

# ACTUATORS AND VALVES 2021

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# ACTUATORS AND VALVES

## ACTUATORS

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## SPRING RETURN DAMPER ACTUATORS

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# ACTUATORS AND VALVES

## ACTUATORS

### TERMINAL UNIT VALVE ACTUATORS

## VA-7080

### THERMAL ON/OFF CONTROL

The VA-7080 Terminal Unit Valve Actuators series provide ON/OFF and DAT control in HVAC application.

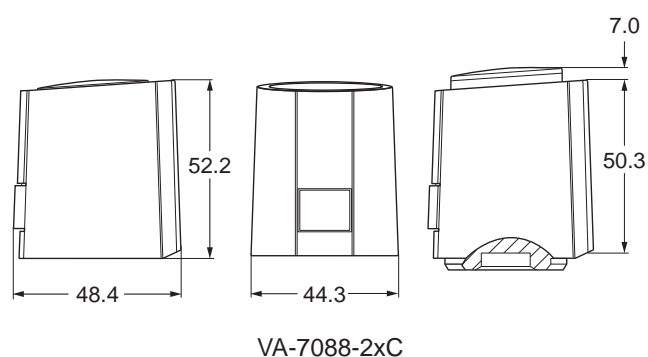
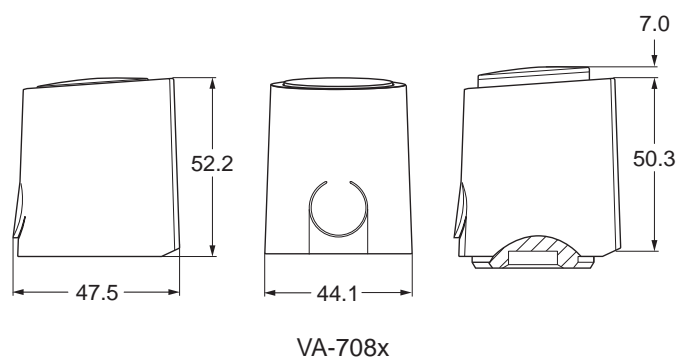
The compact design of these actuators make them suitable for installations in confined spaces, such as fan-coil applications.

The VA-7080 Actuators are designed for field mounting onto all Johnson Controls Terminal Unit Valves: VG3000, VP1000 (see *pertinent Product Bulletins*).

## FEATURES

- 24 VAC/DC and 230 VAC power supply
- ON/OFF or DAT controls
- NC version (stem retracts when energized)
- NO version (stem extends when energized)
- Easy mounting solution
- Factory mounted cable 1.5 m
- Models with auxiliary switch

## DIMENSIONS (in mm)





## ACTUATORS

### VA-7080 TERMINAL UNIT VALVE ACTUATORS

## ORDERING INFORMATION

CODES	SUPPLY VOLTAGE	ACTION CONTROL	FORCE	STROKE	FACTORY SETTING	MOUNTING THREAD	PROTECTION CLASS	PACKAGING	POWER CONSUMPTION		AUXILIARY SWITCHES	
									Continuous	Start-up		
VA-7081-21	24 VAC/VDC	ON/OFF or DAT	100 N	5.0 mm	Normally closed (stem retracts when energized) 2 m cable length	M28x1.5	IP54	Single packaged in carton box	1 W	<300 mA during max 2 min.	---	
VA-7088-21						M30x1.5						
VA-7081-23	230 VAC					M28x1.5						<550 mA during 100 ms. max
VA-7088-23						M30x1.5						
VA-7080-21	24 VAC/VDC				Normally open (stem extends when energized) 2 m cable length	M28x1.5				<300 mA during max 2 min.		
VA-7087-21						M30x1.5						
VA-7080-23	230 VAC					M28x1.5				<550 mA during 100 ms. max		
VA-7087-23						M30x1.5						
VA-7088-21C	24 VAC/VDC				Normally closed (stem retracts when energized) 2 m cable length	M30x1.5				<300 mA during max 2 min.		■
VA-7088-23C	230 VAC									<550 mA during 100 ms. max		■

## ACCESSORIES (ORDER SEPARATELY)

CODES	DESCRIPTION
VA50	Adapter for VG6000
VA64	Adapter for VP1000

## SPARE PARTS

CODES	DESCRIPTION
VA80	Standard adapter M30 x 1.5 for VG3000 and V5000, included in the product package
VA17	Standard adapter M28 x 1.5 for VG5000 and VG4000, included in the product package



## ACTUATORS

### VA-7080 TERMINAL UNIT VALVE ACTUATORS

#### ADAPTER SELECTION GUIDE FOR JOHNSON CONTROLS VALVES

VALVE	ACTUATOR	ADAPTER	NOTE
VG3000	VA-7087-2x	---	Included in the actuator packaging
	VA-7088-2x	---	Included in the actuator packaging
V5000	VA-7087-2x	---	Included in the actuator packaging
	VA-7088-2x	---	Included in the actuator packaging
VG6000	VA-7087-2x	VA50	To be ordered separately
	VA-7088-2x	VA50	To be ordered separately
VP1000	VA-7080-2x	VA64	To be ordered separately
	VA-7081-2x	VA64	To be ordered separately
VG5000	VA-7080-2x	---	Included in the actuator packaging
	VA-7081-2x	---	Included in the actuator packaging
VG4000	VA-7080-2x	---	Included in the actuator packaging
	VA-7081-2x	---	Included in the actuator packaging

# ACTUATORS AND VALVES

## ACTUATORS

### TERMINAL UNIT VALVE ACTUATORS

## VA-7090

### THERMAL 0...10 V CONTROL

The VA-709x Series Terminal Unit Valve Actuators provides Proportional Control in HVAC application.

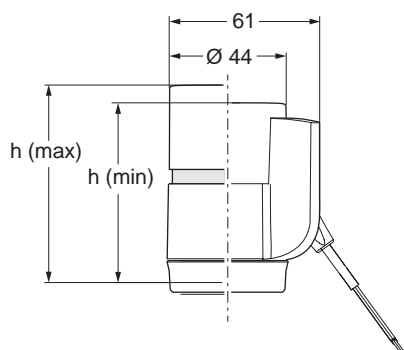
The compact design of these actuators make them suitable for installations in confined spaces, such as fan-coil applications. The VA-709x Actuators are designed for field mounting onto all Johnson Controls terminal unit valves: VG3000 and VP1000 (see pertinent Product Bulletins).

Moreover, thanks to an innovative fixing system, the VA-709x is suitable for almost all the terminal unit valves in the market.

## FEATURES

- 24 VAC power supply
- 0...10 V control signal
- NC version (stem retracts when energized)
- NO version (stem extends when energized)
- Easy mounting solution
- Factory mounted cable 2 m

## DIMENSIONS (in mm)



	H (max)	H (min)
Normally closed	66 mm	59 mm
Normally open	64 mm	59 mm





## ACTUATORS

VA-7090 TERMINAL UNIT VALVE ACTUATORS

### ORDERING INFORMATION

CODES	SUPPLY VOLTAGE	ACTION CONTROL	FORCE	STROKE	FACTORY SETTING	MOUNTING THREAD	PROTECTION CLASS	PACKAGING	POWER CONSUMPTION	
									Continuous	Start-up
VA-7097-21	24 VAC	0...10 V	125 N	4.5 mm	Normally open	M30x1.5	IP54	Single packaged in carton box	2 W	250 mA
VA-7098-21					Normally closed					

### ACCESSORIES (ORDER SEPARATELY)

CODES	DESCRIPTION	PACKAGING
0550390001	Elevated Bayonet Nut M30x1.5 with normal and short insert	Single packaged in Plastic Bag
0550390101	Elevated Bayonet Nut M28x1.5 with normal and short insert	
0550390201	Elevated Bayonet Nut M30x1 with normal and short insert	



# ACTUATORS AND VALVES

## ACTUATORS

### TERMINAL UNIT VALVE ACTUATORS

## VA-7480

### MOTORIZED FLOATING AND PROPORTIONAL CONTROL

The VA-748x series provides Floating, Proportional or Proportional control with 0-10 V position feedback signal in HVAC applications. The compact design of this actuator makes it suitable for installation in confined spaces, such as fan coil, chilled ceiling, manifolds, etc.

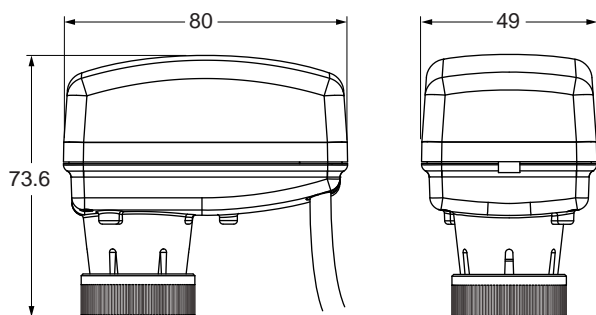
The VA-748x series actuator is designed for field mounting onto VG3000 and VP1000 terminal unit valves (*see pertinent Product Bulletins*).

Due to the innovative concept of different strokes setting the VA-748x can be installed over most of the terminal unit valve in the market.

## FEATURES

- 24 VAC/VDC and 230 VAC power supply
- Floating and Proportional control
- Threaded nut M28x1.5 and M30x1.5
- Auto stroke detection
- Configurable stroke
- Configurable to direct and reverse action
- Configurable analog inputs
- Max mechanical stroke 6.3 mm
- Feedback Control

## DIMENSIONS (in mm)





## ACTUATORS

### VA-7480 TERMINAL UNIT VALVE ACTUATORS

## ORDERING INFORMATION

CODES	CONTROL TYPE	POWER SUPPLY	RUNNING TIME (s/mm)	NOMINAL FORCE (N)	FACTORY STROKE CONFIGURATION	CABLE LENGTH (m)	MOUNTING THREAD NUT	SPECIAL CONFIGURATION	FEEDBACK	FAIL SAFE				
VA-7480-0011	Floating	24 VAC	13	120	---	1.5	M28x1.5	---	---	---				
VA-7480-0311						3		UL Listed						
VA-7481-0011			8			M30x1,5								
VA-7480-0001			13											
VA-7481-0001			8											
VA-7480-0201-TA			13			2								
VA-7480-0501-TA		5												
VA-7480-4001		230 VAC		120		---	1.5	M28x1.5			---			
VA-7480-4003														
VA-7480-0013														
VA-7481-0013			8											
VA-7480-0003			13											
VA-7481-0003			8					M30x1,5						
VA-7481-4003		Proportional	24 VAC/VDC	8		120	3.2 mm	1.5			M30x1,5	---	---	---
VA-7482-2001							4.3 mm							
VA-7482-3001	6.0 mm													
VA-7482-1001-RA	3.2 mm				3		Reverse action							
VA-7482-1301-RA	4.3 mm													
VA-7482-2001-RA	1.5				M28x1.5		---							
VA-7482-0011														
VA-7482-0311	3				UL Listed									
VA-7482-0312														
VA-7482-2201-TA	140				4.3 mm		2	M30x1,5	Reverse action					
VA-7482-2501-TA							5							



## ACTUATORS

### VA-7480 TERMINAL UNIT VALVE ACTUATORS

CODES	CONTROL TYPE	POWER SUPPLY	RUNNING TIME (s/mm)	NOMINAL FORCE (N)	FACTORY STROKE CONFIGURATION	CABLE LENGTH (m)	MOUNTING THREAD NUT	SPECIAL CONFIGURATION	FEEDBACK	FAIL SAFE
VA-7482-5001	Proportional	24 VAC/VDC	8	120	2.5 mm	1.5	M30x1,5	---	---	---
VA-7482-6001					5.0 mm					
VA-7482-7001					5.5 mm					
VA-7482-8201				160	Auto stroke detection	2 (Halogen Free)		Reverse action		
VA-7482-9201										
VA-7482-8201-RA						2 (Halogen Free)		Reverse action		
VA-7482-9201-RA										
VA-7482-8002-RA						2 (Halogen Free)		---		
VA-7482-9002-RA										
VA-7483-8201						2 (Halogen Free)		---		
VA-7483-9201										
VA-7483-8201-RA						2 (Halogen Free)		---		
VA-7483-9201-RA										
VA-7484-8001*				1.5 (Halogen Free)	Reverse action					
VA-7484-9001*						---				
VA-7484-8001-RA*								Reverse action		
VA-7484-9001-RA*						---				

\* Next Release January 2021!

#### Note

Models available with special cable length and reverse action factory set. (Please refer to the Product Bulletin)

# ACTUATORS AND VALVES

## ACTUATORS

TERMINAL UNIT  
VALVE ACTUATORS

# SMART FLOW CONTROL SERIES

SMART TERMINAL UNIT AND ROOM CONTROL

The Smart Flow Control Series combining a V6W0000 Six-Way Ball Valve with a smart programmable digital actuator (VMA) is the most efficient way to control technology advanced applications.

The Smart Flow Control Series delivers flow control performance and greater flexibility through sensor connection and extensive capabilities. Room control can be easily integrated into the VMA by connecting a NS8000 Network Sensor.

## FEATURES

- Nominal voltage 24V AC
- BACnet® MS/TP and BACnet® IP protocol communication
- Electronic pressure independent solution - Vortex Trail Flow Sensor fully integrated
- VMA is used in combination with a NS8000 Series Room Sensor to provide an all in one full-control user experience
- Capability for measuring and displaying zone temperature, occupancy detection, duct temperature, zone humidity and dewpoint, determination, carbon dioxide (CO<sub>2</sub>) level, setpoint adjustments, fan speed control or discharge air temperatures.

## ORDERING INFORMATION

CODES	DN	CONNECTION	DESCRIPTION
SFC1656-V6W0-0	15	1/2" female BSPP	Smart Flow Control Kit (VMA BACnet MS/TP, six-way valve, flow sensor, cable)
SFC1656-V6W1-0		3/4" male flat ends	
SFC1930-V6W0-0		1/2" female BSPP	Smart Flow Control IP Kit (VMA BACnet IP, six-way valve, flow sensor, cable, valve linkage)
SFC1930-V6W1-0		3/4" male flat ends	



# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN PLANT VALVE ACTUATORS

## VA-7200

### FLOATING AND PROPORTIONAL CONTROL

The VA-720x Series Synchronous Motor Driven Actuator provides Floating or Proportional control of valves, with up to 19 mm stroke in heating, ventilation and air conditioning applications.

This compact Non-Spring Return Actuator has a 1000N nominal force and responds to a variety of input signals.

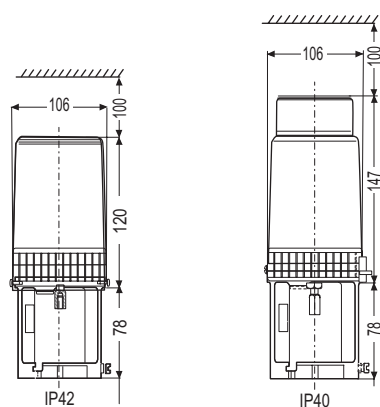
The VA-7200 series can be easily field mounted or ordered factory coupled to VG7000 series valves in accordance with the specified maximum close-off pressure ratings.



## FEATURES

- 1000N force output compact unit
- Magnetic clutch
- Signal fail "safe position"

## DIMENSIONS (in mm)



## ORDERING INFORMATION

CODES	SUPPLY VOLTAGE (50/60 Hz)	CONTROL	MOTOR RATING	PROTECTION CLASS
VA-7200-1001	24 VAC	Floating	5 W	IP42
VA-7202-1001		Proportional 0...10 VDC / 0(4)...20 mA		



# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN PLANT VALVE ACTUATORS

## VA-7700

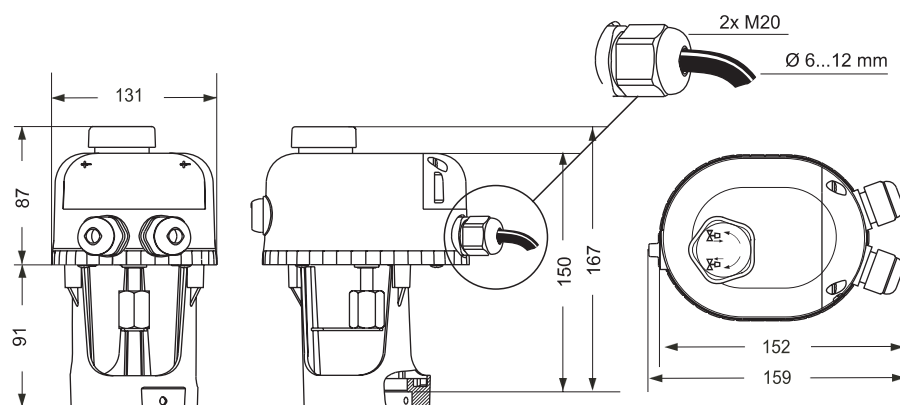
### FLOATING AND PROPORTIONAL CONTROL

The VA-7700 series provides Floating and Proportional control and can be mounted onto VG7000, VGS800 and VG9000 valves.

### FEATURES

- 24 VAC and 230 VAC power supply
- Floating and proportional control
- Manual override
- LED operating status display
- Self calibrating
- IP54 enclosive protection

### DIMENSIONS (in mm)





## ACTUATORS

### VA-7700 NON-SPRING RETURN PLANT VALVE ACTUATORS

## ORDERING INFORMATION

### MOUNTING ONTO VG7000 SERIES VALVES

CODES	SUPPLY VOLTAGE (50/60Hz)	ACTION CONTROL	NOMINAL FORCE (N)	STROKE (mm)	FULL STROKE TIME (s)	PROTECTION CLASS	POWER CONSUMPTION
VA-7700-1001	24 VAC	Floating	500	20	190	IP54	2.4 VA
VA-7700-1003	230 VAC						
VA-7740-1001	24 VAC						
VA-7740-1003	230 VAC						
VA-7706-1001	24 VAC	Proportional	500	20	190	IP54	4.4 VA
VA-7746-1001							

### MOUNTING ONTO VGS8000 AND VG9000 SERIES VALVES

CODES	SUPPLY VOLTAGE (50/60 Hz)	ACTION CONTROL	NOMINAL FORCE (N)	STROKE (mm)	FULL STROKE TIME (s)	PROTECTION CLASS	POWER CONSUMPTION
VA-7700-8201	24 VAC	Floating	500	20	190	IP54	2.4 VA
VA-7700-8203	230 VAC						
VA-7740-8201	24 VAC						
VA-7740-8203	230 VAC						
VA-7706-8201	24 VAC	Proportional	500	20	190	IP54	4.4 VA
VA-7746-8201							

# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN PLANT VALVE ACTUATORS

## VA7810

#### FLOATING AND PROPORTIONAL CONTROL

The VA7810 Non Spring Return Actuator with 1000 N thrust for valves in heating, ventilation and air conditioning applications is available for Floating or Proportional control.

All models have manual override as standard and provide stroke capabilities of 7 mm to 25 mm. Proportional models are self-calibrating.

The actuator is intended for use with Johnson Controls VG7000 and VGS800 threaded valves as well as VG8000 and VG9000 flanged valves. All valves should be fitted in accordance with the maximum close-off pressure ratings specified.

Valve/actuators can be ordered as separate units or as a factory fitted valve/actuator combinations.

## FEATURES

- Proportional Actuators are self calibrating
- All models can also be used as floating and ON/OFF Actuators
- Force controlled motor shut-off
- Manual override as standard
- IP54 enclosure protection
- Delivered with fitted 1.5 m cable and wire terminals
- Status LED
- Models with optional aux. switches or 2 k $\Omega$  feedback potentiometer
- Control-Signal failure - stem to pre-determined position
- Stroke position indicator

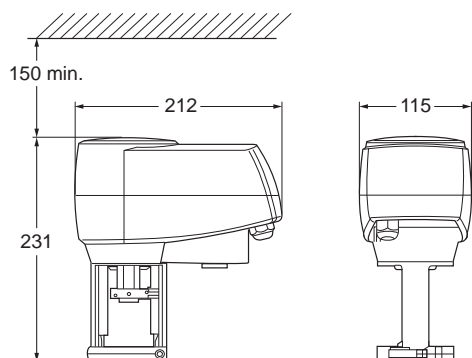




## ACTUATORS

### VA7810 NON-SPRING RETURN PLANT VALVE ACTUATORS

#### DIMENSIONS (in mm)



#### ORDERING INFORMATION

##### MOUNTING ONTO VG7000 AND VGS800 THREADED VALVES

CODES	SUPPLY VOLTAGE (50/60 Hz)	ACTION CONTROL	FORCE (N)	STROKE (mm)	FULL STROKE TIME (s)	PROTECTION CLASS	POWER CONSUMPTION	SPRING RETURN ACTION	ACCESSORIES FACTORY MOUNTED
VA7810-ADA-11	230 VAC	ON/OFF or Floating	1000	25	150	IP54	8 VA	---	---
VA7810-ADC-11									2 aux switches
VA7810-AGA-11	24 VAC	ON/OFF or Floating	1000	25	150	IP54	3 VA	---	---
VA7810-AGC-11									2 aux switches
VA7810-AGH-11		2 KΩ pot							
VA7810-GGA-11		---							
VA7810-GGC-11		ON/OFF, Floating or Proportional			150 (selectable 75)		6 VA		2 aux switches

##### MOUNTING ONTO VG8000 AND VG9000 FLANGED VALVES

CODES	SUPPLY VOLTAGE (50/60 Hz)	ACTION CONTROL	FORCE (N)	STROKE (mm)	FULL STROKE TIME (s)	PROTECTION CLASS	POWER CONSUMPTION	SPRING RETURN ACTION	ACCESSORIES FACTORY MOUNTED
VA7810-ADA-12	230 VAC	ON/OFF or Floating	1000	25	150	IP54	8 VA	---	---
VA7810-ADC-12									2 aux switches
VA7810-AGA-12	24 VAC	ON/OFF or Floating	1000	25	150	IP54	3 VA	---	---
VA7810-AGC-12									2 aux switches
VA7810-AGH-12		2 KΩ pot							
VA7810-GGA-12		---							
VA7810-GGC-12		ON/OFF, Floating or Proportional			150 (selectable 75)		6 VA		2 aux switches

# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN PLANT VALVE ACTUATORS

## VA1125

### FLOATING AND PROPORTIONAL CONTROL

The VA1125 Valve Actuators are used to control Valves in HVAC systems. They are of modular construction so that the required type of control signal is achieved simply by fitting a module with the required function in-situ. It can be mounted onto VG8000, VG8300 and VG9000 series valves.

## FEATURES

- 24 VAC and 230 VAC power supply
- Floating and Proportional control
- Manual override
- Automatic stem coupling
- Actuator fixed to valve with one ring nut
- Self adjusting, automatic stroke adjustment, calibrated pressure control at the end positions
- 2 auxiliary switches, feedback potentiometer and split range unit available
- IP66
- Selectable characteristic curve
- Selectable running time



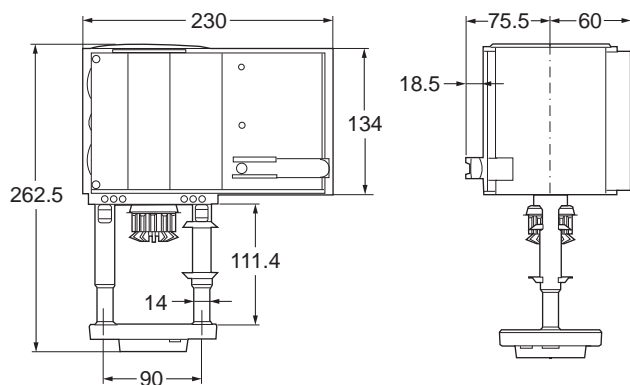




## ACTUATORS

### VA1125 NON-SPRING RETURN PLANT VALVE ACTUATORS

#### DIMENSIONS (in mm)



#### ORDERING INFORMATION

CODES	24 VAC ACTUATORS	POWER CONSUMPTION	PROTECTION CLASS	NOMINAL STROKE (mm)
VA1125-GGA-1	2500N; Non-Spring Return	20.5 VA	IP66	49

#### ACCESSORIES MODULES FOR ON SITE INSTALLATION

CODES	DESCRIPTION
VA1000-M230N	230 VAC module
VA1000-P2	2 K $\Omega$ feedback potentiometer
VA1000-S2	2 SPDT auxiliary switches
VA1000-EP	Extension kit for applications with temperatures greater than 140°C up to 200°C





## ACTUATORS

### FA-3000 NON-SPRING RETURN PLANT VALVE ACTUATORS

## ORDERING INFORMATION

CODES	SUPPLY VOLTAGE (50/60 Hz)	ACTION CONTROL	FORCE (N)	STROKE (mm)	FULL STROKE TIME (s)	PROTECTION CLASS	POWER CONSUMPTION	ACCESSORIES FACTORY MOUNTED
FA-3300-7416	24 VAC	Floating	6000	42 (max 45)	150	IP65	37 VA	---
FA-3303-7416								2 aux switches and 2 K $\Omega$ pot
FA-3341-7416		Proportional					2 aux switches	
FA-3300-7411	230 VAC	Floating	6000	42 (max 45)	150	IP65	37 VA	---
FA-3303-7411								2 aux switches and 2 K $\Omega$ pot

# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN PLANT VALVE ACTUATORS

## RA-3000

### FLOATING AND PROPORTIONAL CONTROL

The RA-3000 Series Synchronous Motor-Driven Reversible Actuators are available for floating or with electric positioner for 0...10 V control.

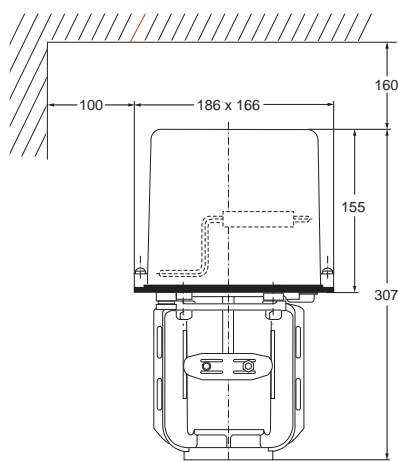
They feature factory calibrated pressure switches to provide specified close-off ratings.

These actuators are available in three sizes with 1600 N, 1800 N and with 3000 N nominal force and can be used with VG8000 and VG9000 series valves according to maximum close-off pressure ratings specified. Factory fitted options, such as 2kOhm feedback potentiometer, auxiliary switches and hand crank are available.

