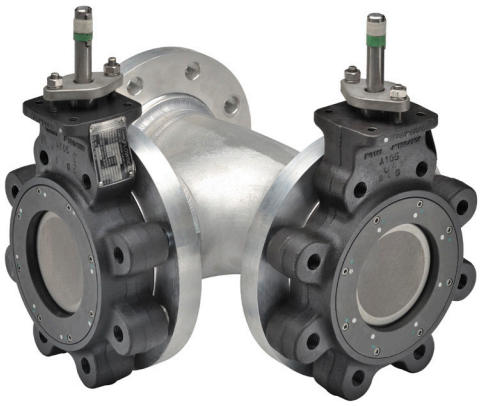
F780-150SHP, 3", 3-Way ANSI Class 150 Butterfly Valve

Reinforced Teflon Seat, 316 Stainless Steel



Application

These valves are designed to meet the needs of HVAC and commercial applications requiring bubble tight shut-off for liquids. Typical applications include chiller insolation, cooling tower isolation, change-over systems, large air handler coil control, bypass and process control applications. The large Cv values provide for an economical control valve solution for larger flow applications.

Jobsite Note

Valve assembly should be stored in a weather protected area prior to installation. Reference the butterfly valve installation instruction for additional information.

Technical Data	
Service	chilled or hot water, up to 60% glycol, steam
Flow Characteristic	modified linear, unidirectional
Controllable Flow Range	Quarter turn, mechanically limited
Size [mm]	3" [80]
End Fitting	For use with ASME/ANSI B16.5 flanges
Body	carbon steel full lug (ASME B16.34)
Seat	RPTFE
Shaft	17-4 PH stainless steel
Bushings	glass backed PTFE
Disc	316 stainless steel
Body Pressure Rating [psi]	ASME/ANSI Class 150
ANSI Class	ANSI 150
Number of Bolt Holes	4
Lug Threads	5/8-11 UNC
Maximum Steam Inlet (Rotary actuators)	50 psi (345 kPa)
Media Temperature Range (Water)	-22°F to 400°F [-30°C to 204°C]
Close-Off Pressure	285 psi
Rangeability	100:1
Maximum Velocity	32 FPS
Cv	228
Weight	62.2 lb [28.2 kg]
Leakage	0%
Servicing	maintenance free

Flow/Cv								
Cv 10°	Cv 20°	Cv 30°	Cv 40°	Cv 50°	Cv 60°	Cv 70°	Cv 80°	Cv 90°
3.4	14	32	57	87	125	171	221	228

Suitable Actuators

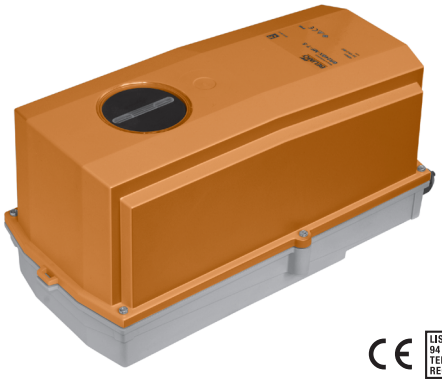
	Non-Spring	Electronic Fail-Safe
F780-150SHP	2*GMB(X), SY2	GKB(X), 2*GKB(X)

Dimensions (Inches [mm])

A	B	C	D	E	F
13.76" [349]	13.06" [332]	23.85" [606]	20.5" [521]	7.92" [201]	9.84" [250]

GMX24-MFT-T-X1 N4H

NEMA 4, Modulating Control, Non-Spring Return, Direct Coupled, 24 V, Multi-Function Technology®



Technical Data	
Power Supply	24 VAC ± 20%, 50/60 Hz, 24 VDC ± 10%
Power Consumption Running	8 W
Power Consumption Holding	2.5 W
Transformer Sizing	6 VA (class 2 power source) / heater 25 VA
Shaft Diameter	1/2" to 1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
Electrical Connection	terminal block
Overload Protection	electronic throughout 0° to 95° rotation
Operating Range Y	2 to 10 VDC, 4 to 20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor), variable (VDC, floating point, on/off)
Input Impedance	100 k Ω for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and On/Off
Feedback Output U	2 to 10 VDC, 0.5 mA max, VDC variable
Angle of Rotation	Max. 95°, adjustable with mechanical stop
Torque	360 in-lbs [40 Nm] minimum
Direction of Rotation (Motor)	reversible with built-in switch
Position Indication	dial
Manual Override	under cover
Running Time (Motor)	150 sec (default), variable (90 to 150 sec)
Humidity	5 to 100% RH (UL Type 4)
Ambient Temperature Range	-40°F to 122°F [-40°C to 50°C]
Storage Temperature Range	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 4, IP66, UL enclosure type 4
Agency Listings†	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise Level (Motor)	<45 dB (A)
Servicing	maintenance free
Quality Standard	ISO 9001
Weight	9.9 lb [4.5 kg]

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

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Wiring Diagrams

INSTALLATION NOTES

(A) Actuators with appliance cables are numbered.

1 Provide overload protection and disconnect as required.

3 Actuators may also be powered by 24 VDC.

5 Only connect common to negative (-) leg of control circuits.

7 A 500 Ω resistor (ZG-R01) converts the 4 to 20 mA control signal to 2 to 10 VDC.

8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

10 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.

12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).

