

MC300 Vacuum Controller

Part Number: 2-450X-X0X

| Operating Specifications ¹ | |
|---------------------------------------|-------------------------------------|
| Operating Range | 1*10 ⁻¹¹ up to 1000 Torr |
| Communications | N/A |
| Analog Output | 0 to 10 V DC (1 per sensor) |
| Analog Output Resolution | 12 bits |
| Display Output Resolution | 3 significant digits |
| Programmable Set Points | 4 |
| Set Point Type | Relay |
| Supply Voltage | 115/230 VAC (0.3/0.15 A), 50-60Hz |
| Maximum Power | 35 W |
| Calibration Medium | Dry air or nitrogen |
| Overpressure | Sensor-dependent |
| Operating Temperature | 0 °C to 50 °C |
| Storage Temperature | -40 °C to 85 °C |
| Display Readable Distance | 35 ft (10 m) |
| Maximum Sensors Controlled | Up to 3 |

Ordering Information

| MC300 Vacuum Controller | |
|---|------------|
| Dual 2A with 7B (10 ⁻⁷ to 20 Torr) | 2-4502-301 |
| Dual 4A with 7B (10 ⁻⁷ to 1000 Torr) | 2-4502-302 |
| Dual 2A with 7E/7F/7FC (10 ⁻¹¹ to 20 Torr) | 2-4502-303 |
| Dual 4A with 7E/7F/7FC (10 ⁻¹¹ to 1000 Torr) | 2-4502-304 |
| Dual 2A with Mini BA (10 ⁻¹⁰ to 20 Torr) | 2-4502-305 |
| Dual 4A with Mini BA (10 ⁻¹⁰ to 1000 Torr) | 2-4502-306 |
| Dual 2A (10 ⁻³ to 20 Torr) | 2-4503-401 |
| Dual 4A (10 ⁻³ to 1000 Torr) | 2-4503-402 |

| Simulators | |
|---|------------|
| 2A Octal, Red Line | 2-2100-237 |
| 2A Octal, 3 Point: 0, 100, 1000 Torr | 2-2100-242 |
| 2A Mini, Red Line | 2-2100-240 |
| 2A Mini, 3 Point: 0, 100, 1000 Torr | 2-2100-241 |
| 4A, Red Line | 2-2119-000 |
| 4A, 3 Point: 0, 1, 760 Torr | 2-2119-003 |
| 7B, 2 Point: 10 ⁻³ , 10 ⁻⁵ Torr | 2-2100-93 |
| 7E/7F/7FC/7FCS, 2 Point: 10 ⁻³ , 10 ⁻⁵ Torr | 2-2145-000 |

| Standard Cables | | | |
|-----------------|------------|------------|-----------|
| Length | 2A Cable | 4A Cable | 7B Cable |
| 10 ft (3 m) | 2-9800-077 | 2-9820-010 | 2-9800-09 |
| 20 ft (6 m) | 2-9800-078 | 2-9820-020 | 2-9800-41 |
| 35 ft (11 m) | 2-9800-079 | 2-9820-035 | 2-9800-42 |
| 50 ft (15 m) | 2-9800-080 | 2-9820-050 | 2-9800-43 |

| Length | 3F Cable | 7EF Cable |
|----------------|-----------|------------|
| 10 ft (3 m) | 2-9854-10 | 2-9841-010 |
| 20 ft (6.1 m) | 2-9854-20 | 2-9841-020 |
| 35 ft (10.6 m) | 2-9854-35 | 2-9841-035 |
| 50 ft (15.2 m) | 2-9854-50 | 2-9841-050 |

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Description

The MC300 controls up to two Televac® thermocouple or convection rough vacuum sensors and an optional cold cathode or mini hot ion high vacuum sensor. It features 4 relay set points for process control and large, bright LED display, making it easy to read from a distance.



PN 2-4502-3XX



PN 2-4503-4XX

Physical Characteristics

| | |
|------------------------|------------------------------------|
| Housing | Cold rolled steel |
| Electrical Connections | Power cord (IEC 60320 C-13) |
| Weight without Sensor | 2.2 kg (5 lbs) |
| Dimensions | See dimensional drawings |
| Mounting | Panel mount or half rack adaptable |

Benefits

- Competitively priced
- Built-in self-diagnostics
- Easy to read large LED display
- Four set point relays for process control
- Individually assignable set point relay ranges
- Analog 0 to 10 V DC output for each connected sensor
- Excellent customer support

Certifications, Compliance, and Ratings

- Certified to UL 61010-1
- CE certified to EN 61326-1:2006
- Certified to CAN/CSA C22.2 No. 61010-1-12
- ISO 17025 accredited calibration optional
- NIST traceable calibration optional

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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

Related Products

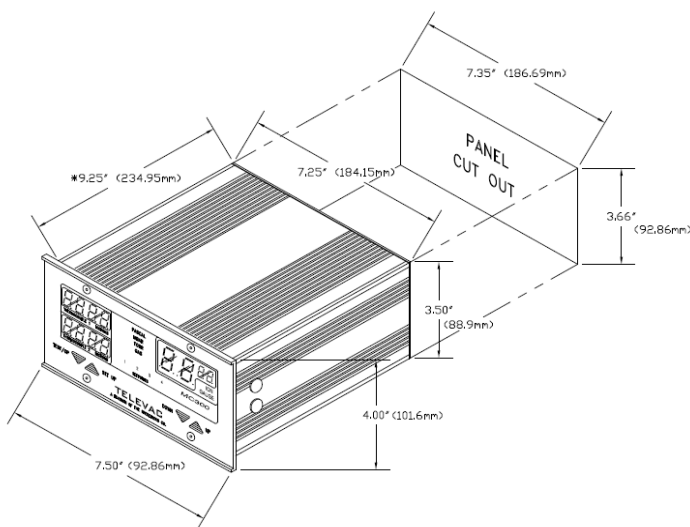
| Description | Part Number |
|---|-------------|
| MX2A Thermocouple Active Gauge | 2-8910-1XX |
| MX4A Convection Active Gauge | 2-8930-1XX |
| MX7B Cold Cathode Active Gauge | 2-8940-XXX |
| MX200 Vacuum Controller RS-232/RS-485/USB | 2-7900-034 |
| MX200 Vacuum Controller EthernetIP/USB | 2-7900-037 |
| (Legacy) MM200 Vacuum Controller | 2-7900-20 |
| (Legacy) MP4AR Active Gauge | 2-7930-XXY |



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Dimensional Drawing



Materials Exposed to Vacuum

Please refer to the appropriate sensor data sheet for materials exposed to vacuum.

Set Points

The MC300 has four relay set points. Individual relay status LEDs are displayed on the front panel. The heavy duty relays have a SPDT (1 Form C) contact and are rated for 24 VDC. They have a maximum current rating of 8 A at 250 VAC or 5 A at 30 VDC. The data sheet can be found at <http://www.omron.com/ecb/products/pdf/en-g6rn.pdf>.

High Vacuum Sensor Operation

The MC300 is sold in configurations containing high vacuum sensors (cold cathode or hot ion). The high vacuum sensor is controlled automatically by the low vacuum sensor connected to station 1. It is switched on when station 1 reads below 10 microns (10 mTorr or 0.010 Torr). When operating high vacuum sensors, it is recommended that the channel 3 high vacuum sensor and channel 1 low vacuum sensor be located near one another on the same manifold.

Company Information

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.

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 any-time-access to our leadership team and solutions that enhance your products, you will feel the Fredericks difference.

[Read more about us!](#)

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