

# F680HD, 3", 2-Way Butterfly Valve

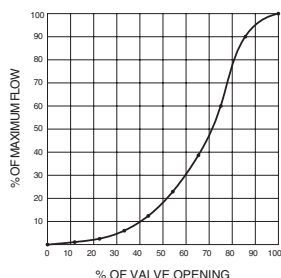
## Resilient Seat, 304 Stainless Steel Disc



### Technical Data

Service	chilled, hot water, up to 60% glycol
Flow Characteristic	modified equal percentage
Controllable Flow Range	90° rotation
Valve Size	3 " [80]
End Fitting	for use with ANSI class 125/150 flanges
Body	ductile iron ASTM A536
Body Finish	epoxy powder coated
Stem Packing	EPDM (lubricated)
Seat	EPDM
Shaft	416 stainless steel
Bushings	RPTFE
Disc	304 stainless steel
Body Pressure Rating	ANSI Class 125, standard class B
ANSI Class	125
Number of Bolt Holes	4
Lug Threads	5/8-11 UNC
Media Temperature Range (Water)	-22°F to 250°F [-30°C to 120°C]
Close-Off Pressure	200 psi
Rangeability	10:1 (for 30° to 70° range)
Maximum Velocity	12 FPS
Cv	302
Weight	6.8 lb [3.1 kg]
Leakage	0%
Servicing	maintenance free

### Flow Pattern



### Application

Valve is designed for use in ANSI flanged piping systems to meet the needs of bi-directional high flow HVAC hydronic applications with 0% leakage. Typical applications include cooling tower bypass, primary flow change-over systems, and large air handler coil control. Valve face-to-face dimensions comply with API 609 & MSS-SP-67, Completely assembled and tested, Ready for installation.

### Jobsite Note

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

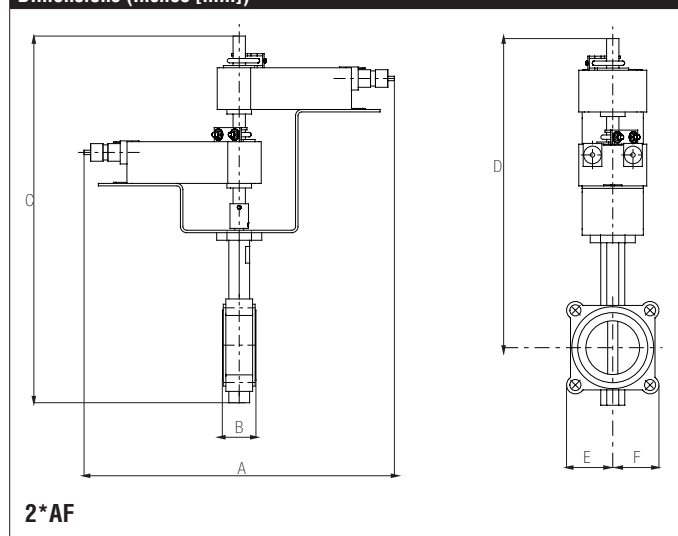
### Flow/Cv

Cv 10°	Cv 20°	Cv 30°	Cv 40°	Cv 50°	Cv 60°	Cv 70°	Cv 80°	Cv 90°
0.2	9	18	39	70	116	183	275	302

### Suitable Actuators

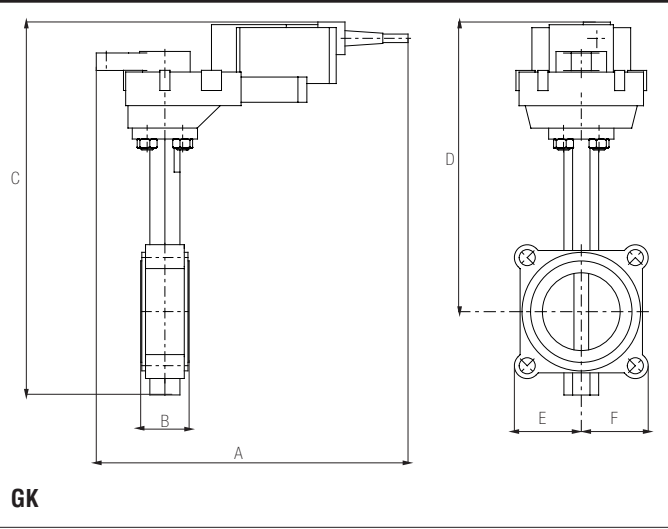
	Non-Spring	Spring	Electronic Fail-Safe
F680HD	GRB(X)	2*AFB(X)	GKRB(X)

