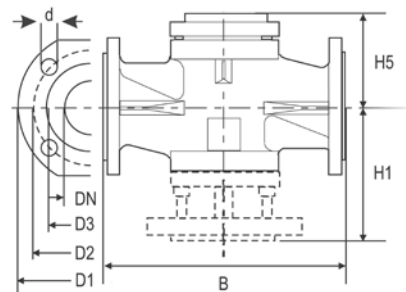
These pressure balanced flanged valves are primarily designed to regulate the flow of water and steam in response to the demand of a controller, in heating, ventilating and air conditioning systems.

These valves have a specially designed plug, which through specific balancing of pressures allows higher close-off pressures with standard actuator combinations.

A variety of electric and pneumatic actuators are available.

## Features

- Nodular cast iron bodies
- Kvs 25...350
- 2-way PDTC (normally open) configuration
- PN16  
Fluid temperature 2...180 °C  
with Glycerin cup -10...180 °C
- Pressure balanced valve plug
- DIN flanged



## Dimensions in mm

Body Size	B	D1	D2	D3	d	H1	H5	Bolts	Holes
DN40	200	150	110	88	17.5	140	78	M16 x 55	4
DN50	230	165	125	102	17.5	145	101	M16 x 60	4
DN65	290	185	145	122	17.5	156	102	M16 x 60	4
DN80	310	200	160	138	17.5	180	108	M16 x 65	8
DN100	350	220	180	158	17.5	225	136	M16 x 70	8
DN125	400	250	210	188	17.5	255	155	M16 x 75	8
DN150	480	285	240	212	22	290	175	M20 x 75	8

Ordering Codes*	Body Size	Kvs	Close-off Pressure kPa								
			Spring Return		Non Spring Return						
			FA-2000-741x 2200 N	VA1x20** 2000 N	RA-3100-8126 1200 N	RA-3100-8226 1700 N	VA1125** 2500 N	VA78xx 1000 N			
VG83E1S1N	DN40	25	---	1600	1600	---	1600	1600			
VG83F1S1N	DN50	40			---	1600		---	1600	---	
VG83G1S1N	DN65	63									1600
VG83H1S1N	DN80	100	1600	1600			---				
VG83J1S1N	DN100	160			1600	1600		---	---		
VG83K1S1N	DN125	250								1600	1600
VG83L1S1N	DN150	350	1600	1600			---				

## Notes

\* For factory mounted valve actuators just add "+M" to the actuator ordering code.

\*\* For fluid temperature >140 °C the extension kit VA1000-EP must be mounted.

## HVAC CONTROL PRODUCTS

### Valves

## Plant Valves

### VG1000 Flanged

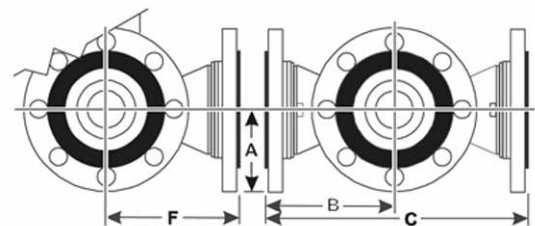
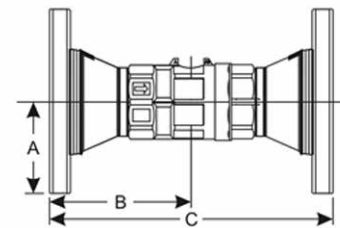
DN65...100, PN16

The VG1000 series control ball valves are used for the water control of air treatment systems in ventilation and air conditioning units as well as heating system.

They are operated by remote mounted Spring Return and Non Spring Return actuators.

#### Features

- 2-way & 3-way mixing
- Body Rating PN 16
- Hot water, chilled water, 50/50 glycol solutions and 172 kPa Saturated Steam for HVAC Systems
- Valve Fluid Temperature Limits -18 to 140 °C
- Maximum Closeoff Pressure  
2-way: 689 kPa / 3-way: 345 kPa
- Maximum Recommended Operating Pressure Drop  
207 kPa for quiet service
- Flow Characteristics  
2-way: Equal Percentage (according EN60534-2-4)  
3-way: Equal Percentage (according EN60534-2-4) Flow Characteristics of Inline Port (Coil) and Linear Percentage Flow Characteristics of Angle Port (Bypass)
- Rangeability Greater than 500:1
- Leakage  
2 and 3-way: 0.01% of Maximum Flow, Control port, ANSI/FCI 70-2, Class 4  
3-way: 1% of Maximum Flow, Bypass Port



