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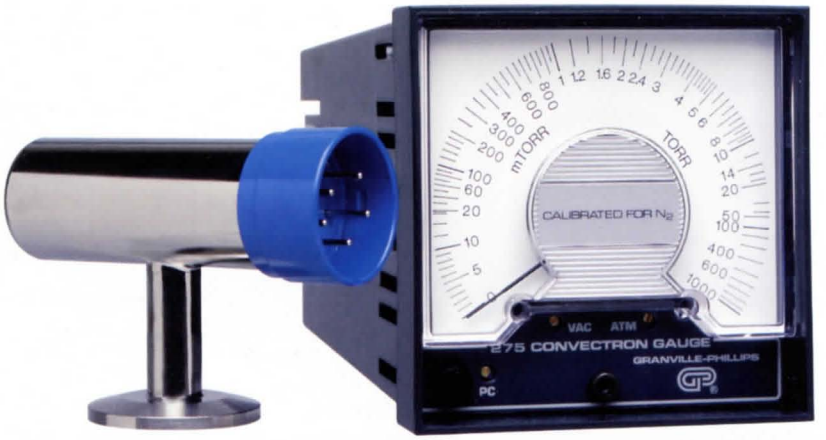
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275 *CONVECTRON*® Analog Controller



Pressure measurement from 10^{-3} to 1,000 Torr with a large, easy to read analog meter using proven *CONVECTRON*® Gauge technology

Benefits & General Information

The Series 275 Analog Controller uses reliable, field-proven *CONVECTRON* Gauges to provide useful pressure measurement over 6 decades from 1 milliTorr to 1,000 Torr (1 x 10^{-3} mbar to 1,300 mbar.) The *CONVECTRON* Gauge contains a temperature compensated heat loss sensor, which uses conduction cooling to sense pressure at lower pressures. At higher pressures, it uses convection cooling in which gas molecules are circulated through the tube by gravitational force.

Their wide useful range, highly predictable performance and low price make *CONVECTRON* Gauges an excellent replacement for conventional thermocouple and Pirani gauges. They are also the measurement systems to consider in applications where conventional thermocouple and Pirani gauges have not been suitable because of limited range, drift, or slow response.

Easy to Read Meter

The 7-inch (17.8 cm) scale is marked to optimize resolution over all 6 decades—including the upper decade.

Fast Response Time

The sensor in a *CONVECTRON* Gauge operates in an electronic feedback loop, which keeps its temperature nearly constant.

The response time to a step function pressure change in N_2 at 1 millitorr is about 810 milliseconds to 90% of the final reading. At 1 Torr it is about 40 milliseconds to 90% of the final reading. Comparable response time for a typical "fast" thermocouple gauge is several seconds at low pressure.

Process Control

Setpoint relay options provide the capability to turn valves, pumps, heaters, and other equipment on or off. Fast, accurate control can be achieved at one or two pressures anywhere within the six decade range.

To set a process control point, simply depress the button on the front panel and adjust the potentiometer until the meter pointer is at the desired pressure setpoint. Setpoints may be checked at any time without interrupting control because the setpoint relay circuits are independent of meter movement.

Specifications

Measuring Range	1 x 10^{-3} Torr to 1000 Torr (1mbar to 1,300 mbar) for N_2.
Ambient Operating Temperature Range	+4 °C to +50 °C
Gauge Tube Temperature Compensation Range	+15 °C to +50 °C
Bakeout Temperature (non-operating)	+150 °C
Output Voltage	0 to 9 volts non-linear, monotonically increasing pressure related signal is available on rear panel connector
Setpoint Relay Output(s)	SPDT relay(s), contact rating: 2 A, 230 Vac resistive load
Electrical Power	105 to 125 Vac or 210 to 250 Vac, 50 to 60 Hz, 10 W. On/off switch not provided
Weight	1.6 kg (3.5 lbs)
Gauge Tube	
Internal Volume	40 cm^3 (2.5 in^3)
Sensor Material	Gold plated tungsten
Weight (with standard fitting)	.33 kg (12 oz)

Ordering Information

Analog *CONVECTRON* Controller

Operating Power	Readout Units	Catalog No.
No setpoint relays		
115 Vac	Torr	275112-1
230 Vac	Torr	275216-1
230 Vac	mbar	275136-1
100 Vac	Torr	275210-1
100 Vac	mbar	275222-1
With 1 setpoint relay		
115 Vac	Torr	275114-1
100 Vac	Torr	275211-1
With 2 setpoint relays		
115 Vac	Torr	275116-1
230 Vac	mbar	275140-1
100 Vac	Torr	275212-1

Controllers have a black case. For a light gray case and silver front panel, delete the "-1" from the part number

Cable Assemblies with 6 ft. (2 m) power cord

North American 115 Vac plug

10 ft. (3 m)	275117
25 ft. (7.5 m)	275075
50 ft. (15 m)	275076
100 ft. (30.5 m)	275077
up to 500 ft. (150 m)	275078

Universal European 220 Vac plug

10 ft. (3 m)	275150
25 ft. (7.5 m)	275151
50 ft. (15 m)	275152
up to 500 ft. (150 m)	275153

CONVECTRON Gauges

1/8 NPT pipe thread / 1/2 in. quick compression fitting	275071
1/4 in. VCR-type female fitting	275185
1/2 inch VCR-type female fitting	275282
3/8 inch VCO-type male fitting	275233
1.33 inch (NW16CF) ConFlat-type flange	275256
2.75 inch (NW35CF) ConFlat-type flange	275238
Welded NW10 KF flange (threaded)	275168
Welded NW16 KF flange (threaded)	275154
Welded NW16 KF flange (welded)	275203
Welded NW25 KF flange (welded)	275196



1/8 NPT pipe thread /
1/2 in. compression fitting
H = 6.4 (2.5)



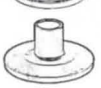
VCR®-type female fitting
H = 8.1 (3.2)



VCO®-type male fitting
H = 8.1 (3.2)

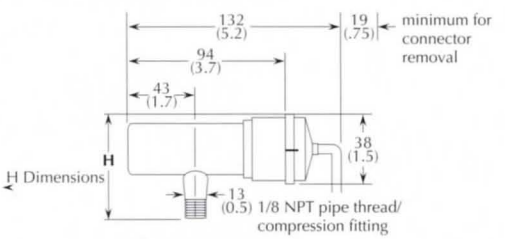


ConFlat® type flange
H = 6.4 (2.5)



KF flange
H = 6.9 (2.7)

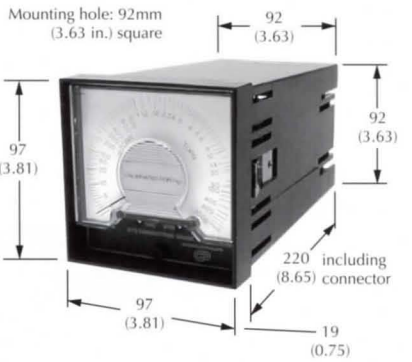
Dimensions are in mm (in.)



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All dimensions are nominal. For tolerances, contact GPC.

Dimensions are in mm (in.)



Terms and Price Policy

F.O.B. Plant, Boulder, Colorado USA. Other terms will be quoted on request. Granville-Phillips reserves the right to change prices and specifications without notice.

Limited Warranty

This equipment is warranted for a period of one year to be free of defects in materials and workmanship subject to certain exceptions and limitations which are expressly stated in our Limited Warranty for this equipment, a copy of which is included in each instruction manual or which will be mailed to you upon request.

Applications assistance

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