



# i-Vu® Building Automation System

## i-Vu® Smart Valves

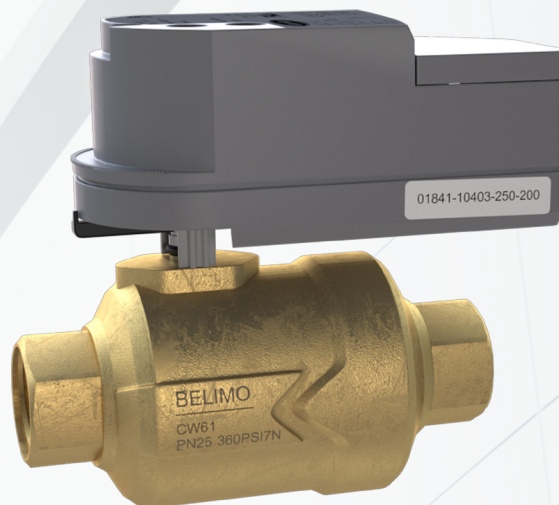
Pressure Independent



*The i-Vu® Building Automation System provides everything you need to access, manage, and control your building, including the powerful i-Vu user interface, plug-and-play BACnet controllers, and state-of-the-art Carrier equipment.*

Carrier's i-Vu® smart valves are designed for maximum efficiency in tight spaces. They combine 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. As such, the valves perform the function of a balancing valve and control valve in one unit.

The i-Vu smart valves are operated by a rotary actuator. This actuator is controlled by an Act Net communications signal from the controller which moves the ball of the valve to the desired position.



## Features

### Communicating Actuators

Valves feature communicating actuators, eliminating the need to use physical I/O on the controller. Up to two valves can be connected to the Act Net bus on any Act Net-enabled controller. Each valve is pre-addressed for quick commissioning.

### Remote Accessibility

Valves can be accessed remotely via the i-Vu system, enabling comprehensive analysis and quick error detection with Fault Detection & Diagnostics (FDD).

### Electronic Fail-safe

Actuators utilize super capacitors to drive actuator to fail state (open or closed, based on part number) on loss of power.

### Exact Position Feedback

Position feedback is communicated to the i-Vu building automation system over the Act Net bus, helping to facilitate commissioning and ensure proper operation.

### Ball Valve Technology

Unlike short stroke globe valves, the self-cleaning QCV ball helps minimize energy losses caused by clogging and eliminates overflow from pump pressure seat lift. In addition, high close-off capabilities ensure shut-off (0% A – AB leakage) and allow for true equal percentage flow characteristics.

### Actuator with Patented Brushless DC Motor

The power consumption of the brushless DC motor is 2.5W (fail safe) and .6W (fail last position) when running and .5W (fail safe) and .4W (fail last position) when holding, helping to save energy and transformer power. This also helps eliminate failures due to stalled motors, helps prolongs actuator life, and also allows for more units to be powered by a single transformer.

### Snap Fit

The valve bodies easily connect to the actuator, allowing operators and technicians to install valves quickly, easily, and without the use of tools. This helps simplify commissioning and helps reduce labor costs. In addition, it makes it easy to retrofit existing non-communicating valves.

### Field Adjustable Max Cv/Flow

Valves can be easily adjusted either locally or remotely using the i-Vu building automation system to ensure that necessary design requirements are met.

### Stem Extension for Insulation

Unlike conventional zone valve actuators, which are normally covered by pipe insulation, the valve stem extension allows for easy actuator removal without damaging the surrounding insulation, helping simplify operation and maintenance activities.



