

MX7M Cold Cathode Ionization Active Gauge

Part Number: 2-8950-XXX

Operating Specifications

Operating Range	5*10 ⁻¹¹ Torr to 1*10 ⁻² 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	250 °C
Response Time	≤ 50 ms
Accuracy	
1*10 ⁻⁹ to 1*10 ⁻³ Torr	±30% of reading
Analog Output	±10 mV
Display Readable Distance	3 m (10 ft)

Ordering Information

MX7M Active Gauge	Part Number
NW25 (DN25 ISO-KF) Stainless Steel	2-8950-KF25
NW40 (DN40 ISO-KF) Stainless Steel	2-8950-KF40
CF40 (DN40 CF-F) Stainless Steel	2-8950-CF40
Replacement Sensors	
NW25 (DN25 ISO-KF) Stainless Steel	2-2183-KF25
NW40 (DN40 ISO-KF) Stainless Steel	2-2183-KF40
CF40 (DN40 CF-F) Stainless Steel	2-2183-CF40

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 ⁻⁴ to 1000 Torr	2-8910-1XX
MX4A	1*10 ⁻⁴ to 1000 Torr	2-8930-1XX
MX7B	1*10 ⁻⁸ to 1*10 ⁻³ Torr	2-8940-XXX
EthernetIP Gateway		2-8900-100

Description

The Televac® MX7M Cold Cathode Ionization Active Gauge utilizes a cleanable 7M triple inverted magnetron cold cathode. It has a variety of features including a wide range of measurement from 5*10⁻¹¹ to 10⁻² 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 MX7M 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 5*10⁻¹¹ to 10⁻² Torr.

When combined with the MX2A or MX4A, the MX7M will provide full range vacuum measurement from 10⁻¹¹ 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 (MX7M) gauges. EthernetIP communications can be enabled by integrating the MX7M with the EthernetIP Gateway.



Applications and Industries

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

Benefits

- Extended range with high bakeout temperature
- Low cost with a compact design and color OLED display
- High accuracy inverted 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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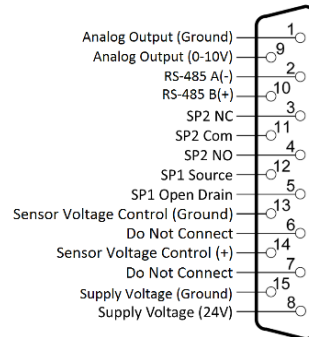
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Electrical Connections

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)



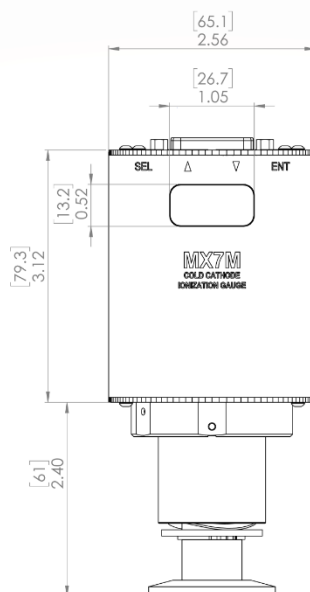
Set Points

The MX7M 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/si2308bds.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

- Stainless Steel
- Alumina Ceramic
- Molybdenum
- Kovar
- Ag-Cu Braze Alloy
- Copper

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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