

IGM-400 Hornet Miniature-Ionization Vacuum Gauge Module

Wide measurement range
 1×10^{-9} to 5×10^{-2} Torr
 1.3×10^{-9} to 6.7×10^{-2} mbar
 1.3×10^{-7} to 6.7 Pa

Designed specifically for use with InstruTech's B-RAX vacuum gauge Controller.

Significant cost savings compared to other vacuum gauge measurement systems.

Full range measurement from 1×10^{-9} Torr to atmosphere when used with the B-RAX Controller and a Convection Gauge.

Dual Hot Filament design, rugged and compact metal construction

Built-in Electrometer results in significant Controller and cabling cost reduction.



Description

The IGM-400 is the Ionization gauge module component of InstruTech's B-RAX multi-gauge vacuum measurement system. All display and control functions are done remotely using the B-RAX.

The complete system consists of :

- One B-RAX vacuum gauge Controller
- One InstruTech Hornet IGM-400 Ionization gauge
- Up to two CVG-101 Convection vacuum gauge tubes

The measurements from the IGM-400 are displayed on the IG display screen of the B-RAX Controller (see B-RAX data sheet for Controller specifications).

IGM-400 used with B-RAX Vacuum Measurement System



InstruTech IGM-400 Ionization Gauge

The IGM-400 Miniature-Ionization vacuum gauge module provides the basic signal conditioning required to turn the gauge into a complete measuring instrument.

The IGM-400 is functional only when used with the B-RAX Vacuum gauge Controller. This allows the user to remotely operate the IGM-400 from the B-RAX Controller.

InstruTech has made numerous design enhancements to the IGM-400 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.

All operations including Filament on/off, Degas, and change of emission current is controlled from the B-RAX.

The emission current can be set to automatically switch between 4 ma and 100 uA. This results in optimal and stable pressure readings over the entire measurement range from low to high vacuum.

The IGM-401 gauge tube assembly is constructed of a compact all metal design with dual Yttria coated Iridium or optional dual Tungsten filaments.

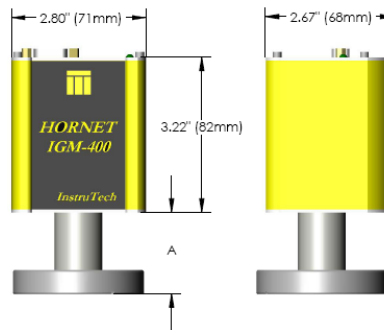
The gauge sensor assembly can be easily replaced in the field by simply removing four socket head cap screws.

Dual Yttria Coated filaments are offered for general vacuum applications. The optional dual Tungsten filaments are available for use in applications not compatible with Yttria filaments such as those gases containing chlorine, fluorine, etc.

Specifications

measurement range	1 x 10 ⁻⁹ to 5 x 10 ⁻² Torr / 1.3 x 10 ⁻⁹ to 6.7 x 10 ⁻² mbar / 1.3 x 10 ⁻⁷ to 6.7 Pa
materials exposed to gases	Dual Filaments: Yttria Coated Iridium or optional Tungsten Ion Collector: Tungsten Grid: Tantalum Others: 316/304 SS, Glass, Nickel
sensitivity	Factory pre-set. Also user adjustable from 2 to 99 (set by B-RAX Controller)
X ray limit	< 5 x 10 ⁻¹⁰
emission current	100 uA, 4 mA, or automatic switching between 100 uA and 4 mA
degas	3 Watts e-beam
overpressure protection	Gauge is auto turned off by at factory default setting of 5 X 10 ⁻² Torr B-RAX can also be set up to auto filament turn on/off using a Convection gauge
filament status	Filament on/off status LED located on the IGM-400. The filament on/off status also displayed by the B-RAX controller.
internal gauge volume	1.0 in ³ (16.4 cm ³)
operating temperature	0 to + 40° C
bakeout temperature	200° C (sensor only - electronics removed)
humidity	0 to 95% RH non-condensing
weight	0.6 Lbs (0.27 kg) with NW25 KF flange
mounting orientation	Any
Interface	Functional only when used with the B-RAX Controller
setpoint relay	Relays available from the B-RAX. (See B-RAX data sheet)
input signal	All IGM-400 operations controlled from B-RAX
filament selection	User selectable between filament 1 or 2 - command signal sent from B-RAX
input power	Powered by B-RAX Controller
RF/EMI protection	CE compliant
Connector/cabling	InstruTech custom cable/connector assembly for connection to B-RAX

Fitting	dimension A
NW16KF	1.45" (37mm)
NW25KF	1.45" (37mm)
NW40KF	1.45" (37mm)
1-1/3" Mini CF	1.85" (47 mm)
2-3/4" Conflat®	1.70" (43 mm)



Ordering Information

Part Numbers

<u>InstruTech IGM-400 Module</u> <u>With Fitting:</u>	<u>With Yttria Filaments</u>	<u>With Tungsten Filaments</u>	<u>Replacement Sensor - Yttria</u>	<u>Replacement Sensor - Tungsten</u>
NW16KF	IGM 400 Y B X	IGM 400 T B X	IG4YB	IG4TB
NW25KF	IGM 400 Y C X	IGM 400 T C X	IG4YC	IG4TC
NW40KF	IGM 400 Y D X	IGM 400 T D X	IG4YD	IG4TD
1-1/3"Mini-CF/NW16CF Mini-Conflat®	IGM 400 Y E X	IGM 400 T E X	IG4YE	IG4TE
2-3/4" CF / NW35CF Conflat®	IGM 400 Y F X	IGM 400 T F X	IG4YF	IG4TF

B-RAX Controller	See B-RAX Controller data sheet
IGM cabling/connector	See B-RAX Controller data sheet
CVG-101 Convection gauge	See CVG-101 Worker Bee Convection gauge data sheet
CVG cabling/connector	See B-RAX Controller data sheet

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