

2006 Product Range Overview








Belimo Project: One Bellevue Center, Seattle, Washington



Actuator Product Range








Spring Return

TF Series 18 in-lb [2 Nm] Approx. 4.5 sq. ft.	LF Series 35 in-lb [4 Nm] Approx. 8 sq. ft.	NF Series 60 in-lb [7 Nm] Approx. 15 sq. ft.	AF Series 133 in-lb [15 Nm] Approx. 33 sq. ft.	Fire & Smoke Actuators 30, 70, 133 in-lb Approx. 4 to 20 sq. ft.
				
Control: On/Off Floating Point 2-10 VDC 4-20 mA w/500Ω resistor	Control: On/Off Floating Point 2-10 VDC 4-20 mA w/500Ω resistor Multi-Function (MFT) ♦	Control: On/Off Floating Point 2-10 VDC 4-20 mA w/500Ω resistor Multi-Function (MFT) ♦	Control: On/Off Floating Point 2-10 VDC 4-20 mA w/500Ω resistor 0 to 20 V Phasecut 0 to 135Ω Multi-Function (MFT) ♦	Control: On/Off
Power Supply: 24 VAC/DC 100 to 240 VAC	Power Supply: 24 VAC/DC 120 VAC 230 VAC	Power Supply: 24 VAC/DC 120 VAC 230 VAC	Power Supply: 24 VAC/DC 120 VAC 230 VAC	Power Supply: 24 VAC/DC 120 VAC 230 VAC
Options: Built-In Auxiliary Switch	Options: Built-In Auxiliary Switch	Options: Built-In Auxiliary Switch	Options: Built-In Auxiliary Switch	Options: Built-In Auxiliary Switch

- ♦ Multi-Function Technology (MFT) Options:
- Control Selectable
 - Start and Span Adj., Start 0.5 to 30 VDC. Span 2.5 to 32 VDC
 - PWM Adj: 0.02 to 50.0 sec
 - Floating Point
 - On/Off
 - Feedback Selectable
 - Running Time Selectable

See programming codes on pg. 41

For detailed information and submittal data, see our Technical Documentation section at www.belimo.com or ask your sales manager for a 2006 Technical Documentation CD.

LM Series 45 in-lb [5 Nm] Approx. 11 sq. ft.	NM Series 90 in-lb [10 Nm] Approx. 22 sq. ft.	AM Series 180 in-lb [20 Nm] Approx. 45 sq. ft.	GM Series 360 in-lb [40 Nm] Approx. 90 sq. ft.	Linear & Rotary Series 34 lbf & 101 lbf Adj Stroke 27 in-lb [3 Nm]
				
Control: On/Off, Floating Point 2-10 VDC 4-20 mA w/500Ω resistor 0 to 20 V Phasecut 0 to 135Ω Multi-Function (MFT) ♦	Control: On/Off, Floating Point 2-10 VDC 4-20 mA w/500Ω resistor 0 to 20 V Phasecut 0 to 135Ω Multi-Function (MFT) ♦	Control: On/Off, Floating Point 2-10 VDC 4-20 mA w/500Ω resistor 0 to 20 V Phasecut 0 to 135Ω Multi-Function (MFT) ♦	Control: On/Off, Floating Point 2-10 VDC 4-20 mA w/500Ω resistor 0 to 20 V Phasecut 0 to 135Ω Multi-Function (MFT) ♦	Control: On/Off, Floating Point 2-10 VDC 4-20 mA w/500Ω resistor Multi-Function (MFT) ♦
Power Supply: 24 VAC/DC 100 to 240 VAC	Power Supply: 24 VAC/DC 100 to 240 VAC	Power Supply: 24 VAC/DC 100 to 240 VAC	Power Supply: 24 VAC/DC 100 to 240 VAC	Power Supply: 24 VAC/DC
Basic Options: Built-In Auxiliary Switch Terminal Strip Bulk Packs		Basic Options: Built-In Auxiliary Switch		
Flexible Options*: 3ft, 10ft, 16ft Cables Terminal Strip Running Time MFT Programming ♦	Flexible Options*: 3ft, 10ft, 16ft Cables Terminal Strip Running Time MFT Programming ♦	Flexible Options*: 3ft, 10ft, 16ft Cables Terminal Strip Running Time MFT Programming ♦	Flexible Options*: 3ft, 10ft, 16ft Cables Terminal Strip MFT Programming ♦	Flexible Options*: 3ft, 10ft, 16ft Cables MFT Programming ♦

Do you need a longer cable or different programming?

