

Pressure Independent Control Valves and Actuators Series



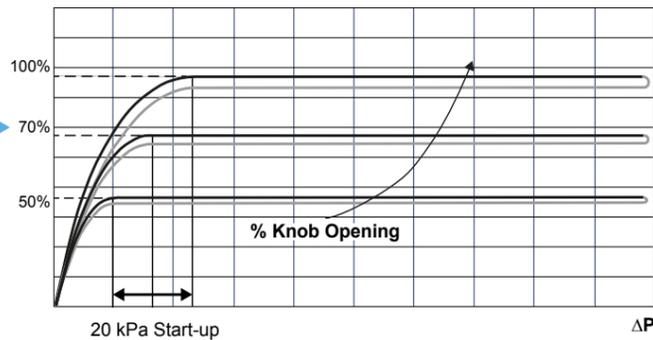
Pressure Independent Control Valves

A PICV replaces a traditional control valve and water pressure balancing set. It automatically limits the water flow rate, irrespective of pressure and allows the flow to be modulated to match the load.

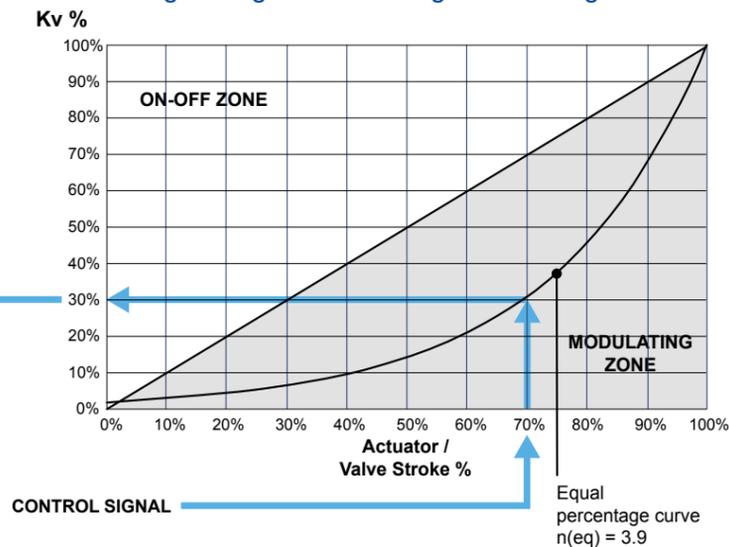
Once the maximum flow setting is pre-set using the graduated scale, the flow will be modulated by means of the control valve and actuator - independent of the system pressure. This results in stable flow and energy efficiency, regardless of what is happening elsewhere in the system.

PIC Valves are particularly well suited to use with inverter driven pumps and variable load circuits.

Dynamic curve
Provides constant flow at any pump head



Control curve
Changes design flow according to control logic of BMS



VP1000 Valves Ball Model



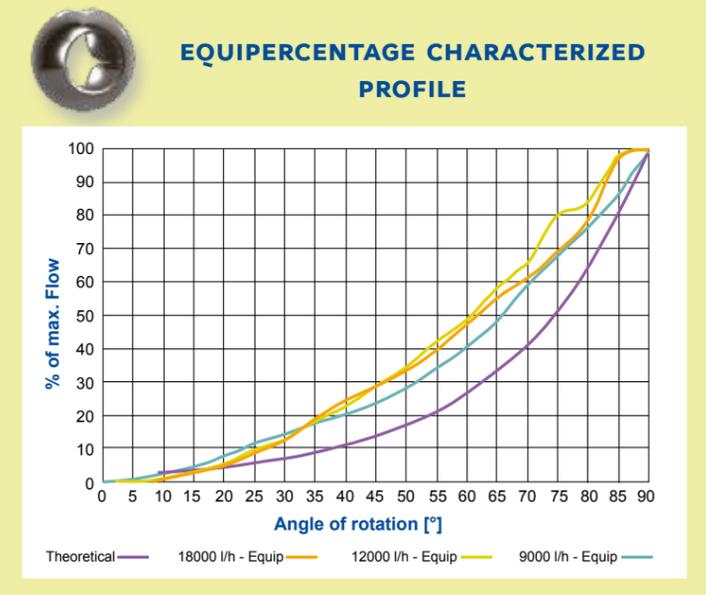
MANUAL SHUT OFF
For easy maintenance ... integral isolation feature.



FLUSHING MODE
Control valve rotated by 180°, profiled opening outside flow path. The valve has now full port passage, allowing twice maximum flow, for proper flushing and cleaning.



ACTUATOR ASSEMBLY
Assemblies with 8Nm Non Spring Return on Spring Return Rotary Actuators.



VP1000 Valves Axial Model



FULL STROKE
Separate pressure control and flow chambers allow for full stroke accuracy at any reduced flow setting.



