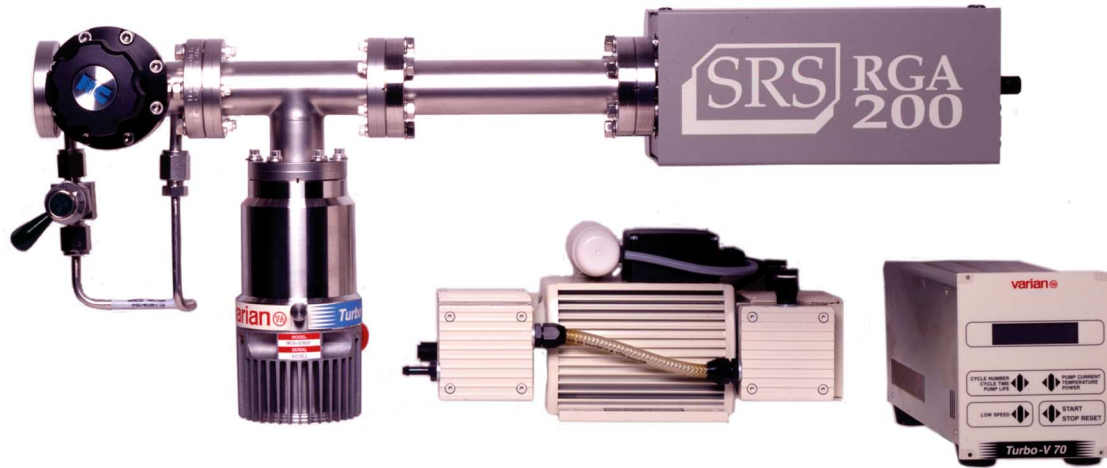


# Process Monitoring Systems

PPR100/200/300 — 100 amu, 200 amu and 300 amu systems



## SRS Process Monitoring Systems

- **0.01, 0.1, 1.0 or 10 Torr inlet pressure**
- **$3 \times 10^{-5}$  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 ... \$19,000 (U.S. list)**
- **PPR200/1 ... \$19,750 (U.S. list)**
- **PPR300/1 ... \$21,250 (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.

**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**

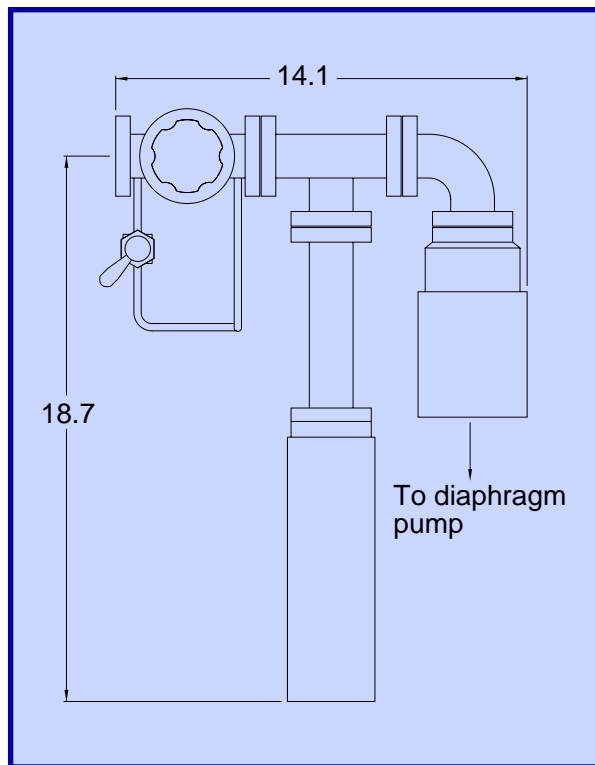
Inlet                         2.75" CF flange, rotatable with through holes  
 Turbo pump to controller 6 ft. cable (provided)  
 Turbo pump to backing pump 6 ft. flexible hose (provided), 1/4" ID  $\times$  7/16" OD  
 Computer interface      RS-232C (28,800 baud, 9-pin D-connector)  
 Software    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

**Pumps**

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

**General**

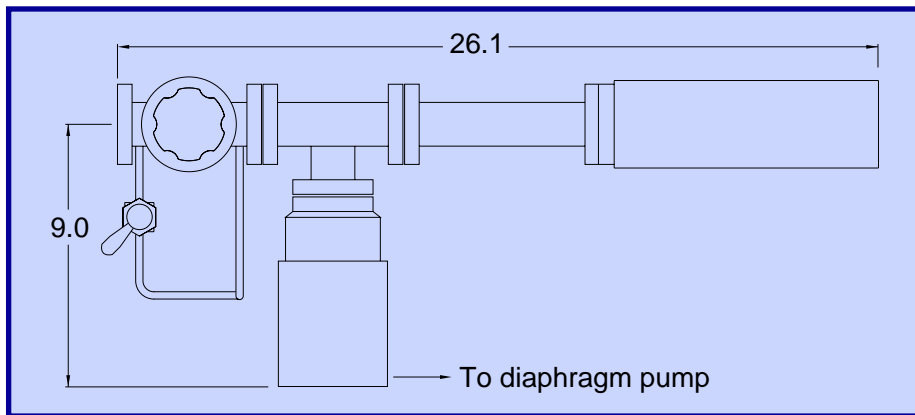
Power requirements      110 VAC @ 60 Hz, 220 VAC @ 50 Hz (not field selectable), 300 W  
 Dimensions                Vary with configuration (see sample configurations)  
 Weight                     16 lbs. (turbo pump, by-pass valve and Tee, RGA)  
                                   33 lbs. (diaphragm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



*Geometry A (inches)*

**Ordering Information**

PPR100/1	100 amu process monitoring system	\$19,000
PPR200/1	200 amu process monitoring system	\$19,750
PPR300/1	300 amu process monitoring system	\$21,250
O100HJR	200 °C heater jacket	\$395
O100EM	Replacement electron multiplier	\$1000
O100RF	Replacement ThO <sub>2</sub> /Ir filament	\$200
O100RI	Replacement ionizer kit (w/ filament)	\$450



*Geometry B (inches)*