



PCG550, PCG552, PCG554

Pirani Capacitance Diaphragm Gauge

The INFICON Pirani Capacitance Diaphragm Gauge (PCG55x) combines the INFICON Pirani technology with the advantages of a ceramic capacitance diaphragm sensor in a single product. In the measurement range between 10 mbar and atmosphere the capacitance diaphragm technology provides gas-type independent, highly accurate values for reliable pressure measurement. The PCG55x offers also a variety of features which allows the right product configuration for the demanded application.



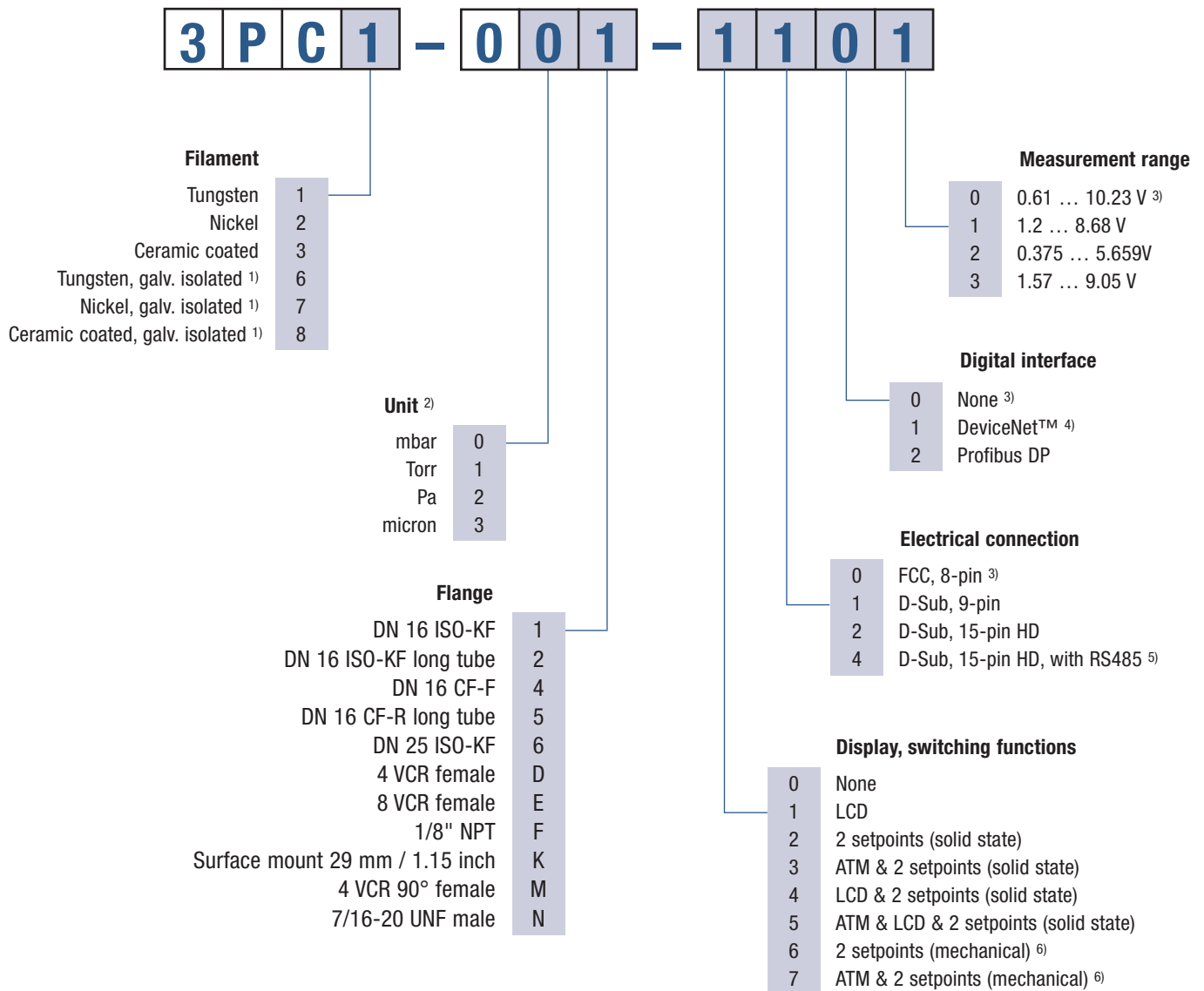
ADVANTAGES

- Gas-type independent above 10 mbar – allows safe venting with any gas mixture
- High accuracy and reproducibility at atmosphere – for reliable atmospheric pressure detection
- Fast atmospheric detection – eliminates waiting time and shortens process cycle
- Versatile of mounting orientation – provides engineering freedom in tool design
- Available with Tungsten (PCG550) or Nickel (PCG552) filament or with a fully ceramic coated (PCG554) sensor unit for highly corrosive applications
- Easy to exchange plug & play sensor element with on-board calibration data – guarantees high reproducibility and low cost of ownership
- Selectable output signal for easy integration
- Optional atmospheric switch, display and digital interfaces
- Diagnostic port on all versions
- Compliance & standards: CE, EN, UL, CSA, RoHS

APPLICATIONS

- Load Lock control
- Fore vacuum pressure measurement
- Safety circuits in vacuum systems
- General vacuum measurement and control in the medium and rough vacuum range





1) Only with D-Sub 9-pin connector available
 2) When selecting LCD (liquid crystal display) choose desired pressure unit
 3) Choose these settings when using an INFICON VGC40x controller
 4) Only with D-Sub 9-pin connector and galvanically isolated available
 5) Only without additional digital interface available
