

## MX2A Active Thermocouple Vacuum Gauge

Part Number: 2-8910-1XX

Operating Specifications	
Operating Range	1*10 <sup>-4</sup> Torr to 1000 Torr
Communications	RS-485
Analog Output	7 selectable 0 V DC 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	2 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	
Brass (P/N: 2-8910-110)	100 °C (electronics removed)
Stainless (P/N: All Others)	200 °C (electronics removed)
Response Time	≤ 2 s
Accuracy	
0.1 mTorr to 1 mTorr	0.1 mTorr resolution
1 mTorr to 10 mTorr	±1 mTorr
10 mTorr to 1 Torr	±10% of reading
1 Torr to 100 Torr	±30% of reading (vertical mount)
100 Torr to 1000 Torr	±10% of reading (vertical mount)
Analog Output	±10 mV
Display Readable Distance	3 m (10 ft)

Ordering Information	
<b>MX2A Active Vacuum Gauge</b>	<b>Part Number</b>
1/8" NPT Stainless Steel	2-8910-101
1/8" NPT Nickel Plated Brass	2-8910-110
1/2" Straight Stainless Steel	2-8910-111
NW16 (DN16 ISO-KF) Nickel Plated Brass	2-8910-116
NW16 (DN16 ISO-KF) Stainless Steel	2-8910-130
NW25 (DN25 ISO-KF) Nickel Plated Brass	2-8910-125
NW25 (DN25 ISO-KF) Stainless Steel	2-8910-131
NW40 (DN40 ISO-KF) Stainless Steel	2-8910-132
1.33" CF (DN16 ISO-CF-F) Stainless Steel	2-8910-150
2.75" CF (DN40 ISO-CF-F) Stainless Steel	2-8910-152
VCR and VCO available upon request	
<b>D-Sub 6 Conductor Cable (flying leads)</b>	<b>Part Number</b>
20 ft (6 m)	2-9857-020
50 ft (15 m)	2-9857-050
100 ft (30 m)	2-9857-100
<b>D-Sub 15 Conductor Cable (flying leads)</b>	<b>Part Number</b>
20 ft (6 m)	2-9858-020
50 ft (15 m)	2-9858-050
100 ft (30 m)	2-9858-100
<b>Wall Power Supply</b>	<b>Part Number</b>
100-240 V AC/47-63 Hz, plug types A, C, G, I	2-7900-097

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### Description

The MX2A Thermocouple Active Gauge utilizes an easily replaceable (no screws) Televac® 2A thermocouple vacuum sensor. It has a variety of features including a wide range of measurement from 1\*10<sup>-4</sup> Torr up to 1000 Torr, RS-485 communications, two programmable set points, and a selectable analog output. The bright OLED display makes it easy to read from a distance.



Options can be set from four capacitive touch controls located on the top of the unit or through RS-485 communications. The extensive selection of fittings, simplicity of use, ease of sensor replacement, and competitive cost make this unit an excellent choice for a variety of vacuum applications.

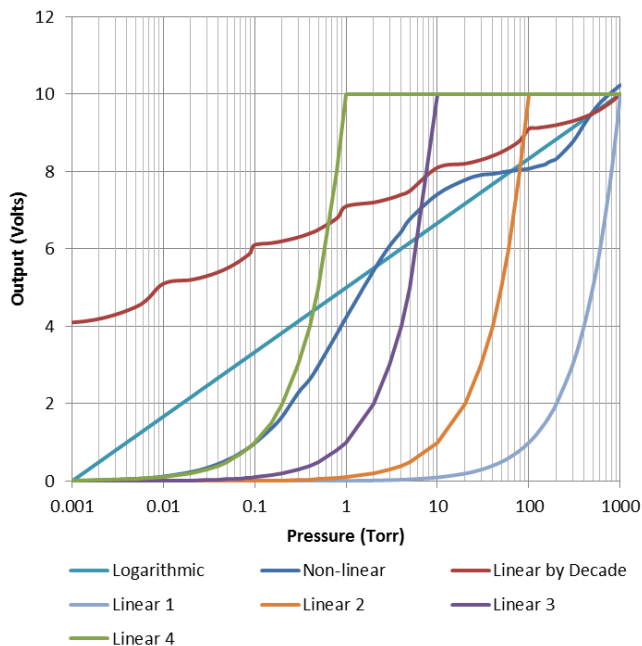
### Benefits

- Simple sensor replacement - no screws to remove
- Extremely fast lead times of 2 weeks or less
- Competitively priced
- Compact design with an easy to read color OLED display
- Excellent resolution and accuracy of measurements
- Superior unit to unit performance
- Excellent customer support

### Ratings and Compliance

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

### Analog Output Behavior



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### Additional Documentation

- Televac® Tolerances
- AN 3001 - Comparison of the MX2A and MX4A Active Gauges
- AN 3010 - Torr Scientific/Torr Decimal/mTorr/Micron Conversions
- AN 3015 - Televac® Recommended Practices for Vacuum Calibration
- AN 3020 - Vacuum Terminology Reference

### Set Points

The MX2A 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 datasheet can be found at [www.vishay.com/docs/69958/si2308bds.pdf](http://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 datasheet can be found at [www.te.com/catalog/pn/en/1393788-3](http://www.te.com/catalog/pn/en/1393788-3).

