Data 630-FC
9/15/2010

Eclipse BoostPak

Flow Sensor Demand Control Option

Version 1

The Flow Sensor Demand Control option provides an adjustable flow monitoring and control output that automatically starts and stops the BoostPak packaged gas booster.

Proper gas booster control is critical to ensure boosted pressure is available at the time of appliance operation. The Flow Sensor limits needless booster runtime which can shorten the life of the motor and waste energy.

The flow control module can eliminate expensive conduit and wiring to appliance equipment interlocking relays. It also is superior to the unreliable pressure sensing control methods.

The Eclipse BoostPak with Flow Sensor Demand Control consists of a microprocessor flow controller that is connected to an insertion style flow sensor. The sensor is intrinsically safe for hazardous (explosive) locations. The flow controller and the flow sensor are mounted in the outlet piping of the BoostPak. The option is normally specified with the initial BoostPak order and comes completely assembled. However, a retrofit kit can be ordered to install the option in most existing BoostPak systems.

Ratings		
Sensor	Construction	316L SS
	Operating Temperature	-100° to 390°F (-70° to 200°C)
	Maximum Pressure on Seal	10 psi (689 bar)
	Operating Range	0.1 to 500 ft/s (0.03 to 152.4 m/s)
Electronics	Enclosure	NEMA 3, 4X, 7 and 9
	Operating Temperature	-40° to 140°F (-40° to 60°C)
	Supply Voltage	110 VAC, 50/60 Hz, 3.1 W
	Contact Rating	5 amp
	Response Time	No flow to flow: 0.5 to 10 seconds Flow to no flow: 2 to 60 seconds
	Approvals, Explosion Proof Enclosure	CSA, FM, UL Class 1 Div. 1 Groups B, C, & D - T4A

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Standard System Features

- Highly reliable, 316 stainless steel, explosion proof rated flow sensor with no moving parts
- Integral and automatic self-test during power up
- DPDT relay contacts rated at 5 amp for booster control
- Explosion proof; NEMA 3, 4X, 7, and 9

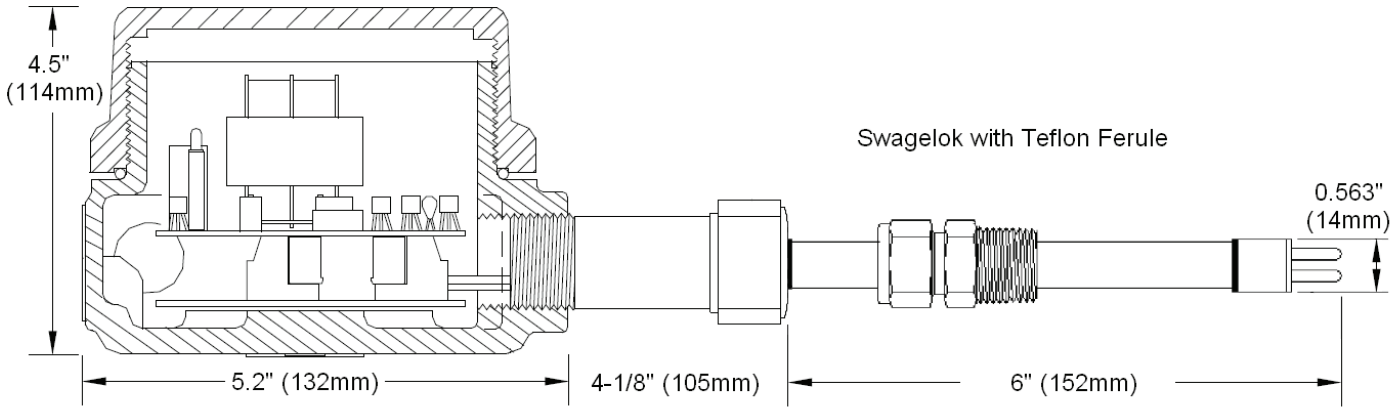
The flow switch uses a thermal differential technique to sense changes in the heat transfer characteristics of a media. The sensor consists of a pair of matched, Resistance Temperature Detectors (RTD's) encased in twin 316L series stainless steel tubes. One RTD is self-heated using a constant DC current. The other RTD is unheated to provide an accurate process temperature reference. The thermal differential created between the heated and reference RTD pair is a function of the density and/or velocity of the media with which the sensor is in contact. Other physical properties may have a secondary effect as well. The differential is greatest at a no flow condition and decreases as the rate of flow increases.

Sequence of Operation

As gas flow inside the pipe increases, the sensor compares the differential temperature signal to the set point.

1. When the flow value is above the set point, the processor energizes the relay and the contacts are closed.
2. The closed contact provides an input to the BoostPak controller that enables the booster to start.
3. As gas flow decreases, the sensor differential temperature signal decreases to a value that is below the set point.
4. The signal processor turns off the relay and its contacts are opened.
5. The input to the BoostPak controller is removed and the booster stops.

Part Numbers	
Flow Sensor	10049626



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