## FEATURES

- Uses synchronous motor with pressure switches
- Special clamp coupler quick-fit systems
- Models for floating and proportional 0...10 VDC control
- Positioner with adjustable starting point, span, and direct/reverse action
- Active 0...10 VDC position feedback on proportional models
- Optional auxiliary switches and feedback potentiometer available
- Optional hand crank

## DIMENSIONS (in mm)





## ACTUATORS

### RA-3000 NON-SPRING RETURN PLANT VALVE ACTUATORS

## ORDERING INFORMATION

### FOR FLOATING CONTROL

CODES	HAND CRANK	FORCE (N)	SUPPLY VOLTAGE	NOMINAL STROKE (mm)	PROTECTION CLASS
RA-3000-7226	---	1800	24 VAC (50/60 Hz)	25	IP54
RA-3100-7226	■		230 VAC (50/60 Hz)		
RA-3000-7227	---			24 VAC (60 Hz)	
RA-3100-7227	■		42		
RA-3000-7325	---	3000		24 VAC (50 Hz)	
RA-3100-7325	■		230 VAC (50 Hz)		
RA-3000-7326	---			24 VAC (50 Hz)	
RA-3100-7326	■				
RA-3000-7327	---		230 VAC (50 Hz)		
RA-3100-7327	■				

### FOR FLOATING CONTROL, WITH 2 AUXILIARY SWITCHES AND 2 KO $\Omega$ m FEEDBACK POTENTIOMETER

CODES	HAND CRANK	FORCE (N)	SUPPLY VOLTAGE	NOMINAL STROKE (mm)	PROTECTION CLASS
RA-3003-7226	---	1800	24 VAC (50/60 Hz)	25	IP54
RA-3103-7226	■		230 VAC (50/60 Hz)		
RA-3003-7227	---			24 VAC (60 Hz)	
RA-3103-7227	■		42		
RA-3003-7325	---	3000		24 VAC (50 Hz)	
RA-3103-7325	■		230 VAC (50 Hz)		
RA-3003-7326	---			24 VAC (50 Hz)	
RA-3103-7326	■				
RA-3003-7327	---		230 VAC (50 Hz)		
RA-3103-7327	■				

### FOR PROPORTIONAL CONTROL WITH BUILT-IN POSITIONER 0...10 VDC AND 2 AUXILIARY SWITCHES

CODES	HAND CRANK	FORCE (N)	SUPPLY VOLTAGE	NOMINAL STROKE (mm)	PROTECTION CLASS
RA-3041-7226	---	1800 N	24 VAC (50/60 Hz)	25	IP54
RA-3141-7226	■		24 VAC (60 Hz)		
RA-3041-7325	---	3000 N		24 VAC (50 Hz)	
RA-3141-7325	■		24 VAC (50 Hz)		
RA-3041-7326	---			24 VAC (50 Hz)	
RA-3141-7326	■				



# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN PLANT VALVE ACTUATORS

## VA9104

### 4 Nm, ON/OFF, FLOATING AND PROPORTIONAL CONTROL ROTARY ACTUATORS FOR BALL VALVES

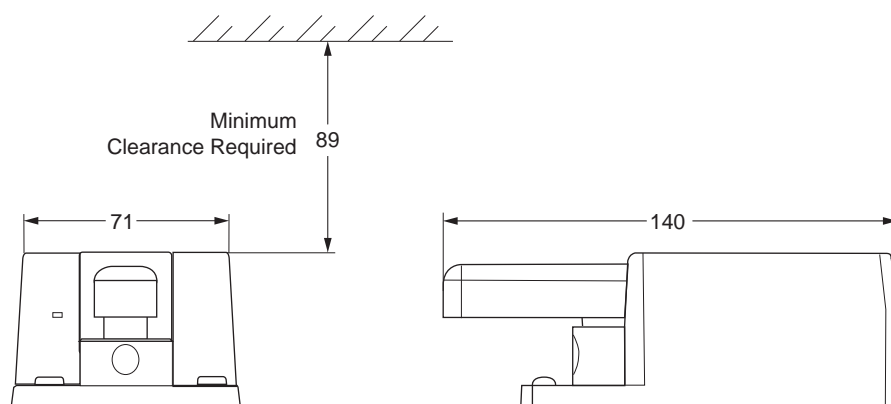
The Electric Actuator Series have been developed for operation of ball valves.

These synchronous, motor driven actuators are used to provide accurate positioning on VG1000 series DN15, DN20 and DN25 Ball Valves.

## FEATURES

- ON/OFF, Floating with timeout and Proportional control
- Load-independent running time
- Up to 5 Actuators in parallel operation possible
- Manual release button
- 1.2 m PVC cable
- Selectable direction of rotation
- Automatic shut-off at end position

## DIMENSIONS (in mm)





## ACTUATORS

### VA9104 NON-SPRING RETURN PLANT VALVE ACTUATORS

## ORDERING INFORMATION

CODES	RUNNING TIME (s/mm)	CONTROL SIGNALS	SUPPLY VOLTAGE (50/60 Hz)
VA9104-AGA-1S	72	Floating without timeout	24 VAC
VA9104-IGA-1S		ON/OFF and Floating with timeout	100 to 240 VAC
VA9104-IUA-1S			
VA9104-GGA-1S		Proportional 0(2)...10 VDC 0(4)...20 mA	24 VAC

# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN PLANT VALVE ACTUATORS

## VA9300

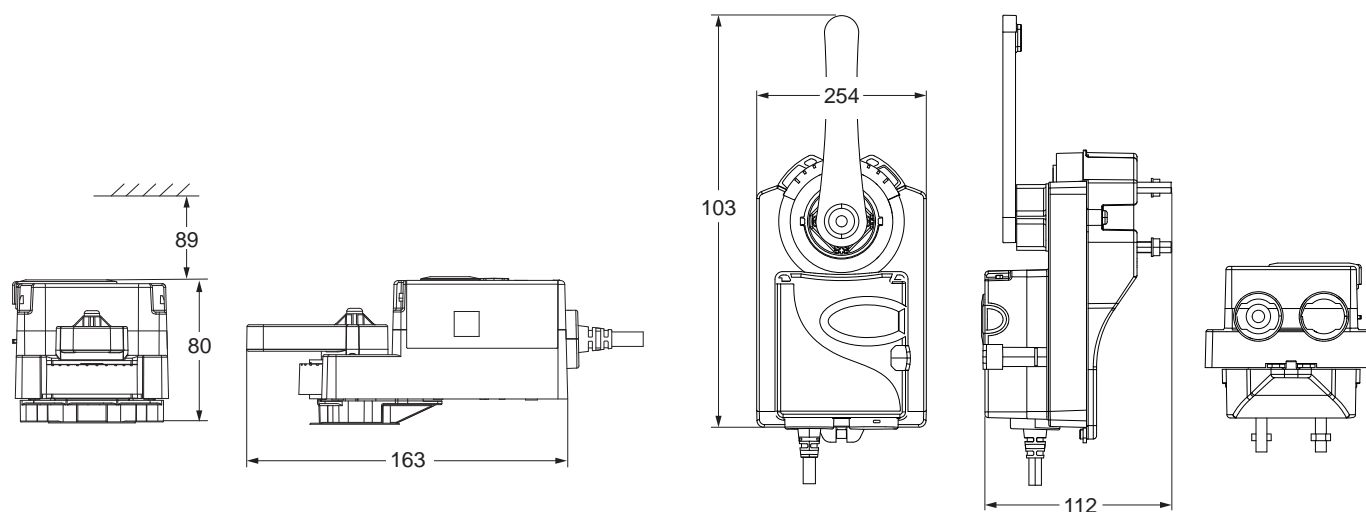
8, 10, 16, 20 AND 35 Nm, ON/OFF, FLOATING AND  
PROPORTIONAL CONTROL ROTARY ACTUATORS FOR BALL VALVES

The VA9300 Series Electric Non Spring Return Actuators are used to provide accurate positioning on Johnson Controls® VG1000 Series DN15 up to DN150 Ball Valves in Heating, Ventilating and Air Conditioning (HVAC) applications.

## FEATURES

- Automatic models with signal input detection model: On/Off, Floating and Proportional
- High speed actuator models
- Line voltage models
- Optional auxiliary switch & potentiometer feedback
- Direct-Coupled Design
- Rugged IP54 Rated Enclosure
- Electronic stall detection
- Microprocessor-controlled Brushless DC Motor

## DIMENSIONS (in mm)





## ACTUATORS

### VA9300 NON-SPRING RETURN PLANT VALVE ACTUATORS

## ORDERING INFORMATION

CODES	TORQUE (Nm)	RUNNING TIME (s)	CONTROL SIGNALS	SUPPLY VOLTAGE (50/60 Hz)
VA9308-AGA-1Z	8	8	ON/OFF and Floating	24 VAC/DC
VA9308-AUA-1Z				100 to 240 VAC
VA9310-AUA-1	10	35	ON/OFF and Floating	100 to 240 VAC
VA9310-GUA-1			Proportional	
VA9310-HGA-1			ON/OFF, Floating and Proportional	24 VAC/DC
VA9316-AUA-1Z	16	16	ON/OFF and Floating	24 VAC/DC
VA9316-AGA-1Z				100 to 240 VAC
VA9320-AUA-1	20	90	ON/OFF and Floating	100 to 240 VAC
VA9320-GUA-1			Proportional	
VA9320-HGA-1			ON/OFF, Floating and Proportional	24 VAC/DC
VA9335-AUA-1	35	150	ON/OFF and Floating	100 to 240 VAC
VA9335-GUA-1			Proportional	
VA9335-HGA-1			ON/OFF, Floating and Proportional	24 VAC/DC

## ACCESSORIES (ORDER SEPARATELY)

CODES	DESCRIPTION
M9000-342	NEMA 4X, IP66/67 Weathershield Kit for VG1000 Series Ball application of VA9104, VA9310, VA9203 and VA9208 Series Electric Actuators (quantity 1)
M9000-400	Jackshaft Linkage Adapter Kit (quantity 1)
M9000-561	Thermal Barrier Kit. Extends the VA9104, VA9310, VA9203 and VA9208 Series Electric Non-Spring Return Actuators applications to include low pressure steam (quantity 1).
M9000-606	Position indicator for M9300 Kits (quantity 5)
M9300-1	Auxiliary Switch Kit (one single-pole, double-throw)
M9300-2	Auxiliary Switch Kit (two single-pole, double-throw)
M9300-100	Threaded Conduit Adapters for 12.7 mm (1/2 in.) electrician's fittings (quantity 5)
M9300-140	External Auxiliary Feedback Potentiometer 140k Ohm
M9300-1K	External Auxiliary Feedback Potentiometer 1k Ohm
M9300-2K	External Auxiliary Feedback Potentiometer 2k Ohm
M9300-10K	External Auxiliary Feedback Potentiometer 10k Ohm
M9310-500	Ball Valve Linkage Kit for applying M9310 Series Electric Actuators to VG1000 Series Valves (quantity 1)
M9000-700	Universal ball valve linkage kit for mounting VA9308 and VA9310 actuators to other manufacturers ball valves

# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN PLANT VALVE ACTUATORS

## VA-9070

68 - 2030 Nm, ON/OFF, FLOATING AND PROPORTIONAL  
CONTROL ROTARY ACTUATORS FOR BUTTERFLY VALVES

The Actuator is specially developed for use with VFB Butterfly Valves in the HVAC industry. These bidirectional actuators are direct mounted on VFB Valves without any linkage. A single VA-9070 provides 68, 226, 339, 565, 734, 1470, 2030 Nm torque depending on the model.

With a power supply of 24 VAC or 230 VAC the actuators can be controlled in ON/OFF, Floating or Proportional configuration. Two isolated auxiliary switches and an electrical heater are standard in these series. The protection class is IP65 to ensure a dust-proof and shower-proof from all angles.

An hand operation is standard. When hand operation is active, a yellow ring is displayed and the actuator motor is not operative. The position indicator is clearly recognizable all around.

The opening and closing speed is independently adjustable in the proportional application.

## FEATURES

- Exact positioning ensures precise flow control
- Complete opening and closing from 100% to 0
- Range from 68 Nm to 2030 Nm
- Self-regulating heater as standard
- Construction optimized for operation with butterfly valves
- Two isolated auxiliary switches as standard



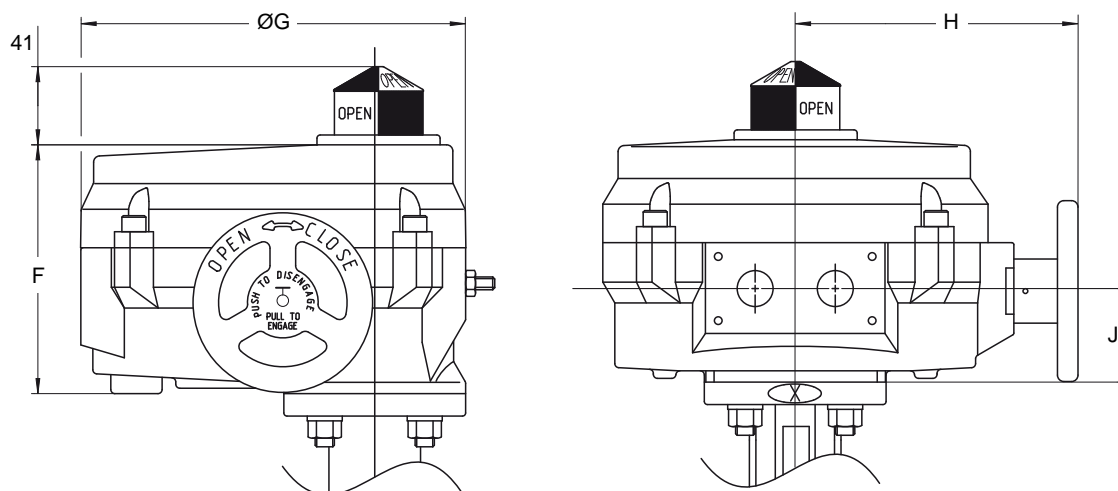


## ACTUATORS

### VA-9070 NON-SPRING RETURN PLANT VALVE ACTUATORS

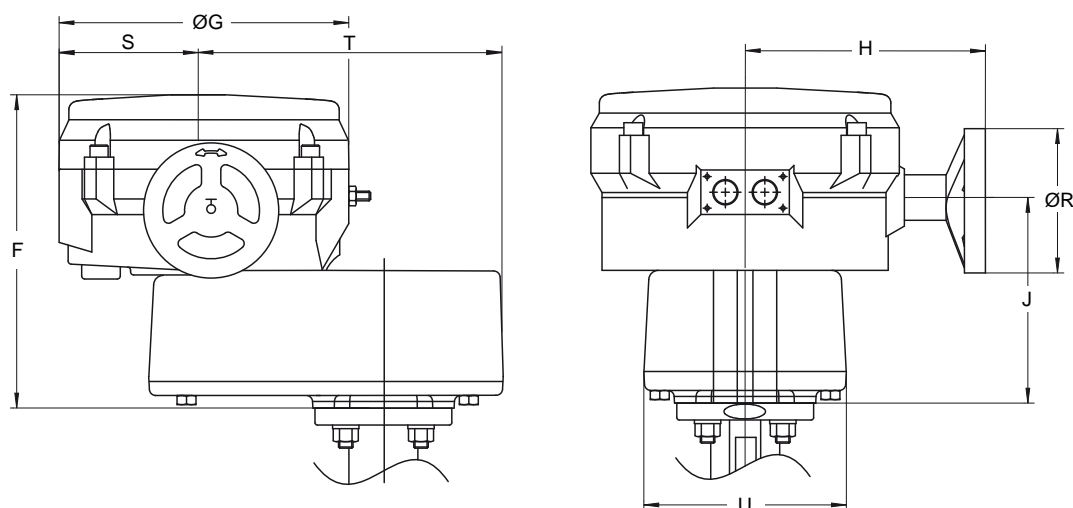
## DIMENSIONS (in mm)

### VALVES WITH VA-9072 / VA-9075 / VA-9077 / VA-9078 ACTUATORS



CODES	F	G	H	J	S	T	R	U	TOP FLANGE
VA-9072	130	191	142	48	---	---	---	---	F07
VA-9075	165	257	198	64	---	---	---	---	F07/F12

### VALVES WITH VA-907A / VA-907B ACTUATORS



CODES	F	G	H	J	S	T	R	U	TOP FLANGE
VA-9077 / VA-9078	183	307	241	74	---	---	---	---	F12/F16
VA-907A / VA-907B	317	307	241	206	155	323	305	203	F12/F16



## ACTUATORS

### VA-9070 NON-SPRING RETURN PLANT VALVE ACTUATORS

## ORDERING INFORMATION

CODES	TORQUE (Nm)	POWER SUPPLY	CONTROLS
VA-9072-13	68	24 VAC	Proportional control
VA-9072-14			ON/OFF and Floating control
VA-9072-23		230 VAC	Proportional control
VA-9072-24			ON/OFF and Floating control
VA-9075-13	226	24 VAC	Proportional control
VA-9075-14			ON/OFF and Floating control
VA-9075-23		230 VAC	Proportional control
VA-9075-24			ON/OFF and Floating control
VA-9077-13	565	24 VAC	Proportional control
VA-9077-14			ON/OFF and Floating control
VA-9078-23	735	230 VAC	Proportional control
VA-9078-24			ON/OFF and Floating control
VA-907A-23	1470		Proportional control
VA-907A-24			ON/OFF and Floating control
VA-907B-23	2034	Proportional control	
VA-907B-24		ON/OFF and Floating control	



# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN PLANT VALVE ACTUATORS

## VAP

### VAP LINEAR ACTUATORS FOR VPMA PRESSURE INDEPENDENT FLANGED VALVES

The VAP series actuators are available for proportional control or 3-point (floating) control. They feature stroke calibration and manual operating which are user friendly to job sites.

In combination with VPMA Pressure Independent Valves, they provide specified close-off pressure according to the application requests.



## FEATURES

- Proportional and Floating Control
- IP65 protection class for critical applications
- 0(2)-10V or 0(4)-20mA input and feedback selectable
- Manual override and LED status indication
- Running speed adjustable (from 1s/mm to 2s/mm)
- Direct mounting on valves, no linkage required
- Stroke calibration ensure stroke consistency with valve

## ORDERING INFORMATION

CODES	FORCE (N)	POWER SUPPLY	CONTROL SIGNAL	MANUAL OVERRIDE	RUNNING SPEED (s/mm)	WEIGHT (kg)
VAP600S-24-C	600	24VAC / VDC $\pm$ 15%	0(2)-10VDC / 0(4)-20mA and 3-point	■	Selectable (High speed: 1s/mm; Low speed: 2s/mm)	3.8 kg
VAP1000S-24-C	1000					
VAP1000L-24C						
VAP3000-24-C	3000					

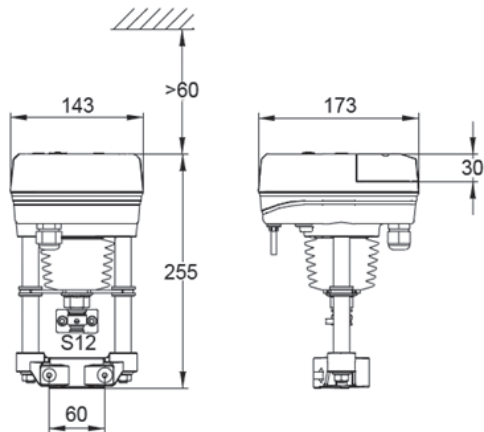




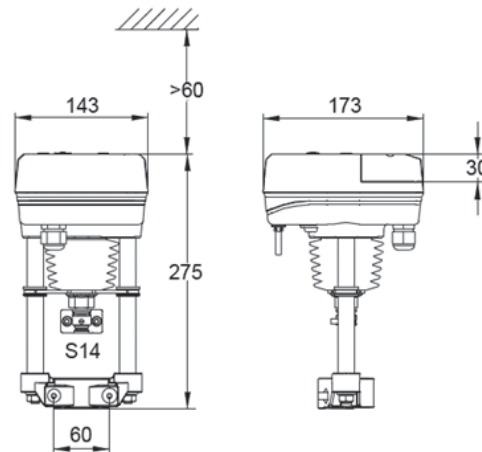
## ACTUATORS

### VAP NON-SPRING RETURN PLANT VALVE ACTUATORS

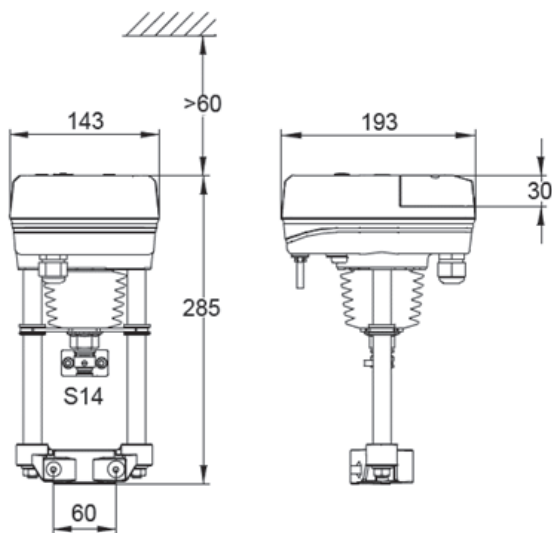
#### DIMENSIONS (in mm)



VAP600S/VAP1000S



VAP1000L



VAP3000L

# ACTUATORS AND VALVES

## ACTUATORS

### SPRING RETURN PLANT VALVE ACTUATORS

## VA7820 - VA7830

#### FLOATING AND PROPORTIONAL CONTROL

The VA78x0 Spring Return Actuator with 1000 N thrust for valves in Heating, Ventilation and Air Conditioning applications is available for Floating or Proportional control.

All models have manual override as standard and provide stroke capabilities of 7 mm to 25 mm. Proportional models are self-calibrating.

The actuator is intended for use with Johnson Controls VG7000 and VGS800 threaded valves as well as VG8000 and VG9000 flanged valves.

All valves should be fitted in accordance with the maximum close-off pressure ratings specified. Valve/actuators can be ordered as separate units or as a factory fitted valve/actuator combinations.

## FEATURES

- Proportional Actuators are self calibrating
- All models can also be used as floating and ON/OFF actuators
- Force controlled motor shut-off
- Manual override as standard
- IP54 enclosure protection
- Delivered with fitted 1.5 m cable and wire terminals
- Status LED
- Control-Signal failure - stem to pre-determined position
- Stroke position indicator
- Spring Return functions

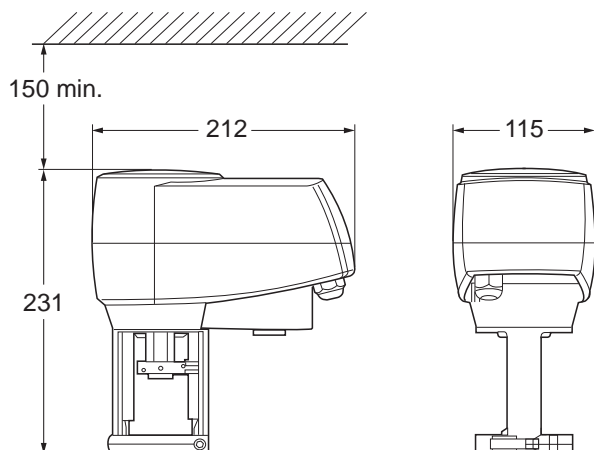




## ACTUATORS

### VA7800 SPRING RETURN PLANT VALVE ACTUATORS

#### DIMENSIONS (in mm)



#### ORDERING INFORMATION

CODES	SUPPLY VOLTAGE (50/60 Hz)	ACTION CONTROL	FORCE (N)	STROKE (mm)	FULL STROKE TIME (s)	PROTECTION CLASS	POWER CONSUMPTION	SPRING RETURN ACTION	ACCESSORIES FACTORY MOUNTED
Actuator with threaded coupler for VG7000 valves									
VA7820-GGA-11	24 VAC	ON/OFF, Floating or Proportional	1000	25	150 (selectable 75)	IP54	11 VA	Actuator stem retracts	---
VA7820-GGC-11								2 aux switches	
VA7830-GGA-11								Actuator stem extend	---
VA7830-GGC-11								2 aux switches	
Actuator with clamp coupler for VG8000 and VG9000 valves									
VA7820-GGA-12	24 VAC	ON/OFF, Floating or Proportional	1000	25	150 (selectable 75)	IP54	11 VA	Actuator stem retracts	---
VA7820-GGC-12								2 aux switches	
VA7830-GGA-12								Actuator stem extend	---
VA7830-GGC-12								2 aux switches	

# ACTUATORS AND VALVES

## ACTUATORS

### SPRING RETURN PLANT VALVE ACTUATORS

## VA1220 - VA1420

### FLOATING AND PROPORTIONAL CONTROL

The VA1220 - VA1420 Valve Actuators are used to control valves in HVAC systems. They are of modular construction so that the required type of control signal is achieved simply by fitting a module with the required function in-situ.

It can be mounted onto VG8000 and VG9000 series valves.

## FEATURES

- 24 VAC and 230 VAC power supply
- Floating and Proportional control
- Manual override
- Automatic stem coupling
- Actuator fixed to valve with one ring nut
- Self adjusting, automatic stroke adjustment, calibrated pressure control at the end positions
- 2 auxiliary switches, feedback potentiometer and split range unit available
- IP66
- Selectable characteristic curve
- Selectable running time

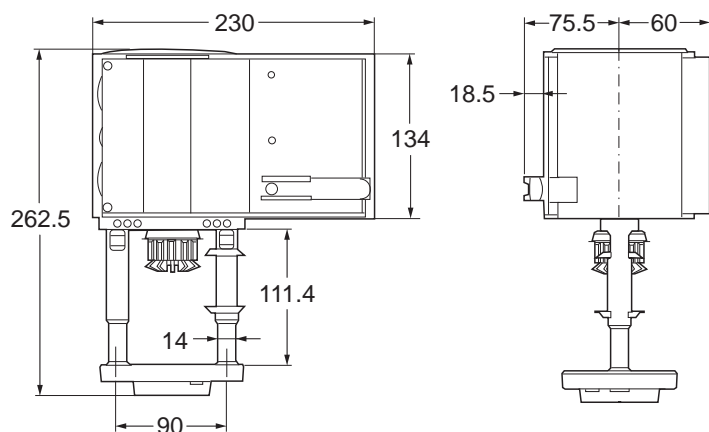




## ACTUATORS

### VA1x20 SPRING RETURN PLANT VALVE ACTUATORS

#### DIMENSIONS (in mm)



#### ORDERING INFORMATION

CODES	24 VAC ACTUATORS	POWER CONSUMPTION	PROTECTION CLASS	NOMINAL STROKE (mm)
VA1220-GGA-1	2000 N; Spring Return retracts	17 VA	IP66	49 mm
VA1420-GGA-1	2000 N; Spring Return extends			

#### ACCESSORIES MODULES FOR IN-SITU INSTALLATION

CODES	DESCRIPTION
VA1000-M230N	230 VAC module
VA1000-P2	2 K $\Omega$ feedback potentiometer
VA1000-S2	2 SPDT auxiliary switches
VA1000-EP	Extension kit for applications with temperatures greater than 140°C up to 200°C

# ACTUATORS AND VALVES

## ACTUATORS

### SPRING RETURN PLANT VALVE ACTUATORS

## FA-2000

### FLOATING AND PROPORTIONAL CONTROL

The FA-2000 Series Electric Actuators are available for floating or with electronic positioner for 0...10 V or 0...20 mA control.

It provides a fully variable valve aperture, a power failure spring return safety mechanism and an electrically operated manual override.

Three models of the FA-2000 are available.

The FA-22 ("failsafe" position down = stem fully extended) and FA-25 ("failsafe" position up = stem fully retracted): this model pair has a 25 mm stroke and a minimum of 2400 N thrust.

The FA-23 ("failsafe" position down) and FA-26 ("failsafe" position up): this model pair has a 42 mm stroke of and a minimum thrust of 2200 N.

