F680HD Technical Data Sheet
Resilient Seat, 304 Stainless Steel Disc

5-year warranty

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.

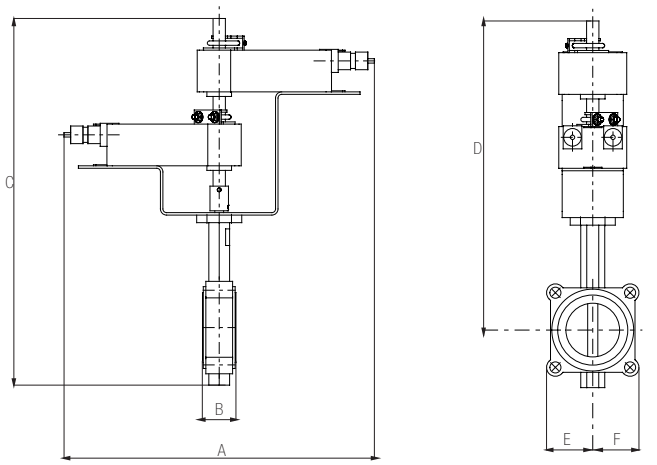
Flow/Cv								
Cv 10°	Cv 20°	Cv 30°	Cv 40°	Cv 50°	Cv 60°	Cv 70°	Cv 80°	Cv 90°
0.2	9	18	39	70	116	183	275	302

Suitable Actuators

	Non-Spring	Spring	Electronic fail-safe
F680HD	GRB(X)	(2*AFB(X))	GKRB(X)

Technical Data	
Fluid	chilled or hot water, up to 60% glycol
Flow characteristic	modified equal percentage
Controllable flow range	90° rotation
Valve Size [mm]	3” [80]
Pipe connection	for use with ANSI class 125/150 flanges
Housing	Ductile cast iron ASTM A536
Body finish	epoxy powder coating (blue RAL 5002)
Stem	416 stainless steel
Stem seal	EPDM (lubricated)
Seat	EPDM
Bearing	RPTFE
Disc	304 stainless steel
Body Pressure Rating	ANSI Class Consistent with 125, 232 psi CWP
ANSI Class	Consistent with 125
Number of Bolt Holes	4
Lug threads	5/8-11 UNC
Close-off pressure Δps	200 psi
Rangeability Sv	10:1 (for 30° to 70° range)
Maximum Velocity	12 FPS
Cv	302
Weight	6.9 lb [3.1 kg]
Fluid Temp Range (water)	-22...250°F [-30...120°C]
Leakage rate	0%
Servicing	maintenance-free

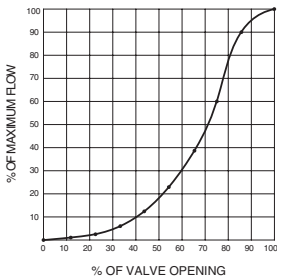
Dimensions (Inches [mm])



2*AF

A	B	C	D	E	F
17.0” [433]	1.9” [49]	19.7” [501]	16.4” [417]	3.5” [89]	

Flow/Mounting Details



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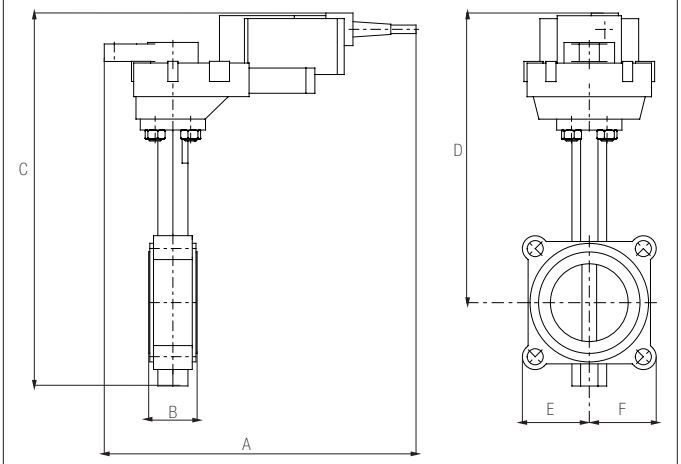
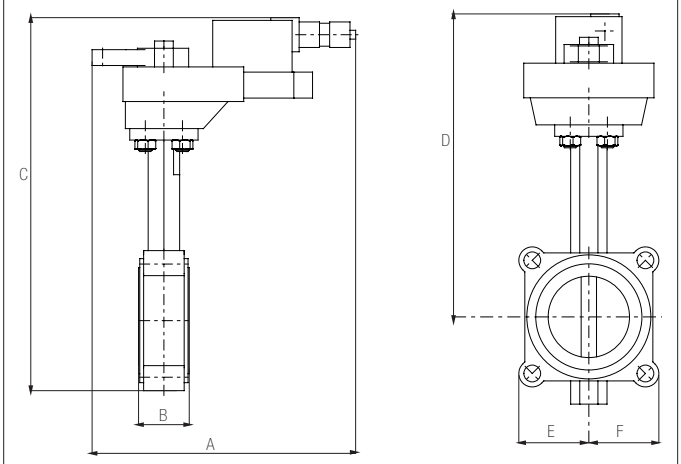


