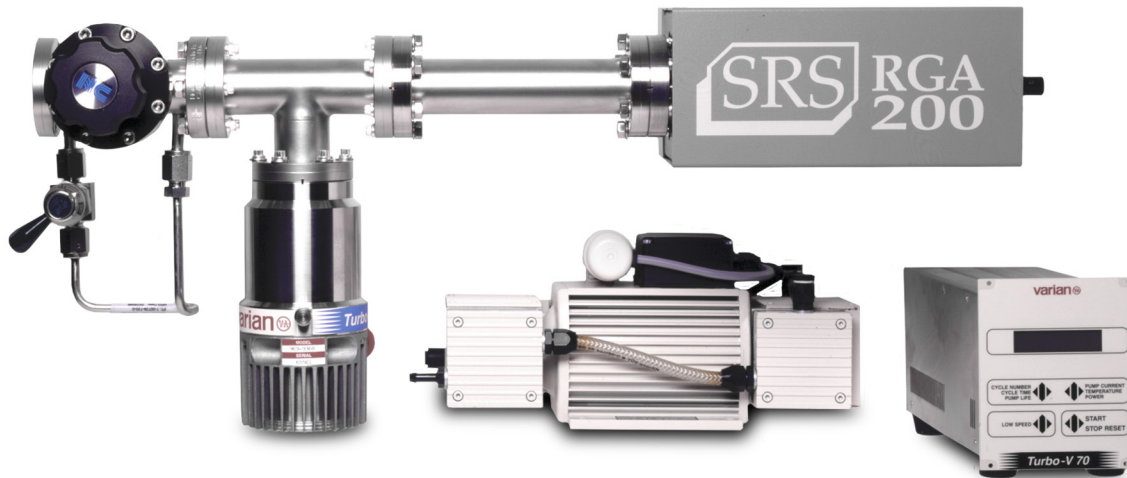


Process Monitoring Systems

PPR systems — 100 amu, 200 amu, and 300 amu



PPR Series Process Monitoring Systems

- 0.01, 0.1, 1.0 or 10 Torr inlet pressure
- 3×10^{-5} Torr-L/s flow rate
- 2 second response time (0.1 Torr)
- 100, 200 or 300 amu systems
- Field-replaceable electron multiplier and filament
- 6 orders of magnitude dynamic range
- RGA Windows software

· PPR100/1 ... \$20,000 (U.S. list)

· PPR200/1 ... \$21,000 (U.S. list)

· PPR300/1 ... \$23,000 (U.S. list)

The PPR Process Monitoring Systems are designed for inline process monitoring and diagnosis. Two paths are provided to the residual gas analyzer (RGA): a high conductivity path for monitoring base vacuum, and a pressure reducing path for monitoring the process at operating pressure. The pressure reducing path contains a micro-hole orifice which is designed to operate at one of the following pressures: 0.01, 0.1, 1 or 10 Torr. It reduces the sample pressure to the operating pressure of the RGA (about 10^{-6} Torr). This pressure drop is maintained by the pumping system which consists of a hybrid turbomolecular pump and a diaphragm pump. Both pumps are oil free and will not contaminate your process.

The inlet assembly that attaches to your process chamber is pictured above. The system includes an RGA, by-pass valve assembly and Tee, a controller, turbo pump, diaphragm pump, and Windows software program for data acquisition and control.

The software is used to operate the instrument in various modes, including analog scan, histogram mode, and pressure vs. time mode. Both Faraday cup and electron multiplier detectors are standard with the PPR system. The electron multiplier provides additional sensitivity and higher scan speeds. The PPR system is shipped completely assembled and calibrated, and is ready to attach to your vacuum process chamber.

For further details, see the specifications on the RGA systems.

