

PSG5xx ATM to Medium Vacuum Gauge

The INFICON Pirani Standard Gauges, PSG500, PSG502-S, PSG510-S and PSG512-S, employ the most advanced digital Pirani technology available in the marketplace. The rugged stainless steel sensor cell and compact design qualify them for use on semiconductor systems and for standard applications, such as fore vacuum lines.



BENEFITS

- Easy push button ATM and HV adjustment
- Space saving rugged design
- Aluminum housing
- Mounts in any orientation
- Stainless steel measuring cell with metal-sealed feedthrough
- Logarithmic signal output for easy integration
- 10 bar absolute overpressure with threaded connections
- 250 °C bakeable version
- Nickel filament option for corrosive applications
- Ceramic feedthrough for extremely corrosive applications (PSG510 & PSG512)
- Optional setpoints
- RoHS compliance

ORDERING INFORMATION

Type	PSG500 tungsten	PSG500-S tungsten, setpoints	PSG502-S nickel, setpoints	PSG510-S tungsten, setpoints, ceramic feedthroughs	PSG512-S nickel, setpoints, ceramic feedthroughs
PSG500 1/2" Tube	350-063				
PSG500 1/8" NPT	350-061				
PSG500 4-VCR (1/4")	350-065				
PSG500 7/16-20 UNF	350-066				
PSG500 8-VCR (1/2")	350-064				
PSG500 DN 16 CF-R	350-062				
PSG500 DN 16 CF-R, ext. body	350-068				
PSG500 DN 16 ISO-KF, ext. body	350-067				
PSG500 DN 16 ISO-KF.	350-060				
PSG500-S 1/2" Tube		350-083			
PSG500-S 1/8" NPT		350-081			
PSG500-S 4-VCR (1/4")		350-085			
PSG500-S 7/16-20 UNF		350-086			
PSG500-S 8-VCR (1/2")		350-084			
PSG500-S DN 16 CF-R		350-082			
PSG500-S DN 16 CF-R, ext. body		350-088			
PSG500-S DN 16 ISO-KF		350-080			
PSG500-S DN 16 ISO-KF, ext. body		350-087			
PSG502-S 1/2" Tube			350-143		
PSG502-S 1/8" NPT			350-141		
PSG502-S 4-VCR (1/4")			350-145		
PSG502-S 7/16-20 UNF			350-146		
PSG502-S 8-VCR (1/2")			350-144		
PSG502-S DN 16 CF-R			350-142		
PSG502-S DN 16 CF-R, ext. body			350-148		
PSG502-S DN 16 ISO-KF			350-140		
PSG502-S DN 16 ISO-KF, ext. body			350-147		
PSG510-S DN 16 ISO-KF				350-200	
PSG512-S DN 16 ISO-KF					350-300

SPECIFICATIONS

Type		PSG500 tungsten	PSG500-S tungsten, setpoints	PSG502-S nickel, setpoints	PSG510-S tungsten, setpoints, ceramic feedthroughs	PSG512-S nickel, setpoints, ceramic feedthroughs
Measuring principle		thermal conductance according to Pirani	thermal conductance according to Pirani	thermal conductance according to Pirani	thermal conductance according to Pirani	thermal conductance according to Pirani
Accuracy (N ₂)						
1 x 10 ⁻³ ... 100 mbar	% of reading		±15%	±15%	±15%	±15%
5 x 10 ⁻⁴ ... 1 x 10 ⁻³ mbar	% of reading		±50%	±50%	±50%	±50%
100 ... 1000 mbar	% of reading		±50%	±50%	±50%	±50%
Accuracy(N ₂)						
1 x 10 ⁻³ ... 100 mbar	% of reading	±15%				
5 x 10 ⁻⁴ ... 1 x 10 ⁻³ mbar	% of reading	±50%				
100 ... 1000 mbar	% of reading	±50%				
Repeatability (air)						
1 x 10 ⁻³ ... 100 mbar	% of reading	2%	2%	2%	2%	2%
Output signal (measurement signal)						
Voltage range	V	0 ... +10.3	0 ... +10.3	0 ... +10.3	0 ... +10.3	0 ... +10.3
Measurement range	V	+1.9 ... +10.0	+1.9 ... +10.0	+1.9 ... +10.0	+1.9 ... +10.0	+1.9 ... +10.0
Measurement range (air, O ₂ , CO, N ₂)	mbar	5 x 10 ⁻⁴ to 1000	5 x 10 ⁻⁴ to 1000	5 x 10 ⁻⁴ to 1000	5 x 10 ⁻⁴ to 1000	5 x 10 ⁻⁴ to 1000
Setpoint						
Setting range	mbar	–	2 x 10 ⁻³ ... 500	2 x 10 ⁻³ ... 500	2 x 10 ⁻³ ... 500	2 x 10 ⁻³ ... 500
Setpoint						
Number of setpoints		none	2	2	2	2
Setpoint						
Hysteresis	% of reading	–	10% above lower threshold	10% above lower threshold	10% above lower threshold	10% above lower threshold
Setpoint						
Relay contact	V (dc)	–	30	30	30	30
Setpoint						
Relay contact	A (dc)	–	0.5 floating	0.5 floating	0.5 floating	0.5 floating
Setpoint						