The actuator can be combined with VG8000 series in accordance with the maximum close-off pressure ratings specified.

The FA-2000, when delivered as a single unit, is pre-set to facilitate installation with minimum adjustment; it is also available with a variety of options such as auxiliary switches and feedback potentiometers.

## FEATURES

- Power failure mechanism (Spring Return)
- Visible calibration ring on stem coupling
- Positioner with adjustable starting point, span and direct/reverse action
- Electrically operated manual override
- Quick-fit coupling clamp

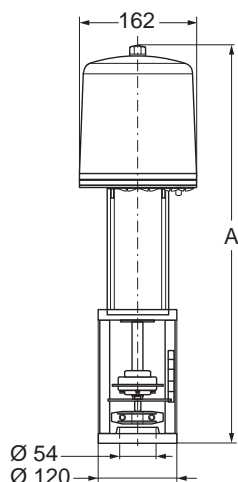




## ACTUATORS

### FA-2000 SPRING RETURN PLANT VALVE ACTUATORS

#### DIMENSIONS (in mm)



A	WITHOUT POSITIONER	WITH POSITIONER
FA-22 / FA-25	541	586
FA-23 / FA-26	575	612

#### ORDERING INFORMATION

CODES	SUPPLY VOLTAGE (50 Hz)	ACTION CONTROL	SPRING RETURN FUNCTION	BUILT-IN ELECTRONIC POSITIONER	NOMINAL THRUST	NOMINAL STROKE (mm)	PROTECTION CLASS	POWER CONSUMPTION	EMERGENCY SHUT OF SPEED
FA-2200-7516	24 VAC	Floating and Proportional	Stem fully extended	---	2.4 kN	25	IP54	6.1 VA	≤ 81
FA-2500-7516			Stem fully retracted						
FA-2300-7416			Stem fully extended		2.2 kN	42			≤ 201
FA-2600-7416			Stem fully retracted						
FA-2240-7516			Stem fully extended	0...10 V / 0(4)...20 mA	2.4 kN	25			≤ 81
FA-2540-7516			Stem fully retracted						
FA-2340-7416			Stem fully extended		2.2 kN	42			≤ 201
FA-2640-7416			Stem fully retracted						
FA-2241-7516			Stem fully extended	0...10 V / 0(4)...20 mA and 2 auxiliary switches	2.4 kN	25			≤ 81
FA-2541-7516			Stem fully retracted						
FA-2341-7416			Stem fully extended		2.2 kN	42			≤ 201
FA-2641-7416			Stem fully retracted						

# ACTUATORS AND VALVES

## ACTUATORS

### SPRING RETURN PLANT VALVE ACTUATORS

## VA9203

### 3 Nm, ON/OFF, FLOATING AND PROPORTIONAL CONTROL ROTARY ACTUATORS FOR BALL VALVES

The VA9203 Series Electric Spring Return Actuators are direct-mount actuators.

These bidirectional actuators are used to provide accurate positioning on Johnson Controls® VG1000 Series DN15 up to DN25 Ball Valves in Heating, Ventilating and Air Conditioning (HVAC) applications.

One Integral line voltage auxiliary switch, available only on the VA9203-xxB-1(Z) models, indicate end-stop position, or perform switching functions within the selected rotation range.

A graduated scale from 0% to 100% and a position indicator provide visual indication of the valve's opening.

When power fails during service, the mechanical spring return system open or close the valve ports.

The series includes the following control options:

- ON/OFF, 24 VAC/DC, 100 to 240 VAC power
- ON/OFF and floating point, 24 VAC/DC power
- Proportional, 24 VAC/DC power, for 0(2) to 10 VDC or 0(4) to 20 mA control

## FEATURES

- 3 Nm rated torque
- Mechanical Spring Return System
- Direct-coupled design
- Reversible mounting
- Rugged IP54 rated enclosure
- Electronic stall detection
- Double-insulated construction
- Microprocessor controlled brushless DC Motor (-AGx and -GGx models)
- External mode selection switch (-AGx and -GGx models)
- Integral cables with colored and numbered conductors
- Optional integrated auxiliary switch
- Override control (proportional models only)
- UL, CE, and C-Tick Compliance
- Manufacturing under International Standards Organization (ISO) 9001 Quality Control Standards



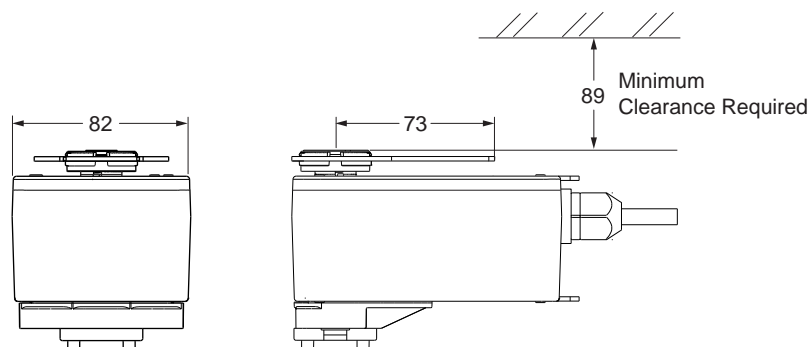




## ACTUATORS

### VA9203 SPRING RETURN PLANT VALVE ACTUATORS

### DIMENSIONS (in mm)



### ORDERING INFORMATION

CODES	TORQUE (Nm)	RUNNING TIME (s/mm)		CONTROL SIGNALS	SUPPLY VOLTAGE (50/60 Hz)	1 AUXILIARY SWITCH
		Motor	Spring			
VA9203-GGA-1Z	3	90	12...17	Proportional	24 VAC/DC	---
VA9203-GGB-1Z				■		
VA9203-AGA-1Z				---		
VA9203-AGB-1Z				■		
VA9203-BGA-1		53...71	19...23	ON/OFF	100 to 230 VAC	---
VA9203-BGB-1						■
VA9203-BUA-1						---
VA9203-BUB-1						■

### ACCESSORIES (ORDER SEPARATELY)

CODES	DESCRIPTION
M9000-560	Ball valve linkage kit for applying M9203 and M9208 series actuators to VG1000 series valves (quantity 1)
M9000-561	Thermal barrier extends M(VA)9104, M(VA)9203 and M(VA)9208 series electric spring return actuator applications to include low pressure steam (quantity 1)
M9000-342	Weathershield kit for VG1000 series ball valve application of M(VA)9104, M(VA)9203 and M(VA)9208 series electric spring return actuators (quantity 1)
M9000-607	Position indicator for VG1000 series ball valve applications (quantity 5)

# ACTUATORS AND VALVES

## ACTUATORS

### SPRING RETURN PLANT VALVE ACTUATORS

## VA9208

### 8 Nm, ON/OFF, FLOATING AND PROPORTIONAL CONTROL ROTARY ACTUATORS FOR BALL VALVES

The VA9208 Series Electric Spring Return Actuators are direct-mount actuators.

These bidirectional actuators are used to provide accurate positioning on Johnson Controls® VG1000 Series DN32 up to DN50 Ball Valves in Heating, Ventilating and Air Conditioning (HVAC) applications.

Two integral line voltage auxiliary switches are available only on the VA9208-xxC-1 models, indicate end-stop position, or perform switching functions within the selected rotation range.

A graduated scale from 0% to 100% and a position indicator provide visual indication of the valve's opening.

When power fails during service, the mechanical spring return system open or close the valve ports.

The series includes the following control options:

- ON/OFF, 24 V AC/DC, 230 V AC power
- ON/OFF and floating control, 24 V AC/DC power
- Proportional, 24 V AC/DC power, for 0(2) to 10 VDC or 0(4) to 20 mA control

## FEATURES

- 8 Nm rated torque
- Mechanical Spring Return System
- Direct-coupled design
- Reversible mounting
- Rugged IP54 rated enclosure
- Electronic stall detection
- Double-insulated construction
- Microprocessor controlled brushless DC motor (-AGx and -GGx models)
- External mode selection switch (-AGx and -GGx models)
- Integral cables with colored and numbered conductors
- Optional integrated auxiliary switches
- UL, CE, and C-Tick Compliance
- Manufacturing under International Standards Organization (ISO) 9001 Quality Control Standards

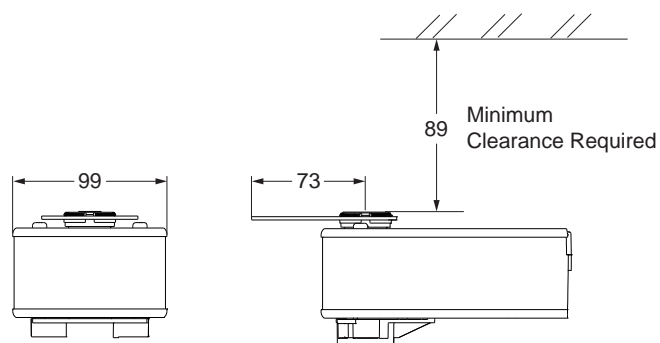




## ACTUATORS

### VA9208 SPRING RETURN PLANT VALVE ACTUATORS

#### DIMENSIONS (in mm)



#### ORDERING INFORMATION

CODES	TORQUE (Nm)	RUNNING TIME (s/mm)		CONTROL SIGNALS	SUPPLY VOLTAGE (50/60 Hz)	2 AUXILIARY SWITCH
		Motor	Spring			
VA9208-GGA-1	8	150	17...25	Proportional	24 VAC/DC	---
VA9208-GGC-1				■		
VA9208-AGA-1				---		
VA9208-AGC-1				■		
VA9208-BGA-1		53...71	13...26	ON/OFF	230 VAC	---
VA9208-BGC-1						■
VA9208-BDA-1						---
VA9208-BDC-1						■

#### ACCESSORIES (ORDER SEPARATELY)

CODES	DESCRIPTION
M9000-560	Ball valve linkage kit for applying M9203 and M9208 series actuators to VG1000 series valves (quantity 1)
M9000-561	Thermal barrier extends M(VA)9104, M(VA)9203 and M(VA)9208 series electric spring return actuator applications to include low pressure steam (quantity 1)
M9000-342	Weathershield kit for VG1000 series ball valve application, IP54
M9000-607	Position Indicator for VG1000 Series ball valve applications (quantity 5)

# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN DAMPER ACTUATORS

## M9102-M9104

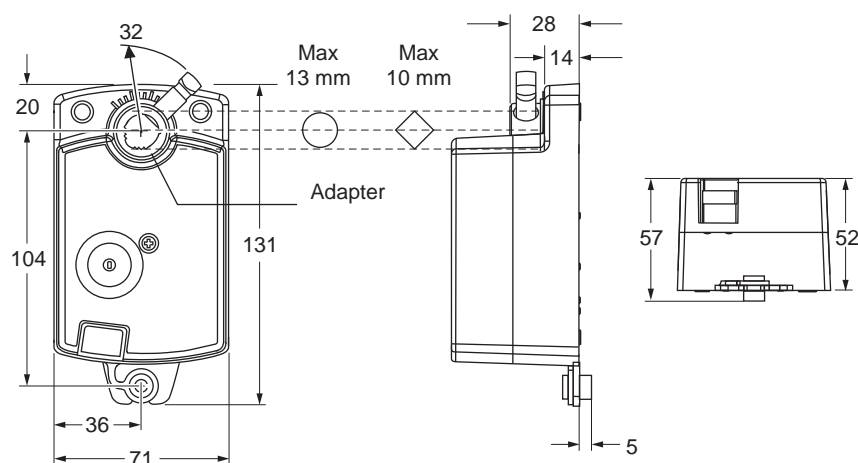
2 AND 4 Nm, ON/OFF, FLOATING AND PROPORTIONAL CONTROL

The small family Electric Damper Actuator Series have been developed to operate small air dampers in Ventilation and Air Conditioning Systems. The compact design make this actuator highly versatile.

### FEATURES

- Floating, ON/OFF and Proportional control
- Load-independent running time
- Up to 5 Actuators in parallel operation possible
- Actuators available with PVC cable or with plug-in terminal block connection
- Simple direct mounting with universal adapter for fitting to  $\varnothing$  8...13 mm or with 8...10 mm square shaft. 45 mm minimum shaft length
- Selectable direction of rotation
- Manual release button

### DIMENSIONS (in mm)



## ACTUATORS

### M9102/M9104 NON-SPRING RETURN DAMPER ACTUATORS



## ORDERING INFORMATION

CODES	TORQUE (Nm)	RUNNING TIME (s/mm)	CONTROL SIGNALS	SUPPLY VOLTAGE (50/60 Hz)	CONNECTION
M9102-AGA-1S	2	36	Floating without timeout	24 VAC	PVC-cable
M9102-AGA-5S					Terminal block
M9102-IGA-1S			ON/OFF and Floating with timeout		PVC-cable
M9102-IGA-5S					Terminal block
M9104-AGA-1S	4	72	Floating without timeout		PVC-cable
M9104-AGA-5S					Terminal block
M9104-IGA-1S			ON/OFF and Floating with timeout		PVC-cable
M9104-IGA-5S					Terminal block
M9104-IUA-5S				100 to 240 VAC	PVC-cable
M9104-GGA-1S			Proportional 0...10 VDC	24 VAC	PVC-cable
M9104-GGA-5S					Terminal block

# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN DAMPER ACTUATORS

## M9304

4 Nm, ON/OFF, FLOATING AND PROPORTIONAL CONTROL

The Silence Electric Damper Actuator Series have been developed to operate small and medium air dampers in Ventilation and Air Conditioning Systems.

The compact design and universal adapter fitted with limitation of rotation angle make this actuator highly versatile.

A key feature of the design is the Johnson Controls® stem adapter which also incorporates angle-of-rotation limiting and position indication.



## FEATURES

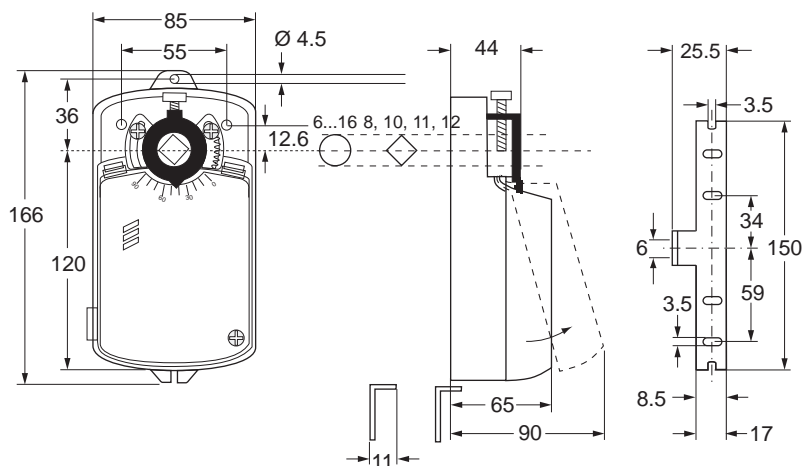
- ON/OFF, Floating and Proportional control
- Load-independent running time
- Up to 5 actuators in parallel operation possible
- Plug-in terminal block connection
- Simple direct mounting with universal adapter for fitting to  $\varnothing$  6 mm to 16 mm shaft or with M9000-ZxxDN adapter kit for 8, 10, 11 and 12 mm square shaft. 45 mm min shaft length
- Selectable direction of rotation
- Limitation of rotation angle
- Manual release button
- 2 adjustable auxiliary switches
- Automatic shut-off at end position (overload switch)
- Energy saving at end positions
- Actuators available with 1 m halogen-free cable



## ACTUATORS

### M9304 SPRING RETURN PLANT VALVE ACTUATORS

## DIMENSIONS (in mm)



## ORDERING INFORMATION

CODES	TORQUE (Nm)	RUNNING TIME (s/mm)	2 ADJUSTABLE AUXILIARY CONTACTS	SUPPLY VOLTAGE (50/60 Hz)
M9304-AGA-1N	4 Nm	35 s	---	24 VAC/DC
M9304-AGC-1N			■	
M9304-ADA-1N			---	230 VAC
M9304-ADC-1N			■	
M9304-AKA-1N			---	48 VDC
M9304-AKC-1N			■	
M9304-BDA-1N			---	230 VAC
M9304-BDC-1N			■	
M9304-GGA-1N			---	24 VAC/DC
M9304-GKA-1N			---	48 VAC/DC



# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN DAMPER ACTUATORS

## M9300

8, 10, 16, 20 AND 35 Nm, ON/OFF, FLOATING AND  
PROPORTIONAL CONTROL

The M9300 Series Electric Non-Spring Return Actuators provide control of dampers in HVAC Systems with 8, 10, 16, 20 and 35 Nm rated torque.

These bidirectional actuators do not require a damper linkage and are easily installed on round shafts or square shafts.

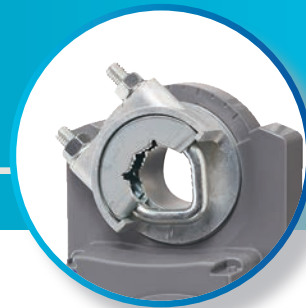
An optional line voltage auxiliary switch kits can be field installed to indicate an end-stop position or perform switching functions within the selected rotation range.

## FEATURES

- Automatic signal input detection model: ON/OFF, Floating and Proportional
- High speed actuator model
- Optional auxiliary switch and potentiometer feedback
- 8, 10, 16, 20 and 35 Nm rated torque
- Self-calibrating to adjust stroke
- Electronic stall detection
- Microprocessor-controlled Brushless DC motor



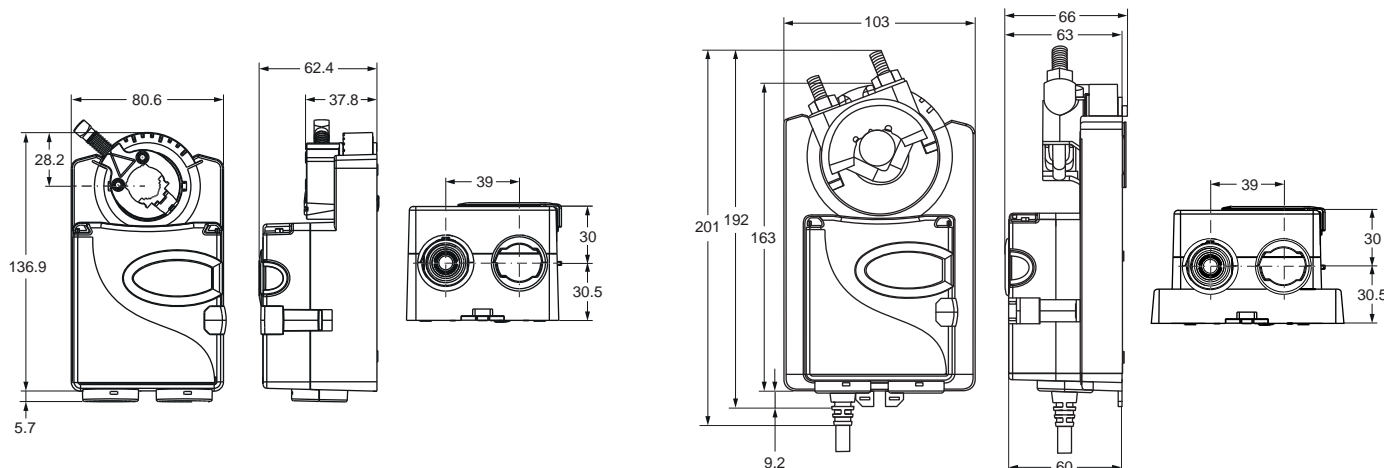




## ACTUATORS

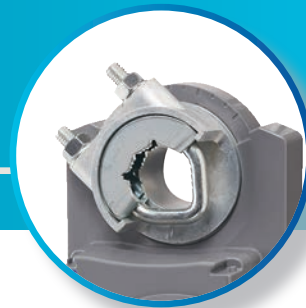
### M9300 NON-SPRING RETURN DAMPER ACTUATORS

## DIMENSIONS (in mm)



## ORDERING INFORMATION

CODES	TORQUE (Nm)	RUNNING TIME (s)	CONTROL SIGNALS	SUPPLY VOLTAGE (50/60 Hz)
M9308-AGA-1Z	8	8	ON/OFF and Floating	24 VAC/DC
M9308-AUA-1Z				100 to 240 VAC
M9310-AUA-1	10	35	ON/OFF and Floating	100 to 240 VAC
M9310-GUA-1			Proportional	
M9310-HGA-1			ON/OFF, Floating and Proportional	24 VAC/DC
M9316-AGA-1Z	16	16	ON/OFF and Floating	24 VAC/DC
M9316-AUA-1Z				100 to 240 VAC
M9320-AUA-1	20	90	ON/OFF and Floating	100 to 240 VAC
M9320-GUA-1			Proportional	
M9320-HGA-1			ON/OFF, Floating and Proportional	24 VAC/DC
M9335-AUA-1	35	150	ON/OFF and Floating	100 to 240 VAC
M9335-GUA-1			Proportional	
M9335-HGA-1			ON/OFF, Floating and Proportional	24 VAC/DC



## ACTUATORS

### M9300 NON-SPRING RETURN DAMPER ACTUATORS

#### ACCESSORIES (ORDER SEPARATELY)

CODES	DESCRIPTION
M9000-322	NEMA 4x, IP66 Weathershield Kit for damper application of M9104, M9310, M9203 and M9208 Series Electric Actuators (quantity 1)
M9000-400	Jackshaft Linkage Adapter Kit (quantity 1)
M9000-561	Thermal Barrier Kit. Extends the VA9104, VA9310, VA9203 and VA9208 Series Electric Non-Spring Return Actuators applications to include low pressure steam (quantity 1).
M9000-604	Replacement Anti-Rotation Bracket Kit for M9310, M9203, M9208, M9210 and M9220 Series Electric Actuators
M9000-606	Position indicator for M9300 Kits (quantity 5)
M9300-1	Auxiliary Switch Kit (one single-pole, double-throw)
M9300-2	Auxiliary Switch Kit (two single-pole, double-throw)
M9300-100	Threaded Conduit Adapters for 12.7 mm (1/2 in.) electrician's fittings (quantity 5)
M9300-140	External Auxiliary Feedback Potentiometer 140k Ohm
M9000-151	Remote Mounting Kit, with crank arm and damper linkage for M9100 and M9300 Series Actuators
M9300-1K	External Auxiliary Feedback Potentiometer 1k Ohm
M9300-2K	External Auxiliary Feedback Potentiometer 2k Ohm
M9300-10K	External Auxiliary Feedback Potentiometer 10k Ohm
M9310-600	Standard Coupler Kit, M9310 Series (9.5 to 19 mm - 3/8 to 3/4 in.) (9.5 to 16 mm - 3/8 to 5/8 in.) (quantity 1)
M9000-323	IP66 weather shield kit for Johnson Controls M9320 and M9335 Series Electric Damper Actuators
M9000-343	IP66 weather shield kit for Johnson Controls M9320 and M9335 Series actuators for applications on VG1000 Series Flanged Ball Valves (2-1/2 in. to 6 in.)
M9300-100D	Butterfly Valve Mounting Kit for Tandem M9300 Series Non-Spring Return Electric Actuators to DN 100, 125 & 150
M9300-100S	Butterfly Valve Mounting Kit for a Single M9300 Series Non-Spring Return Electric Actuator to DN 50, 80 & 100
M9300-200S	Butterfly Valve Mounting Kit for a Single M9300 Series Non-Spring Return Electric Actuator to DN 200
M9320-500	Ball valve linkage kit for converting Johnson Controls M9320 and M9335 Series Electric Damper Actuators into VA9320 and VA9335 Series Electric Valve Actuators
M9320-600	Standard coupler kit for Johnson Controls M9316, M9320, M9335 Series Electric Damper Actuators; round to 19 mm to 27 mm and square 16 mm to 19 mm

# ACTUATORS AND VALVES

## ACTUATORS

### NON-SPRING RETURN DAMPER ACTUATORS

## M9100

8, 16, 24 AND 32 Nm, ON/OFF, FLOATING AND PROPORTIONAL  
CONTROL

The M9100 Series Electric Actuators are direct-mount Actuators.

These bidirectional actuators do not require a damper linkage, and are easily installed on round shafts or square shafts using the standard shaft clamp included with the actuator.

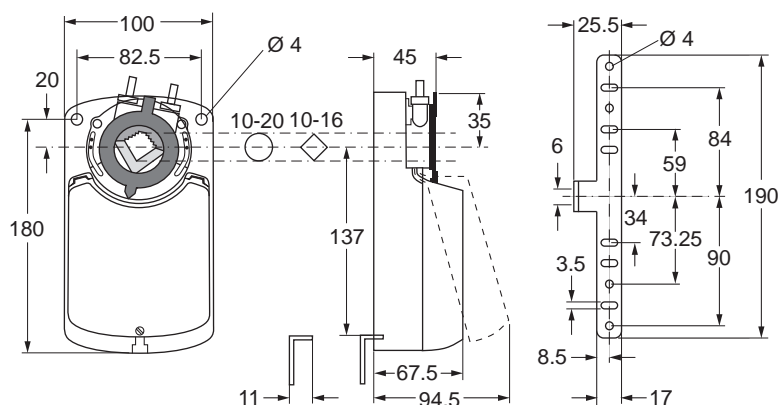
A single M9100 series electric non spring return actuator provides 8, 16, 24 or 32 Nm torque depending on the model. Two integral line voltage auxiliary switches, available only on the M91xx-xxC models, indicate end stop position or performs switching functions within the selected rotation range.

M9100 series actuators provide 90° of rotation. A graduated scale from 0° to 90° and a position indicator provide visual indication of stroke.

