

ADJUSTABLE SIGNAL CONTROL VALVE EQA 629/M

The EQA-629/M is a proportional pneumatic actuated valve to control clean gases. Designed for applications in which an external pneumatic signal is required to control the fluid.

Normally closed, and opening with signal. This signal is adjustable depending on the process, and the closing is class VI according to ANSI/FCI 70-2.

The 629/M proportional service valve is fail-closed and opens proportionally to the magnitude of the signal upon receiving the defined signal. When the signal is removed, the valve returns to its closed position.



TECHNICAL DATA

Working pressure	up to 12 bar
Outlet pressure	up to 7 bar
Available sizes	NPT 1" and 2" (DN 25 and 50)
Capacity	Kv (1"-8,4/2"-15) Cv (1"-9,7/2"-17.3)
Connections	Threaded NPT, Flanged ANSI B16.5 Serie 150
Operating pressure	-20 to 60 C°
Closing	FCI 70-2 class VI
Rangeability	20:1
Characteristics	Proportional

MATERIALS

Main body	Nodular cast iron ASTM A 536 GR. 60-45-12.
Internals	Brass
Diaphragms	Nitrile + nylon
Diaphragm case	Nodular cast iron
Gaskets and obturator	NBR
Seat	Brass
Diaphragm cap	Aluminum and nodular cast iron for high pressure signal

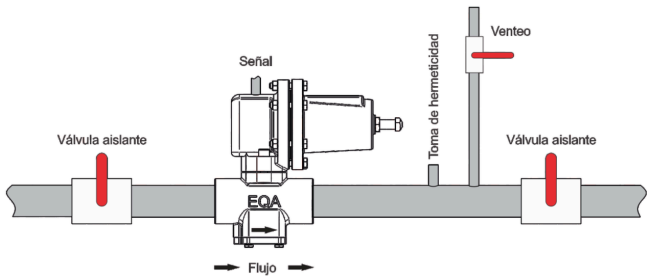


FLOW RATE CONVERSION

TO OBTAIN	CUBIC FOOT PER HOUR	CUBIC METER PER HOUR	CUBIC FOOT PER DAY	CUBIC METER PER DAY
MULTIPLY	(Scf/h)	(Scm/h)	(Scf/d)	(Scm/d)
Cubic foot per hour	1	0.028	24	0.672
Cubic meter per hour (15°C, 1.01325 bara)	35.71	1	857.04	24
Cubic foot per day	0.0417	0.0012	1	0.028
Cubic meter per day	1.4879	0.0417	35.71	1

UNIT CONVERSION

TO OBTAIN	POUNDS PER SQUARE INCH	INCHES OF WATER COLUMN W	MILIMETER S OF WATER COLUMN W	INCHES OF MERCURY	MILIMETER S OF MERCURY	BAR	MILIBAR	KILOGRAMS PER SQUARE CENTIMETER	KILOPASCALS
MULTIPLY	psi	in H2O	mm H2O	in Hg	mm Hg	bar	mbar	Kg/cm ²	Kpa
psi	1	27.68	703.1	2.036	51.7	0.06895	68.95	0.0703	6.895
in H2O	0.0361	1	25.4	0.07355	1.87	0.002491	2.491	0.00254	0.22491
mm H2O	0.0014	0.0394	1	0.00289	0.07355	0.000098	0.0981	0.0001	0.00981
in Hg	0.4911	13.6	345.4	1	25.4	0.03386	33.86	0.03453	3.386
mm Hg	0.01934	0.535	13.6	0.03937	1	0.001333	1.333	0.00136	0.1333
bar	14.5	401.5	10198.1	29.53	750.06	1	1000	1.02	100
mbar	0.0145	0.4015	10.1981	0.02953	0.7501	0.0001	1	0.00102	0.1
Kg/cm ²	14.22	393.7	10000	28.96	735.58	0.9807	980.7	1	98.07
Kpa	0.145	4.015	101.98	0.2953	7.501	0.01	10	0.0102	1



The installing position must be the same as represented in the schematics.
Assuring flow direction as arrows in main body indicate, is mandatory.
Connect signal to the back plug in the valve case.
The valve is calibrated at the factory so that it closes tightly in the absence of signal or different inlet pressure defined in the order.

SUBCRITICAL REGIME P1 < 2P2

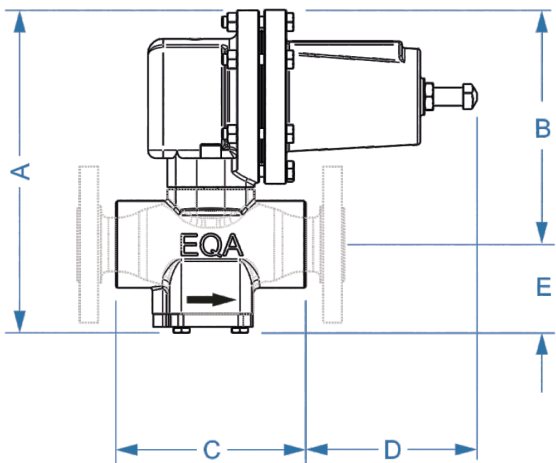
Subcritical Regime makes reference to when inlet pressure and outlet pressure determine capacity.
The lower the differential pressure, the lower the volumetric flow rate.

$$QN= 514 \times Kv \times \sqrt{\frac{(P_1-P_2) \times (P_2)}{\rho \times (273.15+t)}}$$

CRITICAL REGIME P1 ≥ 2P2

Critical Regime, means that capacity only depends on inlet pressure. Theoretically, the speed of sound is reached when a high pressure differential (P1>2P2) is generated in the pinhole. The gas will not be able to reach a speed greater than the speed of sound, even if the outlet pressure continues to fall.

DIMENSIONS



$$QN= 257 \times Kv \times P_1 \times \frac{1}{\sqrt{\rho \times (273.15+t)}}$$

To calculate the flow rate with (Kv), take the following into account:

- Q = Flow rate in Sm³/h.
- P1 = Absolute inlet pressure.
- P2 = Absolute outlet pressure.
- ρ = Density relative to air.
- t = Temperature in °C

	Threaded		Flanged (ANSI S150)	
Ref (mm)	1" (DN25)	2" (DN50)	1" (DN25)	2" (DN50)
A	219	242	219	242
B	159	182	159	182
C	130	143	184	254
D	150	140	124	84
E	60	60	60	60

NPS	DN	Kv	Cv
1"	25	8.4	9.7
2"	50	15	17.3

When using biogas, correct operation is guaranteed only with Treated Biogas (reduced sulfide values ppm < 200).



At EQA, we strive to minimize our environmental impact through sustainable and responsible practices. For this reason, we invite you to join our commitment and, at the end of the product's life cycle, adhere to the current Municipal, Provincial, and National regulations when classifying, recycling, destroying, or disposing of the product, spare parts, non-reusable parts, or packaging. In this way, we prevent damage to the environment and also promote, together, the reuse and recycling whenever possible. We appreciate your commitment and effort in joining these actions.