

# VPIC series Pressure Independence Control Valves (PICV)



## Features

- Both body and internal components are made from high quality and high performance materials for durability.
- The modulating valve plug is the pressure balance type globe valve plug to ensure the adjustment precision.
- Built-in compact dynamic pressure balancing assembly
- High performance springs and membrane, a million times life cycle testing.
- Stable balancing performance and high precision.
- Built-in pressure introducing tube
- High close-off pressure, very low leakage.

## Specification Parameters

Size	DN15-DN250
PN	PN16 & PN25
Leakage	Stroke $\geq$ 20mm: Less than 0.02% of max flowrate Stroke $\leq$ 6mm: Less than 0.05% of max flowrate
Connections	DN15-DN50: Thread (BSPP) DN50-DN250: Flange (ISO7005-2)
Media	Applicable Media: Chilled Water, hot Water, up to 50% Glycol Water Temperature: -10...120 °C
Material	Body: DN15-DN50 Brass HPb59-1 DN65-DN250: nodular cast iron GGG40
	Stem: SS304
	Plug: SS304
	Spring: SS304
	membrane: EPDM

## Application

Honeywell VPIC series PICV is mainly used to control air conditioning terminal equipment (AHU, FAU, MAU etc.) and other equipment need to be adjusted and balancing control.

VPIC series of PICV has built-in linear valve plug and work with ML series electric actuator can achieve electric proportional integral adjustment and dynamic differential pressure balance control function. PICV can eliminate over-flow and lack-flow situation by setting max flowrate, which can achieve air conditioning terminal equipment static balancing. VPIC series of dynamic differential pressure balance electric regulator can achieve HVAC system static balancing and dynamic balancing, make air conditioning temperature control more accurate without fluctuation, improve the comfort of air conditioning system, meet the demand of process control, and can achieve effective energy saving significantly.

# VPIC Series PICV

## Specification Parameters

Model	Size	PN	Test ports	Max flow rate m <sup>3</sup> /h	Working pressure range kPa	Stroke	Compatible Actuator	Actuator thrust force	Close-off DP kPa	Connection
VPIC16R-S15	DN15	PN16	No	0.8	35~500	4mm	M7410E5001*	90N	≥600	Thread
VPIC16R-S20	DN20	PN16	No	1.3	35~500	4mm	M7410E5001*	90N	≥600	Thread
VPIC16R-S25	DN25	PN16	No	2	35~500	6mm	M7410E2026	180N	≥600	Thread
VPIC16R-S32	DN32	PN16	No	3.1	35~500	6mm	M7410E2034	300N	≥600	Thread
VPIC16R-S15P	DN15	PN16	Yes	0.8	35~500	4mm	M7410E5001	90N	≥600	Thread
VPIC16R-S20P	DN20	PN16	Yes	1.3	35~500	4mm	M7410E5001	90N	≥600	Thread
VPIC16R-S25P	DN25	PN16	Yes	2	35~500	6mm	M7410E2026	180N	≥600	Thread
VPIC16R-S32P	DN32	PN16	Yes	3.1	35~500	6mm	M7410E2034	300N	≥600	Thread
VPIC16R-025	DN25	PN16	No	2	35~500	20mm	ML8824A0620-BV ML8824B0620-BV ML7420A8088-E	600N	≥400	Thread
VPIC16R-032	DN32	PN16	No	4	35~500	20mm		600N	≥400	Thread
VPIC16R-040	DN40	PN16	No	6	35~500	20mm		600N	≥400	Thread
VPIC16R-050	DN50	PN16	No	8	35~500	20mm		600N	≥400	Thread
VPIC16R-025P	DN25	PN16	Yes	2	35~500	20mm		600N	≥400	Thread
VPIC16R-032P	DN32	PN16	Yes	4	35~500	20mm		600N	≥400	Thread
VPIC16R-040P	DN40	PN16	Yes	6	35~500	20mm		600N	≥400	Thread
VPIC16R-050P	DN50	PN16	Yes	8	35~500	20mm		600N	≥400	Thread
VPIC16F-050P	DN50	PN16	Yes	13	35-400	20mm		600N	≥600	Flange
VPIC16F-065P	DN65	PN16	Yes	26	35-400	20mm		600N	≥600	Flange
VPIC16F-080P	DN80	PN16	Yes	32	35-400	40mm	ML8824A1840-BV ML8824B1840-BV ML7421B8012-E	1800N	≥600	Flange
VPIC16F-100P	DN100	PN16	Yes	55	40-400	40mm		1800N	≥600	Flange
VPIC16F-125P	DN125	PN16	Yes	90	40-400	40mm		1800N	≥600	Flange
VPIC16F-150P	DN150	PN16	Yes	145	45-400	40mm		1800N	≥600	Flange
VPIC16F-200P	DN200	PN16	Yes	208	45-400	40mm	ML3524	3500N	≥600	Flange
VPIC16F-250P	DN250	PN16	Yes	240	45-400	40mm	ML3524	3500N	≥600	Flange

\* After testing, the effective stroke of M7410E5001 exceeds 4mm, which is suitable for short stroke PICV with 4mm stroke. The PICV with 4mm stroke can also be compatible with M7410E2026.

