PRESSURE CONTROL VALVES

FDV 301 KP.51Z

FDV 31 KTZ

FDV 300 TTZ

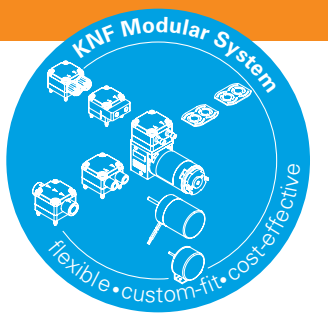
ADVANTAGES

- Compact and lightweight
- Use with liquid and gaseous media
- High chemical resistance
- Durable and maintenance free
- Available with manually adjustable turning knob (31/301)
- NSF certified models available

POSSIBLE AREAS OF USE

- Prevention of excessive pressure build-up
- Optimizing accuracy of the pump by reducing pressure fluctuations
- Preventing unwanted injection of liquid caused by venturi

Please visit our website
www.knf.com
to get more information.



PERFORMANCE DATA

Type	Pressure range (bar)	Max. flowrate liquid (l/min)	Max. flowrate gas (Nl/min)	Material (Housing / Diaphragm)					
				KP	KP .51	KV	KT	TV	TT
FDV 30 / 31	0.5 - 2.5	3	150	PP / EPDM	PP / EPDM	PP / FKM	PP / FFKM	PVDF / FKM	PVDF / FFKM
FDV 1.30 / 1.31	2.0 - 6.5	3	150						
FDV 300 / 301	0.8 - 2.5	12	300						
FDV 1.300 / 1.301	2.0 - 6.5	12	300						

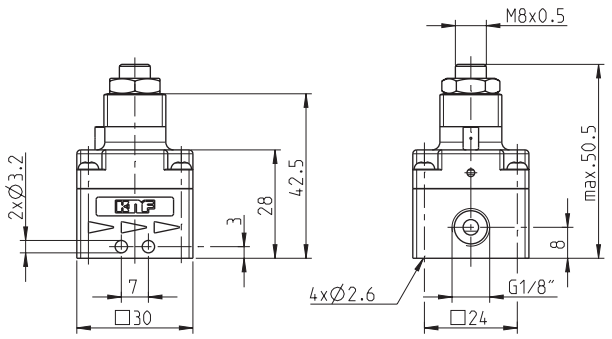
FDV 30/31

PERFORMANCE

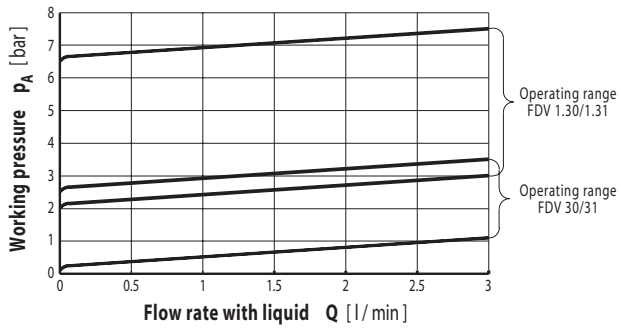
Basic model	Lowest adjustable pressure (bar g)	Highest adjustable pressure (bar g)
FDV 30/31	0.5	2.5

Basic model	FDV 30/31
Factory set working pressure (bar g)	0.5
Max. flow rate for liquid (l/min)	3
Max. flow rate for gas (Nl/min)	150
Max. permissible temperature for media (°C)	80
Max. permissible ambient temperature (°C)	80
Connecting threads	G 1/8"
Weight according to material of constr. (g)	50-60

FDV 30/1.30



PERFORMANCE CHART FOR LIQUIDS



All FDV diaphragm pressure control valves are suitable for use with liquids.

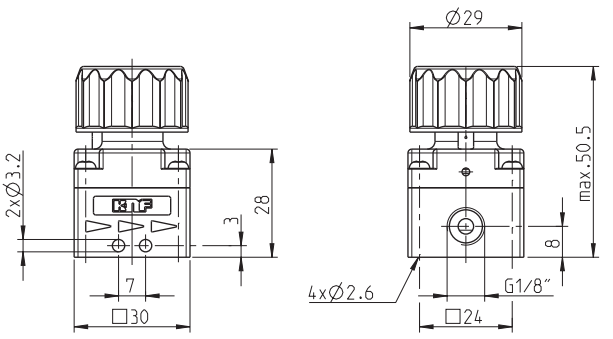
FDV 1.30/1.31

PERFORMANCE

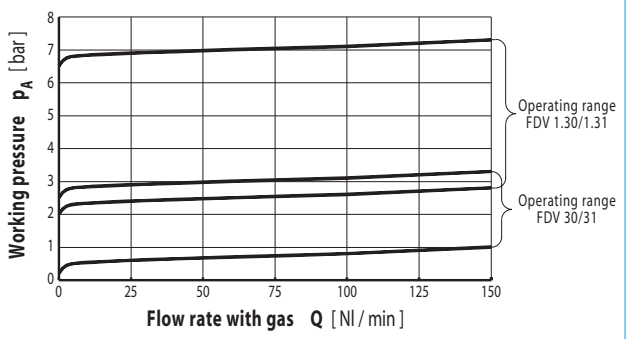
Basic model	Lowest adjustable pressure (bar g)	Highest adjustable pressure (bar g)
FDV 1.30/1.31	2	6.5

