

# VPMA Pressure Independent Control Valves



The power behind **your mission**



# Pressure Independent Control Valves

## VPMA Series



DN32-DN50



DN65-DN250

### DN32...250, PN16, 2-way

The VPMA series Pressure Independent Control Valve is a combination of a differential pressure regulator and a regulating valve for flow adjustment. VPMA offers a remarkable adjustment flexibility.

In combination with VAP actuator, it automatically limits the water flow rate, irrespective of pressure and allows precise modulating control, therefore avoiding too high energy consumption.

Since VPMA valve performs the functions of two valves (balancing and adjustment), the installation costs are considerably reduced.

Since it is not necessary to adjust the valve after installation, the system adjustment costs is eliminated.

## FEATURES

- Wide range of operating differential pressure
- High control accuracy provides the equal percentage flow curve
- Pressure ports selectable (threaded valves)
- Built-in balancing tube allows compact size and avoid damages
- Dirty resistance allows long life characteristic

## ORDERING INFORMATION

VP	M	A	6	050	P	-C
VP	Balancing Valve					
	M	Type: mechanical pressure independent control				
		A	Typical Application: AHU			
			6	Pressure Rating: 6 = PN16, 7 = PN25		
				050	Valve Size: 032 = DN32 ... 250 = DN250	
					Without pressure ports	
				P	With pressure ports	
					-C	Place of origin

Note: See available product number for ordering in "Selection Table".



## SELECTION TABLE

Valve Number	Size	Flow rate max (m <sup>3</sup> /h)	Rated Stroke (mm)	Start-up $\Delta P$ (kPa)	$\Delta P$ max. (kPa)	Pressure Ports	Actuator Number
VPMA6032-C	DN32	4	20	35	500	No	VAP600S-24-C
VPMA6032P-C	DN32	4	20	35	500	Yes	VAP600S-24-C
VPMA6040-C	DN40	6	20	35	500	No	VAP600S-24-C
VPMA6040P-C	DN40	6	20	35	500	Yes	VAP600S-24-C
VPMA6050-C	DN50	8	20	35	500	No	VAP600S-24-C
VPMA6050P-C	DN50	8	20	35	500	Yes	VAP600S-24-C
VPMA6065P-C	DN65	21	20	35	500	Yes	VAP600S-24-C
VPMA6080P-C	DN80	28	40	35	500	Yes	VAP1000L-24-C
VPMA6100P-C	DN100	50	40	35	500	Yes	VAP1000L-24-C
VPMA6125P-C	DN125	90	40	35	500	Yes	VAP1000L-24-C
VPMA6150P-C	DN150	145	40	35	500	Yes	VAP1000L-24-C
VPMA6200P-C	DN200	208	40	35	500	Yes	VAP3000L-24-C
VPMA6250P-C	DN250	240	40	35	500	Yes	VAP3000L-24-C

## TECHNICAL SPECIFICATIONS

- Pressure Rating: PN16
- Fluid Type: Regulation of hot / chilled water with glycol up to max. 50% vol. in HVAC system
- Fluid Temperature: -10°C ~ 120°C
- Flow Characteristic: Equal percentage
- Stem Movement: PDT (Push Down To Close)
- Leakage:  $\leq 0.01\%$  Kvs (ANSI Class IV IEC 60534-4)
- Flow Rate Accuracy:  $\pm 10\%$
- Pipe Connection: DN32-DN50 Threaded ISO7-1 Rp  
DN65-DN250 Flanged ISO7005-2
- Pressure Port Connection: G1/4
- Ambient Operating Condition: -10 ~ 65°C,  $\leq 95\%$ RH, non-condensing
- Ambient Storage Condition: -25°C ~ 60°C,  $\leq 95\%$ RH, non-condensing
- Materials:
  - Valve Body: Brass, nickel-plated (DN32 - 50)  
Ductile Iron (DN65 - DN250)
  - Stem: Stainless Steel
  - Plug: Stainless Steel
  - Diaphragm: Enhanced EPDM
  - Stem Seal: PTFE + fluorine rubber

