

UM91-HF

Rev 6

July 2012

Supersedes Rev 5

Model 91-HF Filter Regulator



INTRODUCTION

The Model 91-HF Filter Regulator removes impurities from an air supply and delivers an accurate output pressure.

SPECIFICATIONS

Port Size	(In, Out and Gauge) ¼" NPT
Output Range	0-120 psig (0-800 kPa)
Max Supply Pressure	150 psig (1034 kPa)
Mounting	Pipe or Through Body
Flow Capacity	22 SCFM (33.0 m ³ /hr) at 100 psig (700 kPa) supply with 20 psig (140 kPa) output
Exhaust Capacity	0.1 SCFM (0.17 m ³ /hr) with downstream pressure 5 psig (35 kPa) above set point
Sensitivity	1" (2.5 cm) of water
Air Consumption	Less than 5 SCFM (0.17 m ³ /hr)
Effect of Supply Pressure Variation	Less than 0.2 psig (1.4 kPa) for 25 psi (170 kPa) change
Ambient Temp Limits	0° to 160°F (-18° to 71°C)
Weight	1.6 lb (725 g)

MATERIALS OF CONSTRUCTION

Body	Diecast Aluminum Alloy, Iridite and Baked Epoxy Finish
Filter	3 Micron Phenolic Impregnated Cellulose
Diaphragm	Nitrile Elastomer and Nylon Fabric
Valve Seat Plug	Nitrile Elastomer
Additional Materials	Brass, Zinc Plated Steel, Acetal

INSTALLATION

Install the regulator as close as possible to the instrument or tool it is to service. For best filter drainage, orient the drain valve so that it is at the lowest point on the drip-well housing. The words "IN" and "OUT" are cast into the body to indicate the direction of flow. See Specifications for port size. Installation dimensions are shown on the next page.



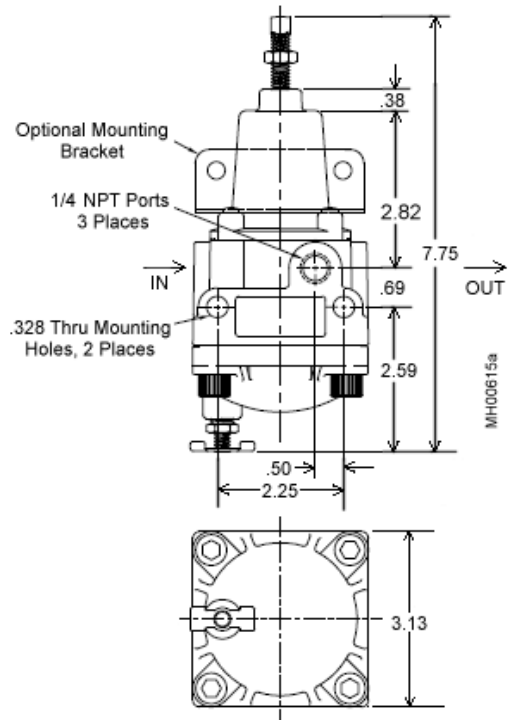
As with any pneumatic device, excessive pressure will eventually cause one or more components to rupture. Such an event could cause death or serious injury. To avoid this possibility, the supply (IN) pressure must not exceed 150 psig.

IMPORTANT

The Model 91-HF filter regulator has low capacity internal relief, which provides very limited downstream over-pressure protection. To avoid exceeding the output pressure limits in service, a pressure relieving or pressure-limiting device should be provided.

INSTRUMENT AIR REQUIREMENTS

This product is intended for use in industrial compressed-air systems only. Do not use this product where pressures and temperatures can exceed those listed under Specifications.



Installation Dimensions

CAUTION



Use of process fluids other than instrument air is not recommended. No claim is made as to the suitability of this product for use with other process fluids, such as hazardous gases, except as listed on an appropriate certificate. Non-approved instruments are suitable for use with instrument air only. Optional features and modifications such as tapped exhaust do not imply suitability for use with hazardous gases except as listed on an approval certificate.

CAUTION



Synthetic compressor lubricants in the instrument air may cause deterioration of some components resulting in instrument failure. See materials of construction above.

The requirements for a quality instrument air supply can be found in the Instrument Society of America's "Quality Standard for Instrument Air" (ISA-S7.3). Basically, this standard calls for the following:

Particle Size — The maximum particle size in the air stream at the instrument should be no larger than 3 microns.

Dew Point — The dew point, at line pressure, should be at least 10°C (18°F) below the minimum temperature to which any part of the instrument air system is exposed at any season of the year. Under no circumstances should the dew point, at line pressure, exceed 2°C (35.6°F).