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Pressure Independent

### Specifications

#### Actuator Specifications

<b>Power consumption</b>	2.5W running, 0.5W holding (fail safe)
	.6W running, .4W holding (fail last position)

#### Control Type

Act Net: Communication from any Act Net-enabled controller

<b>Electrical connection</b>	3 ft. [1 m] cable with 1/2" conduit fitting screw terminals
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<b>Power supply</b>	24 VAC/DC
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<b>Transformer sizing</b>	5 VA
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#### Valve Specifications

<b>Service</b>	chilled or hot water, 60% glycol
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<b>Flow characteristic</b>	equal percentage
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<b>Controllable flow range</b>	75°
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<b>Sizes</b>	1/2", 3/4"
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<b>Materials</b>	Body - forged brass Ball - stainless steel Stem - stainless steel Seats - Teflon® PTFE O-rings - PTFE
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<b>End fitting</b>	NPT female
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<b>Media temp. range</b>	36°F to 212°F [2°C to 100°C]
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<b>Media temp. limit</b>	250°F [120°C]
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<b>Max operating temperature</b>	212°F [100°C]
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<b>Body pressure rating</b>	360 psi
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<b>Max Close-off pressure</b>	200 psi
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<b>Pressure (ΔP)</b>	5 to 50 psi
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<b>Leakage</b>	0%
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Assembled in the USA

### Part Numbers & Default Characteristics

#### Fail Mode "Closed" Models

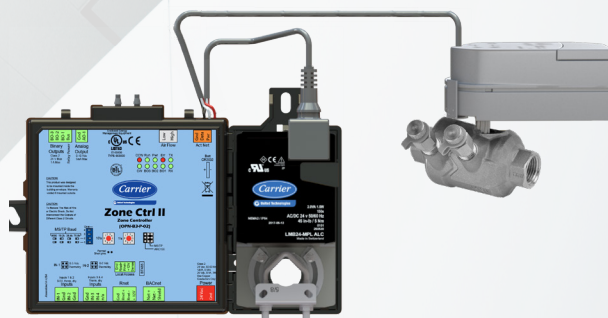
Part #	Size	Flow Rate GPM	Address
Z2050QPT-B+CQK-R-04-C	1/2" 2-way	0.9	4
Z2050QPT-B+CQK-R-05-C	1/2" 2-way	0.9	5
Z2050QPT-D+CQK-R-04-C	1/2" 2-way	2.0	4
Z2050QPT-D+CQK-R-05-C	1/2" 2-way	2.0	5
Z2050QPT-F+CQK-R-04-C	1/2" 2-way	4.3	4
Z2050QPT-F+CQK-R-05-C	1/2" 2-way	4.3	5
Z2075QPT-G+CQK-R-04-C	3/4" 2-way	9.0	4
Z2075QPT-G+CQK-R-05-C	3/4" 2-way	9.0	5

#### Fail Mode "Open" Models

Part #	Size	Flow Rate GPM	Address
Z2050QPT-B+CQK-L-04-C	1/2" 2-way	0.9	4
Z2050QPT-B+CQK-L-05-C	1/2" 2-way	0.9	5
Z2050QPT-D+CQK-L-04-C	1/2" 2-way	2.0	4
Z2050QPT-D+CQK-L-05-C	1/2" 2-way	2.0	5
Z2050QPT-F+CQK-L-04-C	1/2" 2-way	4.3	4
Z2050QPT-F+CQK-L-05-C	1/2" 2-way	4.3	5
Z2075QPT-G+CQK-L-04-C	3/4" 2-way	9.0	4
Z2075QPT-G+CQK-L-05-C	3/4" 2-way	9.0	5

#### Fail Mode "Last Position" Models

Part #	Size	Flow Rate GPM	Address
Z2050QPT-B+CQK-L-04-C	1/2" 2-way	0.9	4
Z2050QPT-B+CQK-L-05-C	1/2" 2-way	0.9	5
Z2050QPT-D+CQK-L-04-C	1/2" 2-way	2.0	4
Z2050QPT-D+CQK-L-05-C	1/2" 2-way	2.0	5
Z2050QPT-F+CQK-L-04-C	1/2" 2-way	4.3	4
Z2050QPT-F+CQK-L-05-C	1/2" 2-way	4.3	5
Z2075QPT-G+CQK-L-04-C	3/4" 2-way	9.0	4
Z2075QPT-G+CQK-L-05-C	3/4" 2-way	9.0	5



The i-Vu smart valves are controlled by an Act Net communications signal from the controller.



CONTROLS EXPERT

Tested. Certified. Factory Authorized.

For more information, contact  
your local Carrier Controls Expert.

Controls Expert Locator:  
[www.carrier.com/controls-experts](http://www.carrier.com/controls-experts)

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