Innovations in Comfort, Energy Efficiency, and Safety for Buildings

2024 Product Overview

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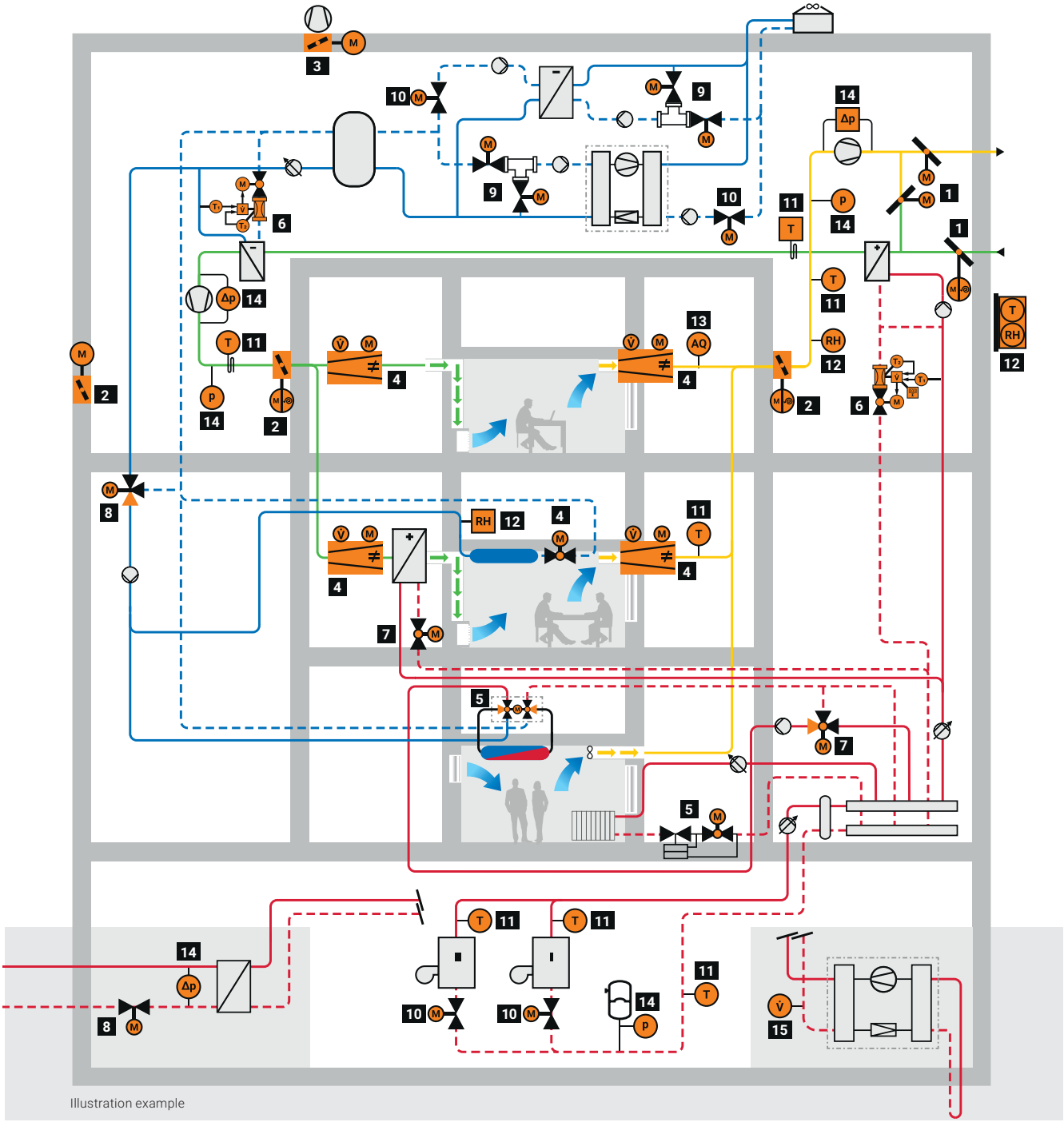
BELIMO

Everything under one roof



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Fan | Air heater | Air cooler | Boiler | Pump | Variable speed pump | Heat exchanger | Chiller / heat pump | Cold water reservoir | Transfer station

Small devices, big impact

Belimo is the global market leader in the development, production, and sale of field devices for the energy-efficient control of heating, ventilation and air-conditioning systems. The focus of our core business is on damper actuators, control valves, sensors and meters. Founded in 1975, the company employs over 2,300 people and has been listed on the Swiss Exchange (SIX) since 1995.

Our consistent focus on market and customer needs underscores our dedication to delivering superior value, surpassing customer expectations, and outpacing competitors.

This Product Overview contains highlights of our range of products and tools. For a full listing, and to view available accessories, please visit www.belimo.com.

Welcome to our Customer Experience Center

We invite our customers and partners to visit our newly opened Customer Experience Center located in Danbury, CT, at our Americas headquarters. Explore our technology and product applications, as well as tour our impressive, state-of-the-art manufacturing facility.

We also offer workshops and hands-on training on-site for our customers, as well as many online courses, through Belimo University.

For more information on our products, training, tours, or anything else Belimo, please contact your local representative at www.belimo.com/contact.

Damper actuators

Versatile performance with low power consumption

Belimo damper actuators are designed for use in a wide variety of HVAC applications ensuring performance, reliability and lower power consumption. Our comprehensive torque range (9 to 1400 in-lbs) is suited for damper sizes as small as 4-inch round allowing the ability to mount on standard damper shafts or directly on jackshafts. Actuators are used for control dampers, air handlers, economizer units, VAV terminal units, fan coil units, fan shutters, and unit ventilators.

