

## PCG55x ATM to Medium Vacuum 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.

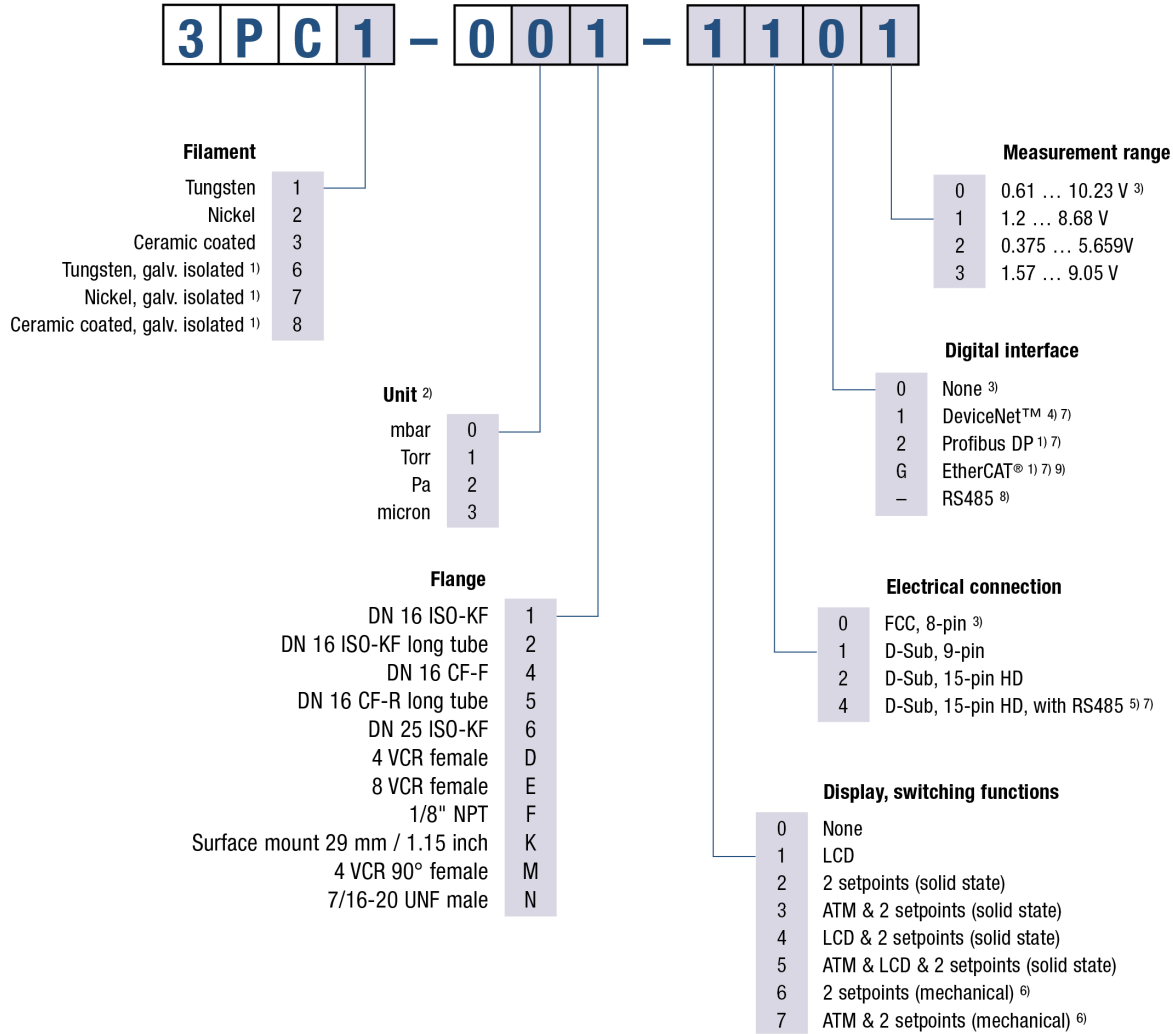


### ADVANTAGES

---

- Gas type independent above 10 mbar – allows safe venting with any gas mixture
- High accuracy and reproducibility at atmosphere – for reliable, fast atmospheric pressure detection
- 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
- Latest EtherCAT protocol Standard ETG.5003.2080 S (R) V1.3.0
- 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
- Compliance & standards: CE, EN, UL, CSA, RoHS