# VPIC Series PICV

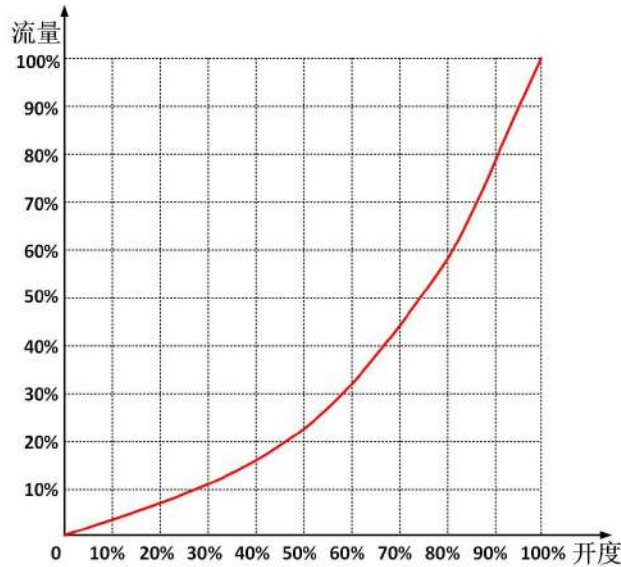
## Specification Parameters

Model	Size	PN	Test ports	Max flow rate m <sup>3</sup> /h	Working pressure range kPa	Stroke	Compatible Actuator	Actuator thrust force	Close-off DP kPa	Connection	
VPIC25R-S15	DN15	PN25	No	0.8	35~500	4mm	M7410E5001*	90N	≥600	Thread	
VPIC25R-S20	DN20	PN25	No	1.3	35~500	4mm	M7410E5001*	90N	≥600	Thread	
VPIC25R-S25	DN25	PN25	No	2	35~500	6mm	M7410E2026	180N	≥600	Thread	
VPIC25R-S32	DN32	PN25	No	3.1	35~500	6mm	M7410E2034	300N	≥600	Thread	
VPIC25R-S15P	DN15	PN25	Yes	0.8	35~500	4mm	M7410E5001	90N	≥600	Thread	
VPIC25R-S20P	DN20	PN25	Yes	1.3	35~500	4mm	M7410E5001	90N	≥600	Thread	
VPIC25R-S25P	DN25	PN25	Yes	2	35~500	6mm	M7410E2026	180N	≥600	Thread	
VPIC25R-S32P	DN32	PN25	Yes	3.1	35~500	6mm	M7410E2034	300N	≥600	Thread	
VPIC25R-025	DN25	PN25	No	2	35~500	20mm	ML8824A0620-BV ML8824B0620-BV ML7420A8088-E	600N	≥400	Thread	
VPIC25R-032	DN32	PN25	No	4	35~500	20mm		600N	≥400	Thread	
VPIC25R-040	DN40	PN25	No	6	35~500	20mm		600N	≥400	Thread	
VPIC25R-050	DN50	PN25	No	8	35~500	20mm		600N	≥400	Thread	
VPIC25R-025P	DN25	PN25	Yes	2	35~500	20mm		600N	≥400	Thread	
VPIC25R-032P	DN32	PN25	Yes	4	35~500	20mm		600N	≥400	Thread	
VPIC25R-040P	DN40	PN25	Yes	6	35~500	20mm		600N	≥400	Thread	
VPIC25R-050P	DN50	PN25	Yes	8	35~500	20mm		600N	≥400	Thread	
VPIC25F-050P	DN50	PN25	Yes	13	35-400	20mm		600N	≥600	Flange	
VPIC25F-065P	DN65	PN25	Yes	21	35-400	20mm		600N	≥600	Flange	
VPIC25F-080P	DN80	PN25	Yes	28	35-400	40mm		ML8824A1840-BV ML8824B1840-BV ML7421B8012-E	1800N	≥600	Flange
VPIC25F-100P	DN100	PN25	Yes	50	40-400	40mm			1800N	≥600	Flange
VPIC25F-125P	DN125	PN25	Yes	90	40-400	40mm	1800N		≥600	Flange	
VPIC25F-150P	DN150	PN25	Yes	145	45-400	40mm	1800N		≥600	Flange	
VPIC25F-200P	DN200	PN25	Yes	208	45-400	40mm	ML3524	3500N	≥600	Flange	
VPIC25F-250P	DN250	PN25	Yes	240	45-400	40mm	ML3524	3500N	≥600	Flange	