ADJUSTMENT KNOB
The maximum flow setting can be set without removing the actuator.



CARTRIDGE
The single piece cartridge gives easier maintenance and flushing.

VPA Flanged Axial Model



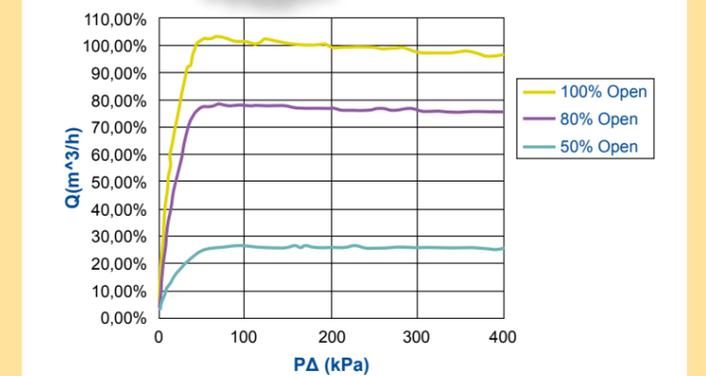
The S-shape design of the valve body flow path minimises internal resistance and turbulence.

Pressure measuring connector can provide convenience for customers to test flow at site.



ACTUATORS OFFER:

- High Accuracy of Flow Control
- Four different input/output
- Display for function information on 3000N model



Actuators

VA-7070 Thermal Actuator



Codes	Power Supply	Control Type
VA-7070-21	24 VAC/VDC	ON/OFF or DAT Normally Open (Stem Extends when energized)
VA-7070-23	230 VAC	
VA-7071-21	24 VAC/VDC	ON/OFF or DAT Normally Closed (Stem Retracts when energized)
VA-7071-23	230 VAC	

- 0550390101 Adapter must be ordered separately

VA-7090 Thermal Actuator



Codes	Power Supply	Control Type
VA-7090-21	24 VAC	Proportional Normally Open (Stem Extends when energized)
VA-7091-21	24 VAC	Proportional Normally Closed (Stem Retracts when energized)

- 0550390101 Adapter must be ordered separately

M9108 Non Spring Return Valve Actuator



Codes	Power Supply	Control Type	Auxiliary Switches
M9108-AGA-5	24 VAC/VDC	ON/OFF and Floating	---
M9108-AGC-5			•
M9108-ADA-5			---
M9108-ADC-5	230 VAC	Proportional	•
M9108-GGA-5	24 VAC/VDC		---
M9108-GGC-5			•

- M9000-525-5 linkage necessary

VAP Non Spring Return Plant Valve Actuator



Codes	Power Supply	Control Type
VAP1000-24-C	24 VAC	0(2)-10V,0(4)-20mA
VAP3000-24-C	24 VAC	0(2)-10V,0(4)-20mA

Valves

VP1000 Valves - Axial Model



Flow Rate Range	Codes	Body Size	Connection Size	PN	Δp Range (kPa)
0.045 ÷ 0.15 m³/h 0.013 ÷ 0.042 l/s	VP100AAA	DN15	Rc ½" Female	25	20 ÷ 400
0.060 ÷ 0.6 m³/h 0.017 ÷ 0.167 l/s	VP100AAE	DN15	Rc ½" Female	25	25 ÷ 400
0.078 ÷ 0.78 m³/h 0.022 ÷ 0.217 l/s	VP100AAG	DN15	Rc ½" Female	25	25 ÷ 400
0.1 ÷ 1 m³/h 0.028 ÷ 0.278 l/s	VP100BAJ	DN20	Rc ¾" Female	25	30 ÷ 400
0.45 ÷ 1.5 m³/h 0.125 ÷ 0.417 l/s	VP101BAN	DN20	Rc ¾" Female	25	35 ÷ 400



VP1000 Valves - Axial Model

Flow Rate Range	Codes	Body Size	Connection Size	PN	Δp Range (kPa)
0.22 ÷ 2.2 m³/h 0.061 ÷ 0.611 l/s	VP100CAU	DN25	1" Union Female	25	25 ÷ 400
0.27 ÷ 2.7 m³/h 0.075 ÷ 0.75 l/s	VP100CAW	DN25	1" Union Female	25	30 ÷ 400
0.27 ÷ 2.7 m³/h 0.075 ÷ 0.75 l/s	VP100DAW	DN32	1¼" Union Female	25	35 ÷ 400
0.3 ÷ 3 m³/h 0.083 ÷ 0.833 l/s	VP100DAY	DN32	1¼" Union Female	25	35 ÷ 400

