

# F7100HD, 4", 3-Way Butterfly Valve

## Resilient Seat, 304 Stainless Steel Disc



### Technical Data

Service	chilled, hot water, up to 60% glycol
Flow Characteristic	modified linear
Controllable Flow Range	90° rotation
Valve Size	4 " [100]
End Fitting	for use with ANSI class 125/150 flanges
Body	ductile iron ASTM A536
Body Finish	epoxy powder coated
Seat	EPDM standard
Shaft	416 stainless steel
Bushings	RPTFE
Disc	304 stainless steel
Body Pressure Rating	200 psi at -20°F to +150°F
ANSI Class	125
Number of Bolt Holes	8
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	600
Weight	85.8 lb [38.9 kg]
Leakage	0%
Servicing	maintenance free

### 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.

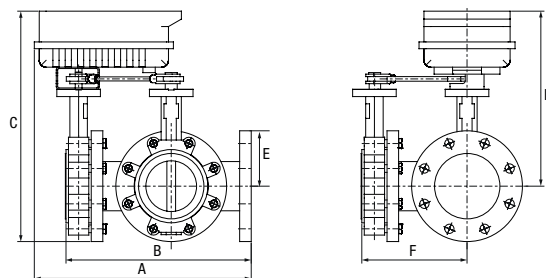
### Flow/Cv

Cv 10°	Cv 20°	Cv 30°	Cv 40°	Cv 50°	Cv 60°	Cv 70°	Cv 80°	Cv 90°
0.3	17	36	78	139	230	364	546	600

### Suitable Actuators

	Non-Spring	Electronic Fail-Safe
F7100HD	PRB(X)	PKRB(X)

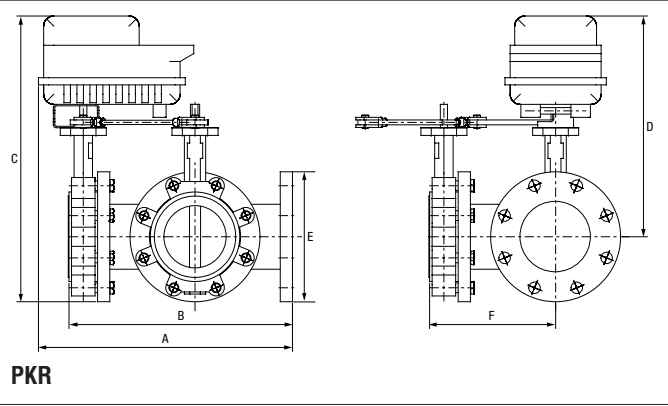
### Dimensions (Inches [mm])



### PRB, PRX

A	B	C	D	E	F
17.63" [447.8]	15.05" [382.3]	18.72" [475.5]	14.22" [361.2]	4.5" [114]	8.55" [217.2]

Dimensions (Inches [mm])



A	B	C	D	E	F
17.63" [447.8]	15.05" [382.3]	20.99" [533]	16.5" [419]	9" [229]	8.55" [217.2]

# PKRXUP-MFT-T

Modulating, Electronic Fail-Safe, 24-240 V, NEMA 4X with BACnet



## Technical Data

Power Supply	24...240 VAC, -20% / +10%, 50/60 Hz, 24...125 VDC, -20% / +10%
Power consumption in operation	52 W
Power consumption in rest position	9 W
Transformer sizing	55 VA @ 24 VAC/DC (class 2 power source), 43 VA @ 120 VAC/DC, 68 VA @ 230 VAC
Electrical Connection	terminal blocks
Overload Protection	electronic throughout 0° to 90° rotation
Operating Range	DC 2...10 V (default), 4 to 20 mA, 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	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for On/Off
Position Feedback	DC 2...10 V, Max. 0.5 mA, VDC variable
Angle of rotation	90°
Torque motor	1400 in-lbs [160 Nm]
direction of rotation motor	reversible with app
direction of rotation spring-return	reversible with app
Fail Safe Position	adjustable with APP 0 to 100%
Position indication	top mounted domed indicator
Manual override	7 mm hex crank, supplied
Running time motor	default 35 sec, variable 30...120 sec
Running time emergency control position	<30 sec
Bridging time	programmable 0 to 10 sec (2 sec default) delay before fail-safe activates
Pre-charging time	5 to 20 seconds
Ambient humidity	5 to 95% RH non condensing (EN 60730-1)
Ambient temperature	-22...122 °F [-30...50 °C]
Degree of Protection	IP66/67, NEMA 4X, UL Enclosure Type 4X
Housing material	Aluminum die cast and plastic casing
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	68 dB (A)
Noise Level (Fail-Safe)	<62 dB (A)
Maintenance	maintenance free
Quality Standard	ISO 9001
Weight	14 lb [6.4 kg]
Auxiliary switch	2 x SPDT, 3A resistive (0.5A inductive) @ 250 VAC, one set at 10°, one adjustable 0° to 90°
Communication	BACnet MS/TP
Passive Sensor Inputs	2 (PT1000) (NI1000) (NTC)

## Application

PR Series valve actuators are designed with an integrated linkage and visual position indicators. For outdoor applications, the installed valve must be mounted with the actuator at or above horizontal. For indoor applications the actuator can be in any location including directly under the valve.

## Default/Configuration

Default parameters for 2 to 10 VDC applications of the PKR..-MFT actuator are assigned during manufacturing. If required, different parameters of the actuator can be ordered. These parameters are variable and can be modified by factory pre-set, the handheld ZTH US or using the Belimo App on a smart phone with Near Field Communications (NFC) programming.

## Operation

The PR series actuator provides 90° of rotation and a visual indicator shows the position of the valve. The PR Series actuator uses a low power consumption brushless DC motor and is electronically protected against overload. A universal power supply is furnished to connect supply voltage in the range of 24-240 VAC and 24-125 VDC. Included is a smart heater with thermostat to eliminate condensation. Two auxiliary switches are provided; one set at 10° open and the other is field adjustable. Running time is field adjustable from 30-120 seconds by using the Near Field Communication (NFC) app and a smart phone.

†Use 60°C/75°C copper wire size range 12-28 AWG, stranded or solid. Use flexible metal conduit. Push the listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 4000V. Type of action 1. Control pollution degree 3.

Wiring Diagrams

- Meets cULus requirements without the need of an electrical ground connection.
- Universal Power Supply (UP) models can be supplied with 24 VAC up to 240 VAC, or 24 VDC up to 240 VDC.
- Disconnect power.
- Provide overload protection and disconnect as required.
- Two built-in auxiliary switches (2x SPDT), for end position indication, interlock control, fan startup, etc.
- Only connect common to negative (-) leg of control circuits.
- Actuators may be controlled in parallel. Current draw and input impedance must be observed.

**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.

