Gems Transducers Deliver Top Performance and Value Under Pressure!

- Excellent Repeatability, Reliability
- Sensing Ranges from Vacuum to 25,000 psi (-1 to 1,600 bar)
- Broad Range of Sensing Technologies:
  - Chemical Vapor Deposition
  - Sputtered Thin Film
  - Capacitance
  - MMS

When your applications require exceptional pressure sensing performance and long-life reliability, look to Gems to deliver. From vacuum to 25,000 psig (-1 to 1,600 bar), we've got you covered with industry's largest selection and best choice of technologies. Our capacitance type sensors are ideal for high volume use; sputtered thin film types are the most precise pressure sensors you can buy, and our other types satisfy all requirements in between.

Typical Applications

- **Off Highway Vehicles** — Load Weighing Systems and Load Moment Indicating
- **Natural Gas Equipment** — Compressors and Dispensing Equipment
- **Semiconductor Processing** — Wafer Manufacturing
- **Power Plants** — Piping Steam Pressures
- **Refrigeration** — Compressors and Lube Oil Pressure Equipment
- **Robotics** — Factory Automated Equipment
- **Test & Measurement** — Dynamometers, Medical Instrumentation, Wind Tunnels
- **Barometrics** — Altimeter Certification, Weather Stations
- **HVAC** — Compressors, Filter Monitoring, Energy Management
- **Transportation** — Breaking, Compressors, Lifts, Air Conditioning

Psibar® CVD Type

Chemical Vapor Deposition manufacturing methods bond a polysilicon layer to a stainless steel diaphragm at the molecular level to produce a sensor with superior long term drift performance. Common batch processing semiconductor manufacturing methods are used to create a polysilicon strain guage bridge with terrific performance at a very reasonable price. CVD construction offers excellent price/perfomance and is the most popular sensor for OEM applications.

Sputtered Thin Film Type

Sputtered film deposition creates transducers with maximum combined linearity, hysteresis and repeatability. Accuracy is as high as 0.08% full scale with long term drift as low as 0.06% full scale per year. Phenomenal performance for critical instruments — Gems sputtered thin film transducers are the jewels of the pressure sensing industry.

Capacitance Type

Gems manufactures capacitance type pressure sensors for a wide range of high volume OEM and specialty applications. Detecting the capacitance change between two surfaces allows Gems transducers to sense extremely low pressure and vacuum levels. Robust construction allows these units to be used in a wide variety of applications. Coupled with an ASIC, these units provide good price/performance in a host of packaging styles.

MMS Type

These transducers employ a micromachined silicon (MMS) diaphragm to detect pressure changes. The silicon diaphragm is protected from the media by an oil-filled 316SS isolation diaphragm; they react in tandem to process fluid pressure. MMS sensors utilize common semiconductor manufacturing techniques that allow for high proof pressure, good linearity, great thermal shock performance and stability in a thin sensor package.

Psibar® CVD Types

Sputtered Thin Film Types

Capacitance Types

MMS Type

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Selection Guide

Purpose	Pressure Range	Accuracy (Full Scale, Typ.)	Long Term Drift (Full Scale/Year)	Thermal Error per °F relative to Room Temperature (Full Scale Typ.)	Operating Temperatures*	Ratiometric	Millivolt	Voltage Output	Current Output	Gauge	Absolute	Vacuum	Dif. Pressure	Submersible	Sanitary	Semiconductor	Digital Output	Sensor Technology Type	Gems Series Number
General/ OEM	Vacuum to 6000 psig (-1 to 414 bar)	0.25% (0.15% optional)	0.20%	0.015%	-40°F to +260°F (-40°C to +125°C)		•	•	•	•	•	•		•				Strain Gauge (CVD)	2200/2600
		0.50%	0.20%	0.020%				•	•	•		•						Strain Gauge (CVD)	1200/1600
	Vacuum to 10,000 psig (-1 to 690 bar)	0.25%	0.50%	±0.035%	-40°F to +185°F (-40°C to +85°C)			•	•	•		•						Capacitance	809
	2 to 10,000 psig (0 to 690 bar)	<25psi: 0.25% >25psi: 0.13%	0.50%	<25psi: 0.035% >25psi: 0.025%	-40°F to +260°F (-40°C to +125°C)			•	•	•								Capacitance	856
	10 in. WC to 150 in. WC (25 to 350 mbar)	0.20%	0.25%	0.028%	-40°F to +212°F (-40°C to +100°C)			•	•	•				•				Capacitance	5000
High Accuracy	2 to 6,000 psi (0.5 to 400 bar)	0.15%	0.15%	0.010%	-22°F to +212°F (-30°C to +100°C)				•	•	•			•				Strain Gauge (CVD)	6700
	2 to 10,000 psig (0.2 to 690 bar)	0.10%	0.10%	0.008%	-22°F to +212°F (-30°C to +100°C)				•	•	•			•				Strain Gauge (Sputtered)	4700
	15 to 10,000 psig (1 to 690 bar)	0.08%	0.06%	0.006%	-65°F to +275°F (-54°C to +135°C)		•			•	•	•		•				Strain Gauge (Sputtered)	4000
	0 to 30,000 psig (0 to 2,200 bar)	0.25%	0.2%	0.83%	-40°F to +257°F (-40°C to +125°C)	•		•	•	•								Strain Gauge (Sputtered)	3100/3200
High Temperature & Accuracy	15 to 6,000 psig (1 to 400 bar)	0.10%	0.06%	0.006%	-65°F to +450°F (-54°C to +230°C)		•			•	•							Strain Gauge (Sputtered)	4000 High Temp
Specialty	600 to 1,100 hPa/mb 800 to 1,100 hPa/mb 0 to 20 psia	0.25%	0.25%/ 6 mos.	0.033%	0°F to +175°F (-18°C to +80°C)				•		•		•			•		Capacitance	876
	0.25 to 100 in. WC (Unidirectional) 0.1 to 50 in. WC (Bidirectional)	1.00%	0.50%	0.066%	0°F to +150°F (-18°C to +65°C)			•	•	•			•			•		Capacitance	865
	1 to 100 psid (0.0 to 7 bar)	0.25%	0.50%	0.040%	0°F to +175°F (-18°C to +80°C)			•	•	•			•					Capacitance	830
	Vacuum to 1,000 (-1 to 69 bar)	0.20%	0.50%	0.040%	-40°F to +260°F (-40°C to +125°C)				•	•		•			•			Capacitance	890
	5 to 260 psig (0.35 to 18 bar)	0.25%	0.20%	0.012%	-40°F to +180°F (-40°C to +80°C)		•	•	•	•				•				Strain Gauge (MMS)	2400
	500 to 10,000 psig (0 to 690 bar)	0.10%	0.05%	0.20%	-40°F to +185°F (-40°C to +85°C)												•	Strain Gauge (Sputtered)	9000

* Specific temperature capability depends on electrical connection selected. See specifications on respective product pages