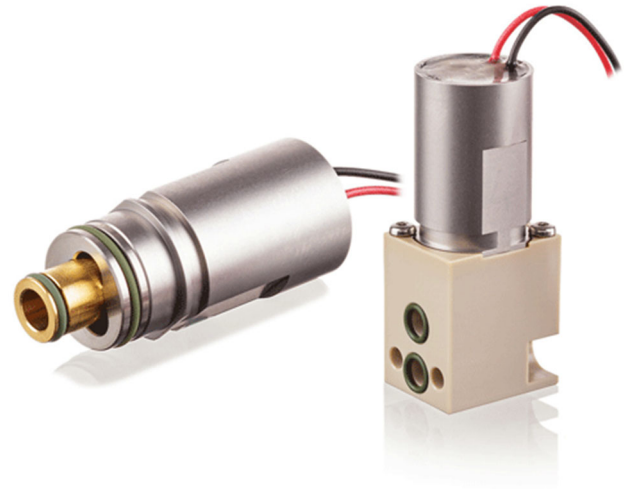


VQV SERIES

HIGH FLOW PRESSURE COMPENSATED PROPORTIONAL VALVES

The VQV series of high-flow pressure-compensated proportional valves for air, oxygen and other neutral gases work across a wide range of pressures (0...7 bar) and flows (0...324 slpm) due to their innovative design.

This design minimizes the effect of inlet pressure on valve opening, making them ideal for medical, life science and advanced automation applications requiring high flow rates in a small footprint with minimal power consumption.



KEY ADVANTAGES

* PRESSURE COMPENSATED

Changes to inlet pressure have a minimal effect on the valve's opening current. This allows the valve to operate over a wide inlet pressure range (0 to 700 kPa) without needing an upstream regulator

* ENERGY EFFICIENT

With a nominal power consumption of 2.5W at maximum current, the VQV series maximizes battery life in mobile applications and reduces power consumption in fixed installations.

* WIDE FLOW RANGE

Accommodating a wide input pressure range, 0 through 700 kPa (101.5 psig), the VQV series is able to deliver a wide range of maximum flows from 0...324 slpm.

* COMPACT & LIGHTWEIGHT

16mm diameter, 38mm height, and a weight less than 40g make the VQV series ideal for applications that require significant flow with a small footprint.

* HIGH BACK PRESSURE

The VQV is able to handle high back pressures, up to 90% of inlet pressure. This makes it ideal for pressure control applications and those with downstream restrictions

* LONG LASTING

Tested to over 100 million cycles, the VQV series is designed to maximize flow performance over an extended period of time.

MECHANICAL SPECIFICATIONS

Valve Type:

2-Way Proportional Normally Closed

Gating Element:

Pressure-Compensated Poppet Seat Valve

Environmental Protection Class:

IP51

Ports:

Cartridge

Connector:

Wire Leads - 200± 5 mm length

Mounting:

Cartridge

Operating Temperature:

5...50C (41...122F)

Filtration:

5 um Particulate

Media:

Neutral Gases, Oxygen, Air

Diameter:

16.0 mm (0.63 in)

Height:

38.0 mm (1.5 in)

Inlet Pressure:

0...700kPa (0...101.5 psi)

Back Pressure:

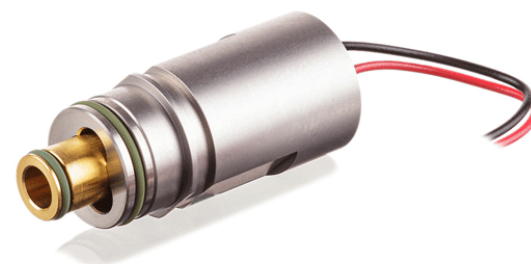
<90% of inlet

Leak Rate:

< 0.6 sccm

ELECTRICAL SPECIFICATIONS

Coil Order Code	Resistance	Input Current	Max Voltage	Nominal Power Consumption
09	14.4 Ω	0...417mA	9Vdc	2.5W
18	58 Ω	0...217mA	18Vdc	2.5W
36	230 Ω	0...104mA	36Vdc	2.5W