- Flexible Options:**
 Belimo's new flexible line of actuators are configurable to your specific needs, See page 36.

- Selectable Options:**
 - Clamp diameter and type.
 - Wiring options from cable lengths to terminal strips.
 - Running Time
 - MFT Programming

- Multi-Function Technology (MFT) Options:**
 Control Selectable
 - Start and Span Adj., Start 0.5 to 30 VDC. Span 2.5 to 32 VDC
 - PWM Adj: 0.02 to 50.0 sec
 - Floating Point
 - On/Off
 Feedback Selectable
 Running Time Selectable

See programming codes on pg. 41

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Electronic Pressure Independent Characterized Control Valves™ U.S. Patent



PICCV Two-way

1/2" to 2"

Service:	Chilled/hot water, 60% glycol
Flow Rate:	0.5-80 GPM
Material:	Brass Body Brass/Stainless trim
Control:	Floating Multi-Function Technology® Spring Return or Non-Spring Return

Typical Application

- Air Handling Units:** – Heating Coils
– Cooling Coils
- Unit Ventilators**
- VAV Box Re-heat Coils**

Electronic Characterized Control Valves™ U.S. Patent



CCV

- B2... Series** Two-way
- B3... Series** Three-way
Mixing/diverting
- B6... Series** Two-way Flanged

1/2" to 3"

Service:	Chilled/hot water, 60% glycol
C_v Range:	0.3-240
Material:	Stainless trim or Brass trim
Control:	On/Off, floating, 2-10 VDC Multi-Function Technology® Spring Return or Non-Spring Return

Typical Application

- Air Handling Units:** – Heating Coils
– Cooling Coils
- Fan Coil Units:** – Heating Coils
– Cooling Coils
- Unit Ventilators**
- VAV Box Re-heat Coils**
- Bypass loops**

Electronic Zone Valves



- ZONE2...N Series** Two-way NPT
- ZONE2...S Series** Two-way Sweat

- ZONE3...N Series** Three-way
Diverting NPT
- ZONE3...S Series** Three-way
Diverting Sweat

1/2" to 1"

Service:	Chilled/hot water, 50% glycol
C_v Range:	1.0 - 8.0
Material:	Brass Body
Control:	On/Off Spring Return

Typical Application

- Fan Coil Units:** – Heating Coils
– Cooling Coils
- Baseboard Radiation**

For detailed information and submittal data, see our Technical Documentation section at www.belimo.com or ask your sales manager for a 2006 Technical Documentation CD.

Electronic Globe Valves



G2...(S) Series	Two-way Screwed Bronze or Stainless Trim
G6...C (S) Series	Two-way Flanged Bronze or Stainless Trim
G6...(S)-250 Series	Two-way Flanged ANSI 250 Bronze or Stainless Trim
G3...(D) Series	Three-way Screwed Bronze Trim
G7...(S) Series	Three-way Flanged Bronze or Stainless Trim
G7...(S)-250 Series	Three-way Flanged ANSI 250 Bronze or Stainless Trim

Three-way Valves available in Mixing or Diverting

1/2" to 6"

Service:	Chilled/hot water, 60% glycol, steam
C_v Range:	0.4-344 (Two-way) 2.2-340 (Three-way Mix.) 4.4-248 (Three-way Div.)
Material:	Stainless steel stem, Bronze plug or Stainless plug
Control:	On/Off, floating, 2-10 VDC Multi-Function Technology® Spring Return or Non-Spring Return

