

PSG55x ATM to Medium Vacuum Gauge

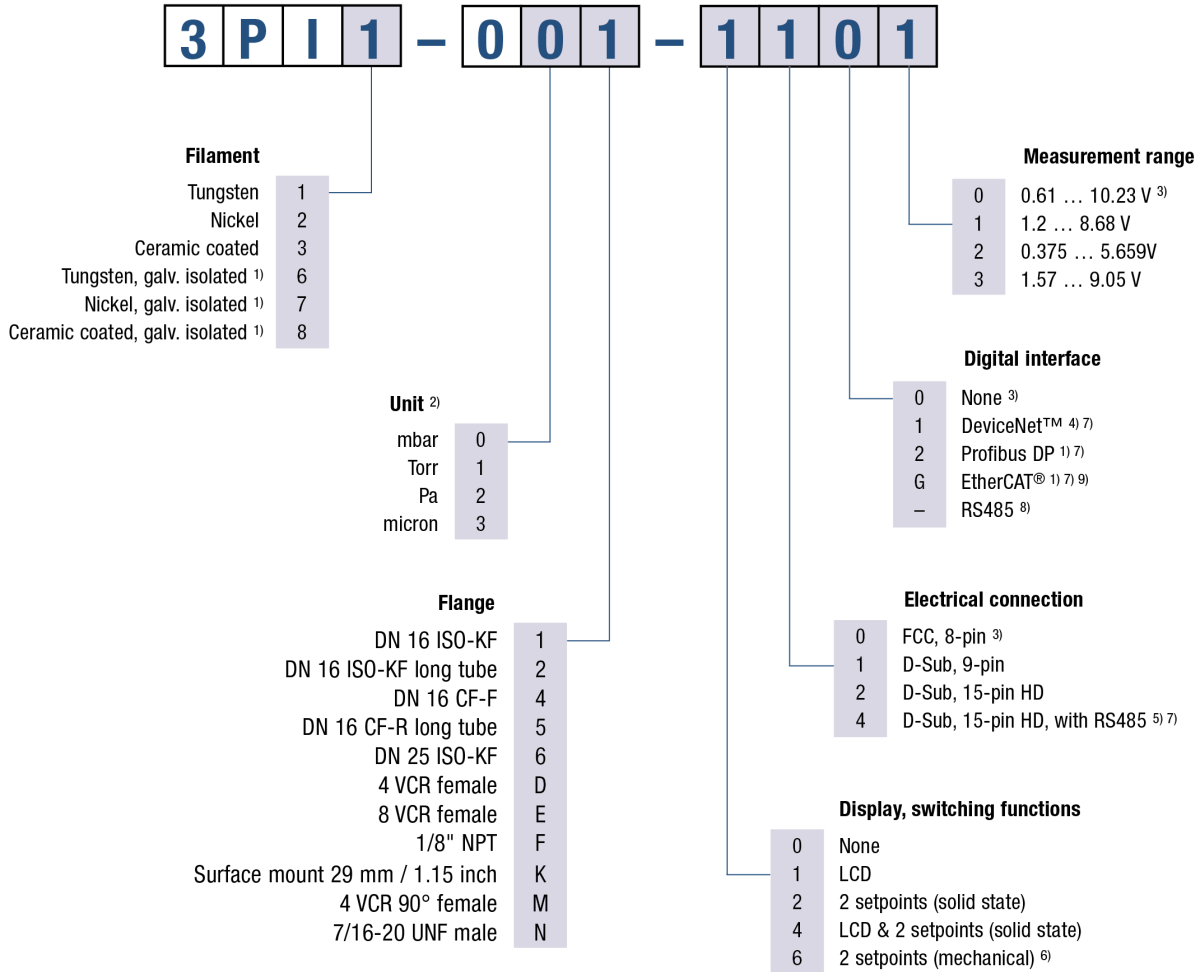
The INFICON Pirani Standard Gauge (PSG55x) employs like his brothers PCG55x and PSG50x the most advanced digital Pirani technology available. The rugged sensor design combined with the compact size and the variety of features qualifies as the right product for measurement from low to the high vacuum 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
- 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 and various plug versions for easy integration
- Mounts in any orientation - provides engineering freedom in tool design
- Diagnostic port on all versions
- Compliance & standards: CE, EN, UL, CSA, RoHS

ORDER 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 VGC50x or PGD400 / PGD500 controller or when choosing "4" under "Electrical connection"

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⁾ Communication standard ETG.5003.2080 S (R) V1.3.0; old version V1.0.0 still available on request

