

B249VSS Technical Data Sheet

Stainless Steel Body, Ball and Stem



Application

These threaded valves are designed to provide modulating or two position control of hot or chilled water and saturated steam systems under 50 psi. Typical applications include reheat coils, VAV terminal control, unit ventilators, and air handlers, especially in areas which have minimum profile requirements. Up to 50 psi steam
 1/2" - 2000 PSIG WOG, Cold Non-Shock
 Federal Specification: WW-V-35C, Type II
 Composition: SS
 Style: 3

Suitable Actuators

	Non-Spring	Spring	Electronic fail-safe
B249VSS	GMB(X), PRB(X)	AF	PKRB(X)

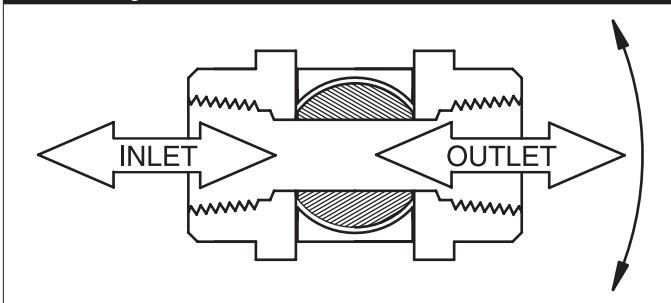
Technical Data

Fluid	chilled or hot water, up to 60% glycol, steam
Flow characteristic	modified equal percentage
Controllable flow range	90° rotation, A – AB open ccw, B – AB open cw
Valve Size [mm]	2" [50]
Pipe connection	SAE NPT (female connections)
Housing	Stainless steel A351-CF8M 316
Housing seal	PTFE
Ball	316 stainless steel
Stem	316 stainless steel
Stem seal	RPTFE
Spindle bearing	RPTFE
Lock nut	stainless steel
Seat	RPTFE
Body Pressure Rating	1500 psig WOG
Maximum Inlet Pressure (Steam)	50 psi
Max Differential Pressure (Steam)	50 psi
Close-off pressure Δ ps	1000 psi
Maximum Velocity	15 FPS
Cv	108
Weight	6.17 lb [2.8 kg]
Fluid Temp Range (water)	-22...298°F [-30...148°C]
Leakage rate	ANSI Class VI

Safety Notes

WARNING: This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to www.p65warnings.ca.gov

Flow/Mounting Details



GKX24-MFT-X1 Technical Data Sheet

Modulating, Electronic Fail-Safe, 24 V, for DC 2...10 V or 4...20 mA Control Signal



5-year warranty



Technical Data

Power Supply	24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10%
Power consumption in operation	12 W
Power consumption in rest position	3 W
Transformer sizing	21 VA (class 2 power source)
Electrical Connection	18 GA plenum cable with 1/2" conduit connector, degree of protection NEMA 2 / IP54, 3 ft [1 m] 10 ft [3 m] and 16ft [5 m]
Overload Protection	electronic throughout 0...95° rotation
Operating Range	2...10 V (default), 4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor), variable (VDC, on/off, floating point)
Operating range Y variable	Start point 0.5...30 V End point 2.5...32 V
Input Impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA, 1500 Ω for PWM, On/Off and Floating point
Position Feedback	2...10 V, Max. 0.5 mA, VDC variable
Angle of rotation	Max. 95°, adjustable with mechanical stop
Direction of motion motor	selectable with switch 0/1
Direction of motion fail-safe	reversible with switch
Position indication	Mechanically, 30...65 mm stroke
Manual override	external push button
Running Time (Motor)	default 150 s, variable 95...150 s
Running time fail-safe	<35 s
Bridging time	programmable 0...10 s (2 s default) delay before fail-safe activates
Pre-charging time	5...20 s
Ambient humidity	max. 95% r.H., non-condensing
Ambient temperature	-22...122°F [-30...50°C]
Storage temperature	-40...176°F [-40...80°C]
Degree of Protection	IP54, NEMA 2, UL Enclosure Type 2
Housing material	UL94-5VA
Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU
Noise level, motor	52 dB(A)
Noise level, fail-safe	61 dB(A)
Servicing	maintenance-free
Quality Standard	ISO 9001
Weight	4.0 lb [1.8 kg]

