



Fiber Optic Sensors
Innovation. Precision. Solutions.

opSen^{••}s



Medical

Opsens MEMS based fiber optic pressure and temperature sensors deliver high fidelity and artifact-free pressure and temperature measurement for minimally invasive applications.

- Highest temperature accuracy of $\pm 0.15\text{ }^{\circ}\text{C}$; resolution of $0.01\text{ }^{\circ}\text{C}$
- Pressure sensor 400 μm OD and smaller
- Pressure sensor with minimal temperature shift and moisture-induced drifting problems
- Immune to RF, MR, ultrasound and EM interferences



Oil and Gas

Opsens' outstanding all-Sapphire downhole pressure and temperature sensors for extreme Oil & Gas harsh environments.

- High operating temperature: up to $300\text{ }^{\circ}\text{C}$ ($400\text{ }^{\circ}\text{C}$ in development)
- Optimized for long lifetime in Hydrogen rich environment
- Ideal P/T sensors for SAGD, CSS, Thermal wells and Intelligent wells applications
- Cost Competitive turn-key solution: P/T sensors + multi-fiber cable + multi-channel surface interrogation unit

Defense & Aerospace

Opsens sensors are a perfect fit for the demanding aerospace industry and represent the sensing solution for the next generation of aircraft and defense systems.

- Miniature and highly adaptable, the sensors fit into any confined area and provide valuable gain in weight and space
- Measure pressure, temperature, strain and displacement with the same interface
- Eliminate the EMC/EMI threats in aircraft and/or near strong magnetic fields
- Robust design for reliable and long term monitoring applications

Laboratory

Opsens offers a wide range of cost competitive fiber optic sensor/system best suited for the most demanding applications in EMI and RFI environments.

- Available up to 16 channels
- Sampling rate from 20Hz to 1KHz
- Extended friendly user interface
- Stable and highly reliable system
- Robust sensor design and packaging



TEMPERATURE

SCBG (GaAs)

SPECIFICATIONS	OTG-F	OTG-A	OTG-M	OTG-P	OTG-R	OTP-A	OTP-M
	Range	-40 °C to +250 °C	-40 °C to +250 °C	0 - 85 °C (Higher range available)	-40 °C to +250 °C	-40 °C to +250 °C	-40 °C to +250 °C
Resolution	0.01 °C	0.1 °C	0.01 °C	0.1 °C	0.1 °C	0.1 °C	0.01 °C
Precision	+/- 1 °C or better	+/- 1 °C	+/- 0.3 °C	+/- 1.5 °C	+/- 1.5 °C	+/- 1.0 °C	+/- 0.15 °C
Response time	0.007 s	0.5 s	Packaging dependant	N/A	0.007 s	1.5 s	< 1 s
Dimensions	0.150 mm O.D. and smaller	1.1 mm O.D.	0.17 mm	4.8 mm O.D.	0.150 mm O.D. and smaller	1.8 mm O.D.	1.2 mm O.D.
Cable sheathing	Acrylic, Polyimide	Teflon™	Teflon™ (Other sheaths available)	Stainless steel or ceramic thermowell	Acrylate tight buffer or PVC	Teflon™	Teflon™ / PVC tight buffer
Signal conditioner compatibility	SCBG (GaAs)	SCBG (GaAs)	SCBG (GaAs)	SCBG (GaAs)	RadSens	WLPI	AccuSens
Features / Applications	- Ultra miniature high accuracy - and fast response time - Laboratory - Medical	- Excellent accuracy - General, Industrial, Cryogenic	- Excellent accuracy - Reliable & Robust design - Medical - General, Industrial, Cryogenic	- Ultra robust, thermowell design - General, Industrial	- High resolution - Electromagnetic radiation, Electronic-explosive device, Military	- Great accuracy - General, Industrial	- Highest accuracy - Robust - Medical

PRESSURE

WLPI

SPECIFICATIONS	OPP-C	OPP-B	OPP-W	OPP-M
	Range	50-1000 psi	50-1000 psi	0-5 MPa (0-750 psi)
Resolution	< 0.02% F.S.	< 0.01% F.S.	0.01% F.S.	0.5 mmHg
Precision	+/- 0.1% F.S.	< 0.1% F.S.	< 0.1% F.S.	+/- 1 mmHg or +/- 1.5% F.S. whichever is greater
Response time	Readout unit dependent	Readout unit dependent	Readout unit dependent	Readout unit dependent
Dimensions	9.5 mm x 58 mm	2.50 mm O.D.	19 mm diameter, 120mm length	0.250 mm and 0.400 mm O.D.
Cable sheathing	4 mm O.D. Polyurethane	Teflon™	SST-316L; Incoloy 825	Customer specified
Signal conditioner compatibility	WLPI	WLPI	WellSens	LifeSens
Features / Applications	- Robust design - General, Industrial	- Robust design - General, Industrial	Oil & Gas downhole P/T Monitoring in: - Heavy Oil Thermal Wells - Intelligent & Unconventional Wells	- Miniature size - Medical
Operating temperature	-20 °C to 85 °C	Up to +100 °C	-40 °C to +300 °C	10 °C to 50 °C