Non Fail-Safe

	Type	Features	Applications
	Rotary: PM (1400 in-lb / 160 Nm) GM (360 in-lb / 40 Nm) AM (180 in-lb / 20 Nm) NM (90 in-lb / 10 Nm) LM (45 in-lb / 5 Nm) CM (18 in-lb / 2 Nm) UM (9 in-lb / 1 Nm)	• Wide range of energy-efficient torque options for the perfect fit • Standard running times for typical HVAC applications, plus Fast and Very Fast acting series available • Power options for low voltage and line voltage circuits • Trouble-free wiring with 3' (1 m) cables or terminal strips • Compatible with BACnet, Modbus, and Cloud connectivity for easy integration with Belimo sensors and customer's BMS/BAS • Multiple control options available for any solution • Brushless DC Motors for improved controllability and long installed life • Overload protection throughout entire range • Universal clamps for direct coupling to damper control shaft • Integrated manual override for rotation without power • Adjustable mechanical stops to limit the damper's angle of rotation • 5-year warranty	• Non Fail-Safe rotary actuators for control of dampers in commercial HVAC systems and equipment • Compatible with a wide range of zone and control damper sizes • Suitable for air handlers, rooftop units, and more • Fail-in-place feature in the event of a power loss • Actuator customization options available for unique Contracting and OEM applications • Wide range of communication protocols available, for easy integration with Belimo sensors and customer's BMS/BAS
	Linear: AH (100 lbf / 450 N) LH (35 lbf / 150 N) UH (11 lbf / 50 N)	• Wide range of linear force options for the perfect fit • Linear movements available in 4", 8", or 12" (100, 200, or 300 mm) strokes • Linear rack and pinion provides a smooth and quiet operation • Easy to set-up and commission • 5-year warranty	• Non Fail-Safe rotary actuators for control of dampers in commercial HVAC systems and equipment • Adaptable to applications where direct coupling is not possible • Mechanical accessories available for easy mounting to surfaces and application solutions

Airflow Measurement & Control Damper Actuators

	Type	Features	Applications
	Rotary LM (45 in-lb / 5 Nm) NM (90 in-lb / 10 Nm)	• Available with D3 Δp dynamic sensor for comfort applications, or M1 diaphragm sensor for contaminated air • Integrated manual override button for rotation without power • Universal clamp fits a wide range of shafts	• Variable Air Volume (VAV) and Constant Volume (CAV) solutions for flow control, pressure control, or zone control • Demand Controlled Ventilation systems, where the air damper is controlled based on CO_2 levels, VOC levels, room occupancy, or other variables
	Linear LH (35 lbf / 150 N)	• Linear movements available in 4", 8", or 12" (100, 200, or 300 mm) strokes • Integrated D3 ΔP sensor • Integrated manual override button for rotation without power	• For use with dampers that need linear actuation • Variable Air Volume (VAV) and Constant Volume (CAV) solutions for flow control, pressure control, or zone control • Demand Controlled Ventilation systems, where the air damper is controlled based on CO_2 levels, VOC levels, room occupancy, or other variables
	In-Duct CMB (18 in-lb / 2 Nm)	• Includes integrated air damper for 4", 5", or 6" (100, 125, or 150 mm) round ducts • Compatible with MFT systems • Built-in modulation with integrated flow anemometer	• In-duct damper solutions that require exact and consistent air flow, with minimal energy or noise levels • Retrofit solutions in tight spaces, where the entire actuator and damper can be contained inside the duct

VAV Universal

	Type	Features	Applications
	Universal Sensor / Communication Module: VRU	• Compatible with BACnet, Modbus, and Cloud connectivity for easy integration with Belimo sensors and customer's BMS/BAS • NFC compatible for optional smartphone connectivity • UL & CE listed • Available with D3 Δp dynamic sensor for comfort applications, M1 for contaminated air, and M1R for room pressure applications • For use with VAV Universal (-VST) actuators only	• When used with a Belimo VST actuator, the ideal solution for VAV, duct pressure, and room pressure applications for technical building equipment and HVAC • Where Fail-Safe or Very Fast Running actuators are needed in Airflow Measurement & Control applications
	Universal Actuators: Non Fail-Safe LM (45 in-lb / 5 Nm) NM (90 in-lb / 10 Nm)	• For use with VRU Modules only • Integrated manual override button for rotation without power • Universal clamp fits a wide range of shafts	• When used with a VRU module, it is the ideal solution for VAV, duct pressure, and room pressure applications for technical building equipment and HVAC
	Mechanical Fail-Safe: LF (35 in-lb / 4 Nm) NF (90 in-lb / 10 Nm) SF (180 Nm / 20 Nm)	• For use with VRU Modules only • Fail-Safe actuation in <20 seconds • Modulating control • Universal clamp fits a wide range of shafts	• Where a Fail-Safe actuator is needed for Airflow Management and Control
	Very Fast Running: LMQ (35 in-lb / 4 Nm) NKQ (54 in-lb / 6 Nm) NMQ (70 in-lb / 8 Nm)	• For use with VRU Modules only • NKQ actuators are Very Fast Running and Electronic Fail-Safe • Actuation in 2.4 seconds (LMQ), or 4 seconds (NMQ/NKQ) • Universal clamp fits a wide range of shafts	• Where a Very Fast Running actuator is needed for Airflow Management and Control

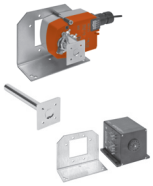
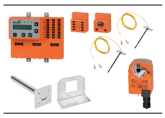
Fail-Safe

	Type	Features	Applications
	Mechanical: EF (270 in-lb / 30 Nm) AF (180 in-lb / 20 Nm) NF (90 in-lb / 10 Nm) LF (35 in-lb / 4 Nm) TF (22 in-lb / 2.5 Nm)	• Wide range of energy-efficient torque options for the perfect fit • Power options for low voltage, line voltage circuits, and select Universal Power models • Compatible with BACnet, Modbus, and Cloud connectivity for easy integration with Belimo sensors and customer's BMS/BAS • Trouble-free wiring with 3' (1 m) cables or terminal strips • Universal clamp accepts up to 1.05" (27 mm) control shaft • Integrated manual override for rotation without power for EF, AF, and NF models • Outdoor protection available up to NEMA 4X • 5-year warranty	• Data Centers, emergency generators, hospitals, schools, laboratories, and others where damper control is needed with a defined Fail-Safe requirement • Available for outdoor and indoor solutions • Solutions with limited internal space, such as unitary equipment • Large, multi-section damper 'walls' • Actuator customization options available for unique Contracting and OEM applications
	Electronic: PK (1400 in-lb / 160 Nm) GK (360 in-lb / 40 Nm) NK (54 in-lb / 6 Nm) AHK (100 lbf / 450 N) AK (180 in-lb / 20 Nm)	• Wide range of energy efficient torque options for the perfect fit • Patented supercapacitor provides reliable fail-safe security • Only 20 second charge time is needed to activate supercapacitor • Power fail delay feature on MFT models allows programmable 0...10 sec delay to prevent immediate fail-safe action in brownout conditions • Adjustable fail-safe position for maximum control and versatility, even during power outages • Power options for low voltage, line voltage circuits, and select Universal Power models • Wide range of accessories for non-direct-coupled applications • AHK linear series is available in 4" (100 mm) stroke • NK series are Very Fast acting (4 sec actuation) • 5-year warranty	

