

# PCMTV DN50-250

Pressure independent valve with smart actuator



*Valves intended for control of heating, cooling and air handling in larger-scale heating and cooling applications where pressure independent control valves are preferred, such as high-rise buildings, supermarkets, factories, etc.*

- ✓ Precise hydronic balance gives increased comfort and reduced energy consumption
- ✓ Accurate flow control, stable maximum flow rate and compensated variations in differential pressure result in a steady and enduring control system
- ✓ Smart actuator offers remarkable adjustment flexibility with many functions in one actuator like multiple control signals and settings of valve characteristic
- ✓ Easy selection as no authority calculations are needed
- ✓ Max flow: 25000 l/h (DN50-65-80) to 277 000 l/h (DN200-250)

## Application

The PCMTV DN50-250 valves are pressure independent dynamic control valves with full authority over the entire flow range. The valves have two measuring ports to measure the differential pressure across the valve. This to make sure it is working in its designed range and is working like a pressure independent control valve (PICV). This means that each individual terminal receives the flow required even in part load conditions. The PCMTV valves do not require any setting ratio calculation or valve authority calculation.

The valves are designed for HVAC installations. The 2-way control valve is used wherever dynamic balancing and fully accurate temperature are required. The large flows enable the valves to control flow and pressure in larger-scale heating and cooling units, such as in high-rise buildings, supermarkets, factories.

All PCMTV DN50-250 valves are fitted with the same type of actuator, with user-friendly design. All features are selected directly on the actuator with the buttons and display.

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PCMTV DN50-250

## Function

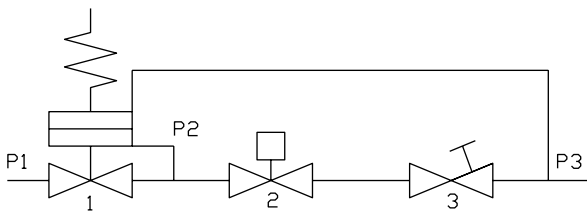
The PCMTV valves offer remarkable adjustment flexibility. They can be accurately set to a specific flow rate value and allow precise modulating control.

Water flow through a valve varies as a function of the area of passage and the pressure differential across that valve. To determine which pressure dependant valve size to use, the following formula is helpful,  $Q = K_v \sqrt{\Delta P}$ .

Thanks to the integrated differential pressure regulator the differential pressure across the valve seats remains constant. This means that the flow is only dependent of the area of passage. The valve flow characteristics (linear and equal percentage) can be selected using the actuator. It is also possible to set any flow rate value and to maintain it stable. Since flow rate is the only parameter to be considered, choosing the suitable valve is easy and fast, and the formula to use is  $Q = K_v$ .

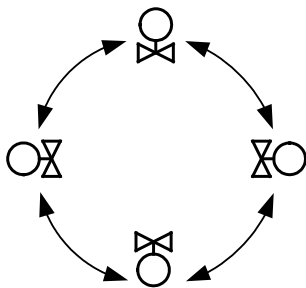
As the differential pressure variations are instantly corrected, temperature variations and adjustment movements are considerably reduced while the valve and moving devices' lifespans are improved.

The PCMTV is a 3-in-1 valve and consists of a differential pressure regulator (1), a control valve (2) and a flow preset function (3).



## Installation

Upside down installation is allowed (although not recommended) along with the standard horizontal and vertical installation.



When power is turned on, the actuator will automatically calibrate to determine the closing point of the valve. At first start-up, please enter the programming menu to set actuator settings.

## Technical data valve

<b>Pressure class</b>	PN40
<b>Connection</b>	Flanged according to EN 1092. Universal flanges (two or more pipe DN can fit same valve flange)
<b>Max. diff. pressure</b>	800 kPa
<b>Rangeability</b>	100 : 1
<b>Application</b>	Heating/cooling system, fan coil unit, radiant cooling and ventilation
<b>Flow characteristics</b>	Linear flow, equal percentage
<b>Media</b>	Hot or cold water, cooling systems (max. 50% glycol)
<b>Stroke</b>	Multi-turn
<b>Max. leakage</b>	ANSI / FCI 70-2 206 / IEC 60534-4 - Class IV
<b>Media temperature</b>	-20...+120 °C