SPECIFICATIONS

Type		PSG550 Tungsten	PSG552 Nickel	PSG554 ceramic coated
Measurement range	mbar	5×10 ⁻⁵ ... 1000	5×10 ⁻⁵ ... 1000	5×10 ⁻⁵ ... 1000
Measurement range	Torr	3.8×10 ⁻⁵ ... 750	3.8×10 ⁻⁵ ... 750	3.8×10 ⁻⁵ ... 750
Accuracy (N ₂)				
5×10 ⁻⁴ ... 1×10 ⁻³ mbar	% of reading	±50	±50	±50
1×10 ⁻³ ... 100 mbar	% of reading	±15	±15	±15
100 ... 1000 mbar	% of reading	±50	±50	±50
Repeatability (N ₂)				
1×10 ⁻³ ... 100 mbar	% 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 3PIx-0xx-xxx0	V	0 ... +10	0 ... +10	0 ... +10
Output signal analog 3PIx-0xx-xxx1	V	0 ... +8.5	0 ... +8.5	0 ... +8.5
Output signal analog 3PIx-0xx-xxx2	V	0 ... +5.529	0 ... +5.529	0 ... +5.529
Output signal analog 3PIx-0xx-xxx3	V	0 ... +8.875	0 ... +8.875	0 ... +8.875
Measuring range 3PIx-0xx-xxx0	V	+0.61 ... +10	+0.61 ... +10	+0.61 ... +10
Measuring range 3PIx-0xx-xxx1	V	+1.2 ... +8.5	+1.2 ... +8.5	+1.2 ... +8.5
Measuring range 3PIx-0xx-xxx2	V	+0.375 ... +5.529	+0.375 ... +5.529	+0.375 ... +5.529

SPECIFICATIONS

Type		PSG550 Tungsten	PSG552 Nickel	PSG554 ceramic coated
Measuring range 3PIx-0xx-xxx3	V	+1.57 ... +8.875	+1.57 ... +8.875	+1.57 ... +8.875
Voltage vs. pressure				
3PIx-0xx-xxx0	volts per decade	1.286	1.286	1.286
3PIx-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 ₂)	mbar	5×10 ⁻⁵ ... 1000	5×10 ⁻⁵ ... 1000	5×10 ⁻⁵ ... 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				
3PIx-0xx-x0xx		FCC, 8-pin	FCC, 8-pin	FCC, 8-pin
3PIx-0xx-x1xx		D-Sub, 9-pin, male	D-Sub, 9-pin, male	D-Sub, 9-pin, male
3PIx-0xx-x2xx		D-Sub, 15-pin HD, male	D-Sub, 15-pin HD, male	D-Sub, 15-pin HD, male
3PIx-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)

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Type		PSG550 Tungsten	PSG552 Nickel	PSG554 ceramic coated
Materials exposed to vacuum		W, Ni, NiFe, glass, SnAg, stainless steel	Ni, NiFe, glass, SnAg, stainless steel	Al ₂ O ₃ , stainless steel
Internal volume				
DN 16 ISO-KF	cm ³	4.7	4.7	4.7
DN 16 ISO-KF long tube	cm ³	14.5	14.5	14.5
DN 16 CF-F	cm ³	8	8	8
DN 16 CF-R long tube	cm ³	14	14	14
DN 25 ISO-KF, 4 VCR	cm ³	5.5	5.5	5.5
8 VCR	cm ³	7	7	7
1/8" NPT, 7/16-20 UNF	cm ³	5.2	5.2	5.2
Surface mount 29 mm/1.15 inch	cm ³	4.9	4.9	4.9
4 VCR 90°	cm ³	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		PSG550 Tungsten	PSG552 Nickel	PSG554 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

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Type	PSG550 Tungsten	PSG552 Nickel	PSG554 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	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
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

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Type		PSG550 Tungsten	PSG552 Nickel	PSG554 ceramic coated
EtherCAT				
Cable length	m (ft.)	≤100 (330)	≤100 (330)	≤100 (330)