Fire and Smoke

	Type	Features	Applications
	FSAF*A (180 in-lb) FSAFB (180 in-lb) FSNF (70 in-lb FSLF (30 in-lb) FSTF (18 in-lb)	• UL 555(S) Listed with major damper manufacturers • UL 2043 • Lowest power consumption life safety actuators available in the market • Modulating control option (180 in-lb)	• Electronic Actuation of Life Safety Dampers • IBC Chapters 7; Containment and Chapter 9; Active protection
	FSKN	• Inaccessible dampers can be inspected • No need to break containment for testing • Frequent testing can be performed at a minimal cost • Test your entire building or campus in minutes • Overall integrity of life safety will increase • 24 V and 120 V options • BTL Certified (BACnet MS/TP)	• Remote testing of life safety dampers as per NFPA 80 and 105 • The industry's first remote testing module for life safety actuators

ZIP Economizer

	Type	Features	Applications
	ECON-ZIP-BASE	• ZIP code patented technology • BACnet MS/TP capability (with ECON-ZIP-COM module) • DCV operation, purge, and other functionality (with ECON-ZIP-EM module) • Bundled "ZIP Packs" available per high limit changeover strategy • 5-year warranty	• RTUs • Up to two 15 ton units (30 tons total) • ASHRAE and CA Title 24 Compliant • BTL Certified (BACnet MS/TP)
	ECON-ZIP-COM	• BACnet MS/TP capability • Remote alarm functionality	• Communication module for ECON-ZIP-BASE • BTL Certified
	ECON-ZIP-EM	• DCV capability • Indoor fan / 2 speed fan or remote alarm • Exhaust fan functionality • Remote Damper Override • Purge Control	• Energy module for ECON-ZIP-BASE
	ECON-ZIP-10K	• 10K ohm type 2 temperature sensor • 1/4" male spade connectors	• SAT / RAT / OAT for use with ECON-ZIP-BASE
	ECON-ZIP-TH	• Temperature / Humidity sensor	• OAE / RAE for use with ECON-ZIP-BASE
	ECON0-ZIP-ACT	• Retrofit Shaft adapter from Honeywell black box motors	• Retrofit
	ECON-ZIP-LF1	• Bracket for LF actuator • Includes: ECON-ZIP-ACT, ZG-112, screws	• Mounting bracket for LF actuator
	ECON-ZIP-TF1	• Bracket for TF actuator • Includes: ECON-ZIP-ACT, ZG-113, spacers, and screws	• Mounting bracket for TF actuator
	ECON-ZIP-SDTF	• ZIP Pack for single dry bulb strategy w/ TFB24-SR actuator • Includes: ECON-ZIP-BASE, ECON-ZIP-EM, 2 X ECON-ZIP-10K, TFB24-SR, ECON-ZIP-TF1	• Single dry bulb changeover strategy w/ DCV capability
	ECON-ZIP-DDTF	• ZIP Pack for differential dry bulb strategy w/ TFB24-SR actuator • Includes: ECON-ZIP-BASE, ECON-ZIP-EM, 3 X ECON-ZIP-10K, TFB24-SR, ECON-ZIP-TF1	• Differential dry bulb changeover strategy w/ DCV capability
	ECON-ZIP-SETF	• ZIP Pack for single enthalpy strategy w/ TFB24-SR actuator • Includes: ECON-ZIP-BASE, ECON-ZIP-EM, ECON-ZIP-10K, ECON-ZIP-TH, TFB24-SR, ECON-ZIP-TF1	• Single enthalpy changeover strategy w/ DCV capability
	ECON-ZIP-DETF	• ZIP Pack for differential enthalpy strategy w/ TFB24-SR actuator • Includes: ECON-ZIP-BASE, ECON-ZIP-EM, ECON-ZIP-10K, 2 X ECON-ZIP-TH, TFB24-SR, ECON-ZIP-TF1	• Differential enthalpy changeover strategy w/ DCV capability
	ECON-ZIP-SDLF	• ZIP Pack for single dry bulb strategy w/ LF24-SR US actuator • Includes: ECON-ZIP-BASE, ECON-ZIP-EM, 2 X ECON-ZIP-10K, LF24-SR US, ECON-ZIP-LF1	• Single dry bulb changeover strategy w/ DCV capability
	ECON-ZIP-DDLF	• ZIP Pack for differential dry bulb strategy w/ LF24-SR US actuator • Includes: ECON-ZIP-BASE, ECON-ZIP-EM, 3 X ECON-ZIP-10K, LF24-SR US, ECON-ZIP-LF1	• Differential dry bulb changeover strategy w/ DCV capability
	ECON-ZIP-SELF	• ZIP Pack for single enthalpy strategy w/ LF24-SR US actuator • Includes: ECON-ZIP-BASE, ECON-ZIP-EM, ECON-ZIP-10K, ECON-ZIP-TH, LF24-SR US, ECON-ZIP-LF1	• Single enthalpy changeover strategy w/ DCV capability
	ECON-ZIP-DELF	• ZIP Pack for differential enthalpy strategy w/ LF24-SR US actuator • Includes: ECON-ZIP-BASE, ECON-ZIP-EM, ECON-ZIP-10K, 2 X ECON-ZIP-TH, LF24-SR US, ECON-ZIP-LF1	• Differential enthalpy changeover strategy w/ DCV capability

Control valves

Optimal flow control solutions

Belimo offers a complete range of innovative pressure dependent and pressure independent valves to meet your system's needs. Our pressure dependent products include globe valves, ball valves, and butterfly valves, while our pressure independent products include mechanical valves (PIQCV), electronic valves (EPIV), and the Belimo Energy Valve™, an advanced IoT cloud-connected valve that optimizes coil performance. Belimo valves help to improve energy efficiency and reduce maintenance costs.

