



## SKY® CDG045D - 45°C (F.S.R. 0.05 ... 1000Torr / mbar)

### SKY® CDG045D - 45°C - Unprecedented Full Scale Stability

INFICON SKY CDG045D manometers are your best choice for high accurate total pressure measurement and control. CDG045D gauges are temperature controlled at 45 °C for superior signal stability and repeatability. They are available for full scale ranges from 50 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 vacuum applications.

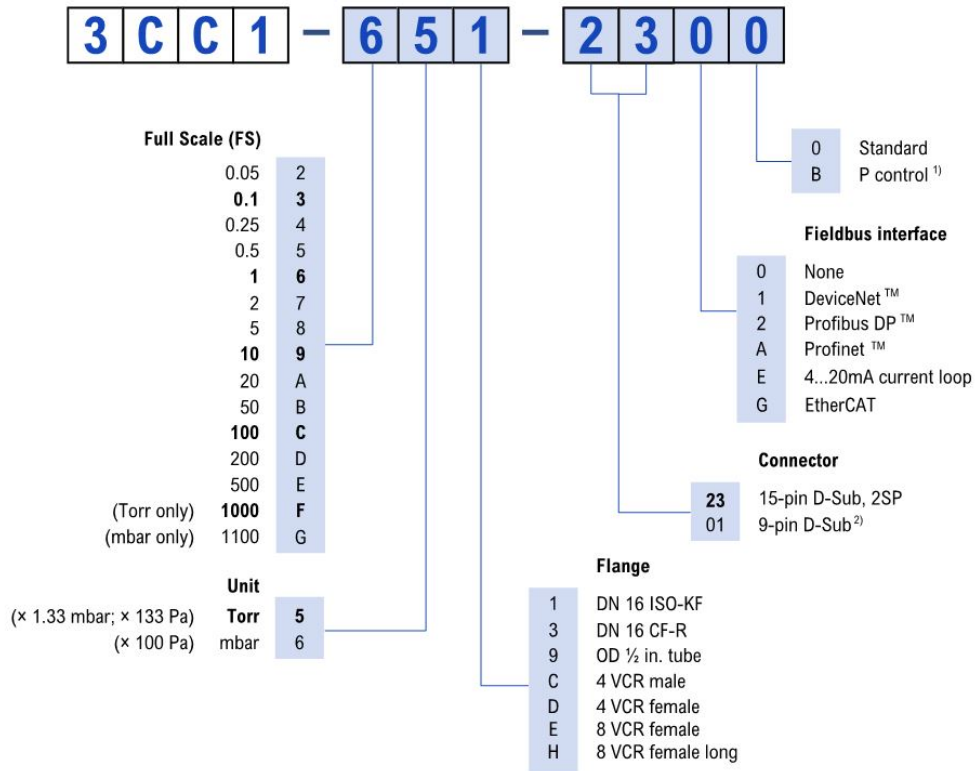


#### ADVANTAGES

- Lower CoO (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 life time with advanced heating concept and gauge protection
- No long term recalibration due to excellent signal stability and repeatability, even in harsh plasma applications
- Compliance & standards: CE, EN, UL, SEMI, RoHS

## ORDER INFORMATION

### ORDERING INFORMATION



1) Optimized signal filter setting for pressure control

2) Not possible with fieldbus interfaces

**bold** = standard products

Other flange types on request.

## SPECIFICATIONS

Type		1000 Torr, 1100 mbar	500 ... 1 Torr / mbar	0.5 ... 0.05Torr / mbar
Accuracy (1)	% of reading	0.15	0.15	0.15
Temperature effect				
on zero	percent FS/°C	0.0025	0.0025	0.005
Temperature effect				
on span	% of reading / °C	0.01	0.01	0.01
Pressure, max.	kPa (absolute)	400	260	130
Resolution	percent FS	0.003	0.003	0.003
Lowest reading	percent FS	0.01	0.01	0.01
Lowest suggested reading	percent FS	0.05	0.05	0.05
Lowest suggested control pressure	percent FS	0.5	0.5	0.5
Temperature				
Operation (ambient)	°C	+10 ... +40	+10 ... +40	+10 ... +40
Bakeout at flange	°C	≤110	≤110	≤110
Storage	°C	-20 ... +65	-20 ... +65	-20 ... +65
Supply voltage		+14 ... +30 VDC or ±15 V (±5%)	+14 ... +30 VDC or ±15 V (±5%)	+14 ... +30 VDC or ±15 V (±5%)
Power consumption				
During Heat up	W	≤12	≤12	≤12
At operating temperature	W	≤8	≤8	≤8
Output signal (analog)	V (dc)	0 ... +10	0 ... +10	0 ... +10
Response time (2)	ms	30	30	130 / 30 <sup>(3)</sup>
Degree of protection		IP 40	IP 40	IP 40
Standards				
CE conformity		EN 61000-6-2/-6-3, EN 61010 & RoHS	EN 61000-6-2/-6-3, EN 61010 & RoHS	EN 61000-6-2/-6-3, EN 61010 & RoHS
ETL certification		UL 61010-1, CSA 22.2 No.61010-1	UL 61010-1, CSA 22.2 No.61010-1	UL 61010-1, CSA 22.2 No.61010-1
SEMI compliance		SEMI S2	SEMI S2	SEMI S2
Electrical connection		D-sub, 15 pole, male	D-sub, 15 pole, male	D-sub, 15 pole, male
Setpoint				
Number of setpoints		2 (SP1,SP2)	2 (SP1,SP2)	2 (SP1,SP2)
Setpoint				
Relay contact	V (dc)	≤30	≤30	≤30
Setpoint				