Basic model	FDV 1.30/1.31
Factory set working pressure (bar g)	3
Max. flow rate for liquid (l/min)	3
Max. flow rate for gas (Nl/min)	150
Max. permissible temperature for media (°C)	80
Max. permissible ambient temperature (°C)	80
Connecting threads	G 1/8"
Weight according to material of constr. (g)	50-60

FDV 31/1.31



PERFORMANCE CHART FOR GASES



All FDV diaphragm pressure control valves are suitable for use with gases, except the KP version (EPDM diaphragm).

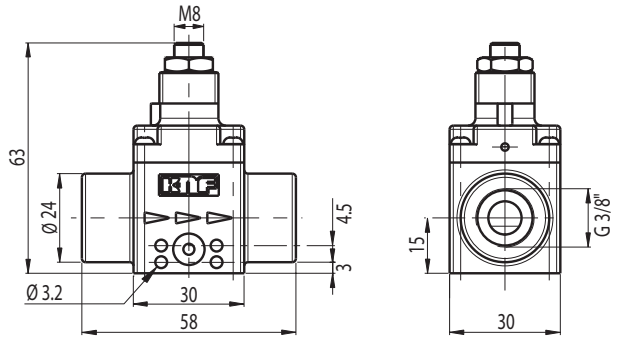
FDV 300/301

PERFORMANCE

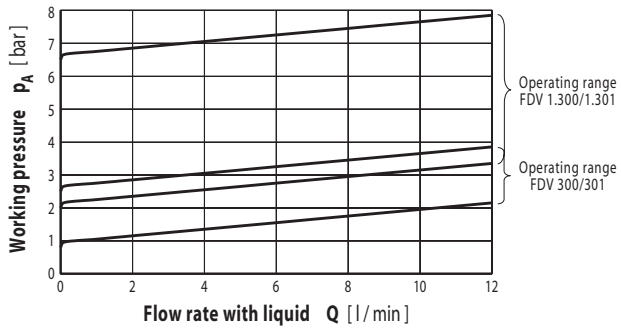
Basic model	Lowest adjustable pressure (bar g)	Highest adjustable pressure (bar g)
FDV 300/301	0.8	2.5

Basic model	FDV 300/301
Factory set working pressure (bar g)	1
Max. flow rate for liquid (l/min)	12
Max. flow rate for gas (Nl/min)	300
Max. permissible temperature for media (°C)	80
Max. permissible ambient temperature (°C)	80
Connecting threads	G 3/8"
Weight according to material of constr. (g)	50-70

FDV 300/1.300



PERFORMANCE CHART FOR LIQUIDS



All FDV diaphragm pressure control valves are suitable for use with liquids.

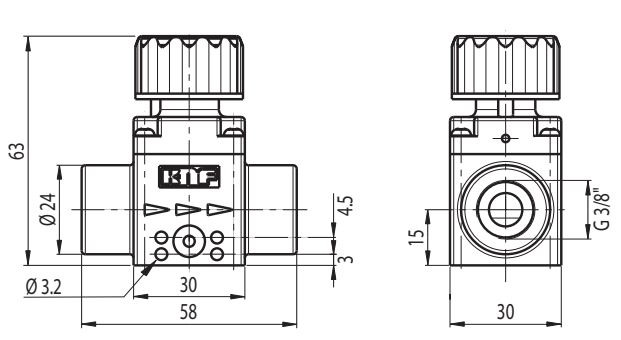
FDV 1.300/1.301

PERFORMANCE

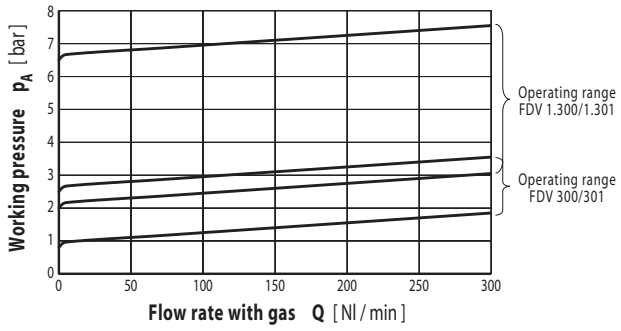
Basic model	Lowest adjustable pressure (bar g)	Highest adjustable pressure (bar g)
FDV 1.300/1.301	2	6.5

