JCS Industries Inc.

Innovative Chemical Feed Solutions

Model 4200 Gas Vacuum Chemical Feeder

The JCS Industries Model 4200 Gas Vacuum Chemical Feeder mixes and feeds gaseous chemicals commonly used for water and wastewater disinfection accurately, reliably and safely. The system is comprised of a vacuum injector to safely introduce the gas into the feed-water stream, a reversing servo motor coupled with a V-notch valve to regulate the chemical flow rate, and a control module for complete electronic control and communications.

Control Modes

Flow Proportional Control - An external 4-20mA DC signal is connected to the feeder. Chemical feed is controlled at a rate that is proportional to the incoming signal. Dosage control is available to adjust the feeder output 0.2 to 4.0 ratio.

Residual Control - An external 4-20mA DC signal from a residual analyzer is connected to the feeder. Chemical feed is controlled via the setup menu in the residual mode. Parameters, such as sample lag and target residual, are entered in the controller for responsive control.

Compound Loop Control - External 4-20mA DC signals from both flow meter and residual analyzer are connected to the feeder. Chemical feed is controlled via the setup menu in the compound loop mode.

Parameters such as sample lag, target residual and flow over-ride are entered in the Model 4200 Controller for responsive control.

- **A wide flow range: 0 to 4,000 PPD**
- **High accuracy: +/- 4% of full scale**
- **System Flexibility: three control modes**
- **Vacuum Feed: safety and zero leaks**
- **Battery Backup: > 2.5 hours of backup**
- **Programmable microprocessor**
- **Multiple failure mode alarms**

Patent: US 7,776,275

A LIQUA FLOW PRODUCT

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Technical Specifications Model 4200

Range			5 to 400% in 0.01 Increments 0 to 4,000 PPD
Accuracy			+/- 4% of full scale
Power Supply			110/220 VAC, 50/60 Hz
Battery Backup			12 VDC, 2.5 Amp Hours
Operating Temperature			32° to 120° F
Enclosure Protection			IP 66,67
Display			Backlit LCD 16 characters X 2 lines
Connections Inlet & Outlet			1/2 " FNPT
Inputs	**Flow, Residual Chlorine**		4-20mA DC
	Remote Start & Stop		Volt Free
Outputs	**System Failure**		Power supply, chemical feed drive motor and set point-all volt free.
Dimensions (Including Mounting Board)			7" L x 12" W x 33" H
Weight			26 Lbs.

Characteristics

The water stream to be treated passes through the injector, creating a vacuum that provides the motive force to draw the disinfection gas to be fed through the entire system. The injector creates strong turbulence, rapidly and thouroughly mixing the gas into the water stream. The chemical flow rate to the injector is regulated using an annular, tapered V-notch and orifice plate. The area through which the gas/water mixture can pass, and hence the chemical flow rate, is varied by moving the V-notch through the orifice plate, which is achieved by directly coupling a reversible servo type motor using a rack and pinion gear. The motor is controlled by a microprocessor based control unit, which also provides the user interface. The chemical flow rate through the system is monitored using a calibrated gas rotameter tube and float. The controller retransmits the valve position to any external device.