### Electrical Connections

Pin	Description
1	Analog Out (Ground)
2	RS-485 A (-)
3	SP2 NC
4	SP2 NO
5	SP1 Open Drain
6	Floating
7	Floating
8	Supply Voltage (+)
9	Analog Out (0 to 10) V
10	RS-485 B (+)
11	SP2 Com
12	SP1 Source
13	Floating
14	Floating
15	Supply Voltage (-)

### Physical Characteristics

Housing	Aluminum
Electrical Connections	D-Sub 15-pin male
Weight with Sensor (typical)	345 g (0.76 lbs)
Weight without Sensor	186 g (0.41 lbs)
Dimensions	See dimensional drawings

### Sample RS-485 Commands (assume address 0)

*0S1<CR>	Read vacuum measurement
*0R1<CR>	Read units of measurement
*0R2<CR>	Read SP1L and SP1H

### Materials Exposed to Vacuum

MX2A PN: 2-8910-110, -116, -125	MX2A PN: All Others
Nickel	Nickel
Glass	Glass
Gold	Gold
Tophet	Tophet
Cupron	Cupron
Solder	Stainless Steel

### Related Products and Replacement Sensors

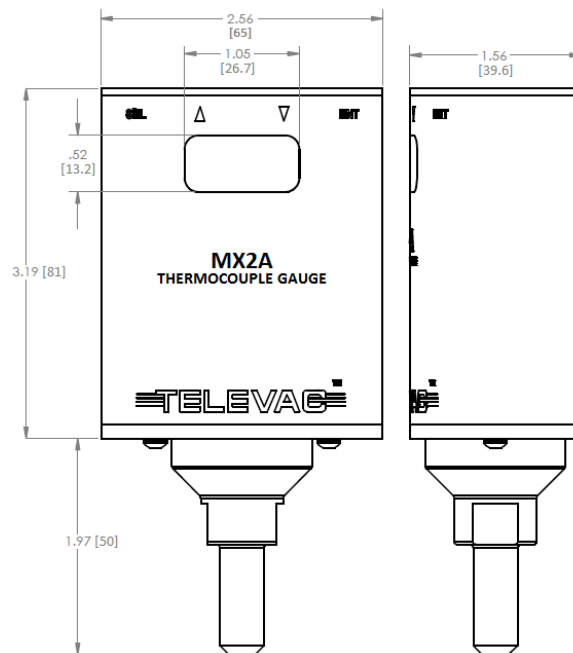
Description	Part Number
2A Sensor 1/8" NPT Nickel Plated Brass	2-2100-10
2A Sensor NW16 (DN16 ISO-KF) Nickel Plated Brass	2-2100-016
2A Sensor NW25 (DN25 ISO-KF) Nickel-Plated Brass	2-2100-025
2A Sensor 1/8" NPT Stainless Steel	2-2126-01
2A Sensor 1/2" Straight Stainless Steel	2-2126-11
2A Sensor NW16 (DN16 ISO-KF) Stainless Steel	2-2126-30
2A Sensor NW25 (DN25 ISO-KF) Stainless Steel	2-2126-31
2A Sensor NW40 (DN40 ISO-KF) Stainless Steel	2-2126-32
2A Sensor 1.33" CF (DN16 ISO-CF-F) Stainless Steel	2-2126-50
2A Sensor 2.75" CF (DN40 ISO-CF-F) Stainless Steel	2-2126-52

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Pair the MX2A with an MX7B for full range vacuum measurement from  $1 \times 10^{-8}$  Torr to 1000 Torr!



### Dimensional Drawings



\*Dimensions are drawn with 1/8" NPT fitting installed

### Contact Us

Televac® - The Fredericks Company  
 2400 Philmont Avenue  
 Huntingdon Valley, PA 19006  
 tel: +1 215 947 2500  
 fax: +1 215 947 7464  
 email: [sales@frederickscompany.com](mailto:sales@frederickscompany.com)  
 web: [www.frederickscompany.com](http://www.frederickscompany.com)

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