## Material

<b>Seal</b>	EPDM
<b>Body</b>	Ductile iron ASTM A395 Grade 60-40-18
<b>Plug</b>	Stainless steel 1.4301
<b>Seat</b>	Stainless steel 1.4301
<b>Stem</b>	Stainless steel 1.4301
<b>Packing box</b>	Brass CW614N
<b>Gaskets</b>	EPDM
<b>O-rings</b>	EPDM
<b>Diaphragm</b>	HNBR

## Technical data actuator

<b>Supply voltage</b>	24 V AC/DC (22...26V AC, 50/60 Hz / 28...32V DC)
<b>Control signal</b>	Combined 0(2)-10V, 4-20 mA, 2-point or 3-point
<b>Ambient temperature</b>	-10...+50 °C
<b>Protection class</b>	IP54



This product carries the CE-mark. More information is available at [www.regincontrols.com](http://www.regincontrols.com).

## Models

Article	Nominal diameter	Flow rate settings		Start-up pressure
		Min. flow rate (l/h)	Max. flow rate (l/h)	
PCMTV50-65-80-F25	DN50/DN65/DN80	9240 l/h	25700 l/h	30 kPa
PCMTV50-65-80-F35	DN50/DN65/DN80	12800 l/h	35600 l/h	35 kPa
PCMTV80-100-F72	DN80/DN100	13300 l/h	72700 l/h	50 kPa
PCMTV125-150-F106	DN125/DN150	23300 l/h	106000 l/h	35 kPa
PCMTV200-250-F277	DN200/DN250	33100 l/h	277000 l/h	35 kPa

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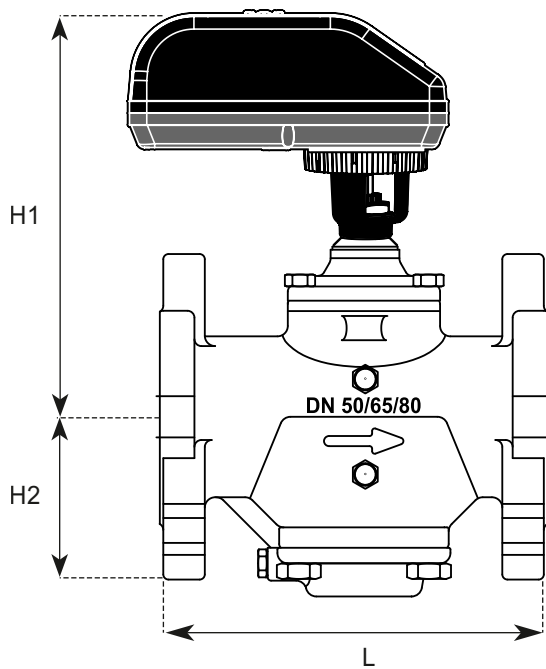
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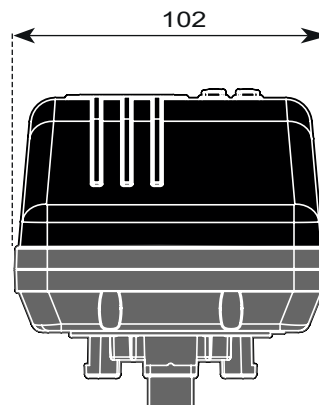
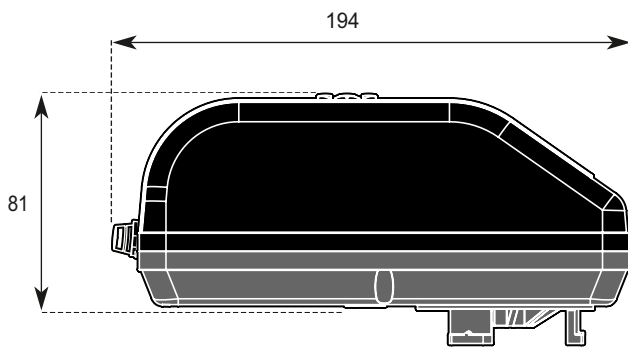
PCMTV DN50-250

## Dimensions



[mm]

