



**High Performance  
Solutions**

## **Belimo Pressure Independent Control Valves**

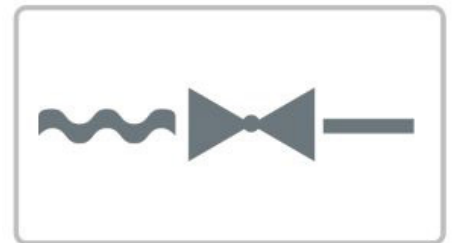
# Energy Efficient Valves Providing Comfort in Buildings



Belimo pressure independent control valves stabilize variable flow hydronic systems for a lifetime of efficiency and worry-free, dynamic balancing.

Belimo pressure independent valves directly control the water flow required by the coil and are not affected by pressure fluctuations in the system. The valves are selected based on the flow requirements of the coil, and no valve authority and Cv calculations are needed. By precisely controlling the flow, the pressure independent valves eliminate the need for balancing valves, thus reducing installation cost. The biggest benefit comes in the form of energy savings by eliminating overflow through the coil. Overflow wastes pumping energy and is the main cause of low Delta T syndrome in chilled water systems.

With Belimo pressure independent technology, every system performs to its full potential – saving time, money, and other precious resources.





# Improves Building Performance

With Belimo's pressure independent control valve technology only a single valve is required to maintain proper flow through each circuit. Each valve arrives from the factory with a flow setting that can be changed in the field, so there is no additional balancing required. The system performs perfectly from start-up. If a facility adds new circuits because of an expansion, the flow control of existing circuits remains intact eliminating the need for re-balancing the system.



## Dynamic Balancing

Belimo's pressure independent valves precisely control the water flow required by the coil and are not affected by pressure fluctuations in the system.



## Energy Savings

Pressure independent control valves maximize energy savings by dynamically balancing the load under all conditions eliminating overflow of the coil thus reducing pumping costs.



## Zero Leakage

Belimo ball valve design offers zero leakage and eliminates energy loss while ensuring reliable operation throughout the entire life of the valve.

"The Belimo's pressure independent control valve not only properly controls the flow of hot or chilled water to the classroom unit ventilator, it also prevents excess flow from going through the unit."

**Robert Morgan, P.E.,**  
**Robert E. Morgan Associates**

| Features                                    | PIQCV | 6-Way ePIV | ePIV | Energy Valve |
|---------------------------------------------|-------|------------|------|--------------|
| Glycol Monitoring                           |       |            |      | ■            |
| True Flow                                   |       | ■          | ■    | ■            |
| Dynamic Balancing                           | ■     | ■          | ■    | ■            |
| Energy Meter                                |       |            |      | ■            |
| Power Control                               |       |            |      | ■            |
| Delta T Manager                             |       |            |      | ■            |
| Cloud Analytics                             |       |            |      | ■            |
| Live Data                                   |       | ■          | ■    | ■            |
| Coil History                                |       |            |      | ■            |
| CCV Technology                              | ■     | ■          | ■    | ■            |
| 0% Leakage                                  | ■     | ■          | ■    | ■            |
| Field Configuration*                        | ■     | ■          | ■    | ■            |
| BACnet MS/TP, Modbus RTU, MPbus, and Analog |       | ■          | ■    | ■            |
| BACnet IP and Modbus TCP/IP                 |       |            |      | ■            |

\*PIQCV is field adjustable.

## PIQCV

The PIQCV combines a differential pressure regulator with a 2-way control valve to supply a specific flow for each degree of ball opening regardless of system pressure fluctuations. The valve performs the function of a balancing valve and control valve in one unit. Available in sizes ½ and ¾ inch.