Energy Valve

	Type	Features	Applications
	2-way NPT	• Delta T Manager optimizes coil and system efficiency • Power control allows for controlling to power setpoint, resulting in a linear response making valve pressure and temperature independent • Power over Ethernet simplifies & reduces installation cost • Integrated Energy Meter provides accurate energy measurement and control • Cloud connection provides remote configuration and enhanced optimization • BACnet MS/TP, BACnet/IP and Modbus TCP, Modbus RTU communication provides seamless integration to BMS • Easily configure onsite with Belimo Assistant app and smartphone • Meets the requirements of EN1434 and CSA C900 and is Measurement Canada AV2478C certified • Glycol monitoring ensures meter accuracy • Software updates can be loaded providing the maximum productivity and reliability • Differential pressure control: Accurate control of branch and system differential optimizes system performance and efficiency with added transparency of flow and energy • IoT-based billing: Owner-authorized third parties are able to securely access data consumption and provide billing services • Built-in data logger captures the energy, flow, and operational data for further system optimization and efficiency	• Air handling units • Fan coils • Chilled beams • CRAH (Computer Room Air Handling unit) • District heat exchangers • Chiller & heat pump monitoring • Cold plate/direct to chip
	2-way Flanged ANSI 125		
	2-way Flanged ANSI 250		

Electronic Pressure Independent Control Valve (EPIV)

	Type	Features	Applications
	2-way NPT	• Control modes - flow and position • Glycol compensation • Temperature monitoring • Field adjustable • True flow or valve position feedback • Dynamic balancing • Cloud monitoring • BACnet MS/TP and ModBus RTU communication provides seamless integration to BMS • Easliy configure onsite with Belimo Assistant app and smartphone through NFC	• Air handling units • Fan coils • Chilled beams • CRAH (Computer Room Air Handling unit)
	2-way Flanged ANSI 125	• Control modes - flow and position • Glycol compensation • True flow or valve position feedback • Temperature compensation • Field adjustable • ANSI 125 rating • BACnet MS/TP and ModBus RTU communication provides seamless integration to BMS (-Mod Models)	
	2-way Flanged ANSI 250	• Control modes - flow and position • Glycol compensation • Temperature compensation • Field adjustable • ANSI 250 rating • BACnet MS/TP and ModBus RTU communication provides seamless integration to BMS (-Mod Models)	
	6-way EPIV	• Control modes - flow and position • Glycol compensation • Field adjustable • Dynamic balancing • Supports different flow requirements (one valve, multiple GPMs possible) • BACnet MS/TP and ModBus RTU communication provides seamless integration to BMS • Easily configure onsite with Belimo Assistant app and smartphone through NFC	• For controlling the flow of hot/chilled water in a dual function single coil device (fan coil/UV, DOAS, active chilled beams)

ZoneTight PIQCV

	Type	Features	Applications
	2-way NPT	• Mechanical pressure independent valve • Field selectable/settable GPM • Low power consumption • Zero leakage • Control modulating 2...10 V or 0.5...10 V • On/Off, floating point control • Compact design • PT Ports for differential pressure measurement/ verification.	• Unit ventilators • Fan coil units • VAV reheat coils • Fin tube casing • Radiant panels • Duct coils
	2-way Press Fit		

Potable Water

	Type	Features	Applications
	Ball Valves: 2-way NPT 2-way Press Fit	• Pressure dependent ball valves for on/off control of potable water • NPT and Press Fit connection • 0% leakage • Lead-free to NSF/ANSI 61 by the methods prescribed in NSF/ANSI 372 to ensure customer safety • Certified NSF 61 - CLD 23 for ambient water temperatures up to 73.4°F	• Domestic water applications
	Butterfly Valves: 2-way ANSI 125	• Pressure dependent ANSI 125 flanged butterfly valves for on/off control of potable water	

ZoneTight QCV

	Type	Features	Applications
	2-way NPT 3-way NPT	• NPT pressure dependent valves for controlling the flow of hot/chilled water • 0% leakage • Field adjustable flow (Cv) • Equal percentage flow (2-way), linear (3-way) • Self-cleaning ball valve technology avoids clogging • On/Off (3-way), Floating Point, or Modulating	• Reheat/preheat coils • Radiant panels and baseboards • Multi- zone manifold heating and cooling systems • Fan coil units • Unit ventilator
	2-way Sweat 3-way Sweat	• Sweat pressure dependent valves for controlling the flow of hot/chilled water • 0% leakage • Field adjustable flow (Cv) • Equal percentage flow (2-way), linear (3-way) • Self-cleaning ball valve technology avoids clogging • On/Off (3-way), Floating Point, or Modulating	
	2-way Press Fit 3-way Press Fit	• Press Fit pressure dependent valves for controlling the flow of hot/chilled water • 0% leakage • Field adjustable flow (Cv) • Equal percentage flow (2-way), linear (3-way) • Self-cleaning ball valve technology avoids clogging • On/Off (3-way), Floating Point, or Modulating	

6-way CCV

	Type	Features	Applications
	6-way NPT	• NPT pressure dependent valves for supporting the coil with 2 different media (hot/cold) • 0% leakage • Linear flow • Energy savings in close position • True close-off to isolate both heating and cooling loops • Performing the function of a changeover valve and a control valve all in one • Proportional control for 2 sequences using 1 analog control signal	• Controls flow of hot or chilled water in a dual function single coil device (fan coil/UV, DOAS, active chilled beams)

Characterized Control Valve (CCV)

	Type	Features	Applications
	2-way NPT 3-way NPT	• NPT pressure dependent valves for controlling the flow of hot/chilled water • 0% leakage • Characterizing disc ensures an equal percentage flow characteristic • High close-off capabilities • Maintenance free with self-cleaning technology (avoids clogging) • Bubble-tight preventing energy losses • On/Off, Floating Point, or Modulating	• Air handling units • Fan coil units • Unit ventilators • VAV re-heat coils • Bypass loops • Perimeter heating/cooling
	2-way Flanged ANSI 125 2-way Flanged ANSI 250	• Flanged ANSI 125/250 pressure dependent valves for controlling the flow of hot/chilled water • 0% leakage • Characterizing disc ensures an equal percentage flow characteristic • NEMA 4/4X protection • High close-off capabilities • Maintenance free with self-cleaning technology (avoids clogging) • Bubble-tight preventing energy losses • On/Off, Floating Point, or Modulating	

High Temperature Characterized Control Valve (HTCCV)

	Type	Features	Applications
	2-way NPT	• NPT pressure dependent DZR brass valve with characterizing disc suitable for controlling the flow of low pressure steam/high temperature water • 0% leakage • On/Off, Floating Point, or Modulating	• Unit ventilators • Fan coil units • VAV reheat coils • Fin tube casing • Radiant panels • Duct coils

Industrial Ball Valves

	Type	Features	Applications
	2-way NPT VS 2-way NPT VSS	• NPT pressure dependent valves for controlling the flow of hot water and steam • ANSI Class VI in accordance with ANSI/FCI 70-2 • Modified equal percentage flow • On/Off, Floating Point, or Modulating	• Controls low to medium pressure steam and hot water for Unit Ventilator (UV), fan coils, dehumidifier, perimeter heating
	3-way NPT "L" bore	• NPT pressure dependent valves for controlling the flow of hot/chilled water • 0% leakage • Modified linear flow • On/Off, Floating Point, or Modulating	• For applications where 100 percent flow is required to be diverted or switched during seasonal changes (from hot to cold or vice versa)

