



VA-180GN Series

Electronic Valve Actuators



Overview

The VA-180GN Series Non-spring Return (NSR), Electronic Valve Actuator requires a 24 Vac supply and receives a 0 to 10 Vdc or a 4 to 20 mA control signal to proportionally control a valve. This actuator is designed to work with the VA-599 Series 2-way and 3-way Valves or the flanged, Pressure Independent Control Valves with a 3/4-inch (20 mm) stroke.

Applications

- ❑ Hot and chilled water applications in closed loop HVAC systems.
- ❑ Low pressure (<15 psi) steam service applications

Features & Benefits

- ❑ 24Vac/Vdc operating voltage
- ❑ Direct-coupled installation requires no special tools or adjustments
- ❑ **VA-180GNX024P**: Visual and electronic stroke indication
- ❑ **VA-180GNX024F**: Visual stroke indication
- ❑ Manual override
- ❑ **VA-180GNX024P**: LED Status Indication
- ❑ Overload and stall protection
- ❑ Optional functions with auxiliary switches, function module, and stem heater
- ❑ Maintenance-free

Model Selection

VA-180GNX024F	Non-spring Return, 24 Vac, 3-Position Control
VA-180GNX024P	Non-spring Return, 24 Vac, Proportional Control

Large Globe Valve & Actuator Assemblies Compatibility Chart

Part numbers in grey denote valve and actuator combinations that can be ordered as assemblies.

Assembly part numbers are created by combining the Valve and Actuator Part Numbers. The final four digits of the valve part number are added to the end of the actuator part number to create the full assembly code.

ex. VA-180GNX024F+VA-599-03108 = VA-180GNX024F-3108

Valve								Actuator (Close Off Pressure - psi)	
Valve	Number of Ports	Size (in)	Flow Rate (Cv)	Trim	Action	ANSI Class	Flow Type	VA-180GNX024F	VA-180GNX024P
VA-599-03000	2-Way	1/2	1.6	SS	NO	250	Linear	250	250
VA-599-03001	2-Way	1/2	1.6	SS	NO	250	Linear	250	250
VA-599-03002	2-Way	1/2	2.5	SS	NO	250	Linear	250	250
VA-599-03003	2-Way	1/2	4	SS	NO	250	Linear	250	250
VA-599-03018	2-Way	1/2	1	SS	NC	250	Linear	250	250
VA-599-03019	2-Way	1/2	1.6	SS	NC	250	Linear	250	250
VA-599-03020	2-Way	1/2	2.5	SS	NC	250	Linear	250	250
VA-599-03021	2-Way	1/2	4	SS	NC	250	Linear	250	250
VA-599-03108	2-Way	1/2	1	SS	NO	250	Equal %	250	250
VA-599-03109	2-Way	1/2	1.6	SS	NO	250	Equal %	250	250
VA-599-03110	2-Way	1/2	2.5	SS	NO	250	Equal %	250	250
VA-599-03111	2-Way	1/2	4	SS	NO	250	Equal %	250	250
VA-599-03126	2-Way	1/2	1	SS	NC	250	Equal %	250	250
VA-599-03127	2-Way	1/2	1.6	SS	NC	250	Equal %	250	250
VA-599-03128	2-Way	1/2	2.5	SS	NC	250	Equal %	250	250
VA-599-03129	2-Way	1/2	4	SS	NC	250	Equal %	250	250
VA-599-03144	3-Way	1/2	1	SS	Mixing	250		250	250
VA-599-03145	3-Way	1/2	1.6	SS	Mixing	250		250	250
VA-599-03146	3-Way	1/2	2.5	SS	Mixing	250		250	250
VA-599-03147	3-Way	1/2	4	SS	Mixing	250		250	250
VA-599-03162	2-Way	1/2	1	Brass	NO	250	Equal %	250	250
VA-599-03163	2-Way	1/2	1.6	Brass	NO	250	Equal %	250	250
VA-599-03164	2-Way	1/2	2.5	Brass	NO	250	Equal %	250	250
VA-599-03165	2-Way	1/2	4	Brass	NO	250	Equal %	250	250

