VRC offers two approaches to measuring high vacuum in hazardous areas. The first is with the sensor, gauge and optional display built into a Killark enclosure approved by UL, CSA and FM. ATEX certificate is provided with all gauges. All gauges provide both 4-20 mA and 0-10 VDC linear outputs. The alternate approach described at the bottom of this page is to have only the sensor located in the hazardous area with the gauge and display located in a non-hazardous area that can be up to 500 feet away. Power required is 15 to 35 VDC.

Ordering Information: Gauge, Sensor and Optional Display

<table>
<thead>
<tr>
<th>Measurement Range, Sensor Type</th>
<th>Maximum Working Pressure</th>
<th>Performance Specifications Catalog Page</th>
<th>Gauge &amp; Sensor with Display &amp; 4-20, 0-10 V Analog Output</th>
<th>Gauge &amp; Sensor with 4-20, 0-10 V Output but No Display</th>
<th>Replacement Sensor Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 to 100 mTorr; Pirani</td>
<td>300 PSIG</td>
<td>14, 24</td>
<td>913050 $1298.</td>
<td>913056 $1049.</td>
<td>902049 $182.</td>
</tr>
<tr>
<td>1 to 2000 mTorr; Pirani</td>
<td>300 PSIG</td>
<td>15, 17, 24</td>
<td>913051 $1209.</td>
<td>913057 $955.</td>
<td>902077XP $139.</td>
</tr>
<tr>
<td>0.01 to 20.00 Torr; Pirani</td>
<td>300 PSIG</td>
<td>16, 17, 24</td>
<td>913052 $1209.</td>
<td>913058 $955.</td>
<td>902089 $139.</td>
</tr>
<tr>
<td>1 to 1500 Torr; 316L Diaph.</td>
<td>30 PSIG</td>
<td>9, 17, 24</td>
<td>913053 $1308.</td>
<td>913059 $1059.</td>
<td>902079XP $498.</td>
</tr>
<tr>
<td>-30&quot; Hg to 150 PSIG; 316L Diaph.</td>
<td>150 PSIG</td>
<td>10, 17, 24</td>
<td>913054 $1308.</td>
<td>913060 $1059.</td>
<td>902086 $498.</td>
</tr>
<tr>
<td>1 to 200 PSIG; 316L Diaph.</td>
<td>300 PSIG</td>
<td>11</td>
<td>913055 $1308.</td>
<td>913061 $1059.</td>
<td>902088 $498.</td>
</tr>
</tbody>
</table>

Sensors for Hazardous Areas

These explosion proof Diaphragm and Pirani sensors can be used with any of the indicators and controllers described in this catalog. These sensors are complete and ready to install in any Class I, Group C or D, Div. 1 area. Simply select the range that fits your application from the table below. Like standard Vacuum Research sensors, these explosion-proof sensors are unaffected by lead length and can be located up to 500 feet (150 m) from the display unit.

Ordering Information

<table>
<thead>
<tr>
<th>Measurement Range</th>
<th>Sensor Type</th>
<th>Performance Specifications Catalog Page</th>
<th>Maximum Working Pressure</th>
<th>Complete Enclosure with Sensor: 1/4&quot; NPT standard, 1/2&quot; NPT optional</th>
<th>Replacement Sensor Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2000 mTorr</td>
<td>Pirani</td>
<td>15, 17, 24</td>
<td>300 PSIG</td>
<td>913006 $636.</td>
<td>902077XP $139.</td>
</tr>
<tr>
<td>.01 to 20 Torr</td>
<td>Pirani</td>
<td>16, 17, 24</td>
<td>300 PSIG</td>
<td>913007 $636.</td>
<td>902089 $139.</td>
</tr>
<tr>
<td>1 to 1500 Torr</td>
<td>316L Diaph.</td>
<td>9, 17, 24</td>
<td>30 PSIG</td>
<td>913001 $895.</td>
<td>902079XP $498.</td>
</tr>
<tr>
<td>-30&quot; Hg to 150 PSIG</td>
<td>316L Diaph.</td>
<td>10, 17, 24</td>
<td>150 PSIG</td>
<td>913003 $895.</td>
<td>902086 $498.</td>
</tr>
<tr>
<td>1 to 200 PSIG</td>
<td>316L Diaph.</td>
<td>11</td>
<td>300 PSIG</td>
<td>913005 $895.</td>
<td>902088 $498.</td>
</tr>
</tbody>
</table>
# Splash Proof IP-65 High Vacuum Transmitters

