

EQUILIBAR[®]
PRECISION FLUID CONTROL



Series 41

Pressure Reducing Regulator
FOR LOW TO MEDIUM PRESSURES

HOW IT WORKS

The Equilibr Series 41 is a manually adjustable spring-operated pressure reducing regulator. The spring force is manually set using the adjustment knob. The spring acts on the top of the diaphragm assembly to open the main internal valve which allows the compressed gas supply to flow into the system and increase the system pressure. This increase in system pressure is sensed by the diaphragm. When the system pressure rises sufficiently to become equal to the force exerted by the setpoint spring then the main valve will close and no additional compressed gas supply will be allowed into the system.

Should the system pressure rise above the desired setpoint provided by the spring, or if the spring setpoint is manually adjusted downward, then the internal exhaust valve will open to vent the excess pressure. In this manner pressure is maintained at the setpoint provided by the spring by adding compressed gas from the supply or by venting any excess system pressure through the exhaust port. The large sensitive diaphragm makes the Series 41 an ideal pressure regulator for low pressure applications, particularly when high flow rates are required.

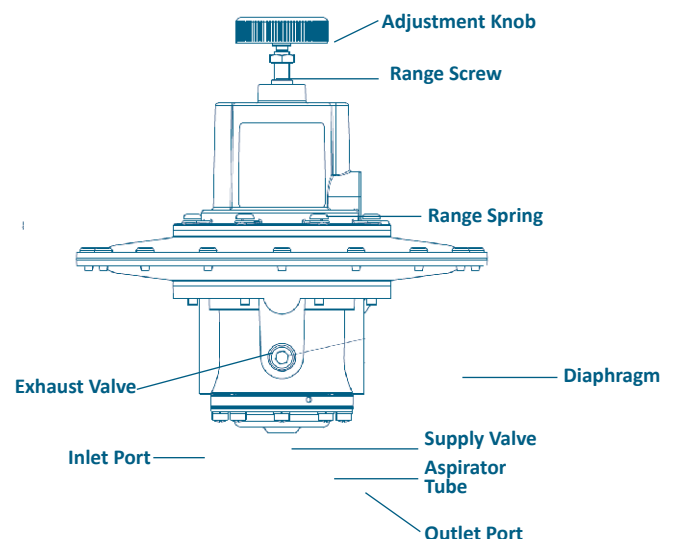
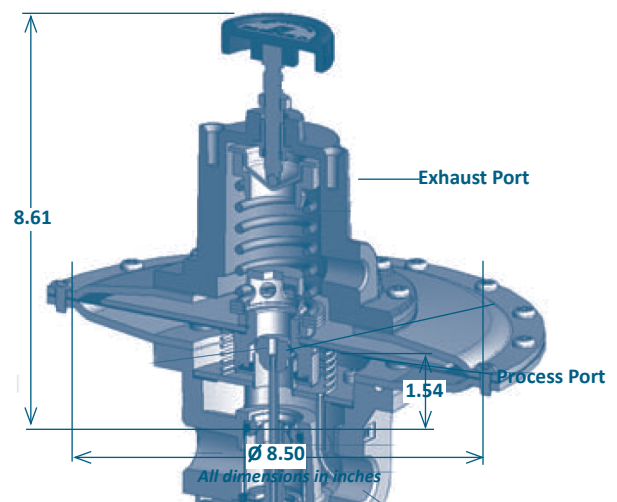
General Specifications

The Series 41 is a pressure reducing regulator designed to control low pressures at flow rates from static through high flow

The series 41 is a no-bleed design regulator that does not consume air in the steady state.

FEATURES

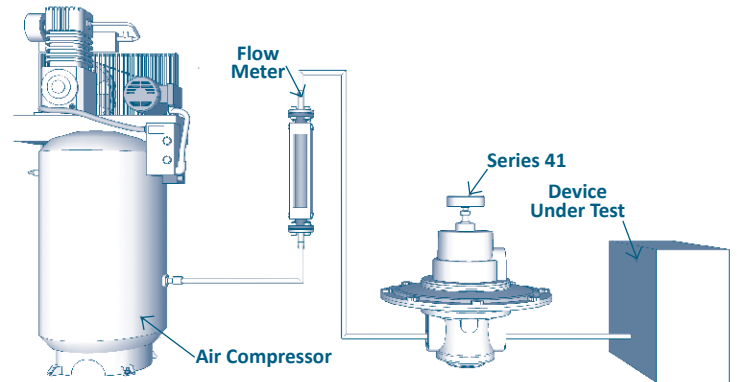
- Sensitive to 0.05 inches of water column
- High forward flow capacity
- High flow exhaust/vent
- Low pressure droop under flow



