Filter Regulator

Market Application Publication

Background:

There are many requirements throughout industry where reducing the pressure of compressed air and removing the contaminates is critical to the operation and functionality of the equipment.

Most pneumatic machinery requires a specific operating pressure or pressure range necessary to operate at maximum efficiencies in addition to high efficiency filtration to prevent damage to critical componentry.

Contact Information:

Parker Hannifin Corporation
Filtration and Separation Division
242 Neck Road
Haverhill, MA 01835

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fax 978 556 7501

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Features and benefits:

- High flow capabilities
- Automatic Drains
- High efficiency coalescing filtration to 99.99% @ 0.01 micron
- Accurate pressure regulation
- Anodized Aluminum construction
- Optional clear Polycarbonate bowls
- Pressure gauges from 30 psig to 250 psig

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Case Study:

A manufacturing facility in Massachusetts designed and built a custom test station for sophisticated equipment they manufacture and sell. This equipment is manufactured to the strict requirements of ISO 9000 quality standards. In addition, critical calibration and qualification testing is required prior to releasing the equipment for sale to customers.

The test station includes very sensitive pneumatically operated componentry requiring specific feed pressure and very clean dry compressed air.

The components used in this test station include actuators, positioners, instrumentation, cylinders, flow meters and valves. Several, independent compressed air feed lines were plumbed to this test station in order to supply the required pressures to components that operate at different pressure ranges.

The Parker Balston Filter Regulator product offering offers several different pressure regulation ranges and high efficiency coalescing filtration.

This test station now receives accurately reduced pressure and very clean, dry contaminate free compressed air. The Balston 12E Series filter regulators are designed to capture all rust and pipescale particles and continually remove all oil and water contaminants at an efficiency of 99.99%+ at 0.01 micron, from the compressed air supply while providing extremely accurate pressure regulation.

The Balston 12E Series filter regulator utilizes a rolling diaphragm design which provides the same regulation accuracy of traditional diaphragm designs but the long service life of a piston design. Available in 3/8" through ¾" port sizes, the 12E series are ideal for low and high flow applications where air demand can vary widely.

Recognized as the industry leader in high efficiency coalescing filtration of compressed air and conditioning, Parker Balston filter regulators are found in the majority of all industries.

Application:

Typical applications for filter regulators include packaging equipment such as filling equipment, sealers, boxers, coders, wrapping and palletizers. More general applications found in most all industries are actuators, cylinders, pneumatic tools, paint spraying and sand blasting. Electronics, Medical and Automotive industries all have very specific requirements for filter regulators as well.

Applications are quite diverse in terms of required delivery pressure. Depending on the piece of equipment, pressure requirements can range from just a few pounds per square inch to well over one hundred pounds per square inch. In addition to regulating the pressure, removal of harmful contaminates found in the compressed air supply is also critical. A good filter regulator will include a high efficiency coalescing filter designed to remove pipe scale, rust, oil and water droplets offering optimum protection to either an oiler downstream or to the pneumatic device it is servicing.

Critical test station serviced with Balston Filter Regulators and Large Prefilters

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Principal Specifications:

Model	AFR-940	AFR-940A	12E27	12E37	12E47
Port Size	1/4" NPT	1/4" NPT	3/8" NPT	1/2" NPT	3/4" NPT
Gauge Ports	1/8" NPT	1/8" NPT	1/4" NPT	1/4" NPT	1/4" NPT
Materials of Construction					
Head	Anod. Alum.	Anod. Alum.	Zinc	Zinc	Zinc
Bowl	Polycarb.	Anod. Alum.	Zinc	Zinc	Zinc
Bonnet	Polycarb.	Polycarb.	Plastic	Plastic	Plastic
Internals	Brass/Buna	Brass/Buna	Zinc/Nitrile	Zinc/Nitrile	Zinc/Nitrile
Maximum Temperature	220°F (104°C)	220°F (104°C)	125°F (52°C)	125°F (52°C)	125°F (52°C)
Maximum Pressure (2)	150 psig	250 psig	250 psig	250 psig	250 psig
Minimum Pressure	---	---	15 psig (1)	15 psig (1)	15 psig (1)
Shipping Weight	0.5 lbs. (0.2 kg)	0.5 lbs. (0.2 kg)	2.5 lbs. (1.1 kg)	2.5 lbs. (1.1 kg)	2.5 lbs. (1.1 kg)
Dimensions	1.2"W X 6"L (3cm X 15cm)	1.2"W X 6"L (3cm X 15cm)	3.25"W X 13"L (8 cm X 33cm)	3.25"W X 13"L (8 cm X 33cm)	3.25"W X 13"L (8cm X 33cm)