 6) Only with D-Sub 9-pin connector without LCD available

SPECIFICATIONS

Type			PCG550	PCG552	PCG554
Filament			Tungsten	Nickel	ceramic coated
Measurement range	mbar (Torr)	5×10 ⁻⁵ ... 1500 (3.8×10 ⁻⁵ ... 1125)			
Accuracy	5×10 ⁻⁴ ... 1×10 ⁻³ mbar (N ₂)	% of reading	±50		
	1×10 ⁻³ ... 100 mbar (N ₂)	% of reading	±15		
	100 ... 950 mbar	% of reading	±5		
	950 ... 1050 mbar	% of reading	±2.5		
Repeatability	1×10 ⁻³ ... 1100 mbar (N ₂)	% of reading	±2		
Admissible pressure	bar (absolute)		≤5		
Pressure, max.	bar (absolute)		10		
Admissible temperature					
Operation (ambient)	°C		+10 ... +50		
Storage	°C		-20 ... +65		
Bakeout at flange	°C		≤80		
Long tube	°C		≤250		
Supply voltage	V / A DC		+15 ... +30		
Power consumption					
Without fieldbus	W		≤2.5		
DeviceNet™	W		≤3		
Profibus	W		≤3		
Output signal analog					
3PCx-0xx-xxx0	V		0 ... +10.23		
-xxx1	V		0 ... +8.68		
-xxx2	V		0 ... +5.659		
-xxx3	V		0 ... +9.05		
Measuring range					
3PCx-0xx-xxx0	V		+0.61 ... +10.23		
-xxx1	V		+1.2 ... +8.68		
-xxx2	V		+0.375 ... +5.659		
-xxx3	V		+1.57 ... +9.05		
Voltage vs. pressure					
3PCx-0xx-xxx0	V / Decade		1.286		
3PCx-0xx-xxx1 / -xxx2 / -xxx3	V / Decade		1		
Load impedance	kΩ		>10		
Setpoint relay			2		
Range (N ₂)	mbar		5×10 ⁻⁵ ... 1500		
Relay contact			n.o., potential free		
Hysteresis	% of threshold		10		
Contact rating					
Solid state relays	V / A DC		≤30 / ≤0.3		
Mechanical relays	V / A DC		≤30 / ≤1		
Switching time	ms		≤30		
Interface (digital)			RS232C		
Electrical connection					
3PCx-0xx-x0xx			FCC, 8-pin		
-x1xx			D-Sub, 9-pin, male		
-x2xx			D-Sub, 15-pin HD, male		
-x4xx			D-Sub, 15-pin HD, with RS485, male		
Cable length	m (ft)		≤100 (≤330)		
RS232C operation			m (ft)		≤30 (≤100)
Materials exposed to vacuum			W, Ni, NiFe, Al ₂ O ₃ , SnAg, stainless steel, glass	Ni, NiFe, Al ₂ O ₃ , SnAg, stainless steel, glass	Al ₂ O ₃ , stainless steel

