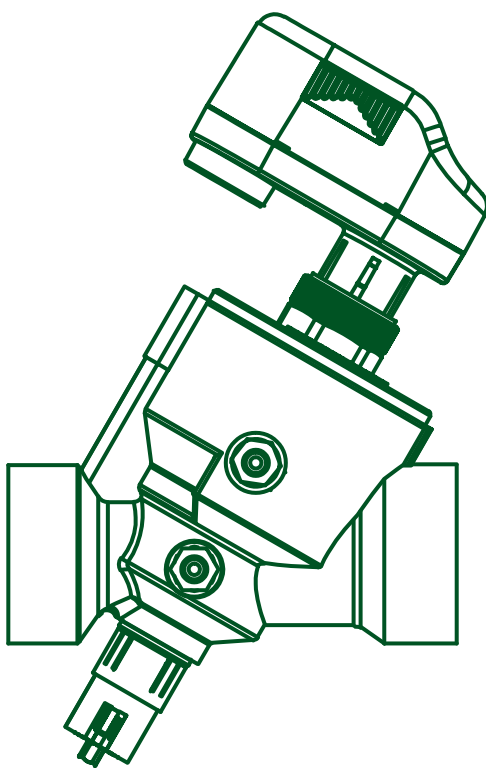
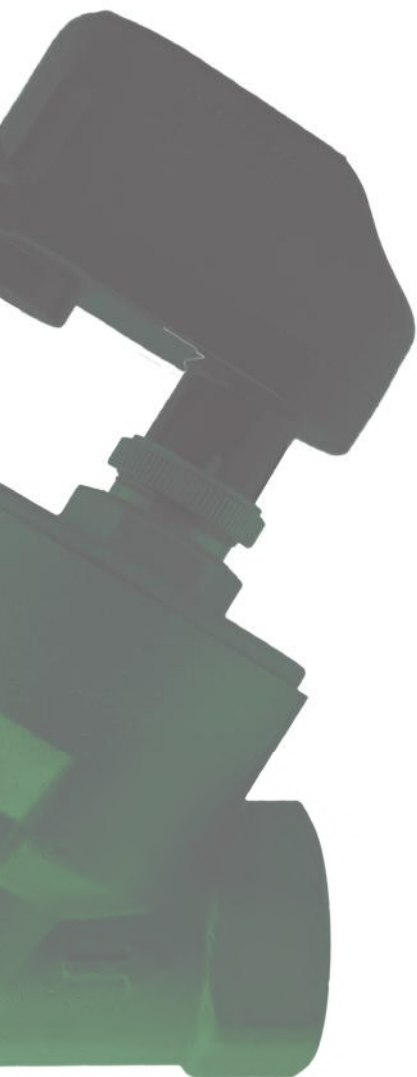


## Mars

Dynamic Balancing Control Valve  
[PIBCV]



**3 Functions in 1**  
**100% Valve Authority At All Times**  
**Pressure Independent**  
**Externally Adjustable Flow Rate**  
**DN20 - 50**

## FlowMate Mars

Dynamic Balancing Control Valve.

Designed & engineered to save energy with optimum efficiency and control. The Mars is designed to serve as an automatic balancing valve and a modulating control valve, it provides automatic balancing at full or part load, all the time maintaining the set flow rate to a high degree of accuracy and independent of pressure differential.



The FlowMate Mars is a Pressure Independent Control Valve, it maintains a constant differential pressure across the control orifice, automatically adjusting internally to regulate any pressure fluctuations. External flow rate setting offers convenient and easy set up and adjustment of the required maximum flow.

Actuated temperature control comes via the FlowMate QQ actuator which provides modulating temperature control. Combined, this means pressure independent flow balancing & modulating control. As the differential control component is independent and constantly regulates differential pressure, it gives the modulating control component 100% valve authority – no need to calculate valve authority. The QQ actuator also benefits from full stroke modulation as the external flow setting mechanism is independent and has no effect on the stroke.

## QQ Actuator

- \* Quick Release System
- \* IP54 rated enclosure
- \* Full Stroke Authority
- \* Fault monitoring & warning



The QQ Actuator flashes On & Off in the event of a fault

## Use

The FlowMate Mars dynamic balancing control valve can be used in heating and cooling systems in applications with Fan Coil Units, Air Handling Units or other terminal unit applications.

