InstruTech®, Inc.

Series 500 Hornet™ Cold Cathode Miniature-Ionization Vacuum Gauge

Wide measurement range
1×10^{-9} to 1×10^{-2} Torr
1.3×10^{-9} to 1.3×10^{-2} mbar
1.3×10^{-7} to 1.3 Pa

Full range measurement from* 1×10^{-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 stabile 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.

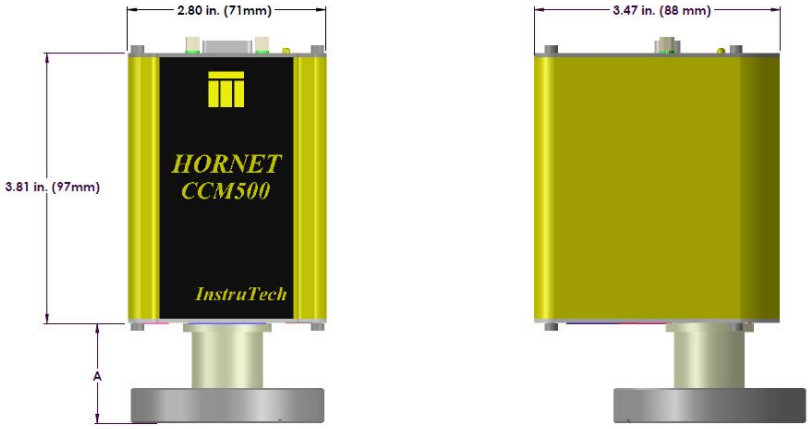
Anode voltage and ion current can be monitored in real time on the research screen of the B-RAX or the FlexRax controller. Sensitivity may be adjusted by the user.

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

Specifications

measurement range	1×10^{-9} to 1×10^{-2} Torr / 1.3×10^{-9} to 1.3×10^{-2} mbar / 1.3×10^{-7} to 1.3 Pa
accuracy - N_2 (typical)	1×10^{-8} to 1×10^{-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 1×10^{-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 relay	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
CE compliance	EMC Directive 2004/108/EC, EN61326-1, EN55011 Low Voltage Directive 2006/95/EC, EN61010-1
environmental	RoHS compliant

Fitting	dimension A
1 in. Tube	2.56 in. (65 mm)
NW16KF	2.63 in. (67 mm)
NW25KF	2.63 in. (67 mm)
NW40KF	2.82 in. (72 mm)
1 1/3 in. Mini-CF	2.11 in. (54 mm)
2 3/4 in. Conflat®	2.63 in. (67 mm)



Ordering Information — *Part Numbers*

CCM500 Fittings / Flanges	Cold Cathode Module	Replacement Sensor
1 in. Tube (1 in. O.D. O-ring compression)	CCM500TX	CC5T
NW16KF	CCM500BX	CC5B
NW25KF	CCM500CX	CC5C
NW40KF	CCM500DX	CC5D
1 1/3 in. Mini-CF/NW16CF Mini-Conflat®	CCM500EX	CC5E
2 3/4 in. CF / NW35CF Conflat®	CCM500FX	CC5F

B-RAX or FlexRax Controller & Gauge Cables	see B-RAX or FlexRax controller data sheet

InstruTech®, Inc.
1475 S. Fordham Street
Longmont, CO 80503
USA

Phone +1-303-651-0551
Fax +1-303-678-1754
E-mail info@instrutechinc.com
Web www.instrutechinc.com