Example: VQV-W**18**-C450C-0700 would have a 58.0Ω coil and would take a 0...217mA input

WETTED MATERIAL SPECIFICATIONS

Body:

Brass
PEEK

Seals:

NBR or FKM - other materials available on request

Moving Elements:

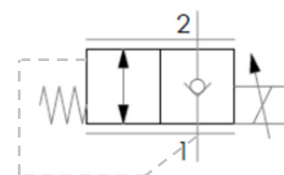
303 Series Stainless Steel
430F Series Stainless Steel

VALVE DESIGN

In a typical proportional solenoid valve, the force caused by the inlet pressure can dramatically change when the valve begins to open.

In the VQV series, the impact of inlet air pressure on when the valve begins to open is lessened by a novel design that channels the inlet media through the stem of the poppet. This causes the inlet pressure to not only push on the poppet face to open the valve, but also to push on the opposite side of the stem to close the valve.

These offsetting forces minimize the effect of inlet pressure, which results in a valve that can deliver high flow rates across a wide range of inlet pressures.



DESIGN FEATURES

Two vertical coil connections makes for easy connection with circuit boards or other connectors

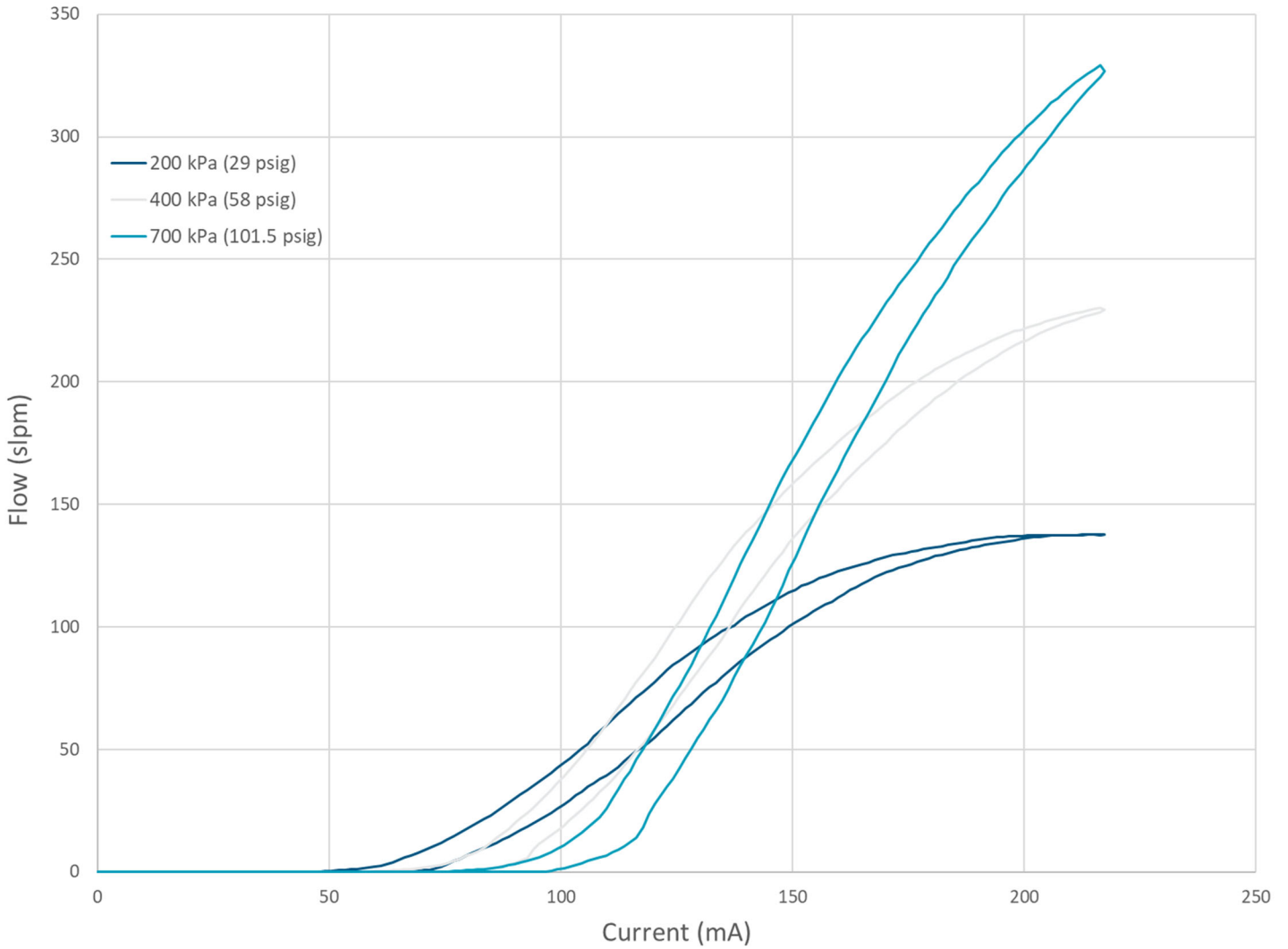
16mm diameter allows for compact installation into manifolds

