

Pirani Standard Gauge

PSG500/-S, PSG502-S, PSG510-S, PSG512-S

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.

Advantages

- Easy push button ATM and HV adjustment
- Space saving rugged design
- Aluminum housing
- Mounts in any orientation
- All stainless steel measuring cell
- 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



Applications

- Controlling high vacuum ionization gauges
- Fore vacuum pressure monitoring
- Safety circuits in vacuum systems
- General vacuum measurement and control in the fine and rough vacuum range

PSG500/-S, PSG502-S, PSG510-S, PSG512-S (continued)

Ordering Information

Type Setpoints Filament	PSG500 none tungsten	PSG500-S two setpoints tungsten	PSG502-S two setpoints nickel	PSG510-S two setpoints tungsten	PSG512-S two setpoints nickel
✓ DN 16 ISO-KF	350-060	350-080	350-140	350-200	350-300
DN 16 CF-R	350-062	350-082	350-142		
1/8" NPT	350-061	350-081	350-141		
8 VCR®	350-064	350-084	350-144		
4 VCR®	350-065	350-085	350-145		
1/2" tube	350-063	350-083	350-143		
7/16-20 UNF	350-066	350-086	350-146		
DN 16 ISO-KF long tube	350-067	350-087	350-147		
DN 16 CF-R long tube	350-068	350-088	350-148		

Replacement sensor

Filament	tungsten	nickel	tungsten	nickel
DN 16 ISO-KF	350-920	350-900	350-930	350-940
DN 16 CF-R	350-922	350-902		
1/8" NPT	350-921	350-901		
8 VCR®	350-924	350-904		
4 VCR®	350-926	350-906		
1/2" tube	350-923	350-903		
7/16-20 UNF	350-925	350-905		
DN 16 ISO-KF long tube	350-927	350-907		
DN 16 CF-R long tube	350-928	350-908		

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Specifications

Type		PSG500	PSG500-S	PSG502-S	PSG510-S	PSG512-S
Filament		tungsten	tungsten	nickel	tungsten	nickel
Measuring principle		thermal conductance according to Pirani				
Measurement range (air, O ₂ , CO, N ₂)	mbar	5 x 10 ⁻⁴ to 1000				
Accuracy (N ₂)	1 x 10 ⁻³ ... 100 mbar	% of reading				
	5 x 10 ⁻⁴ ... 1 x 10 ⁻³ mbar	% of reading				
	100 ... 1000 mbar	% of reading				
Repeatability (air)	1 x 10 ⁻³ ... 100 mbar	% of reading				
Output signal (measurement signal)						
Voltage range	V	0 ... +10.3				
Measurement range	V	+1.9 ... +10.0				
Voltage vs. pressure		logarithmic 1.286 V/decade				
Error signal	V	0 ... +0.5 (filament rupture)				
Output impedance	Ω	2 x 4.7				
Minimum loaded impedance	kΩ	10, short-circuit proof				
Response time	ms	80				
Gauge identification	kΩ	27.0, referenced to supply common				
Adjustment		one tactile switch for ATM and HV adjustment				
Setpoint		none	2			
Setting range	mbar		2 x 10 ⁻³ ... 500			
Hysteresis	% of reading		10% above lower threshold			
Relay contact	V DC / A DC		30 / 0.5 floating			
Switching time	ms		<20			
Supply voltage						
At gauge	V DC		+14 ... +30			
Ripple	V _{pp}		≤1			
Current consumption	mA		<500 (max. starting current)			
Power consumption	W		≤1			
Electrical connection		FCC 68 / RJ45 appliance connector, 8 poles, male				
Sensor cable		8 poles plus shielding				
Cable length	m	≤100 (8 x 0.14 mm²)				
Materials exposed to vacuum		glass, Ni, NiFe				Al ₂ O ₃ , Ni,
		DIN 1.4301/1.4305/1.4435				DIN 1.3981/1.4305/1.4435
Filament		W	W	Ni	W	Ni
Internal volume						
DN 16 ISO-KF, DN 16 CF-R, 7/16-20 UNF	cm³ (inch³)	1.5 (0.092)				
DN 16 ISO-KF & DN 16 CF-R long tube	cm³ (inch³)	10 (0.61)				
1/8" NPT, 4 VCR, 8 VCR, 1/2" tube	cm³ (inch³)	2 (0.122)				
Admissible pressure	bar (absolute)	10, limited to inert gases				
Admissible temperature						
Operation	°C	+5 ... +60				
Vacuum connection ¹⁾	°C	80 / 250 ²⁾				
Storage	°C	-20 ... +65				
Mounting orientation		any				
Degree of protection		IP40				
Weight						
DN 16 ISO-KF, 7/16-20 UNF	g	80				
DN 16 CF-R, 4 VCR	g	100				
1/8" NPT, 1/2" tube	g	70				
8 VCR, DN 16 ISO-KF long tube	g	130				
DN 16 CF-R long tube	g	140				

¹⁾ In horizontal mounting orientation

²⁾ Long tube

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Dimensions

mm (inch)