Typical Application

Air Handling Units:	– Heating Coils – Cooling Coils
Fan Coil Units:	– Heating Coils – Cooling Coils
Unit Ventilators	
VAV Box Re-heat Coils	
Bypass loops	

Electronic Butterfly Valves



F6... Series (HS,HSU)	Two-way
F7... Series (HS,HSU)	Three-way Mixing/diverting
F6... SHP Series	Two-way ANSI 150/300
F7... SHP Series	Three-way ANSI 150/300 Mixing/diverting

2" to 30"

Service:	Chilled/hot water, 50% glycol
C_v Range:	115-73,426
Material:	Stainless shaft Stainless Disc Cast Iron, Full Lug Body EPDM Liner
Control:	On/Off, floating, 2-10 VDC On/Off, floating 0-10 VDC, 2-10 VDC, 1-5 VDC, 4-20mA (NEMA 4 actuator) Multi-Function Technology® Spring Return or Non-Spring Return

Typical Application

Chiller and cooling tower isolation
Change-over systems
Large air handler coil control
Bypass control applications

Electronic Ball Valves – VS Series



B2... VS Series	Two-way Screwed Stainless Steel Trim
B3... VS Series	Three-way Mixing/Diverting Screwed Stainless Steel Trim
B2... VSS Series	Two-way Screwed Stainless Steel Body and Trim
B6... VS Series	Two-way Flanged Stainless Steel Trim

1/2" to 10"


Service:	Chilled/hot water, 50% glycol, steam
C_v Range:	1 to 12,400
Material:	Bronze or Stainless Body Stainless Steel Trim RPTFE Seats
Control:	On/Off, floating, 2-10 VDC On/Off, floating 0-10 VDC, 2-10 VDC, 1-5 VDC, 4-20mA (NEMA 4 actuator) Multi-Function Technology® Spring Return or Non-Spring Return

Typical Application

Unit Ventilators
Humidifiers
Heating and Cooling Coils

Call Customer Service to discuss your application.

For detailed information and submittal data, see our Technical Documentation section at www.belimo.com or ask your sales manager for a 2006 Technical Documentation CD.

- 5-Year peace of mind warranty. 
- Competent application assistance thanks to 100% dedication to HVAC Damper Actuators and Control Valves.
- Free technical support.
- Belimo University for HVAC application training.
- 100% product testing before shipment.
- Same-day shipments.
- Three customer Service Centers in the US (NE, SE and W).
- ISO 9001-2000 Quality Management System.
- 30+ years design, manufacturing and application experience.

Damper Actuators

- Extensive product range.
- Specific retrofit offerings.
- Small dimensions in relation to torque.
- Microprocessor-controlled Brushless DC motor increases actuator life span and reliability & provides constant running time (most actuators).
- Cut labor costs with simple direct coupling.
- Check damper position easily with clear position indication.
- Overload-proof throughout rotation.
- Temporary restrictions in damper movement will not change actuator operation. Actuator returns to normal operation when restriction is removed.
- Built-in or add-on mechanical stops to adjust angle of rotation.
- Built-in auxiliary switch is easy to use, offers feedback or signal for additional device (-S models).
- Need to change control direction? Do it easily with a simple switch on actuator housing.
- Rugged housings withstand rough handling in the mechanical room.
- Double insulated – no need for separate ground. A Belimo exclusive (on 120/230V models, and all models with built-in auxiliary switches.)
- Automatically compensates for damper seal wear, ensuring tight close off.

Spring Return

- True mechanical spring return – the most reliable failsafe.
- Reverse mount for clockwise or counterclockwise fail-safe.
- Manual override crank speeds installation (AF Series).
- 3 ft. appliance cable and conduit connector eases installation.

