



Energy Savings
You Can See

Belimo Energy Valve™



Discover the advantages:
www.belimo.us

BELIMO®

Energy savings you can see

The Belimo Energy Valve is an IoT cloud-connected pressure independent valve that monitors coil performance and energy consumption while maintaining Delta T. It also has an exclusive glycol monitoring feature providing accurate, repeatable flow measurement, and ensuring glycol content meets design requirements.



Cloud Optimization

Monitors and enhances energy usage delivering optimal system performance. System analytics are also provided to show historical performance.



Delta T Management

The Belimo Delta T Manager algorithm reduces pumping and chiller/boiler operating costs by increasing plant efficiency and maintaining design Delta T.

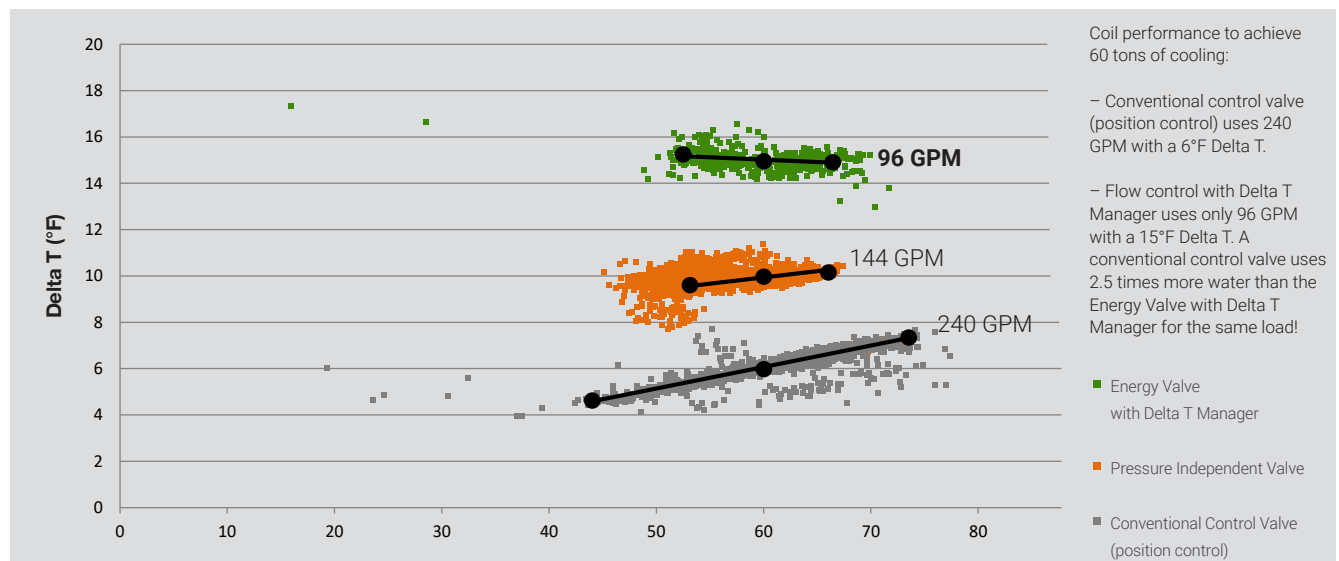


Energy Monitoring

An integrated energy meter provides accurate coil performance data. The data is used to verify system performance during commissioning and acts as a baseline. This feature helps achieve LEED points through Energy and Atmosphere within credits 1 and 5.

“One thing that impressed us was having such intelligence right on the valve actuator. You can characterize a coil’s performance with just a couple of pieces of data and with that information you can observe the degradation of coils and refocus your maintenance efforts accordingly.”

Peter Cooper, Manager of Sustainable Engineering and Utility Planning, Massachusetts Institute of Technology



Transparent energy monitoring

The Energy Valve has a patented Power Control and Belimo Delta T Manager™ logic built in to monitor coil performance and optimize the available energy of the coil by maintaining Delta T. In addition to the standard analog signal and feedback wiring, it communicates its data to the Building Management System (BMS) via BACnet MS/TP or BACnet IP as well as Modbus RTU and Modbus TCP/IP. The built-in web server enables clear visualization of the valves' operation in real time. Performance data is stored for 13 months on board the valve. Cloud data provides lifetime data access.



