

Butterfly Valve with Lug types

- Disc 304 stainless steel
- Bubble tight shut-off
- Resilient seat
- Valve face-to-face dimensions comply with API 609 & MSS-SP-67
- Completely assembled and tested, ready for installation



5-year warranty

Type overview

Type	DN
F650HD	50

Technical data

Functional data	Valve size [mm]	2" [50]
	Fluid	chilled or hot water, up to 60% glycol
	Fluid Temp Range (water)	-22...250°F [-30...120°C]
	Body Pressure Rating	ANSI Class Consistent with 125, 232 psi CWP
	Close-off pressure Δps	200 psi
	Flow characteristic	modified equal percentage
	Leakage rate	0% leakage, leakage rate A
	Servicing	maintenance-free
	Flow Pattern	2-way
	Controllable flow range	90° rotation
	Cv	115
	Maximum Velocity	12 FPS
	Lug threads	5/8-11 UNC
Materials	Valve body	Ductile cast iron ASTM A536
	Body finish	epoxy powder coating (blue RAL 5002)
	Stem	416 stainless steel
	Stem seal	EPDM (lubricated)
	Seat	EPDM
	Pipe connection	for use with ANSI class 125/150 flanges
	Bearing	RPTFE
	Disc	304 stainless steel
Gear operator materials	Gears - hardened steel	
Suitable actuators	Non-Spring	ARB(X) GRB(X)
	Spring	AFRB(X)