Flats allow for easy mounting and orientation adjustment of valve

Body made from 300 and 400 series stainless steel for maximum chemical and media compatibility

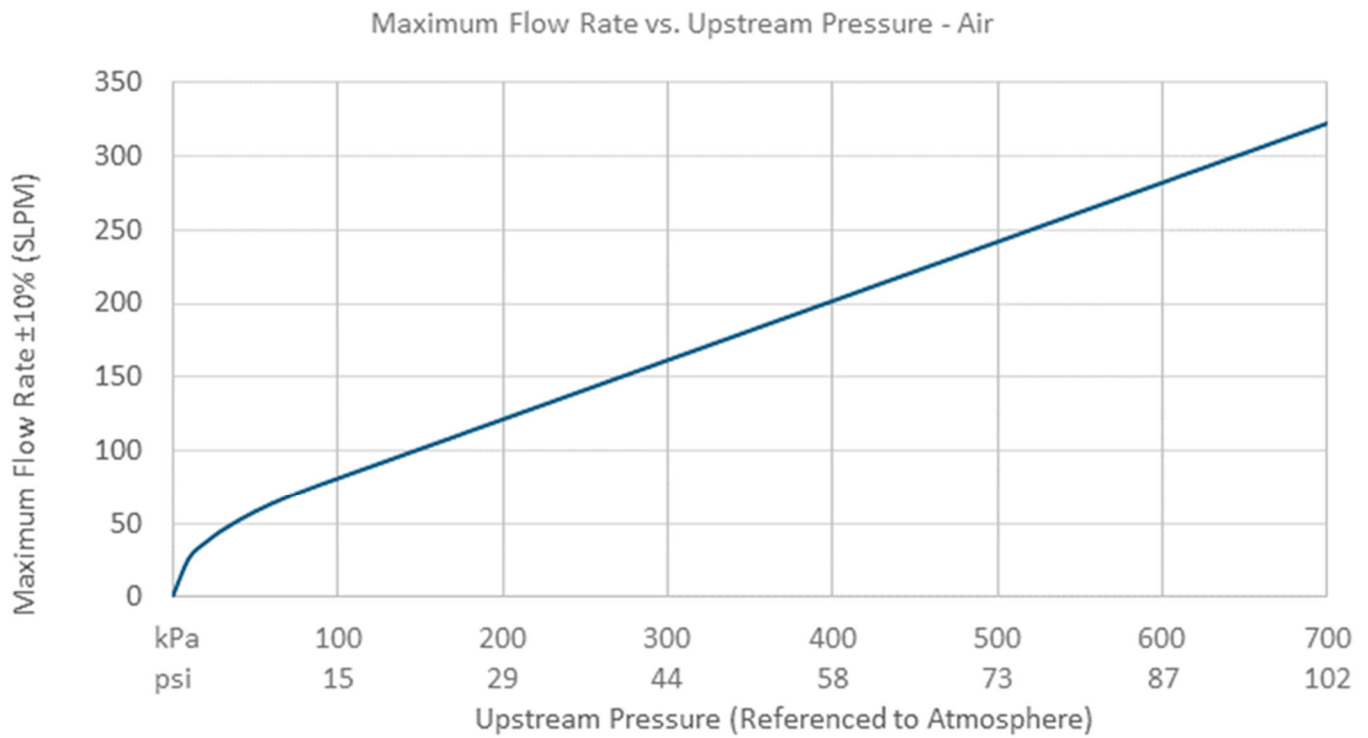
Cartridge valve design allows for simplified mounting and integration into complex valve manifolds