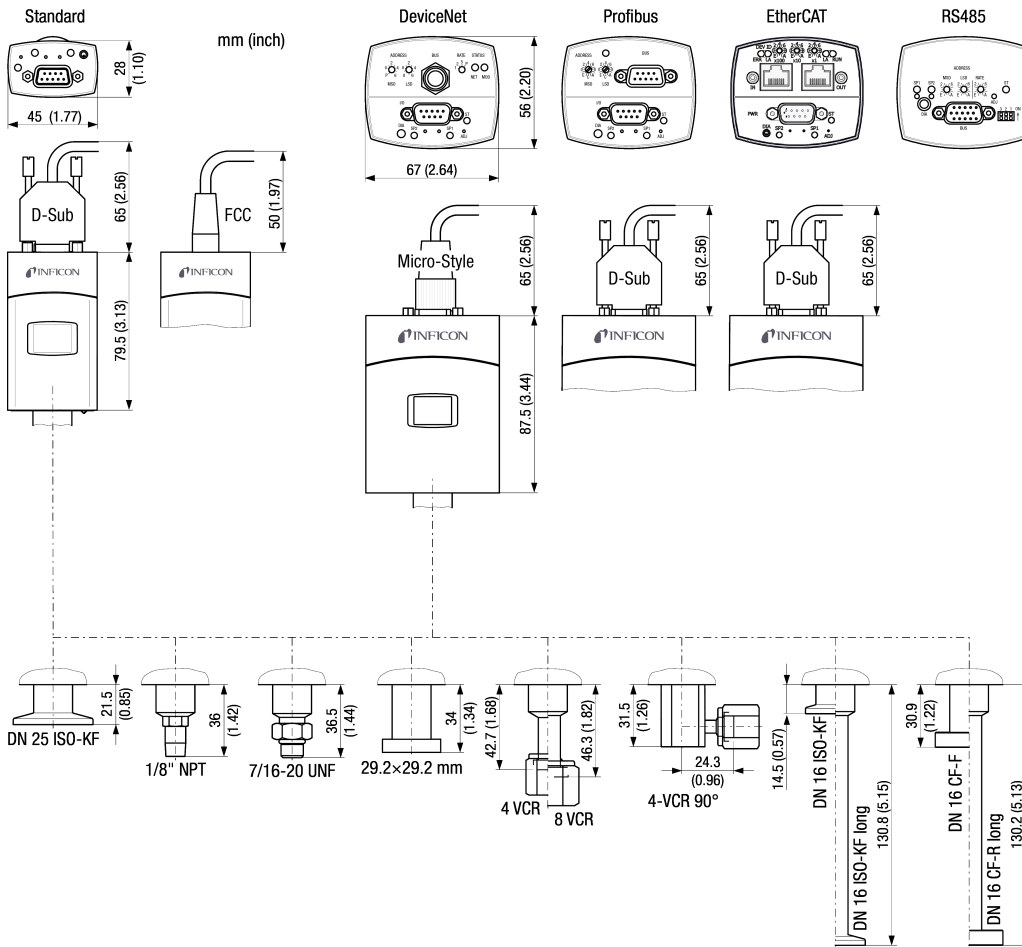
SPAREPARTS

	PSG550 Tungsten	PSG552 Nickel	PSG554 ceramic coated
PSG550 Spare sensor, 1/8" NPT	355-930	-	-
PSG550 Spare sensor, 29x29mm	355-934	-	-
PSG550 Spare sensor, 4-VCR	355-932	-	-
PSG550 Spare sensor, 4-VCR / 90°	355-935	-	-
PSG550 Spare sensor, 7/16-20 UNF	355-933	-	-
PSG550 Spare sensor, 8-VCR	355-931	-	-
PSG550 Spare sensor, DN 16 CF-F	355-927	-	-
PSG550 Spare sensor, DN 16 CF-R, long	355-928	-	-
PSG550 Spare sensor, DN 16 ISO-KF	355-925	-	-
PSG550 Spare sensor, DN 25 ISO-KF	355-929	-	-
PSG550 Spare sensor, DN16 ISO-KF, long	355-926	-	-
PSG552 Spare sensor, 1/8" NPT	-	355-941	-
PSG552 Spare sensor, 29 x 29mm	-	355-945	-
PSG552 Spare sensor, 4-VCR	-	355-943	-
PSG552 Spare sensor, 4-VCR / 90°	-	355-946	-
PSG552 Spare sensor, 7/16-20 UNF	-	355-944	-
PSG552 Spare sensor, 8-VCR	-	355-942	-
PSG552 Spare sensor, DN 16 CF-F	-	355-938	-
PSG552 Spare sensor, DN 16 CF-R, long	-	355-939	-
PSG552 Spare sensor, DN 16 ISO-KF	-	355-936	-
PSG552 Spare sensor, DN 25 ISO-KF	-	355-940	-
PSG552 Spare sensor, DN16 ISO-KF, long	-	355-937	-
PSG554 Spare sensor, 1/8" NPT	-	-	355-952
PSG554 Spare sensor, 29x29mm	-	-	355-956
PSG554 Spare sensor, 4-VCR	-	-	355-954
PSG554 Spare sensor, 4-VCR / 90°	-	-	355-957
PSG554 Spare sensor, 7/16-20 UNF	-	-	355-955
PSG554 Spare sensor, 8-VCR	-	-	355-953
PSG554 Spare sensor, DN 16 CF-F	-	-	355-949
PSG554 Spare sensor, DN 16 CF-R, long	-	-	355-950
PSG554 Spare sensor, DN 16 ISO-KF	-	-	355-947
PSG554 Spare sensor, DN 16 ISO-KF, long	-	-	355-948
PSG554 Spare sensor, DN 25 ISO-KF	-	-	355-951

ACCESSORIES

	PSG550 Tungsten	PSG552 Nickel	PSG554 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



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