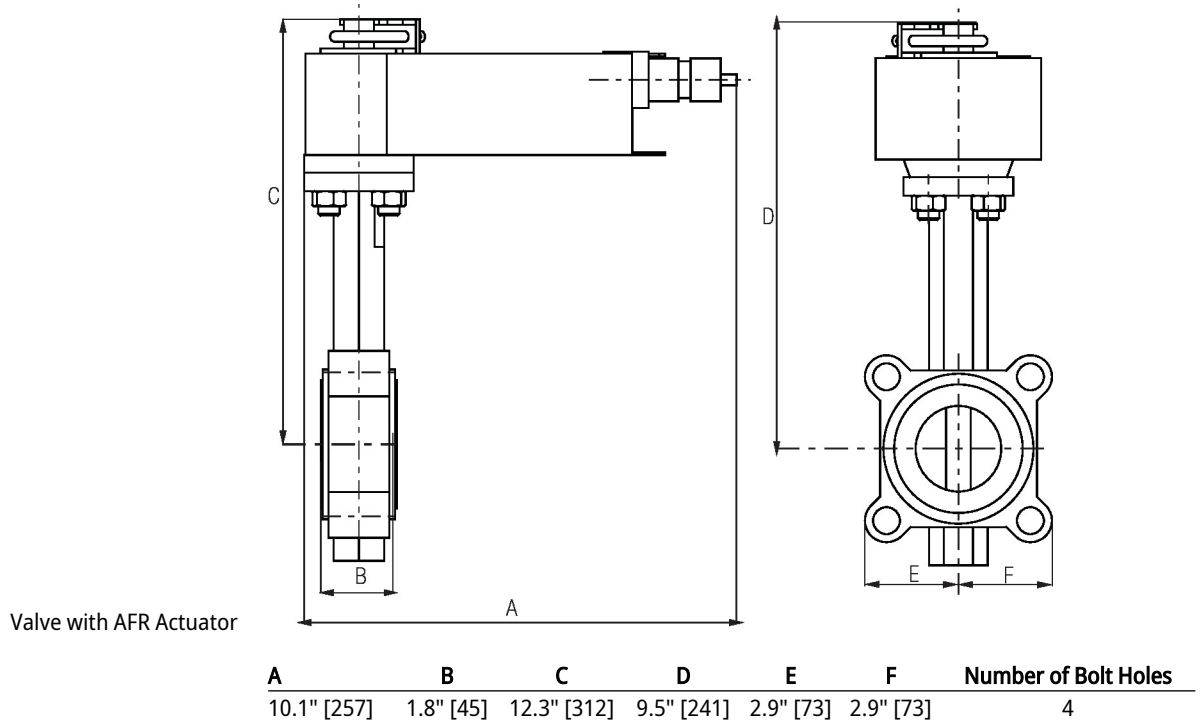
Product features

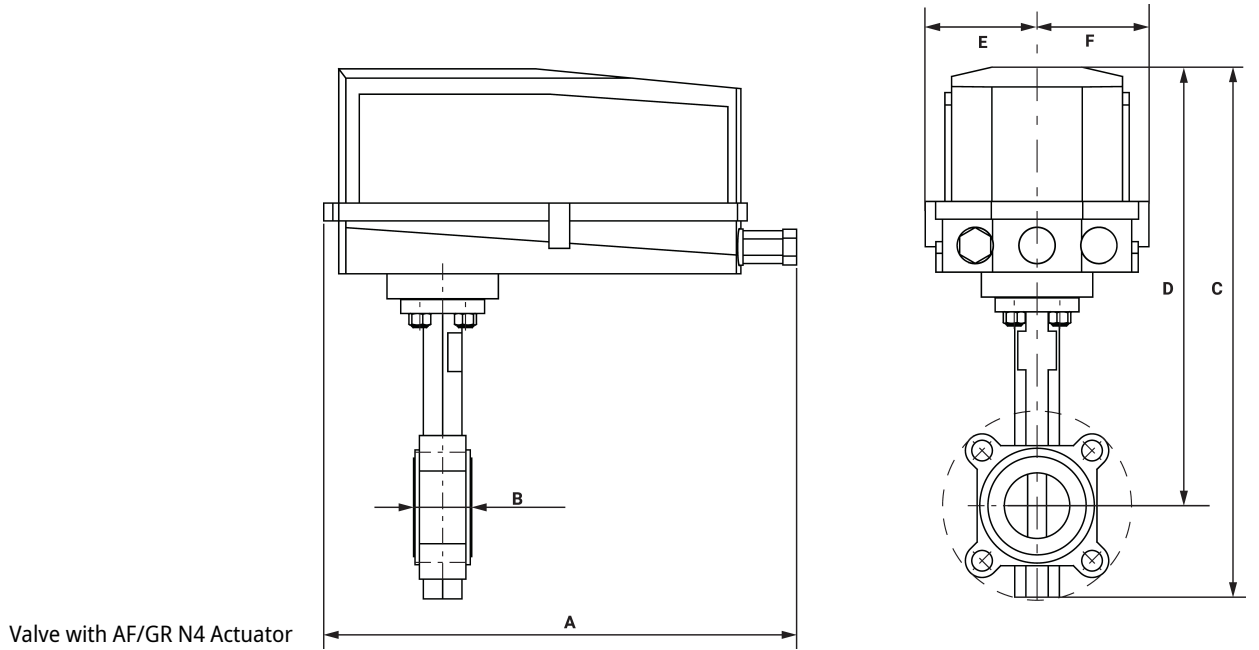
Flow/Mounting details



Dimensions

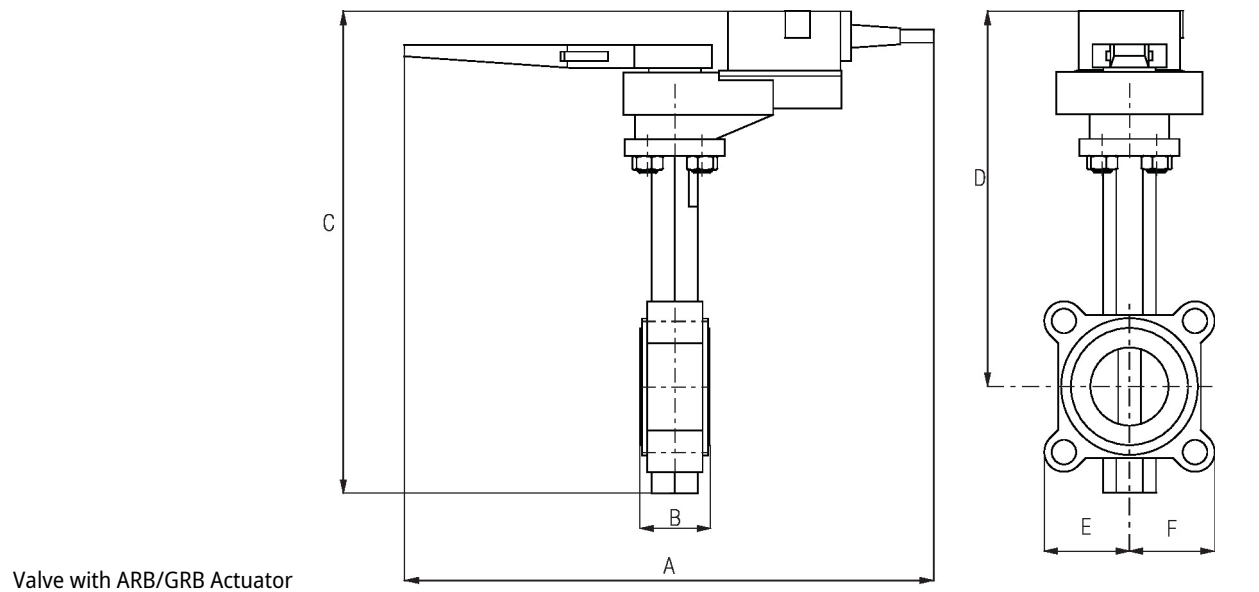
Type	DN	Weight
F650HD	50	5.3 lb [2.4 kg]