VP1000 Valves - Ball Model



Flow Rate Range	Codes	Body Size	Connection Size	PN	Δp Range (kPa)
1.8 ÷ 6 m³/h 0.5 ÷ 1.667 l/s	VP101DBB	DN40	1¼" Union Female	16	30 ÷ 600
1.8 ÷ 6 m³/h 0.5 ÷ 1.667 l/s	VP101EBB	DN40	1½" Union Female	16	30 ÷ 600
0.9 ÷ 9 m³/h 0.25 ÷ 2.5 l/s	VP101EBC	DN40	1½" Union Female	16	35 ÷ 600
3.3 ÷ 11 m³/h 0.917 ÷ 3.056 l/s	VP101EBD	DN40	2" Union Female	16	40 ÷ 600
1.2 ÷ 12 m³/h 0.333 ÷ 3.333 l/s	VP101FBD	DN50	2" Union Female	16	30 ÷ 400
1.8 ÷ 18 m³/h 0.5 ÷ 5 l/s	VP101FBF	DN50	2" Union Female	16	35 ÷ 400
1.8 ÷ 18 m³/h 0.5 ÷ 5 l/s	VP101GBF	DN50	Rc 2½" Male	16	35 ÷ 400



VPA Valves

Flow Rate Range	Codes	Body Size	Connection Size	PN	Δp Range (kPa)
3.9 ÷ 13 m³/h 1.092 ÷ 3.64 l/s	VPA050-C	DN50	Flange ISO 7005-2	16	35 ÷ 400
6.3 ÷ 21 m³/h 1.74 ÷ 5.8 l/s	VPA065-C	DN65	Flange ISO 7005-2	16	35 ÷ 400
8.4 ÷ 28 m³/h 2.34 ÷ 7.8 l/s	VPA080-C	DN80	Flange ISO 7005-2	16	35 ÷ 400
15 ÷ 50 m³/h 4.17 ÷ 13.9 l/s	VPA100-C	DN100	Flange ISO 7005-2	16	35 ÷ 400
27 ÷ 90 m³/h 7.5 ÷ 23 l/s	VPA125-C	DN125	Flange ISO 7005-2	16	35 ÷ 400
43.5 ÷ 145 m³/h 12.09 ÷ 40.3 l/s	VPA150-C	DN150	Flange ISO 7005-2	16	35 ÷ 400

Actuators

Codes	Power Supply	Control Type
VA-7482-1001	24 VAC/DC	Proportional 3.2 mm Electrical Stroke

Codes	Power Supply	Control Type
VA-7480-0001	24 VAC	Floating 13 sec/mm
VA-7481-0001		Floating 8 sec/mm
VA-7480-0003	230 VAC	Floating 13 sec/mm
VA-7481-0003		Floating 8 sec/mm
VA-7482-8201	24 VAC	Proportional Self Calibrating

VA-7480 Motorized Actuator



Codes	Power Supply	Control Type
VA-7482-3001	24 VAC/DC	Proportional 6 mm Electrical Stroke

Codes	Power Supply	Control Type	Auxiliary Switches
VA9208-GGA-1	24 VAC/VDC	Proportional	---
VA9208-GGC-1			•
VA9208-AGA-1			---
VA9208-AGC-1	24 VAC/VDC	Floating & ON/OFF	•
VA9208-BGA-1			---
VA9208-BGC-1			•
VA9208-BDA-1	230 VAC	ON/OFF	---
VA9208-BDC-1			•

VA9208 Spring Return Valve Actuators



Easy Valve selection

K_{VS} calculations are no longer necessary. The valve is simply selected according to the flow demand of the load.

Pumps Cost reduced

PICV guarantee the required flow to each terminal. Consequently the total flow is less and the system requires a lower pump head.

More comfort and additional saving

The morning start-up can easily cause system imbalance as loads boost to meet demand. Loads at circuit ends can become starved of flow and take longer to warm or cool. Eliminating this imbalance improves comfort and energy consumption.

Higher Efficiency on equipment

PICVs guarantee the required flow to each load without wasting pump power with pressure reducing sets. The lower pump head pressure and flow rates needed save energy and the cost of oversized pumps.



Simplified Balancing

PICVs makes circuits independent; decoupling them from the system. The balancing process is much simplified – just a check of the flow.

Flexibility

Plants can be commissioned zone-by-zone without the need for re-commissioning when additional plant or zones are added.

Three Valves in one piece

An immediate 50% labour cost reduction and less pipe space needed.

Johnson Controls delivers products, services and solutions that increase energy efficiency and lower operating costs in buildings for more than one million customers. Operating from 500 branch offices in more than 150 countries, we are a leading provider of equipment, controls and services for heating, ventilating, air-conditioning, refrigeration and security systems. We have been involved in more than 500 renewable energy projects including solar, wind and geothermal technologies. Our solutions have reduced carbon dioxide emissions by 16 million metric tons and generated savings of \$7.5 billion since 2000. Many of the world's largest companies rely on us to manage 1.5 billion square feet of their commercial real estate.