#### Dimensions in mm

Valve Size	A	B	C	F	Holes for Flange	Holes Diameters	Bolt
DN65	92.5	145	290	149	4	19	M16x60
DN80	100	155	310	159	8	19	M16x65
DN100	110	175	350	179	8	19	M16x70

## HVAC CONTROL PRODUCTS Valves

### Plant Valves VG1000 Flanged

#### Assemblies of valves with PROPORTIONAL ACTUATORS

Spring Return Function	---		•	
Supply Voltage	24 VAC/DC			
Torque	24 Nm		20 Nm	
Running Time	125 s		150 s	
Spring Return Time Power Off	---		26 s	
Control Signal	VDC:	0 - 10 / 2 - 10		
	mA:	0 - 20 / 4 - 20		
Switches	---	2 x SPDT	---	2 x SPDT
Feedback	VDC:	0 - 10 / 2 - 10		
Actuator Code	M9124-GGA-1N	M9124-GGC-1N	M9220-HGA-1	M9220-HGC-1
Linkage Code	M9000-518		M9000-519	
Ordering Code Suffix for Assemblies	+ 524GGA	+ 524GGC	+ 530HGA (Spring Opens)	+ 530HGC (Spring Opens)
			+ 550HGA (Spring Closes)	+ 550HGC (Spring Closes)

#### Ordering Codes

Valve Code	Body Size	Kvs (Control Port)	Kvs (Bypass Port)	Valid combinations of valves, linkages and actuators			
<b>2-way Models</b>							
VG12E5GT	DN65	63	---	•	•	•	•
VG12E5GU		100	---	•	•	•	•
VG12E5HU	DN80	100	---	•	•	•	•
VG12E5HW		180	---	•	•	•	•
VG12E5JV	DN100	150	---	•	•	•	•
<b>3-way Models</b>							
VG18E5GT	DN65	63	40	•	•	•	•
VG18E5GU		100	63	63	•	•	•
VG18E5HU	DN80	100	63	•	•	•	•
VG18E5HW		180	75	75	•	•	•
VG18E5JV	DN100	150	75	•	•	•	•

## HVAC CONTROL PRODUCTS Valves

### Plant Valves VG1000 Flanged

#### Assemblies of valves with FLOATING and ON/OFF ACTUATORS

Spring Return Function	---				•					
Supply Voltage	24 VAC / DC		230 VAC		24 VAC / DC				230 VAC	
Torque	24 Nm				20 Nm					
Running Time	125 s				150 s				24 - 57 s	
Spring Return Time Power Off	---				20 s				11...50 s	
Control Signal	Floating and ON/OFF						ON/OFF			
Switches	---	2 x SPDT	---	2 x SPDT	---	2 x SPDT	---	2 x SPDT	---	2 x SPDT
Feedback	---									
Actuator Code	M9124-AGA-1N	M9124-AGC-1N	M9124-ADA-1N	M9124-ADC-1N	M9220-AGA-1	M9220-AGC-1	M9220-BGA-1	M9220-BGC-1	M9220-BDA-1	M9220-BDC-1
Linkage Code	M9000-518				M9000-519					
Ordering Code suffix for assemblies	+524AGA	+524AGC	+524ADA	+524ADC	+530AGA (Spring Opens)	+530AGC (Spring Opens)	+530BGA (Spring Opens)	+530BGC (Spring Opens)	+530BDA (Spring Opens)	+530BDC (Spring Opens)
					+550AGA (Spring Closes)	+550AGC (Spring Closes)	+550BGA (Spring Closes)	+550BGC (Spring Closes)	+550BDA (Spring Closes)	+550BDC (Spring Closes)