Valve with AF/GR N4 Actuator

A	B	C	D	E	F	Number of Bolt Holes
14.5" [368]	1.8" [45]	16.1" [409]	13.3" [338]	3.4" [86]	3.4" [86]	4



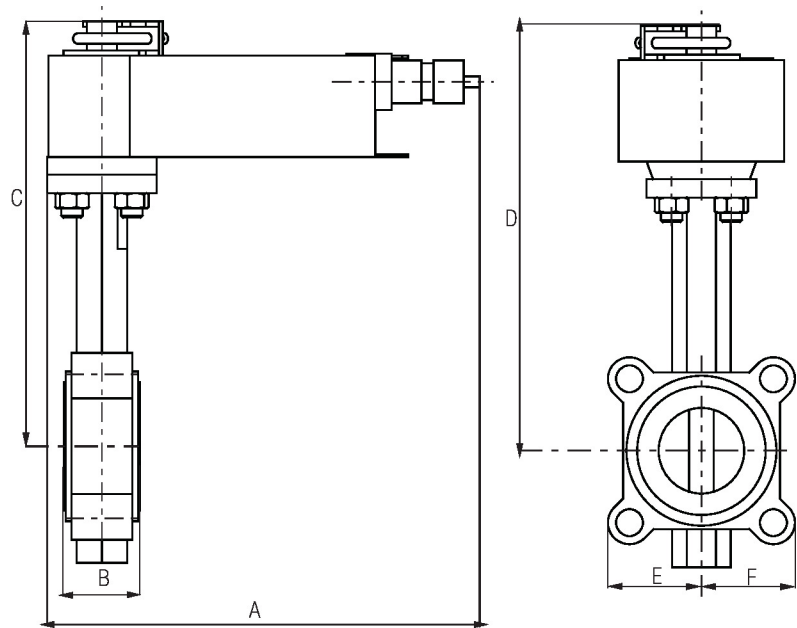
Valve with ARB/GRB Actuator

A	B	C	D	E	F	Number of Bolt Holes
14.6" [370]	1.8" [45]	12.4" [314]	9.7" [246]	2.9" [73]	2.9" [73]	4