## FEATURES

- Direct-coupled design
- Selectable direction of rotation
- Electronic stall detection
- Double-insulated construction
- Load independent
- Optional integrated auxiliary switches
- Manufactured under International Standards Organization (ISO) 9001 Quality Control Standards

## DIMENSIONS (in mm)





## ACTUATORS

### M9100 NON-SPRING RETURN DAMPER ACTUATORS

## ORDERING INFORMATION

CODES	RUNNING TIME (s)	CONTROL SIGNALS	2 AUXILIARY CONTACTS	FEEDBACK POTENTIOMETER	SUPPLY VOLTAGE (50/60 Hz)	
8 Nm						
M9108-AGA-1N	30	ON/OFF and Floating	---	---	24 VAC/DC	
M9108-AGC-1N			■	---		
M9108-AGE-1N			---	1 KOhm		
M9108-AGD-1N			---	140 Ohm		
M9108-AGF-1N			---	2 KOhm		
M9108-ADA-1N			---	---		
M9108-ADC-1N			■	---	100 ... 230 VAC	
M9108-ADE-1N			---	1 KOhm		
M9108-ADD-1N			---	140 Ohm		
M9108-ADF-1N			---	2 KOhm		
M9108-GGA-1N			Proportional 0(2)...10 VDC / 0(4)...20 mA	---	---	24 VAC/DC
M9108-GGC-1N				■	---	
M9108-GDA-1N		Proportional 0(2)...10 VDC	---	---	230 VAC	
M9108-GDC-1N			■	---		
M9108-GDA-1N1		Proportional 0(4)...20 mA	---	---		
M9108-GDC-1N1			■	---		
16 Nm						
M9116-AGA-1N	80	ON/OFF and Floating	---	---	24 VAC/DC	
M9116-AGC-1N			■	---		
M9116-AGE-1N			---	1 KOhm		
M9116-AGD-1N			---	140 Ohm		
M9116-AGF-1N			---	2 KOhm		
M9116-ADA-1N			---	---		
M9116-ADC-1N			■	---	100 ... 230 VAC	
M9116-ADE-1N			---	1 KOhm		
M9116-ADD-1N			---	140 Ohm		
M9116-ADF-1N			---	2 KOhm		
M9116-GGA-1N			Proportional 0(2)...10 VDC / 0(4)...20 mA	---	---	24 VAC/DC
M9116-GGC-1N				■	---	
M9116-GDA-1N		Proportional 0(2)...10 VDC	---	---	230 VAC	
M9116-GDC-1N			■	---		
M9116-GDA-1N1		Proportional 0(4)...20 mA	---	---		
M9116-GDC-1N1			■	---		



## ACTUATORS

### M9100 NON-SPRING RETURN DAMPER ACTUATORS

## ORDERING INFORMATION

CODES	RUNNING TIME(s)	CONTROL SIGNALS	2 AUXILIARY CONTACTS	FEEDBACK POTENTIOMETER	SUPPLY VOLTAGE (50/60 Hz)		
24 Nm							
M9124-AGA-1N	125	ON/OFF and Floating	---	---	24 VAC/DC		
M9124-AGC-1N			■	---			
M9124-AGE-1N			---	1 KOhm			
M9124-AGD-1N			---	140 Ohm			
M9124-AGF-1N			---	2 KOhm			
M9124-ADA-1N			---	---		100 ... 230 VAC	
M9124-ADC-1N			■	---			
M9124-ADE-1N			---	1 KOhm			
M9124-ADD-1N			---	140 Ohm			
M9124-ADF-1N			---	2 KOhm			
M9124-GGA-1N			Proportional 0(2)...10 VDC	---	---		24 VAC/DC
M9124-GGC-1N			0(4)...20 mA	■	---		
M9124-GDA-1N			Proportional 0(2)...10 VDC	---	---	230 VAC	
M9124-GDC-1N			■	---			
M9124-GDA-1N1			Proportional 0(4)...20 mA	---	---		
M9124-GDC-1N1			■	---	---		
32 Nm							
M9132-AGA-1N	140	ON/OFF and Floating	---	---	24 VAC/DC		
M9132-AGC-1N			■	---			
M9132-AGE-1N			---	1 KOhm			
M9132-AGD-1N			---	140 Ohm			
M9132-AGF-1N			---	2 KOhm			
M9132-ADA-1N			---	---		100 ... 230 VAC	
M9132-ADC-1N			■	---			
M9132-ADE-1N			---	1 KOhm			
M9132-ADD-1N			---	140 Ohm			
M9132-ADF-1N			---	2 KOhm			
M9132-GDA-1N			Proportional 0(2)...10 VDC	---	---		230 VAC
M9132-GDC-1N			■	---	---		
M9132-GGA-1N			200	Proportional 0(2)...10 VDC	---	---	24 VAC/DC
M9132-GGC-1N					0(4)...20 mA	■	

# ACTUATORS AND VALVES

## ACTUATORS

### SPRING RETURN DAMPER ACTUATORS

## M9203

3 Nm, ON/OFF, FLOATING AND PROPORTIONAL CONTROL

The M9203 Series Electric Spring Return Actuators are direct-mount Actuators. These bidirectional actuators do not require a damper linkage, and are easily installed on round shafts or square shafts using the standard shaft clamp included with the actuator.

A single M9203 series electric spring return actuator provides 3 Nm running and spring return torque.

An integral line voltage auxiliary switch, available only on the M9203-xxB-1(Z) models, indicates end stop position, or performs switching functions within the selected rotation range.

M9203 Series Actuators provide 95° of rotation. A graduated scale from -5° to 90° and a position indicator provide visual indication of stroke.

When power fails during service, the mechanical spring return system provides rated torque to the connected equipment, returning it to the home position.

The series includes the following control options:

- ON/OFF, 24 V, 100 to 240 VAC power
- ON/OFF and floating point, 24 V power
- Proportional, 24 V power, for 0(2) to 10 VDC or 0(4) to 20 mA control signal

## FEATURES

- 3 Nm rated torque
- Direct-coupled design
- Reversible mounting
- Electronic stall detection
- Double-insulated construction
- Microprocessor-controlled brushless DC motor (-AGx and GGx types)
- External mode selection switch (-AGx and -GGx types)
- Integral cables with colored and numbered conductors
- Optional Integrated Auxiliary Switch
- Override control (proportional models only)
- Manufactured under International Standards Organization (ISO) 9001 Quality Control Standards



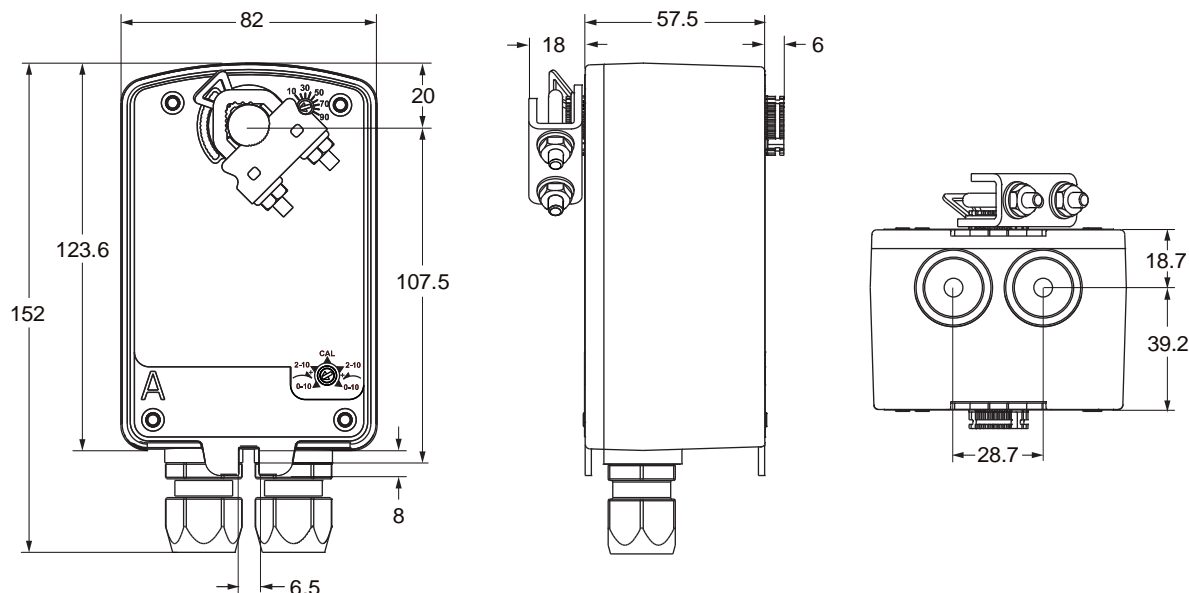




## ACTUATORS

### M9203 SPRING RETURN DAMPER ACTUATORS

### DIMENSIONS (in mm)



### ORDERING INFORMATION

CODES	TORQUE (Nm)	RUNNING TIME (s/mm)	CONTROL SIGNALS	SUPPLY VOLTAGE (50/60 Hz)	1 AUXILIARY SWITCH		
M9203-AGA-1	3	150	ON/OFF and Floating	24 VAC / DC	---		
M9203-AGB-1					■		
M9203-AGA-1Z		90			---		
M9203-AGB-1Z					■		
M9203-BGA-1		60			ON/OFF	100 - 240 VAC	---
M9203-BGB-1							■
M9203-BUA-1			27	---			
M9203-BUB-1				■			
M9203-GGA-1		150	Proportional	24 VAC/DC			---
M9203-GGB-1							■
M9203-GGA-1Z					90	---	
M9203-GGB-1Z						■	



## ACTUATORS

### M9203 SPRING RETURN DAMPER ACTUATORS

## ORDERING INFORMATION

### ACCESSORIES (ORDER SEPARATELY)

CODES	DESCRIPTION
M9000-322	Weathershield kit for damper application of M9203 and M9208 series electric spring return Actuators (quantity 1)
M9000-342	Weathershield kit for VG1000 series ball valve application of M(VA)9104, M(VA)9203 and M(VA)9208 series electric spring return Actuators (quantity 1)
M9000-400	Jackshaft linkage adapter kit (quantity 1)
M9000-560	Ball valve linkage kit for applying M9203 and M9208 series electric Actuators to VG1000 series valves (quantity 1)
M9000-561	Thermal barrier kit for M9000-560 ball valve linkage. Extends M(VA)9104, M(VA)9203 and M(VA)9208 series electric spring return Actuators applications to include low pressure steam (quantity 1)
M9000-604	Replacement anti-rotation bracket Kit for M9203, M9208, M9210 and M9220 series electric spring return Actuators (quantity 1)
M9000-606	Position indicator for damper applications (quantity 5)
M9000-607	Position indicator for VG1000 series ball valve applications (quantity 5)
M9203-100	Remote mounting kit with crankarm kit (quantity 1)
M9203-110	Universal mounting kit without Crankarm kit (quantity 1)
M9203-115	Universal mounting kit with crankarm kit (quantity 1)
M9203-150	Crankarm kit (quantity 1)
M9203-250	Remote mounting kit with crankarm kit and damper linkage for D1300 dampers (quantity 1)
M9203-601	Replacement standard coupler kit (with retainer) for mounting M9203 series electric spring return Actuators (quantity 1)
M9203-602	Replacement retainer for M9203 series electric spring return Actuators (quantity 5)
M9203-603	Adjustable stop kit for M9203 series electric spring return Actuators (quantity 1)



# ACTUATORS AND VALVES

## ACTUATORS

### SPRING RETURN DAMPER ACTUATORS

## M9208

8 Nm, ON/OFF, FLOATING AND PROPORTIONAL CONTROL

The Spring Return Electric Damper-Actuator series has been specially developed for the motorized operation of air dampers in Air Conditioning Systems.

When the control signal is applied the actuator drives the damper to the operational position, while evenly tensioning the integrated spring.

After a power failure the stored energy in the spring immediately brings the damper to the safety position.

Manual operation is automatically cancelled when the actuator is in electrical operation.

The compact design and universal adapter fitted with limitation of rotation angle make this actuator highly versatile.

## FEATURES

- ON/OFF and Floating control signal
- Up to 5 actuators in parallel operation possible
- Electrical connection with halogen-free cable
- Simple direct mounting with universal adapter on  $\varnothing$  8 mm to 16 mm shaft or 6 mm to 12 mm square shaft. An optional M9208-600 Jackshaft coupler kit is available for 12 to 19 mm round shafts, or 10 mm to 14 mm square shafts
- Limitation of rotation angle
- Manual positioning with crank handle
- 2 auxiliary switches, 1 adjustable

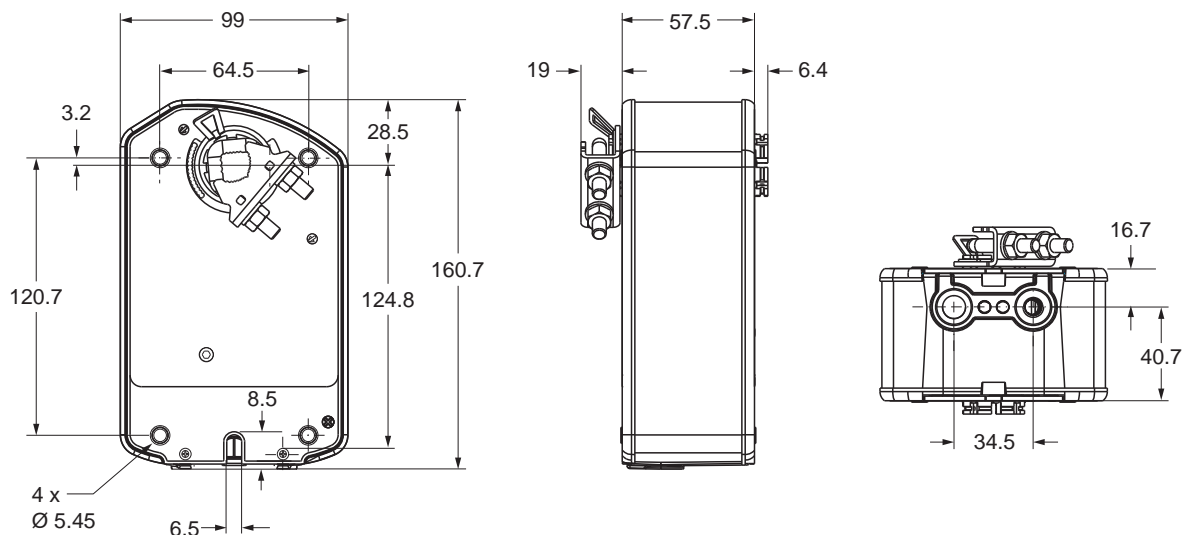




## ACTUATORS

### M9208 SPRING RETURN DAMPER ACTUATORS

## DIMENSIONS (in mm)



## ORDERING INFORMATION

CODES	TORQUE (Nm)	RUNNING TIME (s/mm)		CONTROL SIGNALS	SUPPLY VOLTAGE (50/60 Hz)	2 AUXILIARY CONTACTS
		Motor	Spring			
M9208-AGA-1	8	150	17...25	ON/OFF or Floating	24 VAC / 24 VDC	---
M9208-AGC-1						■
M9208-BGA-1		55...71	13...26	ON/OFF	24 VAC	---
M9208-BGC-1						■
M9208-BDA-1		55...71	13...26	ON/OFF	230 VAC	---
M9208-BDC-1						■
M9208-GGA-1		150	17...25	Proportional 0...10 VDC / 2...10 VDC	24 VAC / 24 VDC	---
M9208-GGC-1						■

# ACTUATORS AND VALVES

## ACTUATORS

### SPRING RETURN DAMPER ACTUATORS

## M9220

20 Nm, ON/OFF, FLOATING AND PROPORTIONAL CONTROL

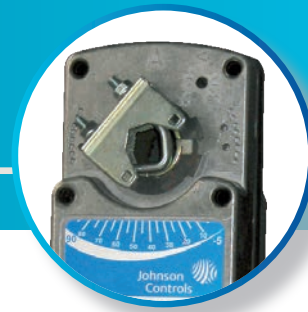
The M9220 Series Actuators are direct mount, Spring Return Electric that provide reliable control of dampers and valves in Heating, Ventilating, and Air Conditioning (HVAC) Systems.

The actuators are available for use with ON/OFF, floating, and proportional controllers. These bidirectional actuators do not require a damper linkage, and are easily installed on dampers.

## FEATURES

- ON/OFF, Floating and Proportional control
- Two or three models mounted in tandem deliver twice or triple the torque
- Up to 5 actuators in parallel operation possible
- Optional adjustable end stops.  
The optional adjustable end stops are used to shorten the actuator stroke electronic stall detection throughout entire rotation range that extends the life of the actuator by deactivating the actuator motor when an overload condition is detected
- Integrated cables halogen-free cables
- IP54 (NEMA2)
- Rated aluminium enclosure
- Easy-to-use locking manual override with auto release and crank storage
- Energy saving at end position
- Two integral gold auxiliary switches (xxC Models)

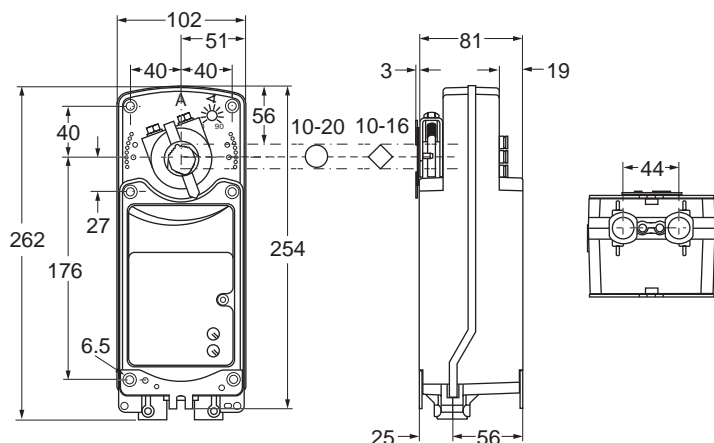




## ACTUATORS

### M9220 SPRING RETURN DAMPER ACTUATORS

#### DIMENSIONS (in mm)



#### ORDERING INFORMATION

CODES	TORQUE (Nm)	RUNNING TIME (s/mm)		CONTROL SIGNALS	SUPPLY VOLTAGE (50/60 Hz)	2 AUXILIARY CONTACTS
		Motor	Spring			
M9220-AGA-1	20	150	20	ON/OFF and Floating	24 AC/VAC	---
M9220-AGC-1						■
M9220-BDA-1		25...57	11...15	ON/OFF	230 VAC	---
M9220-BDC-1						■
M9220-BGA-1						---
M9220-BGC-1						■
M9220-GGA-1		150	26	Proportional 0(2)...10 VDC	24 AC/VAC	---
M9220-GGC-1						■
M9220-HGA-1				Proportional 0(2)...10 VDC with span offset		---
M9220-HGC-1						■

# ACTUATORS AND VALVES

## ACTUATORS

### SAFETY DAMPER ACTUATORS

## S9208

8 Nm, ON/OFF CONTROL

The S9208 Security Fire Electric, Spring Return Damper Actuator series has been specially developed for the motorized operation of fire protection dampers.

When the control signal is applied the actuator drives the damper to the operational position, while evenly tensioning the integrated spring.

After a power failure the stored energy in the spring immediately brings the damper to the safety position.

Manual operation is automatically cancelled when the actuator is in electrical operation.

S9208 actuators can be supplied with the Advanced Sensor. The Advanced Sensor is a thermoelectric tripping device which contains two thermal fuses: one for duct temperature monitoring, available in 72°C or 95°C models; and one for ambient temperature, available in a 72°C model.

When the ambient temperature or duct temperature exceeds the maximum value, the power cuts off irreversibly, allowing the actuator to drive the damper to its safety position with the energy stored in the spring.

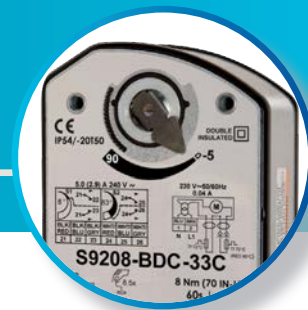
## FEATURES

- ON/OFF control signal
- 12 mm square shaft and 10 mm, 8 mm adapter inside the package
- Connection with halogen-free cable
- Advanced Sensor for duct temperature monitoring, available in 72°C or 95°C models; and one for ambient temperature, available in a 72°C model.
- ST1.72E temperature sensor. Switch point of temperature sensor ca. 72°C
- Actuator temperature sensor to monitor ambient sensor
- Low noise level
- Manual positioning with crank handle
- 2 fixed auxiliary switches (8° and 83°)

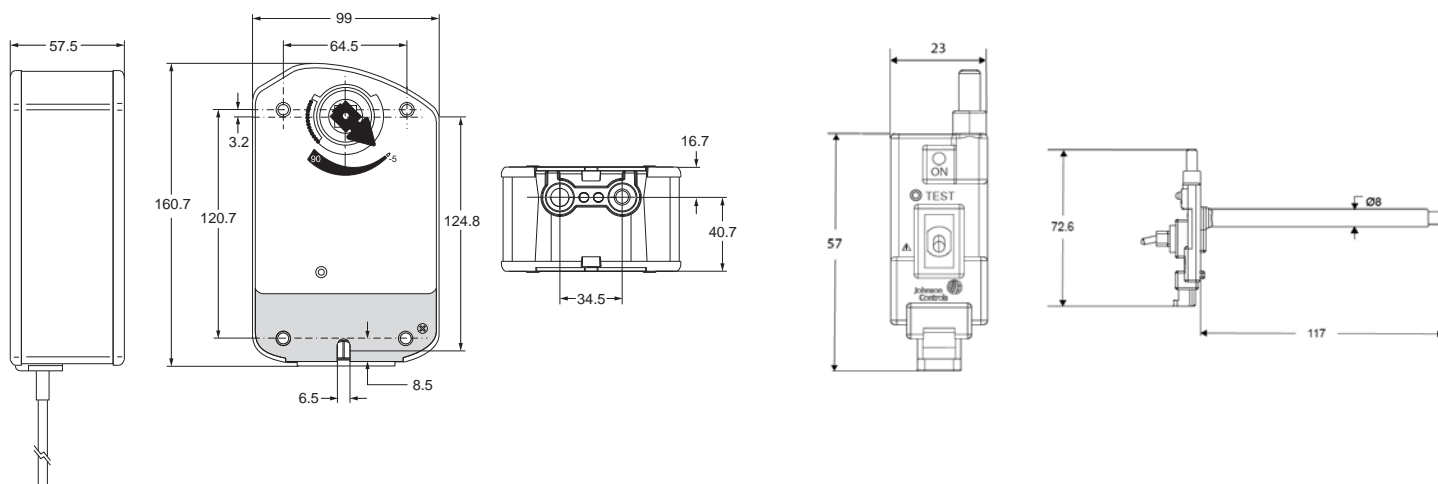


## ACTUATORS

### S9208 SAFETY DAMPER ACTUATORS



## DIMENSIONS (in mm)



## ORDERING INFORMATION

CODES	SUPPLY VOLTAGE (50-60 Hz)	DESCRIPTION
S9208-BGC-33	24 VAC / VDC	Without sensor
S9208-BGC-33A		With ambient thermosensor
S9208-BGC-33B		With duct sensor
S9208-BGC-33C		With duct and ambient sensors
S9208-BGC-33E		Advanced Sensor, 72°C duct fuse and 72°C ambient fuse
S9208-BGC-33F		Advanced Sensor, 95°C duct fuse and 72°C ambient fuse
S9208-BDC-33	230 VAC	Without sensor
S9208-BDC-33A		With ambient thermosensor
S9208-BDC-33B		With duct sensor
S9208-BDC-33C		With duct and ambient sensors
S9208-BDC-33E		Advanced Sensor, 72°C duct fuse and 72°C ambient fuse
S9208-BDC-33F		Advanced Sensor, 95°C duct fuse and 72°C ambient fuse



# ACTUATORS AND VALVES

## ACTUATORS

### SAFETY DAMPER ACTUATORS

## S9220

20 Nm, ON/OFF SPRING RETURN ACTUATOR FOR FIRE DAMPER

The S9220 Fire electric, Spring Return damper actuator series has been specially developed for the motorized operation of fire protection dampers.

When the control signal is applied the actuator drives the damper to the operational position, while evenly tensioning the integrated spring.

After a power failure the stored energy in the spring immediately brings the damper to the safety position. Manual operation is automatically cancelled when the actuator is in electrical operation.

## FEATURES

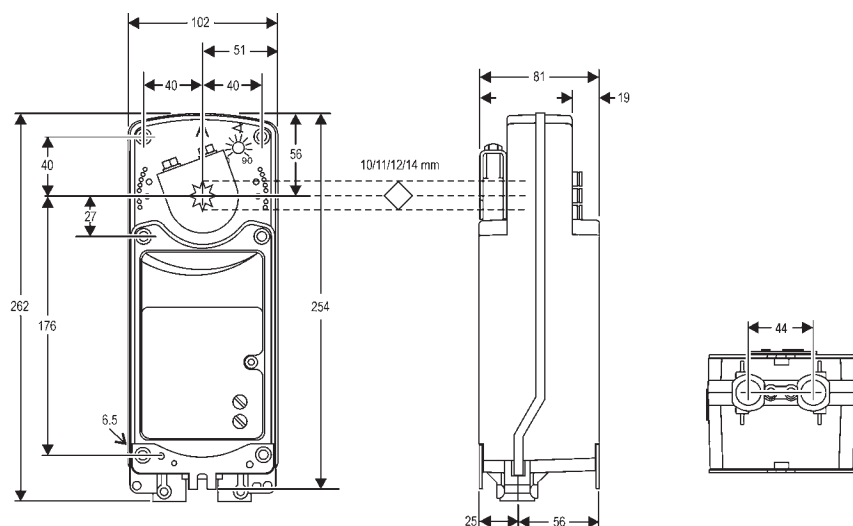
- ON/OFF control signal
- 10/11/12/14 mm steel adapter for a square shaft
- Connection with halogen-free cable
- Direct connection of ST1.72E temperature sensor. Switch point of temperature sensor ca.72 °C
- Actuator temperature sensor to monitor ambient sensor
- Low noise level
- Manual positioning with crank handle
- 2 fixed auxiliary switches (5° and 85°)







## DIMENSIONS (in mm)



## ORDERING INFORMATION

S9220-B	x	C-	xx	x	ON/OFF ACTUATOR WITH 2 AUXILIARY SWITCHES
					- without sensor
					A with ambient thermosensor
					B with duct sensor
					C with duct and ambient sensors
				31	10mm Coupler
				32	11mm Coupler
				33	12mm Coupler
				34	14mm Coupler
				D	230Vac
				G	24V AC/DC

# ACTUATORS AND VALVES

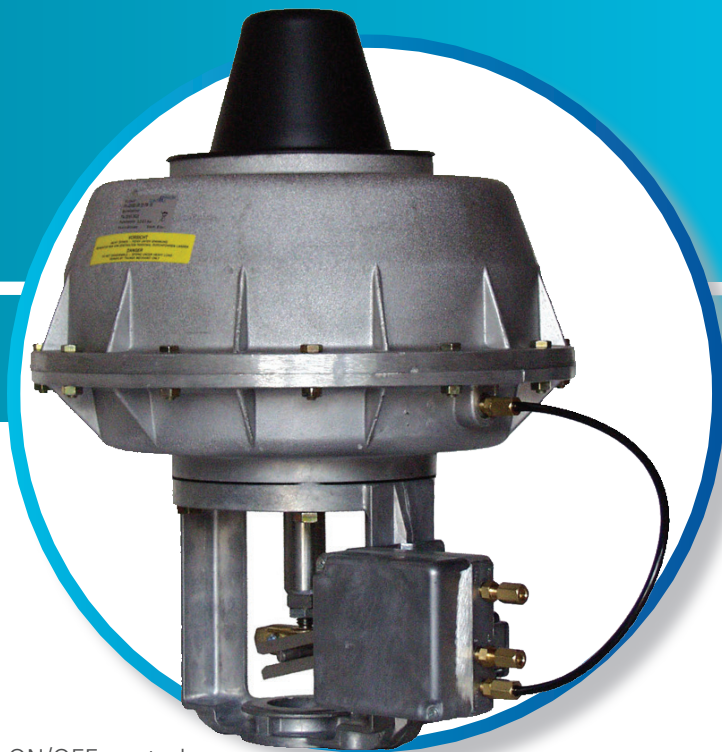
## ACTUATORS

### PNEUMATIC VALVE ACTUATORS

## PA-2000

### ON/OFF CONTROL

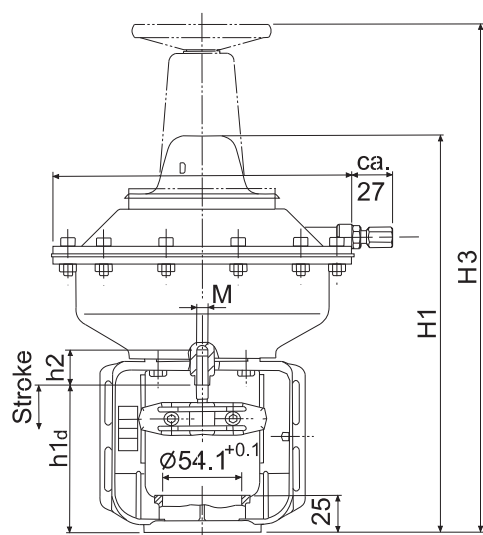
The PA-2000 Pneumatic Valve Actuators series is available for ON/OFF control. The actuator can be combined with VG8000 series valves in accordance with the maximum close-off pressure ratings specified. The fail safe position of the PA-2000 can be changed in-situ with a conversion kit.