#### Ordering Codes

Valve Code	Body Size	Kvs (Control Port)	Kvs (Bypass Port)	Valid combinations of valves, linkages and actuators									
<b>2-way Models</b>													
VG12E5GT	DN65	63	---	•	•	•	•	•	•	•	•	•	•
VG12E5GU		100	---	•	•	•	•	•	•	•	•	•	•
VG12E5HU	DN80	100	---	•	•	•	•	•	•	•	•	•	•
VG12E5HW		180	---	•	•	•	•	•	•	•	•	•	•
VG12E5JV	DN100	150	---	•	•	•	•	•	•	•	•	•	•
<b>3-way Models</b>													
VG18E5GT	DN65	63	40	•	•	•	•	•	•	•	•	•	•
VG18E5GU		100	63	•	•	•	•	•	•	•	•	•	•
VG18E5HU	DN80	100	63	•	•	•	•	•	•	•	•	•	•
VG18E5HW		180	75	•	•	•	•	•	•	•	•	•	•
VG18E5JV	DN100	150	75	•	•	•	•	•	•	•	•	•	•

HVAC CONTROL PRODUCTS  
Valves

## Plant Valves

## VG1000 Threaded

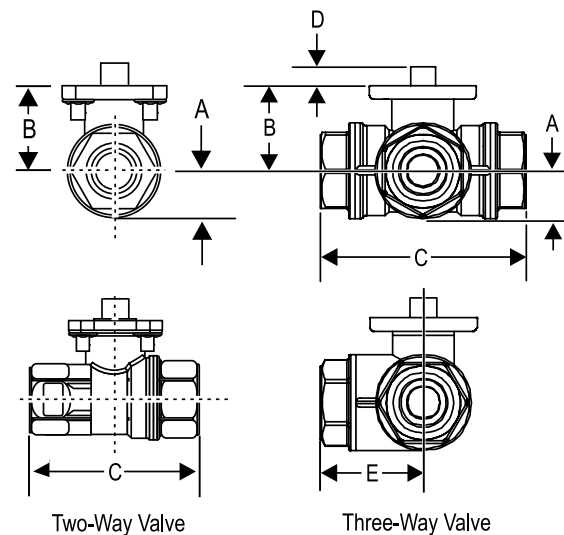
DN15...50, PN40

The VG1000 series ball valves are used for the water control of air treatment systems in ventilation and air conditioning units as well as heating system.

They are operated by direct or remote mounted Spring Return and Non Spring Return actuators.

## Features

- Forged brass body
- Kvs 1...63
- 2-way, 3-way mixing and diverting configurations
- Inherent Equal Percentage Flow Characteristic in the in-line port of all valves
- BSPP female threaded body connections
- **Service**  
Hot and cold water:  
-30...140°C with 8 Nm Non Spring Return  
-30...95°C with 4 Nm Non Spring Return (140°C with M9000-561 Thermal Barrier)  
-30...100°C with 3 Nm and 8 Nm Spring Return (140°C with M9000-561 Thermal Barrier)  
Water with glycol to max 50% volume  
Steam to max 103 kPa at 121°C with 8 Nm Non Spring Return  
Steam to max 103 kPa at 121°C with 4 Nm Non Spring Return, 3 Nm and 8 Nm Spring Return with Thermal Barrier
- M9000-525-5 linkage kit available for field mounting to M9108 series electric actuators



## Dimensions in mm

Body size	A	B	C	D	E
DN15	17	31	67	9	33
DN20			75		38
DN25	19	33	92		46
DN32	26	44	109		54
DN40	29	48	119		59
DN50	37	53	139		74

## HVAC CONTROL PRODUCTS Valves

### Plant Valves VG1000 Threaded

#### Assemblies of valves with PROPORTIONAL ACTUATORS

Spring Return Function	---		•				
Supply Voltage	24 VAC						
Torque	4 Nm	8 Nm	3 Nm	8 Nm			
Running Time	72 s	30 s	90 sec	170 sec			
Spring Return Time Power Off	---		16 sec	22 sec			
Control Signal	VDC:	0 - 10 / 2 - 10					
	mA:	0 - 20 / 4 - 20					
Switches	---	2 x SPDT	---	1 x SPDT	---	2 x SPDT	
Feedback	VDC:	0 - 10 / 2 - 10					
Actuator Code	VA9104-GGA-1S	M9108-GGA-5	M9108-GGC-5	VA9203-GGA-1Z	VA9203-GGB-1Z	VA9208-GGA-1	VA9208-GGC-1
Linkage Code	---	M9000-525-5		---			
Ordering Code Suffix for Assemblies	+5A4GGA +6A4GGA*	+5A8GGA	+5A8GGC	Spring Opens Configuration			
				+533GGA +633GGA*	+533GGB +633GGB*	+538GGA +638GGA*	+538GGC +638GGC*
				Spring Close Configuration			
				+553GGA +653GGA*	+553GGB +653GGB*	+558GGA +658GGA*	+558GGC +658GGC*