### FEATURES

- Smallest pressure independent characterized ball valve in the market
- Actuator runs at 0.3 W saving energy and transformer power
- Flow is adjustable at the actuator and always perfectly balanced
- Self-cleaning ball valve technology avoids clogging and offers zero leakage eliminating energy loss

### Actuator snap fit design

Easily connects to the actuator without tools

### Blow-out proof stem

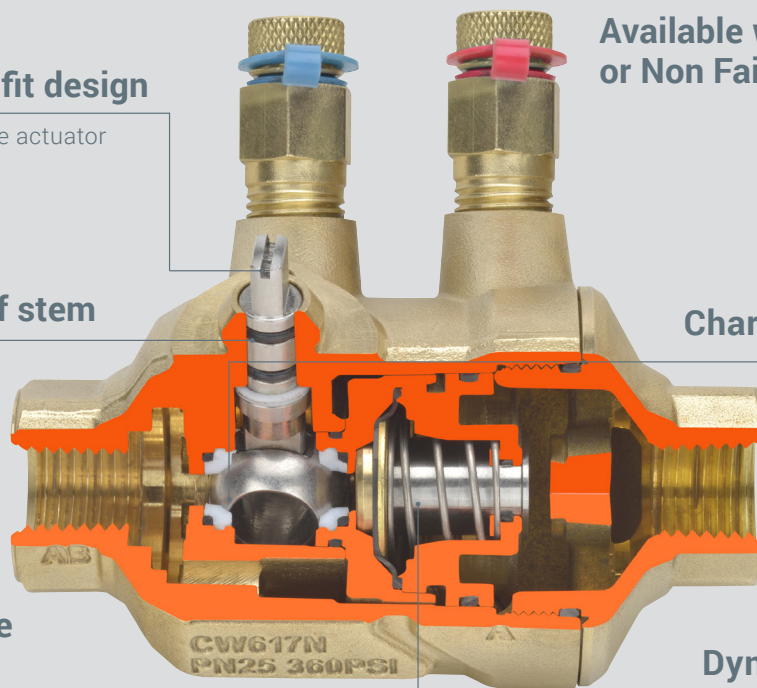
Teflon® disc and double O-ring design for long service life

