

JCS Industries Inc.

Model 4100 Liquid Vacuum Chemical Feeder



- **A wide flow range: 3 to 12,000 GPD**
- **A Turndown ratio of 100:1**
- **High accuracy: +/-2% of actual feed**
- **System Flexibility: four control modes**
- **Battery backup: >2.5 hours of backup**
- **Programmable microprocessor**
- **No air binding possible**
- **Metering to validate actual flow rate**
- **Multiple failure mode alarms**

The JCS Industries Model 4100 Liquid Vacuum Chemical Feeder is for operations that require high efficiency, accuracy, control, and safety. The Model 4100 will feed numerous aqueous chemicals commonly used in municipal and industrial water treatment systems, i.e, sodium hypochlorite, sodium bisulfate, aluminum sulfate, ammonium sulfate, acids, sodium hydroxide, non-oxidizing biocides, scale and corrosion inhibitors.

The system is comprised of a vacuum injector to safely introduce the liquid into the feed-water stream; a reversing servo motor coupled with a V-notch valve to regulate the chemical feed rate; an electronic flow sensor to monitor and regulate the feed rate; and a control module for complete electronic control and communications.

The JCS Model 4100 Liquid Feeder will automatically regulate in both fixed and variable control modes.

Control Modes:

- Fixed Feed Rate
- Flow Paced
- Residual Control
- Compound Loop

Technical Specifications Model 4100

Range		➤	5 TO 400% in 0.01% increments.
Accuracy		➤	+/- 2% of actual feed rate
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	3 to 2,000 GPD 2,000 TO 12,000 GPD	➤	0.5" NPT 0.75" NPT
Inputs	Flow, Residual Chlorine Remote Start/Stop	➤	4-20mA DC Volt Free
Outputs	Chemical Feed Rate System Failure	➤	4-20mA DC Power supply, chemical feed, drive motor and set point – all volt free
Dimensions (include Mounting Board)		➤	12.0"W x 33.0"H x 16.0"D
Weight		➤	32 Lbs (14.5kg)

Characteristics

The Plant's water flow rate and/or a chemical residual signal shall be used to adjust the disinfection chemical liquid flow rate by electronically positioning the servomotor driving the feed control valve. The ratio of input signal to liquid flow shall be adjustable over a range of 5% to 400% to enable increased liquid feed in response to additional chemical demand. Where compound loop control is required the model 4100 controller will receive two analog signals and feed to a user defined set point without the need for an additional PID controller. A compound loop with a second trim signal and remote control signal must be included. A provision is available for user adjustment of flow and residual dynamics factor to ensure accuracy of dosage control. In the automatic or manual mode, output relay contacts will provide the means for alarm and control functions. All relays are to be user selectable as normally open or normally closed. A 4-20mA signal of the actual chemical feed rate output must be supplied.