(continued)

SPECIFICATIONS (concluded)

Type Filament		PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
Internal volume				
DN 16 ISO-KF	cm ³		4.7	
DN 16 ISO-KF long tube	cm ³		14.5	
DN 16 CF-F	cm ³		8	
DN 16 CF-R long tube	cm ³		14	
DN 25 ISO-KF, 4 VCR	cm ³		5.5	
8 VCR	cm ³		7	
1/8" NPT, 7/16-20 UNF	cm ³		5.2	
Surface mount 29 mm / 1.15 inch	cm ³		4.9	
4 VCR 90°	cm ³		7.9	
Weight				
Without fieldbus interface	g		115 ... 130	
With fieldbus interface	g		230 ... 250	
Degree of protection			IP 40	
Standards		EN 61000-6-2/-6-3, EN 61010, UL 61010-1, CSA 22.2 No.61010-1		

SPECIFICATIONS DeviceNet™

Protocol		DeviceNet™, group 2 slave only	
Data rate switch	kBaud	125, 250, 500 or network programmable	
Cable length			
125 kbps	m (ft)	500 (1650)	
250 kbps	m (ft)	250 (825)	
500 kbps	m (ft)	100 (330)	
MAC ID		2 switches (address 00 - 63) or network programmable	
Digital functions		read pressure, select units: Torr, mbar, Pa, micron, counts monitor gauge status, detailed alarm and warning information, safe state allows definition of behavior in case of error	
Specification		DeviceNet™ "Vacuum Gauge Device Profile"	
Device type		"CG" for combination gauge	
I / O slave messaging		polling only	
Supply voltage for DeviceNet™			
3PC6- / 3PC7- / 3PC8-0xx-xxxx	V / A DC	+15 ... +30	
Power consumption			
3PC6- / 3PC7- / 3PC8-0xx-xxxx	W	≤3	
Connector for DeviceNet		Micro-Style, 5-pin, male	

SPECIFICATIONS Profibus DP

Baud rates	kBaud MBaud	9.6 / 19.2 / 93.75 / 187.5 / 500 1.5 / 12
Address		2 switches (address 00 - 127) or network programmable
Digital functions		read pressure, select units: Torr, mbar, Pa, micron, counts monitor gauge status, detailed alarm and warning information, safe state allows definition of behavior in case of error
Connector for Profibus DP		D-Sub, 9-pin, female

SPECIFICATIONS RS485C

Baud rates	kBaud	9.6 / 19.2 / 38.4 /57.6
Address		2 switches (address 00 - 255)
Digital functions		read pressure, select units: Torr, mbar, Pa, micron, counts monitor gauge status, detailed alarm and warning information, safe state allows definition of behavior in case of error
Connector for RS485		D-Sub, 15-pin HD, male

