**Series 500 Hornet™ Cold Cathode Miniature-Ionization Vacuum Gauge**

- **Wide measurement range**
  - $1 \times 10^9$ to $1 \times 10^7$ Torr
  - $1.3 \times 10^9$ to $1.3 \times 10^2$ mbar
  - $1.3 \times 10^7$ to 1.3 Pa

- **Full range measurement from** $1 \times 10^9$
  - Torr to atmosphere when used with the
  - B-RAX or the FlexRax controllers and a
  - convection gauge

- **Rugged and compact Double-Inverted Magnetron design improves sensor sensitivity and performance**

- **Improved sensor signal to noise ratio provides stable and optimal performance throughout the measurement range**

- **Ionization gauge designed specifically for use with InstruTech’s B-RAX or FlexRax vacuum gauge controllers**

- **Built-in Electrometer results in significant controller and cabling cost reduction**

**Description**

The CCM500 Hornet™ is a cold cathode ionization vacuum gauge module specifically designed for use with InstruTech’s B-RAX™ or FlexRax™ vacuum gauge controllers.

All display and control functions are performed remotely by the B-RAX or the FlexRax controller.

**The InstruTech CCM500 Hornet Ionization Gauge**

The CCM500 Hornet ionization vacuum gauge module provides the basic signal conditioning required to turn the gauge into a complete measuring instrument.

The CCM500 Hornet Cold Cathode ionization gauge sensor assembly is constructed of a compact metal design resulting in a simple yet rugged sensor suitable for numerous industrial applications.

The Double-Inverted magnetron design places two opposing magnetic fields over the anode (sensor) to enhance the generations of ions. This nearly doubles the electron currents, maximizing the generation of ions and improving sensitivity and signal-to-noise ratio.

The sensor assembly can be easily disassembled and cleaned allowing long term use with minimal down time.

InstruTech has made numerous design enhancements to the CCM500 Hornet to reduce cost and improve performance.

The electrometer auto zeroes to ensure that the readings are not subject to temperature drift. This eliminates the need for unnecessary and expensive circuitry which further reduces the cost.

The CCM500 Hornet is functional only when used with the B-RAX or the FlexRax vacuum gauge controller. This allows the user to remotely operate the CCM500 Hornet from the B-RAX or the FlexRax controller.

All operations including sensor on/off is controlled from the B-RAX or the FlexRax.

Anode voltage and ion current can be monitored in real time on the research screen of the B-RAX or the FlexRax controller. Sensitivity may be adjusted by the user.

The combination of superior sensor design and enhanced signal processing provides optimal and stable pressure readings over the entire measurement range from low to high vacuum.
Specifications

measurement range: $1 \times 10^{-9}$ to $1 \times 10^{-2}$ Torr / $1.3 \times 10^{-9}$ to $1.3 \times 10^{-2}$ mbar / $1.3 \times 10^{-7}$ to $1.3$ Pa

accuracy - $N_2$ (typical): $1 \times 10^{-4}$ to $1 \times 10^{-2}$ Torr; ± 30% of reading

repeatability - (typical): ± 5% of reading

materials exposed to gases: 304 stainless steel, ceramic, Viton® O-ring

sensitivity: factory preset to 10 Torr$^{-1}$ (also user adjustable between 2 to 99)

overpressure protection: gauge turns off at factory default setting of $1 \times 10^{-2}$ Torr

internal gauge volume: 1.965 in$^3$ (32.2 cm$^3$)

temperature: operating: 0 to + 40 °C; storage: -40 to + 70 °C

bakeout temperature: 150 °C (sensor only - electronics removed), limit to 5 hours with magnets installed

humidity: 0 to 95% relative humidity, non-condensing

weight: 1.7 lb. (0.77 kg) with NW25 KF flange

housing (electronics): aluminum extrusion

mounting orientation: any

analog output: analog output is available at the B-RAX or the FlexRax

setpoint delay: relays available at the B-RAX or FlexRax

status outputs: anode (sensor) on/off status is determined by LED on the CCM500 and also display messages and available user interface options on the B-RAX and FlexRax controllers

input control signal: all CCM500 operations controlled from the B-RAX or the FlexRax

input power: powered by either the B-RAX or FlexRax controller

connector/cabling: InstruTech cable/connector assembly for connection to either B-RAX or FlexRax


environmental: RoHS compliant

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Ordering Information

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<th>Replacement Sensor</th>
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<tr>
<td>1 in. Tube (1 in. O.D. O-ring compression)</td>
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<td>CCST</td>
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<td>NW16KF</td>
<td>CCM500BX</td>
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<td>NW25KF</td>
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<td>NW40KF</td>
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<td>1 1/3 in. Mini-CF/NW16CF Mini-Conflat®</td>
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<td>CCM500FX</td>
<td>C5F</td>
</tr>
</tbody>
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B-RAX or FlexRax Controller & Gauge Cables: see B-RAX or FlexRax controller data sheet