Application Highlights

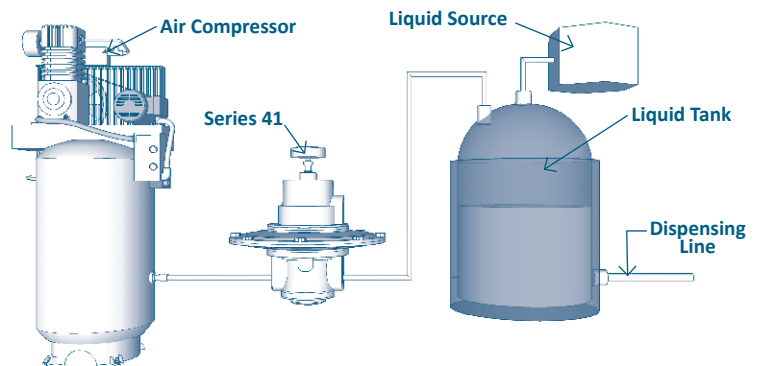
LEAK TESTING

Manufactured products must often undergo a final quality control inspection. A common test is to verify that an amount of air between a high and a low limit pass through the product at a given pressure. This can be used to ensure that all parts are present and that any dust seals are properly installed. The Series 41 is shown supplying a low pressure air signal to a product. Because the Series 41 applies the same pressure regardless of the actual flow rate, the reading taken from the flow meter can directly be used as the quality control measurement.



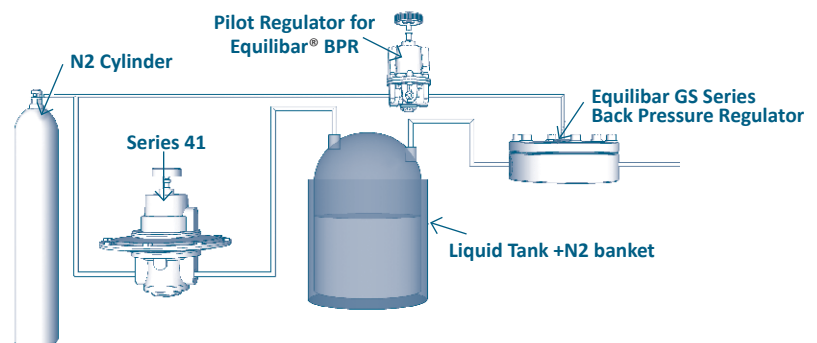
LIQUID DISPENSING

A traditional liquid pump is not always the best choice for dispensing liquids. Pumps can produce pulsations which cause the fluid to be dispensed unevenly. By using a compressed gas as the motive force, a smooth consistent dispense may be had. The Series 41 will apply the same pressure regardless of the liquid dispense flow rate. This works well for intermittent applications and for applications which run at variable speeds or variable application rates.



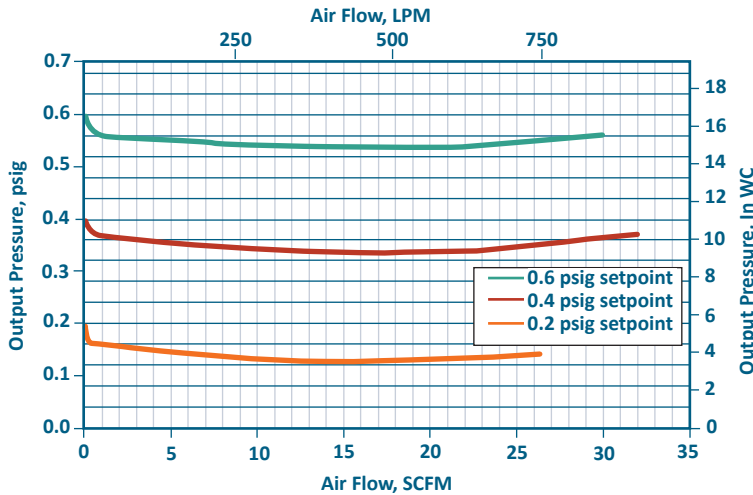
TANK BLANKETING

Tanks containing liquids often have a small positive pressure of compressed gas applied to the dead space overhead. This low positive pressure is used to prevent the ingress of atmospheric air, dust, and other contaminants. The Series 41 is ideal because it accurately controls at low to very low output pressures. A back pressure regulator should be used to relieve any excess pressure in the tank because the Series 41 should not be exposed to corrosive vapors. A stainless steel Equilibar® back pressure regulator (BPR) is ideal to handle this relief function.



Technical Information

Flow Characteristics Performance Curve
Model 4114A Supply Pressure = 100 psig



Performance Curves display typical decrease in outlet pressure as flow increases. Similar response to be expected for other supply pressures and setpoints. Performance data outside of these curves is not available.