### Dimensions (Inches [mm])



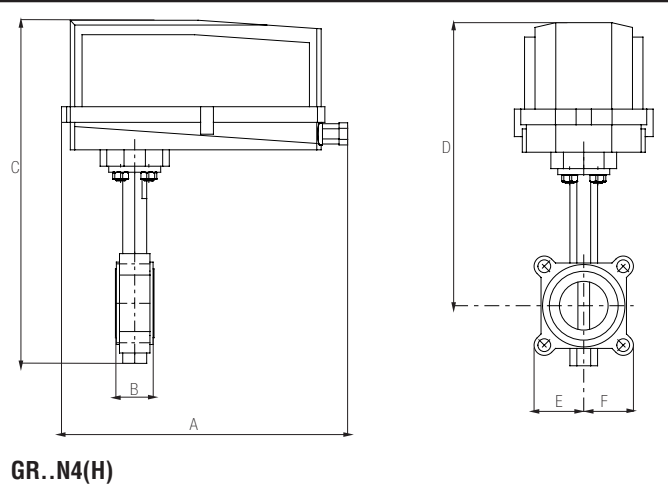
A	B	C	D	E	F
16.9" [429]	1.81" [46]	21.38" [544]	17.63" [448]	3.75" [95]	

**Dimensions (Inches [mm])**



A	B	C	D	E	F
12.7" [323]	1.81" [46]	15.10" [384]	11.5" [292]	3.75" [95]	

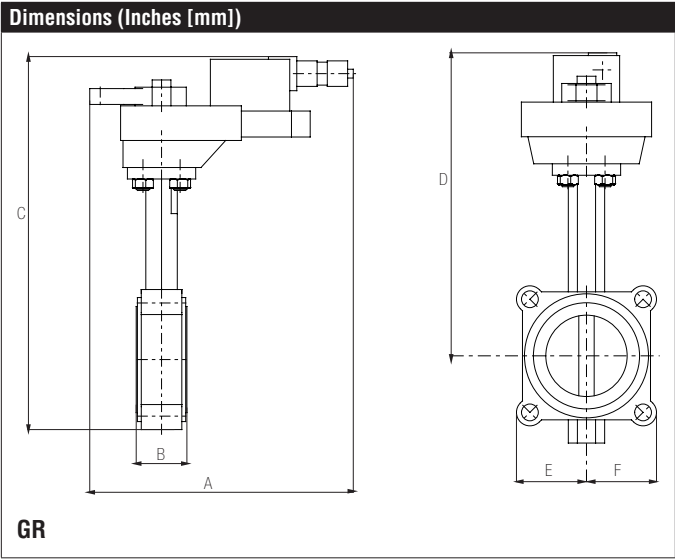
**Dimensions (Inches [mm])**



A	B	C	D	E	F
14.1" [358]	1.81" [46]	18.39" [467.1]	14.8" [328]	3.75" [95]	

# F680HD, 3", 2-Way Butterfly Valve

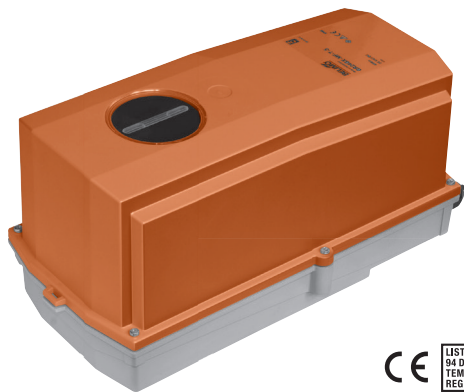
Resilient Seat, 304 Stainless Steel Disc



A	B	C	D	E	F
12.7" [323]	1.81" [46]	15.10" [384]	11.16" [283]	2.6" [66]	

# GRX24-MFT-T N4H

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



## Technical Data

Power Supply	24 VAC, $\pm 20\%$ , 50/60 Hz, 24 VDC, $\pm 10\%$
Power consumption in operation	8 W
Power consumption in rest position	2.5 W
Transformer sizing	10 VA (class 2 power source) / heater 25 VA
Electrical Connection	terminal blocks
Overload Protection	electronic throughout 0° to 90° rotation
Operating Range	DC 2...10 V (default), 4 to 20 mA w/ ZG-R01 (500 $\Omega$ , 1/4 W resistor), variable (VDC, floating point, on/off)
Operating range Y variable	starting point DC 0.5...30 V end point DC 2.5...32 V
Input Impedance	600 $\Omega$
Position Feedback	DC 2...10 V, Max. 0.5 mA, VDC variable
Angle of rotation	90°, adjustable with mechanical stop
direction of rotation motor	reversible with built-in switch
Position indication	dial
Manual override	under cover
Running time motor	default 150 sec, variable 90...150 sec
Ambient humidity	5 to 95% RH non condensing (EN 60730-1)
Ambient temperature	-22...122 °F [-30...50 °C]
Non-operating temperature	-40...176 °F [-40...80 °C]
Degree of Protection	IP66/67, NEMA 4X, UL Enclosure Type 4X
Housing material	polycarbonate
Agency Listing	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)
Maintenance	maintenance free
Quality Standard	ISO 9001
Weight	9.9 lb [4.5 kg]

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

## Wiring Diagrams

### INSTALLATION NOTES

- 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  $\Omega$  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 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.

