

## MX7B Cold Cathode Ionization Active Gauge

Part Number: 2-8940-XXX

### Operating Specifications

<b>Operating Range</b>	1*10 <sup>-8</sup> Torr to 1*10 <sup>-3</sup> Torr
<b>Display</b>	OLED
<b>Digital Communications</b>	RS-485, USB (micro)
<b>Analog Output</b>	Configurable 0 to 10 V DC
<b>Programmable Set Points</b>	2
<b>Set Point 1</b>	Open collector
<b>Set Point 2</b>	Relay
<b>Supply Voltage</b>	22 V DC to 26 V DC
<b>Maximum Power</b>	8 W
<b>Calibration Medium</b>	Dry air or nitrogen
<b>Overpressure</b>	150 PSI
<b>Digital Output Resolution</b>	3 significant digits with exponent
<b>Analog Output Resolution</b>	16-bits
<b>Operating Temperature</b>	0 °C to 50 °C
<b>Storage Temperature</b>	-20 °C to 60 °C
<b>Bakeout Temperature</b>	120 °C
<b>Response Time</b>	≤ 150 ms
<b>Accuracy</b>	
1*10 <sup>-7</sup> to 1*10 <sup>-3</sup> Torr	±30% of reading
Analog Output	±10 mV
<b>Display Readable Distance</b>	3 m (10 ft)

### Ordering Information

MX7B Active Gauge	Part Number
¾" NPT Brass	2-8940-NPT
¾" Straight Brass	2-8940-075
1" Straight Brass	2-8940-100
1-1/4" Straight Brass	2-8940-125
NW25 (DN25 ISO-KF) Stainless Steel	2-8940-KF25

Replacement Sensors	Part Number
¾" NPT Brass	2-2171-NPT
¾" Straight Brass	2-2171-075
1" Straight Brass	2-2171-100
1-1/4" Straight Brass	2-2171-125
NW25 (DN25 ISO-KF) Stainless Steel	2-2171-KF25

D-Sub 6 Conductor Cable (flying leads)	Part Number
20 ft (6 m)	2-9873-020
50 ft (15 m)	2-9873-050
100 ft (30 m)	2-9873-100

D-Sub 15 Conductor Cable (flying leads)	Part Number
20 ft (6 m)	2-9858-020
50 ft (15 m)	2-9858-050
100 ft (30 m)	2-9858-100
Custom Lengths	2-9858-000

Wall Power Supply	Part Number
100-240 V AC/47-63 Hz, plug types A, C, G, I	2-7900-097

### Related Products

Name	Operating Range	Part Number
MX2A	1*10 <sup>-4</sup> to 1000 Torr	2-8910-1XX
MX4A	1*10 <sup>-4</sup> to 1000 Torr	2-8930-1XX
EthernetIP Gateway		2-8900-100

### Description

The Televac® MX7B Cold Cathode Ionization Active Gauge utilizes a cleanable 7B Penning magnetron cold cathode. It has a variety of features including a wide range of measurement from 10<sup>-8</sup> to 10<sup>-3</sup> Torr, RS-485 digital communications, a micro-USB port, two programmable set points, a configurable analog output, and a bright color OLED display. The unit also features 4 capacitive touch controls, making all features accessible through the display.

The selection of fittings, simplicity of use, ease of sensor cleaning, and low cost of the MX7B make it an excellent choice for a variety of vacuum applications and industries. This gauge is designed for use with the MX2A and MX4A active gauges to provide full range vacuum measurement from 10<sup>-8</sup> to 10<sup>-3</sup> Torr.

When combined with the MX2A or MX4A, the MX7B will provide full range vacuum measurement from 10<sup>-8</sup> to 1000 Torr. This is an optimal solution for heat treat and vacuum furnaces where calibration frequency requirements vary between rough vacuum (MX2A and MX4A) and high vacuum (MX7B) gauges. EthernetIP communications can be enabled by integrating the MX7B with the EthernetIP Gateway.