FEATURES

- **Delta T Optimization and Flow Setpoints**
Cloud analytics provide recommended Delta T and flow setpoints which can be updated remotely or automatically to save time and improve efficiency.
- **Performance Reporting**
Key performance indicators are graphically illustrated showing current and historical performance data of flow rates, energy usage, Delta T, and other points of interest.
- **Glycol Monitoring**
Detects the percentage of glycol content in the HVAC system, assuring concentrations meet design needs reducing overfilling, and eliminating adding glycol above necessary levels.
- **Lifetime Data Access**
Secure, single consolidated repository that stores and provides system data access for future optimization.
- **Online Tech Support**
Belimo's industry leading technical support team available to assist you remotely.
- **Software Updates**
Latest software and security updates automatically provided for maximum productivity and reliability.
- **Extended Warranty**
5-year warranty is increased to 7-year with Belimo cloud connection.



One solution, so many benefits

Patented power control and Delta T Manager

logic built in monitor coil performance and optimize the available energy of the coil by maintaining the Delta T.



Dynamic coil performance

illustrates the operation of the coil in real time, accurately providing transparency in power degradation and other operational issues. Delta T setpoint suggestion is offered; eliminates the need to export data to external analysis tools.



Enhanced communication

enables expanded system integration and BMS control with the addition of Modbus RTU and TCP/IP. Other integration protocols include BACnet MSTP and BACnet IP, Belimo MP-Bus, and one analog feedback signal for valve flow, power, temperature or position.



Glycol monitoring

utilizes an embedded temperature sensor, ultrasonic technology, and advanced logic algorithms to monitor the percentage of glycol content in the system. Glycol monitoring provides you with the knowledge to optimize heat transfer and pumping efficiency, while reducing operating costs and the risk of freezing.



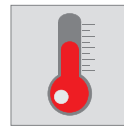
5-year warranty



7-year warranty

**Integrated energy meter**

measures and analyzes historical energy data for benchmarking, optimization, and reporting.

**Temperature sensors**

with quality RTD's measure supply and return media for precise energy management.

**Ultrasonic flow meter**

durable design, no moving parts and wet calibration ensure true flow, accuracy and repeatability which can be shared with the DDC system.

**Set-up wizard**

offers easy configuration, valve operation, and programming options.

**Save and reload**

settings from one valve configuration and load them into another valve for fast and accurate setup.

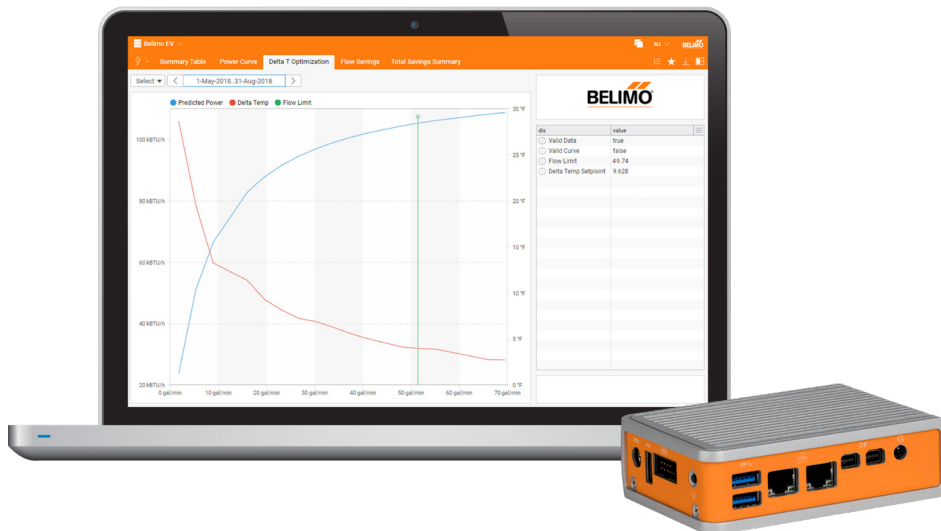
**Commissioning report**

provides confirmation valves are correctly configured.

Platform for on-site Energy Valve optimization

The Belimo Clear Edge is an analytical device that leverages the data from all installed Energy Valves in a BACnet Building Automation System (BAS). It automatically analyzes the Belimo Energy Valve data to optimize, manage, and monitor key performance indicators of water coil performance and hydronic energy consumption. The Clear Edge offers trending capability with automated Delta T setpoint adjustment to increase system performance and energy savings strategies. An internet connection is not needed.

The Belimo Clear Edge technology is accessible as a plug-in for SkySpark from Stackhub (www.stackhub.org).



