

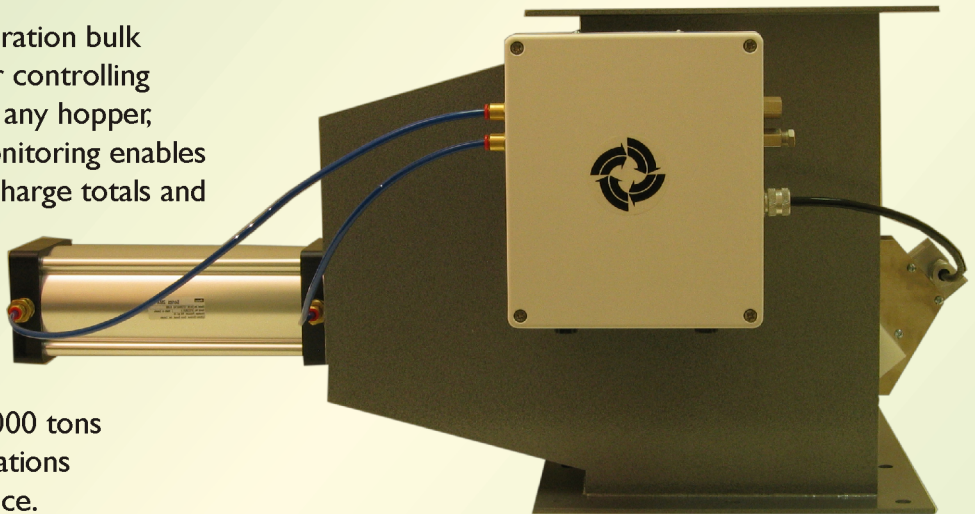


Flow Controller with Doppler Radar Technology

TYPE: HPFC04-POE

A UNIQUE AND ECONOMICAL FEEDER FOR ALL BULK MATERIAL APPLICATIONS

The Flow Controller is our 5th generation bulk material feeder. It is ideally suited for controlling discharge flow rate of material from any hopper, silo, bin or load-out. Continuous monitoring enables the Flow Controller to maintain discharge totals and compensate for changes in material properties. The bulk material size can vary from powders to coarse granules and the Flow Controller is available in 4 standard sizes ranging from small capacities to well over 1000 tons per hour. Custom sizes and configurations can be supplied in good time and price.



Features:

Ethernet Communication (DHCP, FTP, HTTP, etc.);
Power Over Ethernet;
±2% Accuracy or better;
Excellent product flow path;
In-line design (can be installed at an angle);
Totally enclosed; Easy Installation; and
Robust construction; Few moving parts.

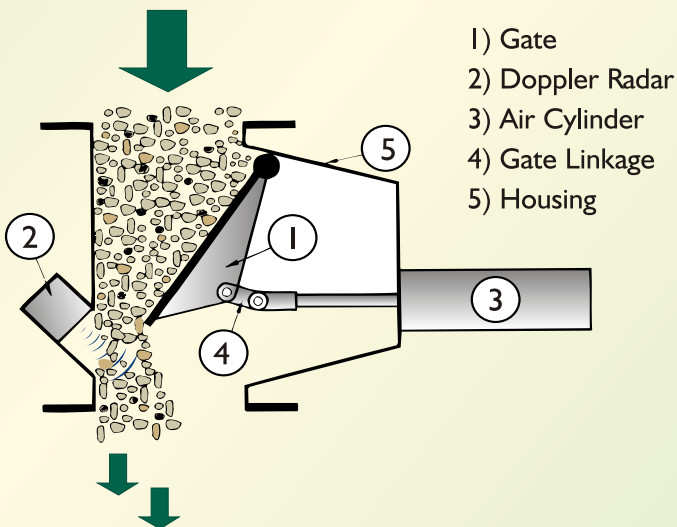
Operating Principle:

The Flow Controller maintains a set flow rate by controlling a gate opening. A hinged gate is powered by an air cylinder that constantly oscillates about the opening set-point. The oscillation provides material agitation for a uniform discharge flow. Opposite the gate is the Doppler radar head mounted, facing the material stream and making full width velocity measurements. The Flow Controller utilizes three measurements to compute bulk material flow rate:

- 1) Gate opening size;
- 2) Discharging velocity; and
- 3) Gate load.

Discharging bulk density is computed from velocity and gate load and is then used to calculate actual flow rate.

A direct path optimizes the product through put capacity.



Process Applications:

The Flow Controller helps to improve plant operations.

- Controlling and monitoring bulk material flow.
- controlling the ratio of materials for continuous blending systems.
- helping to keep accurate inventory of products.
- batching of various products, in-plant and load-out.



Installation and Maintenance:

The new generation of Flow Controller (HPFC04-POE) incorporates all the improvements in design over the past 17+ years since the Flow Controllers have been in operation all over the world.