Non-Spring Return

- Increased torque output by up to 28%
- More mounting flexibility – LM accepts 3/4" dia. shafts, NM, AM & GM mounts to 1.05" dia. jackshafts.
- New linear stroking actuators with extensive control responses and lengths (4", 8" and 12")
- New 360 degree actuators with extensive control responses and 0 to 330 degree operating angle with accessory or default endless rotation.
- New optional external auxiliary switch(es) or position feedback potentiometer modules – same modules for all non-spring return actuators!
- Manual override push button.
- Compatible to discontinued models.
- The power of choice – Belimo's Flexible actuator range offers longer cable lengths, NEMA 2/IP54 terminal strip covers, mechanical clamping options, programming options

Fire and Smoke

- FSLF & FSNF meet the Uniform Building Code (UBC) 15-second operation time requirements between 32°F and 350°F at rated voltage and torque.
- FSAF meets UL555 operating requirements and offers 133 in-lb min torque output with only 10VA power requirement.
- Overload protection is electronic throughout 0° to 95° rotation.
- 3 ft, 18 GA 3 color-coded leads, 1/2" conduit connector.

Multi-function Technology

MFT

- Selectable:
 - Control (VDC, PWM, Floating Pt, On/Off).
 - Feedback.
 - Motion (Run Time).
 - Diagnostics (alarm messages).



5 Pressure Independent Characterized Control Valves™ PICCV

- Easy selection, no C_v calculation required.
- Hydronic balancing is simplified, as the circuits are not interactive.
- Flexible commissioning.
- One piece installation saves 50% of labor costs, installation space, and investment for balancing valve.
- Reduces pumping costs.
- Maintains ΔT for higher efficiency of chillers and condensing boilers.
- Visualizes flow in a BMS system and provides accurate flow for each degree of opening.
- Prevents overflow or underflow for fast start-up.

5 Characterized Control Valves™ CCV

- C_v range 0.3 to 240.
- An equal-percentage valve characteristic.
- Unlike a globe valve, no sudden change in inlet flow upon opening.
- Excellent stability of control.
- C_v values comparable with those of globe valves of the same size or larger.
- Higher close-off ratings than standard globe valves.
- 100% tight shut-off on two-way valves means NO leak-by unlike globe valves that have ANSI IV shutoff (leakage rate of 0.01% of the C_v rating).
- Three-way valve can be piped in mixing or diverting application.
- Position indication visible from 10 ft. distance.

2 Electronic Zone Valves

- Push button for quick removal of actuator.
- Easy manual open lever with automatic return.
- Up to 75 psi close-off.
- Only 2-3/8" wide to fit most baseboards.
- Spring return normally open or normally closed.
- One actuator for two- and three-way applications.
- Available with or without auxiliary switch.

5 Electronic Globe Valves

- Self-adjusting stroke utilizes full control signal for maximum resolution.
- Visual sliding stroke indicators speed installation and system check.
- Assembly can be mounted with valve stem horizontal to the pipe.
- Self locking valve coupling to ensure proper valve-actuator connection.
- Pressure Compensated Flanged Globe Valves utilize a balanced plug design. Perfect for high close-off requirements.

2 Electronic Butterfly Valves

- Cast Iron Full Lug Bodies.
- EPDM liner.
- Stainless Steel Disc as Standard.
- Unique seat and disc design ensures positive valve sealing while maintaining low seating torque.
- Belimo or Industrial NEMA 4 Actuators.
- Easily Accessible Field Wiring Terminal on NEMA 4 type.
- Simple, Single Handed Override Wheel on NEMA 4 type.
- High Performance line for ANSI 150/300 Ratings.

2 Electronic Ball Valves

- Bronze, Cast Iron and Stainless Bodies.
- Stainless Ball and Stem.
- NPT or Flanged Bodies.
- Live Loaded or Gland Type Packing.
- Belimo or Industrial NEMA 4 Actuators.



**NEW Retrofit Guide
Now Available!**

Call your Belimo Representative for
a copy; or download at:
www.belimo.com

BELIMO

**2005
Technical Documentation and Price List
Retrofit Solutions for Valves**

Effective October 2005



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