#### Ordering Codes

Valve Code**	Body Size	Kvs (Control Port)	Kvs (Bypass Port)***	Disc	Valid combinations of valves, linkages and actuators							
VG1x05AD	DN15	1.0	0.63	•	•	•	•	•	•	---	---	
VG1x05AE		1.6	1.0		•	•	•	•	•	---	---	
VG1x05AF		2.5	1.6		•	•	•	•	•	---	---	
VG1x05AG		4.0	2.5		•	•	•	•	•	---	---	
VG1x05AL		6.3	4.0		•	•	•	•	•	•	---	---
VG1x05AN		10	5.0		---	•	•	•	•	•	---	---
VG1x05BL	DN20	6.3	4.0	•	•	•	•	•	•	---	---	
VG1x05BN		10	5.0	---	•	•	•	•	•	---	---	
VG1x05CN	DN25	10	6.3	•	•	•	•	•	•	---	---	
VG1x05CP		16	8.0	---	•	•	•	•	•	---	---	
VG1x05DP	DN32	16	10.0	•	---	•	•	---	---	•	•	
VG1x05DR		25	12.5	---	---	•	•	---	---	•	•	
VG1x05ER	DN40	25	16	•	---	•	•	---	---	•	•	
VG1x05ES		40	20	---	---	•	•	---	---	•	•	
VG1x05FS	DN50	40	25.0	•	---	•	•	---	---	•	•	
VG1x05FT		63	31.5	---	---	•	•	---	---	•	•	

**Notes:**

\* = M9000-561 Thermal Barrier Included

\*\* = x = 2 2-way  
x = 8 3-way

\*\*\* = Only 3-way valves

## HVAC CONTROL PRODUCTS Valves

### Plant Valves VG1000 Threaded

#### Assemblies of valves with FLOATING and ON/OFF ACTUATORS

Spring Return Function	---						•											
Supply Voltage	24 VAC	100-230 VAC	24 VAC	230 VAC			24 VAC											
Torque	4 Nm		8 Nm			3 Nm		8 Nm										
Running Time	72 s		30 s			90 s		150 s										
Spring Return Time Power Off	---						16 s		22 s									
Control Signal	Floating with time-out & ON/OFF						Floating & ON/OFF											
Switches	---		2 x SPDT	---		2 x SPDT	---		1 x SPDT	---		2 x SPDT						
Feedback	---																	
Actuator Code	VA9104-IGA-1S	VA9104-IUA-1S	M9108-AGA-5	M9108-AGC-5	M9108-ADA-5	M9108-ADC-5	VA9203-AGA-1Z	VA9203-AGB-1Z	VA9208-AGA-1	VA9208-AGC-1								
Linkage Code	---		M9000-525-5				---											
Ordering code suffix for assemblies							Spring Opens Configuration											
	+5A4IGA +6A4IGA*	+5A4IUA +6A4IUA*	+5A8AGA	+5A8AGC	+5A8ADA	+5A8ADC	+533AGA +633AGA*	+533AGB +633AGB*	+538AGA +638AGA*	+538AGC +638AGC*								
							Spring Close Configuration											
							+553AGA +653AGA*						+553AGB +653AGB*		+558AGA +658AGA*		+558AGC +658AGC*	