SPECIFICATIONS

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Relay contact: Switching time	ms	–	<20	<20	<20	<20
Supply voltage						
At gauge	V (dc)	+14 ...+30	+14 ...+30	+14 ...+30	+14 ...+30	+14 ...+30
Supply voltage						
Ripple	V (p-p)	≤1	≤1	≤1	≤1	≤1
Voltage vs. pressure		logarithmic 1.286 Volts per decade	logarithmic 1.286 Volts per decade	logarithmic 1.286 Volts per decade	logarithmic 1.286 Volts per decade	logarithmic 1.286 Volts per decade
Internal volume						
DN 16 ISO-KF, DN 16 CF-R, 7/16-20 UNF	cm ³ (in. ³)	1.5 (0.092)	1.5 (0.092)	1.5 (0.092)	1.5 (0.092)	1.5 (0.092)
DN 16 ISO-KF & DN 16 CF-R long tube	cm ³ (in. ³)	10 (0.61)	10 (0.61)	10 (0.61)	10 (0.61)	10 (0.61)
1/8" NPT , 4 VCR, 8 VCR, 1/2" tube	cm ³ (in. ³)	2 (0.122)	2 (0.122)	2 (0.122)	2 (0.122)	2 (0.122)
Admissible temperature						
Operation	°C	+5 ... +60	+5 ... +60	+5 ... +60	+5 ... +60	+5 ... +60
Vacuum connection (1)	°C	80 / 250 ⁽²⁾	80 / 250 ⁽²⁾	80 / 250 ⁽²⁾	80 / 250 ⁽²⁾	80 / 250 ⁽²⁾
Storage	°C	-20 ... +65	-20 ... +65	-20 ... +65	-20 ... +65	-20 ... +65
Weight						
DN 16 ISO-KF, 7/16-20 UNF	g	80	80	80	80	80
DN 16 CF-R, 4 VCR	g	100	100	100	100	100
1/8" NPT, 1/2" tube	g	70	70	70	70	70
8 VCR, DN 16 ISO-KF long tube	g	130	130	130	130	130
DN 16 CF-R long tube	g	140	140	140	140	140
Error signal	V	0 ... +0.5 (filament rupture)	0 ... +0.5 (filament rupture)	0 ... +0.5 (filament rupture)	0 ... +0.5 (filament rupture)	0 ... +0.5 (filament rupture)
Output impedance	Ω	2 x 4.7	2 x 4.7	2 x 4.7	2 x 4.7	2 x 4.7
Minimum loaded impedance	kΩ	10, short-circuit proof	10, short-circuit proof	10, short-circuit proof	10, short-circuit proof	10, short-circuit proof
Response time	ms	80	80	80	80	80

