



InstruTech, Inc.

CVG-101 Worker Bee Convection Vacuum Gauge

Wide measuring range
 10^{-4} to 1000 Torr
 10^{-4} to 1333 mbar
 10^{-2} Pa to 133 kPa

Wider measuring range and better accuracy than thermocouple gauges.

Also a low cost, plug-compatible, direct drop-in replacement gauge for GP Convector[®] and Mini-Convector[®] gauges.

A single vacuum gauge can monitor your vacuum system pump-down and venting.

Upgrade your vacuum system and process performance.

Significant savings for you. No changes to your system. Use your existing Convector[®] controllers, cables, and modules.



The InstruTech CVG-101 Sensor

The CVG-101 “Worker Bee” Convection vacuum gauge sensor incorporates numerous design enhancements compared to other traditional Convection vacuum gauges.

Temperature compensation has been moved out of the vacuum environment and placed around the outside of the vacuum gauge tube. This has eliminated a dozen or so unnecessary parts and welds, significantly increasing the reliability, providing optimal vacuum measurement while reducing cost. The improved mechanical strength results in a highly robust vacuum gauge less susceptible to mechanical shock and vibration.

Other design features include reduced internal volume and significant reduction of internal surface area resulting in faster pump-down and less outgassing. A fine mesh screen in the gauge inlet port helps prevent particulate contamination from entering the gauge. The gauge is shielded against RF interference. Guided by our vast experience and vacuum measurement know how, our sensors are specifically designed for reliability and manufacturability.

These, and other, design features add up to a highly reliable vacuum gauge with significant cost savings that are passed on to you.

Upgrade for thermocouple TC vacuum gauges

The *Worker Bee* provides wider measuring range than traditional thermocouple vacuum gauges - from 10^{-4} Torr to atmosphere - so you can monitor your entire pump-down and vent cycle.

The CVG-101 *Worker Bee* Convection Enhanced Pirani gauge is more accurate than a thermocouple gauge, especially at lower pressures.

Also a Low cost drop-in replacement for the GP Convector[®] Gauge

The *Worker Bee* can also directly replace the Granville-Phillips Convector[®] sensor, at significantly lower cost.

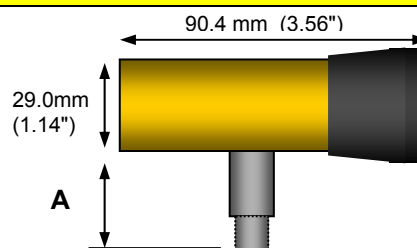
The InstruTech CVG convection vacuum gauge provides equivalent or better performance throughout the range of 10^{-4} to 1000 Torr (10^{-4} to 1333 mbar). Only the same, equivalent, or better materials are used in the vacuum environment. Clean assembly procedures assure compatibility with today’s contamination-sensitive processes. All tooling that comes in contact with vacuum surfaces of the InstruTech gauge are of very low vapor pressure materials.

The sensor connector has the same pinouts and signal as the corresponding Convector[®]. It is directly interchangeable with your existing Convector[®] controllers, cables, so you don’t need to change any wiring, hardware, or process recipes. With *Worker Bee*’s performance, more robust design, longevity, and lower cost, your process could only improve

Whether you’re looking to reduce costs or improve your process, the CVG-101 Worker Bee offers a cost-effective solution for your vacuum gauging needs

Specifications

measurement range	1x10 ⁻⁴ to 1000 Torr 1x10 ⁻⁴ to 1333 mbar 1x10 ⁻² Pa to 133 kPa
resolution	1x10 ⁻⁴ Torr, 1x10 ⁻⁴ mbar, 1x10 ⁻² Pa
temperature - operating	0 to 50 °C
temperature - bakeout	150 °C maximum, non-operating, with cable or electronics removed
humidity - operating	0 to 95% RH non-condensing
mounting orientation	horizontal recommended
materials exposed to vacuum	gold-plated tungsten, 304 & 316 stainless steel, glass, nickel, Teflon
internal volume	26 cm ³ (1.589 in ³)
internal surface area	59.7 cm ² (9.25 in ²)
leak integrity	< 1x10 ⁻⁹ atm cc/sec He
weight	85 gm (3 oz)
RF/EMI protection	CE compliant



	fitting	dimension <u>A</u>
	1/8"NPT - 1/2" tube	25.4mm (1.00")
	NW16KF	33.0mm (1.30")
	NW25KF	33.0mm (1.30")
	NW40KF	33.0mm (1.30")
	1-1/3" Mini-Conflat®	27.4mm (1.08")
	2-3/4" Conflat®	21.6mm (0.85")
	1/4" Cajon® 4VCR	47.2mm (1.86")
	1/2" Cajon® 8VCR	44.5mm (1.75")

Ordering Information

InstruTech CVG

Convector®

Standard Gauges

1/8"NPT - 1/2" tube	CVG 101 G A	275071
NW16KF	CVG 101 G B	275203
NW25KF	CVG 101 G C	275196
NW40KF	CVG 101 G D	275316
1-1/3" Mini-CF / NW16CF Mini-Conflat®	CVG 101 G E	275256
2-3/4" CF / NW35CF Conflat®	CVG 101 G F	275238
1/4" Cajon® 4VCR female	CVG 101 G G	275185
1/2" Cajon® 8VCR female	CVG 101 G H	275282

Gauges for Mini-Convector® Modules

1/8"NPT - 1/2" tube	CVG 102 G A	275810
NW16KF	CVG 102 G B	275816
NW25KF	CVG 102 G C	275817
NW40KF	CVG 102 G D	275818
1-1/3" Mini-CF / NW16CF Mini-Conflat®	CVG 102 G E	275813
2-3/4" CF / NW35CF Conflat®	CVG 102 G F	275814
1/4" Cajon® 4VCR female	CVG 102 G G	275811
1/2" Cajon® 8VCR female	CVG 102 G H	275864

Convector® and Mini-Convector® are registered trade marks of Brooks Automation - Granville-Phillips.
Cajon® is a registered trade mark of the Swagelok Company.
Conflat® is a registered trademark of Varian Vacuum Technologies.