### 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
- Low cost with a compact design and color OLED display
- Excellent customer service and support
- Rapid turn-around for calibration and service

### Ratings and Compliance

- Certified to UL 61010-1
- CE certified to EN 61010-1, EN 61236-1, EN 55011
- Certified to CAN/CSA C22.2 No. 61010-1-12
- EAC certified
- RoHS Compliant
- IP40



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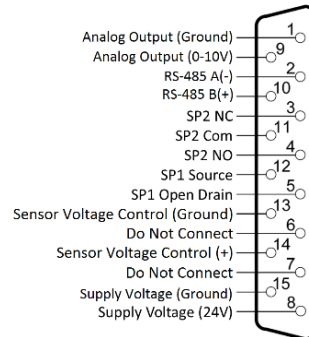
## MX7B Cold Cathode Ionization Active Gauge

Part Number: 2-8940-XXX



### Electrical Connections

Pin	Description
1	Analog Output (Ground)
2	RS-485 A (-)
3	SP2 NC
4	SP2 NO
5	SP1 Open Drain
6	Do not connect
7	Do not connect
8	Supply Voltage (+)
9	Analog Out (0 to 10 V)
10	RS-485 B (+)
11	SP2 Com
12	SP1 Source
13	Sensor Voltage Control (Ground)
14	Sensor Voltage Control (+)
15	Supply Voltage (Ground)



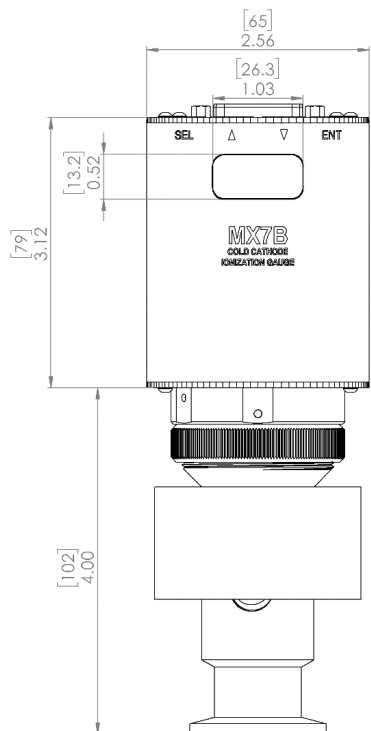
### Set Points

The MX7B has two set points. Set point 1 is an N-Channel 60 V MOSFET open collector. It has a maximum current rating of 1 A. The data sheet can be found here: [www.vishay.com/docs/69958/si2308bd.pdf](http://www.vishay.com/docs/69958/si2308bd.pdf). Set point 2 is a relay with a maximum switching voltage of 220 V DC (250 V AC) and a maximum switching current of 2 A. The data sheet can be found here: [www.te.com/catalog/pn/en/1393788-3](http://www.te.com/catalog/pn/en/1393788-3).

### Physical Characteristics

Enclosure	Aluminum
Weight with Sensor	1 kg (2 lbs)
Weight without Sensor	0.3 kg (0.6 lbs)
Dimensions	See dimensional drawing

### Dimensional Drawing



### Materials Exposed to Vacuum

Brass
Stainless Steel
Tophet
Kovar
Ceramic
Glass
Fluoropolymer Elastomer
Nickel
Solder

### Additional Documentation

- [Televac® Tolerances](#)
- [AN 3010 - Torr Scientific/Torr Decimal/mTorr/Micron Conversions](#)
- [AN 3015 - Televac® Recommended Practices for Vacuum Calibration](#)
- [AN 3020 - Vacuum Terminology Reference](#)
- [AN 3023 - Automatic Control of an MX7B/MX7M with an MX2A/MX4A](#)

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### Company Information

**High performance products designed and manufactured in the USA** - For over 85 years, Televac® has been 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.

**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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