



- 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 C_v values provide for an economical control valve solution for larger flow applications. Designed for use in Victaulic piping systems when mated to Victaulic 41 series flange nipples.

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...HDU Butterfly Valves.

Technical Data	
Service	chilled, hot water, 60% glycol
Flow characteristic	modified equal percentage
Controllable flow range	82°
Sizes	2" to 12"
Type of end fitting	for use with ANSI Class 125/150 flanges
Materials	
Body	ductile iron ASTM A536
Body finish	epoxy powder coated
Disc	304 stainless steel
Seat	EPDM
Shaft	416 stainless steel
O-ring	EPDM
Bushings	RPTFE
Media temperature range	-22°F to 250°F [-30°C to 120°C]
Body pressure rating	ASME/ANSI Class 125
Close-off pressure	50 psi
Rangeability	10:1 (for 30° to 70° range)
Maximum velocity	12 FPS
Leakage	bubble tight

		Valve Nominal Size		Type	Suitable Actuators			
C_v 90°	C_v 60°	IN	DN [mm]	2-way	Spring	Non-Spring		Electronic Fail-Safe
115	44	2"	50	F650HDU	AF Series	AM Series		
196	75	2½"	65	F665HDU				
302	116	3"	80	F680HDU				
600	230	4"	100	F6100HDU				
1022	392	5"	125	F6125HDU				
1579	605	6"	150	F6150HDU			SY Series	
3136	1202	8"	200	F6200HDU				
5340	2047	10"	250	F6250HDU				
8250	3062	12"	300	F6300HDU				

Valve	Size	C_v	MOD							ON/OFF	
			10°	20°	30°	40°	50°	60°	70°	80°	90°
F650HDU	2"	115	.06	3	7	15	27	44	70	105	115
F665HDU	2½"	196	.10	6	12	25	45	75	119	178	196
F680HDU	3"	302	.20	9	18	39	70	116	183	275	302
F6100HDU	4"	600	.30	17	36	78	139	230	364	546	600
F6125HDU	5"	1022	.50	29	61	133	237	392	620	930	1022
F6150HDU	6"	1579	.80	45	95	205	366	605	958	1437	1579
F6200HDU	8"	3136	2	89	188	408	727	1202	1903	2854	3136
F6250HDU	10"	5340	3	151	320	694	1237	2047	3240	4859	5340
F6300HDU	12"	8250	4	234	495	1072	1911	3062	5005	7507	8250

F6 Series, 2-Way, HDU Butterfly Valve Resilient Seat, 304 Stainless Disc



Maximum Dimensions (Inches)

Valve	Size	C _v 90°	C _v 60°	A	B	C	D(Max)	BHC	No. of Holes	Lug Bolt	Actuator	Close-Off (PSI)	
F650HDU	2"	115	44	1.65	9.00	9.00	19.50	4.75	4	5/8-11 UNC	AF	50	Spring Return
F665HDU	2½"	196	75	1.81	9.00	9.00	20.00	5.50	4	5/8-11 UNC		50	
F680HDU	3"	302	116	1.81	9.00	9.00	20.50	6.00	4	5/8-11 UNC		50	
F6100HDU	4"	600	230	2.05	9.00	9.00	21.00	7.50	8	5/8-11 UNC		50	
F6125HDU	5"	1022	392	2.19	9.00	9.00	22.00	8.50	8	3/4-10 UNC		50	
F6100HDU	4"	600	230	2.05	8.00	8.00	17.00	7.50	8	5/8-11 UNC	GK	50	Electronic Fail-Safe
F6125HDU	5"	1022	392	2.19	8.00	8.00	17.50	8.50	8	3/4-10 UNC		50	
F6150HDU	6"	1579	605	2.19	8.00	8.00	22.50	9.50	8	3/4-10 UNC	2*GK	50	
F650HDU	2"	115	44	1.65	7.00	7.00	15.00	4.75	4	5/8-11 UNC	AM	50	Non-Spring Return
F665HDU	2½"	196	75	1.81	7.00	7.00	15.50	5.50	4	5/8-11 UNC		50	
F680HDU	3"	302	116	1.81	7.00	7.00	16.00	6.00	4	5/8-11 UNC		50	
F6100HDU	4"	600	230	2.05	8.00	8.00	17.00	7.50	8	5/8-11 UNC	GM	50	
F6125HDU	5"	1022	392	2.19	8.00	8.00	17.50	8.50	8	3/4-10 UNC		50	
F6150HDU	6"	1579	605	2.19	8.00	8.00	22.50	9.50	8	3/4-10 UNC	2*GM/GK	50	
F6150HDU	6"	1579	605	2.19	6.00	4.00	18.00	9.50	8	3/4-10 UNC	DR/DKR	50	
F650HDU	2"	115	44	1.65	4.25	4.25	15.50	4.75	4	5/8-11 UNC	SY1...	50	
F665HDU	2½"	196	75	1.76	4.25	4.25	16.00	5.50	4	5/8-11 UNC		50	
F680HDU	3"	302	116	1.78	4.25	4.25	16.25	6.00	4	5/8-11 UNC		50	
F6100HDU	4"	600	230	2.05	8.00	13.00	22.00	7.50	8	5/8-11 UNC	SY2...	50	
F6125HDU	5"	1022	392	2.19	8.00	13.00	22.50	8.50	8	3/4-10 UNC		50	
F6150HDU	6"	1579	605	2.19	8.00	13.00	23.00	9.50	8	3/4-10 UNC		50	
F6200HDU	8"	3136	1202	2.37	8.00	13.00	24.25	11.75	8	3/4-10 UNC	SY3...	50	
F6250HDU	10"	5340	2047	2.67	8.00	13.00	25.50	14.25	12	7/8-9 UNC		50	
F6300HDU	12"	8250	3062	3.01	8.00	13.00	27.25	17.00	12	7/8-9 UNC	SY4...	50	

