All You Need for All You Measure

Engineered for reliable, repeatable measurement and control

ISO 9001 Certified

www.televac.com
TELEVAC provides a full line of vacuum gauges and instrumentation covering the entire practical vacuum range. From $10^{-11}$ to $10^{-1}$ Torr. TELEVAC offers highly accurate, repeatable gauges to meet your application. Moreover, TELEVAC is constantly developing innovative new gauges to widen the range of vacuum measurement and control. Turn to TELEVAC first for advanced vacuum products backed by superb research and development, support and service.

Since 1945, TELEVAC has been committed to improving the standards and range of vacuum product applications. Used extensively throughout the industrial, scientific and high-tech communities, TELEVAC gauges are employed for independent measurement and control, or with OEM systems and products. TELEVAC is an accepted supplier to many leading companies and government agencies, including NASA and the United States Department of Defense.

TELEVAC instrumentation is engineered for reliable, repeatable measurement and control. Gauges are produced using advanced manufacturing methods and equipment. They are cycled through a high-temperature burn-in period to assure component integrity, and are thoroughly QC tested. Calibration is performed under actual vacuum conditions by comparison with standards traceable to NIST.

TELEVAC gauges are available in microprocessor-based and analog modalities. Ultra-high vacuum (UHV) applications are especially appropriate to TELEVAC. Contact us for expert consultation regarding your vacuum measurement and control needs. If a standard TELEVAC product is not in order, a modified or customized gauge often is. TELEVAC will design, manufacture and support instruments or systems to meet major customer requirements.

This brochure will show you the primary TELEVAC product lines. We look forward to discussing your applications, and promptly fulfilling your vacuum needs with accurate, reliable, and proven TELEVAC products.

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MM200 Modular Vacuum Controller
Range: $10^{-11}$ to 7600 Torr max

The MM200 provides a wide range of options for vacuum measurement and control through a single instrument. Different vacuum functions are easily accommodated with this one flexible, half-rack controller. Configurations include combinations of cold or hot ionization, thermocouple, convection, diaphragm and set-point relay modules.

**TELEVAC MM200 features:**
- Customer configurable design
- Built-in self-diagnostics
- Selectable units of measure
- Easy to read large LED display
- 0-10V analog output per sensor
- Rack mountable
- Digital RS-232/485 interface
- Gas compensation: Ar and N2

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<table>
<thead>
<tr>
<th>MM200 Controller Configuration</th>
<th>Model</th>
<th>Range</th>
<th>Sensors Controlled</th>
<th>Slots (Max Modules)</th>
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<tr>
<td></td>
<td>1E and 1F Piezo Diaphram</td>
<td>1 to 1000</td>
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<td>1(5)</td>
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<td></td>
<td>4A Convection</td>
<td>$10^{-1}$ to 1000</td>
<td>2</td>
<td>1(5)</td>
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<td></td>
<td>2A Thermocouple</td>
<td>$10^{-7}$ to 20</td>
<td>2</td>
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<td></td>
<td>7B Cold Cathode</td>
<td>$10^{-7}$ to $10^{-1}$</td>
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<td>1.5 (3)</td>
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<td></td>
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<td></td>
<td>3F Mini Bayard Alpert Hot Ion</td>
<td>$10^{-11}$ to $10^{-2}$</td>
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<td></td>
<td>Capacitance Diaphram</td>
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<td></td>
<td>Relay Setpoints (4)</td>
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<td>1(2)</td>
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<td></td>
<td>RS-232/485</td>
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</table>

*Many other configuration combinations available*

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Rear View – Typical Configuration

TELEVAC MM200 can be assembled by combining several modules to form the desired multi-functional controller. Six slots are available for gauge boards and process relays. The seventh slot is reserved for digital communications.
MC300
Range: $10^{-11}$ to $10^{-3}$ Torr

The TELEVAC MC300 utilizes state-of-the-art electronics in a compact enclosure. The MC300 Series is available in a two channel rough vacuum version and a three channel rough/high vacuum version. Each model has four user-selectable relays and an analog output for each channel.