PPR Specifications

Performance

Gas flow	$\sim 3 \times 10^{-5}$ mbar-L/s with pressure reduction inlet active
Response time	2 seconds at 0.1 mbar inlet pressure (scales linearly with pressure)
Start-up time	8 minutes nominal

Connections

Inlet	2.75" CF flange, rotatable with through holes
Turbo pump to controller	6 ft. cable (provided)
Turbo pump to backing pump	6 ft. flexible hose (provided), 1/4" ID x 7/16" OD
Computer interface	RS-232C (28,800 baud, 9-pin D-connector)
Software	RGA Windows application

Pumps

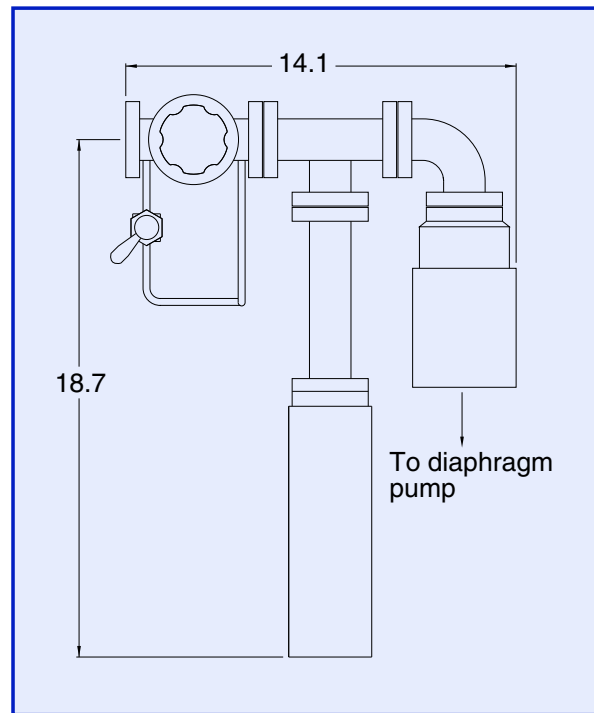
High vacuum	Hybrid turbomolecular/drag pump, 70 L/s, ultimate pressure 2×10^{-9} mbar
Backing	Diaphragm pump with ultimate pressure less than 1 mbar. Protection class IP44
Cooling	Requires forced air cooling

General

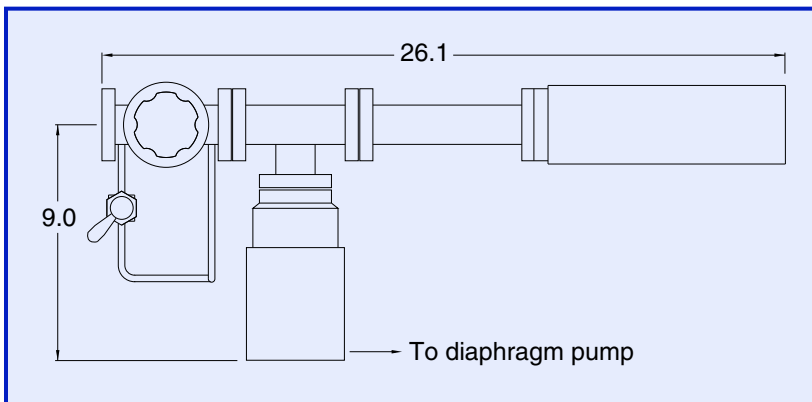
Power requirements	110 VAC @ 60 Hz, 220 VAC @ 50 Hz (not field selectable), 300 W
Dimensions	Vary with configuration (see sample configurations)
Weight	16 lbs. (turbo pump, by-pass valve and Tee, RGA) 33 lbs. (diaphragm pump and controller)
Warranty	One year parts and labor on defects in material or workmanship. Pump seals and diaphragm warranted for 90 days.

Ordering Information

PPR100/1	100 amu process monitoring system	\$20,000
PPR200/1	200 amu process monitoring system	\$21,000
PPR300/1	300 amu process monitoring system	\$23,000
O100HJRW	200 °C heater jacket	\$995
O100REA	Ethernet adapter	\$495
PPM100	Optional stand-alone monitor	\$2995



Geometry A (inches)



Geometry B (inches)