

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

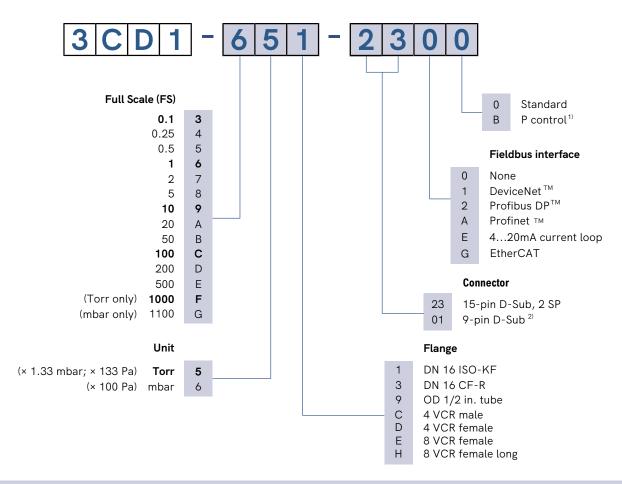
- Lower cost of ownership, 50% faster warm up, energy efficient low power consumption
- · Easy integration, wide variety of full scales, flanges and interfaces, standard with two set points
- Easy one push button or remote signal zero command, zero offset adjustable
- Diagnostic port for quick service 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



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

| Туре | Part no. |
|--|----------|
| Diagnostic cable RS232C; USB-A - phone jack 2.5mm (1.8m) ¹⁾ | 303-366 |

¹⁾ Diagnostic SW available upon request



| SPECIFICATIONS | | | | |
|-----------------------------|---------------------------------|-----------------------|------------------------------|----------------------|
| Full scale (FS) Torr / mbar | 1000 / 1100 200 | 100 1 | 0.5 0.25 | 0.1 |
| Accuracy 1) | 0.2 % of re | ading | 0.4 % of r | eading |
| Temperature effect | | | | |
| On zero | 0.0025 % F | S/°C | 0.005 % F | =S / °C |
| On span | 0.02 % of read | ling / °C | 0.02 % of re | ading / °C |
| Pressure, max. (absolute) | 400 kPa | 260 kPa | 130 k | :Pa |
| Response time ²⁾ | | 30 ms | | 130 ms ³⁾ |
| Resolution | | 0.003 | 3 % FS | |
| Lowest reading | | 0.01 | % FS | |
| Lowest suggested | | | | |
| Reading | | 0.05 | 5 % 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 | | ≤1 | 5 W | |
| At operating temperature | ≤10 W | | | |
| Output signal (analog) | | 0 + | 10 V (dc) | |
| Degree of protection | | IP | 9 40 | |
| Standards | | | | |
| CE conformity | | EN 61000-6-2, EN 6 | 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 | ō-pin, male | |
| Setpoint | | | | |
| Number of setpoints | | 2 (SP | 1, SP2) | |
| Relay contact | ≤30 V (dc) / ≤0.5 A (dc) | | | |
| Hysteresis | 1 % FS | | | |
| Diagnostic port | | | | |
| Protocol | | RS2 | 232-C | |
| Read | | pressure, status, ID, | | |
| Set | set p | • | ust, factory reset, DC offse | t |
| Materials exposed to vacuum | • | | nless steel (AISI 316L) | |
| Internal volume | | ≤6. | 8 cm ³ | |
| Weight | | 892 | 964 g | |
| | | | | |

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!"



| 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 |





| PROFIBUS DP | | |
|--|---|--|
| Setpoint relays | 2 | |
| Range | $1 \times 10^{-9} \dots 100 \text{ mbar}$ | |
| 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 |

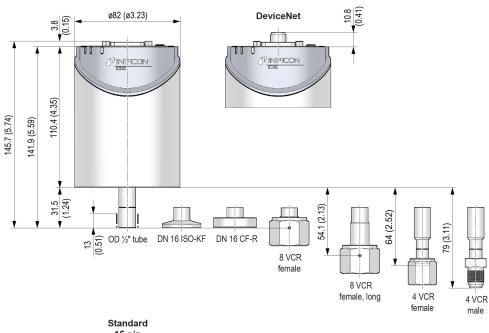
| PROFINET™ | |
|------------------------|---|
| Communication protocol | protocol specialized for PROFINET |
| Physical Layer | 100BASE-Tx (IEEE 802.3) |
| Digital functions | |
| read | pressure, status, ID |
| set | set points, filter, zero adjust, reset, DC offset |
| Profinet connector | 2 × RJ45,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

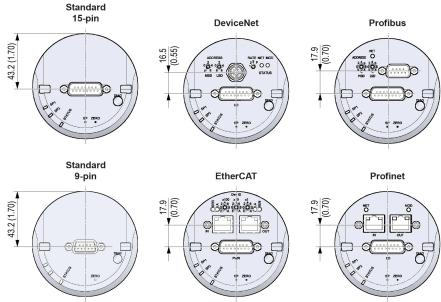




DIMENSIONS

mm (inch)







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