## Features

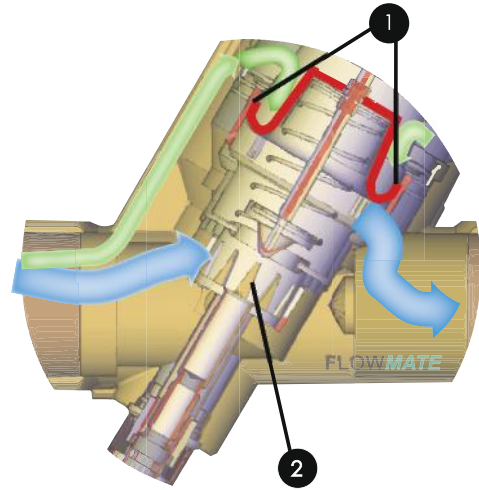
- DN20 to DN50 connection sizes.
- Compact and robust design.
- Integrated PT Ports & PT Plugs .
- Unique valve design gives a higher than industry average DN size to flow rate ratio.
- Designed to ensure constant flow is maintained even with power or signal loss to the actuator.
- Easy and convenient external flow setting procedure. Set or change the desired flow rate without having to remove the valve from the line.
- Fault monitoring and warning. The QQ actuator warns of any faults via a flashing LED.

## Benefits

- Precise Dynamic balancing resulting in
  - Minimized maintenance and downtime – The FlowMate Mars is designed to be hassle free in installation & operation.
  - Greatly reduced commissioning requirements – saving time and resources.
  - An efficient & cost saving system – all ensure peace of mind for the end user.
- Circuits fitted with the FlowMate Mars benefit from operation at high  $\Delta P$  & desired flow rate with minimal drops in pressure.
- High grade materials give durability and a long operational lifetime.
- Installation space is kept to a bare minimum with reduced equipment requirements.
- Flow rate accuracy of  $\pm 5\%$  within varying system differential pressure ranges.
- 100% authority meaning no there is no more need to calculate valve authority.

## Working Principle

The FlowMate Mars is essentially two mechanisms in one valve. **1** consists of a rolling diaphragm counteracted by a precision spring; this regulates the pressure differential across **2** which is a calibrated variable orifice mechanism controlled by the actuator. The diaphragm in **1** reacts to varying pressure in the system and as a result, regulates the pressure differential across the actuated control valve orifice **2**.



## Flow Rate Adjustment

Set & Adjust the FlowMate Mars easily with external flow rate adjustment.



Simple Flow Rate Setting

## Maximum Flow Rates 40 - 400kPa

Model	DN	l / s	l / h	GPM
D020	DN20	0.69	2500	10.93
D025	DN25	0.83	3000	13.20
D032	DN32	1.11	4000	17.60
D040	DN40	1.67	6010	26.46
D050	DN50	1.94	7000	30.82

## Technical Specifications

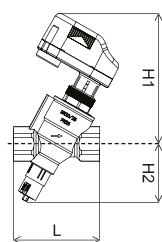
Pressure Rating	PN25
Ambient Temperature	-10 to 60°C
Medium Temperature	-10 to 120°C
Shut off Leakage	ANSI Class IV
Maximum Close Off Pressure	700 kPa, 101 psi
<b>Materials</b>	
Body	Forged Brass
Spring	Stainless Steel
Seat Plug	EPDM
O-Rings	EPDM
Diaphragm	EPDM
End Connection	Female ISO
PT Ports	Yes
PT Plugs	Yes

## Actuator Specifications

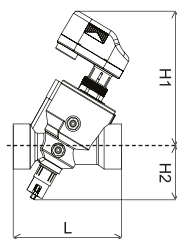
Model	QQ
Type	Modulating
Voltage	24V AC/DC
Power Consumption	2W
Control Signal	2-10VDC *
Feedback Signal	4-20mA **
Operating Temperature	0 to 50°C
Closing & Opening Time	Max180 secs
Actuating Force	150 N ±5%
Stroke Length	5mm/ 10mm
Protection Class	IP54/ II
Fault Monitoring/ Warning	Yes
Housing	Polycarbonate
Failsafe	Optional (Lithium Polymer 250mAh)

\* & \*\* Please contact factory for specific signal requirements

D020 - D025



D032 - D050



## Available Sizes & Dimensions

Model	DN	L mm	H1 mm	H2 mm	Weight kg	Connection
D020	DN20	102	152	67	1.5	DN20 Female ISO
D025	DN25	102	152	67	1.5	DN25 Female ISO
D032	DN32	145	175	69	3.0	DN32 Female ISO
D040	DN40	145	175	69	3.0	DN40 Female ISO
D050	DN50	149	186	78	3.6	DN50 Female ISO

From concept to finished product, FlowMate exacts the highest levels of quality, precision and workmanship. To ensure that our clients enjoy maximum benefits, assurance and quality of service, FlowMate implements rigorous testing, manufacturing practices and protocols. To enjoy the next level of flow control that FlowMate offers, please contact us. Our highly skilled professionals will be pleased to advise and assist you.

For further information, please visit  
[WWW.FLOWMATE.COM](http://WWW.FLOWMATE.COM)

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