Ordering Information

For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time

Model	AFR-940	AFR-940A	12E27	12E37	12E47
Control Gauge Pressure Range:					
0-30 psig	AFR-940-30	AFR-940A-30	see ordering matrix below		
5-60 psig	AFR-940-60	AFR-940A-60	see ordering matrix below		
10-130 psig	AFR-940-130	AFR-940A-130	see ordering matrix below		
Auto. Drain (1)	N/A	N/A	Included	Included	Included
Replacement Filter Cartridges:					
Number Required	1	1	1	1	1
Box of 5	5/050-05-BX	5/050-05-BX	5/130-14-BX	5/130-14-BX	5/130-14-BX
Box or 10	050-05-BX	050-05-BX	130-14-BX	130-14-BX	130-14-BX
Mounting Bracket	11536	11536	PS807P	PS807P	PS807P

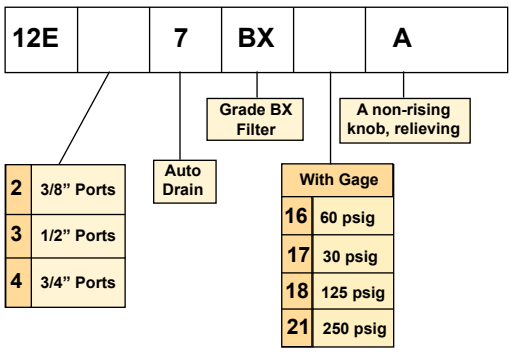
Notes:

1 Minimum operating pressure for automatic drain is 15 psig.

2 Maximum pressure ratings are for temperatures to 130°F (54°C). Please consult the factory for maximum pressure ratings at elevated temperatures.

How to Order

To order product with desired port size and Regulating Pressure Range, select the indicator digits from the matrix (at right). This will complete the entire model number which is needed to place an order.



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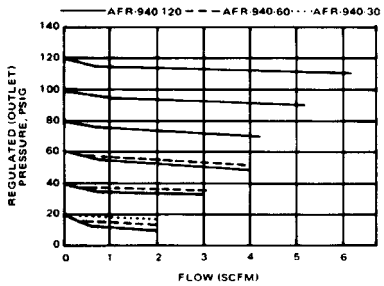
Filter-Regulator Combinations

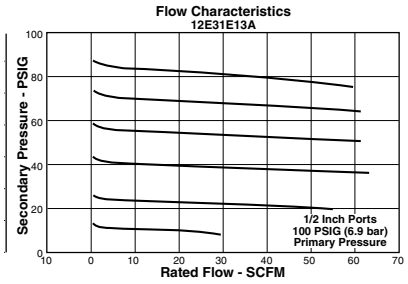
Balston Filter-Regulators combine a high efficiency coalescing filter with a high quality pressure regulator. Air flows through the filter, then to the pressure regulator. The filter is a Balston coalescing compressed air filter (Grade BX) and will completely remove oil, water, and dirt from compressed air and other compressed gases. Flow direction through the element is inside-to-outside for optimum oil and water removal. An automatic drain is installed on the 3/8", 1/2", and 3/4" models offering maintenance-free operation. Pressure gauges are standard and are available in up to 4 different ranges (see ordering information).

Control Characteristics

Model AFR-940, AFR-940A



Model 12E3



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