Series 32-300 Volumetric Feeder

The Series 32-300 Screw Type Volumetric Feeders are designed for the demands of municipal and industrial-process applications. They meter dry and semi-dry pebble lime with reliable accuracy and repeatability.

The heavy gauge steel construction stands up to the stress of long-running, high-volume bulk operations. Operation and control are simple and direct. There are only five moving parts. Power from the vertically mounted AC motor is transmitted through a right-angle gear reducer to the feed-screw shaft. A potentiometer or touchscreen entry on the main control panel sets the feed rate. Automatic control from a remote signal is available. Oversize sealed ball bearings support the one-piece, through-shaft at both ends. Interchangeable feed screws in four sizes extend the versatile capabilities of these feeders. The standard hopper with steeply sloped sides is designed to promote an even flow of lime to the feed screw.

Features

Versatile
Four screw sizes are available for capacities up to 133 cubic feet per hour. The feeder can be controlled manually or by a remote signal. The basic feeder can process lime at temperatures to 150° F.

Structural Strength
Heavy gauge steel is used throughout. Feed-screw shaft is a single piece through-shaft and is supported at both ends by sealed ball bearings. Metering screw segments are all welded to the shaft for strong unitized construction.

Reliable Performance
The simple, direct mechanical linkage has only five moving parts (drive, coupling, screw, and two bearings). Power from the vertically mounted AC motor is transmitted through a right-angle gear reducer. The feed screw is directly coupled to the gear reducer.

Simplified Control
Feeder controls are centralized in a NEMA 4 enclosure with flexible mounting locations. Toggle switches set the operating mode. A potentiometer controls feed rate, and an analog meter provides readout of feed rate in percent of full scale.

Simple Maintenance
A removable clean-out hatch is provided on one side of the hopper for easy cleaning and access to the feeder screw.

Key Benefits

- Heavy gauge construction
- Simple design
- Convenient controls and readouts
- Easy to maintain
- Smooth handling of difficult lime flows

Design and Operation

The Series 32-300 Volumetric Feeder is powered by a VFD-controlled AC motor. A gear reducer converts the high speed motor-shaft rotation to a low speed, high-torque drive for the feed-screw shaft. Sealed ball bearings support the single-piece through-shaft at both ends. The standard hopper has a capacity of 1.5 cubic feet and steeply sloped sides for good lime flow to the feed screw. A hopper vibrator is available for lime with poor flow characteristics. All controls are housed in a NEMA 4 enclosure with flexible mounting locations. A potentiometer enables accurate pre-setting of the feed rate and excellent repeatability.

Applications

Continuous Feeding
Bulk lime is fed by volume at a controlled feed rate. Feed rate is set as a percent of full scale and can be controlled by a remote-process signal.

Short Description
This feeder is a Series 32-300 Screw-Type Volumetric Feeder with electric-variable-speed control. Full scale capacity is 8 to 133 cubic feet per hour depending on feed-screw size. Operating range is 20:1. The feeder consists of a VFD drive in NEMA 4 enclosure; AC motor; right-angle speed-reducer gear box; feed hopper; a mixing trough and a discharge tube extension. A steel base supports the feeder and all components. VFD-control arrangements can be local manual, remote manual, start-stop, or automatic mA. Speed readout is available with start-stop and automatic arrangements. A potentiometer adjusts motor speed. With the automatic mA arrangement, the feed rate is controlled by a 0-10 VDC or 4-20 mA DC process-control input. An optional panel-mounted potentiometer trims the signal to a percent of maximum to produce the speed-rate required. The walls of the 1.5 cubic foot hopper are steeply sloped. Feeder and hopper are heavy gauge steel construction (option for 304 or 316 SS is available). Feed screws are available in 2”, 2-1/2”, 3”, and 4” sizes.

Technical Data

Accuracy
With uniform free-flowing lime, accuracies of 5% of full scale can be achieved. It must be realized, however, that with lime delivery controlled on a basis of volume, many factors apply: lime flowability, density at the feed screw, hopper size and shape are only a few of the factors which determine accuracy. Actual accuracy can be established only by running sample material tests.

Capacity
Up to 133 cubic feet per hour.

Lime Characteristics
Per AWWA Standard B202-07 Quicklime and Hydrated Lime

Maximum Temperature
Ambient, 120° F; process lime, 150° F standard.

Process-Control Input
0-10 VDC or 4-20 mA DC.

Input Impedance
Maximum is 270 ohms for 4-20 mA and 1,000 ohms for 0-10 VDC.

Motors
TEFC, ½ hp

Control Arrangements
- Manual
- Remote manual
- Start-stop
- Automatic from remote process signal

Continuous Operating Range
20:1

Shipping Weight
250 lb.

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