V Ball Valves

	Type	Features	Applications
	2-way NPT	• NPT ANSI 300 pressure dependent valves for controlling the flow of hot/chilled water/steam • ANSI Class IV in accordance with ANSI/FCI 70-2 • On/Off, Floating Point, or Modulating	• Controls high pressure steam and hot/chilled water for AHU, heat exchanger, and Unit Ventilator (UV)
	2-way Flanged	• Flanged ANSI 150 pressure dependent valves for controlling the flow of hot/chilled water/steam • ANSI Class IV in accordance with ANSI/FCI 70-2 • On/Off, Floating Point, or Modulating	• Controls high pressure steam and hot/chilled water for AHU, chiller plant, and heat exchanger

Globe Valves

	Type	Features	Applications
	2-way NPT	• Pressure dependent • NPT connection • Available in bronze or with stainless steel trim • On /Off, Floating Point, Modulating Multi-Fuction control available • Offered from ½...2"	• Controls flow of hot or chilled water and low to medium pressure steam for Unit Ventilator (UV), fan coils, dehumidifier, perimeter heating
	3-way NPT	• Pressure dependent • NPT connection • Available in bronze or with stainless steel trim • On /Off, Floating Point, Modulating and Multi-Fuction control available • Mixing or diverting flow • Offered from ½...2"	• Controls flow of hot or chilled water and water with glycol for Unit Ventilator (UV), fan coils, dehumidifier, perimeter heating
	2-way Flanged	• Pressure dependent • Meets ANSI Flange 125/250 standards • Designed for use with hot/chilled water, water with glycol and steam • On/Off, Floating Point, Modulating and Multi-Fuction control available • Offered from 2½...6"	• Controls high pressure steam and hot or chilled water for air handling units, chiller plants and heat exchangers
	3-way Flanged	• Pressure dependent • Meets ANSI Flange 125 / 250 standards • Designed for use with hot/chilled water or water with glycol • On/Off, Floating Point, Modulating and Multi-Fuction control available • Offered from 2½...6"	• Controls flow of hot or chilled water • Ideal for isolation - cooling towers, primary bypass flow control, large air handler coil control, process control heat exchanger applications

Butterfly Valves

	Type	Features	Applications
	2-way Resilient Seat 3-way Resilient Seat	• Wide range of sizes available • Running time options for every application (20...120s) • 0% Leakage • High close-off pressures • Reduced energy designs compared to competition • Various communication protocols available • Different configurations available depending on application • Ease of commissioning with the Belimo Assistant App • NEMA 4 options available for outdoor applications	• Controls flow of hot or chilled water • Ideal for isolation, primary bypass flow control, boilers, cooling tower isolation, large air handler coil control, process control heat exchanger applications
	2-way Grooved (VIC) 3-way Grooved (VIC)	• Wide range of sizes available • Running time options for every application (20...120s) • 0% Leakage • High close-off pressures • Reduced energy designs compared to competition • Various communication protocols available • Different configurations available depending on application • Ease of commissioning with the Belimo Assistant App • NEMA 4 options available for outdoor applications • Ease of installation with grooved-end fittings; saves on labor time and cost	
	2-way High Performance ANSI 150 3-way High Performance ANSI 150	• Wide range of sizes available • Running time options for every application (20...120s) • 0% Leakage • High close-off pressures • Reduced energy designs compared to competition • Various communication protocols available • Different configurations available depending on application • Ease of commissioning with the Belimo Assistant App • NEMA 4 options available for outdoor applications • Rated for high temperatures and pressures to conform to ANSI 150 specification	
	2-way High Performance ANSI 300 3-way High Performance ANSI 300	• Wide range of sizes available • Running time options for every application (20...120s) • 0% Leakage • High close-off pressures • Reduced energy designs compared to competition • Various communication protocols available • Different configurations available depending on application • Ease of commissioning with the Belimo Assistant App • NEMA 4 options available for outdoor applications • Rated for high temperatures and pressures to conform to ANSI 300 specification	

Sensors and meters

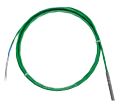
Foundation of comfort

Belimo HVAC sensors, detectors and meters offer superior reliability, easy installation, and seamless integration with major Building Automation Systems (BAS). The sensor range measures temperature, humidity, air pressure, water leaks, CO_2, and VOCs for pipes, ducts, and outdoors.

Room Sensors

	Type	Features	Applications
	Active: 22RT 22RTH 22RTM	• Dual channel • Pressure compensation • Temperature compensation • Multiple options for fine-tuning the comfort level based on the change of temperature, humidity levels, and/or carbon dioxide concentration • NFC capability • Collected data is transmitted to the controller through our MP-Bus communication language, Analog (0...10 V), BACnet, or ModBus points	• Utilizing Demand Controlled Ventilation (DCV), adjusts the air flow and temperature in response to demand and occupancy status
	Passive: 01RT P-01RT	• Setpoint adjustment dial • Manual override button • Multiple options for fine-tuning the comfort level based on the change of temperature • Collected data is transmitted to the controller via a passive temperature output • Output signal NTC20K, NTC10K3, NTC10K2 or PT1000	
	EXT-RT	• Blank stainless steel wall plate that incorporates a precision temperature sensor • Output signal NTC20K, NTC10K3, NTC10K2 or PT1000	• Flush mounted directly to an electrical box or to a wall • Used to monitor room temperatures
	EXT-TN	• 0...10 V output • Relay output • 360° sensing	• Ceiling mounted multi-sensor designed for measuring light and motion in room and office spaces • Typically used in lighting applications to optimize energy efficiency through lighting control