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Valve	Number of Ports	Size (in)	Flow Rate (Cv)	Trim	Action	ANSI Class	Flow Type	VA-180GNX024F	VA-180GNX024P
VA-599-03180	2-Way	1/2	1	Brass	NC	250	Equal %	250	250
VA-599-03181	2-Way	1/2	1.6	Brass	NC	250	Equal %	250	250
VA-599-03182	2-Way	1/2	2.5	Brass	NC	250	Equal %	250	250
VA-599-03183	2-Way	1/2	4	Brass	NC	250	Equal %	250	250
VA-599-03198	3-Way	1/2	1	Brass	Mixing	250		250	250
VA-599-03199	3-Way	1/2	1.6	Brass	Mixing	250		250	250
VA-599-03200	3-Way	1/2	2.5	Brass	Mixing	250		250	250
VA-599-03201	3-Way	1/2	4	Brass	Mixing	250		250	250
VA-599-03004	2-Way	3/4	6.3	SS	NO	250	Linear	211	211
VA-599-03022	2-Way	3/4	6.3	SS	NC	250	Linear	250	250
VA-599-03112	2-Way	3/4	6.3	SS	NO	250	Equal %	211	211
VA-599-03130	2-Way	3/4	6.3	SS	NC	250	Equal %	250	250
VA-599-03148	3-Way	3/4	6.3	SS	Mixing	250		250	250
VA-599-03166	2-Way	3/4	6.3	Brass	NO	250	Equal %	211	211
VA-599-03184	2-Way	3/4	6.3	Brass	NC	250	Equal %	250	250
VA-599-03202	3-Way	3/4	6.3	Brass	Mixing	250		250	250
VA-599-03005	2-Way	1	10	SS	NO	250	Linear	137	137
VA-599-03023	2-Way	1	10	SS	NC	250	Linear	159	159
VA-599-03113	2-Way	1	10	SS	NO	250	Equal %	137	137
VA-599-03131	2-Way	1	10	SS	NC	250	Equal %	159	159
VA-599-03149	3-Way	1	10	SS	Mixing	250		159	159
VA-599-03167	2-Way	1	10	Brass	NO	250	Equal %	137	137
VA-599-03185	2-Way	1	10	Brass	NC	250	Equal %	159	159
VA-599-03203	3-Way	1	10	Brass	Mixing	250		159	159
VA-599-03006	2-Way	1-1/4	16	SS	NO	250	Linear	85	85
VA-599-03024	2-Way	1-1/4	16	SS	NC	250	Linear	92	92
VA-599-03114	2-Way	1-1/4	16	SS	NO	250	Equal %	85	85
VA-599-03132	2-Way	1-1/4	16	SS	NC	250	Equal %	92	92
VA-599-03150	3-Way	1-1/4	16	SS	Mixing	250		92	92
VA-599-03168	2-Way	1-1/4	16	Brass	NO	250	Equal %	85	85
VA-599-03186	2-Way	1-1/4	16	Brass	NC	250	Equal %	92	92

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Valve								Actuator (Close Off Pressure - psi)	
Valve	Number of Ports	Size (in)	Flow Rate (Cv)	Trim	Action	ANSI Class	Flow Type	VA-180GNX024F	VA-180GNX024P
VA-599-03204	3-Way	1-1/4	16	Brass	Mixing	250		92	92
VA-599-03007	2-Way	1-1/2	25	SS	NO	250	Linear	55	55
VA-599-03025	2-Way	1-1/2	25	SS	NC	250	Linear	57	57
VA-599-03115	2-Way	1-1/2	25	SS	NO	250	Equal %	55	55
VA-599-03133	2-Way	1-1/2	25	SS	NC	250	Equal %	57	57
VA-599-03151	3-Way	1-1/2	25	SS	Mixing	250		57	57
VA-599-03169	2-Way	1-1/2	25	Brass	NO	250	Equal %	57	57
VA-599-03187	2-Way	1-1/2	25	Brass	NC	250	Equal %	57	57
VA-599-03205	3-Way	1-1/2	25	Brass	Mixing	250		57	57
VA-599-03008	2-Way	2	40	SS	NO	250	Linear	34	34
VA-599-03026	2-Way	2	40	SS	NC	250	Linear	35	35
VA-599-03116	2-Way	2	40	SS	NO	250	Equal %	34	34
VA-599-03134	2-Way	2	40	SS	NC	250	Equal %	35	35
VA-599-03152	3-Way	2	40	SS	Mixing	250		35	35
VA-599-03170	2-Way	2	40	Brass	NO	250	Equal %	34	34
VA-599-03188	2-Way	2	40	Brass	NC	250	Equal %	35	35
VA-599-03206	3-Way	2	40	Brass	Mixing	250		35	35

Product Specifications

Power supply

Operating voltage	24 Vac + 20% / 24 Vdc + 20% / -15%; Class 2
Frequency	45 to 65 Hz
Fusing of supply lines	Max. 10A slow
Power consumption:	
<input type="checkbox"/> Stem retracts/extends (VA-180GNX024P)	8 VA/3.75 W
<input type="checkbox"/> Stem retracts/extends (VA-180GNX024F)	5 VA/3.75 W

Function Data

Positioning times	30 s
Positioning force	800 N
Nominal stroke	20 mm
Permissible medium temperature (valve fitted)	-13°F to 266°F (-25°C to 130°C)

Signal Inputs

Positioning signal "Y"	
<input type="checkbox"/> 0 to 10 Vdc	Current draw < 0.1 mA Input impedance > 100K Ω
<input type="checkbox"/> 4 to 20 mA	Current draw DC 4 to 20 mA + 1% Input impedance < 500 Ω
Positioning signals "Y1", "Y2"	3-position
<input type="checkbox"/> Voltage	24 Vac \pm 20%/24 Vdc + 20%/-15%

Connecting Cable

Wire gauge	16 to 24 AWG
Cable entries	3 entries for 1/2" conduit connection

Parallel Operation

Parallel operation	< 10 (depending on controller output)
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Forced Control