### Field adjustable max flow

### Available with Fail-Safe or Non Fail-Safe Actuator

### Characterized ball

### Dynamic pressure regulator

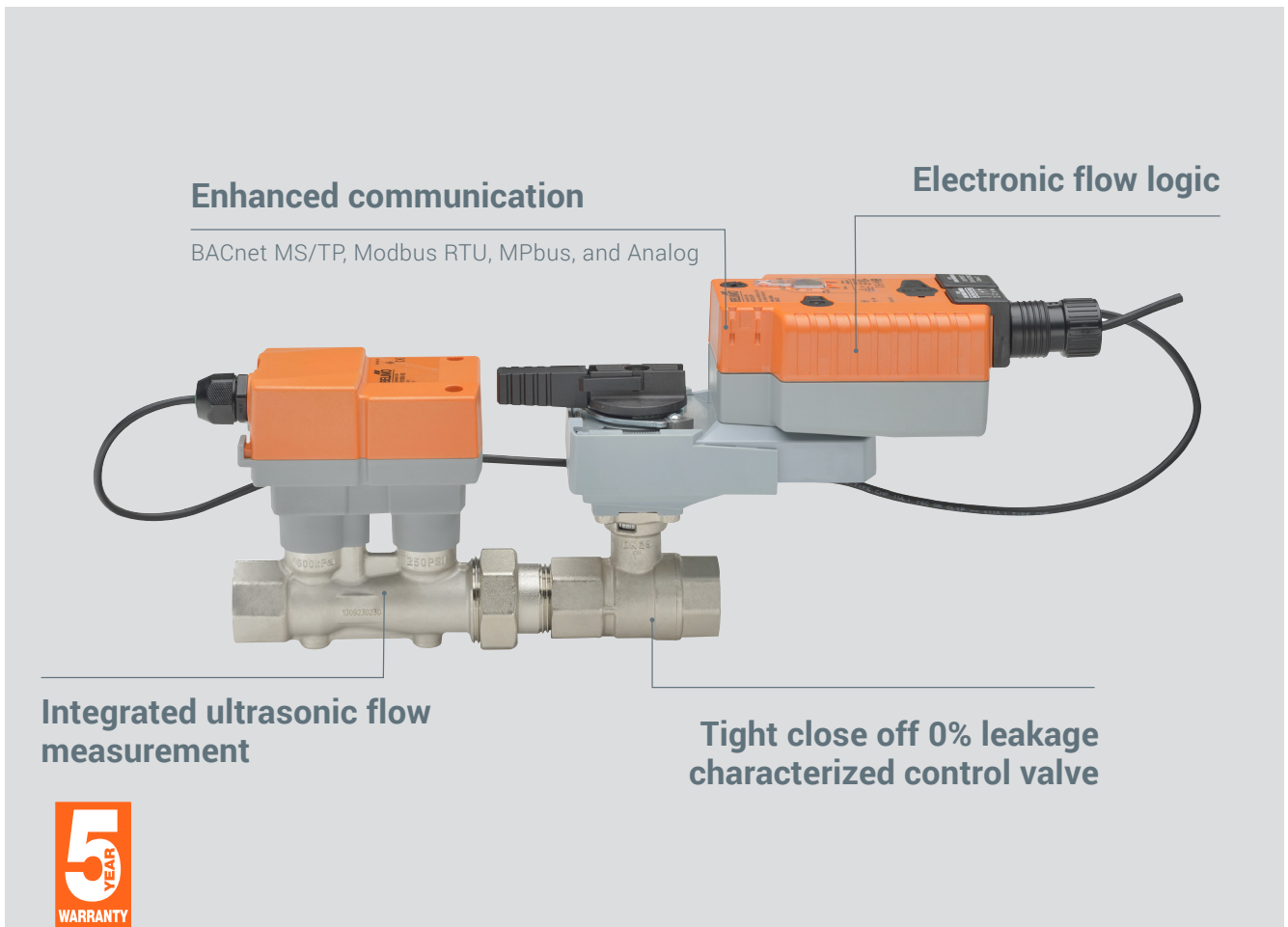


## ePIV

The 2-way ePIV is a pressure independent characterized control valve with an integrated electronic flow meter and a powerful control algorithm. The ePIV integrated control signal maintains flow set point regardless of system pressure variations with its powerful algorithm that modulates the valve based on its measured true flow. Available in sizes ½ to 6 inches.

### FEATURES

- Compensates for pressure variations and performs dynamic balancing to maintain system performance at varying loads
- Valves selected based on coil flow rate; no valve authority and Cv calculations are needed
- Maintains pressure independent operation eliminating the need for manual balancing valves, reducing installation and commissioning
- High close-off pressure and zero leakage eliminates “ghost energy” losses in the system



## 6-way ePIV

The 6-way ePIV is the only one of its kind designed for chilled beams, radiant ceiling panels, and 4-pipe fan coil units providing true flow and dynamic balancing. It has the functionality of up to four 2-way control valves and two balancing valves thus saving material and installation time. Available in sizes ½ and ¾ inch.

### FEATURES

- Performs changeover and modulating control for single coil 4-pipe system
- Provides different flow settings for heating and cooling
- Zero percent leakage saves energy
- Reduced material and installation cost
- Simplified commissioning with flow measurement and verification