GK

A	B	C	D	E	F
11.2” [284]	1.9” [49]	16.5” [419]	13.1” [334]	3.5” [89]	

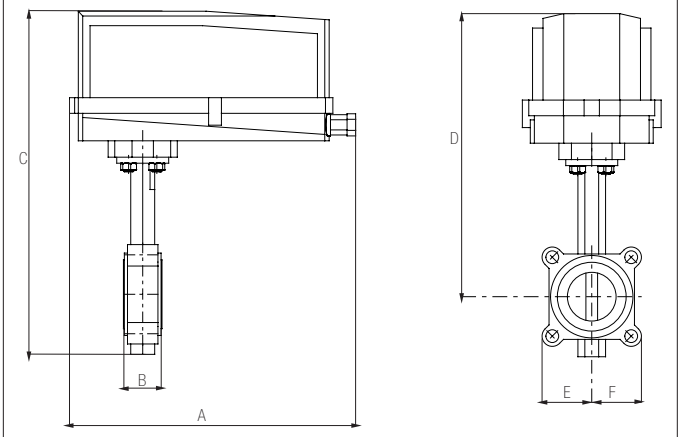
Dimensions (Inches [mm])



GM

A	B	C	D	E	F
9.4” [239]	1.9” [49]	16.5” [419]	13.1” [334]	3.5” [89]	

Dimensions (Inches [mm])



GR/GK..N4

A	B	C	D	E	F
14.1” [358]	1.9” [49]	17.8” [451]	14.3” [363]	3.5” [89]	

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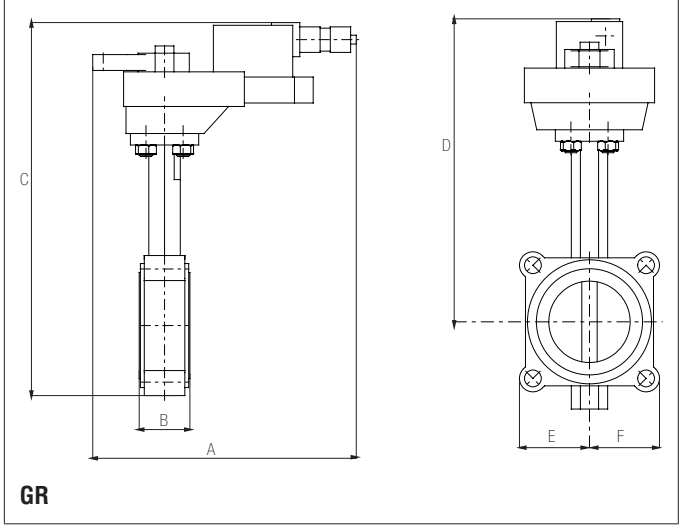
Dimensions (Inches [mm])

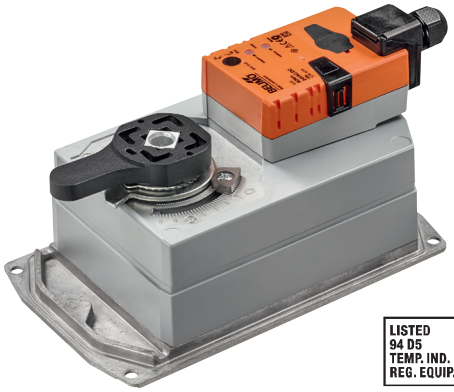


GR

A	B	C	D	E	F
10.8” [275]	1.9” [49]	14.3” [362]	11.0” [279]	3.5” [89]	

DRX24-MFT-T Technical Data Sheet

Modulating, Non-Spring Return, 24 V, for DC 2…10 V or 4…20 mA



5-year warranty

LISTED 94 D5 TEMP. IND. & REG. EQUIP. c UL us

BRUSHLESS dc motor

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	Screw terminal (for 22 to 12 AWG wire)
Overload Protection	electronic thoughout 0...90° 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 On/Off
Position Feedback	2...10 V, Max. 0.5 mA, VDC variable
Direction of motion motor	selectable with switch 0/1
Position indication	Mechanically, pluggable
Manual override	external push button
Running Time (Motor)	default 150 s, variable 90...150 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	45 dB(A)
Servicing	maintenance-free
Quality Standard	ISO 9001
Weight	2.7 lb [1.2 kg]

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

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.

◆ 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.