Available in 3 Ranges

- **1 to 1500 Torr Stainless Steel Diaphragm**

- **1 to 2000 mTorr & .01 to 20 Torr Pirani Gauges**

- **Linear 0 to 10 VDC and 4-20 mA Outputs**

- **Power Required 12 to 35 Volt DC, 200 mA**

- **Dust and Splashproof Enclosure Rated IP-65**

## SS Diaphragm Gauge

1 to 1500 Torr  
1 to 2000 mbar  
0.1 to 200 kPa  

### Specifications
- **Measurement Range:** 1 to 1500 Torr (1 to 2000 mbar and 0.1 to 200 kPa).  
- **Calibration:** Any gas.  
- **Resolution:** ± 1 Torr.  
- **Response Time:** Less than 1 sec. for 90% of an increase in pressure. ≈ 1.5 sec. for decrease from atmosphere to 1 Torr.  
- **Power:** 12 to 35 volt DC; less than 100 mA.  
- **Analog Output:** Linear 0 to 10 VDC and 4-20 mA standard.  
- **Temperature Effects:** Automatic compensation from 0° to 50°C.  
- **Bake Out Temperature:** Gauge can be baked to 100°C (212°F) in air or vacuum.  
- **Vacuum Connection:** 1/4 NPT male. Others such as NW, VCR and 1/2" O.D. tube available.  
- **Materials:** All wetted parts 300 series S.S.  
- **SS Sensor Max. Pressure w/o Damage:** 4500 Torr, burst 6000 Torr.  
- **Dimensions:** Enclosure 3 X 3 X 2 In. (76 X 76 X 50 mm) 1/4 In. NPT vacuum connection is 1 5/8 In. (41 mm) long.  
- **Mounting:** Gauge can be supported by the vacuum connection and oriented in any plane.  
- **Net Wt.:** 0.75 lb. (0.3 kg)  
- **Ship:** 1 lb. (0.45 kg)

## Pirani Gauge

1 to 2000 milliTorr  
0.001 to 200 mbar  
0.1 to 200.0 Pa  

### Measurements
- **Measurement Range:** 1 to 2000 milliTorr (.001 to 2 mbar, and 0.1 to 200 Pa)  
- **Calibration:** Air or Nitrogen.  
- **Accuracy:** Better than 5% of value or ± 0.03 mTorr, whichever is larger.  
- **Response Time:** 0.3 second time constant.  
- **Power:** 12 to 35 volt DC; less than 200 mA.  
- **Analog Output:** Linear 0 to 10 VDC & 4 to 20 mA standard.  
- **Temperature Effects:** Changes in ambient temperature between 0°C and 50°C change the reading less than 0.2 mT per °C at 50 mT; less than 4 mT per °C at 900 mT.  
- **Bakeout Temperature:** Gauge can be baked to 100°C (212°F) in air or vacuum.  
- **Vacuum Connection:** 1/4 NPT male. Others such as NW, VCR and 1/2" O.D. tube available.  
- **Materials:** All wetted parts 300 series S.S.  
- **Dimensions:** Enclosure 3 X 3 X 2 In. (76 X 76 X 50 mm) 1/4 In. NPT vacuum connection is 1 5/8 In. (41 mm) long.  
- **Mounting:** Gauge can be supported by the vacuum connection and oriented in any plane.  
- **Net Wt.:** 0.75 lb. (0.3 kg)  
- **Ship:** 1 lb. (0.45 kg)

## Pirani Gauge

.01 to 20 Torr  
0.01 to 20.00 mbar  
1.0 to 2000 Pa  

### Specifications
- **Measurement Range:** 0.01 to 20 Torr (.01 to 20 mbar, and 1 to 2000 Pa)  
- **Calibration:** Air or Nitrogen.  
- **Accuracy:** Better than 5% of value or ± 0.03 Torr, whichever is larger.  
- **Response Time:** 0.3 second time constant.  
- **Power:** 12 to 35 volt DC; less than 200 mA.  
- **Analog Output:** 0 to 10 VDC, non-linear standard. Linear 0-10 V & 4-20 mA optional.  
- **Temperature Effects:** Changes in ambient temperature between 0°C and 50°C change the reading less than 0.01 Torr per °C.  
- **Bakeout Temperature:** Gauge tube can be baked to 100°C (212°F) in air or vacuum.  
- **Vacuum Connection:** 1/4 NPT male. Others such as NW, VCR and 1/2" O.D. tube are available.  
- **Materials:** All wetted parts 300 series S.S.  
- **Dimensions:** Enclosure 3 X 3 X 2 In. (76 X 76 X 50 mm) 1/4 In. NPT vacuum connection is 1 5/8 In. (41 mm) long.  
- **Mounting:** Gauge can be supported by the vacuum connection and oriented in any plane.  
- **Net Wt.:** 0.75 lb. (0.3 kg)  
- **Ship:** 1 lb. (0.45 kg)

### Ordering Information

- **SS Diaphragm Gauge**  
  - 1 to 1500 Torr  
  - 1 to 2000 mbar  
  - 0.1 to 200 kPa  

- **Pirani Gauge**  
  - 1 to 2000 milliTorr  
  - 0.001 to 200 mbar  
  - 0.1 to 200.0 Pa  

- **Pirani Gauge**  
  - .01 to 20 Torr  
  - 0.01 to 20.00 mbar  
  - 1.0 to 2000 Pa  

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