



## 2A NASA Mini Thermocouple Vacuum Gauge

Part Number: **2-2100-XX**

### Operating Specifications

<b>Operating Range</b>	1*10 <sup>-3</sup> Torr to 20 Torr
<b>Analog Output</b>	Controller-dependent
<b>Supply Voltage</b>	Controller-dependent
<b>Maximum Voltage</b>	5 V
<b>Maximum Power</b>	55 mW
<b>Maximum Filament Temperature</b>	250 °C
<b>Mounting Orientation</b>	Any
<b>Calibration Medium</b>	Dry air or nitrogen
<b>Overpressure</b>	125 PSIG
<b>Analog Output Resolution</b>	Controller-dependent
<b>Operating Temperature</b>	-54 °C to 93 °C
<b>Storage Temperature</b>	-54 °C to 93 °C
<b>Bakeout Temperature</b>	400 °C
<b>Response Time</b>	≤ 1 s
<b>Accuracy</b>	
1 to 10 mTorr	±1 mTorr
10 to 100 mTorr	±10% of reading
100 mTorr to 1 Torr	±20% of reading
1 to 20 Torr	Indication only
<b>Analog Output</b>	±10 mV

### Physical Characteristics

<b>Electrical Connections</b>	4-Pin Mates w/Bendix PC-06A-8-4S SR
<b>Weight</b>	28 g (0.062 lbs)
<b>Dimensions</b>	See dimensional drawings

### Key Features and Benefits

- Designed and manufactured to NASA specifications
- Reliable, high quality vacuum indication and performance
- Rugged and simple construction
- Operation in any physical orientation
- No calibration required

### Applications and Industries

- [National labs, research and development](#)
- Space launch applications

### Ordering Information

Part Number	Description
2-2100-31	1/8" NPT Stainless Steel
2-2100-97	VCR 4 Male Stainless Steel

### Compatible Vacuum Controllers

Part Number	Description
2-7900-034	<a href="#">MX200 Vacuum Controller RS-232/RS-485/USB</a>
2-7900-037	<a href="#">MX200 Vacuum Controller EthernetIP/USB</a>
2-7900-071	<a href="#">MV2A Vacuum Controller</a>
2-3014-042	<a href="#">Compact 2A Vacuum Controller</a>
2-3001-10X	<a href="#">VacuGuard™ Portable Vacuum Controller</a>
2-3001-10X	<a href="#">B2A Portable Vacuum Controller</a>

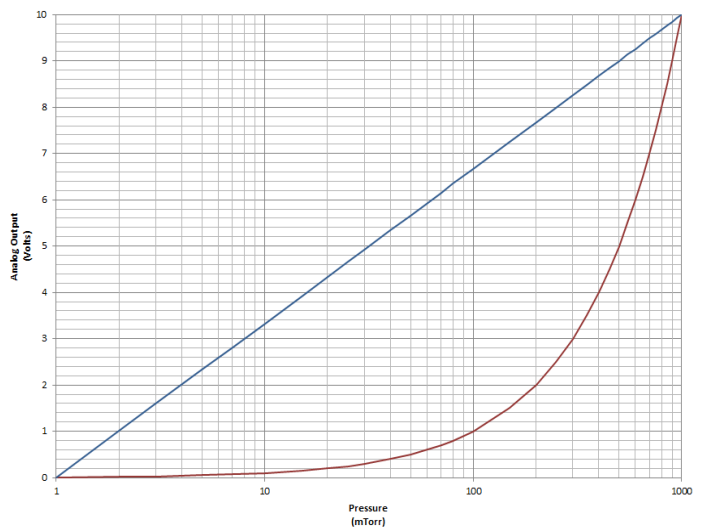
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### Description

The **2A NASA Mini Thermocouple Vacuum Gauge** has a measurement range from 1\*10<sup>-3</sup> up to 20 Torr. It indirectly measures absolute pressure by detecting the thermal dissipation of a filament. It can withstand high temperature bakeouts up to 400 °C. It also has less than 25% of the internal volume of the Televac® 2A vacuum sensor.

