

## Technical Data Sheet

# Butterfly Motorized Valve (AFB Actuator)

Valves are supplied by Belimo to AERCO's specification.

- 50 psi bubble tight shut-off
- Long stem design allows for 2" insulation
- Valve face-to-face dimensions comply with API 609 & MSS-SP-67
- Completely assembled and tested, ready for installation

### 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 isolation, 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

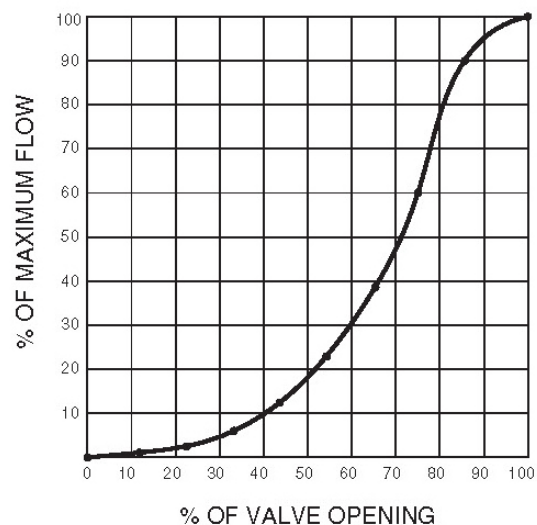
Valves should be stored in a weather protected area prior to construction. Complete installation recommendations can be found in Belimo's Installation and Maintenance Instructions for F6/F7 HD/HDU Butterfly Valves.



P/N 92084-1 illustrated in photo

Valve Technical Data	
Service	chilled, hot water, 60% glycol
Flow Characteristic	modified equal percentage
Action	90° rotation
Type of End Fitting	for use with ANSI Class 125/150 flanges
Materials	Body Body finish Disc Seat Shaft O-ring Upper bushing Middle bushings Lower bushing
Media Temperature Range	-22°F to 250°F [-30°C to 120°C]
Operation Ambient Temperature Range	-22°F to 122°F [-30°C to 50°C]
Body Pressure Rating	ASME/ANSI Class 125/150 (200 psi at -30°F to 275°F)
Range ability	10:1 (for 30° to 70° range)
Maximum Velocity	12 FPS

### Flow Pattern



### Application Notes

1. Valves are rated at 50 psi differential pressure in the closed position.
2. Valves are furnished with lugs tapped for use with ANSI Class 125/150 flanges. Installation flanges and hardware are not included.
3. 2-way assemblies are furnished assembled and tested, ready for installation.

Actuator Technical Data	
Power Supply AFBUP-S	24...240 VAC -20% / +10%, 50/60 Hz 24...125 VDC ±10%
Power consumption AFBUP-S running holding	7 W 3.5 W
Transformer sizing AFBUP-S	7 VA @ 24 VAC [class 2 power source] 8.5 VA @120 VAC 18 VA@ 240 VAC
Electrical connection [-S models have 2 cables]	3 ft, 18 GA appliance cable 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Mechanical angle of rotation	95° [adjustable with mechanical end stop, 35° to 95°]
Torque	180 in-lb [20 Nm] minimum
Direction of rotation spring	reversible with CW/CCW mounting
Position indication	visual indicator, 0° to 95° [0° is full spring return position]
Manual override	5mm hex crank [3/16" Allen], supplied
Auxiliary switches [AFBUP-S]	2 x SPDT 3A [0.5A] @ 250 VAC, UL approved one set at +10°, one adjustable 10° to 90°
Running Time motor spring	<75 sec 20 sec @ -4°F to 122°F [-20°C to 50°C]; <60 sec @ -22°F [-30°C]
Humidity	max. 95% RH non-condensing
Ambient temperature	-22°F to 122°F [-30°C to 50°C]
Storage temperature	-40°F to +176°F [-40°C to 80°C]
Housing	NEMA 2, IP54, Enclosure Type2
Housing material	Zinc coated metal and plastic casing
Agency listings	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC & 2006/95/EC
Noise level	<50dB(A) motor @ 75 seconds ≤62dB(A) spring return
Servicing	maintenance free
Quality standard	ISO 9001

Specifications							
AERCO P/N	Size	Valve Model	Actuator Model	Cv	Max GPM	COP	Weight (lbs)
92084-1	3"	F680HDU	AFBUP-S [Qty: 1]	302	264	50	17
*92084-2	*4"	F6100HDU	AFBUP-S [Qty: 2]	600	470	50	32

Dimensions (inches)							
AERCO P/N	A	B	C	D (Max)	BHC	No. of Holes	Lug Bolt
92084-1	1.78	3.5	8.5	20.5	6	4	5/8-11UNC
92084-2	2.05	9	9	21	7.5	8	5/8-11UNC

Dimension "A" is compressed, add .125" for relaxed state.  
Dimension "D" allows for actuator removal without the need to remove the valve from the pipe.

\*Dual actuated valves have actuators mounted on a common valve shaft.

## Actuator Operation

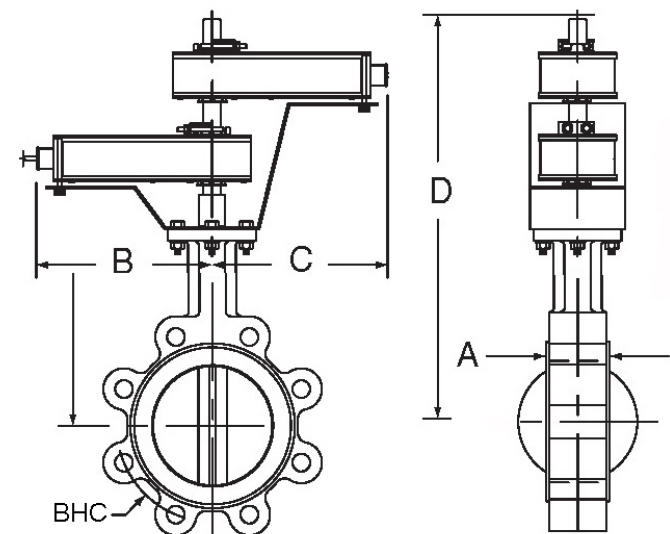
The AFB series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight dampers. The spring return system provides constant torque to the damper with, and without, power applied to the actuator.

The AFB series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 95°.

The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

The AFBUP-S version is provided with two built-in auxiliary switches. These SPDT switches provide safety interfacing or signaling, for example, for fan start-up. The switching function at the fail-safe position is fixed at +10°, the other switch function is adjustable between +10° to +90°. The AFBUP-S, actuator is shipped at +5° (5° from full fail-safe) to provide automatic compression against damper gaskets for tight shut-off.

## Dimensions



Max GPM = Maximum US gallons of water per minute, at room temperature, that will flow through the fully open valve without exceeding design velocity limits.

COP = Close-Off Pressure stated in psi. This is the maximum differential pressure the valve will close-off against while maintaining a bubble tight seal.

Proposal/Submittal Information				
Size	AERCO P/N	System Data		
		GPM	Pressure (psig)	Temp (F)



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