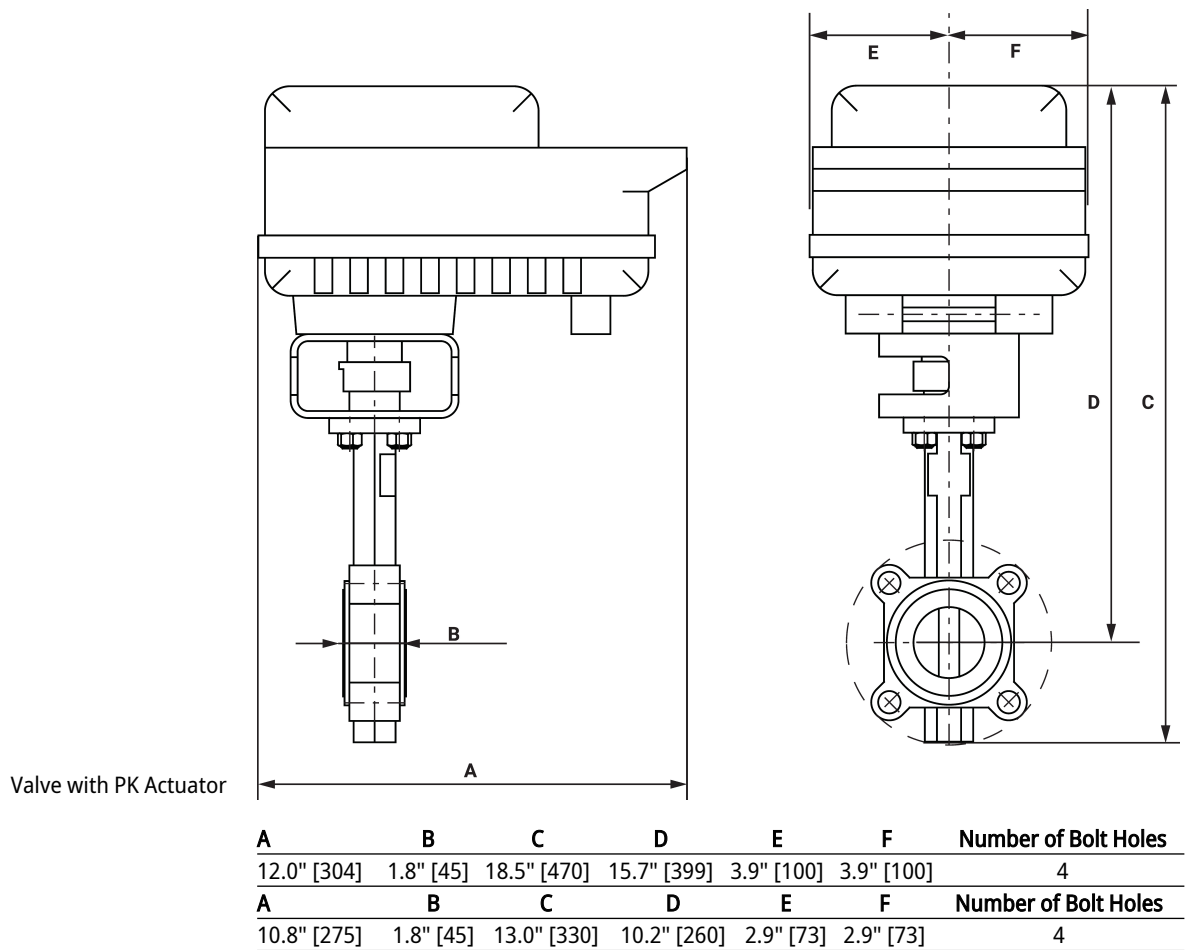
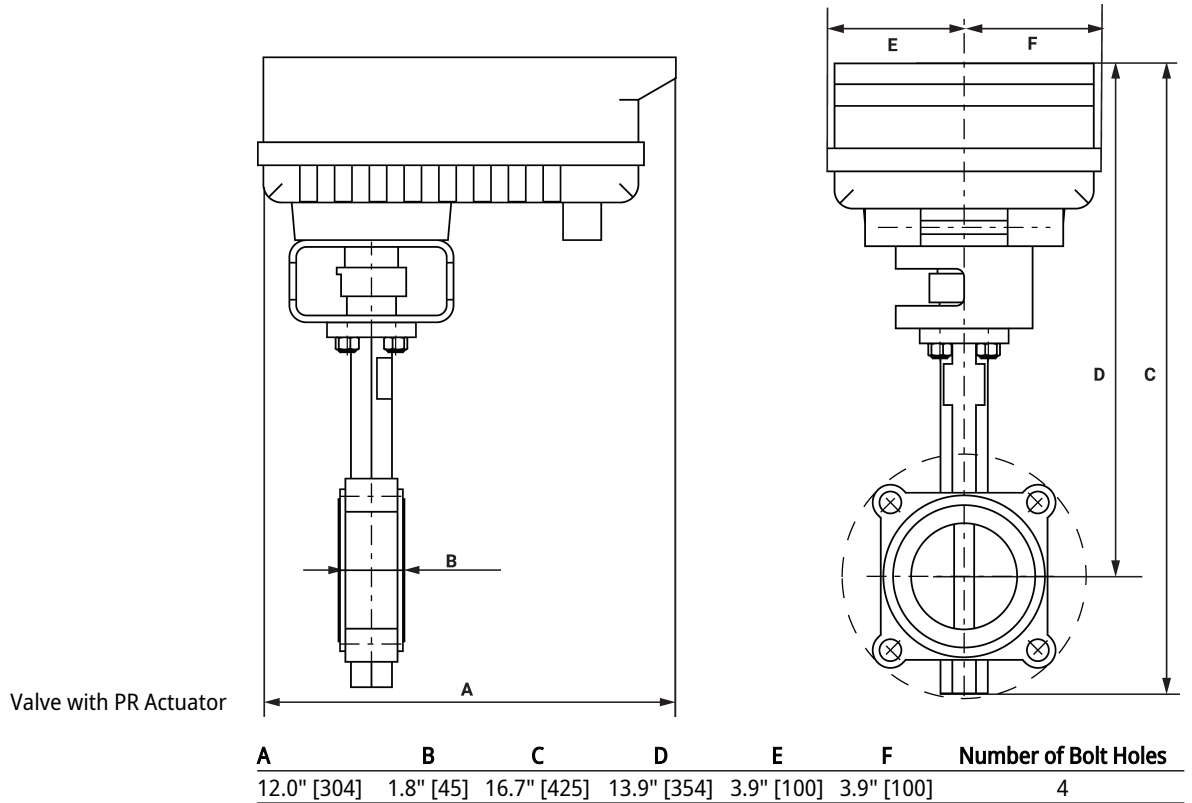
Valve with AFB/AFX Actuator

