RVL Scientific & Engineering Pvt. Ltd.
An ISO9001:2015 Certified MSME Company

Our products:
- Potentiostat-Galvanostat-EIS
- Planetary Ball Mill
- Evaporation Materials
- Magnetic Stirrer
- Homogenizer
- Lab Reactor
- Photochemical Reactor
- Glove Box
- Coin Cell Equipments and Consumables
- Conductive Ink Printer
- Centrifuge
- Overhead Stirrer
- Solvent Purification System
- Microscope
- Gas Purification System
- Sputtering Targets
- Liquid Handling Equipments
- Shakers
- Dewar Flask
- Encapsulation Machine

www.rvltech.com
RVL INERT GAS PURIFICATION MODULE

For O2 / H2O ELIMINATION in a containment chamber (Glove Boxes)

Performance <1 ppm O2 and < 1ppm H2O

Ready to use after integrating with any glove box system (Leak test of glove box must meet the requirements). Our purification modules are designed for connection to a glove box (class 1 leak tight glove box, according to ISO 10648-2).

It purifies the inert gas atmosphere argon, nitrogen, helium within the glove box, by removing oxygen and moisture. This purification takes place within a closed circuit with the glove box. Made up of SS304L reactor container loaded with molecular sieves and catalyst.

Fitted with PID temperature controller and a suitable power supply, In-line gas Blower for circulation, Oxygen and moisture sensor, HMI for a user interface for operation of the glove box. Embedded based electronics controller for controlling the glove box parameters. All tubing and connectors are of Swagelok. SS 304L make, Purification columns will include fill & empty ports of the diameter of 100 mm and length of 200 mm for easy catalyst replacement.

The Purification system is fitted with pressure regulation system to work with overpressure or underpressure in relation to environment, ranging from +/- 10 mbar. However for safety reason the pressure limit is set to +/- 5 mbar. The safety limit is important so that incidental damages do not occur due to excess pressure ranges in case of any malfunction.

Technical Specifications:

**System Operation**: Automatic PLC Controlled.

**Purification Level**: < 1ppm H2O and O2.

**Regeneration**: Fully automatic via PLC.

**Regeneration Gas**: N2 or Ar mixed with 5% H2.

**Leak rate**: Recirculation and pressure control system pipelines subjected to a pressure test at 1 bar pressure and helium leak testing (HLT) the leak rate is ≤10^{-8} std cc/s

**Blower**: Hermetically sealed blower with displacement 85m³/h, variable speed depending on levels of purity controlled via PLC

**Valves**: Valves are solenoid operated via PLC. Also Main reactor fitted with manual valves.

**Purification Capacity**: Three different standard Purifiers are available as per below details:

<table>
<thead>
<tr>
<th>Purifier I - Single Column</th>
<th>Purifier II - parallel column</th>
<th>Purifier III - Series column</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removal capacity</td>
<td>Removal capacity</td>
<td>Removal capacity</td>
</tr>
<tr>
<td>Oxygen: 40 Liters</td>
<td>Oxygen: 2X40 Liters</td>
<td>Oxygen: 220 Liters</td>
</tr>
<tr>
<td>Moisture: 2000g</td>
<td>Moisture: 2X2000g</td>
<td>Moisture: 5000g</td>
</tr>
</tbody>
</table>
Optional Accessories:

Oxygen sensor:
Make: Southland Sensing
Range: 0 - 10/100/1000PPM / 1%/10%/25%
Accuracy: +/- 1% Full Scale Range
Resolution: 0.1
Display: Graphical w/ Backlight
Classification: General Purpose
Temperature: 0 - 50°C
Power: 24 VDC / 230 VAC 50 Hz
Signal Output: 4 - 20mA
Response time: T90 in 10 Seconds
Temperature Compensation: Integral
Flow Sensitivity: 1 - 4 SCFH

Moisture Sensor:
Make: Michell UK
Range: 0 to 1000 ppmv (-100 to 20 deg C dewpoint range)
2 wire transmitter, 4-20 mA output,
Special Features: Inbuilt LCD display Inbuilt key pad (three push buttons) for field programming, operation and field calibration Display and analog output are field programmable in five engg. units – deg. C, deg. F, ppmv, lbs/mmscf, g/m³ Stainless steel sintered filter for dew point NIST / NPL Traceability sensor Stainless steel housing
OUR VALUABLE CUSTOMER LIST

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