Oil Content — The maximum total oil or hydrocarbon content, exclusive of non-condensable, should not exceed 1 ppm under normal operating conditions.

OPERATION

Prior to turning on supply air, back off the adjusting screw until there is no compression of the range spring; refer to dimension and assembly drawings as needed. After turning the supply pressure on, turn the adjusting screw clockwise to increase outlet pressure.

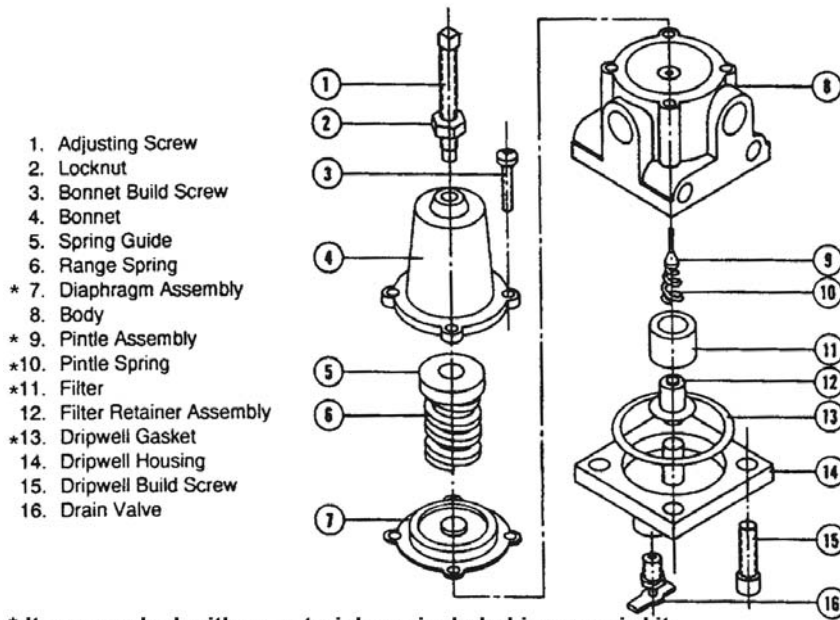
MAINTENANCE

- 1) To remove condensate, slowly open the drain valve and bleed accumulated liquid.
- 2) To clean the filter element:
 - a. Shut off supply air.



Components can be ejected with great force if the instrument is disassembled while pressure is applied. To avoid the risk of death or serious injury, always turn off and vent supply pressure and any downstream pressure source when disassembling the instrument.

- b. Drain condensate.
- c. Remove four corner bolts from the bottom of the unit. Refer to the Assembly Drawing as needed.
- d. Remove drip-well housing and filter.
- e. Clean parts and reassemble in reverse order.



- 1. Adjusting Screw
- 2. Locknut
- 3. Bonnet Build Screw
- 4. Bonnet
- 5. Spring Guide
- 6. Range Spring
- * 7. Diaphragm Assembly
- 8. Body
- * 9. Pintle Assembly
- * 10. Pintle Spring
- * 11. Filter
- 12. Filter Retainer Assembly
- * 13. Dripwell Gasket
- 14. Dripwell Housing
- 15. Dripwell Build Screw
- 16. Drain Valve

<u>Repair Kits:</u>	<u>Part Number:</u>
Spare Parts	10963-202
Filters (4)	10963-201

* Items marked with an asterisk are included in a repair kit.

Assembly Drawing

- 3) To install replacement parts:
 - a. Order repair kits; see the assembly drawing for part numbers.
 - b. Shut off supply air. Back out the adjusting screw.
 - c. Remove four corner bolts from bottom of unit and four screws on the top. Remove all parts.
 - d. Replace all parts that show excessive wear.
 - e. Clean all parts and replace in the reverse order.

CUSTOMER/PRODUCT SUPPORT

For support and the location of your local Siemens representative, refer to the table below for the URL of the Process Instrumentation (PI) portion of the Siemens public Internet site. Once at the site, click **Support** in the right column and then **Product Support**. Next select the type of support desired: sales, technical (see the table below), documentation, or software.

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Technical Support	1-800-333-7421; 8 a.m. to 4:45 p.m. eastern time, Monday through Friday (except holidays)
Customer Service & Returns	1-800-365-8766 (warranty and non-warranty)
Public Internet Site	http://www.usa.siemens.com/pi
Technical Publications in PDF	Click the above link to go to the Siemens Internet site and then click Process Instrumentation . In the column to the right, click Support > Manuals . In the column to the left, select the product line (e.g. Pressure or Temperature or Controllers) to open navigation and search panes. Note: Navigation may change as the site evolves.

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