PSG550, PSG552, PSG554

Pirani Standard Gauge

The INFICON Pirani Standard Gauge (PSG55x) employs like his brothers PCG55x and PSG50x the most advanced digital Pirani technology available. The rugged sensor design combined with the compact size and the variety of features qualifies as the right product for measurement from low to the high vacuum range.

ADVANTAGES

- Available with tungsten (PSG550) or nickel (PSG552) filament or with a fully ceramic coated (PSG554) sensor unit for highly corrosive applications
- Optional display, setpoints and digital interfaces, e.g. EtherCAT®, DeviceNet™ etc.
- Latest EtherCAT® protocol generation 2.0
- Easy to exchange plug and play sensor element with on-board calibration data—guarantees high reproducibility and low cost of ownership
- Selectable output signal and various plug versions for easy integration
- Optional setpoints relays, display and digital interfaces e.g. EtherCAT®, DeviceNet™ etc.
- Measuring performance independent of mounting orientation for maximum engineering freedom in tool design
- Diagnostic port on all versions
- Compliance and standards: CE, EN, UL, CSA, RoHS

APPLICATIONS

- For vacuum pressure measurement
- Safety circuits in vacuum systems
- General vacuum measurement and control from low to the high vacuum range

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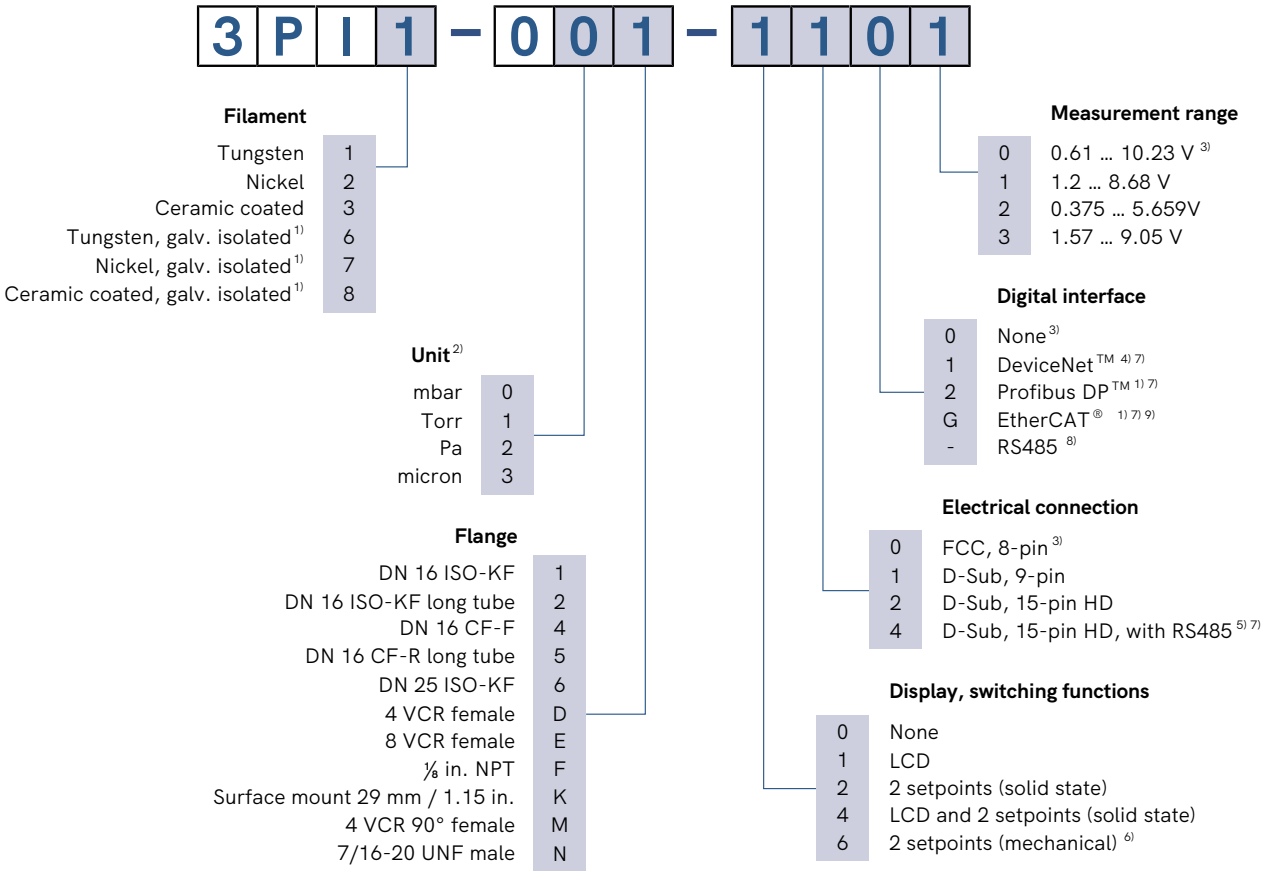
ORDERING INFORMATION



