

## 7B Penning Magnetron Cold Cathode Passive Sensor

Part Number: 2-2100-2XX

### Operating Specifications

<b>Operating Range 1</b> for MX7B	1*10 <sup>-8</sup> to 1*10 <sup>-3</sup> Torr 1*10 <sup>-6</sup> to 1*10 <sup>-1</sup> Pa 1*10 <sup>-8</sup> to 1*10 <sup>-3</sup> mbar
<b>Operating Range 2</b> for MX200, MC300	1*10 <sup>-7</sup> to 1*10 <sup>-3</sup> Torr 1*10 <sup>-5</sup> to 1*10 <sup>-1</sup> Pa 1*10 <sup>-7</sup> to 1*10 <sup>-3</sup> mbar
<b>Analog Output</b>	Controller dependent
<b>Supply Voltage</b>	Controller dependent
<b>Mounting Orientation</b>	Any
<b>Calibration Medium</b>	Dry air or nitrogen
<b>Overpressure</b>	150 PSI
<b>Analog Output Resolution</b>	Controller-dependent
<b>Operating Temperature</b>	0° to +50° C
<b>Storage Temperature</b>	-20° to +70° C
<b>Bakeout Temperature</b>	120°C
<b>Response Time</b>	≤ 50 ms
<b>Accuracy (MX7B)</b>	
1*10 <sup>-7</sup> to 1*10 <sup>-3</sup> Torr	±30% of reading
<b>Accuracy (MX200, MC300)</b>	
1*10 <sup>-6</sup> to 1*10 <sup>-3</sup> Torr	±0.2 decade

### Ordering Information

7B Sensor 3/4" NPT Brass	2-2100-263
7B Sensor 1" Straight Brass	2-2100-265
7B Sensor 1 1/4" Straight Brass	2-2100-266
7B Sensor 3/4" Straight Stainless Steel	2-2100-267
7B Sensor NW25 (DN25 ISO-KF) Stainless Steel	2-2100-272

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### Materials Exposed to Vacuum

Brass  
Stainless Steel  
Tophet  
Kovar  
Ceramic  
Glass  
Fluoropolymer Elastomer  
Nickel  
Solder

### Applications and Industries

- Heat treatment and vacuum furnaces
- Thin film deposition and coating processes

### Benefits

- Reliable Penning magnetron cold cathode technology
- Easily cleaned for extended sensor lifetime
- Supported by various controllers and active gauges
- Excellent customer service and support
- Rapid turn-around for calibration and service

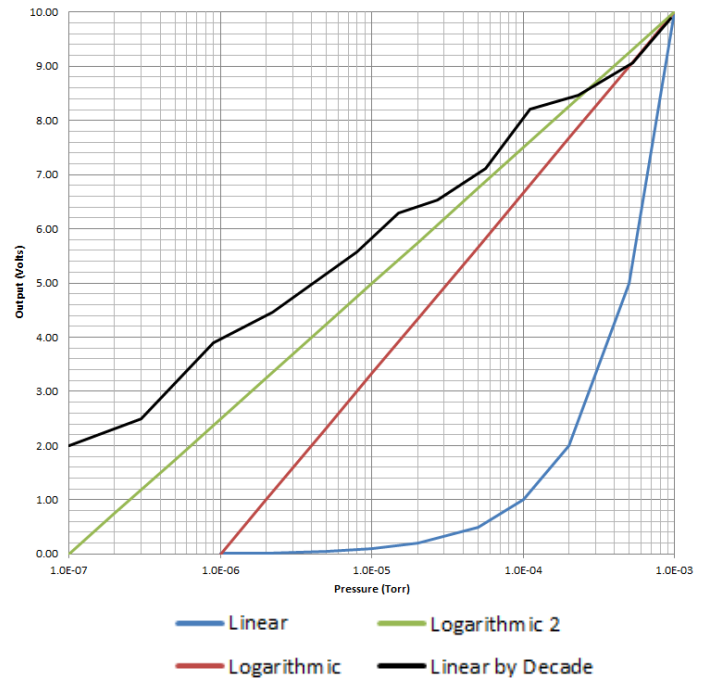
### Description

The 7B Penning Magnetron Cold Cathode Passive Sensor has a measurement range from 1\*10<sup>-8</sup> up to 1\*10<sup>-3</sup> Torr. It indirectly measures absolute pressure by ionizing gas in the presence of a magnetic field. Unlike hot filament sensors, the 7B is resistant to inrushes of gas and does not have a filament that can burn out. The sensor design allows for easy disassembly enabling quick cleaning for an extended lifetime.

The 7B can be operated by the Televac® MX200 or MC300 rack mountable controllers, or the MX7B active gauge. These controllers automatically operate the cold cathode to provide a full range vacuum measurement solution when the 7B is used in conjunction with rough vacuum sensors like the 2A or 4A.



### Analog Output Behavior (MX200)



### Ratings and Compliance

- RoHS compliant

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### Additional Documentation

- Televac® Tolerances
- AN 3002 - Cleaning the 7B and 7E Cold Cathode Passive Gauges
- AN 3010 - Torr Scientific/Torr Decimal/mTorr/Micron Conversions
- AN 3015 - Televac® Recommended Practices for Vacuum Calibration
- AN 3020 - Vacuum Terminology Reference

### Related Products

Description	Part Number
MX7B Cold Cathode Ionization Active Gauge	2-8940-XXX
MX200 Vacuum Controller RS-232/RS-485/USB	2-7900-034
MX200 Vacuum Controller EthernetIP/USB	2-7900-037
MC300 Vacuum Controller	2-4502-X0X
(Legacy) MM200 Vacuum Controller	2-7900-20



MX7B



MX200 EthernetIP/USB



MC300

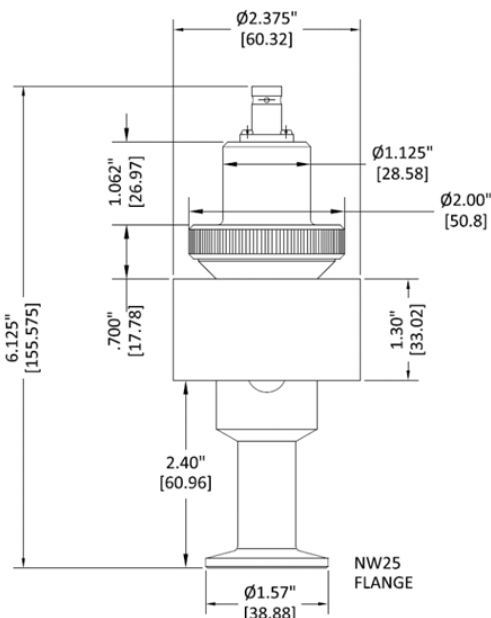
Visit our website at [www.televac.com](http://www.televac.com) for a full list of compatible instruments.

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### Physical Characteristics

Electrical Connections	MHV
Weight	795 g (1.75 lbs) (NW25)
Dimensions	See dimensional drawings

### Dimensional Drawing



### Company Information

**Specialty manufacturing services that promise precision** - For more than 85 years, Televac® 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 and end users achieve even the most complex designs.

**High performance products designed and manufactured in the USA** - Televac® is a global provider and U.S. manufacturer and designer of high-performance 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** - Televac® 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** - Televac®'s world-class vacuum sensors, gauges, and control instrumentation are engineered for the most demanding applications and environments. Our 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 superior sensitivity.

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