### Enhanced communication

BACnet MS/TP, Modbus RTU, MPbus, and Analog

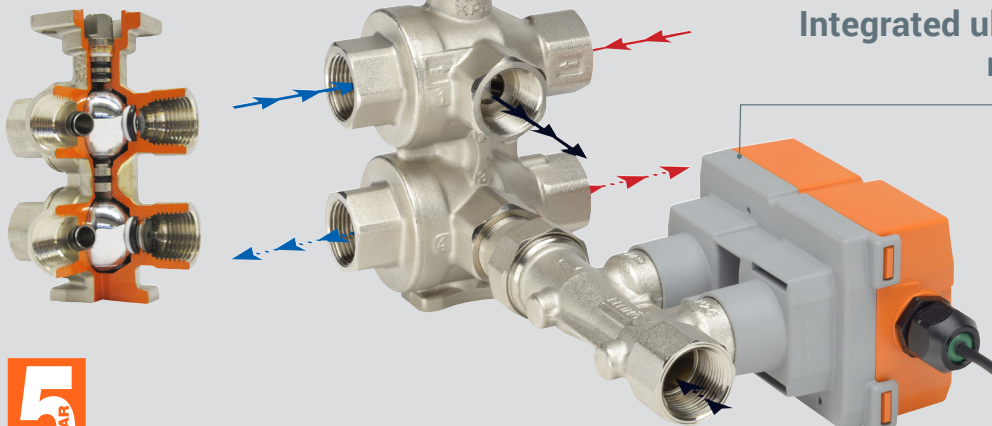


### Near Field Communication

Allows for fast programming, commissioning and troubleshooting

### Modulating control with electronic flow logic

### Integrated ultrasonic flow measurement

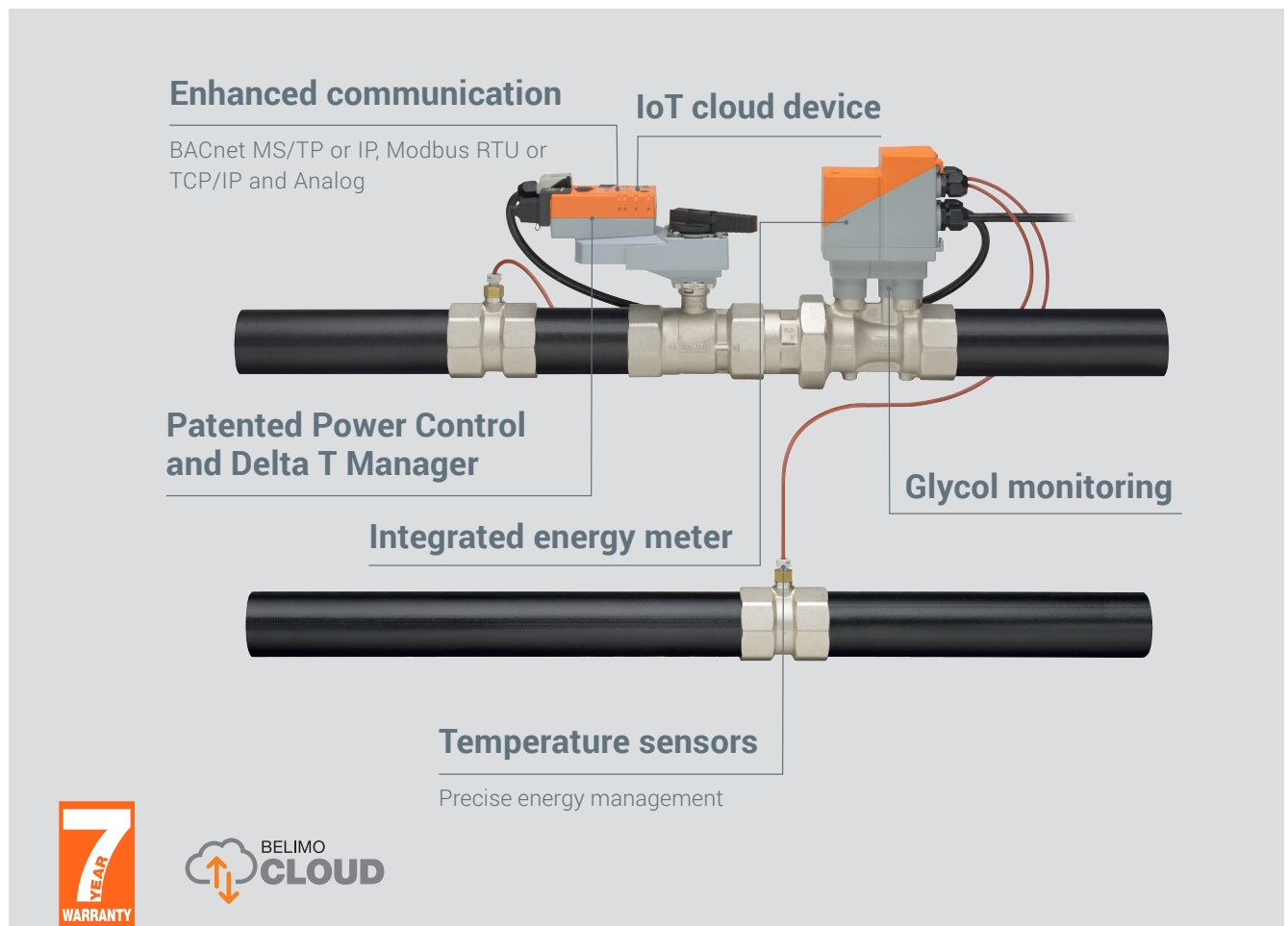


## Belimo Energy Valve™

The Belimo Energy Valve is an Internet of Things (IoT) cloud device utilizing advanced analytic technology leveraging captured system data to improve coil and system performance achieving increased energy savings. Connecting to the Belimo Cloud offers lifetime data storage, setpoint recommendations, performance reporting, along with an additional two years of warranty. Local data storage and trending capability coupled with BACnet, Modbus, and analog communication provide the ability monitor energy usage and develop energy savings strategies through the BAS. Available in sizes ½ to 6 inches.

### FEATURES

- Patented Power Control and Delta T Manager logic built-in optimizes the available energy of the coil by maintaining Delta T
- Glycol monitoring ensures concentration meets design needs reducing additional pumping and providing optimized heat exchange and safe operation
- Dynamic coil performance illustrates the operation of the coil in real time accurately providing transparency of power degradation and other operational issues
- Simplified commissioning with flow measurement and verification



# Solutions for Maximum Efficiency

| Product Range                     |            | Valve Nominal Size |         | Suitable Actuators |                      |
|-----------------------------------|------------|--------------------|---------|--------------------|----------------------|
| Valve Type                        | Flow (GPM) | Inches             | DN [mm] | Non-Fail-Safe      | Electronic Fail-Safe |
| PIQCV                             | 0.9        | ½                  | 15      | CQ                 | CQK                  |
|                                   | 2.0        | ½                  | 15      |                    |                      |
|                                   | 4.3        | ½                  | 15      |                    |                      |
|                                   | 9.0        | ¾                  | 20      |                    |                      |