## FEATURES

- Manual override
- Reversible action in-situ
- Accessories available

## DIMENSIONS (in mm)





## ACTUATORS

### PA-2000 PNEUMATIC VALVE ACTUATORS

## ORDERING INFORMATION

CODES	HANDWHEEL	SPRING RANGE	POSITIONER (PR10)	SPRING RETURN ACTION	DIAPHRAM AREA	STROKE		
PA-2000-3212	---	20 - 50 kPa	---	Direct Acting Actuator stem extends	150 cm <sup>2</sup>	13 mm		
PA-2100-3217	■	70 - 100 kPa				25 mm		
PA-2000-3312	---	20 - 50 kPa			600 cm <sup>2</sup>	42 mm		
PA-2100-3317	■	70 - 100 kPa				25 mm		
PA-2000-3612	---	20 - 50 kPa			■	Reverse Acting Actuator stem extends	150 cm <sup>2</sup>	13 mm
PA-2100-3617	■	70 - 100 kPa						25 mm
PA-2000-3712	---	20 - 50 kPa					600 cm <sup>2</sup>	42 mm
PA-2100-3717	■	70 - 100 kPa						25 mm
PA-2030-3222	---	20 - 50 kPa	---	Direct Acting Actuator stem extends			150 cm <sup>2</sup>	13 mm
PA-2130-3227	■	70 - 100 kPa						25 mm
PA-2030-3322	---	20 - 50 kPa					600 cm <sup>2</sup>	42 mm
PA-2130-3327	■	70 - 100 kPa						25 mm
PA-2030-3622	---	20 - 50 kPa			■	Reverse Acting Actuator stem extends	150 cm <sup>2</sup>	13 mm
PA-2130-3627	■	70 - 100 kPa						25 mm
PA-2030-3722	---	20 - 50 kPa					600 cm <sup>2</sup>	42 mm
PA-2130-3727	■	70 - 100 kPa						25 mm
PA-20x0-3212	---	20 - 50 kPa	---	Direct Acting Actuator stem extends			150 cm <sup>2</sup>	13 mm
PA-2100-3217	■	70 - 100 kPa						25 mm
PA-2000-3312	---	20 - 50 kPa					600 cm <sup>2</sup>	42 mm
PA-2100-3317	■	70 - 100 kPa						25 mm
PA-2000-3612	---	20 - 50 kPa			■	Reverse Acting Actuator stem extends	150 cm <sup>2</sup>	13 mm
PA-2100-3617	■	70 - 100 kPa						25 mm
PA-2000-3712	---	20 - 50 kPa					600 cm <sup>2</sup>	42 mm
PA-2100-3717	■	70 - 100 kPa						25 mm

# VALVES AND ACTUATORS COMBINATIONS

### CONTROL VALVE SELECTION

	VFB	VG1000	VP1000	VPA	VG3000	VG7000	VGS800	VG9000	VG8000	VG8300	V6W0000
2-way	■	■	■	■	■	■	■	■	■	■	
3-way mixing valve		■			■	■	■	■	■		
3-way diverting valve		■			■				■		
3-way + by-pass valve					■						
6-way valves											■
Thermal actuator			■		■						
Electric actuator	■	■	■	■	■	■	■	■	■	■	■
Pneumatic actuator						■			■	■	
$K_{VS}$ 0,25											
$K_{VS}$ 0,4											
$K_{VS}$ 0,63											
$K_{VS}$ 1											
$K_{VS}$ 1,6											
$K_{VS}$ 2,5											
$K_{VS}$ 3,3											
$K_{VS}$ 4											
$K_{VS}$ 6,3											
$K_{VS}$ 10											
$K_{VS}$ 16											
$K_{VS}$ 25											
$K_{VS}$ 40											
$K_{VS}$ 52											
$K_{VS}$ 63											
$K_{VS}$ 72											
$K_{VS}$ 100											
$K_{VS}$ 124											
$K_{VS}$ 126											
$K_{VS}$ 150											
$K_{VS}$ 160											
$K_{VS}$ 180											
$K_{VS}$ 243											
$K_{VS}$ 250											
$K_{VS}$ 350											
$K_{VS}$ 397											
$K_{VS}$ 721											
$K_{VS}$ 1083											
$K_{VS}$ 1591											
$K_{VS}$ 2852											
$K_{VS}$ 4670											
$K_{VS}$ 6946											
$K_{VS}$ 9063											
$K_{VS}$ 12044											
$K_{VS}$ 14804											
$K_{VS}$ 19212											

N/A

N/A

# ACTUATORS AND VALVES

## VALVES

### TERMINAL UNIT VALVES

## VG3000

DN10...25, PN16

The VG3000 brass valve series is primarily designed to regulate the flow of water in response to the demand of a controller in zone and terminal unit applications.

Following actuators are available:

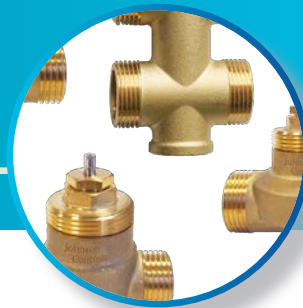
- VA-708x thermal ON/OFF actuator
- VA-709x thermal 0...10 V actuator
- VA-748x electric terminal unit valve actuator

The valves are available in 2-way, 3-way mixing and 3-way mixing with built-in by-pass configurations.

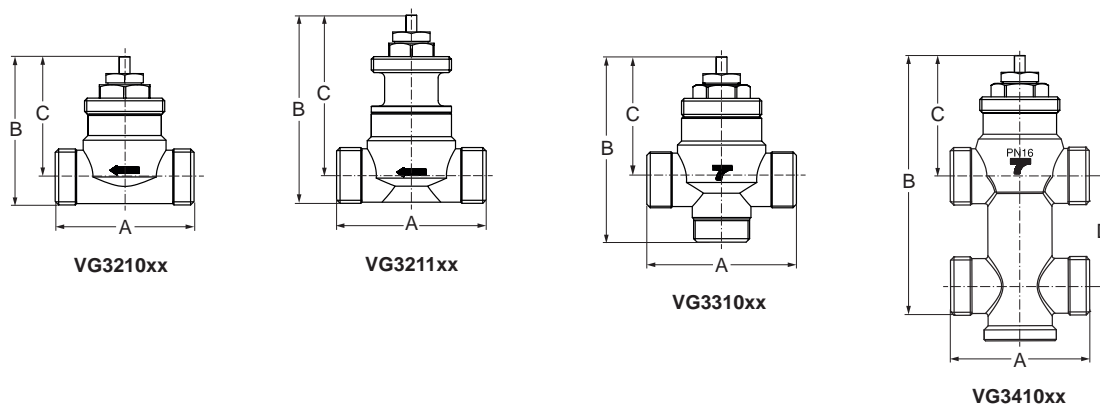
## FEATURES

- 2-way PDTC (NO) with 6 bar close off pressure
- Extend range of  $K_{VS}$  (0.4...6.3)
- Forged brass body, stainless steel stem and spring
- Actuator can be field installed after piping
- Commissioning cap available as accessory (VG3000-CAP)





## DIMENSIONS (in mm)



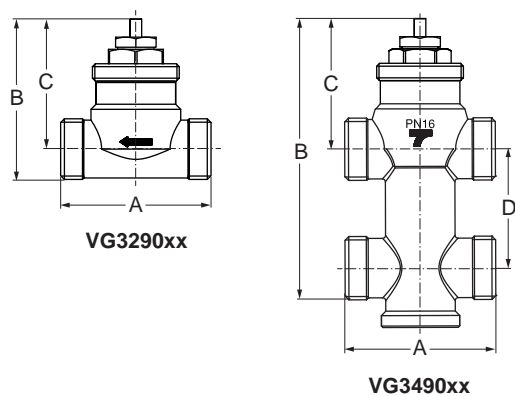
### THREADED MALE CONNECTION - BSPP

CODES	DIMENSIONS			
	A	B	C	D
VG3210BS	52	55	45	---
VG3210CS				
VG3210DS				
VG3210ES				
VG3210FS	56	58	45	---
VG3210JS				
VG3210KS	66	61.5	45.5	---
VG3210LS	80			
VG3211BS	52	70	60	---
VG3211CS				
VG3211DS				
VG3211ES				
VG3211FS	56	73	60	---
VG3211JS				
VG3211KS	66	74	60	---
VG3211LS	80			

CODES	DIMENSIONS			
	A	B	C	D
VG3310BS	52	66	45	---
VG3310CS				
VG3310DS				
VG3310ES				
VG3310FS	56	67	46	---
VG3310JS		73		
VG3310KS	66	80	46	---
VG3310LS	80			
VG3410BS	52	95.5	45	40
VG3410CS				
VG3410DS				
VG3410ES				
VG3410FS	56	96.5	46	---
VG3410JS		98.2		
VG3410KS	66	125	46	---
VG3410LS	80			

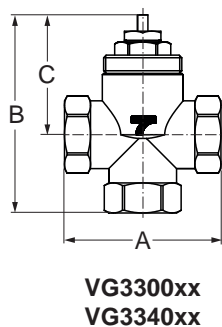
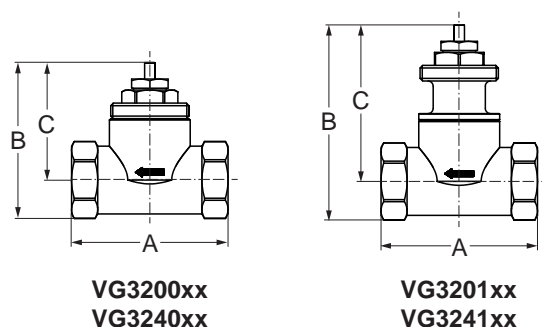


## DIMENSIONS (in mm)



## COMPRESSION FITTING

CODES	DIMENSIONS			
	A	B	C	D
VG3290BS	52	55	45	---
VG3290CS				
VG3290DS				
VG3290ES				
VG3290FS	56	95.5	45	40
VG3490BS	52			
VG3490CS				
VG3490DS				
VG3490ES	56	96.5	45	40
VG3490FS				



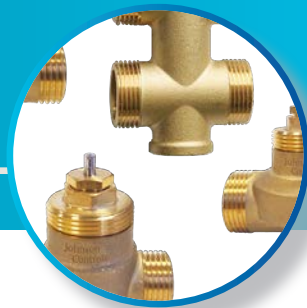
## THREADED FEMALE CONNECTION BSPP

CODES	DIMENSIONS		
	A	B	C
VG3200FS	60	58	45
VG3200KS	65	60	45
VG3200LS	80	64	45.5
VG3201FS	60	73	60
VG3201KS	65	75	60
VG3201LS	80	77	58
VG3300FS	60	76	46
VG3300KS	65	80	46
VG3300LS	80	85.5	46

## THREADED FEMALE CONNECTION NPT

CODES	DIMENSIONS		
	A	B	C
VG3240FS	60	58	45
VG3240KS	65	60	45
VG3240LS	80	64	45.5
VG3241FS	60	73	60
VG3241KS	65	75	60
VG3241LS	80	77	58
VG3340FS	60	76	46
VG3340KS	65	80	46
VG3340LS	80	85.5	46





## ORDERING INFORMATION

### THREADED MALE CONNECTION - BSPP

CODES	BODY TYPE	BODY SIZE	CONNECTIONS	K <sub>VS</sub> (Cv) CONTROL PORT	K <sub>VS</sub> BY-PASS PORT
VG3210BS	2-way PDTC (NO)	DN10	G 1/2"	0.4 (0.43)	---
VG3210CS				0.63 (0.70)	
VG3210DS				1.0 (1.12)	
VG3210ES				1.6 (1.9)	
VG3210FS				2.5 (2.9)	
VG3210JS		DN15	G 3/4"	2.5 (2.9)	
VG3210KS				4.0 (4.7)	
VG3210LS				6.3 (7.4)	
VG3211BS		2-way PDTC (NO)	DN10	G 1/2"	
VG3211CS	0.63 (0.70)				
VG3211DS	1.0 (1.12)				
VG3211ES	1.6 (1.9)				
VG3211FS	2.5 (2.9)				
VG3211JS	DN15		G 3/4"	2.5 (2.9)	
VG3211KS				4.0 (4.7)	
VG3211LS				6.3 (7.4)	
VG3310BS	3-way Mixing		DN10	G 1/2"	0.4 (0.43)
VG3310CS		0.63 (0.70)			0.4
VG3310DS		1.0 (1.12)			0.63
VG3310ES		1.6 (1.9)			1.0
VG3310FS		2.5 (2.9)			---
VG3310JS		DN15	G 3/4"	2.5 (2.9)	1.6
VG3310KS				4.0 (4.7)	2.5
VG3310LS				6.3 (7.4)	4.0
VG3410BS		3-way with Built-in By-pass Mixing	DN10	G 1/2"	0.4 (0.43)
VG3410CS	0.63 (0.70)				0.4
VG3410DS	1.0 (1.12)				0.63
VG3410ES	1.6 (1.9)				1.0
VG3410FS	2.5 (2.9)				---
VG3410JS	DN15		G 3/4"	2.5 (2.9)	1.6
VG3410KS				4.0 (4.7)	2.5
VG3410LS				6.3 (7.4)	4.0



## VALVES

VG3000 - TERMINAL UNIT VALVES

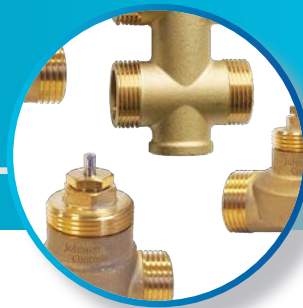
## ORDERING INFORMATION

### COMPRESSION FITTING

CODES	BODY TYPE	BODY SIZE	CONNECTIONS	K <sub>VS</sub> (Cv) CONTROL PORT	K <sub>VS</sub> BY-PASS PORT
VG3290BS	2-way PDTC (NO)	DN10	Compression fitting 1/2"	0.4 (0.43)	---
VG3290CS				0.63 (0.70)	
VG3290DS				1.0 (1.12)	
VG3290ES				1.6 (1.9)	
VG3290FS				2.5 (2.9)	
VG3490BS	3-way with Built-in By-pass Mixing	DN10	Compression fitting 1/2"	0.4 (0.43)	0.25 (0.29)
VG3490CS				0.63 (0.70)	0.4 (0.43)
VG3490DS				1.0 (1.12)	0.63 (0.70)
VG3490ES				1.6 (1.9)	1.0 (1.12)
VG3490FS				2.5 (2.9)	1.6 (1.9)

### THREADED FEMALE CONNECTION - BSPP

CODES	BODY TYPE	BODY SIZE	CONNECTIONS	K <sub>VS</sub> (Cv) CONTROL PORT	K <sub>VS</sub> BY-PASS PORT
VG3200FS	2-way PDTC (NO)	DN15	G 1/2"	2.5 (2.9)	---
VG3200KS		DN20	G 3/4"	4.0 (4.7)	---
VG3200LS		DN25	G 1"	6.3 (7.4)	---
VG3201FS	2-way PDTC (NO)	DN15	G 1/2"	2.5 (2.9)	---
VG3201KS		DN20	G 3/4"	4.0 (4.7)	---
VG3201LS		DN25	G 1"	6.3 (7.4)	---
VG3300FS	3-way Mixing	DN15	G 1/2"	2.5 (2.9)	1.6
VG3300KS		DN20	G 3/4"	4.0 (4.7)	2.5
VG3300LS		DN25	G 1"	6.3 (7.4)	4.0



## VALVES

VG3000 - TERMINAL UNIT VALVES

## ORDERING INFORMATION

THREADED FEMALE CONNECTION - NPT

CODES	BODY TYPE	BODY SIZE	CONNECTIONS	$K_{VS}$ (Cv) CONTROL PORT	$K_{VS}$ BY-PASS PORT
VG3240FS	2-way PDTC (NO)	DN15	NPT 1/2"	2.5 (2.9)	---
VG3240KS		DN20	NPT 3/4"	4.0 (4.7)	---
VG3240LS		DN25	NPT 1"	6.3 (7.4)	---
VG3241FS	2-way PDTC (NO)	DN15	NPT 1/2"	2.5 (2.9)	---
VG3241KS		DN20	NPT 3/4"	4.0 (4.7)	---
VG3241LS		DN25	NPT 1"	6.3 (7.4)	---
VG3340FS	3-way Mixing	DN15	NPT 1/2"	2.5 (2.9)	1.6
VG3340KS		DN20	NPT 3/4"	4.0 (4.7)	2.5
VG3340LS		DN25	NPT 1"	6.3 (7.4)	4.0

## ACCESSORY (ORDER SEPARATELY)

CODE	DESCRIPTION
VG3000-CAP	Plastic commissioning cap

# ACTUATORS AND VALVES

## VALVES

### TERMINAL UNIT VALVES

## V6W0000

DN15...20, PN16

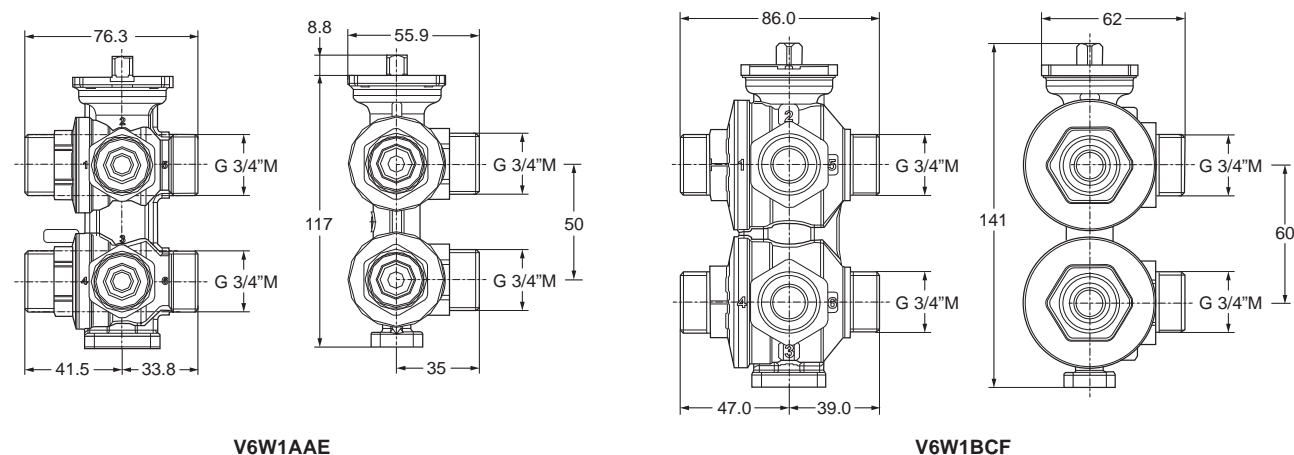


The V6W0000 line consists in 6-way ball valves used for HVAC 4-pipes applications to automatically carry out the winter-summer change-over or, potentially, the control of radiant ceilings, fan coils and chilled beams.

## FEATURES

- No cross-flow between floating and cooling circuits
- Different  $K_{VS}$  combination for an accurate and valuable control
- Compact and cost effective solution
- Changeable disk to select  $K_{VS}$  on site, avoiding any possible ordering mistakes

## DIMENSIONS (in mm)



V6W1AAE

V6W1BCF

## ORDERING INFORMATION

CODES	BODY SIZE	$K_{VS}$ MAX	$K_{VS}$ WITH DISK	CONNECTION
V6W1AAE	DN15	1.25	1 - 0.63 - 0.4 - 0.25	3/4" Male Flat ends
V6W1BCF	DN20	2.7	2.1 - 1.6 - 1.0 - 0.7	
V6W0AAE	DN15	1.25	1 - 0.63 - 0.4 - 0.25	1/2" Female BSP

# ACTUATORS AND VALVES

## VALVES

### PLANT VALVES

## VGS800

DN15...50, PN16



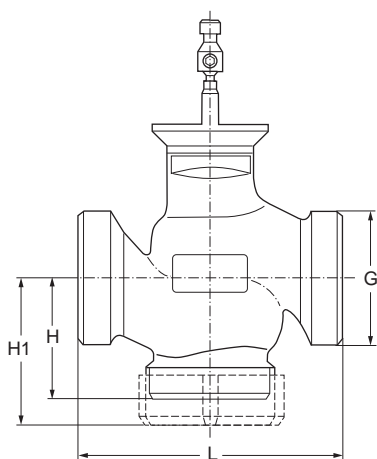
These valves are primarily designed to regulate the flow of water in response to the demand of a controller in zone and terminal unit applications. Following electric actuators are available:

- VA-77xx and VA78xx electric valve actuators

## FEATURES

- Cast bronze body
- $K_{VS}$  0.63...40
- 2-way PDT0 (normally closed) using 3-way mixing valve with modkit, 3-way mixing configuration
- Fluid temperature 2 to 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



## VALVES

### VGS800 - PLANT VALVES

## ORDERING INFORMATION

### 3-WAY MIXING CONFIGURATION

CODES	BODY SIZE	K <sub>VS</sub>	NOMINAL STROKE (mm)	CLOSE-OFF PRESSURE kPa	
				VA-77xx-820x 500 N	VA78xx-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 MUFFLES

CODES	MUFFLES
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 muffles are needed for the mixing valves

### MODKIT FOR TRANSFORMATION OF 3-WAY INTO 2-WAY VALVES

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

# ACTUATORS AND VALVES

## 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 3-way mixing configurations. Both electric and pneumatic actuators are available for factory or field mounting.

## FEATURES

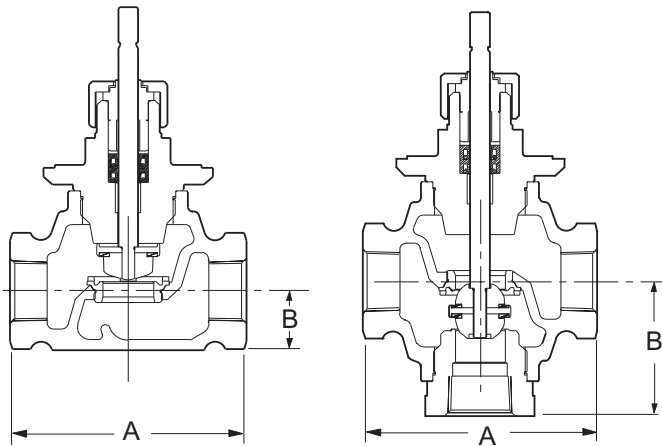
- DN15 through DN50 bronze valves, in 2-way PDTC, PDTO and 3-way mixing configurations
- Wide range of electric actuators available for all valves
- Every valve tested for tight shutoff
- Uses Standard Johnson Controls U-cup Packing
- Flexible features-and-options ordering template
- Standard bonnet and stem design
- Leakage
  - Brass trim: 0.01% of maximum flow
  - Stainless steel trim: 0.05% of maximum flow
- Inherent flow characteristics
  - Equal percentage: 2-way valves
  - Linear: 3-way valves
- Rangeability: 25:1 at 0.25...1 KVS and 100:1 at 1.6...40 K<sub>Vs</sub>
- 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 to 120°C water / 100 kPa Saturated Steam
  - With all other actuators: 2 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



## ORDERING INFORMATION FOR VALVE BODIES

VG7

### STEM TYPE

T	Standard threaded stem
S	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	FLOW COEFFICIENT $K_{vs}$
A	DN15	0.25
B	DN15	0.4
C	DN15	0.63
D	DN15	1.0
E	DN15	1.6
F	DN15	2.5
G	DN15	4.0
L	DN20	6.3
N	DN25	10
P	DN32	16
R	DN40	25
S	DN50	40

	BODY CONFIGURATION	TRIM TYPE	INHERENT FLOW CHARACTERISTICS
1	2-way	Brass trim	Equal percentage
2	3-way mixing	Brass trim	Linear in both ports
3	2-way	Stainless steel trim	Equal percentage
4	3-way mixing	Stainless steel trim	Linear in both ports
5	3-way mixing	Brass trim	Equal percentage in control port, linear in bypass port (only available for VG7x1... valves with BSPP male connection)

### END CONNECTION

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

### BODY CONFIGURATION

2	2-way PDTTC (Normally Open)
4	2-way PDTTO (Normally Closed)
8	3-way Mixing



## VALVES

### VG7000 - PLANT VALVES

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



## VALVES

### VG7000 - PLANT VALVES

MAXIMUM CLOSE-OFF PRESSURES (*in kPa*), FOR VALVES WITH BRASS TRIM AND PNEUMATIC ACTUATORS

ACTUATOR	VALVES SIZE	2-WAY PDTC OR 3-WAY VALVES WITH 138 kPa AIR SUPPLY		2-WAY PDTO OR 3-WAY VALVES WITH 0 kPa AIR SUPPLY	
		Spring range kPa <sup>1</sup>			
		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

**Note**  
**1** 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.



## VALVES

### VG7000 - PLANT VALVES

MAXIMUM CLOSE-OFF PRESSURES (*in kPa*), FOR VALVES WITH STAINLESS STEEL TRIM AND PNEUMATIC ACTUATORS

ACTUATOR	VALVES SIZE	2-WAY PDTC OR 3-WAY VALVES WITH 138 kPa AIR SUPPLY		2-WAY PDTO OR 3-WAY VALVES WITH 0 kPa AIR SUPPLY	
		Spring range kPa <sup>1</sup>			
		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**  
**1** 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.