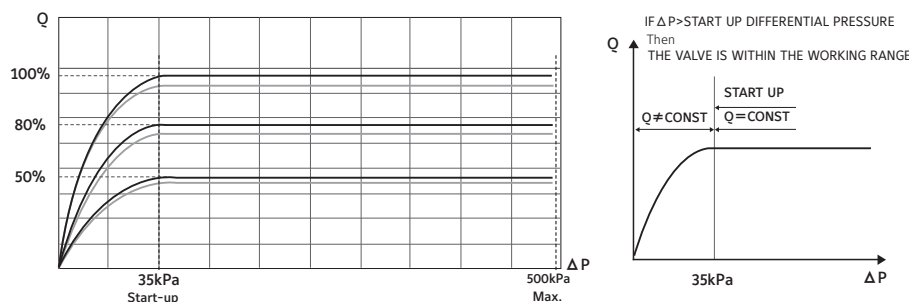


Fig 1: Dynamic Characteristic Curves

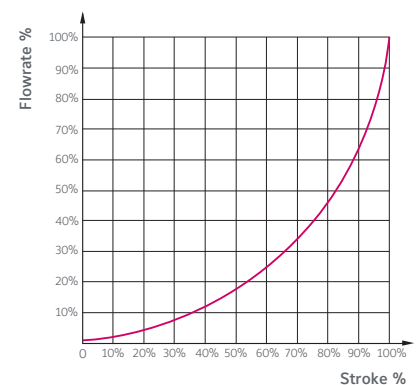


Fig 2: Flow characteristic - equal percentage

VALVE DIMENSIONS

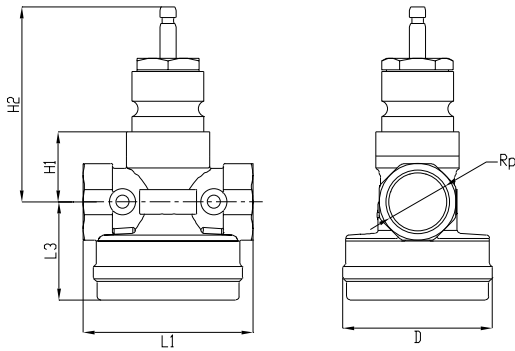


Fig 3: DN32-DN50

Size	Rp	L1 mm	L3 mm	D mm	H1 mm	H2 mm	Weight kg
DN32	1-1/4"	104	59	92	33	109.5	7.4
DN40	1-1/2"	115	63	105	36	112.5	9.4
DN50	2"	130	70.5	120	40.5	117	13

Note: Weight data is without pressure port fittings (≈50g).

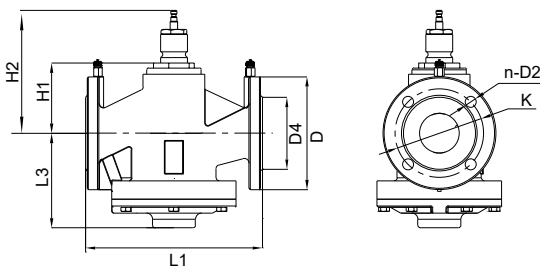


Fig 4: DN65-DN250

Size	D mm	n-D2 mm	D4 mm	K mm	L1 mm	L3 mm	H1 mm	H2 mm	Weight kg
DN65	185	4-19	118	145	290	155	115	191.5	24
DN80	200	8-19	132	160	310	167	148	224.5	34
DN100	220	8-19	156	180	350	181	150	226.5	49
DN125	250	8-19	184	210	400	197	163	239.5	63
DN150	285	8-23	211	240	480	222	198	274.5	82
DN200	340	12-23	266	295	500	245	180	256.5	129
DN250	405	12-28	319	355	600	277	210	286.5	195

ACTUATOR COMPATIBILITY

VAP SERIES NON-SPRING RETURN ACTUATOR

- Supply Voltage: 24VAC / DC±15%, 50/60Hz
- Control Type: Proportional control or Floating control
- Input Signal: 0 (2)~10VDC / 0 (4)~20mA or PAT (Position Adjustment Time)
- Feedback Signal (applies only to proportional control mode): 0(2)~10VDC / 0(4)~20mA
- Protection Class: IP65

Actuator Number	Rated Force (N)	Rated Stroke (mm)	Running Time (low speed) (s/mm)	Running Time (high speed) (s/mm)	Connection to Valve
VAP600S-24-C	600	30	2	1	S12
VAP1000L-24-C	1000	50			S14
VAP3000L-24-C	3000	50			S14

Note: See "VAP series Actuators" Product Bulletin for more information of actuators.