#### Ordering Codes

Valve Code**	Body Size	Kvs (Control Port)	Kvs (Bypass Port)***	Disc	Valid combinations of valves, linkages and actuators												
VG1x05AD	DN15	1.0	0.63	•	•	•	•	•	•	•	•	•	•	•	---	---	
VG1x05AE		1.6	1.0		•	•	•	•	•	•	•	•	•	•	•	---	---
VG1x05AF		2.5	1.6		•	•	•	•	•	•	•	•	•	•	•	---	---
VG1x05AG		4.0	2.5		•	•	•	•	•	•	•	•	•	•	•	---	---
VG1x05AL		6.3	4.0		•	•	•	•	•	•	•	•	•	•	•	---	---
VG1x05AN		10	5.0		---	•	•	•	•	•	•	•	•	•	•	---	---
VG1x05BL	DN20	6.3	4.0	•	•	•	•	•	•	•	•	•	•	---	---		
VG1x05BN		10	5.0	---	•	•	•	•	•	•	•	•	•	---	---		
VG1x05CN	DN25	10	6.3	•	•	•	•	•	•	•	•	•	•	---	---		
VG1x05CP		16	8.0	---	•	•	•	•	•	•	•	•	•	---	---		
VG1x05DP	DN32	16	10.0	•	---	---	•	•	•	•	•	•	•	---	---		
VG1x05DR		25	12.5	---	---	---	•	•	•	•	•	•	•	•	---	---	
VG1x05ER	DN40	25	16	•	---	---	•	•	•	•	•	•	•	---	---		
VG1x05ES		40	20	---	---	---	•	•	•	•	•	•	•	•	---	---	
VG1x05FS	DN50	40	25.0	•	---	---	•	•	•	•	•	•	•	---	---		
VG1x05FT		63	31.5	---	---	---	•	•	•	•	•	•	•	•	---	---	

#### Notes

\* = M9000-561 Thermal Barrier Included

\*\* = x = 2 2-way  
x = 8 3-way

\*\*\* = Only 3-way valves

## HVAC CONTROL PRODUCTS Valves

### Plant Valves VG1000 Threaded

#### Assemblies of valves with ON/OFF ACTUATORS

Spring Return Function	•							
Supply Voltage	24 V AC/DC				100...240 V AC		230 VA	
Torque	3 Nm		8 Nm		3 Nm		8 Nm	
Running Time	60 s		60 s		60 s		60 s	
Spring Return Time Power Off	22 s		21 s		22 s		21 s	
Control Signal	ON/OFF							
Switches	---	1 x SPDT	---	2 x SPDT	---	1 x SPDT	---	2 x SPDT
Feedback	---							
Actuator Code	VA9203- BGA-1	VA9203- BGB-1	VA9208- BGA-1	VA9208- BGC-1	VA9203- BUA-1	VA9203- BUB-1	VA9208- BDA-1	VA9208- BDC-1
Linkage Code	---							
Ordering code suffix for assemblies	Spring Opens Configuration							
	+533BGA +633BGA*	+533BGB +633BGB*	+538BGA +638BGA*	+538BGC +638BGC*	+533BUA +633BUA*	+533BUB +633BUB*	+538BDA +638BDA*	+538BDC +638BDC*
	Spring Close Configuration							
	+553BGA +653BGA*	+553BGB +653BGB*	+558BGA +658BGA*	+558BGC +658BGC*	+553BUA +653BUA*	+553BUB +653BUB*	+558BDA +658BDA*	+558BDC +658BDC*

#### Ordering Codes

Valve Code**	Body size	Kvs (Control Port)	Kvs (Bypass Port)***	Disc	Valid combinations of valves, linkages and actuators							
VG1x05AD	DN15	1.0	0.63	•	•	•	---	---	•	•	---	---
VG1x05AE		1.6	1.0		•	•	---	---	•	•	---	---
VG1x05AF		2.5	1.6		•	•	---	---	•	•	---	---
VG1x05AG		4.0	2.5		•	•	---	---	•	•	---	---
VG1x05AL		6.3	4.0		•	•	---	---	•	•	---	---
VG1x05AN		10	5.0		---	•	•	---	---	•	•	---
VG1x05BL	DN20	6.3	4.0	•	•	•	---	---	•	•	---	---
VG1x05BN		10	5.0	---	•	•	---	---	•	•	---	---
VG1x05CN	DN25	10	6.3	•	•	•	---	---	•	•	---	---
VG1x05CP		16	8.0	---	•	•	---	---	•	•	---	---
VG1x05DP	DN32	16	10.0	•	---	---	•	•	---	---	•	•
VG1x05DR		25	12.5	---	---	---	•	•	---	---	•	•
VG1x05ER	DN40	25	16	•	---	---	•	•	---	---	•	•
VG1x05ES		40	20	---	---	---	•	•	---	---	•	•
VG1x05FS	DN50	40	25.0	•	---	---	•	•	---	---	•	•
VG1x05FT		63	31.5	---	---	---	•	•	---	---	•	•

#### Notes

\* = M9000-561 Thermal Barrier Included

\*\* = x = 2 2-way  
x = 8 3-way

\*\*\* = Only 3-way valves