## SPECIFICATIONS

Type		1000 Torr, 1100 mbar	500 ... 1 Torr / mbar	0.5 ... 0.05Torr / mbar
Relay contact	A (dc)	≤0.5	≤0.5	≤0.5
Setpoint				
Hysteresis	percent FS	1	1	1
Diagnostic port				
Protocol		RS232-C	RS232-C	RS232-C
Read		pressure, status, ID	pressure, status, ID	pressure, status, ID
Set		set points, filter, zero adjust, factory reset, DC offset	set points, filter, zero adjust, factory reset, DC offset	set points, filter, zero adjust, factory reset, DC offset
Materials exposed to vacuum				
		Aluminum oxide ceramic (Al <sub>2</sub> O <sub>3</sub> ), stainless steel (AISI 316L <sup>(4)</sup> )	Aluminum oxide ceramic (Al <sub>2</sub> O <sub>3</sub> ), stainless steel (AISI 316L <sup>(4)</sup> )	Aluminum oxide ceramic (Al <sub>2</sub> O <sub>3</sub> ), stainless steel (AISI 316L <sup>(4)</sup> )
Internal volume				
I. volume 1/2" tube	cm <sup>3</sup> (in. <sup>3</sup> )	4.2 (0.26)	4.2 (0.26)	4.2 (0.26)
I. volume DN 16 ISO KF	cm <sup>3</sup> (in. <sup>3</sup> )	4.2 (0.26)	4.2 (0.26)	4.2 (0.26)
I. volume DN 16 CF-R	cm <sup>3</sup> (in. <sup>3</sup> )	4.2 (0.26)	4.2 (0.26)	4.2 (0.26)
I. volume 8 VCR®	cm <sup>3</sup> (in. <sup>3</sup> )	4.2 (0.26)	4.2 (0.26)	4.2 (0.26)
Weight				
Weight 1/2" tube	g	837	837	837
Weight DN 16 ISO KF	g	852	852	852
Weight DN 16 CF-R	g	875	875	875
Weight 8 VCR®	g	897	897	897
EtherCAT				
Protocol EtherCAT		protocol specialized for EtherCAT	protocol specialized for EtherCAT	protocol specialized for EtherCAT
Communication standards		ETG.5003.1 S (R) V1.1.0 Common Device Profile ETG.5003.2080 S (R) V1.3.0 Specific Device Profile: Vacuum Gauge	ETG.5003.1 S (R) V1.1.0 Common Device Profile ETG.5003.2080 S (R) V1.3.0 Specific Device Profile: Vacuum Gauge	ETG.5003.1 S (R) V1.1.0 Common Device Profile ETG.5003.2080 S (R) V1.3.0 Specific Device Profile: Vacuum Gauge
Node address		Explicit Device Identification	Explicit Device Identification	Explicit Device Identification
Physical layer		100BASE-Tx (IEEE 802.3)	100BASE-Tx (IEEE 802.3)	100BASE-Tx (IEEE 802.3)
Digital functions read		pressure, status, ID	pressure, status, ID	pressure, status, ID