**\* After testing, the effective stroke of M7410E5001 exceeds 4mm, which is suitable for short stroke PICV with 4mm stroke. The PICV with 4mm stroke can also be compatible with M7410E2026.**

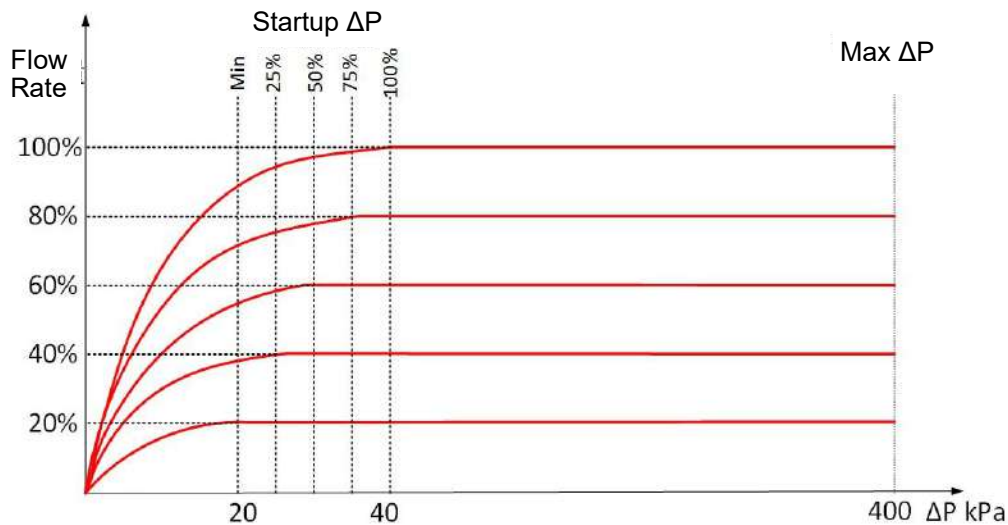
# VPIC Series PICV

## Function and curve of modulating valve plug



- VPIC series of PICV's modulating plug adopts pressure balancing globe plug, So equip a low thrust force actuator can ensure high close-off pressure difference.
- Stem down close
- EQ% characteristic curve (for DN25 and above sizes), which is the necessary condition to ensure good control performance for a HVAC system with large variation of air conditioning load.

## Balancing curve of dynamic pressure balancing



- VPIC series PICV can make flow rate unchanged in ant open when the  $\Delta P$  between inlet and outlet is in the working pressure range, which can achieve the air conditioning temperature is not fluctuating.
- Due to the stability of pressure difference between inlet and outlet of modulating plug, accurate flow rate adjustment can be achieved to ensure the accuracy of temperature control.
- Because there is no changing pressure difference result in actuator moving frequently , the actuator's running time can be increased effectively

## Installation

- The valve shall be installed according to the flow direction indicated on the valve body, in line with the actual flow direction. It is recommended that the valve be installed on the back pipe.
- Avoid exposing the actuator to the high temperature area, and the actuator mounting position must be kept in a slant upward to prevent the condensate from flowing into the actuator to damage the actuator.
- In order to ensure that the solids do not block the body, the filter should be added in the inlet direction of the valve, and the water piping system should be cleaned before the valve is installed

# VPIC Series PICV

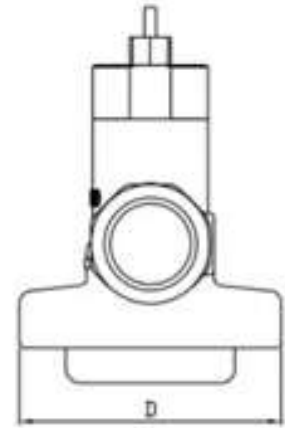
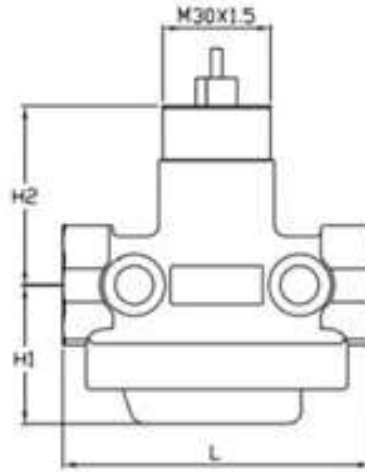
## Dimension & weight

