

# Series 275

## Convectron® Vacuum Gauges



Convectron® gauges from MKS have been the world-standard convection-enhanced Pirani gauge for over 35 years and are used in thousands of vacuum processes to accurately measure pressure from atmosphere to  $10^{-4}$  Torr. To assure the highest level of accuracy and gauge-to-gauge reproducibility, every Convectron gauge is individually calibrated at the factory, thereby making controller adjustment unnecessary.

Convectron gauges are a unique variation of thermal conductivity gauges where pressure measurement is

based on the rate of heat loss from a sensor wire. Unlike traditional thermocouple and Pirani gauges that use only conductive heat loss, Convectron gauges take advantage of heat loss due to convection at higher pressures. This extends the range of accurate, repeatable measurement to atmosphere.

The Convectron gauge delivers fast response time — in milliseconds — compared to thermocouple-type gauges that respond in seconds.

### Product Features

- Wide range vacuum pressure measurement from atmosphere to  $1 \times 10^{-4}$  Torr
- Easy installation in space-restricted locations
- For use with several MKS vacuum gauge controllers
- Temperature compensation offsets the effects of ambient temperature changes



### Key Benefits

- Individually calibrated gauges assure the highest measurement performance
- Wide selection of vacuum fittings simplifies installation on your vacuum system
- Rugged construction

## Specifications

Measuring Range for N<sub>2</sub> or Air See Note (1), (2)

**Torr  
mbar  
Pa**

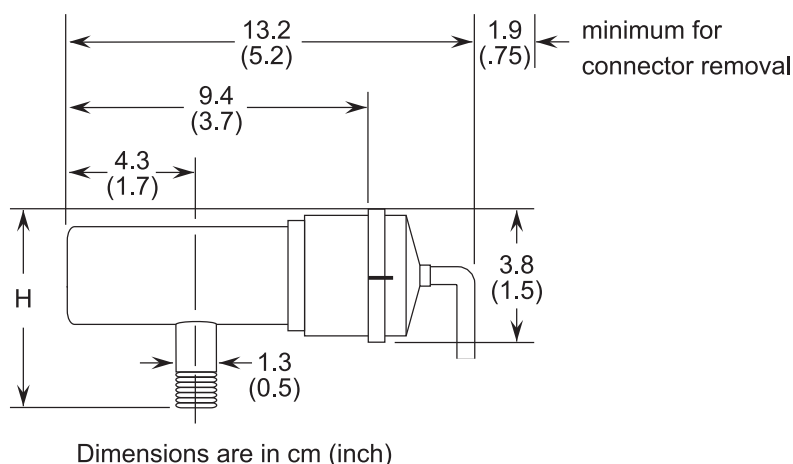
- Atmosphere to 1x10<sup>-4</sup>
- Atmosphere to 1.33x10<sup>-4</sup>
- Atmosphere to 1.33x10<sup>-2</sup>

Mounting Position	Horizontal preferred
Weight	85 grams (3 ounces) for 1/8" NPT flange
Internal Volume	35 cm <sup>3</sup> (2.14 in <sup>3</sup> )
Sensor Materials	Gold-plated tungsten
Other Materials Exposed to Gas	304 stainless steel, borosilicate glass, Kovar®, Alumina, NiFe alloy, polyimide
Gauge Operating Temperature	4°C to 50°C
Gauge Bakeout Temperature	150°C
Maximum Internal Pressure	150 psi

### Notes:

(1) Pressure measurement indications will change with different gases and mixtures. Correction parameters for common gases are provided in the controller instruction manuals and are included in the Series 475 Convector gauge controller.

(2) Convector gauges are not intended for use with flammable or explosive gases.



Vacuum Connection	Dim H	
	cm	in
1/8" NPT / 1/2" tubulation	6.35	(2.5)
1/4" VCR®-type female	7.11	(2.8)
1/2" VCR®-type female	8.13	(3.2)
3/8" VCO®-type male	7.11	(3.1)
1.33" Conflat®-type	6.35	(2.5)
2.75" Conflat®-type	6.35	(2.5)
NW16KF	6.86	(2.7)
NW25KF	6.86	(2.7)
NW40KF	6.86	(2.7)

### Dimensional Drawing

Note: Unless otherwise specified, dimensions are nominal values in centimeters (inches referenced).

Convector Gauges with Gold-plated Tungsten Sensor*	Catalog #
1/8" NPT / 1/2" tubulation	275071
1/4" VCR type female fitting	275185
1/2" VCR type female fitting	275282
3/8" VCO type male fitting	275233
1.33" rotatable Conflat type fitting	275256
2.75" rotatable Conflat type fitting	275238
NW16KF flange	275203
NW25KF flange	275196
NW40KF flange	275316

\* Platinum sensor gauges are available.