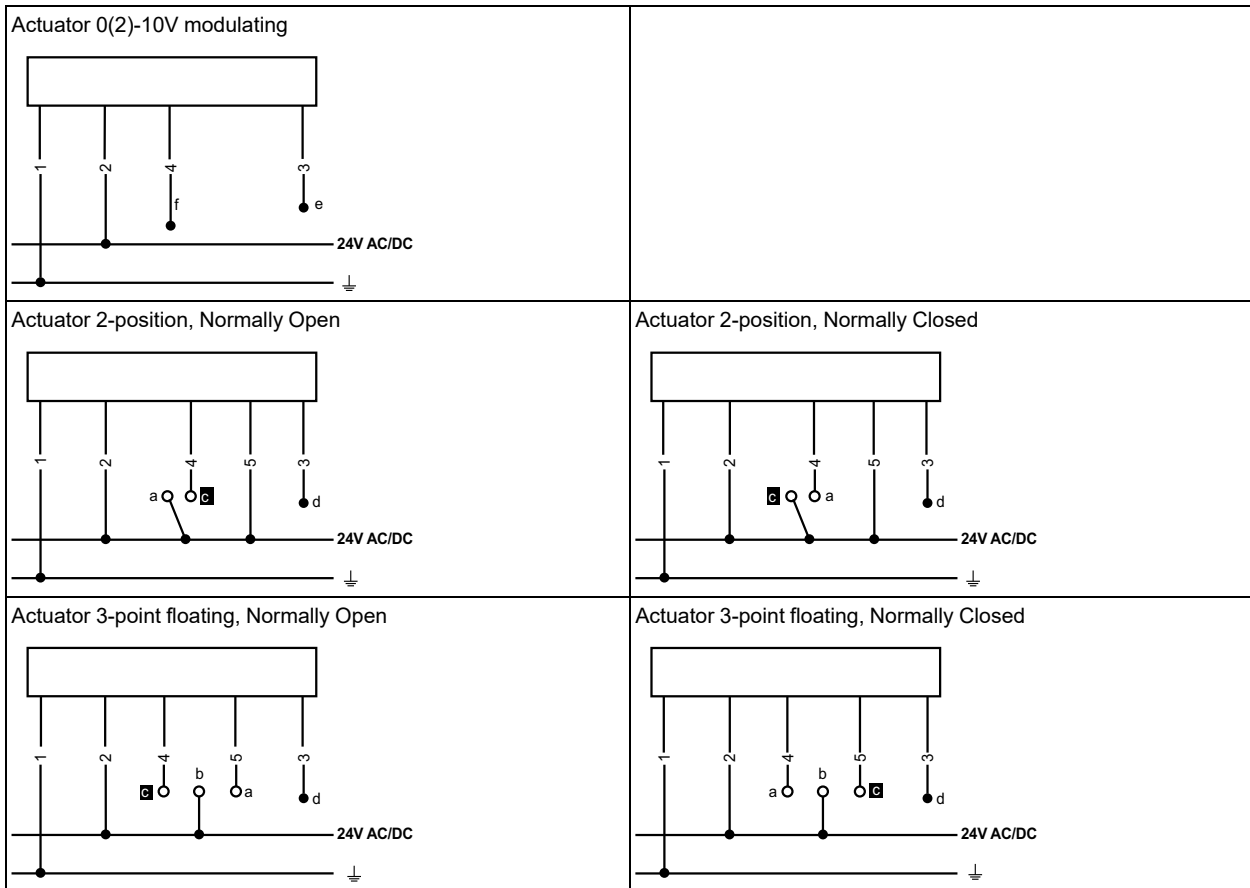
Model	L (mm)	H1 (mm)	H2 (mm)
PCMTV50-65-80-F25 PCMTV50-65-80-F35	224	252	95
PCMTV80-100-F72	320	292	135
PCMTV125-150-F106	422	343	180
PCMTV200-250-F277	725	472	292



[mm], unless otherwise specified

## Wiring

If feedback signal is required, leave the green wire detached.



Number	Wiring colour
1	Black
2	Blue
3	Green
4	White
5	Red

Letter	Description
a	Open
b	Stop
c	Close
d	Feedback signal
e	Feedback signal 0-10 V DC
f	Input signal 0-10 V DC

## Documentation

All documentation can be downloaded from [www.regincontrols.com](http://www.regincontrols.com).