

## SKY<sup>®</sup> CDG160D / CDG200D

### Heated Capacitance Diaphragm Gauge

INFICON SKY CDG160D and CDG200D high temperature manometers are your best choice for accurate total pressure measurement and control. CDG160D and CDG200D gauges are temperature controlled at 160°C respectively 200°C for superior performance in demanding semiconductor and plasma processes. They are available for full scale ranges from 1 Torr 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 CDGs are high quality, cost effective pressure sensors for demanding semiconductor, plasma and vacuum applications.



#### ADVANTAGES

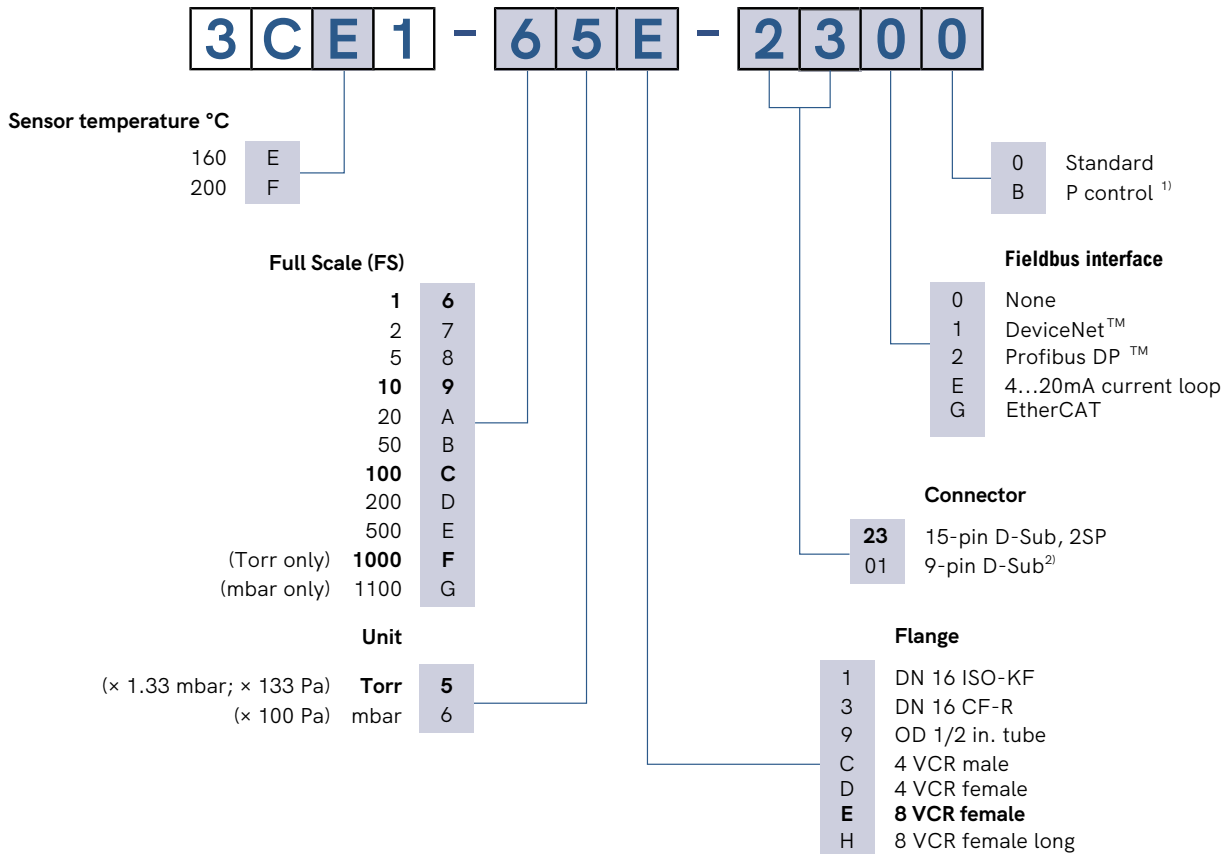
- Lower cost of ownership, 50% faster warm up, energy efficient low power consumption
- Easy integration, wide variety of full scales, flanges and interfaces, standard with two set points
- Easy one push button or remote signal zero command, zero offset adjustable
- Diagnostic port for quick service and maintenance
- Two year warranty, longer lifetime with HT 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, CVD, PVD and other semiconductor production processes
- Chemical and corrosive high temperature processes
- General thin film and vacuum processes requiring gauge protection

# SKY® CDG160D / CDG200D

## ORDERING INFORMATION



- 1) Optimized signal filter setting for pressure control
- 2) Not possible with fieldbus interfaces

**bold** = standard products

Other flange types on request.

