

MX7B Cold Cathode Ionization Active Gauge

Part Number: 2-8940-XXX



| Operating Specifications | |
|---|--|
| Operating Range | 1x10 ⁻⁸ Torr to 1x10 ⁻³ Torr |
| Display | OLED |
| Digital Communications | RS-485, USB (micro) |
| Analog Output | Configurable 0 to 10 V DC |
| Programmable Set Points | 2 |
| Set Point 1 | Open collector |
| Set Point 2 | Relay |
| Supply Voltage | 22 V DC to 26 V DC |
| Maximum Power | 8 W |
| Calibration Medium | Dry air or nitrogen |
| Overpressure | 150 PSI |
| Digital Output Resolution | 3 significant digits with exponent |
| Analog Output Resolution | 16-bits |
| Operating Temperature | 0 °C to 50 °C |
| Storage Temperature | -20 °C to 60 °C |
| Bakeout Temperature | 120 °C |
| Response Time | ≤ 150 ms |
| Accuracy | |
| 1x10 ⁻⁷ to 1x10 ⁻³ Torr | ±30% of reading |
| Analog Output | ±10 mV |
| Display Readable Distance | 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 | 1x10 ⁻⁴ to 1000 Torr | 2-8910-1XX |
| MX4A | 1x10 ⁻⁴ to 1000 Torr | 2-8930-1XX |
| EthernetIP Gateway | | 2-8900-100 |

Description

The Televac® MX7B Active Gauge utilizes a cleanable 7B Penning magnetron cold cathode. It has a variety of features including a wide range of measurement from 10⁻⁸ to 10⁻³ 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 10⁻⁸ to 10⁻³ Torr.

When combined with the MX2A or MX4A, the MX7B will provide full range vacuum measurement from 10⁻⁸ 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

- Low cost with a compact design and color OLED display
- Reliable Penning magnetron cold cathode technology
- Easily cleaned for extended sensor lifetime
- 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

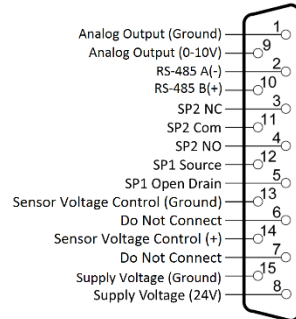
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Electrical Connections

| 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

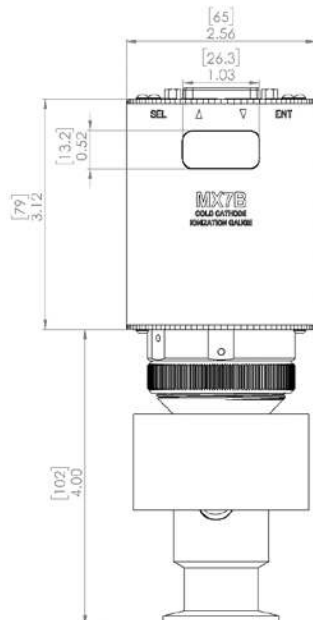
Set point 2 is a relay with a maximum switching voltage of 220 V DC (250 V AC) and a maximum switching current of 2 A. The data sheet can be found here:

www.te.com/catalog/pn/en/1393788-3

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 |

Company Information

High performance products designed and manufactured with pride - For over 80 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.

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 Televac 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.

Contact Us

Televac® - The Fredericks Company
2400 Philmont Avenue
Huntingdon Valley, PA 19006

email: sales@frederickscompany.com

web: www.frederickscompany.com

tel: +1 215 947 2500

fax: +1 215 947 7464

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