### Short stroke thread PICV

**PN16: DN15-DN32**

**PN25: DN15-DN32**

DN	PN16 SKU	PN25 SKU
DN15	VPIC16R-S15	VPIC25R-S15
DN20	VPIC16R-S20	VPIC25R-S20
DN25	VPIC16R-S25	VPIC25R-S25
DN32	VPIC16R-S32	VPIC25R-S32
DN15	VPIC16R-S15P	VPIC25R-S15P
DN20	VPIC16R-S20P	VPIC25R-S20P
DN25	VPIC16R-S25P	VPIC25R-S25P
DN32	VPIC16R-S32P	VPIC25R-S32P



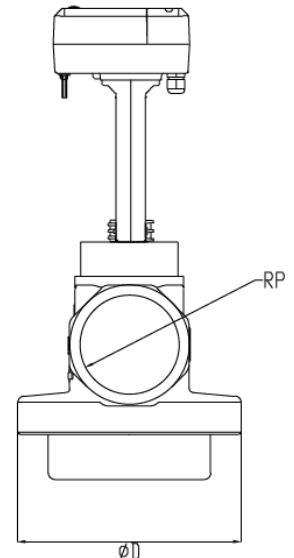
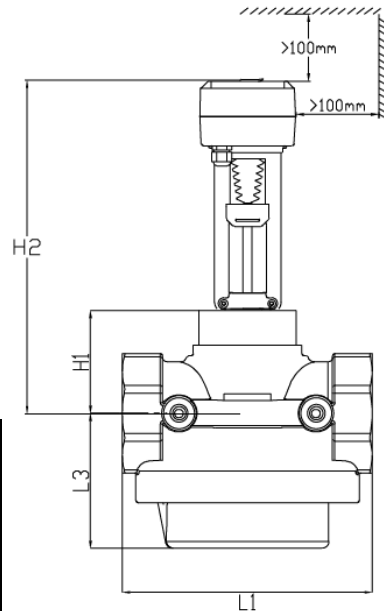
DN	Thread inch	L (mm)	D (mm)	H1 (mm)	H2 (mm)	Weight (g)
DN15	1/2"	74	62	34	46.5	634
DN20	3/4"	80	68	36	46.5	747
DN25	1"	85	69	42.5	44	870
DN32	1-1/4"	103	86	57	46.5	1520

### Long stroke thread PICV

**PN16: DN25-DN50**

**PN25: DN25-DN50**

DN	PN16 SKU	PN25 SKU
DN25	VPIC16R-025	VPIC25R-025
DN32	VPIC16R-032	VPIC25R-032
DN40	VPIC16R-040	VPIC25R-040
DN50	VPIC16R-050	VPIC25R-050
DN25	VPIC16R-025P	VPIC25R-025P
DN32	VPIC16R-032P	VPIC25R-032P
DN40	VPIC16R-040P	VPIC25R-040P
DN50	VPIC16R-050P	VPIC25R-050P



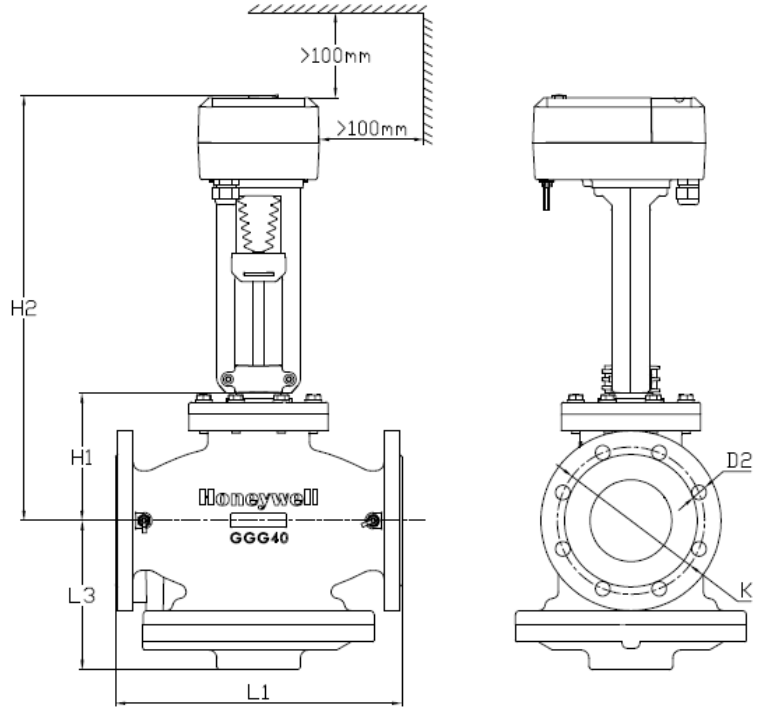
Size	L1 (mm)	L3 (mm)	H1 (mm)	H2 (mm)	D (mm)	thread (inch)	Weight (kg)
DN25	95	42	38	278	74	1"	1.26
DN32	109/129*	58.5	42.5	282.5	95	1-1/4"	1.94
DN40	113	61	46.5	286.5	101	1-1/2"	2.27
DN50	130	71.5	52.5	292.5	112	2"	3.13