## ACCESSORIES

Type	Part no.
Diagnostic cable RS232C; USB-A - phone jack 2.5mm (1.8m) <sup>1)</sup>	<b>303-366</b>

<sup>1)</sup> Diagnostic SW available upon request

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## SPECIFICATIONS

Full scale (FS) Torr / mbar	1000 / 1100 ... 200	100 ... 1
Accuracy <sup>1)</sup>	0.4 % of reading	
Temperature effect		
On zero	0.005 % FS / °C	
On span	0.02 % of reading / °C	
Pressure, max. (absolute)	400 kPa	260 kPa
Response time <sup>2)</sup>	30 ms	
Resolution	0.003 % FS	
Lowest reading	0.01 % FS	
Lowest suggested		
Reading	0.05 % FS	
Control pressure	0.5 % FS	
Temperature		
Operation (ambient) <sup>3)</sup>	+10 ... +50 °C	
Bakeout at flange	≤200 °C	
Storage	-20 ... +65 °C	
Supply voltage	+21 ... +30 V (dc) or ±15 V (±5%)	
Power consumption during heat up		
CDG160D	≤18 W	
CDG200D	≤25 W	
Power consumption at operating temperature		
CDG160D	≤12 W	
CDG200D	≤18 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	setpoints, filter, zero adjust, factory reset, DC offset	

<sup>1)</sup> Non-linearity, hysteresis, repeatability at 25°C ambient operating temperature without temperature effects after three hours operation

<sup>2)</sup> Increase 10 ... 90% FS

<sup>3)</sup> Ambient temperatures >40°C may increase surface temperature above SEMI S2 compliance levels — mark “caution hot!”

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Full scale (FS) Torr / mbar	1000 / 1100 ... 200	100 ... 1
Materials exposed to vacuum	ceramics (Al <sub>2</sub> O <sub>3</sub> ), stainless steel (AISI 316L)	
Internal volume	≤6.8 cm <sup>3</sup>	
Weight	891 ... 964 g	

<sup>1)</sup> Non-linearity, hysteresis, repeatability at 25°C ambient operating temperature without temperature effects after three hours operation

<sup>2)</sup> Increase 10 ... 90% FS

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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 Set points, filter, zero adjust, factory reset, DC offset 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	"VG" for combination gauge
I / O slave messaging	Polling only
Supply voltage for DeviceNet™	24 V nominal (11 ... 25 V)
Supply voltage for gauge	+21 ... +30 V (dc) or ±15 V (±5%)
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 - 125) or network programmable
Digital functions	Read pressure, select units: Torr, mbar, Pa Set points, filter, zero adjust, factory reset, DC offset 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
Connector for Profibus DP	D-Sub, 9-pin, female
Connector for CDG (analog output, supply voltage, setpoints)	D-Sub, 15-pin, male

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## EtherCAT<sup>®</sup>

Protocol	EtherCAT <sup>®</sup>
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

## 4-20mA current loop (analog)

Output signal (measurement signal)	2-wire, current loop
Signal range	3.8 ... 20.2 mA
Measuring rang (zero ... FS)	4.0 ... 20.0 mA
Loaded impedance $R_L$	18.5 ... 33.3 V (dc) <sup>1)</sup> 500 $\Omega$
	16.2 ... 31.0 V (dc) <sup>1)</sup> 400 $\Omega$
	13.9 ... 28.8 V (dc) <sup>1)</sup> 300 $\Omega$
	11.7 ... 26.5 V (dc) <sup>1)</sup> 200 $\Omega$
	9.4 ... 24.2 V (dc) <sup>1)</sup> 100 $\Omega$

<sup>1)</sup> Supply voltage current interface

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## DIMENSIONS

mm (inch)

