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Valve Solutions

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244/245

PRESSURE/FLOW CONTROL SYSTEM

The 244/245 Pressure/Flow Control System is a closed loop feedback control system for use in vacuum processes requiring an all-metal, bakeable control valve, for wide range pressure or flow control. The 244/245 system, comprised of a control module and servo-controlled leak valve, is ideally suited for single-gas processes such as sputtering, sputter etching, ion source control, ion implantation, vacuum gauge calibration, etc.

The 245 Valve is an all-metal, bakeable control valve, capable of controlling pressure from 10^{-11} to 6000 Torr, with a maximum throughput up to 2500 Torr-liters/sec (200 slm). The valve can be used with many corrosive gases that preclude the use of other valves. With the valve driver assembly removed, the valve may be baked to 450°C for UHV applications. The stepper motor used to drive the 245 allows response to pressure or set point changes in fractions of a second, and will drive the valve from a fully closed to a fully open position in only 15 seconds.

The 244 Controller is designed to interface with a wide variety of input signals and with external control signals for full system automation. Set point, phase lead and gain, manual/automatic/external control mode, and input signal adjustments are provided. The 244 accepts input signals from thermocouple and ionization gauges, Pirani gauges, and MKS Baratron® pressure transducers with Full Scales between 0.1 and 10 VDC. Options include: 1) valve position indicator; 2) multiple set points (3 or 4), remote or front-panel selectable; 3) process limit relay to provide alarm or control functions when pressure exceeds a preset percentage of set point.

Features & Benefits

- Utilizes an all-metal, bakeable control valve via use of a stepper motor
- Wide pressure and flow control range
- High accuracy: 0.25% of F.S., for input signals of 10, 1, and 0.1 VDC Full Scale
- Fully automatic, manual, or remote control
- Multi-set point, process limit, and valve position options
- Microprocessor-compatible through external control signals (open, auto, close, set point selection, etc.)

Specifications and Ordering Information

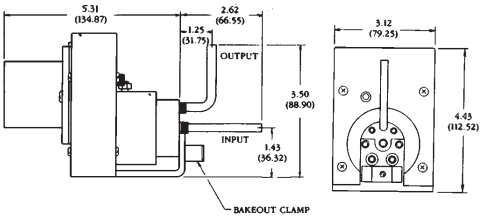
245 Valve

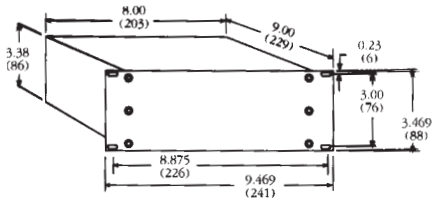
Materials Exposed to Gases	304 sst and fine silver
Pressure Control Range	10^{-11} to 6000 Torr
Maximum Throughput	2500 Torr-liters/sec (200 slm)
Closed Leakage	< 10^{-9} scc/sec
Pressure Connection	1/4” (6.35 mm) o.d. tubulation
Maximum Inlet Pressure	200 psig on center port, 25 psig on other port*
Temperature Range	
Operating	0° to 50°C
Bakeout	450°C (with driver removed and bakeout clamp installed)
Electromagnetic Compatibility	Fully compliant to EMC Directive 2004/108/EEC when used with an overall metal braided shielded cable, properly grounded at both ends

244 Controller

Power Input Required	115/230 VAC, 50-60 Hz
Power Output Available	+15 VDC @ 200 mA
Input Signals Accepted	0 to +0.1, +1, or +10 VDC
External Set Point Input	0 to 5 VDC
Control Accuracy	0.25% of Full Scale
Mounting Standard	1/2-rack cabinet, may be mounted alone or with any other MKS 1/2-rack instrument in 19-inch rack with optional RM-6 rack mounting kit

**Consult factory for fittings or different tube bend styles.*





Dimensional Drawing —

Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Ordering Code Example: 244E-1-VPO-PLO

Type Number	Code	Configuration
244E Pressure/Flow Controller	244E	244E
Number of Set Point Controls		
Single set point control (standard)	1	1
Three set point controls (option)	3	
Four set point controls (option)	4	
Options		
Valve position indicator	VPO	VPO and/or PLO
Process limit option	PLO	

Type Number	
245 Control Valve	245

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