SPECIFICATIONS

Type		PSG500 tungsten	PSG500-S tungsten, setpoints	PSG502-S nickel, setpoints	PSG510-S tungsten, setpoints, ceramic feedthroughs	PSG512-S nickel, setpoints, ceramic feedthroughs
Gauge identification	kΩ	27.0, referenced to supply common	27.0, referenced to supply common	27.0, referenced to supply common	27.0, referenced to supply common	27.0, referenced to supply common
Adjustment		one tactile switch for ATM and HV adjustment	one tactile switch for ATM and HV adjustment	one tactile switch for ATM and HV adjustment	one tactile switch for ATM and HV adjustment	one tactile switch for ATM and HV adjustment
Current consumption	mA	<500 (max. starting current)	<500 (max. starting current)	<500 (max. starting current)	<500 (max. starting current)	<500 (max. starting current)
Power consumption	W	≤1	≤1	≤1	≤1	≤1
Electrical connection		FCC 68 / RJ45 appliance connector, 8 poles, male	FCC 68 / RJ45 appliance connector, 8 poles, male	FCC 68 / RJ45 appliance connector, 8 poles, male	FCC 68 / RJ45 appliance connector, 8 poles, male	FCC 68 / RJ45 appliance connector, 8 poles, male
Sensor cable		8 poles plus shielding	8 poles plus shielding	8 poles plus shielding	8 poles plus shielding	8 poles plus shielding
Cable length	m	≤100 (8 x 0.14 mm ²)	≤100 (8 x 0.14 mm ²)	≤100 (8 x 0.14 mm ²)	≤100 (8 x 0.14 mm ²)	≤100 (8 x 0.14 mm ²)
Materials exposed to vacuum		glass, Ni, NiFe, DIN 1.4301 / 1.4305 / 1.4435	glass, Ni, NiFe, DIN 1.4301 / 1.4305 / 1.4435	glass, Ni, NiFe, DIN 1.4301 / 1.4305 / 1.4435	Al ₂ O ₃ , Ni, DIN 1.3981 / 1.4305 / 1.4435	Al ₂ O ₃ , Ni, DIN 1.3981 / 1.4305 / 1.4435
Filament		W	W	Ni	W	Ni
Admissible pressure	bar (absolute)	10, limited to inert gases	10, limited to inert gases	10, limited to inert gases	10, limited to inert gases	10, limited to inert gases
Mounting orientation		any	any	any	any	any
Degree of protection		IP40	IP40	IP40	IP40	IP40

