

SKY[®] CDG100D

Heated Capacitance Diaphragm Gauge

INFICON SKY CDG100D manometers are your best choice for accurate total pressure measurement and control. CDG100D gauges are temperature controlled at 100°C for superior performance in demanding semiconductor and plasma processes. They are available for full scale ranges from 100 mTorr to 1000 Torr, with all common flange types and fieldbus interfaces and provide a linear 0 to 10 V, gas type independent, pressure signal. INFICON capacitance manometers use an ultra pure alumina ceramic diaphragm which is corrosion proof. The advantages of the ceramic sensor are better signal stability, faster recovery from atmosphere, short warm up time and an extraordinary lifetime. INFICON CDG are high quality, cost effective pressure sensors for demanding semiconductor, plasma and vacuum applications.



ADVANTAGES

- Lower cost of ownership, 50% faster warm up, energy efficient low power consumption
- Easy integration, wide variety of full scales, flanges and interfaces, standard with two set points
- Easy one push button or remote signal zero command, zero offset adjustable
- Diagnostic port for quick service and maintenance
- Two year warranty, longer lifetime with advanced heating concept and gauge protection
- No long term recalibration due to excellent signal stability and repeatability, even in harsh plasma applications
- Compliance and standards: CE, EN, UL, SEMI, RoHS

APPLICATIONS

- Etch, PVD, CVD and other semiconductor production processes
- Chemical and corrosive high temperature processes
- General thin film and vacuum processes requiring gauge protection

SKY[®] CDG100D

SPECIFICATIONS

Full scale (FS) Torr / mbar	1000 / 1100 ... 200	100 ... 1	0.5 ... 0.25	0.1
Accuracy ¹⁾	0.2 % of reading		0.4 % of reading	
Temperature effect				
On zero	0.0025 % FS / °C		0.005 % FS / °C	
On span	0.02 % of reading / °C		0.02 % of reading / °C	
Pressure, max. (absolute)	400 kPa	260 kPa	130 kPa	
Response time ²⁾	30 ms		130 ms ³⁾	
Resolution			0.003 % FS	
Lowest reading			0.01 % FS	
Lowest suggested				
Reading			0.05 % FS	
Control pressure			0.5 % FS	
Temperature				
Operation (ambient) ⁴⁾			+10 ... +50 °C	
Bakeout at flange			≤110 °C	
Storage			-20 ... +65 °C	
Supply voltage			+14 ... +30 V (dc) or ±15 V (±5%)	
Power consumption				
During Heat up			≤15 W	
At operating temperature			≤10 W	
Output signal (analog)			0 ... +10 V (dc)	
Degree of protection			IP 40	
Standards				
CE conformity			EN 61000-6-2, EN 61000-6-3, EN 61010	
ETL certification			UL 61010-1, CSA 22.2 No.61010-1	
SEMI compliance			SEMI S2	
Electrical connection			D-sub, 15-pin, male	
Setpoint				
Number of setpoints			2 (SP1, SP2)	
Relay contact			≤30 V (dc) / ≤0.5 A (dc)	
Hysteresis			1 % FS	
Diagnostic port				
Protocol			RS232-C	
Read			pressure, status, ID,	
Set			set points, filter, zero adjust, factory reset, DC offset	
Materials exposed to vacuum			ceramics (Al ₂ O ₃), stainless steel (AISI 316L)	
Internal volume			≤6.8 cm ³	
Weight			892 ... 964 g	

¹⁾ Non-linearity, hysteresis, repeatability at 25°C ambient operating temperature without temperature effects after two hours operation

²⁾ Increase 10 ... 90% FS

³⁾ For pressure control type only

⁴⁾ Ambient temperatures >40°C may increase surface temperature above SEMI S2 compliance levels — mark "caution hot!"

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SPECIFICATIONS INTERFACES

DeviceNet™

Protocol	DeviceNet™, group 2 slave only
Data rate switch	125, 250, 500 kBaud or network programmable
Cable length	
125 kbps	500 m (1650 ft.)
250 kbps	250 m (825 ft.)
500 kbps	100 m (330 ft.)
MAC ID	Two switches (address 00 - 63) or network programmable
Digital functions	Read pressure, select units: Torr, mbar, Pa Degas function, Pirani full scale adjust Monitor gauge status Safe state allows definition of behavior in case of error Detailed alarm and warning information
Analog functions	0 ... 10 V analog output pressure indication two setpoint relays A + B
Visual communication indicators	LED network status (green / red) LED module status (green / red)
Specification	DeviceNet™ "Vacuum Gauge Device Profile"
Device type	"CG" for combination gauge
I / O slave messaging	Polling only
Setpoint relays	2
Range	1×10^{-9} ... 100 mbar
Relay contact	NO, potential free
Hysteresis	10 % of reading
Contact rating	60 V / 0.5 A (dc)
Supply voltage for DeviceNet™	+11 - +25 V / 0.5 A (dc)
Supply voltage for gauge	+20 - +28 V / 0.8 A (dc)
Connector for DeviceNet™	Microstyle, 5-pin
Connector for Gauges (analog output, supply voltage, setpoints)	D-Sub, 15-pin, male

PROFIBUS DP

Baud rates	9.6 / 19.2 / 93.75 / 187.5 / 500 kBaude 1.5 / 12 MBaud
Address	Two switches (address 00 - 127) or network programmable
Digital functions	Read pressure, select units: Torr, mbar, Pa Degas function, Pirani full scale adjust Monitor gauge status, filament status Safe state allows definition of behavior in case of error Detailed alarm and warning information
Analog functions	0 ... 10 V analog output pressure indication two setpoint relays A + B

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PROFIBUS DP

Setpoint relays	2
Range	1 × 10 ⁻⁹ ... 100 mbar
Relay contact	NO, potential free
Hysteresis	10 % of reading
Contact rating	≤30 V / ≤0.5 A (dc)
Connector for Profibus DP	D-Sub, 9-pin, female
Connector for BPG (analog output, supply voltage, setpoints)	D-Sub, 15-pin, male

EtherCAT®

Protocol	EtherCAT®
Communication standards	Semiconductor Device Profile ETG.5003 Part 1 Common Device Profile ETG.5003 Part 2080 "Specific Device Profile - Vacuum Pressure Gauge"
Process Data	Fixed PDO mapping and configurable PDO mapping
EtherCAT connector	RJ45, 8-pin (socket), IN and OUT
Cable	Shielded Ethernet CAT5e or higher
Cable length	≤100 m (330 ft.)
Data rate	100000 Kbps

PROFINET™

Communication protocol	protocol specialized for PROFINET
Physical Layer	100BASE-Tx (IEEE 802.3)
Digital functions	
read	pressure, status, ID
set	set points, filter, zero adjust, reset, DC offset
Profinet connector	2 × RJ45, 8-pin (socket), IN and OUT
Cable	Special Ethernet Patch Cable or Crossover Cable, shielded (CAT5e quality or higher)
Cable length	≤100 m (330 ft.)
Data rate	100000 Kbps

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DIMENSIONS

mm (inch)