# ACTUATORS AND VALVES

## 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 (HVAC) systems.

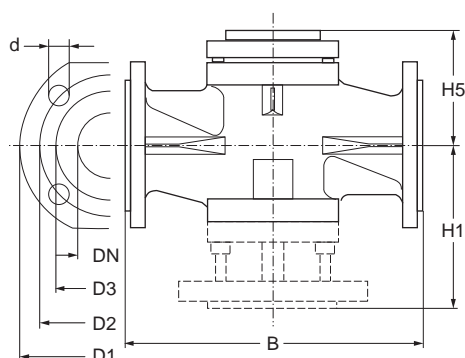
Following electric actuators are available:

- VA-7700 for DN15...50 valves
- VA7810 for DN15...65 valves
- VA1000 for DN65...100 valves

## FEATURES

- Nodular cast iron body
- $K_{VS}$  0.63...160
- 2-way PDTO (normally closed) and 3-way mixing configurations
- Fluid temperature 2 to 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





## VALVES

VG9000 - PLANT VALVES

## ORDERING INFORMATION

PN6 SERIES (VG9xxxS1K)

CODES <sup>1</sup>	BODY SIZE	K <sub>VS</sub>	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			
2-way PDT0 (Normally Closed) configuration										
VG94A5S1K	DN15	0.63	---	---	---	600	600			
VG94A4S1K		1.0								
VG94A3S1K		1.6								
VG94A2S1K		2.5								
VG94A1S1K		4.0								
VG94B1S1K	DN20	6.3	---	---	---	600	600			
VG94C1S1K	DN25	10								
VG94D1S1K	DN32	16								
VG94E1S1K	DN40	25								
VG94F1S1K	DN50	40								
VG94G1S1K	DN65	63	470	620	---	---	---			
VG94H1S1K	DN80	100	510	300				400		
VG94J1S1K	DN100	160	320	180				240		
3-way mixing configuration										
VG98A5S1K	DN15	0.63	---	---				---	600	600
VG98A4S1K		1.0								
VG98A3S1K		1.6								
VG98A2S1K		2.5								
VG98A1S1K		4.0								
VG98B1S1K	DN20	6.3	---	---	---	600	600			
VG98C1S1K	DN25	10								
VG98D1S1K	DN32	16								
VG98E1S1K	DN40	25								
VG98F1S1K	DN50	40								
VG98G1S1K	DN65	63	470	620	---	---	---			
VG98H1S1K	DN80	100	510	300				400		
VG98J1S1K	DN100	160	320	180				240		

### Note

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





## VALVES

VG9000 - PLANT VALVES

## ORDERING INFORMATION

PN10 SERIES (VG9xxxS1L)

CODES <sup>1</sup>	BODY SIZE	K <sub>VS</sub>	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	
2-way PDT0 (Normally Closed) configuration								
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	---	
3-way Mixing configuration								
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	---	

### Note

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

# ACTUATORS AND VALVES

## 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 (HVAC) systems.

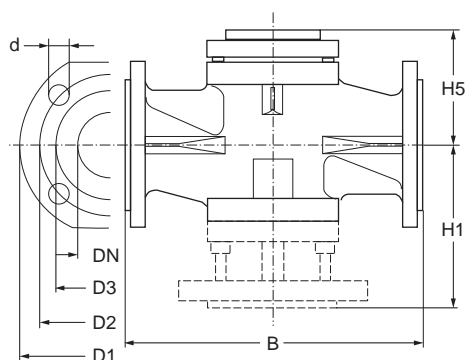
A variety of electric and pneumatic actuators are available.



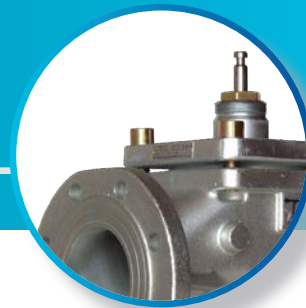
## FEATURES

- Nodular cast iron body
- $K_{VS}$  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



## VALVES

VG8000N - PLANT VALVES

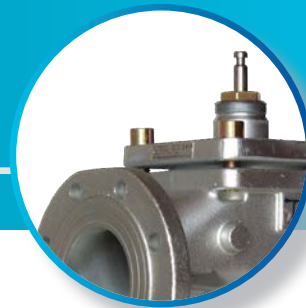
## ORDERING INFORMATION

2-WAY PDTC (NORMALLY OPEN) CONFIGURATION

CODES <sup>1</sup>	BODY SIZE	K <sub>VS</sub>	CLOSE-OFF PRESSURE kPa										
			FA-2000-741x 2400 N	FA-2000-751x 2200 N	FA-3300 6000 N	RA-3100-8226 2700 N	VA1x20 <sup>2</sup> 2000 N	VA1125 <sup>2</sup> 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											
VG82C1S1N	DN25	10											
VG82D1S1N	DN32	16											
VG82E1S1N	DN40	25											
VG82F1S1N	DN50	40								1030	650	800	1080
VG82G1S1N	DN65	63								790	500	630	830
VG82H1S1N	DN80	100	370	220	380	390							
VG82J1S1N	DN100	160	190	740	120	160	230						
VG82K1S1N	DN125	250	110	460	---	90	140						
VG82L1S1N	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.



## VALVES

VG8000N - PLANT VALVES

## ORDERING INFORMATION

### 3-WAY MIXING CONFIGURATION

CODES <sup>1</sup>	BODY SIZE	K <sub>VS</sub>	CLOSE-OFF PRESSURE kPa						
			FA-2000-741x 2400 N	FA-2000-751x 2200 N	FA-3300 6000 N	RA-3100-8226 2700 N	VA1x20 <sup>2</sup> 2000 N	VA1125 <sup>2</sup> 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	1030	---	---	220	380	390	---
VG88G1S1N	DN65	63	790						
VG88H1S1N	DN80	100	370						
VG88J1S1N	DN100	160	190						
VG88K1S1N	DN125	250	110	---	460	---	90	140	---
VG88L1S1N	DN150	350	50	280	40				

#### 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.



## VALVES

VG8000N - PLANT VALVES

## ORDERING INFORMATION

### 3-WAY MIXING CONFIGURATION

CODES <sup>1</sup>	BODY SIZE	K <sub>VS</sub>	CLOSE-OFF PRESSURE kPa						
			FA-2000-741x 2400 N	FA-2000-751x 2200 N	FA-3300 6000 N	RA-3100- 8226 2700 N	VA1x20 <sup>2</sup> 2000 N	VA1125 <sup>2</sup> 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	---
VG89C1S1N	DN25	10							
VG89D1S1N	DN32	16							
VG89E1S1N	DN40	25							
VG89F1S1N	DN50	40	---	---	---	---	---	---	---
VG89G1S1N	DN65	63							
VG89H1S1N	DN80	100							
VG89J1S1N	DN100	160							
VG89K1S1N	DN125	250	---	---	---	---	---	---	---
VG89L1S1N	DN150	350							

#### Notes

**1** 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.

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

# ACTUATORS AND VALVES

## VALVES

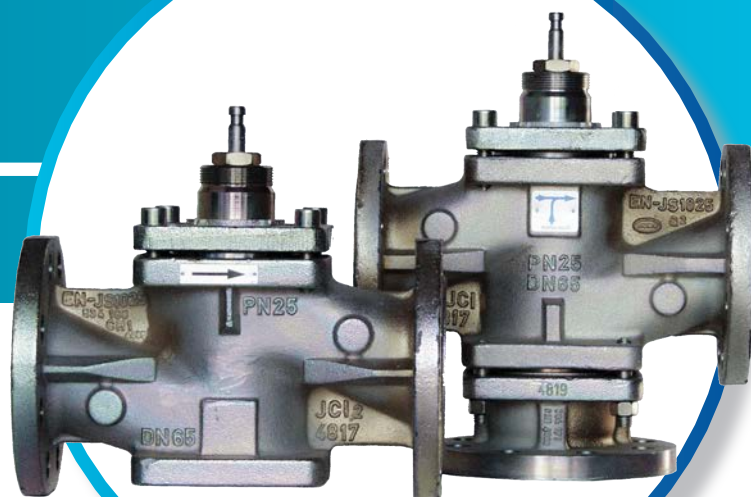
### PLANT VALVES

## 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 (HVAC) systems.

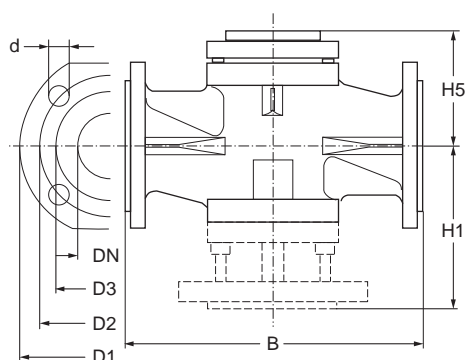
A variety of electric and pneumatic actuators are available.



## FEATURES

- Nodular cast iron body
- $K_{VS}$  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

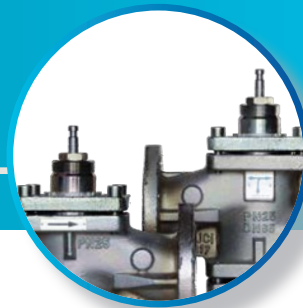
## DIMENSIONS (in mm)



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







## VALVES

### VG8000H - PLANT VALVES

## ORDERING INFORMATION

### 3-WAY MIXING CONFIGURATION

CODES <sup>1</sup>	BODY SIZE	K <sub>VS</sub>	CLOSE-OFF PRESSURE kPa							VA1125 <sup>2</sup> 500 N	VA78xx 1000 N					
			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 <sup>2</sup> 2000 N	VA1125 <sup>2</sup> 500 N							
VG88A4S1H	DN15	1.0	---	---	---	---	---	---	2500	2500	2500					
VG88A3S1H		1.6														
VG88A2S1H		2.5														
VG88A1S1H		4.0														
VG88B1S1H	DN20	6.3	---	---	---	---	---	---	---	---	2030					
VG88C1S1H	DN25	10									1360					
VG88D1S1H	DN32	16									660					
VG88E1S1H	DN40	25									370					
VG88F1S1H	DN50	40	---	---	---	---	---	---	---	---	---					
VG88G1S1H	DN65	63										920	1300	600	750	1020
VG88H1S1H	DN80	100										710	1010	450	580	750
VG88J1S1H	DN100	160										330	480	200	260	370
VG88K1S1H	DN125	250	---	---	---	---	---	---	---	---	---					
VG88L1S1H	DN150	350										180	290	100	140	210
			100	450	170	---	80	120								
			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 K<sub>VS</sub> 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.



# ACTUATORS AND VALVES

## VALVES

### PLANT VALVES

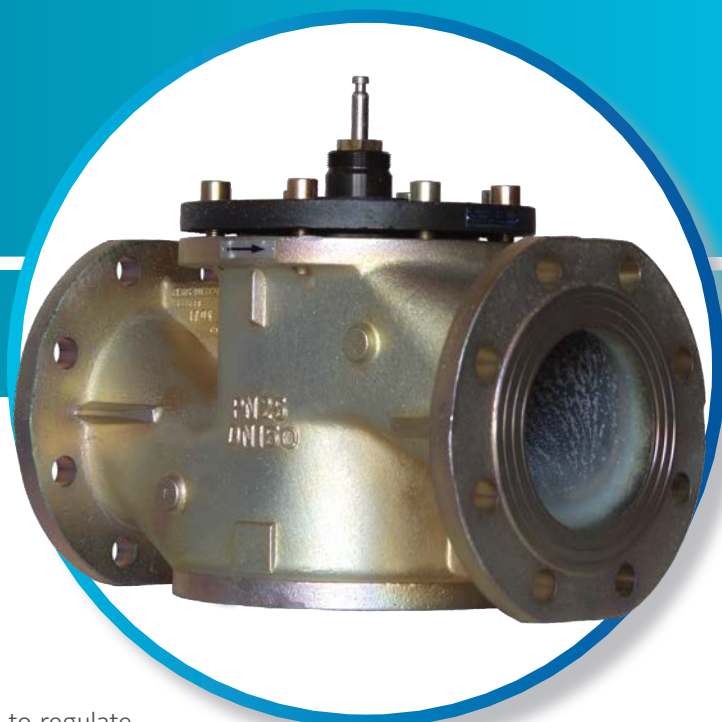
## VG8300N

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 (HVAC) systems.

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

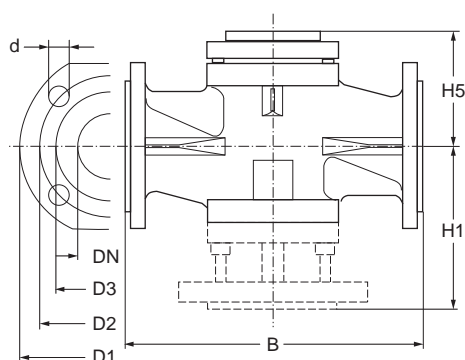
A variety of electric and pneumatic actuators are available.



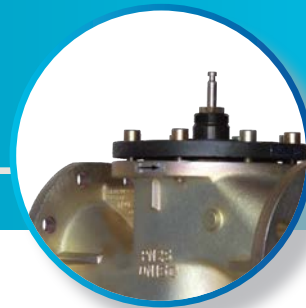
## FEATURES

- Nodular cast iron bodies
- $K_{VS}$  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



## VALVES

VG8300N - PLANT VALVES

## ORDERING INFORMATION

CODES <sup>1</sup>	BODY SIZE	K <sub>VS</sub>	CLOSE-OFF PRESSURE kPa							
			Spring return		Non spring return					
			FA-2000-741x 2200 N	VA1x20 <sup>2</sup> 2000 N	RA-3100-8126 1200 N	RA-3100-8226 1700 N	VA1125 <sup>2</sup> 2500 N	VA78xx 1000 N		
VG83E1S1N	DN40	25	---	1600	1600	---	1600	1600		
VG83F1S1N	DN50	40			---	1600		---	1600	---
VG83G1S1N	DN65	63								
VG83H1S1N	DN80	100	1600	1500	---	1600	1500	---		
VG83J1S1N	DN100	160		1400						
VG83K1S1N	DN125	250		1000					1400	
VG83L1S1N	DN150	350								

### Notes

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

# ACTUATORS AND VALVES

## VALVES

### PLANT VALVES

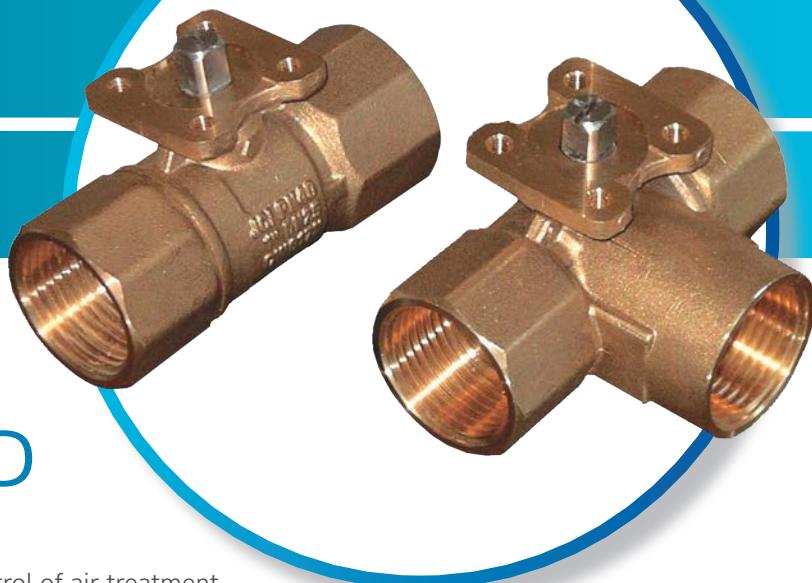
## VG1000 THREADED

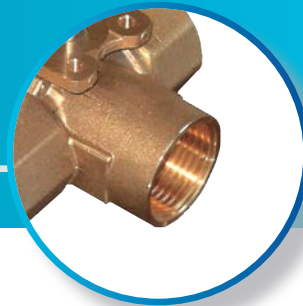
DN15...50, PN40

The VG1000 series ball valves are used for the water control of air treatment systems in Heating, Ventilating and Air Conditioning (HVAC) systems. They are operated by direct or remote mounted spring return and non spring return actuators.

### FEATURES

- Forged brass body
- $K_{VS}$  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...95°C with VA9104 series  
(140°C with M9000-561 Thermal Barrier)
  - 30...100°C with VA9203, VA9208, and VA9310 series  
(140°C with M9000-561 Thermal Barrier)
  - Water with glycol to max 50% volume
  - Steam to max 100 kPa at 120°C with thermal barrier

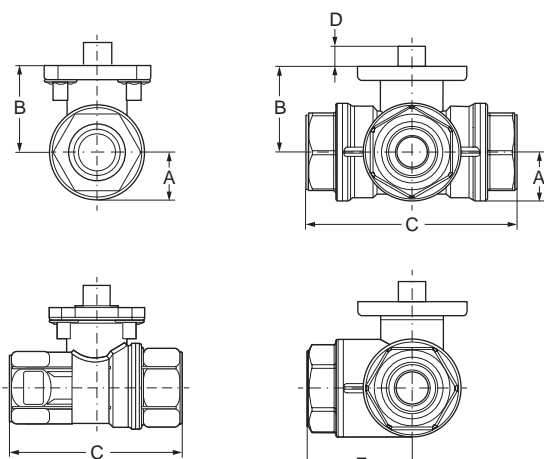




## VALVES

### VG1000 THREADED - PLANT VALVES

## DIMENSIONS (in mm)



Two-way Valve

Three-way Valve

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

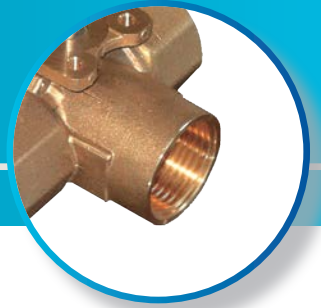
## ORDERING INFORMATION

CODES	BODY SIZE	$K_{VS}$ (CONTROL PORT)	$K_{VS}$ (BY-PASS PORT)
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

# ACTUATORS AND VALVES

## VALVES

### VG1000 THREADED - PLANT VALVES



## VALVES AND ACTUATORS COMBINATIONS

### Notes

① x = 3: Spring Return Port A Open  
x = 5: Spring Return Port A Closed

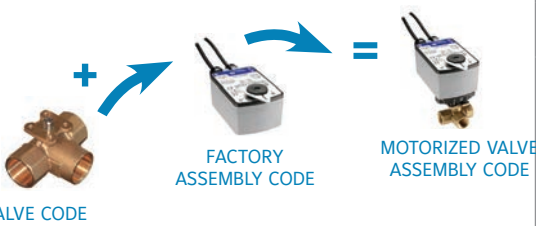
② Available only as an external Kit.

Not present in the assembly.

Separately order: **M9300-1** for 1 SPDT

**M9300-2** for 2 SPDT

		ACTUATOR TYPE												ACTUATOR TYPE																																										
		Non-Spring Return						Spring Return																																																
		VA9104	VA9308	VA9310	VA9203			VA9208																																																
ACTUATOR OPTIONS	CONTROL INPUT	On/Off and Floating Point	Proportional 0 (2) to 10 VDC	On/Off and Floating Point	On/Off and Floating Point	On/Off and Floating Point	Proportional Point	On/Off and Floating Point	On/Off and Floating Point	On/Off	On/Off	Proportional 0 (2) to 10 VDC	On/Off and Floating Point	On/Off	On/Off	Proportional 0 (2) to 10 VDC																																								
	POWER SUPPLY	24 V AC	100-230 V AC	24 V AC / DC	100-230 V AC	24 V AC / DC	100-230 V AC	24 V AC / DC	24 V AC / DC	100...230 V AC	24 V AC / DC	24 V AC / DC	24 V AC / DC	230 V AC	24 V AC / DC																																									
	Auxiliary Switches:		1 SPDT, 5,0(2.9) A @ 240 V		2 SPDT, 5,0(2.9) A @ 240 V																																																			
	Position Feedback:		0(2) to 10VDC Position Feedback																																																					
ACTUATOR CODE		VA9104-IGA-1S	VA9104-GGA-1S	VA9104-IUA-1S	VA9308-AGA-1Z	VA9308-AUA-1Z	VA9310-HGA-1	VA9310-GUA-1	VA9310-AUA-1	VA9203-AGA-1Z	VA9203-AGB-1Z	VA9203-BGA-1	VA9203-BGB-1	VA9203-BUA-1	VA9203-BUB-1	VA9203-GGA-1Z	VA9203-GGB-1Z	VA9208-AGA-1	VA9208-AGC-1	VA9208-BGA-1	VA9208-BGC-1	VA9208-BDA-1	VA9208-BDC-1	VA9208-GGA-1	VA9208-GGC-1																															
CONTROL INPUT	PRESSURE DROP - kPa (bar)		Kvs		VALVE BODY CONFIGURATION		FACTORY ASSEMBLED VALVE + ACTUATOR COMBINATIONS MATRIX																																																	
	2 (0.02)	5 (0.05)	10 (0.1)	25 (0.25)	50 (0.5)	100 (1)	200 (2)	300 (3)	400 (4)	500 (5)	DN mm	Control Port (Bypass Port)	2-WAY	3-WAY																																										
	0,14	0,22	0,32	0,50	0,71	1,00	1,41	1,73	2,00	2,24	1,0 (0,63)	15	1,6 (1,0)	2,5 (1,6)	4,0 (2,5)	6,3 (4,0)	10 (5,0)	20	6,3 (4,0)	10 (5,0)	25	10 (6,3)	16 (8,0)	16 (10,0)	32	25 (12,5)	40	25 (16)	40 (20)	40 (25,0)	50	40 (25,0)	63 (31,5)																							
FLUID TEMPERATURE LIMITS		Water -30° to 100°C		Water -30° to 140°C		Steam		Max 103 kPa		FACTORY ASSEMBLY CODE																																														
		6A4IGA	5A4IGA	6A4GGA	5A4GGA	6A4IUA	5A4IUA	Available upon request	Available upon request	610HGA	510HGA	Available upon request	610AUA	510AUA	6x3AGA	5x3AGA	6x3AGB	5x3AGB	6x3BGA	5x3BGA	6x3BGB	5x3BGB	6x3BUA	5x3BUA	6x3BUB	5x3BUB	6x3GGA	5x3GGA	6x3GGB	5x3GGB	6x8AGA	5x8AGA	6x8AGC	5x8AGC	6x8BGA	5x8BGA	6x8BGC	5x8BGC	6x8BDA	5x8BDA	6x8BDC	5x8BDC	6x8GGA	5x8GGA	6x8GGC	5x8GGC										



Example: VG1805CP + 533GGB

Note: Some assembly items are only available upon request.



# ACTUATORS AND VALVES

## VALVES

### PLANT VALVES

## VG1000 FLANGED

DN65...150, 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.

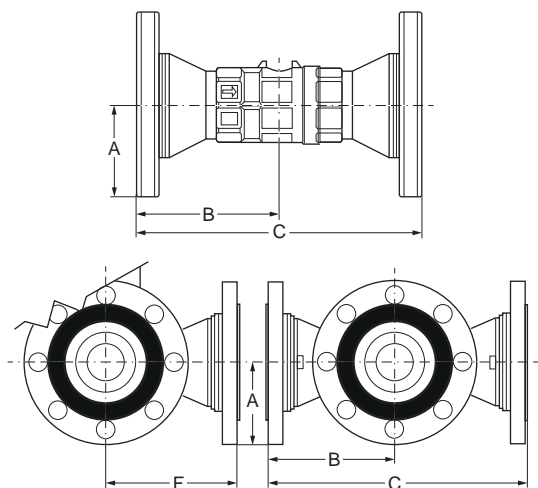


## FEATURES

- 2-way and 3-way mixing
- Body rating PN16
- Hot water, chilled water, 50/50 glycol solutions and 172 kPa saturated steam for HVAC Systems
- Valve fluid temperature limits -20 to 140°C
- Maximum close-off pressure 2-way: 690 kPa / 3-way: 345 kPa
- Maximum recommended operating pressure drop 200 kPa for quiet service
- Flow characteristics:
  - 2-way: Equal percentage
  - 3-way: Equal percentage in Inline port (Coil) and linear characteristics in angle port (By-pass)
- Rangeability greater than 500:1
- Leakage 2-way and 3-way: 0.01% of maximum flow, control port
- 3-way: 1% of maximum flow, by-pass ports



## DIMENSIONS (in mm)



CODES	VALVE SIZE	A	B	C	F	HOLES FOR FLANGE	HOLES DIAMETERS	BOLT
VG1xE5Gx	DN65	92.5	145	290	149	4	19	M16x60
VG1xE5Hx	DN80	100	155	310	159	8	19	M16x65
VG1xE5Jx	DN100	110	175	350	179	8	19	M16x70
VG1xE5NY	DN125	125	200	400	255	8	19	M16x75
VG1xE5PZ	DN150	142.5	240	480	290	8	23	M20x80



## VALVES

### VG1000 FLANGED - PLANT VALVES

## ORDERING INFORMATION

### ASSEMBLIES OF VALVES WITH PROPORTIONAL ACTUATORS

Spring Return Function	---		■			
Supply Voltage	230 VAC	24 VAC/DC				
Torque	20 Nm	24 Nm	20 Nm			
Running Time	90 s	125 s	150 s			
Spring Return Time Power Off	---		26 s			
Control Signal	VDC	0 - 10 / 2 - 10				
	mA	0 - 20 / 4 - 20				
Switches	Several options available through external accessory. Please refer to VA9300 Product Bulletin	---	2 x SPDT	---	2 x SPDT	
Feedback	VDC	0 - 10 / 2 - 10				
Actuator Codes	VA9320-GUA-1	VA9320-HGA-1	M9124-GGA-1N	M9124-GGC-1N	M9220-HGA-1	M9220-HGC-1
Linkage Codes	---		M9000-518		M9000-519	
Ordering Code Suffix for Assemblies	Assembly available upon request		+ 524GGA	+ 524GGC	+ 530HGA (Spring opens)	+ 530HGC (Spring opens)
					+ 550HGA (Spring closes)	+ 550HGC (Spring closes)

VALVE CODES	BODY SIZE	K <sub>vs</sub> (Control port)	K <sub>vs</sub> (By-pass port)	VALID COMBINATIONS OF VALVES, LINKAGES AND ACTUATORS					
2-way models									
VG12E5GT	DN65	63	---	■	■	■	■	■	■
VG12E5GU		100	---	■	■	■	■	■	■
VG12E5HU	DN80	100	---	■	■	■	■	■	■
VG12E5HW		180	---	■	■	■	■	■	■
VG12E5JV	DN100	150	---	■	■	■	■	■	■
VG12E5NY	DN125	250	---	■	■	■	■	■	■
VG12E5PZ	DN150	350	---	■	■	■	■	■	■
3-way models									
VG18E5GT	DN65	63	40	■	■	■	■	■	■
VG18E5GU		100	63	■	■	■	■	■	■
VG18E5HU	DN80	100	63	■	■	■	■	■	■
VG18E5HW		180	75	■	■	■	■	■	■
VG18E5JV	DN100	150	75	■	■	■	■	■	■
VG18E5NY	DN125	250	160	■	■	■	■	■	■
VG18E5PZ	DN150	350	160	■	■	■	■	■	■

#### Note

Some assembly items are only available upon request.