Temperature Sensors

	Type	Features	Applications
	Outdoor Air: 01UT 22UT	• Outdoor temperature sensor • Multiple passive outputs • Multiple active outputs • NEMA 4X / IP65 • Removable spring loaded terminal block • Mounting plate • Adaptor ½" NPT • UL Listed • 5-year warranty	• Active sensor (0...10 V) for measuring the relative or absolute humidity and temperature in outdoor areas • Instead of the humidity signal, the enthalpy or the dewpoint can be selected as an output signal
	Duct Immersion: 01DT 22DT	• Thermowell for liquid applications • Multiple passive outputs • Multiple active outputs • Probe lengths 2", 4", 6", 8", 12", 18" • NEMA 4X / IP65 • UL Listed • 5-year warranty	• Designed for both duct and pipe applications • Used for monitoring and maintaining the water temperature in a chilled water system
	Duct Averaging: 01MT 22MT	• Continuous sensing element • Multiple passive outputs • Multiple active outputs • Probe length 10, 20, or 50 ft • NEMA 4X / IP65 • UL Listed • 5-year warranty	• Designed to be mounted horizontally or vertically across large coils in air handing units or fan coil units • These individual thermistors are wired together in a series/parallel configuration to provide a single average temperature resistive signal to the building automation system
	Strap-On: 01ST 01HT 22HT	• Multiple passive outputs • Surface contact temperature sensing probe • Pluggable spring loaded terminal block • Max. 2.5 mm² • -30...195°F [-35...90°C] measuring range temperature	• Can be attached directly to the outside of the pipes using their adjustable pipe clamp • Given their design, these sensors ensure fast response and accurate temperature readings of the water flowing inside the pipe without needing to penetrate the pipe itself
	Cable: 01CT 22CT	• Multiple passive outputs • 2...8" stainless steel probe lengths • 6.5' cable length • -40...300°F [-40...150°C] measuring range temperature	• Used as a duct temperature sensor with a mounting flange or as an immersion temperature sensor in combination with an immersion sleeve for air handling units or heating/cooling pipes or coils
	Low Temperature Detection: 01DTS	• Low limit temperature detection switch • Capillary copper tube (10 ft or 20 ft) • Set point range 14…54 °F [-10…12 °C] • Output signal - SPDT • Auto or manual option • NEMA 4 / IP65 • 5-year warranty	• Used on different types of HVAC systems, the water coil freeze stat prevents freon-to-liquid heat exchangers (liquid coils) from freezing • Typically placed on the supply air side of the coil, it shuts down the flow of outside air to a mixing box when the temperature reaches a predetermined setpoint

Humidity Sensors

	Type	Features	Applications
	Outdoor: 22UTH	• Outdoor sensor humidity / temperature • Multiple passive outputs • Multiple active outputs • Measuring ranges field selectable • Removable spring loaded terminal block • Includes mounting plate & rain cover • Includes conduit adaptor ½" NPT • NEMA 4X / IP65 • UL Listed • 5-year warranty	• Active sensor (0...10 V) for measuring the relative or absolute humidity and temperature in outdoor areas • Instead of the humidity signal, the enthalpy or the dewpoint can be selected as an output signal
	Duct: 22DTH	• Duct sensor humidity / temperature • Multiple passive outputs • Multiple active outputs • Probe length 5.5" • Measuring ranges field selectable • Removable spring loaded terminal block • Includes mounting flange • Includes conduit adaptor ½" NPT • NEMA 4X / IP65 • UL Listed • 5-year warranty	• Specifically designed to measure one or a combination of humidity, temperature, enthalpy, dew point, and absolute humidity of the air flowing within HVAC ductwork • Users can select appropriate measurement ranges based on their specific requirements • These sensors are usually placed in the ductwork and directly measure the air temperature inside
	Condensation: 22HH	• AC/DC 24 V • Red/green LED for detection status • Pipe mount or remote sensing • 1A max relay switch	• For detection of condensation on chilled surfaces (e.g. chilled beams) • With relay contact for connection to controller and display systems or for series connection with the cooling valve to interrupt the cold water flow directly when condensation begins
	Leak Detection: 22HL	• AC/DC 24 V • Red/green LED for water detection status • Floor or pan mounted • 1A max relay switch • Single or double relays	• For detection of liquid leakage • Designed for alarm, control and monitoring applications of containers, false floors, suspended ceilings or rooms for preventing unintended ingress of water • With relay contact for connection to controller and display systems or for series connection with the valve to interrupt the water flow directly when liquid leakage begins

Air Quality Sensors

	Type	Features	Applications
	Duct: 22DC 22DTC 22DTM 22DCV 22DCM 22DCK	• Combined duct mounted air quality sensors for CO_2, VOC, temperature, and humidity • Dual channel • Active outputs • 0...10 V • 4...20 mA • LCD display option • Bluetooth dongle option • Probe length 6" or 7" • Removable spring loaded terminal block • Includes mounting flange • Includes conduit adaptor ½" NPT • NEMA 4X / IP65 • UL Listed • 5-year warranty	• Specifically designed to measure one or a combination of temperature, humidity, CO_2, VOCs or CO_2/VOC mixes in the air flowing within HVAC ductwork • These sensors provide real-time data on IAQ indicators, allowing stakeholders to monitor and manage air quality effectively • Users can select appropriate measurement ranges based on their specific requirements • Usually placed in the ductwork and directly measure the air temperature inside

Pressure Sensors

	Type	Features	Applications
	Duct: 22ADP	• Differential Pressure Sensor (air) • Active output • 0...10 V • 4...20 mA • Auto zero calibration option • LCD display option • Bluetooth dongle option • 8 X pressure range (field selectable) • Multiple WC ranges • Removable spring loaded terminal block • Includes 2 cuct connectors (plastic) • Includes 6 ft. tube (PVC) • Includes conduit adaptor ½" NPT • NEMA 4X / IP65 • UL Listed • 5-year warranty	• Differential pressure sensors are effective for measuring airflow in front of and behind air filters • If room pressure exceeds set limits, the sensor triggers an alarm to prevent contamination or maintain sterile conditions • Can be mounted on either upstream or downstream sides measuring airflow before the filter (air entering the filter) or after the filter (filtered air)
	Switch: 01APS	• Differential Pressure Switch (air) • Output signal - SPDT • Set point range adjustable • Multiple WC ranges • Multi-unit pack option • Includes 2 duct connectors (plastic) • Includes 6 ft. tube (PVC) • Includes conduit adaptor ½" NPT • NEMA 13 / IP54 • 5-year warranty	• Designed to sense the difference in pressure between two different points or sources connected to a sensing diaphragm • An action is triggered (such as turning on or off a pump, fan, or alarm) when a specific pressure threshold is reached • Can be fastened directly to the duct, heater, or panel as long as the mounting surface has minimal or no vibration
	Pipe: 22PDP 22WP 22WDP	• AC/DC 24 V • 0...10, 0...5 and 4...20 ms output • 0...100 psi signal or delta pressure • Remote transducers • LCD display where applicable • Auto zeroing • PVC and armored cables	• Chiller head pressure or delta pressure between supply and return on chiller • Optional manifold for monitoring pressure in coils and boilers