Dimension "A" is compressed, add .125" for relaxed state.

AF, AM and GM maximum actuator ambient temperature is 122°F.

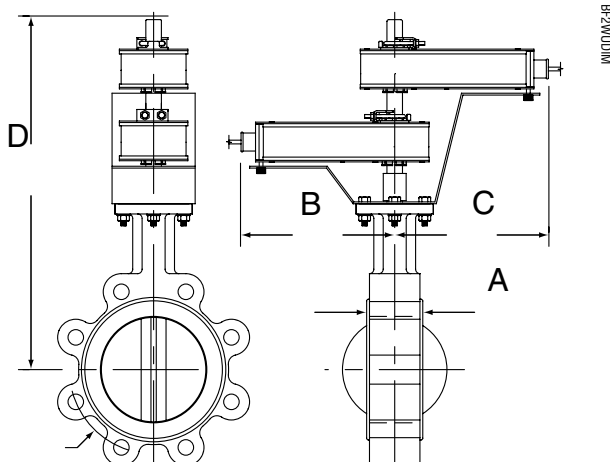
SY maximum actuator ambient temperature is 150°F.

Model SY1... does not have handwheel - override is via 8mm wrench on bottom side of actuator.

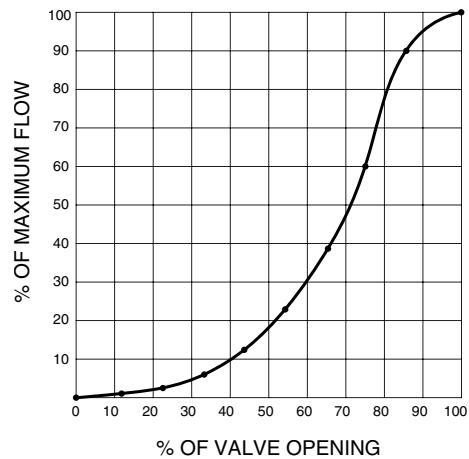
Application Notes

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.
4. Dimension "D" allows for actuator removal without the need to remove the valve from the pipe.
5. Weather shields are available, dimensional data upon request.
6. Dual actuated valves have actuators mounted on a common valve shaft.
7. Belimo SY Series actuators are NEMA 4X rated.

