ENERGY VALVE 3.0
Solving Low Delta T Leveraging IoT
Agenda

- Low Delta T
- Features and Benefits
- Success Stories
- Industry Recognition
Low Delta T Syndrome is Industry Wide
Coils and valves are not sized properly

Systems are not dynamically balanced

Coils foul and degrade with age or lack proper maintenance

Too much water is delivered

Low Delta T May Occur When
Central Plants Increase Rate for Low Delta T

FLOW

DELTA T

$\text{PER TON/H RELATIVE TO DELTA T}$

- **FLOW**
- **DELTA T**

42°F

Entering water

58°F

Return water

Central Plants Increase Rate for Low Delta T
Energy Valve 3.0

The world’s most advanced pressure-independent valve
## Energy Valve Overview

<p>| | |</p>
<table>
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| **1** | **Actuator**  
Webserver, data logger, BACnet, Modbus, MP-Bus, Cloud capability |
| **2** | **Electronic Flow Meter**  
True Flow, Wet calibrated |
| **3** | **Temperature Sensors**  
Platinum based RTD for supply and return, allowing BTU measurement |
| **4** | **Logic**  
Delta T Management, Cloud Optimization, Power Control algorithm |

**Measure, Observe, Record and Trend Performance Data**
New Features

- Enhanced Delta T Management
- Ultra Sonic Flowmeter
- Glycol Monitoring
- Enhanced User Interface
- Cloud-Based Services
Enhanced User Interface
Enhanced User Interface

Streamlined design
Live data points

Belimo-ZWT Demo EV55

- 1.4 gpm Flow
- 2.4 kW Power
- 35% Valve position
- 0% Monoethylen
- 54.4°F Temp T2
- 42.7°F Temp T1

<table>
<thead>
<tr>
<th>Status</th>
<th>Control function</th>
<th>Setpoint DDC</th>
<th>Delta temperature</th>
<th>Delta T limiting status</th>
</tr>
</thead>
<tbody>
<tr>
<td>OK</td>
<td>Simulated operation</td>
<td>35.3%</td>
<td>11.7°F</td>
<td>dT Manager standby</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35.3% Position</td>
<td></td>
<td>dT Setpoint</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Simulated input</td>
<td></td>
<td>2.8°F</td>
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Enhanced Communication
Unlike any actuator on the market

- 2-10 VDC
- 0.5-10 VDC
Cloud-Based Services
Leveraging the Belimo Cloud

Cloud-Based Services
Remote cloud communication to monitor energy usage and leverage system data

Automatic Optimization
Capture system data to automatically improve coil and system performance via advanced analytic technology

Advanced Efficiency
Increase plant efficiency and mitigate the Low Delta T syndrome to reduce pumping and chiller/boiler operating costs
Energy Valve 3.0 Cloud Services
Advanced optimization with multiple benefits

- **Lifetime Data Access**
- **Performance Report**
- **Online Support**
- **Software Updates**
- **Increase Warranty to 7 Years**
- **Lifetime Data Access**

**Optimization of ΔT and Flow Settings**
Success Story
Massachusetts Institute of Technology (MIT)

Average Delta T rose from 6.15°F to 12.14°F, reducing chilled water flow by 49%.

Annual savings were estimated to be as high as $1.5 million.
Success Story
Hillsdale College Mossey Library & Delp Hall

Delta T Increased
3-7°F to 10-12°F
reducing usage of chiller by
300 hours/year

Electricity consumption reduced by as much as
16%
Industry Recognition

ACME 2016
Winner of Innovation Award

Acrex 2015
Winner of award of excellence

ControlTrends 2014
Best commercial product of the year

ControlTrends 2012
Energy Saving Product of the Year

AHR Awards 2017
Best Energy Efficient Product

2014 AHR Innovation Award
Finalist in the Category of Building Automation

2015 Energy Show
Technical Innovation of the Year

2017 AHR Innovation Award
Winner in the Category of Building Automation

BCIA Awards 2013
Best Energy Efficient Product

HVR Awards 2012
Winner of Energy Smart Automation Award

Shanghai Energy IAC 2014
Winner of Energy Smart Automation Award

Silver Trophy

Silver Trophy Award 2013
For more information and access to useful tools and resources, visit energyvalve.com