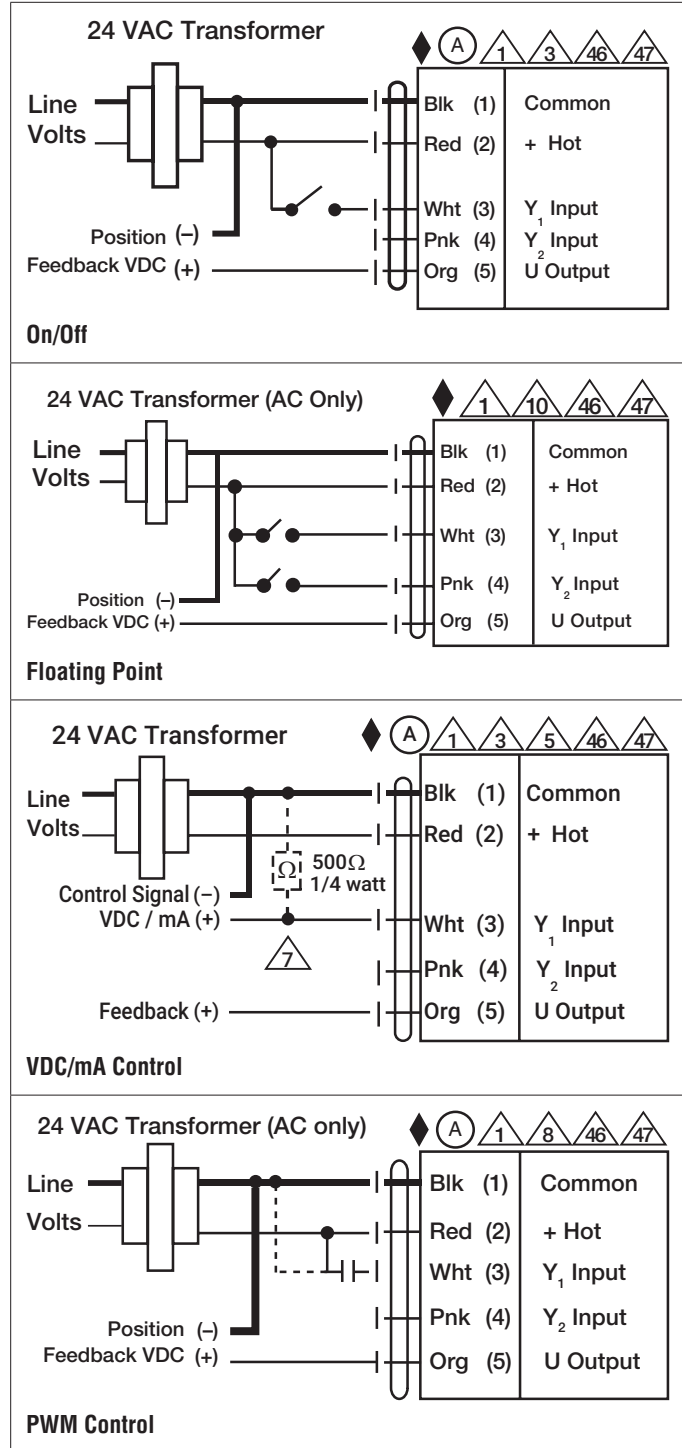
†Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 3

Wiring Diagrams

INSTALLATION NOTES

- Actuators with appliance cables are numbered.
- Provide overload protection and disconnect as required.
- Actuators may also be powered by 24 VDC.
- Only connect common to negative (-) leg of control circuits.
- A 500 Ω resistor (ZG-R01) converts the 4 to 20 mA control signal to 2 to 10 VDC.
- Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.
- For triac sink the Common connection from the actuator must be connected to the Hot connection of the controller. Position feedback cannot be used with a triac sink controller; the actuator internal common reference is not compatible.
- IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
- Actuators may be controlled in parallel. Current draw and input impedance must be observed.
- Master-Slave wiring required for piggy-back applications. Feedback from Master to control input(s) of Slave(s).
- Meets cULus requirements without the need of an electrical ground connection.

WARNING! LIVE ELECTRICAL COMPONENTS!
 During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



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