The Flow Controller's rigid and compact design allows installation even in areas of restricted space. With just a few moving parts (air cylinder and gate) low maintenance is virtually assured.

The machine's heavy duty housing, oversized bearings and rugged air cylinder make this Flow Controller withstand harsh environments and even abrasive materials.

For very abrasive products special steel qualities are available. The Flow Controller is available with an electroless Nickel plating or with an automotive finish powder coating.

The new features are:

The all new smaller processing board features a 32bit processing core with multiple dedicated RISC processors to handle all the operational demands of the Flow Controller smoothly and accurately. All power and communication are now handled by a single IEEE 802.3af PoE Class-3 device 10/100 Base-T Ethernet connection.

This means that the only electrical connection required to the Flow Controller is a single Cat-5e Ethernet cable to a PoE Ethernet Switch. A removable micro-SD card is used to store all web content, machine parameters, logged data, and other data to make the Flow Controller powerful machine. Built in data logging and the use of a SNTP client for time stamping, provides accountability and observability never before available on the Flow Controller.

The embedded DHCP client provides for easy and dynamic setting of the network parameters and basic machine (vendor) settings. The DHCP client can be disabled to allow for the static setting of IP and other parameters.

An FTP server allows for easy movement of all files to and from the machine. A powerful HTTP server featuring Escherlogic's PHP-like tags means that web content can be dynamic, animated, and interactive with any data or parameters that the Flow Controller has available. The HTTP server can handle both machine-to-machine and machine-to-user control.

Interfacing to a control system simply involves creating a basic web page with the tags required, such as Status, Flow Rate, Set Point, Total Accumulation, etc., a standard HTTP Post method will allow for the setting of a parameter. Any Web Browser can be used to also access and control the Flow Controller.



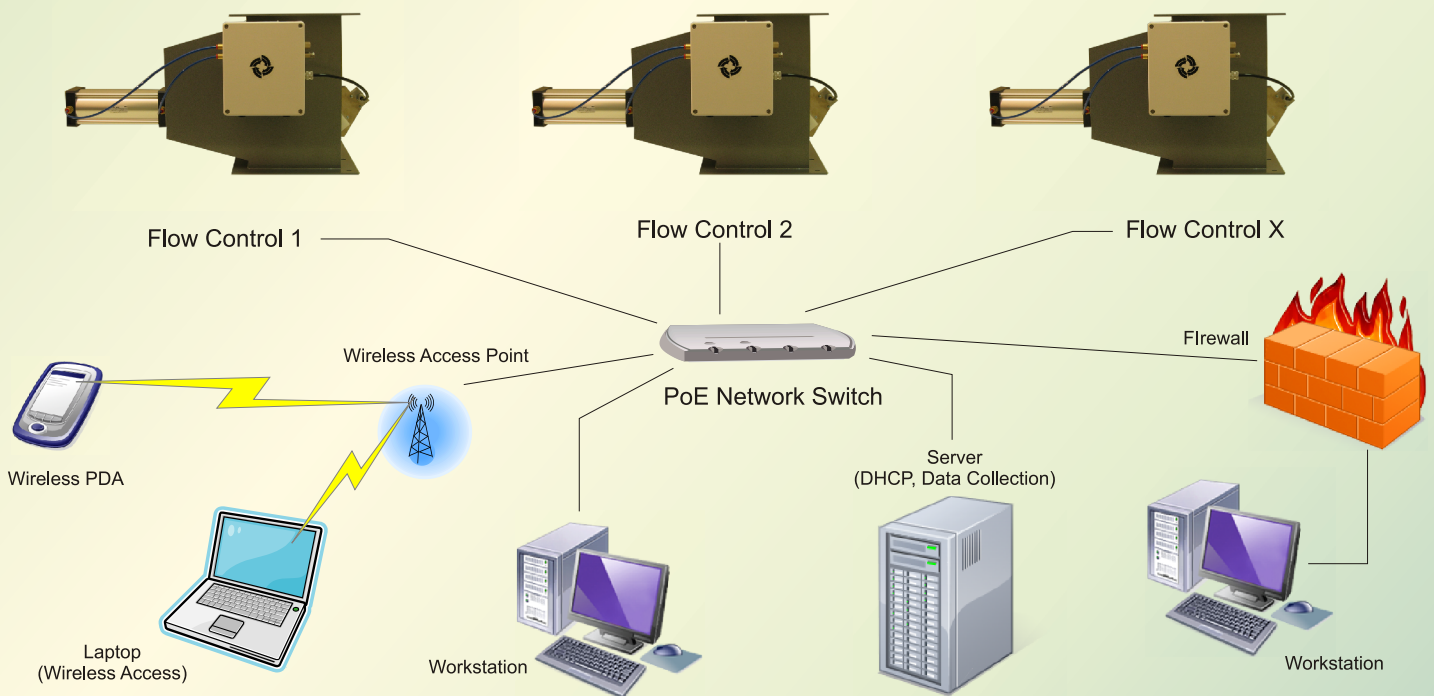
An automated feeder gate zeroing system has been added, controlled by a separate processor. This provides a more precise gate positioning and better stability. With the new indexed encoder gate position errors are a thing of the past. Every time the gate passes the 1/2" gap the gate position is automatically adjusted. Power failures will not interfere or affect the feeder gate position.