| 6-way ePIV                        | 5.5        | ½                  | 15      | LRX24              | ---                  |
|                                   | 10.3       | ¾                  | 20      |                    |                      |
| ePIV and Energy Valve             | 5.5        | ½                  | 15      | LRX24              | AKRX24               |
|                                   | 10.3       | ¾                  | 20      |                    |                      |
|                                   | 18.2       | 1                  | 25      |                    |                      |
|                                   | 28.5       | 1¼                 | 32      | NRX24              |                      |
|                                   | 39.6       | 1½                 | 40      |                    |                      |
|                                   | 76.1       | 2                  | 50      | ARX24              |                      |
|                                   | 100        | 2                  | 50      |                    |                      |
| ePIV and Energy Valve<br>ANSI 125 | 127        | 2½                 | 65      | GRX24              | GKRX24               |
|                                   | 180        | 3                  | 80      |                    |                      |
|                                   | 317        | 4                  | 100     |                    |                      |
|                                   | 495        | 5                  | 125     |                    |                      |
|                                   | 713        | 6                  | 150     |                    |                      |
| ePIV and Energy Valve<br>ANSI 250 | 127        | 2½                 | 65      | EVX24...(-L)       | AVKX24...(-L)        |
|                                   | 180        | 3                  | 80      |                    |                      |
|                                   | 317        | 4                  | 100     | EVX24...(-B)       | AVKX24...(-B)        |
|                                   | 495        | 5                  | 125     |                    |                      |
|                                   | 713        | 6                  | 150     |                    |                      |



Belimo Americas

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