

# APTech

# GAS CONTROL NEWS

QUALITY – RELIABILITY – SAFETY

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## A Lucky 13

To some, 13 is not considered a lucky number. The new 1300 series is anything but unlucky! We are pleased to introduce the AZ and AK 1300 series single stage, pressure regulators for high flow point of use applications. The 1300 series is a free poppet version of the venerable 1200 series tied diaphragm regulator. It provides the same outstanding pressure control and flow performance in a more cost effective package. The 1300 is the new regulator of choice for high flow gas distribution applications ranging from tool hook up, N<sub>2</sub> blanketing to CDA (clean dry air) delivery.

(10 bar). An HF option is not available because the 1300 comes standard with this feature for maximum flow performance in every unit. The porting configurations and fitting choices are identical to the equivalent AZ and AK 1200 models, as the body is common to both series. Available options are limited due to cost reduction efforts, which preclude the VS, FC and HR options common to other series.

The 1300 series provides a significant cost savings over a comparable 1200 series, with no sacrifice in performance. It is a 'drop in' replacement for point of use applications, providing the same rugged reliability the industry has come to depend upon. ❖



AZ 1300



AK 1300

The 1300 series specifications are tailored to distribution requirements. The inlet pressure rating is 300 psig (21 bar) with outlet pressure ratings to 150 psig

### Corporate Office:

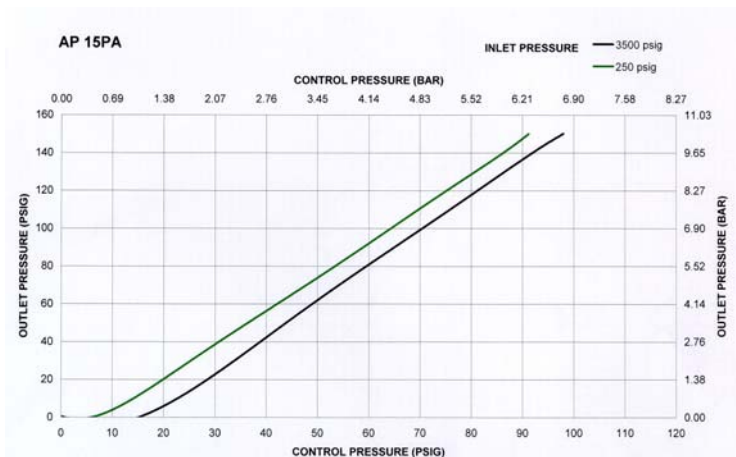
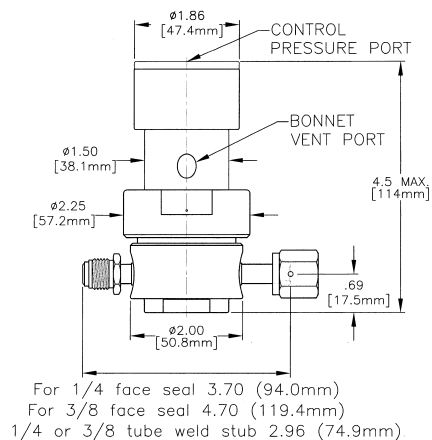
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# Pneumatic Regulator Pressure Control

Remote control is no longer remote to the 1000 or 1500 series in the AP, AZ and AK families. A new optional pneumatic actuator replaces the adjustment spring to provide outlet pressure control via control of pressure to the actuator. As opposed to dome loading the regulator by applying control pressure to the non-wetted side of the diaphragm, a pneumatic actuator safely drives the regulator while isolating the control pressure from potential contact with the process gas. If a regulator is dome loaded and the diaphragm leaks, the process gas will mix with the pneumatic control gas to the dome. This is a potentially very hazardous situation depending upon the process gas. A pneumatic actuator provides a fail safe feature, isolating the control gas from any potential process gas leak through the diaphragm. The actuator requires control pressure to open the regulator, and therefore should be considered normally closed (NC). This too is a safety feature, because the regulator will close with loss of control pressure such as may occur in case of a fire melting plastic control pressure lines.

The 1200 and 1400T series will soon have a similar PA option available. It will be a different actuator to accommodate the larger diaphragm of these series.



The PA option is designed to deliver up to 100 psig (7 bar) outlet pressure with only 80 psig (5.5 bar) of control pressure. The ratio of control pressure to outlet pressure is depicted in the attached graph.

Though it may seem logical to utilize a pneumatically controlled regulator as a pneumatically controlled valve, pressure regulators should not be considered shut off valves.

## HR Meets the 1400T

A new, higher inlet pressure option is now available for the AP, AZ and AK 1400T series – designated HR. The HR option raises the standard 2,300 psig (159 bar) inlet pressure rating to 3,000 psig (207 bar). This is the same basic option that has been available for some time with the 1200 series.

The 1400T HR option was developed for customers desiring moderately high flow capacity with a minimum of supply pressure effect (the delivery pressure rise due to decreasing source pressure). The 1400T has less than half the supply pressure effect of the 1200 series, 1.6 psi per 100 psi drop in source pressure compared to 3.6 psi per 100 psi drop. This is a good option for high pressure He and H<sub>2</sub> systems where the source pressure can vary from almost 3,000 psig (207 bar) down to 200 psig (14 bar). Lower supply pressure effect comes at the expense of flow capacity. As the supply pressure effect of the 1400T is half of the 1200, the flow capacity is also about half. The 1400T HR is not for every high inlet pressure application, but it provides another option for the system designer to optimize a gas delivery system. ❖