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 or PGD400 controller or when choosing “4” under electrical connections
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
7) Fieldbus options only available together with switching functions (select number “2” or “4” from table “Display, switching functions”)
8) Just selectable via number “4” from table “Electrical connection”
9) EtherCAT protocol generation 2.0; protocol generation 1.0 still available on request

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Replacement sensor	PSG550 Tungsten	PSG552 Nickel	PSG554 Ceramic coated
DN 16 ISO-KF	**355-925**	**355-936**	**355-947**
DN 16 ISO-KF long tube	**355-926**	**355-937**	**355-948**
DN 16 CF-F	**355-927**	**355-938**	**355-949**
DN 16 CF-R long tube	**355-928**	**355-939**	**355-950**
DN 25 ISO-KF	**355-929**	**355-940**	**355-951**
4 VCR female	**355-932**	**355-943**	**355-954**
8 VCR female	**355-931**	**355-942**	**355-953**
1/8 in. NPT	**355-930**	**355-941**	**355-952**
Surface mount 29 mm (1.15 in.)	**355-934**	**355-945**	**355-956**
4 VCR 90° female	**355-935**	**355-946**	**355-957**
7/16-20 UNF male	**355-933**	**355-944**	**355-955**

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

[1)] Diagnostic SW available upon request

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SPECIFICATIONS

Type	PSG550	PSG552	PSG554
Filament	**Tungsten**	**Nickel**	**Ceramic coated**
Measurement range	5×10^{-5} … 1000 mbar (3.8×10^{-5} … 750 Torr)		
Accuracy (N_2)			
5×10^{-4} … 1×10^{-3} mbar		±50% of reading	
1×10^{-3} … 100 mbar		±15% of reading	
100 … 1000 mbar		±50% of reading	
Repeatability (N_2) 1×10^{-3} … 100 mbar		±2% of reading	
Admissible pressure (absolute)		≤5 bar	
Pressure, max. (absolute)		10 bar	
Admissible temperature			
Operation (ambient)		+10 … +50°C	
Storage		-20°C … +65°C	
Bakeout at flange		≤80°C	
Long tube		≤250°C	
Supply voltage		+15 … +30 V / A (dc)	
Power consumption			
Without fieldbus		≤2.5 W	
DeviceNet™		≤3 W	
Profibus DP		≤3 W	
EtherCAT®		≤4.5 W	
Output signal analog			
3PIx-0xx-xxx**0**		0 … +10 V	
3PIx-0xx -xxx**1**		0 … +8.5 V	
3PIx-0xx -xxx**2**		0 … +5.529 V	
3PIx-0xx -xxx**3**		0 … +8.875 V	
Measuring range			
3PIx-0xx-xxx**0**		+0.61 … +10 V	
3PIx-0xx-xxx**1**		+1.2 … +8.5 V	
3PIx-0xx-xxx**2**		+0.375 … +5.529 V	
3PIx-0xx-xxx**3**		+1.57 … +8.875 V	
Voltage vs. pressure			
3PIx-0xx-xxx**0**		1.286 V / Decade	
3PIx-0xx-xxx**1**		1 V / Decade	
3PIx-0xx-xxx**2**		1 V / Decade	
3PIx-0xx-xxx**3**		1 V / Decade	
Load impedance		>10 kΩ	

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Type	PSG550	PSG552	PSG554
Filament	**Tungsten**	**Nickel**	**Ceramic coated**
Setpoint relay		2	
Range (N_2)		5×10^{-5} … 1000 mbar	
Relay contact		NO, potential free	
Hysteresis		10% of threshold	
Contact rating			
Solid state relays		≤30 V / ≤0.3 A (dc)	
Mechanical relays		≤30 V / ≤1 A (dc)	
Switching time		≤30 ms	
Interface (digital)		RS232C	
Electrical connection			
3PIx-0xx-x**0**xx		FCC, 8-pin	
3PIx-0xx -x**1**xx		D-Sub, 9-pin, male	
3PIx-0xx -x**2**xx		D-Sub, 15-pin HD, male	
3PIx-0xx -x**4**xx		D-sub, 15-pin HD, with RS485, male	
Cable length		≤100 m (≤330 ft)	
RS232C operation		≤30 m (≤100 ft)	
Materials exposed to vacuum	W, Ni, NiFe, glass, SnAg, stainless steel	Ni, NiFe, glass, SnAg, stainless steel	Al_2O_3, stainless steel
Internal volume			
DN 16 ISO-KF		4.7 cm^3	
DN 16 ISO-KF long tube		14.5 cm^3	
DN 16 CF-F		8 cm^3	
DN 16 CF-R long tube		14 cm^3	
DN 25 ISO-KF, 4 VCR		5.5 cm^3	
8 VCR		7 cm^3	
1/8 in. NPT, 7/16-20 UNF		5.2 cm^3	
Surface mount 29 mm (1.15 in.)		4.9 cm^3	
4 VCR 90°		7.9 cm^3	
Weight			
Without fieldbus interface		115 … 130 g	
With fieldbus interface		230 … 250 g	
Degree of protection		IP 40	
Standards		EN 61000-6-2/-6-3, EN 61010, UL 61010-1, CSA 22.2 No. 61010-1	