**TELEVAC M300 features:**
- Large, bright LED display
- Operator lockout switch
- Selectable units: Torr, microns, mBar, Pascal
- Gas compensation: Ar and N$_2$
- Self-diagnostics
- 0-10 V outputs

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Sensors</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC300 2A/7B</td>
<td>20 to $10^{-7}$ Torr</td>
<td>2A Thermocouple, 7B Penning Cold Cathode</td>
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<tr>
<td>MC300 4A/7B</td>
<td>1000 to $10^{-7}$ Torr</td>
<td>4A Convection, 7B Penning Cold Cathode</td>
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<tr>
<td>MC300 2A/7E</td>
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<td>4A Convection, 7E Double Inverted Magnetron Cathode</td>
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<td>MC300 2A/7F</td>
<td>20 to $10^{-11}$ Torr</td>
<td>2A Thermocouple, 7F Double Inverted Magnetron Cathode</td>
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<td>MC300 4A/7F</td>
<td>1000 to $10^{-11}$ Torr</td>
<td>4A Convection, 7F Double Inverted Magnetron Cathode</td>
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<tr>
<td>MC300 2A/3F</td>
<td>20 to $10^{-10}$ Torr</td>
<td>2A Thermocouple, 3F Mini Bayard Alpert Hot Ionization</td>
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<tr>
<td>MC300 4A/3F</td>
<td>1000 to $10^{-10}$ Torr</td>
<td>4A Convection, 3F Mini Bayard Alpert Hot Ionization</td>
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</table>

MV2A Thermocouple
Vacuum Measurement Controller
Range: $10^{-3}$ to 20 Torr

The MV2A Controller is a single-channel vacuum measurement and control instrument that employs the TELEVAC 2A sensor, featuring a bright LED display, 2 setpoint relays and analog output. The MV2A Controller is accurate, versatile and easy to use.

**TELEVAC MV2A Controller features:**
- Easy panel mount, weighs less than 1 lb.
- 2 process control relays, 5 Amps @ 40 Volts
- 0–5 V linear output

VacuGuard Portable Thermocouple
Vacuum Instrument
Range: $10^{-3}$ to 20 Torr

Compact in size with large digital, easy to read LED display, the VacuGuard has the capability to drive TELEVAC 2A and 2V6 sensors as well as DV4 and DV6 series sensors with the flick of a switch. It has a rugged construction with a powder coated extruded aluminum enclosure. It is a battery operated, portable, comes with carrying case and cables. The VacuGuard is available in a variety of kits to fit every requirement. It is also available with rechargeable batteries and charger. Sensors sold separately.

**TELEVAC VacuGuard features:**
- Easy to read digital display
- Portable, battery operated
- Rugged construction
- Position switch, reads choice of TELEVAC 2A, 2A Mini, 2V6 Thermocouple and DV4 and DV6 sensors
B2A-1-BAT Portable Thermocouple Vacuum Instrument
Range: $10^{-3}$ to 20 Torr

This economical, portable TELEVAC instrument is ideal for field applications. Solidly constructed and rechargeable, it is lightweight, compact and easy to operate. Controls are front-panel mounted for direct access. Simply lift the flap of the carrying case, apply the sensor, and use. This reliable vacuum gauge offers unmatched flexibility and accuracy. The popular B2A-1-BAT has proven itself in countless applications wherever vacuum measurement portability is required.

**The TELEVAC B2A-1-BAT provides:**
- Up to 16 hours of operation between charges/low-battery light
- Rugged, compact, lightweight enclosure with 10-ft. sensor cable
- Only one current adjustment necessary for operation
- Interchangeable sensor without recalibration

CC-10 Wide Range Vacuum Gauge
Crystal/Cold Cathode Combination
Range: $10^{-3}$ to 760 Torr

The CC-10 is a self-contained compact gauge and controller designed to replace multiple conventional vacuum gauges by incorporating the latest sensor technology to permit seamless measurement of twelve decades of pressure. This gauge uses dual sensor technology. Rough vacuum, from atmospheric pressure to $10^2$ Torr is measured using a crystal sensor, while pressure from $10^2$ Torr to $1 \times 10^{-9}$ Torr is measured with a double inverted magnetron cold cathode sensor.

All operating parameters are easily addressed and checked from the membrane panel on the front of the electronics module. A blue-green segmented LED provides pressure indication. Discrete LEDs indicate status for each of the three set point relays. The CC-10 offers the user the choice of both analog and digital communication as a standard feature.