Flow Sensors

	Type	Features	Applications
	Pipe: 22PF FM	• AC/DC 24 V • 0...10 VDC output • BACnet MS/TP, Modbus RTU, MP-Bus communication • Ultrasonic flow measurement • Glycol compensation • Media temperature measurement • ±2% flow accuracy • 1 inline temperature sensor • ½...2" NPT	• Provides precise fluid measurement in heating or cooling systems such as AHU coils, FCU, and small unitary systems • Glycol monitoring and accuracy against freezing of coils • Mounted vertically or horizontally in-line of pipes indoors or outdoors with NEMA 4 options

Thermal Energy Meters

	Type	Features	Applications
	22PE 22PEC	• AC/DC 24 V • Power over Ethernet (PoE) • 0...10 VDC output • BACnet MS/TP, Modbus RTU, MP-Bus communication • Ultrasonic flow measurement • Patented glycol compensation algorithm automatically selects the glycol concentration, ensuring reliable performance and eliminating manual input and inaccuracies • Media temperature measurement • BTU metering • Cloud and IoT based billing • Battery backup • LCD display (22PEC models only) • ±2% flow accuracy • 1 inline temperature sensor • 1 remote temperature sensor • ½...2" NPT	• Designed for chillers, boilers, commercial/ multi-tenant energy metering, and monitoring applications such as commercial units, condominiums, apartments, or central plant systems. CSA model with 22PEC • Accurate measurement for heating and cooling allows building operators to adopt a cost recovery strategy through tenant billing • Designed to EN1434 and equipped for IoT-based billing, Belimo's thermal energy meters provide the proper flow and energy measurement

Gas monitoring devices

Ventilation on demand

Our gas monitors are factory calibrated and can measure up to two different gases simultaneously. Monitors can connect to a network to check vehicle emissions and indoor air quality, with or without a central controller.

Vehicle Emissions

	Type	Features	Applications
	22G02-5.. 22G14-5.. 22G0214-5..	• Factory calibrated • Can monitor up to two different gases simultaneously • Audible and visual alarms • CAN bus communication, that allows for standalone operation • Select models provide direct control through analog outputs and relays, and integration into a building management system (BMS) through BACnet MS/TP • Wired daisy chain for up to 32 devices • Can be easily assigned to groups on-site to zone ventilation on the same network • All monitors come with a 5-year warranty • All sensor modules come with a 1-year warranty • All CO, NO_2 and CO+NO_2 gas monitors are UL 2075 and ULC-S588 certified	• Enclosed parking garages • Loading docks • Automotive maintenance facilities • Truck maintenance facilities • Fire stations • Ambulance bays • Boiler rooms • Warehouses

Indoor Air Quality

	Type	Features	Applications
	22G15-5..	• Factory calibrated • Can monitor up to two different gases simultaneously • Audible and visual alarms • CAN bus communication, that allows for standalone operation • Select models provide direct control through analog outputs and relays, and integration into a building management system (BMS) through BACnet MS/TP • Wired daisy chain for up to 32 devices • Can be easily assigned to groups on-site to zone ventilation on the same network • All monitors come with a 5-year warranty • All sensor modules come with a 1-year warranty	• Classrooms (0...2000 ppm) • Conference rooms (0...2000 ppm) • Warehouses (0...2000 ppm) • Medical gas storage (0...5000 / 0...10000 ppm) • Laboratories (0...5000 / 0...10000 ppm) • Breweries (0...5000 / 0...10000 ppm) • Indoor greenhouses (0...5000 / 0...10000 ppm) • Grow farms (0...5000 / 0...10000 ppm) • Mechanical rooms (0...5000 / 0...10000 ppm) • Compressor rooms (0...5000 / 0...10000 ppm)

Combustible and Toxic Gas Monitoring Only available in Canada

	Type	Features	Applications
	22G04-5.. 22G05-5.. 22G06-5.. 22G08-5.. 22G16-5.. 22G17-5.. 22G22-5.. 22G23-5..	• Factory calibrated • Can monitor up to two different gases simultaneously • Audible and visual alarms • CAN bus communication, that allows for standalone operation • Select models provide direct control through analog outputs and relays, and integration into a building management system (BMS) through BACnet MS/TP • Wired daisy chain for up to 32 devices • Can be easily assigned to groups on-site to zone ventilation on the same network • All monitors come with a 5-year warranty • All sensor modules come with a 1-year warranty	• Food processing plants (NH_3) • Cold storage (NH_3) • Ice rinks (NH_3) • Mechanical rooms (NH_3) • Compressor rooms (NH_3) • Landfills (NH_3, H_2S, CH_4) • Water and wastewater treatment plants (NH_3, H_2S, CL_2) • Recycle centers (NH_3, H_2S) • Natural gas monitoring (CH_4) • Commercial kitchens (C_3H_8, CH_4) • Laboratories (C_3H_8, O_2 Leak, O_2 Depletion) • Warehouses (C_3H_8, H_2) • Lead acid battery charging stations (H_2) • Swimming pool mechanical rooms (CL_2) • Medical labs (O_2 Leak, O_2 Depletion) • Medical gas storage (O_2 Leak, O_2 Depletion) • Welding facilities (O_2 Leak, O_2 Depletion)

Accessories

	Type	Features	Applications
	Communication Modules: C-22G-5..	• Audible and visual alarms • CAN bus communication, allowing for standalone operation and networking of up to 32 devices • Select models feature relays and analog outputs to control ventilation directly, as well as BACnet MS/TP allowing for integration into a BMS • Wired via daisy chain • 5-year warranty	• Gas detection systems that require control from one or multiple centralized locations, and/or gas detection systems that want the ability to view the entire system in a remote location (ex: office space, facility manager office, etc.) • Communication modules also allow the entire gas monitoring system (all individual gas monitors, their gas levels, and their alarm level statuses) to be viewed through the communication module
	Relay Unit: C-22G-50	• 4 relays with visual alarms • Wired via daisy chain • 5-year warranty	• Gas detection systems that require control from one or multiple centralized locations
	High-Low Kit: A-22G-A14	• Enclosure for remote mounting a sensor module • Interface connector to plug into an existing gas monitor • 7' (2 m) plug-in data cable [Type RJ45] that interconnects the two	• Remote enclosures used to remotely mount a sensor module at a different elevation than the gas monitor

For all gas monitoring accessories, please see the Product Guide and Price List on the Belimo website.