## ORDER INFORMATION



<sup>1)</sup> Only with D-Sub 9-pin connector available

<sup>2)</sup> When selecting LCD (liquid crystal display) choose desired pressure unit

<sup>3)</sup> Choose these settings when using an INFICON VGC50x or PGD400 / PGD500 controller or when choosing "4" under "Electrical connection"

<sup>4)</sup> Only with D-Sub 9-pin connector and galvanically isolated available

<sup>5)</sup> Only without additional digital interface available

<sup>6)</sup> Only with D-Sub 9-pin connector without LCD available

<sup>7)</sup> Fieldbus options only available together with switching functions (select number "2", "3", "4" or "5" from table "Display, switching functions")

<sup>8)</sup> Just selectable via number "4" from table "Electrical connection"

<sup>9)</sup> Communication standard ETG.5003.2080 S (R) V1.3.0; old version V1.0.0 still available on request

## SPECIFICATIONS

Type		PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
Measurement range	mbar	5×10 <sup>-5</sup> ... 1500	5×10 <sup>-5</sup> ... 1500	5×10 <sup>-5</sup> ... 1500
Measurement range	Torr	3.8×10 <sup>-5</sup> ... 1125	3.8×10 <sup>-5</sup> ... 1125	3.8×10 <sup>-5</sup> ... 1125
Accuracy				
5×10 <sup>-4</sup> ... 1×10 <sup>-3</sup> mbar (N <sub>2</sub> )	% of reading	±50	±50	±50
1×10 <sup>-3</sup> ... 100 mbar (N <sub>2</sub> )	% of reading	±15	±15	±15
100 ... 950 mbar	% of reading	±5	±5	±5
950 ... 1050 mbar	% of reading	±2.5	±2.5	±2.5
Repeatability				
1×10 <sup>-3</sup> ... 1100 mbar (N <sub>2</sub> )	% of reading	±2	±2	±2
Admissible pressure	bar (absolute)	≤5	≤5	≤5
Pressure, max.	bar (absolute)	≥10	≥10	≥10
Admissible temperature				
Operation (ambient)	°C	+10 ... +50	+10 ... +50	+10 ... +50
Storage	°C	-20 ... +65	-20 ... +65	-20 ... +65
Bakeout at flange	°C	≤80	≤80	≤80
Bakeout at flange long tube	°C	≤250	≤250	≤250
Supply voltage	V (dc)	+15 ... +30	+15 ... +30	+15 ... +30
Power consumption				
Without fieldbus	W	≤2.5	≤2.5	≤2.5
DeviceNet™	W	≤3	≤3	≤3
Profibus	W	≤3	≤3	≤3
Output signal analog 3PCx-0xx-xxx0	V	0 ... +10.23	0 ... +10.23	0 ... +10.23
Output signal analog 3PCx-0xx-xxx1	V	0 ... +8.68	0 ... +8.68	0 ... +8.68
Output signal analog 3PCx-0xx-xxx2	V	0 ... +5.659	0 ... +5.659	0 ... +5.659
Output signal analog 3PCx-0xx-xxx3	V	0 ... +9.05	0 ... +9.05	0 ... +9.05
Measuring range 3PCx-0xx-xxx0	V	+0.61 ... +10.23	+0.61 ... +10.23	+0.61 ... +10.23
Measuring range 3PCx-0xx-xxx1	V	+1.2 ... +8.68	+1.2 ... +8.68	+1.2 ... +8.68
Measuring range 3PCx-0xx-xxx2	V	+0.375 ... +5.659	+0.375 ... +5.659	+0.375 ... +5.659