Basic model	FDV 1.300/1.301
Factory set working pressure (bar g)	3
Max. flow rate for liquid (l/min)	12
Max. flow rate for gas (Nl/min)	300
Max. permissible temperature for media (°C)	80
Max. permissible ambient temperature (°C)	80
Connecting threads	G 3/8"
Weight according to material of constr. (g)	50-70

FDV 301/1.301



PERFORMANCE CHART FOR GASES



All FDV diaphragm pressure control valves are suitable for use with gases, except the KP version (EPDM diaphragm).

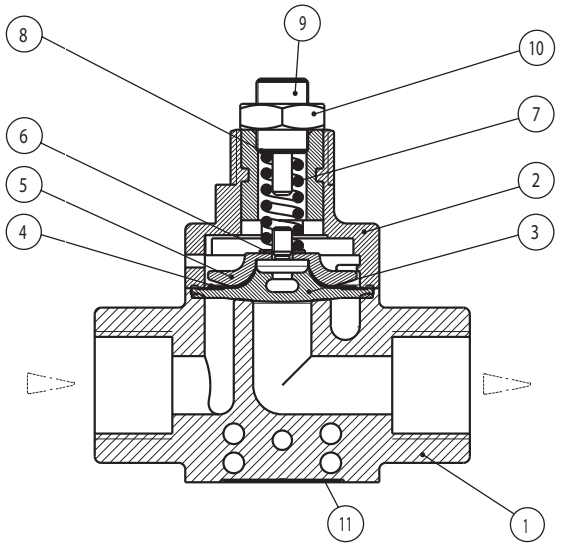
GENERAL NOTES / ASSEMBLY AND FUNCTION

Assembly and function

The design of the FDV pressure control valve is based on the technology of diaphragm valves. The essential components are the upper body 2, the lower body 1, the spindle system (resp. the turning knob) and the diaphragm 3.

The required opening pressure is readily adjusted by the tension of the pressure spring 7. The spring tension applies a force to the diaphragm 3 which is transferred to the fluid system. By turning the spindle 9 (resp. the turning knob) clockwise the opening pressure increases under constant flow rate; turning counter-clockwise decreases the opening pressure. With the shaft spindle/locknut head, the spindle 9 can be fixed with the locknut 10, and consequently any unintentional adjustment is prevented.

In the static position the diaphragm 3 is pressed over the connection channel, separating the inlet from the outlet port. If the pressure in the fluid or gas system exceeds the set spring pressure, the diaphragm 3 will be pushed up. This opens up the connection channel allowing the liquid/gas to flow until such time as the pressure in the system falls below the spring pressure.



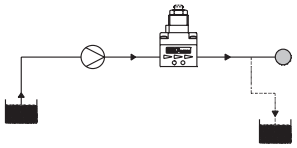
1 Lower Body
2 Upper Body
3 Lip diaphragm
4 Anti-friction ring
5 Support
6 Washer
7 Pressure spring
8 Washer
9 Spindle
10 Locknut
11 Label

Applications

FDV diaphragm pressure control valves can be used for many different functions.

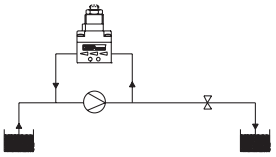
Pressure control function

The FDV valve creates a constant back pressure when pumping into a system with fluctuating pressure or a vacuum or out of a system with a positive pressure. This optimises the accuracy and repeatability of the pump.



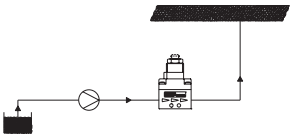
Bypass function

The pressure control valve prevents the build up of excessive pressure on the operating side of the system and protects the pump, pipework, vessels, glassware etc.



Anti-injection function

When metering into pipework at high flow rates, the FDV valve avoids unintended injection of liquid.



The performance values for the series models shown on this data sheet were determined under test conditions.
The actual performance values may differ and depend in particular on the usage conditions and therefore on the specific application, on the parameters of the components involved in the user's system and on any technical modifications carried out which deviate from the standard configuration or the as delivered condition.

If individual designs have been created for specific customers on the basis of series models, other technical performance data may apply.
Before operation begins, the relevant operating instructions and/or assembly or installation instructions should be read and the safety information contained in these instructions should be noted.
KNF reserves the right to make changes to the product and the associated documentation without prior notice to the customer.

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