RetroFIT+

Enhanced Comfort and Energy Efficiency

Belimo RetroFIT+ offers a variety of comprehensive solutions to replace old or damaged actuators, control valves and sensors with world class products to maximize energy savings, boost system efficiency, and elevate comfort levels. RetroFIT+ linkages are available for most major manufacturers of globe valves and butterfly valves. Belimo damper actuators can be either direct mounted or connected via additional linkage components, depending on application requirements. Custom solutions are available by submitting a custom retrofit solution form, found on the Belimo website. Once submitted, our highly skilled machine shop will design and build the best solution for your application.

RetroFIT+ Air Solutions - Damper Actuators

	Type	Features	Applications
	Rotary Actuators: PM / PK (1400 in-lbs) GM / GK (360 in-lbs) EF (270 in-lbs) AM / AF (180 in-lbs) NM / NF (90 in-lbs) LM (45 in-lbs) LF (35 in-lbs) TF (22 in-lbs) CM (18 in-lbs) UM (9 in-lbs) Linear Actuators: AH / AHK (100 lbf) NK (54 in-lbs) LH (34 lbf) UH (11 lbf)	• Wide range of energy-efficient torque options for the perfect fit • Standard running times for typical HVAC applications, plus Fast and Very Fast acting series available • Power options for low voltage and line voltage circuits • Trouble-free wiring with 3' (1 m) cables or terminal strips • Compatible with BACnet, Modbus, and Cloud connectivity for easy integration with Belimo sensors and customer's BMS/BAS • Multiple control options available for any solution • Brushless DC Motors for improved controllability and long installed life • Overload protection throughout entire range • Universal clamps for direct coupling to damper control shaft • Integrated manual override for rotation without power • Adjustable mechanical stops to limit the damper's angle of rotation • Patented supercapacitor provides reliable fail-safe security • Only 20 second charge time is needed to activate supercapacitor • Power fail delay feature on MFT models allows programmable 0...10 sec delay to prevent immediate fail-safe action in brownout conditions • Adjustable fail-safe position for maximum control and versatility, even during power outages • 5-year warranty	• Compatible with a wide range of zone and control damper sizes • Suitable for air handlers, rooftop units, and more • Fail-in-place feature in the event of a power loss • Actuator customization options available for unique Contracting and OEM applications • Data centers, emergency generators, hospitals, schools, laboratories, and other spaces where damper control is needed with a defined fail-safe requirement • Available for outdoor and indoor solutions • Solutions with limited internal space, such as unitary equipment • Large, multi-section damper 'walls'

RetroFIT+ Air Solutions - VAV

	Type	Features	Applications
	VAV Compact: Set with VAV Compact	• Set solution for round VAV units with differential pressure sensor and complete installation set	• Replacement of VAV actuator and control components for small and medium retrofits

RetroFIT+ Water Solutions - Globe Valve Actuators

	Type	Features	Applications
	Linear Actuators: RV (1010 lbf) EV (560 lbf) AVK (450 lbf) SV / SVK (340 lbf) LV / LVK(115 lbf)	• For globe valves from various manufacturers	• Controls flow of hot or chilled water and low to medium pressure steam for Unit Ventilator (UV), fan coils, dehumidifier, perimeter heating

RetroFIT+ Water Solutions - Rotary Valve Actuators

	Type	Features	Applications
	Rotary Actuators: PR / PKR GM / GK AR / AFR SY	• For rotary valves from various manufacturers: - Ball Valves - Butterfly Valves • Confirm required torque for valve	• Controls flow of hot or chilled water • Ideal for isolation, primary bypass flow control, boilers, cooling tower isolation, large air handler coil control, process control heat exchanger applications

Tools and apps

Tools to Achieve Efficient Building Performance

Belimo provides an array of online tools from sizing and selection of HVAC products to energy-saving calculators that help you achieve increased building performance efficiently.

The **Belimo Assistant App** enhances efficiency with swift programming, commissioning, and diagnostics for Belimo devices. Key features include identification of device type, parameter customization, and visualization of operational data.

Download on the App Store

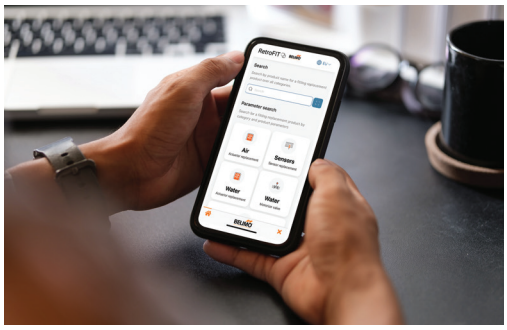
ANDROID APP ON Google play

Belimo SelectPro is an online and offline sizing and selection tool for sensors, valves, actuators, and replacement solutions. SelectPro offers:

- Intuitive User Interface – navigate through the tool with ease
- Flow and Cv clip setting offered in SelectPro for ZoneTight Zone Valves
- Reference Documents – locate information in one central location
- Contact Profiles – ability to save multiple contact profiles
- Quote Generator – create a professional quote from your schedule
- Media Download – save a ZIP file of your entire schedule's media

Savings Estimator Tools estimate the annual cost and energy savings you can expect when installing the Belimo Energy Valve or Belimo Damper Actuators. These tools have an Excel-based platform and are available online at belimo.com.

Belimo RetroFIT+ App allows you to quickly and easily find replacement solutions for valves, actuators and sensors. Replacement solutions ensure reliable, functioning heating and cooling HVAC systems and boost the performance and efficiency of integrated building technology. The Belimo RetroFIT+ app is FREE and can be downloaded from the Apple App Store or Google Play.



Belimo Hydronic Simulator™ identifies and illustrates when the system needs to be balanced and how adjusting the valve could impact the entire system. The primary purpose of the Belimo Hydronic Simulator is to educate on the importance of why pressure dependent valves are not recommended in a dynamic system.

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Exceptional service

At Belimo, we continually invest in new technologies that increase customer value by improving occupant comfort, energy efficiency, simplified installation, and maintenance-free operation. Our sales team is available to consult and provide insight and advice on how to achieve the best solution to help increase your system performance. Belimo will continue to focus on providing you with exceptional product availability, fast delivery times, and world-class customer service and technical support. We remain dedicated to continuously improve our standards and are committed to providing you with the highest value possible.

Whatever your HVAC application, our global network of support experts are on hand and ready to assist.

- Global support
- Tested quality
- On-time delivery
- Extensive service
- Complete product range

AA_13005 – 06.2024 – Subject to technical modifications

Belimo Americas
USA, Canada, Brazil, Latin America, and the Caribbean
www.belimo.com