FEATURES

– Aggregated Start Screen

A simplified view of Key Performance Indicators (KPI's) including BACnet object name, instance number, supply and return temperatures, Delta T, delta setpoint, flow, current energy usage, and 30 days of energy consumption.

– Energy Dashboard

Input cost and kWh data, pump efficiency, and other building specific variables provide aggregated cost and energy savings due to reduced pumping. Reporting is available by the day, month, quarter, and year.

– Automatic and Continuous Delta T Optimization

Software analytics providing the optimal Delta T and flow setpoints, which are automatically written to the Delta T Manager to save time and improve efficiency.

– Coil Power and Delta T Curves

Scatter plots that automatically generate load profiles and flow saturation points of coil characteristics and Delta T performance.

– Setpoint Configuration

Change parameters on installed Energy Valves individually or collectively.

– Automatic Discovery

Energy Valves on a BACnet network are viewable with a single click. Point mappings automatically provide fast and easy analysis and optimization.

Most capable valve in the HVAC industry

Features	Typical PI Valve*	Energy Valve
IoT Device		✓
Cloud Analytics		✓
Glycol Monitoring		✓
Commissioning Report		✓
True Flow		✓
Dynamic Balancing	✓	✓
Energy Meter		✓
Power Control		✓
Delta T Manager		✓
Live Data and Coil History		✓
CCV Technology**		✓
Leakage	ANSI Class IV	0%
High Close-off		✓
Low Minimum Pressure Drop		✓
Field Configuration	✓	✓
Bus Communication		BACnet MS/TP or IP, Modbus RTU or TCP/IP and MP Bus
Password Configuration		✓
Set-Up Wizard		✓
5-Year Warranty	✓	✓
7-Year Warranty with Cloud Access		✓

*Typical pressure independent valves based on globe valve technology.

**Not available on ANSI 250 models.

Product Range

Valve			Actuator Type	
End Fittings	Design Flow Range GPM	Nominal Valve Size	Non Fail-Safe	Electronic Fail-Safe
NPT	1.65 - 100	½" - 2"	•	•
Flanged (ANSI 125)	38 - 713	2½" - 6"	•	•
Flanged (ANSI 250)	38 - 713	2½" - 6"	•	•

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Awards and accolades



New Energy Valve Technology at Charles Hayden Library Reaps the Rewards of Higher Delta T!

"One thing that impressed us was having such intelligence right on the valve actuator," said Peter Cooper, Manager of Sustainable Engineering and Utility Planning at MIT, Hayden Library. "You can characterize a coil's performance with just a couple of pieces of data and with that information you can observe the degradation of coils and refocus your maintenance efforts accordingly."



Belimo Energy Valve™ Cures Medical University's Low Delta T!

"The University started seeing a 10-degree Delta T," said Scott Czubkowski, PE, Director of Engineering at Kerney Associates. "It went from a 7-degree to a 10-degree Delta T within a day." But that was not all. Kerney and Associates found that within one hour, the system went from using 600 gallons of water to 100 gallons per minute.



Red Wing School District will Achieve Payback in Under Two Years.

"Savings are always difficult to quantify for new buildings; however, at River Bluff, we are pumping approximately 50% less water than that of a similar sized building in our district," Kevin Johnson, Director of Building and Grounds and Technology Director, Red Wing School District said. "This equates to substantial pump cost savings over the long-term and represents an improvement over traditional valves, which often deliver far more GPM than needed to maintain temperature setpoints."

Awards

2018

- EnergieGenie Award

2017

- AHR Expo: **Innovation Award Finalist**

2016

- ACME: **Innovation Award**
- Poznan International Trade Fair: **Gold Medal**
- Control Trends: **Energy Savings Solution Product of the Year**

2015

- Energy Show: **Best Energy Efficient Product of the Year**
- AREX: **Award of Excellence**
- CSA: **Innovation in Commissioning**
- Deutscher Rechenzentrumspreis: **German Data Centre Prize**

2014

- Control Trends: **Energy Saving Product of the Year**
- AHR EXPO: **Innovation Award**
- Shanghai Energy Conference: **Golden Key Award**
- Poznan International Trade Fair: **Gold Medal**

2013

- Building Efficiency Congress Fair: **Building Efficiency Award**
- Interclima Show: **Silver Trophy Award**
- BCIA: **Technical Innovation of the Year Products**
- Trade Fair: **Building Efficiency**
- Innovation Competition: **Intelligent Energy Management**

2012

- Control Trends: **Best Commercial Product of the Year**
- HVR Awards: **Air Conditioning Product of the Year**

Belimo Americas

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