## SPECIFICATIONS

Type		PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
Measuring range 3PCx-0xx-xxx3	V	+1.57 ... +9.05	+1.57 ... +9.05	+1.57 ... +9.05
Voltage vs. pressure				
3PCx-0xx-xxx0	volts per decade	1.286	1.286	1.286
3PCx-0xx-xxx1 / -xxx2 / -xxx3	volts per decade	1	1	1
Load impedance	kΩ	>10	>10	>10
Setpoint relay				
Number of setpoints		2	2	2
Relay contact		n.o., potential free	n.o., potential free	n.o., potential free
Setpoint relay				
Range (N <sub>2</sub> )	mbar	5×10 <sup>-5</sup> ... 1000	5×10 <sup>-5</sup> ... 1000	5×10 <sup>-5</sup> ... 1000
Setpoint relay				
Hysteresis	% of threshold	10	10	10
Setpoint relay				
Contact rating solid state relays	V (dc)	≤30	≤30	≤30
Contact rating mechanical relays	V (dc)	≤30	≤30	≤30
Setpoint relay				
Contact rating solid state relays	A (dc)	≤0.3	≤0.3	≤0.3
Contact rating mechanical relays	A (dc)	≤1	≤1	≤1
Setpoint relay				
Switching time	ms	≤30	≤30	≤30
Interface (digital)		RS232C	RS232C	RS232C
Electrical connection				
3PCx-0xx-x0xx		FCC, 8-pin	FCC, 8-pin	FCC, 8-pin
3PCx-0xx-x1xx		D-Sub, 9-pin, male	D-Sub, 9-pin, male	D-Sub, 9-pin, male
3PCx-0xx-x2xx		D-Sub, 15-pin HD, male	D-Sub, 15-pin HD, male	D-Sub, 15-pin HD, male
3PCx-0xx-x4xx		D-Sub, 15-pin HD, with RS485, male	D-Sub, 15-pin HD, with RS485, male	D-Sub, 15-pin HD, with RS485, male
Cable length	m (ft.)	≤100 (≤330)	≤100 (≤330)	≤100 (≤330)
RS232C operation	m (ft.)	≤30 (≤100)	≤30 (≤100)	≤30 (≤100)

## SPECIFICATIONS

Type		PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
Materials exposed to vacuum		W, Ni, NiFe, Al <sub>2</sub> O <sub>3</sub> , SnAg, stainless steel, glass	Ni, NiFe, Al <sub>2</sub> O <sub>3</sub> , SnAg, stainless steel, glass	Al <sub>2</sub> O <sub>3</sub> , stainless steel
Internal volume				
DN 16 ISO-KF	cm <sup>3</sup>	4.7	4.7	4.7
DN 16 ISO-KF long tube	cm <sup>3</sup>	14.5	14.5	14.5
DN 16 CF-F	cm <sup>3</sup>	8	8	8
DN 16 CF-R long tube	cm <sup>3</sup>	14	14	14
DN 25 ISO-KF, 4 VCR	cm <sup>3</sup>	5.5	5.5	5.5
8 VCR	cm <sup>3</sup>	7	7	7
1/8" NPT, 7/16-20 UNF	cm <sup>3</sup>	5.2	5.2	5.2
Surface mount 29 mm/1.15 inch	cm <sup>3</sup>	4.9	4.9	4.9
4 VCR 90°	cm <sup>3</sup>	7.9	7.9	7.9
Weight				
Without fieldbus interface	g	115 ... 130	115 ... 130	115 ... 130
With fieldbus interface	g	230 ... 250	230 ... 250	230 ... 250
Degree of protection		IP 40	IP 40	IP 40
Standards				
CE conformity		EN 61000-6-2/-6-3, EN 61010	EN 61000-6-2/-6-3, EN 61010	EN 61000-6-2/-6-3, EN 61010
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
DeviceNet™				
Protocol		DeviceNet™, group 2 slave only	DeviceNet™, group 2 slave only	DeviceNet™, group 2 slave only
MAC ID		2 switches (address 00 - 63) or network programmable	2 switches (address 00 - 63) or network programmable	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	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	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

## SPECIFICATIONS

Type		PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
Specification		DeviceNet™ "Vacuum Gauge Device Profile"	DeviceNet™ "Vacuum Gauge Device Profile"	DeviceNet™ "Vacuum Gauge Device Profile"
Device type		"CG" for combination gauge	"CG" for combination gauge	"CG" for combination gauge
I / O slave messaging		polling only	polling only	polling only
Connector for DeviceNet		Micro-Style, 5-pin, male	Micro-Style, 5-pin, male	Micro-Style, 5-pin, male
DeviceNet™				
Data rate switch	kBaud	125, 250, 500 or network programmable	125, 250, 500 or network programmable	125, 250, 500 or network programmable
DeviceNet™				
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)
DeviceNet™				
Supply voltage for DeviceNet™ 3PI6- / 3PI7- / 3PI8-0xx-xxxx	V (dc)	+15 ... +30	+15 ... +30	+15 ... +30
DeviceNet™				
Power consumption 3PI6- / 3PI7- / 3PI8-0xx-xxxx	W	≤3	≤3	≤3
Profibus DP				
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
Profibus DP				
Baud rates	Mbaud	1.5 / 12	1.5 / 12	1.5 / 12
Profibus DP				
Address		2 switches (address 00 - 127) or network programmable	2 switches (address 00 - 127) or network programmable	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	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	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