## ORDERING INFORMATION

### ASSEMBLIES OF VALVES WITH FLOATING AND ON/OFF ACTUATORS

Spring Return Function	---												■			
Supply Voltage	24 VAC / DC	230 VAC	230 VAC	24 VAC / DC	24 VAC / DC	230 VAC	24 VAC / DC				230 VAC					
Torque	16 Nm		20 Nm		24 Nm				20 Nm							
Running Time	16 s		90 s		125 s				150 s		24 - 57 s					
Spring Return Time Power Off	---												20 s		11...50 s	
Control Signal	Floating and ON/OFF				Floating and ON/OFF				ON/OFF							
Switches	Several options available through external accessory. <i>Please refer to VA9300 Product Bulletin.</i>				---	2 x SPDT	---	2 x SPDT	---	2 x SPDT	---	2 x SPDT	---	2 x SPDT		
Feedback	---															
Actuator Codes	VA9316-AGA-1	VA9316-AUA-1	VA9320-AUA-1	VA9320-HGA-1	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 Codes	---				M9000-518				M9000-519							
Ordering Code Suffix for Assemblies	Assembly available upon request				+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)		

VALVE CODES	BODY SIZE	K <sub>v</sub> /s (Control port)	K <sub>v</sub> /s (By-pass port)	VALID COMBINATIONS OF VALVES, LINKAGES AND ACTUATORS											
2-way models															
VG12E5GT	DN65	63	---	■	■	■	■	■	■	■	■	■	■	■	■
VG12E5GU		100	---	■	■	■	■	■	■	■	■	■	■	■	■
VG12E5HU	DN80	100	---	■	■	■	■	■	■	■	■	■	■	■	■
VG12E5HW		180	---	■	■	■	■	■	■	■	■	■	■	■	■
VG12E5JV	DN100	150	---	■	■	■	■	■	■	■	■	■	■	■	■
VG12E5NY	DN125	250	---	■	■	■	■	■	■	■	■	■	■	■	■
VG12E5PZ	DN150	350	---	■	■	■	■	■	■	■	■	■	■	■	■
3-way models															
VG18E5GT	DN65	63	40	■	■	■	■	■	■	■	■	■	■	■	■
VG18E5GU		100	63	■	■	■	■	■	■	■	■	■	■	■	■
VG18E5HU	DN80	100	63	■	■	■	■	■	■	■	■	■	■	■	■
VG18E5HW		180	75	■	■	■	■	■	■	■	■	■	■	■	■
VG18E5JV	DN100	150	75	■	■	■	■	■	■	■	■	■	■	■	■
VG18E5NY	DN125	250	160	■	■	■	■	■	■	■	■	■	■	■	■
VG18E5PZ	DN150	350	160	■	■	■	■	■	■	■	■	■	■	■	■

#### Note

Some assembly items are only available upon request.

# ACTUATORS AND VALVES

## VALVES

### PLANT VALVES

## VFB BUTTERFLY VALVES

DN25...500, PN16

VFB butterfly valves series are specifically designed for a wide range of Heating, Ventilating, and Air Conditioning (HVAC) applications, including two-position and modulating control of hot, chilled, or condenser water, and 50/50 glycol solutions. All valves are factory tested for bubble-tight shutoff at 100% of the fully-rated pressure. These valves are also bidirectional, allowing positive shutoff with the flow in either direction.

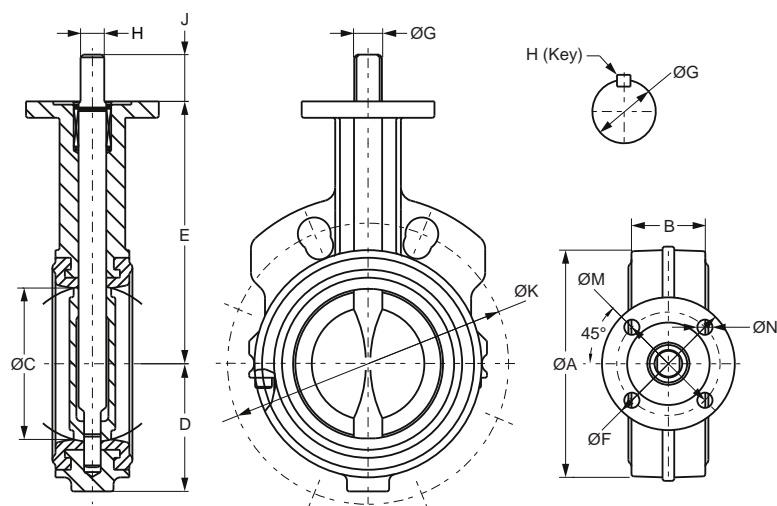
### FEATURES

- **Low seating/unseating torques** - Reduce actuator torque and size requirements, particularly with lower-pressure rated valves
- **Bubble-tight shutoff** - Ensures positive closure when needed
- **Broad range of pre-assembled actuators** - Offers a wide selection for new and replacement electric and pneumatic actuators
- **High-integrity components** - Provide quality valve assemblies, combining long cycle life with optimal engineered functional designs
- **Fluid temperature limits** -29°C to 121°C
- **Flow characteristics** - Modified equal percentage





## DIMENSIONS (in mm)



### TWO-WAY VALVE

VALVE SIZE (mm)	VALVE SIZE (inch)	A	B	C	D	E	F	M	N	G	H	J	VALVE NET WEIGHT <sup>2</sup> (kg)	TOP FLANGE ISO 5211	NUMBER OF HOLES ON FLANGE		NUMBER OF HOLES ON FLANGE		NUMBER OF HOLES ON FLANGE	
															K <sup>1</sup>	PN6	K <sup>1</sup>	PN10	K <sup>1</sup>	PN16
25	1	60	30	32	43	25	65	50	7	10	8	25	1	F05	75	4 x M10	85	4 x M12	85	4 x M12
32	1-¼	70	32	41	53	25	65	50	7	10	8	25	1,2	F05	90	4 x M12	100	4 x M16	100	4 x M16
40	1-½	80	32	47	55	25	65	50	7	10	8	25	2.8	F05	100	4 x M12	110	4 x M16	110	4 x M16
50	2	94	42	51	56	140	90	70	10	14	10	32	3.1	F07	110	4 x M12	125	4 x M16	125	4 x M16
65	2-½	106	45	64	63	152	90	70	10	14	10	32	4.1	F07	130	4 x M12	145	4 x M16	145	4 x M16
80	3	124	45	76	71	159	90	70	10	14	10	32	4.3	F07	150	4 x M16	160	8 x M16	160	8 x M16
100	4	154	51	102	87	178	90	70	10	16	11	32	4.9	F07	170	4 x M16	180	8 x M16	180	8 x M16
125	5	179	55	127	102	190	90	70	10	19	13	32	7.2	F07	200	8 x M16	210	8 x M16	210	8 x M16
150	6	206	55	146	115	203	90	70	10	19	13	32	9.5	F07	225	8 x M16	240	8 x M20	240	8 x M20
200	8	267	59	197	146	241	150	125	14	22	16	32	12	F07	280	8 x M16	295	8 x M20	295	12 x M20
250	10	324	67	248	181	273	150	125	14	30	22	51	17	F12	335	12 x M16	350	12 x M20	355	12 x M24
300	12	378	77	298	206	311	150	125	14	30	22	51	20	F12	395	12 x M20	400	12 x M20	410	12 x M24
350	14	433	78	337	238	346	150	125	14	35	10x10 <sup>3</sup>	51	23	F12	445	12 x M20	460	16 x M20	470	16 x M24
400	16	488	102	387	273	375	150	125	14	35	10x10 <sup>3</sup>	51	27	F12	495	16 x M20	515	16 x M24	525	16 x M27
450	18	536	114	438	305	406	210	165	21	50	10x12 <sup>3</sup>	64	30	F16	---	---	565	20 x M24	585	20 x M27
500	20	591	127	489	356	436	210	165	21	50	10x12 <sup>3</sup>	64	33	F16	---	---	650	20 x M24	650	20 x M30

#### Notes

- 1 Disc chordal dimension at valve face.
- 2 Net weight is for valve only (no actuator).
- 3 Key: the key is needed to link the actuator. It is inside the package of the valve. Dimensions in mm (high x width).

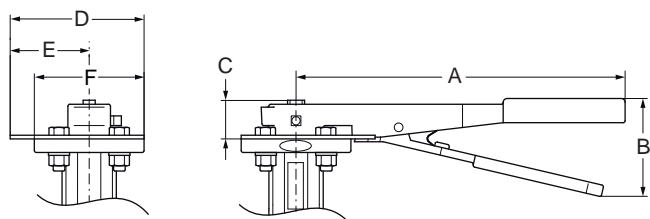
## VALVES

### VFB BUTTERFLY VALVES - PLANT VALVES



## DIMENSIONS (in mm)

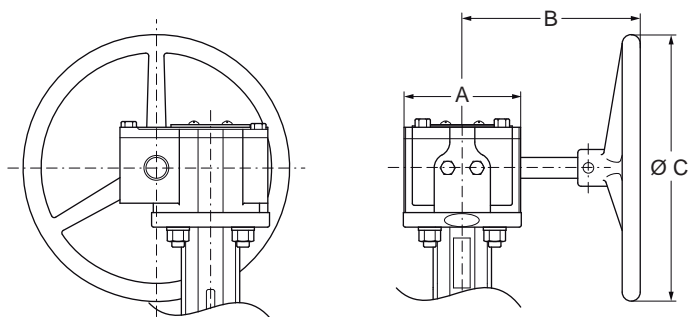
### TEN-POSITION MANUAL HANDLE



VALVE SIZE (mm)	VALVE SIZE (inch)	CODES <sup>1</sup>	A	B	C
25 to 40	1/2" to 1-1/2"	VF-998-100	196	60	25
50 to 80	2" to 3"	VF-998-101	270	80	32
100	4"	VF-998-102	270	80	32
125 to 150	5" to 6"	VF-998-103	270	80	32
200	8"	VF-998-104	298	80	32
250 to 300	10" to 12"	VF-998-105	298	80	51

#### Note

**1** Kit includes a manual gear operator, adaptor (if required), and mounting hardware.



VALVE SIZE (mm)	VALVE SIZE (inch)	CODES <sup>1</sup>	A	B	C
50 to 150	2" to 6"	VF-998-303	90	136	203
200	8"	VF-998-304	150	190	203
250 to 300	10" to 12"	VF-998-305	150	190	203
350 to 400	14" to 16"	VF-998-307	150	303	305
450 to 500	18" to 20"	VF-998-308	210	379	305

#### Note

**1** Kit includes a manual gear operator, adaptor (if required), and mounting hardware.





## VALVES

### VFB BUTTERFLY VALVES - PLANT VALVES

## ORDERING INFORMATION

CODES	BODY SIZE	VALVE SIZE (inch)	$K_{VS}$ VALUE	MAX $\Delta P$ (kPa) CLOSE-OFF PRESSURE
High pressure close-off (12 Bar from DN50 to DN300, 10 Bar all other sizes)				
VFB025H	DN25	1	52	1000
VFB032H	DN32	1 ¼	72	
VFB040H	DN40	1 ½	126	
VFB050H	DN50	2	124	1200
VFB065H	DN65	2 ½	243	
VFB080H	DN80	3	397	
VFB100H	DN100	4	723	
VFB125H	DN125	5	1083	
VFB150H	DN150	6	1591	
VFB200H	DN200	8	2852	
VFB250H	DN250	10	4670	1000
VFB300H	DN300	12	6946	
VFB350H	DN350	14	9063	
VFB400H	DN400	16	12044	
VFB450H	DN450	18	14804	
VFB500H	DN500	20	19212	
Low pressure close-off (3,5 Bar from DN100 to DN500)				
VFB100L	DN100	4	723	350
VFB125L	DN125	5	1083	
VFB150L	DN150	6	1591	
VFB200L	DN200	8	2852	
VFB250L	DN250	10	4670	
VFB300L	DN300	12	6946	
VFB350L	DN350	14	9063	
VFB400L	DN400	16	12044	
VFB450L	DN450	18	14804	
VFB500L	DN500	20	19212	

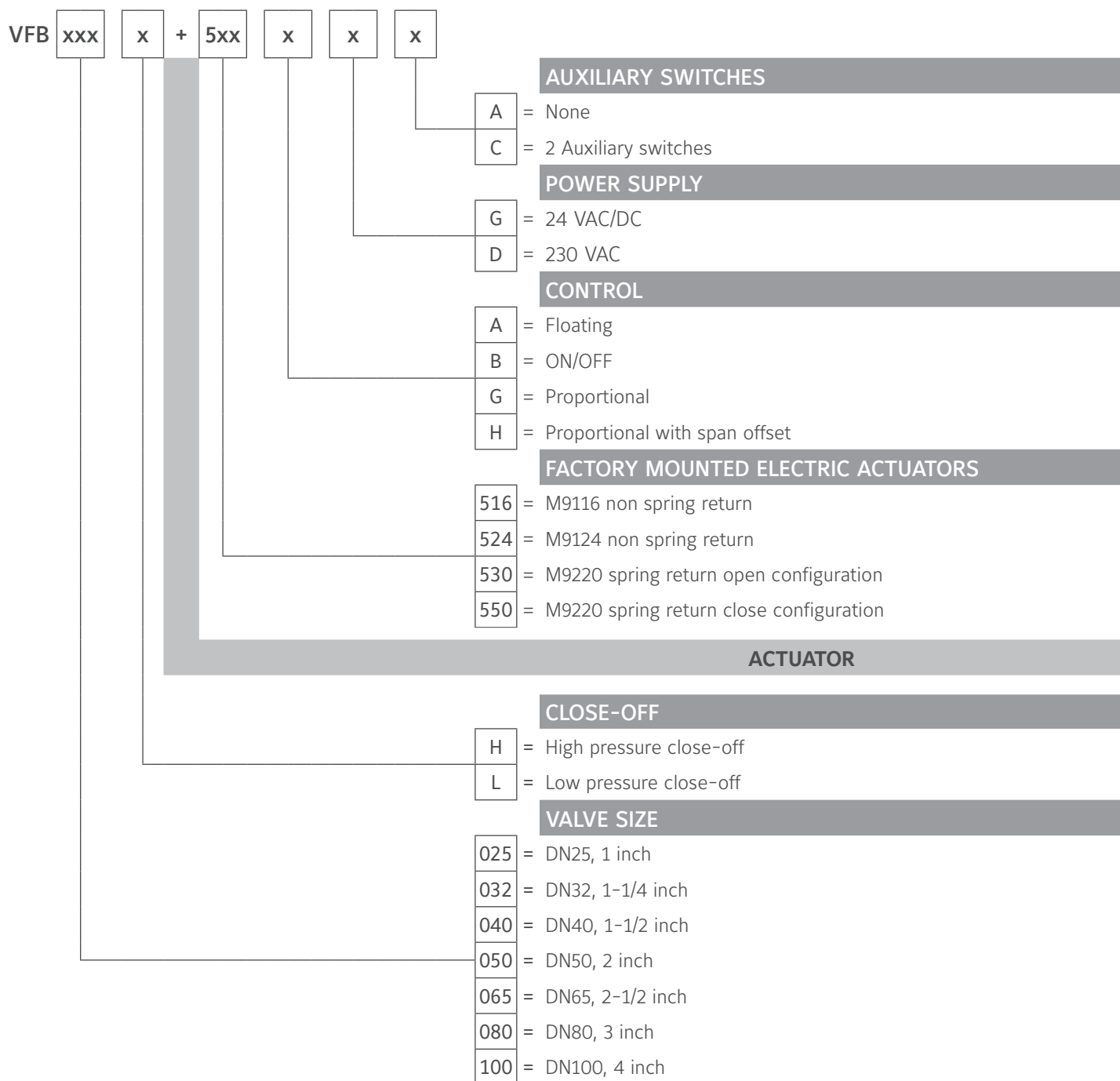


## VALVES

### VFB BUTTERFLY VALVES - PLANT VALVES

## ORDERING CODES

### VFB BUTTERFLY VALVES WITH M9000 ACTUATORS ASSEMBLY





## VALVES

VFB BUTTERFLY VALVES - PLANT VALVES

## ORDERING INFORMATION

VBF VALVES WITH M9000 ACTUATORS AND NECESSARY LINKAGE CODE - AVAILABLE COMBINATION

VALVES				ACTUATORS		
				Non Spring Return		Spring Return
				Torque (Nm)		
				16	24	20
CODES	DN	INCHES	MAX CLOSE-OFF PRESSURE (bar)	M9116	M9124	M9220
VFB025H	25	1"	12	M9100-100A	---	M9200-100A
VFB032H	32	1-1/4"	12	M9100-100A		M9200-100A
VFB040H	40	1-1/2"	12	M9100-100A		M9200-100A
VFB050H	50	2"	12	M9100-100B		M9200-100B
VFB065H	65	2-1/2"	12	M9100-100B		M9200-100B
VFB080H	80	3"	12	---	M9100-100B	M9200-100B
VFB100L	100	4"	3.5		M9100-100C	M9200-100C

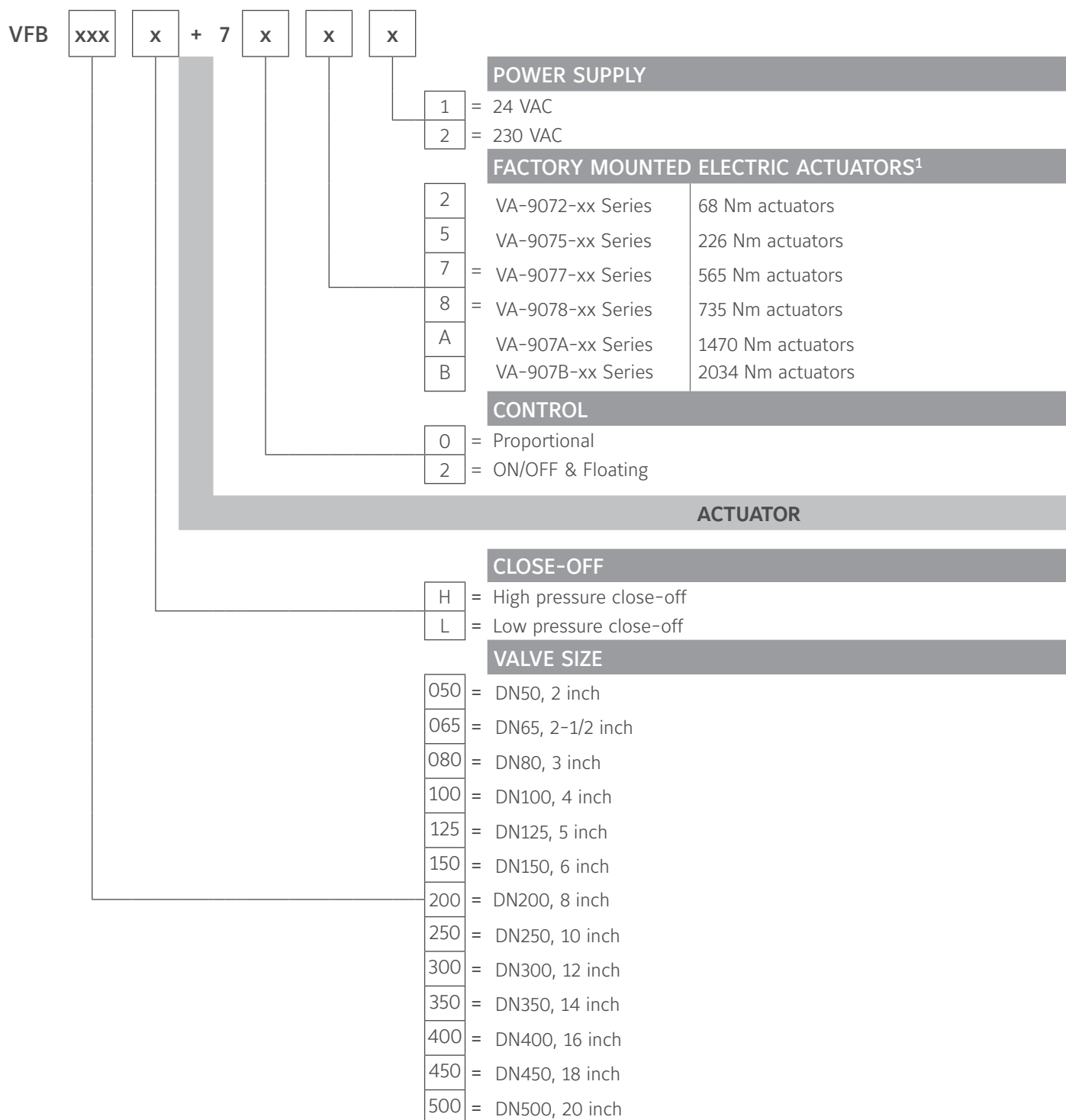


## VALVES

### VFB BUTTERFLY VALVES - PLANT VALVES

## ORDERING CODES

### VFB BUTTERFLY VALVES WITH VA-9070 ACTUATORS ASSEMBLY



**Note**

<sup>1</sup> See VA-9070 Product Bulletin for more details



## VALVES

### VFB BUTTERFLY VALVES - PLANT VALVES

## ORDERING INFORMATION

### VBF VALVES WITH VA-9070 SERIES ACTUATORS - AVAILABLE COMBINATION

JCI VFB VALVES				ACTUATORS								
				POWER SUPPLY 230 VAC					POWER SUPPLY 24 VAC			
				Torque (Nm)								
VALVES CODES	DN	INCHES	MAX CLOSE- OFF PRESSURE (bar)	68	226	735	1470	2034	68	226	565	
				VA-9072	VA-9075	VA-9078	VA-907A	VA-907B	VA-9072	VA-9075	VA-9077	
VFB050H	50	2	12	■	---	---	---	---	■	---	---	
VFB065H	65	2-1/2	12	■	---	---	---	---	■	---	---	
VFB080H	80	3	12	■	---	---	---	---	■	---	---	
VFB100H	100	4	12	■	---	---	---	---	■	---	---	
VFB125H	125	5	12	■	---	---	---	---	■	---	---	
VFB150H	150	6	12	■	---	---	---	---	■	---	---	
VFB200H	200	8	12	---	■	---	---	---	---	■	---	
VFB250H	250	10	12	---	---	■	---	---	---	---	■	
VFB300H	300	12	10	---	---	■	---	---	---	---	■	
VFB350H	350	14	10	---	---	■	---	---	---	---	---	
VFB400H	400	16	10	---	---	---	■	---	---	---	---	
VFB450H	450	18	10	---	---	---	■	---	---	---	---	
VFB500H	500	20	10	---	---	---	---	■	---	---	---	
VFB100L	100	4	3.5	■	---	---	---	---	■	---	---	
VFB125L	125	5	3.5	■	---	---	---	---	■	---	---	
VFB150L	150	6	3.5	■	---	---	---	---	■	---	---	
VFB200L	200	8	3.5	---	■	---	---	---	---	■	---	
VFB250L	250	10	3.5	---	■	---	---	---	---	■	---	
VFB300L	300	12	3.5	---	---	■	---	---	---	---	■	
VFB350L	350	14	3.5	---	---	■	---	---	---	---	■	
VFB400L	400	16	3.5	---	---	■	---	---	---	---	■	
VFB450L	450	18	3.5	---	---	■	---	---	---	---	■	
VFB500L	500	20	3.5	---	---	■	---	---	---	---	---	

# ACTUATORS AND VALVES

## VALVES

### PRESSURE INDEPENDENT VALVES

## VP1000

DN15...32, PN25  
DN40...50, PN16

The VP1000 Pressure Independent Control Valve is the combination of a differential pressure regulator and a regulating valve for flow adjustment.

The VP1000 valve allows the adjustment of the flow rate in case of partial load of the system and also ensures a stable adjustment of the supply connected to it. The differential pressure regulator corrects any differential pressure variation. This leads to a considerable reduction in temperature variations and adjustment movements and the extended life of moving devices connected to it.

The VP1000 valve offers complete adjustment flexibility. In combination with Johnson Controls actuators they can be set to a specific flow rate value and allow precise modulating control. The valve always guarantees a suitable flow rate, therefore avoiding high energy consumption.

Since the VP1000 valve performs the functions of two valves (balancing and adjustment), installation costs are considerably reduced. The automatic flow rate limitation eliminates system adjustment costs. Since adjustment is very easy to perform, design flow rates can be modified at any time and at low cost.

Since it is not necessary to adjust the valve after its installation, the valve can work immediately after it has been assembled, for example, on the floor where works are already finished.

In order to adjust the flow rate, just set the selected value using the adjustment knob.

Since flow rate is the only parameter to be considered, choosing a suitable valve is fast and easy. The VP1000 valve's maximum adjustment matches the maximum flow rate allowed by the pipe size, on the basis of the values established by international standards.