**CC-10 Wide Range Vacuum Gauge features:**
- Seamless measurement from atmospheric pressure to UHV on a single vacuum port
- 0-10 VDC Analog Output
- RS485 digital communications
- Three adjustable set points
- Digital Display, read in Torr, Mbar or Pa
- Power with 24 VDC
- Small Size: 3.7”x2.75”x6.3”

2A Compact Thermocouple Instrument
Range: $10^{-3}$ to 20 Torr

The TELEVAC Thermocouple Compact Instrument is economical and easy-to-mount for accurate measurement in the $10^{-3}$ to 20 Torr vacuum range. It offers excellent value with accuracy and economy in the same field-proven gauge.

**TELEVAC Thermocouple Compact Instrument:**
- Line voltage 110V/220, 50/60 Hz capability
- Line voltage selection switch
- 0–10 V analog output
MX2A Thermocouple Active Vacuum Gauge
Range: $10^{-4}$ to 1000 Torr

The MX2A Active Gauge utilizes an easily replaceable Televac 2A Thermocouple vacuum sensor known for its rugged design and contamination resistance, it is the perfect gauge for a wide variety of applications. The bright OLED display makes it easy to read from a distance and all options can be easily set from the four capacitive touch controls located on the top of the unit.

**TELEVAC MX2A features:**
- Ease of sensor replacement
- RS-485 communications
- Bright OLED display
- Two programmable set points
- Selectable 0-10 V analog outputs
- Multi-directional install
- Easy set-up from controls on unit
- Extensive selection of fittings
- Simplicity of use
- Competitive cost for wide range

MX4A Convection Active Vacuum Gauge
Range: $10^{-4}$ to 1000 Torr

The MX4A Active Gauge is a convection enhanced thermal conductivity gauge that utilizes an easily replaceable Televac 4A Convection vacuum sensor which provides a fast response time of $<1$ second. The MX4A also provides improved accuracy performance in the 10 to 100 Torr range. The bright OLED display makes it easy to read from a distance and all options can be easily set from the four capacitive touch controls located on the top of the unit.

**TELEVAC MX4A features:**
- Fast response time $<1$ sec
- Ease of sensor replacement
- RS-485 communications
- Bright OLED display
- Two programmable set points
- Easy set-up from controls on unit
- Selectable 0-10 V analog outputs
- Extensive selection of fittings
- Simplicity of use
- Competitive cost for wide range

MP7ER and MP7FR Double-Inverted Magnetron Cold Cathode Active Vacuum Gauges
MP7ER Range: $10^{-8}$ to $10^{-2}$ Torr
MP7FR Range: $10^{-11}$ to $10^{-2}$ Torr

The MP7ER and MP7FR Active gauges provide an ideal compact, stand-alone measurement solution. These gauges can provide local readout, relay control, and analog output for data acquisition or computer control systems. The gauges use our 7E or 7F double-inverted magnetron cold cathode sensor, which provides a superior method of high and ultra-high vacuum measurement.

**TELEVAC MP7ER and MP7FR features:**
- Easy to read display
- Log on/off control included
- MP7ER is easily disassembled for cleaning
- 0-10V linear or log outputs
- Process control relay

7E and 7F Double-Inverted Magnetron Cold Cathode Sensor
7E Range: $10^{-8}$ to $10^{-2}$ Torr
7F Range: $10^{-11}$ to $10^{-2}$ Torr

The 7E and 7F cold cathode sensors offer proven accuracy and unmatched durability at high and ultra-high vacuums. The sensor design indirectly measures absolute pressure by ionizing gas in the presence of a magnetic field. Unlike hot filament sensors, the cold cathodes are resistant to inrushes of gas.

**TELEVAC 7E and 7F Cold Cathode Sensors features:**
- 7E easily disassembled for quick cleaning
- Improved sensitivity compared to Penning Magnetrons
- Minimal stray magnetic field compared to other inverted magnetron sensors
- High bakeout temperature for 7F
- Compact design
- Mountable in any orientation
## Product Maxtrix

### Sensor Measurement Range

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<tr>
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<th>10⁻⁹</th>
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<td>10K</td>
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### Instrument Selection Guide

- MM200
- MC-300
- CC-10
- MP30R
- MP30R
- MX4A
- MX2A
- Vacto/Grady™
- B2A-F-BAT
- COMPACT 2A

### Conversion Table

- mBar | 10⁺⁻¹ 10⁺⁻² 10⁺⁻³ 10⁺⁻⁴
- PASCAL | 10⁻³ 10⁻⁴ 10⁻⁵ 10⁻⁶