(1) In horizontal mounting orientation

(2) Long tube

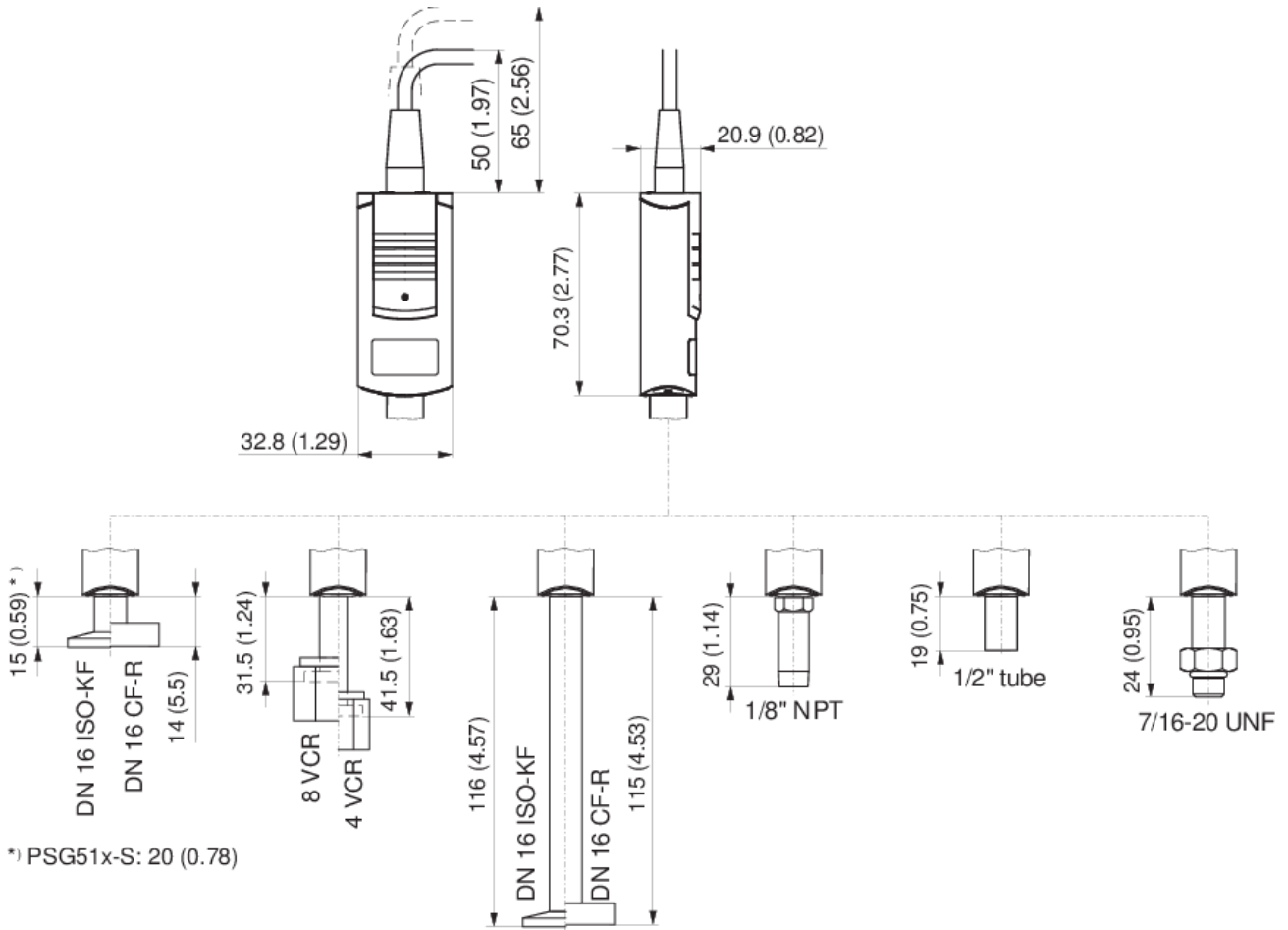
SPAREPARTS

	PSG500 tungsten	PSG500-S tungsten, setpoints	PSG502-S nickel, setpoints	PSG510-S tungsten, setpoints, ceramic feedthroughs	PSG512-S nickel, setpoints, ceramic feedthroughs
PSG500 Spare Sensor 4-VCR (1/4")	350-926	350-926	-	-	-
PSG500 Spare Sensor 1/2" Tube	350-923	350-923	-	-	-
PSG500 Spare Sensor 1/8" NPT	350-921	350-921	-	-	-
PSG500 Spare Sensor 7/16-20 UNF	350-925	350-925	-	-	-
PSG500 Spare Sensor 8-VCR (1/2")	350-924	350-924	-	-	-
PSG500 Spare Sensor DN 16 CF-R	350-922	350-922	-	-	-
PSG500 Spare Sensor DN 16 CF- R,ext.body	350-928	350-928	-	-	-
PSG500 Spare Sensor DN 16 KF	350-920	350-920	-	-	-
PSG500 Spare Sensor DN 16 KF,ext.body	350-927	350-927	-	-	-
PSG502 Spare Sensor 1/2" Tube	-	-	350-903	-	-
PSG502 Spare Sensor 1/8" NPT	-	-	350-901	-	-
PSG502 Spare Sensor 4-VCR (1/4")	-	-	350-906	-	-
PSG502 Spare Sensor 7/16-20 UNF	-	-	350-905	-	-
PSG502 Spare Sensor 8-VCR (1/2")	-	-	350-904	-	-
PSG502 Spare Sensor DN 16 CF-R	-	-	350-902	-	-
PSG502 Spare Sensor DN 16 CF- R,ext.body	-	-	350-908	-	-
PSG502 Spare Sensor DN 16 KF	-	-	350-900	-	-
PSG502 Spare Sensor DN 16 KF,ext.body	-	-	350-907	-	-
PSG510 Spare Sensor DN 16 KF	-	-	-	350-930	-
PSG512 Spare Sensor DN 16 KF	-	-	-	-	350-940

ACCESSORIES

	PSG500 tungsten	PSG500-S tungsten, setpoints	PSG502-S nickel, setpoints	PSG510-S tungsten, setpoints, ceramic feedthroughs	PSG512-S nickel, setpoints, ceramic feedthroughs
Clamping ring DN 10-16 ISO-KF	211-001	211-001	211-001	211-001	211-001

DIMENSIONS



www.inficon.com reachus@inficon.com

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