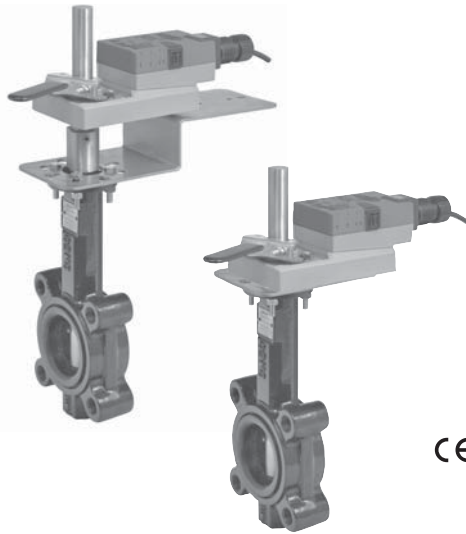
Dimensions



Flow Pattern



AM/AR Series Actuators, On/Off, Floating Point



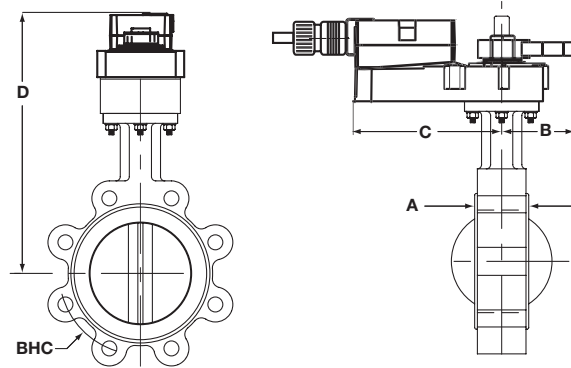
Models

AMB24-3-X1
ARB24-3-X1
ARB24-3-5

Technical Data	
Power supply	24 VAC $\pm$ 20% 50/60 Hz 24 VDC $\pm$ 10%
Power consumption	running 2.0 W holding 0.2 W
Transformer sizing	5.5 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Control	on/off, floating point
Input impedance	600 Ω
Angle of rotation	95°, adjustable with mechanical stop
Direction of rotation	reversible with protected switch
Position indication	handle
Manual override	external push button
Running time	95 seconds
Humidity	5 to 95% RH non condensing (EN 60730-1)
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
Housing material	UL94-5VA
Agency listings†	cULus according to UL 60730-1A/-2-14, CAN/CSA E60730-1, CSA C22.2 No. 24-93, CE according to 89/336/EEC (and 2006/95/EC for line voltage and/or -S versions)
Noise level	<45dB(A)
Quality standard	ISO 9001

Note: AR Actuators are on 2-way valves
AM Actuators are on 3-way valves

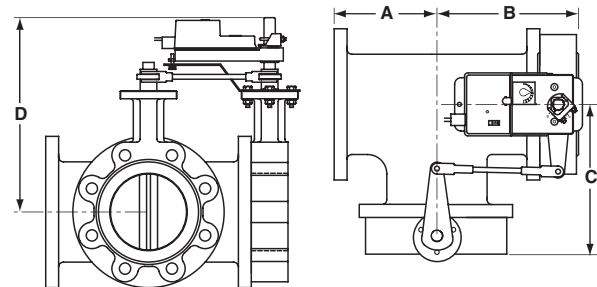
Dimensions with 2-Way Valve



AP_LineRevised

Valve	Size	Dimensions (Inches)					Non-Fail Safe (psi)	
		A	B	C	D(Max)	BHC	HD	HDU
F650HD(U)	2"	1.65	7.00	7.00	15.00	4.75	200	50
F665HD(U)	2½"	1.76	7.00	7.00	15.50	5.50	200	50
F680HDU	3"	1.78	7.00	7.00	16.00	6.00		50
F650VIC	2"	3.21	7.00	7.00	14.50	-	200	
F665VIC	2½"	3.77	7.00	7.00	14.50	-	50	

Dimensions with 3-Way Valve



Single_Butterfly

Valve	Size	Dimensions (Inches)					Non-Fail Safe (psi)	
		A	B	C	D(Max)	BHC	HD	HDU
F750HD	2"	4.50	6.15	6.15	15.50	4.75	200	
F765HDU	2½"	5.00	6.76	6.76	16.00	5.50	200	50
F750VIC	2"	3.21	6.00	6.00	15.00	-		50

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Wiring Diagrams

✂ **INSTALLATION NOTES**



CAUTION *Equipment damage!*

Actuators may be connected in parallel.
Power consumption and input impedance must be observed.



Actuators may also be powered by 24 VDC.



APPLICATION NOTES



Meets cULus or UL and CSA 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.