## SPECIFICATIONS

Type	PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
Connector for Profibus DP	D-Sub, 9-pin, female	D-Sub, 9-pin, female	D-Sub, 9-pin, female
RS485C			
Baud rates	kBaud	9.6 / 19.2 / 38.4 /57.6	9.6 / 19.2 / 38.4 /57.6
RS485C			
Address	2 switches (address 00 - 255)	2 switches (address 00 - 255)	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	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	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	D-Sub, 15-pin HD, male	D-Sub, 15-pin HD, male
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 ProfileETG.5003.2080 S (R) V1.3.0 Specific Device Profile: Vacuum Gauge	ETG.5003.1 S (R) V1.1.0 Common Device ProfileETG.5003.2080 S (R) V1.3.0 Specific Device Profile: Vacuum Gauge	ETG.5003.1 S (R) V1.1.0 Common Device ProfileETG.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)
EtherCAT connector	RJ45, 8-pin (socket), IN and OUT	RJ45, 8-pin (socket), IN and OUT	RJ45, 8-pin (socket), IN and OUT
Cable	shielded Ethernet CAT5e or higher	shielded Ethernet CAT5e or higher	shielded Ethernet CAT5e or higher
Process data	Fixed PDO mapping and configurable PDO mapping	Fixed PDO mapping and configurable PDO mapping	Fixed PDO mapping and configurable PDO mapping
Mailbox (CoE)	SDO requests, responses and information	SDO requests, responses and information	SDO requests, responses and information

## SPECIFICATIONS

Type		PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
EtherCAT				
Cable length	m (ft.)	≤100 (330)	≤100 (330)	≤100 (330)