A	B	C	D	E	F	Number of Bolt Holes
10.1" [257]	1.8" [45]	15.1" [384]	12.4" [315]	2.9" [73]	2.9" [73]	4



Valve with AMB/AMX Actuator

A	B	C	D	E	F	Number of Bolt Holes
8.3" [211]	1.8" [45]	15.1" [384]	12.4" [315]	2.9" [73]	2.9" [73]	4





5-year warranty



Technical data

Electrical data	Nominal voltage	AC 24...240 V / DC 24...125 V	
	Nominal voltage frequency	50/60 Hz	
	Nominal voltage range	AC 19.2...264 V / DC 21.6...137.5 V	
	Power consumption in operation	7 W	
	Power consumption in rest position	3.5 W	
	Transformer sizing	18 VA	
	Auxiliary switch	2 x SPDT, 3 A resistive (0.5 A inductive) @ AC 250 V, one set at 10°, one adjustable 10...90°	
	Switching capacity auxiliary switch	3 A resistive (0.5 A inductive) @ AC 250 V	
	Electrical Connection	(2) 18 GA appliance cables, 1 m, with 1/2" conduit connectors	
	Overload Protection	electronic throughout 0...95° rotation	
Functional data	Position feedback U note	No Feedback	
	Direction of motion motor	selectable by ccw/cw mounting	
	Direction of motion fail-safe	reversible with cw/ccw mounting	
	Manual override	5 mm hex crank (3/16" Allen), supplied	
	Angle of rotation	95°	
	Running Time (Motor)	75 s / 90°	
	Running time fail-safe	<20 s	
	Noise level, motor	50 dB(A)	
	Noise level, fail-safe	62 dB(A)	
Position indication	Mechanical		
Safety data	Power source UL	Class 2 Supply	
	Degree of protection IEC/EN	IP54	
	Degree of protection NEMA/UL	NEMA 2	
	Enclosure	UL Enclosure Type 2	
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02 CE acc. to 2014/30/EU and 2014/35/EU	
	Quality Standard	ISO 9001	
	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC	
	Ambient humidity	Max. 95% RH, non-condensing	
	Ambient temperature	-22...122°F [-30...50°C]	
	Storage temperature	-40...176°F [-40...80°C]	
	Servicing	maintenance-free	
	Weight	Weight	4.6 lb [2.1 kg]
	Materials	Housing material	Galvanized steel and plastic housing

Footnotes †Rated Impulse Voltage 4kV, Type of Action 1.AA.B, Control Pollution Degree 3.

Electrical installation

- ⚠ 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.
- ◆ Meets cULus requirements without the need of an electrical ground connection.
- Ⓐ Actuators with appliance cables are numbered.
- Ⓢ UP Universal Power Supply (UP) models can be supplied with 24 VAC up to 240 VAC, or 24 VDC up to 125 VDC.
- ⚠ Apply only AC line voltage or only UL-Class 2 voltage to the terminals of auxiliary switches. Mixed or combined operation of line voltage/safety extra low voltage is not allowed.
- ⚠ Provide overload protection and disconnect as required.
- ⚠ Actuators may also be powered by DC 24 V.
- ⚠ Two built-in auxiliary switches (2x SPDT), for end position indication, interlock control, fan startup, etc.
- ⚠ Actuators may be powered in parallel. Power consumption must be observed.
- ⚠ Parallel wiring required for piggy-back applications.

Wiring diagrams

On/Off