16 Actuators are provided with a numbered screw terminal strip instead of a cable.

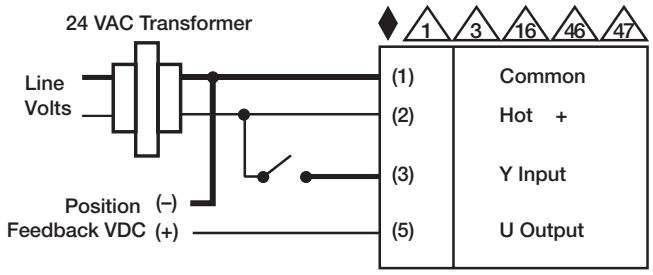
46 Actuators may be controlled in parallel. Current draw and input impedance must be observed.

47 Master-Slave wiring required for piggy-back applications. Feedback from Master to conrol input(s) of Slave(s).

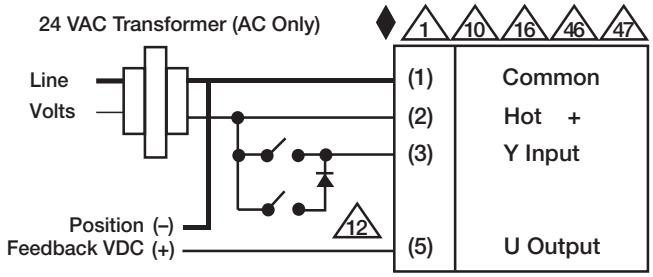
◆ Meets cULus requirements without the need of an electrical ground connection.

WARNING! LIVE ELECTRICAL COMPONENTS!

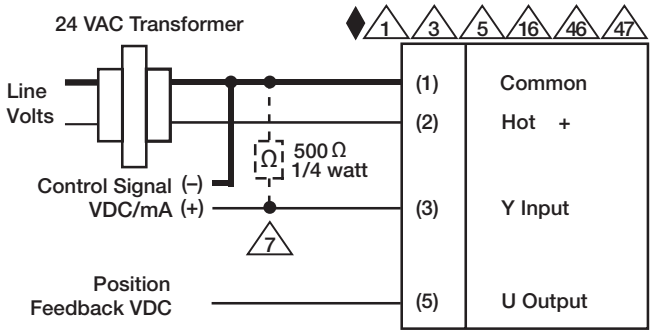
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow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



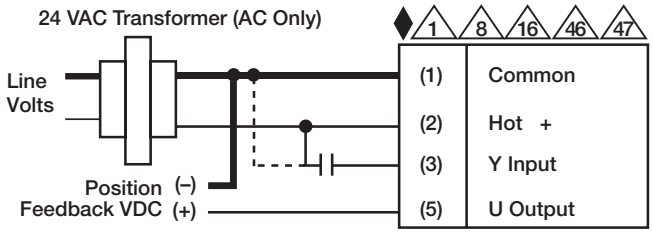
On/Off



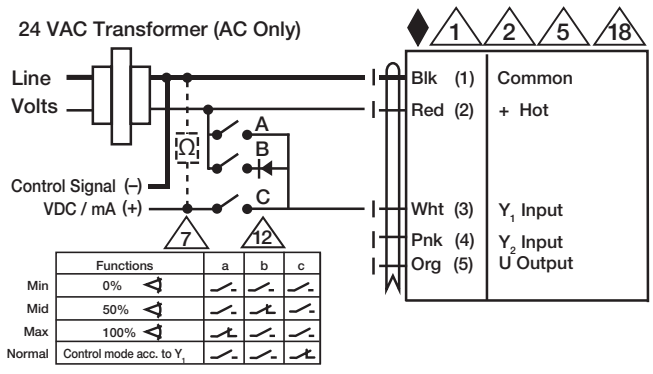
Floating Point



VDC/mA Control



PWM Control



Override Control

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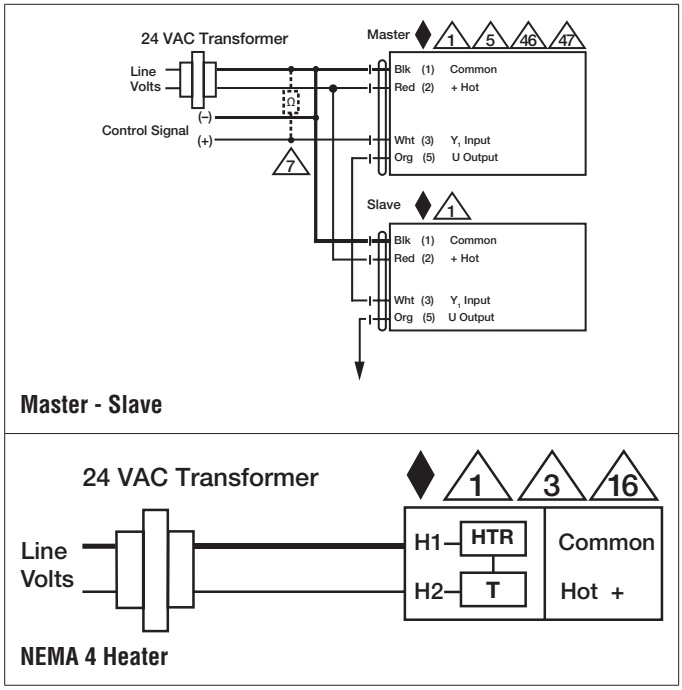

Master - Slave

NEMA 4 Heater