## SPECIFICATIONS

Type	1000 Torr, 1100 mbar	500 ... 1 Torr / mbar	0.5 ... 0.05Torr / mbar
Digital functions set	set points, filter, zero adjust, reset, DC offset	set points, filter, zero adjust, reset, DC offset	set points, filter, zero adjust, reset, DC offset
Mailbox (CoE)	SDO requests, responses and information	SDO requests, responses and information	SDO requests, responses and information
Process data	Fixed PDO mapping and configurable PDO mapping	Fixed PDO mapping and configurable PDO mapping	Fixed PDO mapping and configurable PDO mapping
EtherCAT connector	2 x RJ45, 8-pin (socket), IN and OUT	2 x RJ45, 8-pin (socket), IN and OUT	2 x RJ45, 8-pin (socket), IN and OUT
Cable	shielded Ethernet CAT5e or higher	shielded Ethernet CAT5e or higher	shielded Ethernet CAT5e or higher
<b>EtherCAT</b>			
Cable length	m (ft.)	≤100 (330)	≤100 (330)
<b>Profinet</b>			
Communication protocol	protocol specialized for Profinet	protocol specialized for Profinet	protocol specialized for Profinet
Data rate	100 Mbps	100 Mbps	100 Mbps
Physical layer	100BASE-Tx (IEEE 802.3)	100BASE-Tx (IEEE 802.3)	100BASE-Tx (IEEE 802.3)
Digital functions read	pressure, status, ID	pressure, status, ID	pressure, status, ID
Digital functions set	set points, filter, zero adjust, reset, DC offset	set points, filter, zero adjust, reset, DC offset	set points, filter, zero adjust, reset, DC offset
Profinet connector	2 x RJ45, 8-pin (socket), input & output	2 x RJ45, 8-pin (socket), input & output	2 x RJ45, 8-pin (socket), input & output
Profinet Cable	Special Ethernet Patch Cable or Crossover Cable, shielded (CAT5e quality or higher)	Special Ethernet Patch Cable or Crossover Cable, shielded (CAT5e quality or higher)	Special Ethernet Patch Cable or Crossover Cable, shielded (CAT5e quality or higher)
Cable length	≤100 m (330 ft)	≤100 m (330 ft)	≤100 m (330 ft)
<b>DeviceNet™</b>			
Protocol	DeviceNet™, group 2 slave only	DeviceNet™, group 2 slave only	DeviceNet™, group 2 slave only
MAC ID	address 00 - 63 by switch or network programmable	address 00 - 63 by switch or network programmable	address 00 - 63 by switch or network programmable
Digital functions read	pressure, status, ID	pressure, status, ID	pressure, status, ID

## SPECIFICATIONS

Type		1000 Torr, 1100 mbar	500 ... 1 Torr / mbar	0.5 ... 0.05Torr / mbar
Digital functions set		set points, filter, zero adjust, factory reset, DC offset	set points, filter, zero adjust, factory reset, DC offset	set points, filter, zero adjust, factory reset, DC offset
Specification		DeviceNet™ "Vacuum Gauge Device Profile" (ODVA)	DeviceNet™ "Vacuum Gauge Device Profile" (ODVA)	DeviceNet™ "Vacuum Gauge Device Profile" (ODVA)
Device type		"VG" vacuum gauge	"VG" vacuum gauge	"VG" vacuum gauge
I / O slave messaging		polling only	polling only	polling only
Supply voltage for gauge at D-sub connector		+14 ... +30 VDC or ±15 V / ≤12 W	+14 ... +30 VDC or ±15 V / ≤12 W	+14 ... +30 VDC or ±15 V / ≤12 W
Supply voltage for DeviceNet transceiver at microstyle connector		24 V nom / <2 W (11 ... 25 V)	24 V nom / <2 W (11 ... 25 V)	24 V nom / <2 W (11 ... 25 V)
Connector for DeviceNet™		microstyle, 5 pin, male	microstyle, 5 pin, male	microstyle, 5 pin, male
Connector for CDG (analog output, supply voltage CDG, setpoints)		D-sub, 15 pin, male	D-sub, 15 pin, male	D-sub, 15 pin, male
<b>DeviceNet™</b>				
Data rate	kBaud	125, 250, 500 by switch or network programmable	125, 250, 500 by switch or network programmable	125, 250, 500 by switch or network programmable
<b>DeviceNet™</b>				
Cable length 125 kbps	m (ft.)	500 (1650)	500 (1650)	500 (1650)
Cable length 250 kbps	m (ft.)	250 (825)	250 (825)	250 (825)
Cable length 500 kbps	m (ft.)	100 (330)	100 (330)	100 (330)
<b>Profibus DP</b>				
Baud rates	kBaud	9.6 / 19.2 / 93.75 / 187.5 / 500	9.6 / 19.2 / 93.75 / 187.5 / 500	9.6 / 19.2 / 93.75 / 187.5 / 500
<b>Profibus DP</b>				
Baud rates	Mbaud	1.5 / 12	1.5 / 12	1.5 / 12
<b>Profibus DP</b>				
Address		address 00 - 125 by switch or network programmable	address 00 - 125 by switch or network programmable	address 00 - 125 by switch or network programmable
Digital functions Read		pressure, status, ID	pressure, status, ID	pressure, status, ID
Digital functions Set		set points, filter, zero adjust, factory reset, DC offset	set points, filter, zero adjust, factory reset, DC offset	set points, filter, zero adjust, factory reset, DC offset
Connector for Profibus DP		D-sub, 9 pin, female	D-sub, 9 pin, female	D-sub, 9 pin, female