\* PN16 L1 is 109, PN25 L1 is 129.

# VPIC Series PICV

## PN16: DN50-DN250

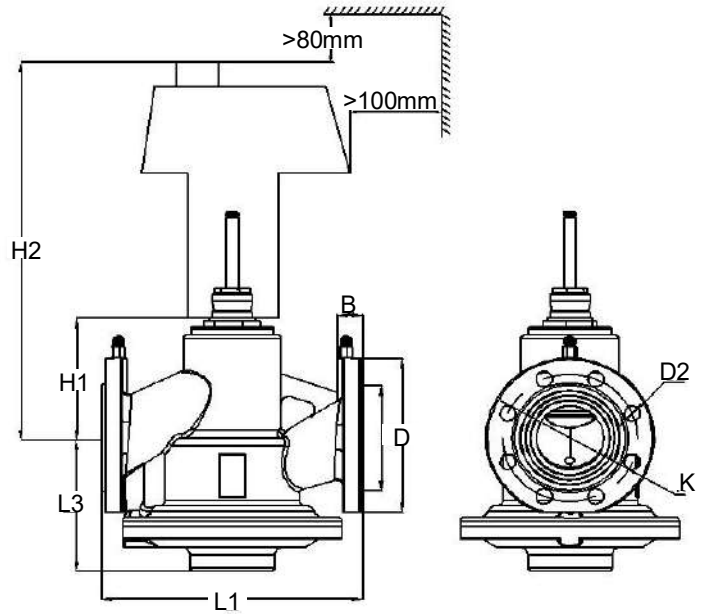
SKU	DN	PN
VPIC16F-050P	DN50	PN16
VPIC16F-065P	DN65	PN16
VPIC16F-080P	DN80	PN16
VPIC16F-100P	DN100	PN16
VPIC16F-125P	DN125	PN16
VPIC16F-150P	DN150	PN16
VPIC16F-200P	DN200	PN16
VPIC16F-250P	DN250	PN16



Size	B (mm)	D (mm)	D2 (mm)	K (mm)	L1 (mm)	L3 (mm)	H1 (mm)	H2 (mm)	Weight (Kg)
DN50	20	165	4-19	125	230	146	100.5	341	20.6
DN65	20	185	4-18	145	290	155	121.5	362	28.6
DN80	20	200	8-18	160	310	167	149	469	35
DN100	22	220	8-18	180	350	186	156	476	50.3
DN125	22	250	8-18	210	400	197	169	489	68.3
DN150	24	285	8-22	240	480	222	204	524	97.6
DN200	24	340	12-23	295	500	245	180	570	140
DN250	26	405	12-28	355	600	277	210	600	207

## PN25: DN65-DN250

SKU	DN	PN
VPIC25F-050P	DN50	PN25
VPIC25F-065P	DN65	PN25
VPIC25F-080P	DN80	PN25
VPIC25F-100P	DN100	PN25
VPIC25F-125P	DN125	PN25
VPIC25F-150P	DN150	PN25
VPIC25F-200P	DN200	PN25
VPIC25F-250P	DN250	PN25



DN	B (mm)	D (mm)	D2 (mm)	K (mm)	L1 (mm)	L3 (mm)	H1 (mm)	H2 (mm)	Weight (Kg)
DN50	20	165	4-19	125	230	146	100.5	426.5	23
DN65	22	185	8-19	145	290	155	121.5	447.5	29
DN80	24	200	8-19	160	310	167	149	475	38
DN100	22	235	8-23	190	350	186	156	482	56
DN125	26	270	8-28	220	400	197	169	495	70
DN150	24	300	8-28	250	480	222	204	530	95
DN200	24	360	12-28	310	500	245	180	570	147
DN250	26	425	12-31	370	600	277	210	600	213