

Auto Dosing Valve



Technical Data Sheet of Auto Dosing Valve

Data Sheet of Valve	
Body	PVC / ABS
Stem	Sonically 'V' notched, Hastalloy 'C' / PVC /
Monal	Bottom Connection mounting on Header Line
Seat	Teflon / Kayner / EPDM
Rack	Hastalloy 'C' / Monal
Pinion	Hastalloy 'C' / Monal
Gear	Monal / Hastalloy 'C' / Nylon / PVC
'O' Ring	Viton
Type	Manual with Automatic arrangement.

Data Sheet of Actuator	
Out put Motion	Linear / Rotary
Out put speed	0.26 mm/sec
Stroke Length	40 mm max.
Manual Override	Provided Hand wheel with clutch.
Travel Limit Switches	Provide – 2 Nos. (1NO + 1 NC)
Torque Limit Switches	Not required as motor used in still duty.
Local Position Indicator	Provided continuous type.
Class of protection	IP 55
Duty Regulating /ON-OFF	Regulating
Area of Operation	Safe

Data Sheet of Motor

Type	Non blocking A.C. Synchronous motor
Supply	220 VAC 50/60 Hz 1 Phase
Insulation Class	B
Actuator / Panel mounted Positioner	PP 300 provided
Input for positioner from controller	4 – 20 mA

Introduction

General

These instructions apply to the wall and panel mounted Automatic gas control valve. Component instruction manuals and supplemental data are referenced where applicable.

Maximum capacity of the valve is related to:

- The gas being dispensed.
- The capacity of the vacuum regulator.
- The capacity of the ejector.

Specifications

Maximum capacity (Chlorine)	Ranges	
	PPD	Kg/h
100 PPD (2 kg/h)	100	2
	50	1
	25	0.5
	10	0.2
200 PPD (4 kg/h)	200	4
	100	2
500 PPD (10 kg/h)	500	10
	200	4

All capacities are listed for chlorine gas. To determine capacities for sulfur dioxide, multiply each value by 0.95. For carbon dioxide, multiply each value by 0.78. For ammonia, multiply each value by 0.5.

Signal input:

a. 4-20 mAdc

Power Requirements: 120 Vac or 240 Vac, 50/60 Hz, single phase

Power consumption: 15 VA

Display: LED bar graph, 0-100% of full valve capacity, in 10% increments. Bottom LED indicates power ON.

Alarm Contact: Unpowered TRIAC rated 0.5 amps @ 240 Vac maximum. Selectable N.O or N.C at valve closed.

Ambient Temperature: 32' F to 125' F (0'c to 50'c)

Dosage Ratio: Maximum – 2:1, Minimum – 1:5

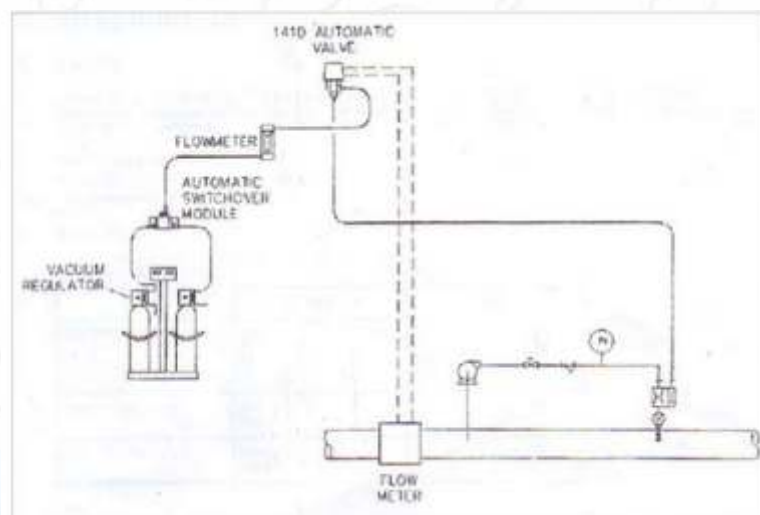
Meter panel

Vacuum Gauge – 0-030 inches of mercury

Meter Size – 6"

Vacuum Line connector Size

Feed Rate	Length of Vacuum Line		
	100 feet (30 m)	200 feet (60 m)	500 feet (150 m)
To 50 PPD(1kg/h)	3/8"	3/8"	1/2"
100 PPD(2g/h)	3/8"	1/2"	5/8"
200 PPD(4kg/h)	1/2"	5/8"	4/3"
500 PPD(10kg/h)	5/8"	3/4"	1"



Principle of Operation

Install the automatic gas control valve or panel between the vacuum regulator (or switchover module, if provided) and the ejector or chemical induction unit.(Figure 1) When the valve receives an input signal, typically from a process flow transmitter, it compresses its present gas feed to the desired gas feed and repositions the valve until a balance is achieved. The result is a linear gas feed rate adjustment in proportion to the input signal to provide versatile automatic control.

A dosage control knob is provided to manually adjust the gas dosage. Once set, the dosage maintains a fixed ratio between the gas feed rate and the process flow, regardless of flow variation. The dosage control knob permits adjustment to the dosage ratio to the 1/5 of the design dosage for any process flow up to the maximum flow rate. It also permits an increase in the gas feed dosage up to the twice the design dosage at half the maximum flow rate. A manual or auto switch and manual rate adjustment switch are provided to manually operate the valve in the event of loss of input signal or manual override.

A solid state electronic switch contact or TRIAC is provided to activate a remote device when a fully closed valve condition occurs. The TRIAC when energized, acts as a switch closure or opening and connects into the hot side of the power line of the remote device.

The valve may be fitted with an optional dual potentiometer (0-500 ohms) where the resistance value is proportional to valve position. When the potentiometer is connected to the Resistance to current signal conversion module, an inferred gas flow rate output signal is available. A local line power ON/OFF signal is not provided since constant power is maintained to the electronics boards.

Accuracy of the gas feed rate is dependent upon maintaining a constant differential pressure between the valve inlet and outlet. This may be accomplished by increasing the vacuum level measured at the valve's outlet 14.6" of mercury minimum when sonic conditions occur or installing an external differential pressure regulator in the downstream vacuum line.

Automatic gas control valves 50 ppd / 1 kg/h and over, use the sonic principle without the differential pressure regulator. For capacities of 25 ppd / 0.5 kg/h or less, the differential pressure regulator is supplied to provide improved accuracy and adjustability by increasing the resolution.

NOTE: Valves 50 ppd (1 kg/h) and over require a minimum vacuum of 14.6" inches of mercury at the valve outlet to operate at sonic flow. To assure this vacuum level, selection of the next higher capacity ejector is recommended.

Wall panels contain a vacuum gauge and a 5" meter panel to aid in monitoring the feeder operation.