## FEATURES

- $K_{VS}$  calculation is not necessary
- Valve authority calculation is not required
- Specific devices or knowledge are not necessary
- Compact design that allows installation in small spaces such as fan-coils or narrow supply spaces
- Simple flow rate adjustment
- Dirty resistance allows long life characteristic

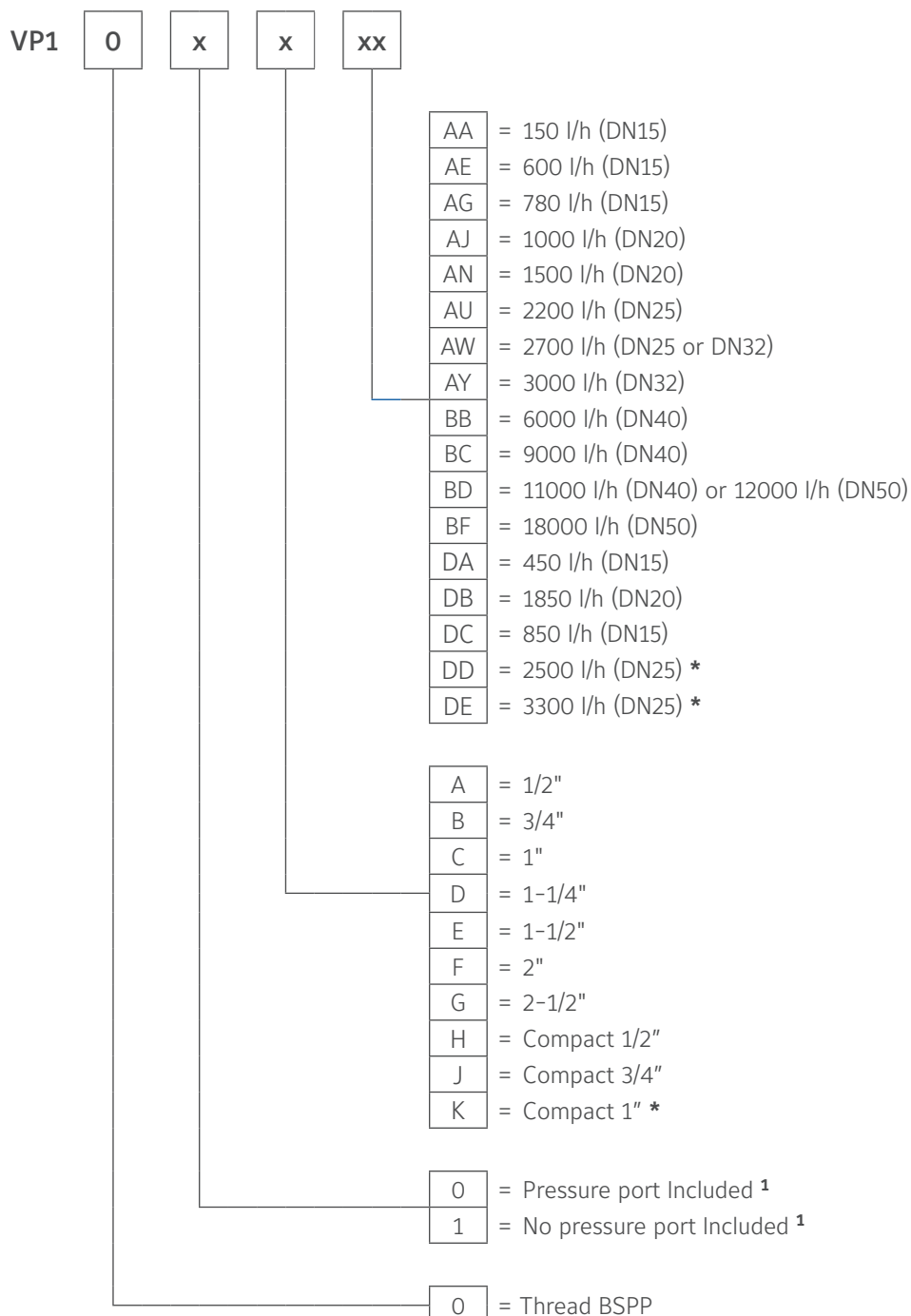




## VALVES

### VP1000 - PRESSURE INDEPENDENT VALVES

## ORDERING INFORMATION



#### Note

<sup>1</sup> On the DN40, DN50 and DN65 Ball Valve, the pressure port are always included despite the Codes VP101xxx

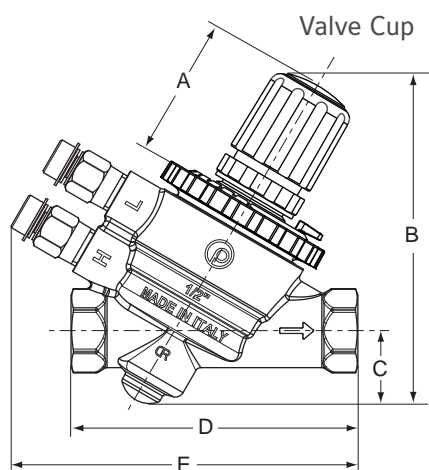
\* New models available from March 2021



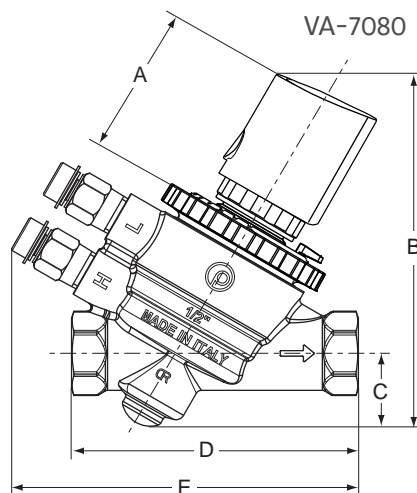


## DIMENSIONS (in mm)

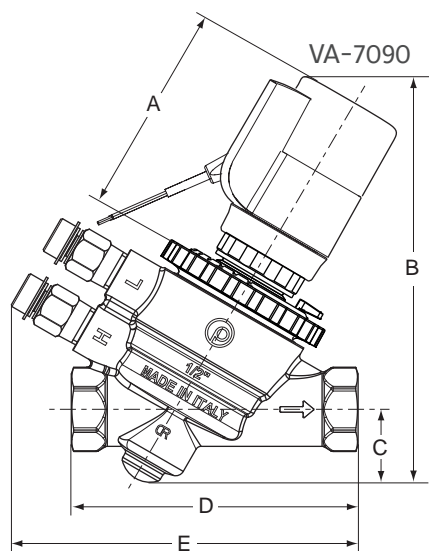
DN15 - DN20



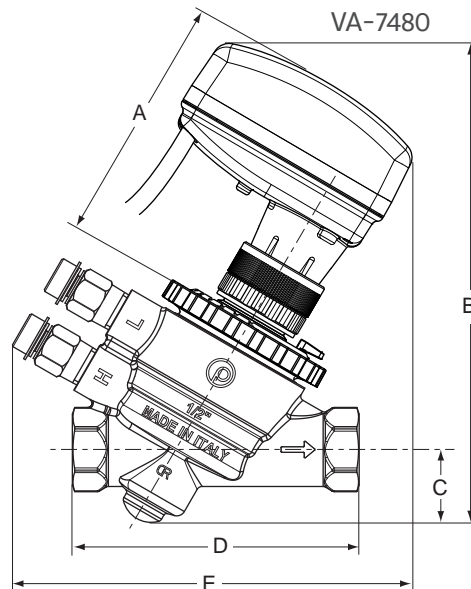
SIZE	A	B	C	D	E
DN15	47	115	25	99	120
DN20				108	127



SIZE	A	B	C	D	E
DN15	81.7	164	25	99	116
DN20				107.5	118.5



SIZE	A	B	C	D	E
DN15	75	144	14.5	80.5	124
DN20		149	17.5	98	130



SIZE	A	B	C	D	E
DN15	80	144	14.5	80.5	124
DN20		149	17.5	98	130

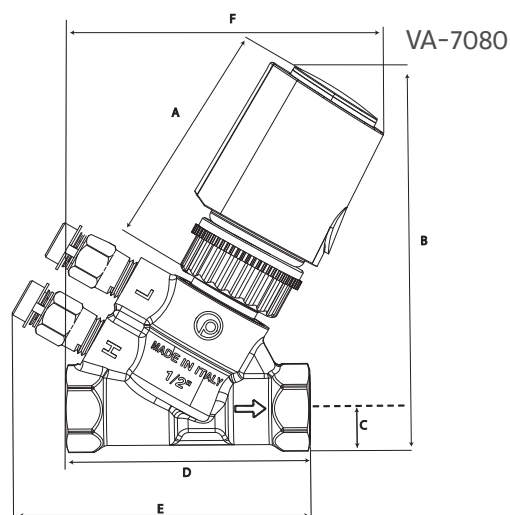
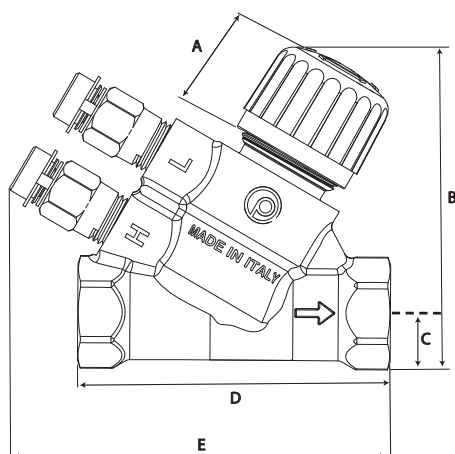
## VALVES

VP1000 - PRESSURE INDEPENDENT VALVES



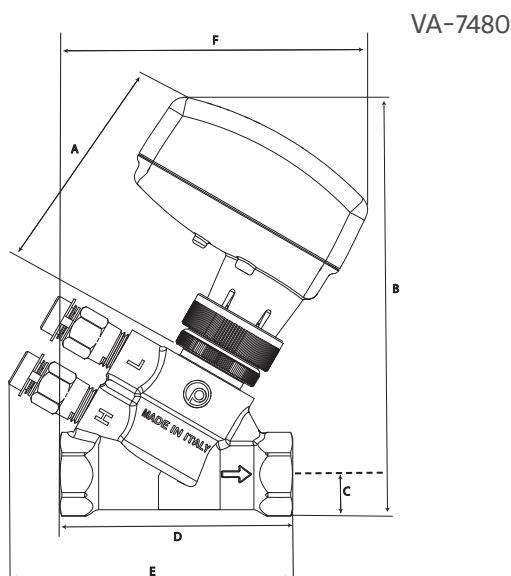
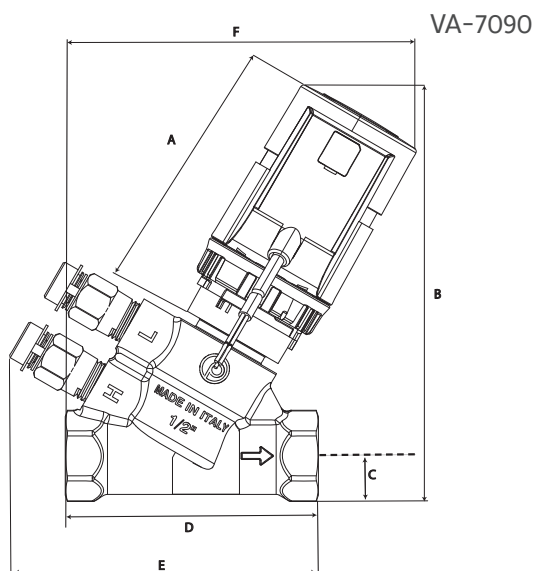
## DIMENSIONS (in mm)

COMPACT DN15 - DN20



SIZE	A	B	C	D	E
DN15	28	83	14.5	80.5	95
DN15-VP10xHDC		85	14.5	93.5	110
DN20		88	17.5	98	118

SIZE	A	B	C	D	E	F
DN15	64.5	120	14.5	80.5	95	106
DN15-VP10xHDC		122	14.5	93.5	110	110.5
DN20		125	17.5	98	118	112.5



SIZE	A	B	C	D	E	F
DN15	74	127	14.5	80.5	110	106
DN15-VP10xHDC		129		93.5		110.5
DN20		132	17.5	98	118	112.5

SIZE	A	B	C	D	E	F
DN15	80.5	145	14.5	80.5	110	106
DN15-VP10xHDC		147		93.5		110.5
DN20		150	17.5	98	118	112.5

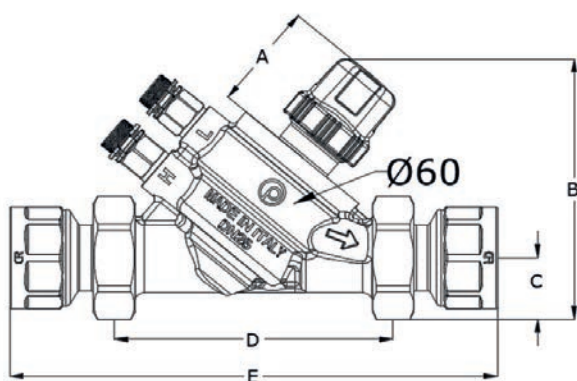


## VALVES

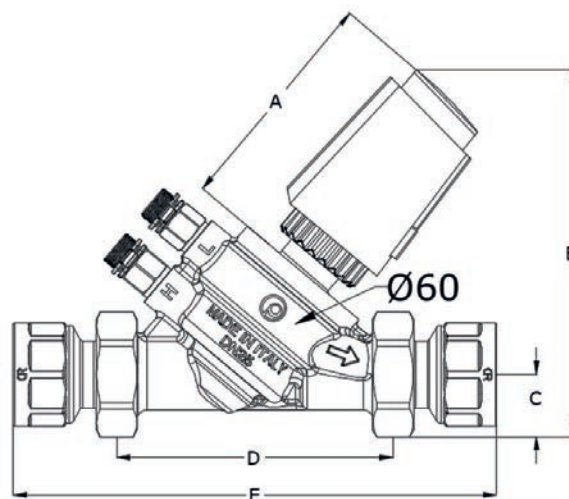
VP1000 - PRESSURE INDEPENDENT VALVES

### DIMENSIONS (in mm)

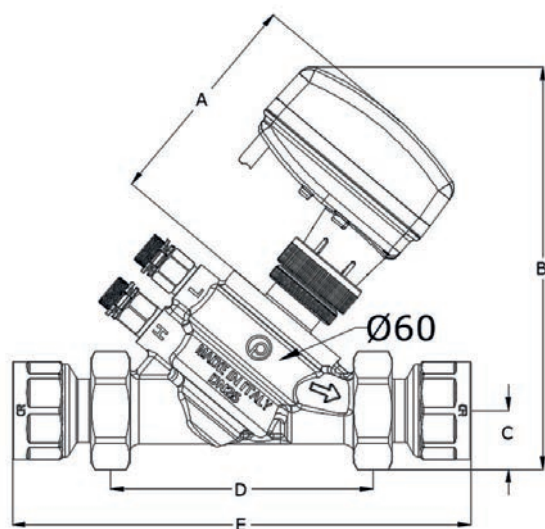
COMPACT DN25



SIZE	A	B	C	D	E
DN25	41	89.5	23.5	108	182



SIZE	A	B	C	D	E
DN25	86	138	23.5	108	182



SIZE	A	B	C	D	E
DN25	87.5	160	23.5	108	182

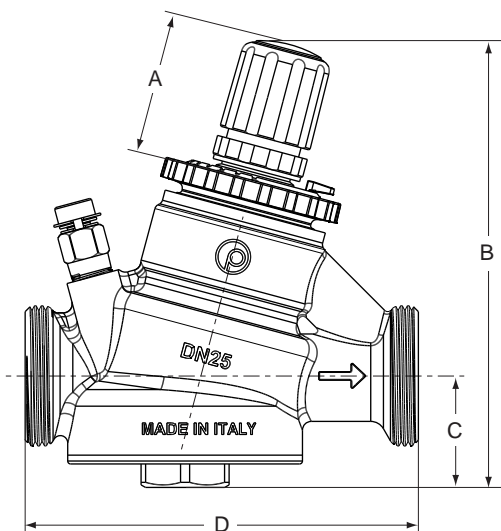


## VALVES

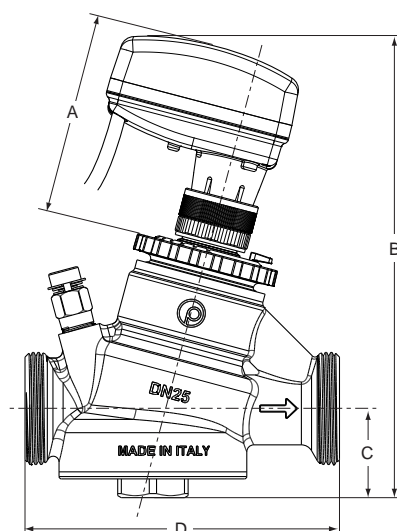
VP1000 - PRESSURE INDEPENDENT VALVES

### DIMENSIONS (in mm)

DN25 - DN32



SIZE	A	B	C	D <sup>1</sup>
DN25	47	152	38	184
DN32				209



SIZE	A	B	C	D <sup>1</sup>
DN15	83	196	38	184
DN20				209

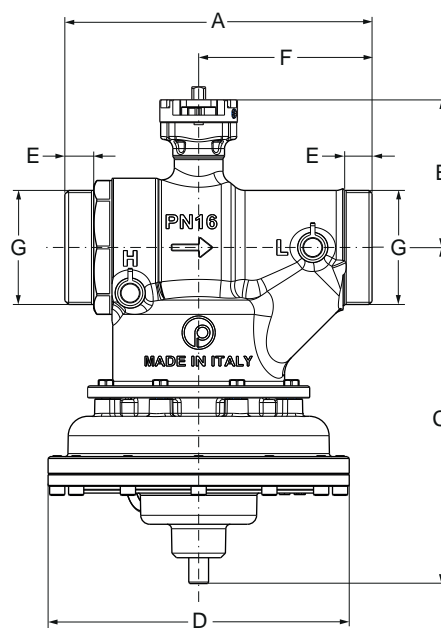
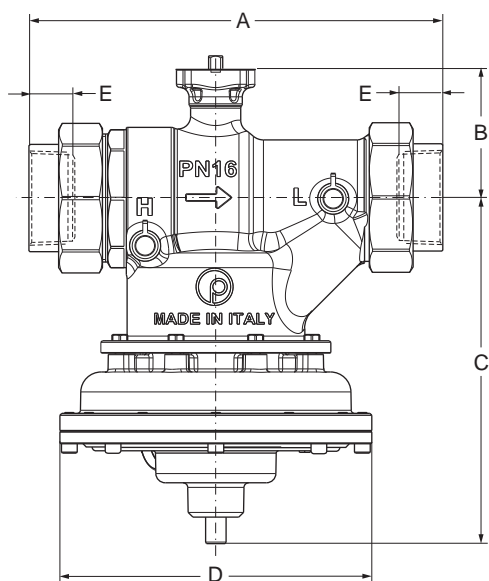
#### Note

1 Dimensional data without fittings



## DIMENSIONS (in mm)

DN40 - DN50



CODES	SIZE	A	B	C	D	E
VP101DBB	DN40	230	89	180	156	23.6
VP101EBB	DN40	230	89	180	156	23.6
VP101EBC	DN40	230	89	180	156	23.6
VP101EBD	DN40	230	89	180	156	23.6
VP101FBD	DN50	264	97	221	198	28
VP101FBF	DN50	264	97	221	198	28

CODE	SIZE	A	B	C	D	E	F	G
VP101GBF	DN50	202	97	221	198	19	114	G ISO-228 G 2.1/2"



## VALVES

### VP1000 - PRESSURE INDEPENDENT VALVES

## TECHNICAL SPECIFICATIONS - COMPACT GLOBE AXIAL MODELS

### DN15 - DN20

	VP10xHAA	VP10xHDA	VP10xHDC	VP10xJAJ	VP10xJDB
Flow rate max.	150 l/h - 0,042 l/s	450 l/h - 0,125 l/s	850 l/h - 0,236 l/s	1000 l/h - 0,278 l/s	1850 l/h - 0,514 l/s
Accuracy 0 ÷ 1 bar	± 5%				
Start-up max.	25 kPa - 0,25 bar	35 kPa - 0,35 bar	25 kPa - 0,25 bar	25 kPa - 0,25 bar	30 kPa - 0,30 bar
ΔP max.	600 kPa - 6 bar				
Leakage	Class IV - IEC 60534-4				
Temperature	-10 to 120°C				
Working pressure max.	2500 kPa - 25 bar				
Fittings	Female BSPP Rp 1/2" - EN 10226-1			Female BSPP Rp 3/4" - EN 10226-1	

### DN25

	VP10xKDD	VP10xKDE
Flow rate max.	2500 l/h - 0,694 l/s	3300 l/h - 0,917 l/s
Accuracy 0 ÷ 1 bar	± 5%	
Start-up max.	30 kPa - 0,30 bar	
ΔP max.	600 kPa - 6 bar	
Leakage	Class IV - IEC 60534-4	
Temperature	-10 to 120°C	
Working pressure max.	2500 kPa - 25 bar	
Fittings	Rp 1" UnionF EN 10226-1	

## ASSEMBLY CODES

Following actuators are available:

- VA-708x ON/OFF thermal \*
- VA-709x thermal 0...10 VDC \*
- VA-748x floating and proportional electric



## VALVES

### VP1000 - PRESSURE INDEPENDENT VALVES

## TECHNICAL SPECIFICATIONS - AXIAL MODELS

### DN15 - DN20

	VP10xAAA	VP10xAAE	VP10xAAG	VP10xBAJ	VP10xBAN
Flow rate max.	150 l/h - 0,042 l/s	600 l/h - 0,167 l/s	780 l/h - 0,217 l/s	1000 l/h - 0,278 l/s	1500 l/h - 0,417 l/s
Accuracy 0 ÷ 1 bar	± 5%				
Start-up max.	20 kPa - 0,20 bar	25 kPa - 0,25 bar	25 kPa - 0,25 bar	30 kPa - 0,30 bar	35 kPa - 0,35 bar
ΔP max.	600 kPa - 6 bar				
Leakage	Class IV - IEC 60534-4				
Temperature	-10 to 120°C				
Working pressure max.	2500 kPa - 25 bar				
Fittings	Female BSPP Rp 1/2" - EN 10226-1			Female BSPP Rp 3/4" - EN 10226-1	

### DN25 - DN32

	VP100CAU	VP100CAW	VP100DAW	VP100DAY
Flow rate max.	2200 l/h - 0,611 l/s	2700 l/h - 0,750 l/s		3000 l/h - 0,833 l/s
Accuracy 0 ÷ 1 bar	± 5%			
Start-up max.	25 kPa - 0,25 bar			35 kPa - 0,35 bar
ΔP max.	600 kPa - 6 bar			
Leakage	Class III - IEC 60534-4			
Temperature	-10 to 120°C			
Working pressure max.	2500 kPa - 25 bar			
Fittings	Female BSPP Rp 1" - EN 10226-1		Female BSPP Rp 1-1/4" - EN 10226-1	

## ASSEMBLY CODES

Following actuators are available:

- VA-708x ON/OFF thermal \*
- VA-709x thermal 0...10 VDC \*
- VA-748x floating and proportional electric

### Note

\* VA-708x and VA-709x are suitable for valves DN15 and DN20 only





## VALVES

VP1000 - PRESSURE INDEPENDENT VALVES

## TECHNICAL SPECIFICATIONS - BALL MODELS

DN40 - DN50

	VP101DBB	VP101EBB	VP101EBC	VP101EBD	VP101FBD	VP101FBF	VP101GBF
Flow Rate max.	6000 l/h 1,667 l/s		9000 l/h 2,5 l/s	11000 l/h 3,056 l/s	12000 l/h 3,33 l/s	18000 l/h 5,00 l/s	
Accuracy 0 ÷ 1 bar	± 5%						
Start-up max.	30 kPa - 0,30 bar		25 kPa - 0,25 bar	30 kPa - 0,30 bar		35 kPa - 0,35 bar	
ΔP max.	600 kPa - 6 bar						
Leakage	Class VI - IEC 60534-4						
Temperature	-10 to 120°C						
Working Pressure max.	1600 kPa - 16 bar						
Fittings	Rp 1-1/4" union Female EN 10226-1	Rp 1-1/2" union Female EN 10226-1		Rp 2" union Female EN 10226-1			Rp 2 1/2" Male EN 10226-1

## ASSEMBLY CODES

CODES	DESCRIPTION
+510HGA <sup>1</sup>	VA9310-HGA-1, 10 Nm Non Spring Return Actuator, 24 V AC/DC, Proportional Control
+538GGA	VA9208-GGA-1, 8 Nm Spring Return Actuator, 24 V AC/DC, Proportional Control, assembled in Spring Open Valve configuration
+538GGC	VA9208-GGC-1, 8 Nm Spring Return Actuator, 24 V AC/DC, Proportional Control, two auxiliary switches, assembled in Spring Open Valve configuration
+558GGA	VA9208-GGA-1, 8 Nm Spring Return Actuator, 24 V AC/DC, Proportional Control, assembled in Spring Close Valve configuration
+558GGC	VA9208-GGC-1, 8 Nm Spring Return Actuator, 24 V AC/DC, Proportional Control, two auxiliary switches, assembled in Spring Close Valve configuration

### Note

<sup>1</sup> The M9000-525-5 linkage is part of the assembly.

# ACTUATORS AND VALVES

## VALVES

### PRESSURE INDEPENDENT VALVES

## VPMA

DN50...250, PN16

The VPMA series Pressure Independent Control Valve is a combination of a differential pressure regulator and a regulating valve for flow adjustment.

VPMA offers a remarkable adjustment flexibility.

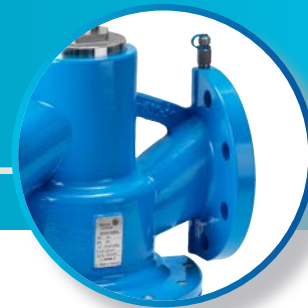
In combination with VAP actuator, it automatically limits the water flow rate, irrespective of pressure and allows precise modulating control, therefore avoiding too high energy consumption.

Since VPMA valve performs the functions of two valves (balancing and adjustment), the installation costs are considerably reduced. Since it is not necessary to adjust the valve after installation, the system adjustment costs is eliminated.

## FEATURES

- Wide range of operating differential pressure
- High control accuracy provides the equal percentage flow curve
- Pressure ports selectable (threaded valves)
- Built-in balancing tube allows compact size and avoid damages
- Dirty resistance allows long life characteristic

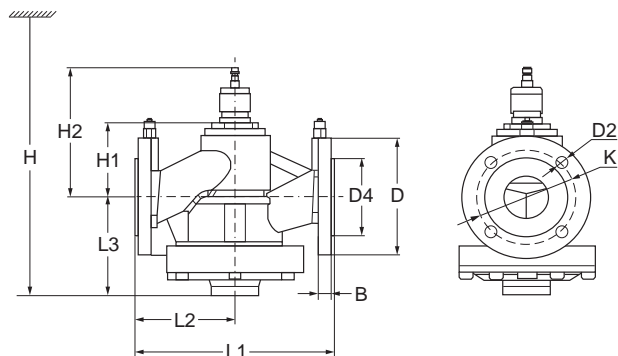




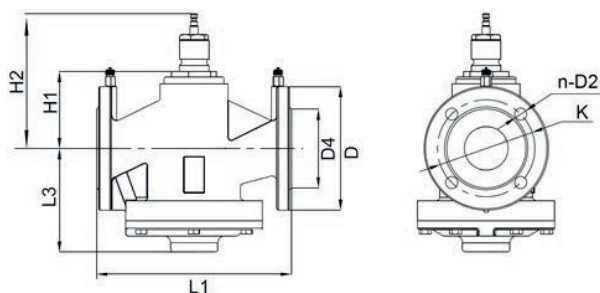
## VALVES

VPA - PRESSURE INDEPENDENT VALVES

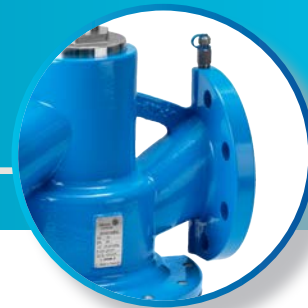
### DIMENSIONS (in mm)



DN	B	D	D2	D4	K	L1	L2	L3	H1	H	WEIGHT (kg)
50	20	Ø 165	4 - Ø 18	Ø 99	Ø 125	230	115	136	95	461	19



DN	D	n-D2	D4	K	L1	L3	H1	H2	WEIGHT (kg)
65	Ø 185	4 - Ø 19	Ø 118	Ø 145	290	155	115	191.5	24
80	Ø 200	8 - Ø 19	Ø 132	Ø 160	310	167	148	224.5	34
100	Ø 220	8 - Ø 19	Ø 156	Ø 180	350	181	150	226.5	49
125	Ø 250	8 - Ø 19	Ø 184	Ø 210	400	197	163	239.5	63
150	Ø 285	8 - Ø 19	Ø 211	Ø 240	480	222	198	274.5	82
200	Ø 340	12 - Ø 23	Ø 266	Ø 295	500	245	180	256.5	129
250	Ø 405	12 - Ø 23	Ø 319	Ø 355	600	277	210	286.5	195



## VALVES

VPA - PRESSURE INDEPENDENT VALVES

## ORDERING INFORMATION

VALVES	DN	PN	FLOW RATE MAX. ( $m^3/h$ )	STROKE ( $mm$ )	START-UP $\Delta P$ (kPa)	$\Delta P$ MAX. (kPa)	PRESSURE PORTS	ACTUATORS
VAP050-C	DN50	16	13	20	35	400	Yes	VAP1000S-24-C
VPMA6065P-C	DN65	16	21	20	35	500	Yes	VAP600S-24-C
VPMA6080P-C	DN80	16	28	40	35	500	Yes	VAP1000L-24-C
VPMA6100P-C	DN100	16	50	40	35	500	Yes	VAP1000L-24-C
VPMA6125P-C	DN125	16	90	40	35	500	Yes	VAP1000L-24-C
VPMA6150P-C	DN150	16	145	40	35	500	Yes	VAP1000L-24-C
VPMA6200P-C	DN200	16	208	40	35	500	Yes	VAP3000L-24-C
VPMA6250P-C	DN250	16	240	40	35	500	Yes	VAP3000L-24-C