The 2A NASA Mini can be operated by several Televac® vacuum controllers, including the [MX200](#), [MX200 EthernetIP](#), [MV2A](#), [Compact 2A](#), [VacuGuard™](#), and [B2A Portable](#).

### Analog Output Behavior



### Materials Exposed to Vacuum

- Gold
- Glass
- Stainless Steel
- Tophet
- Cupron

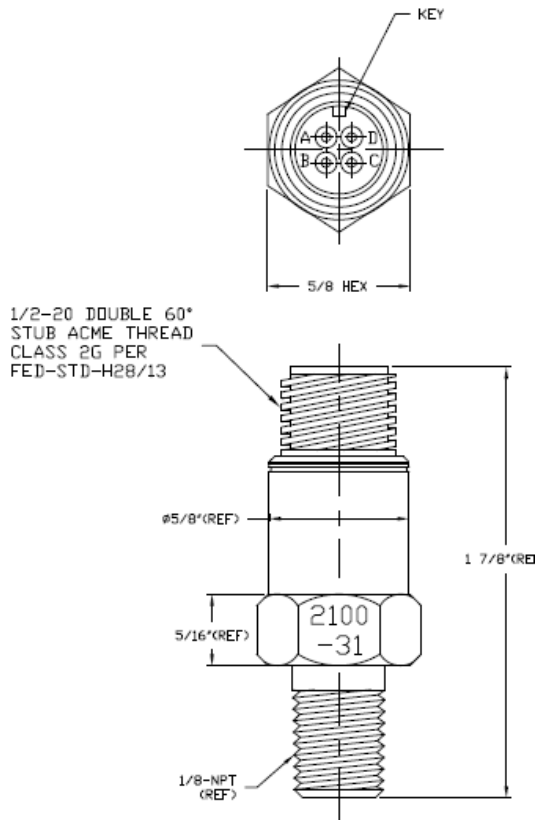
### Ratings and Compliance

- RoHS complaint



**2A NASA Mini Thermocouple Vacuum Gauge**  
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**Dimensional Drawing**



**Additional Documentation**

- AN3010 [Torr Scientific/Torr Decimal/mTorr/Micron Conversions](#)
- AN3015 [Recommended Practices for Vacuum Calibration](#)
- AN3020 [Vacuum Terminology Reference](#)
- Resource [Televac® Tolerances](#)

**Company Information**

**Specialty manufacturing services that promise precision -**

Since 1935, Fredericks has specialized exclusively in tilt and vacuum measurement products. Today, our precise manufacturing processes produce the most accurate and advanced products on the market, ensuring perfection every time. A true specialty service provider, we are willing and eager to put our experience and capabilities to good use, helping OEMs achieve even the most complex designs.

**High performance products designed and manufactured with pride -**

Fredericks is a global provider and U.S. manufacturer and designer of high-performance tilt and vacuum measurement products. Built to last, our products are made with state-of-the-art sensing technology, proven processes, and an intrinsic passion for the trade. Offering simple integration and quality and safety benchmarks, our customers benefit not just from standard-setting reliability, but from our commitment to competitive pricing and performance.

**A partnership that prioritizes uptime, lead time, and service -**

Fredericks guarantees customer satisfaction and our 'not too big, not too small' operation is what enables us to offer a true partnership experience. Our dedicated representatives and engineers offer exceptionally responsive service and some of the fastest lead times in the industry, knowing that uptime is the key to your success. With anytime-access to our leadership team and solutions that enhance your products, you will feel the Fredericks difference.

**Vacuum measurement tools built for the toughest jobs -**

Fredericks' world-class vacuum sensors, gauges, and control instrumentation are engineered for the most demanding applications and environments. Our patented Televac® and ETI vacuum brands feature cold-cathode technology, thermocouple and convection gauges, and precision-manufactured hot ionization gauges. Dedicated solely to vacuum gauging and calibration services, we provide industrial heating, national laboratories, cryogenics, and industrial gas applications, among many others, with fast lead times and industry-leading performance. Covering the entire practical vacuum range, our products deliver rapid response vacuum readings and sensitivity.

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