



2A Thermocouple Vacuum Gauge

Part Numbers: **2-2100-10, 2-2100-0XX, and 2-2126-0XX**

Operating Specifications

Operating Range	1*10 ⁻³ Torr to 20 Torr
Analog Output	Controller-dependent
Max. Filament Temperature	250 °C
Mounting Orientation	1*10 ⁻³ to 20 Torr: Any 20 to 1000 Torr: Vertical
Calibration Medium	Dry air or nitrogen
Overpressure	150 PSI
Analog Output Resolution	Controller-dependent
Operating Temperature	0 °C to 50 °C
Storage Temperature	-40 °C to 85 °C
Max. Bakeout Temperature	120 °C (brass) 200 °C (stainless steel)
Response Time	≤ 2 s
Accuracy	
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

Physical Characteristics

Electrical Connections	Octal male
Weight	126 g (0.28 lbs) (NW25)

Key Features and Benefits

- Compact, robust design
- Numerous fittings available
- Excellent resolution and repeatability
- Minimal sensor to sensor output variation

Applications and Industries

- E-beam welding
- Freeze dryers
- Liquefied National Gas (LNG), industrial gas, cryogenics
- Particle accelerators
- National labs, research and development
- Semiconductor
- Thin film deposition
- Vacuum distillation
- Vacuum furnace, heat treat
- Vacuum glove boxes

Materials Exposed to Vacuum

P/N: 2-2100-10, 2-2100-0XX	P/N: 2-2126-0XX
Gold	Gold
Solder	Glass
Glass	Alloy 52
Alloy 52	304 Stainless Steel
Nickel	Tophet
Tophet	Cupron

Description

The **2A thermocouple vacuum sensor** (also sometimes called a thermocouple, TC, Pirani, or convection vacuum gauge) has a measurement range from 1*10⁻³ up to 1000 Torr. It indirectly measures absolute pressure by detecting the thermal dissipation of a filament. This sensor is available in nickel-plated brass and stainless steel with a variety of fittings to fit your system's requirement.

The 2A can be operated by all Televac® vacuum controllers including the **MX200, MX200 EthernetIP, MV2A, Compact 2A, VacuGuard™, B2A Portable** or connect directly into the MX2A Thermocouple Active Vacuum Gauge for an all-in-one vacuum measurement solution.

Ordering Information

Part Number	Description
2-2100-10	1/8" NPT Nickel-Plated Brass
2-2126-001	1/8" NPT Stainless Steel
6-2100-11	3/8" Straight Nickel-Plated Brass
2-2126-011	1/2" Straight Stainless Steel
2-2100-016	NW16/KF16 Nickel-Plated Brass
2-2100-025	NW25/KF25 Nickel-Plated Brass
2-2126-030	NW16/KF16 Stainless Steel
2-2126-031	NW25/KF25 Stainless Steel
2-2126-032	NW40/KF40 Stainless Steel
2-2126-040	8-VCO Male Stainless Steel
2-2126-041	8-VCO Female Stainless Steel
2-2126-042	8-VCR Male Stainless Steel
2-2126-043	8-VCR Female Stainless Steel
2-2126-044	4-VCR Male Stainless Steel
2-2126-045	4-VCR Female Stainless Steel
2-2126-050	CF16/1.33" CF-F Stainless Steel
2-2126-052	CF40/2.75" CF-F Stainless Steel

Compatible Vacuum Controllers

Part Number	Description
2-7900-034	MX200 Vacuum Controller RS-232/RS-485/USB
2-7900-037	MX200 Vacuum Controller EthernetIP/USB
2-7900-071	MV2A Vacuum Controller
2-3014-042	Compact 2A Vacuum Controller
2-3001-10X	VacuGuard™ Portable Vacuum Controller
2-3001-10X	B2A Portable Vacuum Controller
2-8910-1XX	MX2A Thermocouple Active Vacuum Gauge

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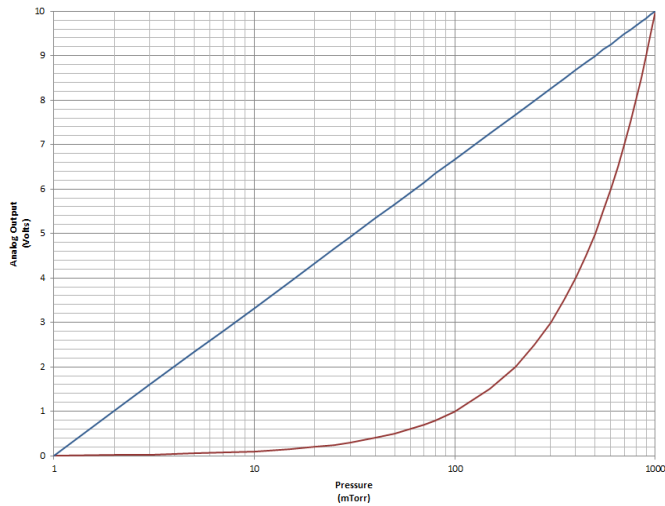
Ratings and Compliance

- RoHS compliant

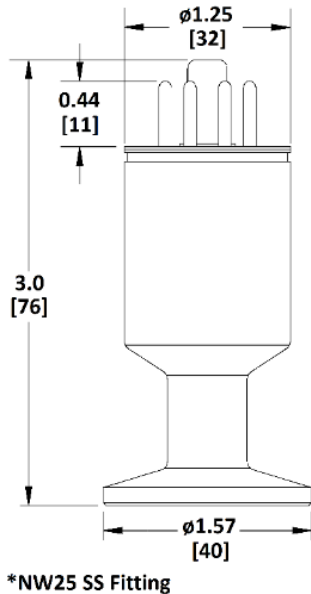


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Analog Output Behavior



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.

Contact Us

The Fredericks Company
 2400 Philmont Avenue
 Huntingdon Valley, PA 19006
 tel: +1 215 947 2500
 email: sales@frederickscompany.com
 web: www.frederickscompany.com

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