SPARE PARTS

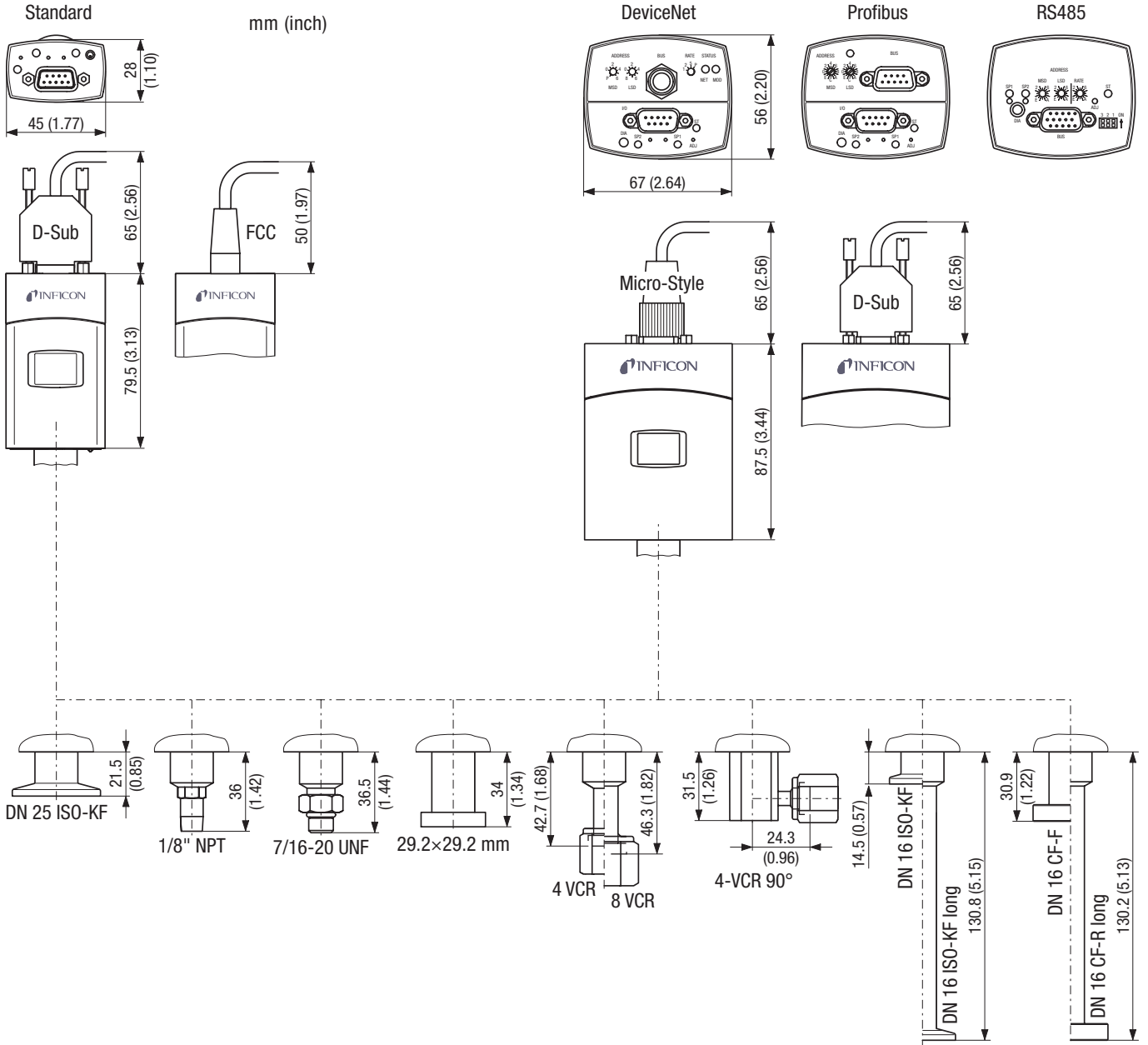
Type Filament		PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
Replacement sensor	DN 16 ISO-KF	357-925	357-936	357-947
	DN 16 ISO-KF long tube	357-926	357-937	357-948
	DN 16 CF-F	357-927	357-938	357-949
	DN 16 CF-R long tube	357-928	357-939	357-950
	DN 25 ISO-KF	357-929	357-940	357-951
	4 VCR female	357-932	357-943	357-954
	8 VCR female	357-931	357-942	357-953
	1/8" NPT	357-930	357-941	357-952
	Surface mount 29 mm / 1.15 inch	357-934	357-945	357-956
	4 VCR 90° female	357-935	357-946	357-957
	7/16-20 UNF male	357-933	357-944	357-955

ACCESSORIES

Centering ring with filter (DN 16 ISO-KF)	211-097
Diagnostic ¹⁾ : Communication adapter (2 m) for PC RS232C serial port	303-333

¹⁾ Software to run the diagnostic functions on Windows NT, XP can be downloaded from our website.

DIMENSIONS



www.inficon.com reachus@inficon.com

Due to our continuing program of product improvements, specifications are subject to change without notice.

tiba40e1-c (2011-03) ©2011 INFICON