

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 1×10^{-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

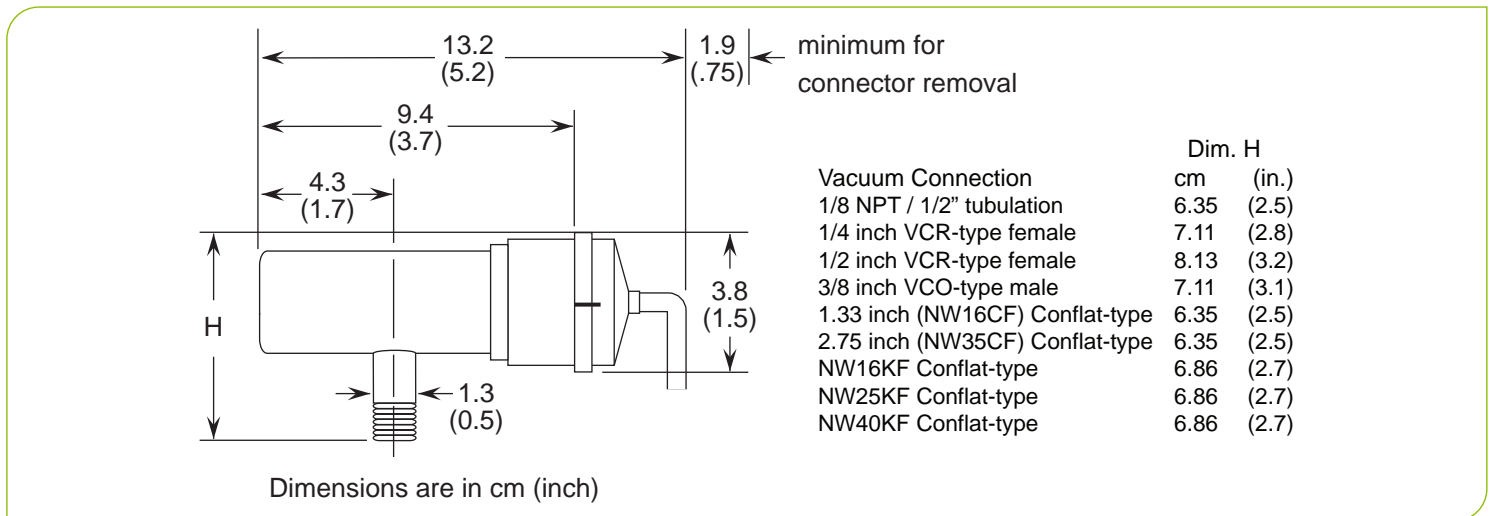
- Individually calibrated gauges assure the highest measurement performance
- Wide selection of vacuum fittings simplifies installation on your vacuum system
- Rugged construction

Ordering Information

Measuring Range for N₂ or air ^{(1) (2)}

| | |
|---------------------------------------|---|
| Torr | Atmosphere to 1x10 ⁻⁴ |
| mbar | Atmosphere to 1.33x10 ⁻⁴ |
| Pa | Atmosphere to 1.33x10 ⁻² |
| Mounting Position | Horizontal preferred |
| Weight | 85 grams (3 ounces) for 1/8 NPT flange |
| Internal Volume | 35 cm ³ (2.14 in ³) |
| 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 Convectron gauge controller.
- (2) Convectron gauges are not intended for use with flammable or explosive gases.



Dimensional Drawing

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

Convectron Gauges with Gold-plated Tungsten Sensor*

| | Catalog # |
|---|-----------|
| 1/8 NPT / 1/2 inch tubulation | 275071 |
| 1/4 inch VCR® type female fitting | 275185 |
| 1/2 inch VCR type female fitting | 275282 |
| 3/8 inch VCO® type male fitting | 275233 |
| 1.33 inch rotatable Conflat® type fitting | 275256 |
| 2.75 inch rotatable Conflat type fitting | 275238 |
| NW16KF flange (welded) | 275203 |
| NW25KF flange (welded) | 275196 |
| NW40KF flange (welded) | 275316 |

* Platinum sensor gauges are available.



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