Product discharge velocity sensing: A new high performance real time Doppler radar system is supplying 60 times per second velocity measurements to the main processor.

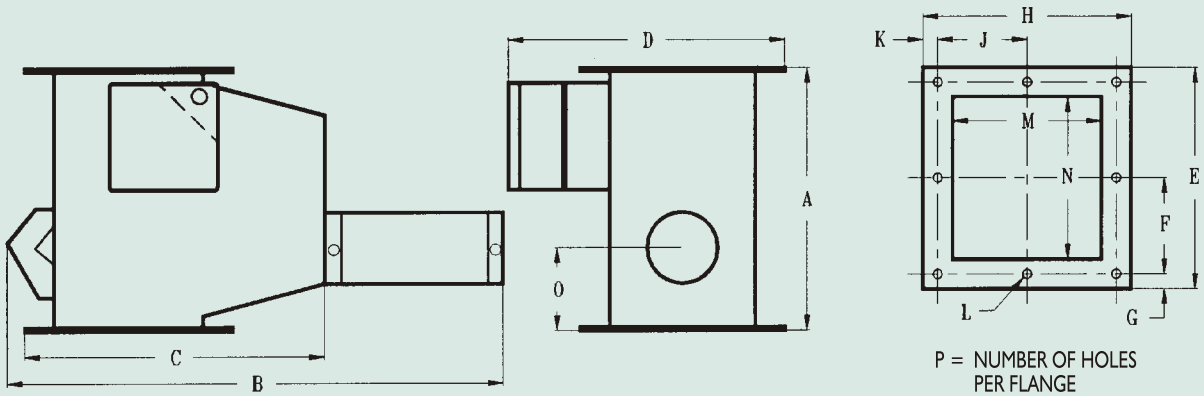
Better gate-load feedback for discharge density compensation. Elimination of DIP switches, station address is now the serial number of the individual Flow Controller. Improved calibration process, no

more "learning sweeps" Gate load and velocity compensation are now controlled by more familiar 'gain' and 'offset' parameters, which are portable and can be copied from machine to machine.

The Flow Controller has a variety of Human Machine Interfaces (HMI) and Machine to Machine Interfaces (MMI) available.



DIMENSIONS - HPFC04 - POE



SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
4X6	12.00 305	25.81 656	12.50 318	13.12 333	8.00 203	3.00 76	1.00 25	10.00 254	4.00 102	1.00 25	.437 11	4.00 102	6.00 152	4.50 114	8
6X6	12.00 305	25.81 656	12.50 318	15.12 384	10.00 254	3.00 76	1.00 25	10.00 254	4.00 102	1.00 25	.437 11	6.00 152	6.00 152	4.50 114	8
8X10	17.50 445	35.69 906	18.12 460	17.12 435	12.00 305	5.00 127	1.00 25	14.00 356	6.00 152	1.00 25	.562 14	8.00 203	10.00 254	5.25 133	8
10X14	17.50 445	35.69 906	18.12 460	22.00 559	18.00 457	8.00 203	1.00 25	14.00 356	6.00 152	1.00 25	.562 14	10.00 254	14.00 356	5.25 133	8

Specifications are subject to change without notice. Lower numbers are in millimeters

Common Specifications

Accuracy	2% typical (application dependant)
Power	Power over Ethernet (PoE) IEEE 802.3af compliant, Class 3 Device 12 Watts peak
Communication	10/100Base-T Ethernet via RJ45 jack
Supported Protocols	ICMP (PING), UDP, TCP, DHCP Client, SNMP Client, FTP Server, HTTP Server c/w Escherlogic tag language
Velocity Measurement	Doppler Radar, 24.125 Ghz at 5 mWatt
Air	1.5 CFM @ 30 PSIG for size 4x6 & 6x6 (0.042 m ³ /min. at 2.1 kg/cm ²) 3.0 CFM @ 30 PSIG for size 8x10 & 10x14 (0.045 m ³ /min. at 2.1 kg/cm ²)
Temperature	-4°F to + 122°F (-20°C. to +50°C.)

FLOW CAPACITY

SIZE	Flow Rate* (approximate)	
	lbs./hr. (x1000)	kgs./hr. (x 1000)
4" x 6"	1 - 40	.45 - 18.14
6" x 6"	3 - 60	1.36 - 27.22
8" x 10"	10 - 120	4.54 - 54.43
10" x 14"	20 - 200	9.07 - 90.72

* Flow rate data based upon 40 lbs./ft³ (640 kgs./m³) material.
Change in bulk density will affect capacities.

For More Information Please Contact:



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