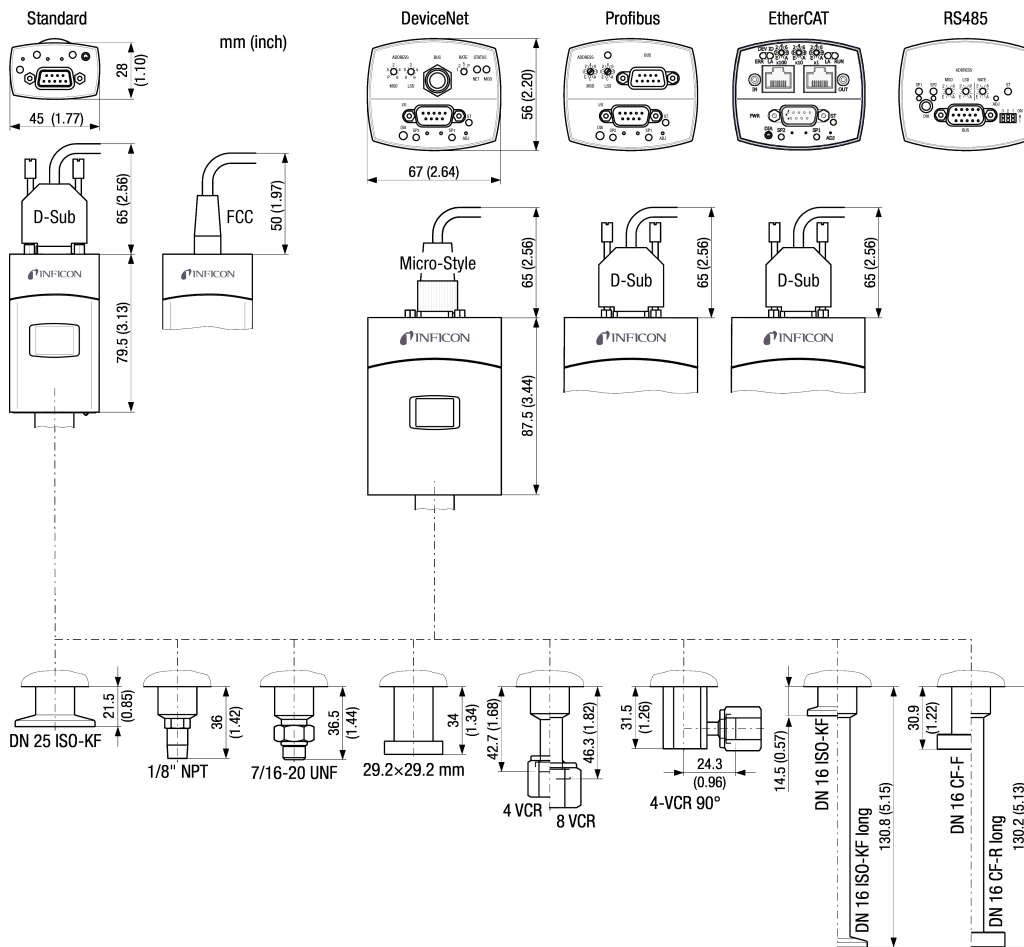
## SPAREPARTS

	PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
PCG550 Spare Sensor, 1/8" NPT	357-930	-	-
PCG550 Spare Sensor, 29x29mm	357-934	-	-
PCG550 Spare Sensor, 4-VCR	357-932	-	-
PCG550 Spare Sensor, 4-VCR / 90°	357-935	-	-
PCG550 Spare Sensor, 7/16-20 UNF	357-933	-	-
PCG550 Spare Sensor, 8-VCR	357-931	-	-
PCG550 Spare Sensor, DN16CF-F	357-927	-	-
PCG550 Spare Sensor, DN16CF-R, long	357-928	-	-
PCG550 Spare Sensor, DN16ISO-KF	357-925	-	-
PCG550 Spare Sensor, DN16ISO-KF, long	357-926	-	-
PCG550 Spare Sensor, DN25ISO-KF	357-929	-	-
PCG552 Spare Sensor, 1/8" NPT	-	357-941	-
PCG552 Spare Sensor, 29x29mm	-	357-945	-
PCG552 Spare Sensor, 4-VCR	-	357-943	-
PCG552 Spare Sensor, 4-VCR / 90°	-	357-946	-
PCG552 Spare Sensor, 7/16-20 UNF	-	357-944	-
PCG552 Spare Sensor, 8-VCR	-	357-942	-
PCG552 Spare Sensor, DN16CF-F	-	357-938	-
PCG552 Spare Sensor, DN16CF-R, long	-	357-939	-
PCG552 Spare Sensor, DN16ISO-KF	-	357-936	-
PCG552 Spare Sensor, DN16ISO-KF, long	-	357-937	-
PCG554 Spare Sensor, 1/8" NPT	-	-	357-952
PCG554 Spare Sensor, 29x29mm	-	-	357-956
PCG554 Spare Sensor, 4-VCR	-	-	357-954
PCG554 Spare Sensor, 4-VCR / 90°	-	-	357-957
PCG554 Spare Sensor, 7/16-20 UNF	-	-	357-955
PCG554 Spare Sensor, 8-VCR	-	-	357-953
PCG554 Spare Sensor, DN16CF-F	-	-	357-949
PCG554 Spare Sensor, DN16CF-R, long	-	-	357-950
PCG554 Spare Sensor, DN16ISO-KF	-	-	357-947
PCG554 Spare Sensor, DN16ISO-KF, long	-	-	357-948
PCG554 Spare Sensor, DN25ISO-KF	-	-	357-951

## ACCESSORIES

	PCG550 Tungsten	PCG552 Nickel	PCG554 ceramic coated
Centering ring with fine filter DN 16 KF	211-097	211-097	211-097
Clamping ring DN 10-16 ISO-KF	211-001	211-001	211-001
Diagnostic cable 1.9m (P3)	303-333	303-333	303-333

## DIMENSIONS



[www.inficon.com](http://www.inficon.com) [reachus@inficon.com](mailto:reachus@inficon.com)

Due to our continuing program of product improvements, specifications are subject to change without notice. RateWatcher is a trademark of INFICON. All other trademarks are the property of their respective owners.