Carrier

i-Vu® Building Automation System
i-Vu® Smart Valves
Pressure Dependent

Carrier's i-Vu® smart valves are designed for maximum efficiency in tight spaces. Equipped with a 2-way or 3-way space saving ball valve, the installation height is 4.33 inches (110 mm).

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 0.5W (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 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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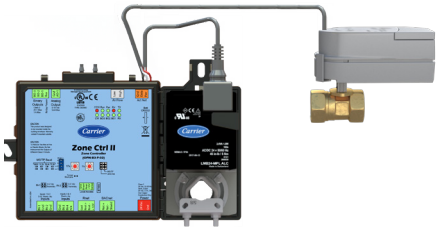
Specifications

Actuator Specifications	
Power Consumption	2.5W running, .5W holding (fail safe) .6W running, .4W holding (fail last position)
Control Type	Act Net: Communication from any Act Net-enabled controller
Electrical Connection	3 ft. [1 m] cable
Power Supply	24 VAC/DC
Transformer Sizing	8 VA

Valve Specifications

Service	Chilled or hot water, 60% glycol
Flow Characteristic	Equal percentage (2-way) Linear (3-way diverting or switching)
Controllable Flow Range	75° (2-way), 90° (3-way)
Sizes	½", ¾"
Materials	Body - forged brass Ball - chrome plated brass Stem - brass Seats - Teflon® PTFE O-rings - EPDM (lubricated)
End Fitting	NPT female
Media Temp. Range	36°F to 212°F [2°C to 100°C]
Media Temp. Limit	250°F [120°C]
Max Operating Temperature	212°F [100°C]
Max Close-Off Pressure	75 psi
Pressure (ΔP)	40 psi
Leakage	0%
Assembled in the USA	



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

Part Numbers & Default Characteristics

Fail Mode "Closed" Models

Part #	Size	Flow Coef. Cv	Address
Z3050Q-E+CQK-R-04-C	1/2" 3-way	1	4
Z3050Q-E+CQK-R-05-C	1/2" 3-way	1	5
Z2050Q-F+CQK-R-04-C	1/2" 2-way	1.4	4
Z2050Q-F+CQK-R-05-C	1/2" 2-way	1.4	5
Z3050Q-H+CQK-R-04-C	1/2" 3-way	2.7	4
Z3050Q-H+CQK-R-05-C	1/2" 3-way	2.7	5
Z2050Q-J+CQK-R-04-C	1/2" 2-way	5.9	4
Z2050Q-J+CQK-R-05-C	1/2" 2-way	5.9	5
Z3075Q-J+CQK-R-04-C	3/4" 3-way	4.6	4
Z3075Q-J+CQK-R-05-C	3/4" 3-way	4.6	5
Z2075Q-K+CQK-R-04-C	3/4" 2-way	9.8	4
Z2075Q-K+CQK-R-05-C	3/4" 2-way	9.8	5

Fail Mode "Open" Models

Part #	Size	Flow Coef. Cv	Address
Z3050Q-E+CQKL-04-C	1/2" 3-way	1	4
Z3050Q-E+CQK-L-05-C	1/2" 3-way	1	5
Z2050Q-F+CQK-L-04-C	1/2" 2-way	1.4	4
Z2050Q-F+CQK-L-05-C	1/2" 2-way	1.4	5
Z3050Q-H+CQK-L-04-C	1/2" 3-way	2.7	4
Z3050Q-H+CQK-L-05-C	1/2" 3-way	2.7	5
Z2050Q-J+CQK-L-04-C	1/2" 2-way	5.9	4
Z2050Q-J+CQK-L-05-C	1/2" 2-way	5.9	5
Z3075Q-J+CQK-L-04-C	3/4" 3-way	4.6	4
Z3075Q-J+CQK-L-05-C	3/4" 3-way	4.6	5
Z2075Q-K+CQK-L-04-C	3/4" 2-way	9.8	4
Z2075Q-K+CQK-L-05-C	3/4" 2-way	9.8	5

Fail Mode "Last Position" Models

Part #	Size	Flow Coef. Cv	Address
Z3050Q-E+CQ-04-C	1/2" 3-way	1	4
Z3050Q-E+CQ-05-C	1/2" 3-way	1	5
Z2050Q-F+CQ-04-C	1/2" 2-way	1.4	4
Z2050Q-F+CQ-05-C	1/2" 2-way	1.4	5
Z3050Q-H+CQ-04-C	1/2" 3-way	2.7	4
Z3050Q-H+CQ-05-C	1/2" 3-way	2.7	5
Z2050Q-J+CQ-04-C	1/2" 2-way	5.9	4
Z2050Q-J+CQ-05-C	1/2" 2-way	5.9	5
Z3075Q-J+CQ-04-C	3/4" 3-way	4.6	4
Z3075Q-J+CQ-05-C	3/4" 3-way	4.6	5
Z2075Q-K+CQ-04-C	3/4" 2-way	9.8	4
Z2075Q-K+CQ-05-C	3/4" 2-way	9.8	5

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For more information, contact your local Carrier Controls Expert.

Controls Expert Locator:
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