## WIRING DIAGRAM

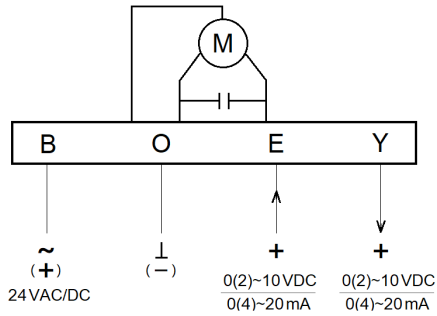


Fig 5: Proportional Application

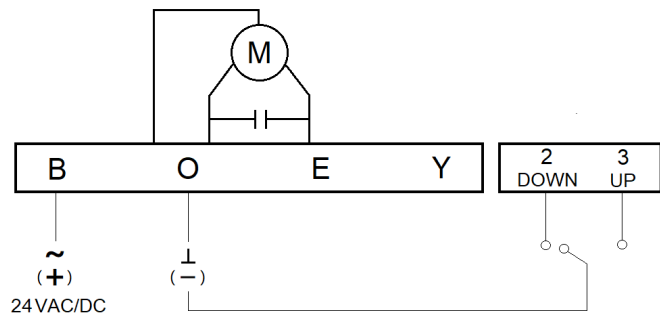


Fig 6: Floating Application

Note: See “VAP series Actuators” Product Bulletin for more operating of actuator and DIP switches settings.

## ASSEMBLY DIMENSIONS

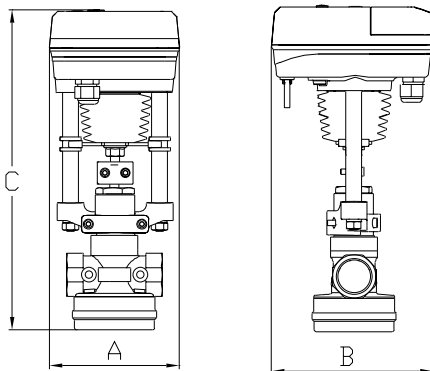


Fig 7: DN32 ~DN50 Assembly

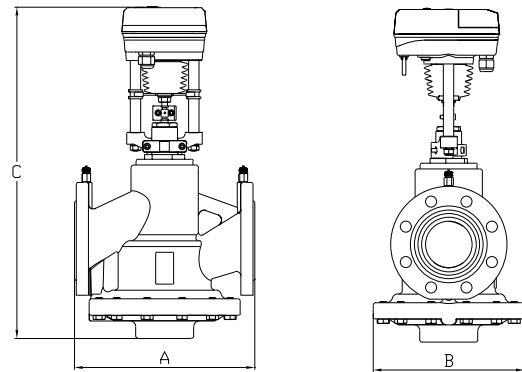


Fig 8: DN65 ~DN250 Assembly

Size	A (mm)	B (mm)	C (mm)
DN32	143	173	347
DN40	143	173	354
DN50	143	173	366
DN65	290	230	525
DN80	310	260	590
DN100	350	282	606
DN125	400	304	635
DN150	480	384	695
DN200	500	430	710
DN250	600	500	772

**Software License.** Any software (including firmware) included in or with this product is licensed, not sold, and is subject to the terms of the Johnson Controls End User License Agreement available at <https://www.johnsoncontrols.com/buildings/legal/digital/generaleula>. Any open source software included in or with this product is subject to the terms of its respective license. By using any of the foregoing software, you are also agreeing to be bound to the terms of such licenses.

## Johnson Controls:

At Johnson Controls, we transform the environments where people live, work, learn and play. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most. We deliver our promise in industries such as healthcare, education, data centers and manufacturing. With a global team of 105,000 experts in more than 150 countries and over 130 years of innovation, we are the power behind our customers' mission. Our leading portfolio of building technology and solutions includes some of the most trusted names in the industry, such as Tyco®, York®, Metasys®, Ruskin®, Titus®, Frick®, Penn®, Sabroe®, Simplex®, Ansul® and Grinnell®.

For more information, visit [www.johnsoncontrols.com](http://www.johnsoncontrols.com) or follow us [@johnsoncontrols](https://twitter.com/johnsoncontrols) on Twitter.

### AUSTRALIA

5 Lindwall Place,  
Rouse Hill,  
NSW 2155, Australia

### HONG KONG

11/F & 12/F,  
Millennium City 6,  
392 Kwun Tong Road,  
Kwun Tong,  
Kowloon, Hong Kong

### INDONESIA

Wisma 77, 16th Floor,  
Jl. S. Parman Kav. 77,  
Slipi,  
Jakarta 11410,  
Indonesia

### MALAYSIA

Luxor Tech Centre,  
Level 2,  
No. 1A, Jalan  
Teknologi, Taman  
Sains Selangor 1, Kota  
Damansara, PJU 5,  
47810 Petaling Jaya,  
Selangor Darul Ehsan,  
Malaysia

### SINGAPORE

31 International  
Business Park Road,  
#03-02, Lobby D & E,  
Singapore 609921

### KOREA

34, Mareunnae-ro,  
Jung-gu,  
Seoul, 04555, Korea

### THAILAND

Rama 9 Road, 719 KPN  
Tower,  
8th Floor, Bangkapi,  
Huaykwang,  
Bangkok, 10310  
Thailand

The power behind **your mission**