FLOW VS. CURRENT AT VARIOUS INLET PRESSURES

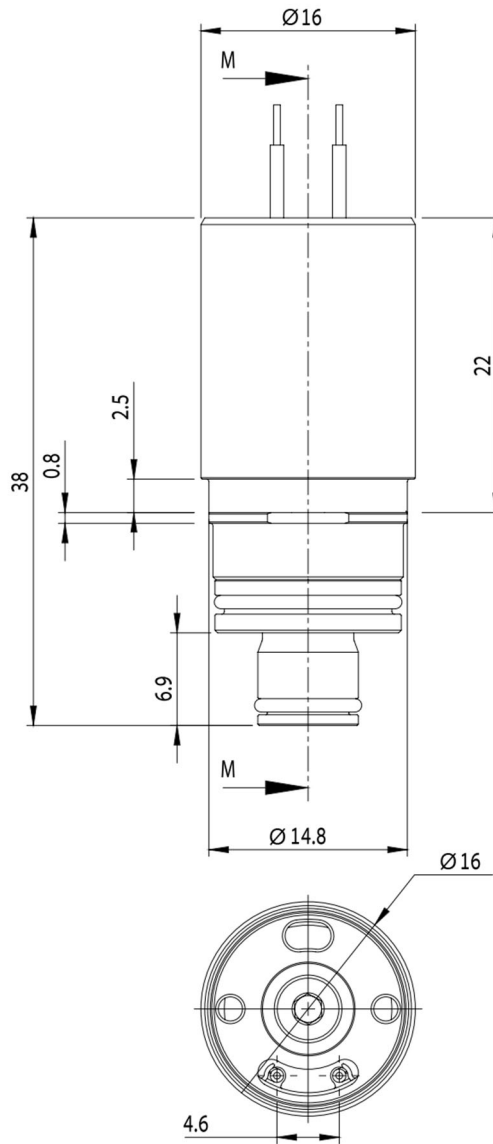


VQV-W18-C230C-0700 tested at various inlet pressure with 0 kPa (0 psig) outlet

MAXIMUM FLOW RATES VS UPSTREAM PRESSURE



DIMENSIONS (VALVE)



VQV ORDER CODES

VQV- W18 - C 230 C -0700

Order Code	Max Coil Voltage	Order Code	Body	Order Code	Seals
09	9Vdc	C	Cartridge	B	NBR
18	18Vdc	S	Side Mount	C	FKM
36	36Vdc				

Highlighted rows in table indicate quick ship version of VQV (VQV-W18-C230C-0700). Enfield strives to keep this version built and in stock for immediate shipment.

For additional configurations and customizations, please contact Enfield Technologies

Enfield Technologies is an expert in high performance proportional control systems. Our standard product line focuses on pneumatics. With custom products and engineering services, we also apply our expertise in other areas of fluid power, electromechanical systems, and control electronics. New developments in pneumatic technology are opening doors for design engineers to create unique, market leading products and systems.

Enfield Technologies is leading this innovation. Our control valves and electronics solve many of the challenges posed by compressible fluids. The additional functionality and performance from Enfield Technologies helps our customers create breakthrough applications and enhance existing systems. Simply put, we make pneumatics do things that others declare impossible.

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