Your supplier of high pressure laboratory instruments

ABPR-SERIES AUTOMATED BACK PRESSURE REGULATOR

Description

The ABPR-series represents the pinnacle of automated back pressure regulation technology, designed for both single and multi-phase fluids, and capable of maintaining stable pressure control up to 20,000 psi. The architecture of the ABPR integrates a motor-driven piston pump, a high-precision pressure transducer, and a dome-loaded valve. The valve features a dual-chamber design, separated by a piston that employs a high-strength stainless steel needle coupled with a reinforced PEEK seat on the lower side. The lower chamber pressure control the process fluid flow, while the upper chamber pressure is regulated by a high accuracy motor driven piston pump, containing nitrogen gas. The Back Pressure Regulator (BPR) serves as a comparator: if the dome pressure surpasses the process pressure, the needle seals the outlet, facilitating pressure build-up. On the other hand, when the process pressure exceeds the dome pressure, the needle retracts, allowing excess process fluid to be released, thereby reducing system pressure. These oscillatory actions result in exceptionally reliable pressure regulation. Through an Ethernet interface and specialized software, the ABPR can be effortlessly programmed to execute complex pressure cycles.

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Specifications

Maximum pressure range	10,000 / 20,000 psi
Flow rate	0.001 to 30 ml/min
Wetted materials	Stainless Steel / Hastelloy
Temperature	ambient to 150°C (300F)
Type of fluids	Gas, liquid, supercritical fluids
Nitrogen gas pressure requirement	1,000 psi (5,000 psi for 20,000 psi)
Power supply requirement	110-220 VAC, 50/60 Hz
Pressure control interface	Ethernet

Benefits

Extremely fast response to system pressure fluctuations

Stable pressure control over the entire flow range

Accurate control even during multiphase flow

Corrosion and chemical resistant

Pressure control via Ethernet communication port