Positioning signal "Z"	
<input type="checkbox"/> VA-180GNX024P	R = 0 to 1,000 Ω , G, G0
<input type="checkbox"/> R = 0 to 1,000 Ω	Stroke proportional to R
<input type="checkbox"/> Z connected to G	Maximum stroke 100%
<input type="checkbox"/> Z connected to G0	Minimum stroke 0%
<input type="checkbox"/> Voltage	Max. 24 Vac + 20%; Max. 24 Vdc + 20% / - 15%
<input type="checkbox"/> Current draw	< 0.1 mA

Position Feedback

Position feedback U	0 to 10 Vdc + 1%
Load impedance	> 10K Ω res.
Load	Maximum 1mA

Degree of Protection

Housing from vertical to horizontal _____ IP54, as per EN 60529
With Weathershield VA-ASK39.1 _____ NEMA 3R
Insulation class (for 24 Vac/Vdc) _____ Class III, as per EN 60730

Environmental Conditions

Operation _____ IEC 60721-3-3
 Climatic conditions _____ Class 3K5
 Mounting location _____ Indoors (weather-protected)
 Ambient temperature _____ 23°F to 131°F (-5°C to 55°C)
 Humidity (non-condensing) _____ 5 to 95% rh
Transportation _____ IEC 60721-3-2
 Climatic conditions _____ Class 2K3
 Temperature _____ -13°F to 158°F (-25°C to 70°C)
 Humidity _____ < 95% rh
Storage _____ IEC 60721-3-1
 Temperature _____ 5°F to 131°F (-15°C to 55°C)
 Humidity _____ 5 to 95% rh
Max. media temperature when mounted on a valve _____ 266°F (130°C)

Environmental Compatibility

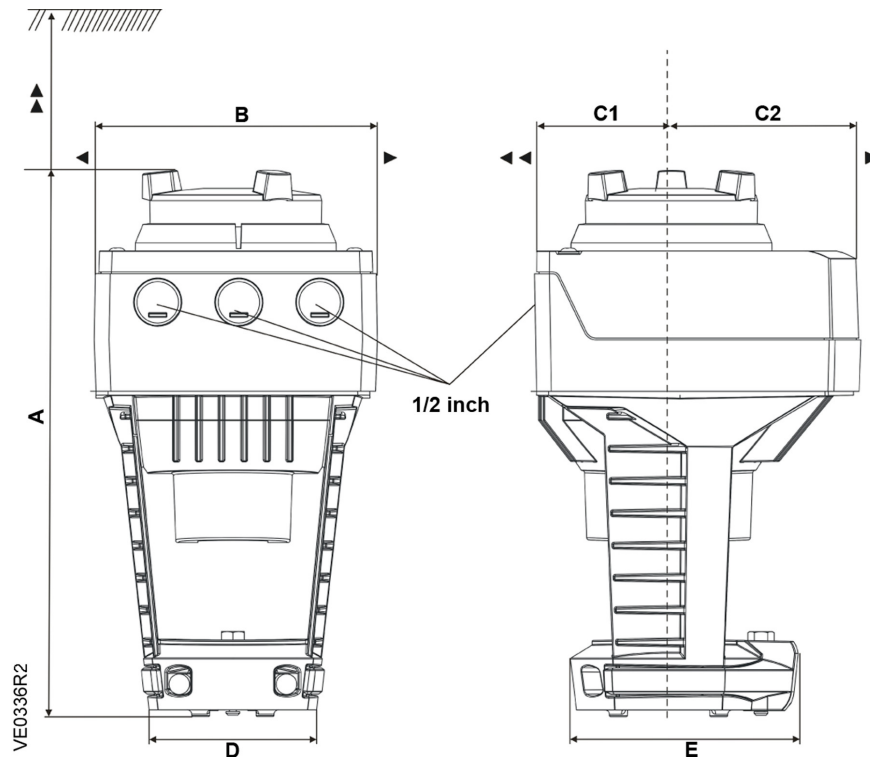
Compatibility:

_____ ISO 14001 (environment)
_____ ISO 9001 (quality)
_____ SN36350 (environment-compatible products)
_____ RL 2002/95/EG (RoHS)

Standards

CE conformity as per EMC directive _____ 2004/108/EC
 Immunity _____ EN 61000-6-2:[2005] Industrial
 Emissions _____ EN 61000-6-3:[2007] Residential
Electrical safety _____ EN 60730-1
C-tick _____ N 474
UL conformity (24 Vac/Vdc) _____ UL 873
C-UL conformity (24 Vac/Vdc) _____ Certified to Canadian standard C22.2, No. 24-93

Dimensions



Product Numbers	A	B	C	C1	C2	D	E	▶	▶▶	Weight lbs (kg)
VA-180GNX024F VA-180GNX024P	9.53 (242)	4.88 (124)	5.91 (150)	2.68 (68)	3.23 (82)	3.15 (80)	3.94 (100)	3.94 (100)	7.87 (200)	4.1 (1.85)
With VA-ASK39.1	10.51 (267)	6.06 (154)	11.81 (300)	7.87 (200)	3.94 (100)	-	-	-	-	4.6 (2.08)

Specifications subject to change without notice.
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