# Ultra-High Pressure Digital Gas Mass Flow Meters & Controllers

## FEATURES

- Ideal for pilot plants, hydrogenation reactors, and autoclave processes
- Measure and control gas mass flow rates over an inlet pressure range of 500 to 5000 psig (34.5 to 345 barg)
- Flow ranges from 100 sccm to 20 slpm
- High accuracy +/- 1.0% of full scale; repeatability +/- 0.2% of full scale
- Wide differential pressure range from 0.345 bard (5 psid) to 345 bard (5000 psid)
- Innovative new ValFlex™ control valve design for precision control over a wide range of pressures and flow rates
- Leak-by of as little as 4 sccm at 5000 psid (345 bard), depending on orifice
- Inert, carbon-reinforced polyamide valve seat increases valve durability and precision
- Special high pressure rated seals minimize gas permeability
- Add Sierra's Compod™ to run small-scale pilot plants or control high pressure reactors and autoclave processes without the expense of DCS or PLC systems.
- Proprietary high pressure calibration facility, directly traceable to NIST
- 24 VDC input power reduces installation cost and complexity
- Unique Pilot Module (mounted or hand-held) lets you view and change critical control functions
- Choose from multiple analog or digital signals
- Supports Modbus, Profibus DP, Foundation Fieldbus
- CE approved

SmartTrak® 100HP


## DESCRIPTION

Precision flow measurement and control at very high gas pressures is among the most challenging applications in the flow industry. Leaks, gas behavioral changes, and unpredictable valve control can all lead to reduced performance.

Designed to overcome these challenges, the 100HP combines the high performance of the SmartTrak® with a wider, more robust flow body, all-welded sensor seals, an innovative new valve design called ValFlex™, and a state-of-the-art high pressure calibration facility. The result is an instrument with increased application flexibility and accuracy in high pressure gas flow control applications.

To increase valve performance and accuracy under high pressures, Sierra's proprietary ValFlex™ valve seat technology uses a flexible, high-impact, carbon-reinforced polyamide valve seat material to assure smooth interaction with the valve orifice. The result is precision control over a wide range of flows from 100 sccm to 20 slpm with an industry leading leak-by as little as 4 sccm at 5000 psid (345 bard), dependant on the orifice used.

Because traditional valve seat elastomers like Viton, Neoprene and Kalrez swell and deform under high pressures, the 100HP uses harder, denser seals to minimize gas permeability.

To ensure the 100HP delivers precise, high pressure measurement and control, each unit is calibrated on our proprietary NIST traceable high-pressure calibration facility using a gas booster, high-pressure accumulator tanks, and mirrored precision pressure gauges, yielding highly accurate inlet and outlet pressures to match the customer's application perfectly.

An instrument designed with purpose, the 100HP is a versatile solution for the most challenging high-pressure gas mass flow applications.

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ISO REGISTERED 9001