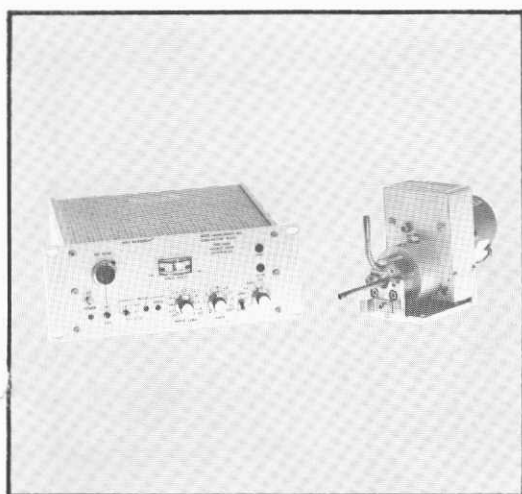


Type 244/245 Vacuum/Pressure/Flow Control System

FEATURES



- Utilizes the all-metal, bakeable and field proven, Granville-Phillips Servo Valve with improved performance via use of a stepper motor.
- Wide pressure and flow control range.
- High Accuracy: 0.25% F.S., for input signals of 10, 1, and 0.1 VDC full scale.
- Fully automatic, manual or remote control.
- Multiple setpoint, process limit and valve position indicator are standard options.
- Microprocessor compatible through external control signals (open, auto, close, setpoint selection, etc.).

Type 244/245 Pressure/Flow controller is a closed-loop feedback control system for use in vacuum processes requiring an organic-free, all-metal, bakeable control valve, for wide range flow or pressure 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 Type 245 Valve is a modified version of the Granville-Phillips Series 216 all-metal, bakeable control valve. The 245 Valve is 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 setpoint changes in fractions of a second, and will drive the valve from full-closed to full-open in only 15 seconds.

The Type 244 Controller is a 1/2-rack instrument designed to interface with a wide variety of input signals and with external control signals for full system automation. Setpoint, phase lead and gain, manual/automatic/external control mode, and input signal adjustments are provided. The 244 will accept input signals from MKS Baratron, mass flow transducers, thermocouple and ionization gauges, or any input signal with full scale between 0.1 and 10 VDC. A \pm VDC power supply is provided to power gauges or transducers from the 244. Options include: (1) Valve position option to indicate relative opening of the valve (an invaluable aid in monitoring system performance); (2) Multi-setpoint option to provide 3 or 4 preset setpoints, remote or front-panel selectable; and (3) Process limit relays to provide alarm or control functions when pressure exceeds a preset percentage of setpoint.



SPECIFICATIONS

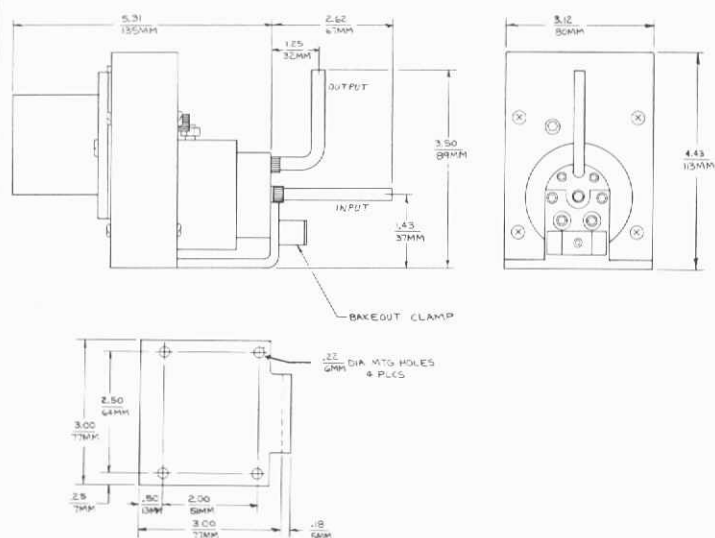
TYPE 245 CONTROL VALVE

- Materials Exposed to Gases:** Monel 400, A-nickel, fine silver, copper-silver eutectic
- Pressure Control:** 10⁻¹¹ to 6000 Torr
- Maximum Throughput:** 2500 Torr. liters/sec (200 SLM)
- Closed Leakage:** < 10⁻¹⁵ scc/sec
- Pressure Connections:** 1/4" (6.35 mm) o.d. tubulation
- Maximum Inlet Pressure:** 2000 psia (13.8 MPa) on center port, 200 psi (1.38 MPa) on other port
- Temperature Range:** operating: 0° to 50°C
 bakeout: up to 450°C (with driver removed and valve open)

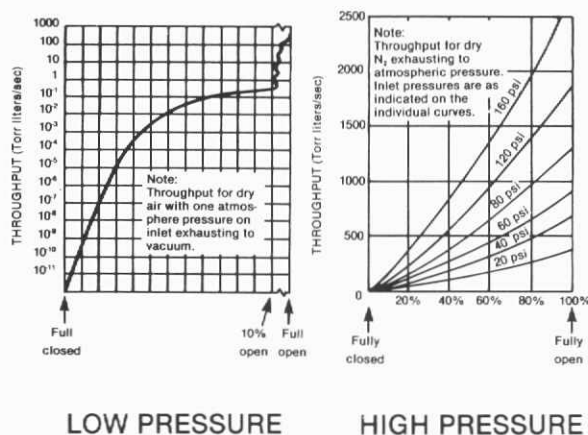
TYPE 244 CONTROLLER

- Power Input Required:** 115/230 VAC, 50-60 Hz, 1/8A
- Power Output Available:** ± 15 VDC @ 200 ma. (each line)
- Input Signals Accepted:** 0 to 0.1, 1, or 10 VDC (or any full scale in between)
- External Setpoint Input:** 0 to 5 VDC
- Control Accuracy:** 0.25% of full scale. (Full scales of 0.1, 1, or 10 VDC, as selected by 244 range switch)
- 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.

OUTLINE DRAWINGS

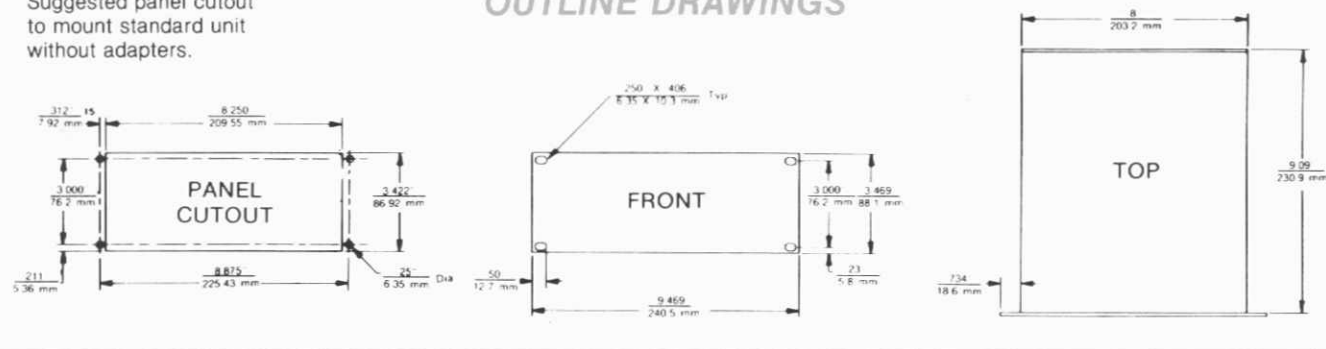


THROUGHPUT CURVES



Suggested panel cutout to mount standard unit without adapters.

OUTLINE DRAWINGS



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