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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 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

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

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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
Setpoint relays	2
Range	1×10^{-9} … 100 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

RS485C		
Baud rates	kBaud	9.6 / 19.2 / 38.4 /57.6
Address		Two 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

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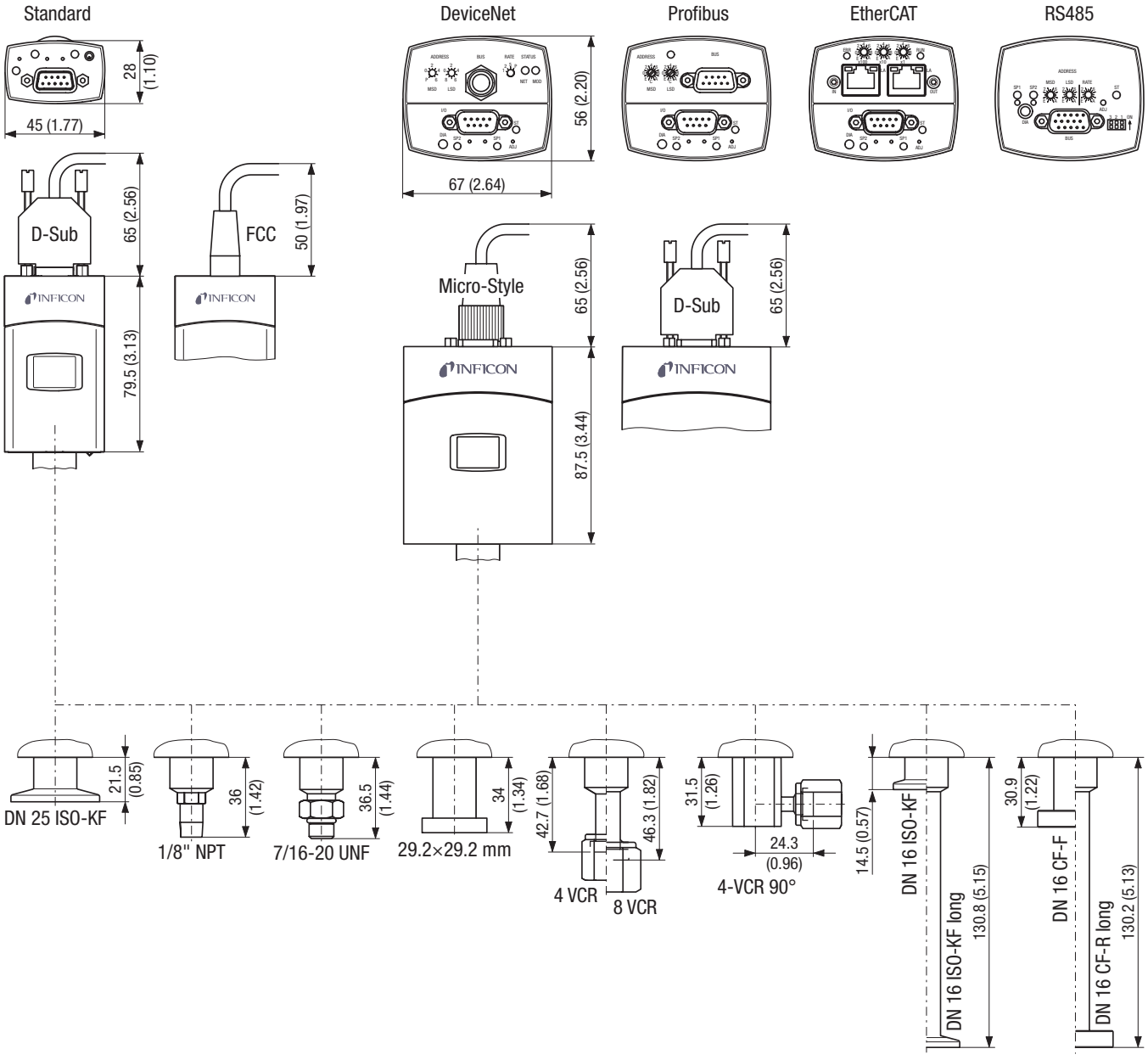
DIMENSIONS

mm (in.)



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