## SPECIFICATIONS

Type		1000 Torr, 1100 mbar	500 ... 1 Torr / mbar	0.5 ... 0.05Torr / mbar
Connector for CDG (analog output, supply voltage, setpoints)		D-sub, 15 pin, male	D-sub, 15 pin, male	D-sub, 15 pin, male
4-20mA current loop (analog)				
Signal range	mA	3.8 ... 20.2	3.8 ... 20.2	3.8 ... 20.2
Measuring range (zero ...FS)	mA	4.0 ... 20.0	4.0 ... 20.0	4.0 ... 20.0
4-20mA current loop (analog)				
Loaded impedance RL	$\Omega$	typical 500 $\Omega$ $\pm$ 1% 24 $\pm$ 3 V (dc) (5)	typical 500 $\Omega$ $\pm$ 1% 24 $\pm$ 3 V (dc) (5)	typical 500 $\Omega$ $\pm$ 1% 24 $\pm$ 3 V (dc) (5)
Loaded impedance absolute	$\Omega$	309 ... 657 $\Omega$ at 24 V (dc) (5)	309 ... 657 $\Omega$ at 24 V (dc) (5)	309 ... 657 $\Omega$ at 24 V (dc) (5)

(1) Non-linearity, hysteresis, repeatability at 25 °C ambient operating temperature without temperature effects after 2 hours operation.

(2) Increase 10 ... 90 percent FS

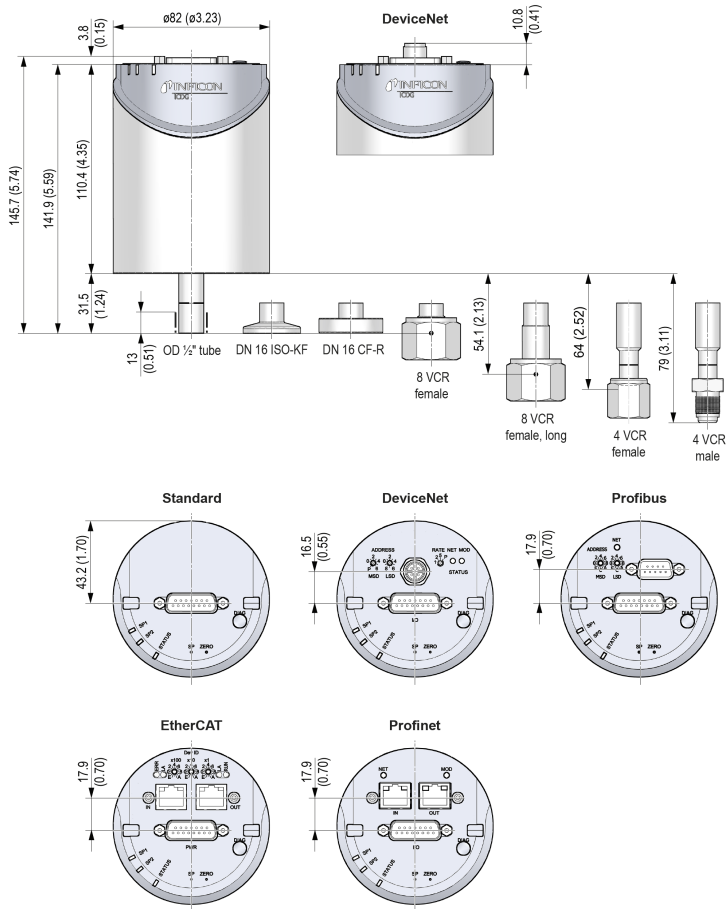
(3) For pressure control type only

(4) 18% Cr, 10% Ni, 3% Mo, 69% Fe

(5) Supply voltage at the gauge

# DIMENSIONS

mm (inch)



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