SUPPLY PRESSURE (PSIG)	20 psig to 150 psig max.
FLOW CAPACITY	24 SCFM (40.7 m3/HR)@ 100 psig [7 bar] (700 kPa) supply and 1.0 psig setpoint
EXHAUST CAPACITY	12 SCFM (0.85 m3/HR) where downstream pressure is 1 psig [0.07 bar] (7 kPa) above setpoint
OUTPUT RANGES	0-0.7 psig [0-0.048 bar]; up to 0-5 psig [0-0.35 BAR]
CONSUMPTION	None Detected
SENSITIVITY	Low as 0.05" Water Column
SUPPLY PRESSURE EFFECT	None Detected
AMBIENT TEMPERATURE	-40°F to +200°F, (-40°C to 93.3°C)
HAZARDOUS LOCATIONS	Acceptable for use in Zones 1 and 2 for gas atmosphere; Groups IIA and IIB and Zones 21 and 22 for dust atmospheres

BODY AND HOUSING	Aluminum
TRIM	Zinc Plated Steel, Brass
DIAPHRAGMS AND SEALS	Nitrile on Dacron

Ordering Information

EXAMPLE							
41	1	6	A	N	N	K	E
41			A				
	1	2		3	4	5	6

1 PRESSURE RANGE

	psig	mbar	kPa
1	0 - 0.7	0 - 48	0 - 4.8
2	0 - 1.4	0 - 97	0 - 9.7
3	0 - 3.0	0 - 210	0 - 21
4	0 - 5.0	0 - 350	0 - 35

2 PORT SIZE

- 3 3/8"
- 4 1/2"
- 6 3/4"

3 PORT THREAD

- N NPT
- U BSPT
- H BSPP¹

4 ELASTOMER

- N Nitrile
- J Fluorocarbon

5 ACTUATOR

- K Knob
- T Tamper Proof

6 VENT

- S Straight
- E Threaded

¹ BSPP Threads in Inlet & Outlet Ports Only. Others BSPT.

Options in **Blue** ship in 1 - 2 days
Options in **Black** are 4 - 6 weeks lead time

TYPICALLY IN STOCK PART NUMBERS

Usually ships 1 - 2 days ARO

PART NUMBER	PRESSURE RANGE	PORT SIZE	ACTUATOR	VENT
4116ANNKE	0-0.7 psig	3/4" NPT	Knob	Threaded Vent
4126ANNKE	0-1.4 psig	3/4" NPT	Knob	Threaded Vent
4136ANNKE	0-3.0 psig	3/4" NPT	Knob	Threaded Vent
4146ANNKE	0-5.0 psig	3/4" NPT	Knob	Threaded Vent

About Equilibar

Equilibar provides innovative and robust pressure control technology for researchers and engineers worldwide. We are proud to design, manufacture, and test our patented back pressure regulators in our factory overlooking the Blue Ridge Mountains near Asheville, NC.

APPLICATION ENGINEERING— WHAT SETS US APART

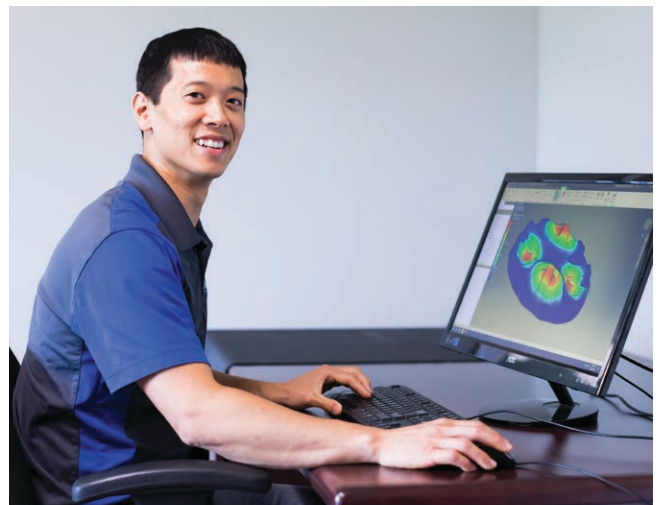
Unlike mass-market regulator distributors, we focus on working with you, the scientist or engineer with a complex pressure control scenario.

Our application engineers work collaboratively with clients to identify the optimal model, trim, and diaphragm for each application's unique challenges. No matter where you are on the globe, you can stay in close contact with your engineer by email, telephone, videoconferencing, or fax.

After installation, your application engineer will support you with start-up information and fine-tuning as needed.



Each application is reviewed by our engineering team to ensure quality performance of our products.



Our engineers offer custom designed solutions for the most difficult pressure control challenges. Feel free to contact us to discuss your situation.



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Made in the
USA

Equilibar's quality system is
ISO 9001:2015 certified.