STRAIN

WLPI

SPECIFICATIONS	OSP
	Range
Resolution	0.15µε
Precision	A: +/- 3% F.S. B: +/- 3% F.S. C: +/- 10% F.S.
Response time	Readout unit dependent
Dimensions	10 mm x 0.230 mm O.D.
Cable sheathing	Acrylate tight buffer, Braided fiberglass
Signal conditioner compatibility	WLPI
Features / Applications	- High accuracy, Miniature - General, Industrial high temperature
Operating temperature	-40 °C to 250 °C

DISPLACEMENT

WLPI

SPECIFICATIONS	ODP
	Range
Resolution	25 microns
Precision	0.2% F.S. (@25 °C) Repeatability 0.05% F.S.
Response time	Readout unit dependent
Dimensions	11.1 mm
Cable sheathing	Acrylate tight buffer, Braided fiberglass
Signal conditioner compatibility	WLPI
Features / Applications	- Intrinsically safe - EMI/RFI immunity - Civil engineering, Nuclear
Operating temperature	-40 °C to 85 °C

SPECIFICATIONS	Pico M	TempSens	TempMonitor	RadSens
	Number of channels	1	4 or 8	3 to 18
Sampling rate	50 Hz	50 Hz	50 Hz	1000 Hz per module
Output - Interface	Display Memory RS-232 AO: +/- 5 V	Display Memory RS-232 AO: +/- 5 V	Display Memory RS-232 RS-485 Relays AO: +/- 5 V, 4-20mA	Display Memory AO: +/- 5 V Ethernet
Applications	Handheld - Battery operated	Lab	Lab	Industrial, Lab EED assessment
Sensor compatibility	SCBG (GaAs)	SCBG (GaAs)	SCBG (GaAs)	OTG-R

SPECIFICATIONS	PicoSens	MultiSens	FieldSens	WellSens	LifeSens
	Number of channels	1	4 or 8	4 to 16	2 to 16
Sampling rate	20 Hz	20 Hz	20 Hz	20 Hz	250 Hz
Output - Interface	Display Memory RS-232 AO: +/- 5 V	Display Memory RS-232 AO: +/- 5 V	Display Memory RS-232 RS-485 AO: +/- 5 V	Display Memory RS-232 RS-485 AO: +/- 5 V ModBus	Display Memory RS-232 AO: +/- 5 V
Applications	Handheld - Battery operated	Lab	Industrial, civil engineering	Field deployment Oil and Gas OPP-W	Lab, Physiological pressure measurement OPP-M
Sensor compatibility	WLPI	WLPI	WLPI	OPP-W	OPP-M

SPECIFICATIONS	ProSens	OEM-Sens	OEM-MNP	OEM-MNT
	Number of channels	From 1 to 8 modules	1, 2 or 4	1
Sampling rate	1000 Hz per module	20 Hz	1000 Hz	50 Hz
Output - Interface	Display Memory AO: +/- 5 V Ethernet	RS-232 RS-485 AO: +/- 5 V CAN BUS	RS-232	RS-232
Applications	Industrial, Lab, Medical dynamic measurement	OEM integration	OEM integration	OEM integration
Sensor compatibility	WLPI and SCBG (GaAs)	WLPI and SCBG (GaAs)	WLPI (OPP-M)	SCBG (GaAs)

The White-Light Interferometry Technology (WLPI)

Opsens' White-Light Interferometry Technology series offer multi-parameter and multi-purpose fiber-optic sensor systems including fiber optic pressure, temperature sensors, strain sensors and displacement sensors. The WLPI series offers to user the ability to measure multiple parameters with just one system.

The Semi-Conductor BandGap Technology (GaAs)

Opsens' Semi-Conductor BandGap Technology (also known as GaAs) fiber-optic temperature sensor systems are ideal for industrial applications, hot spot monitoring in power transformer windings, and electrical current monitoring of electro-explosive devices (EED). These systems offer great user interface features with no gauge factor entering.

FEATURES OF OPSENS FIBER OPTIC SENSORS:

- Discrete and miniature size (100µm OD and up)
- Robust sensor and cable constructions
- Intrinsically safe
- Immune to EMI, RFI, MRI, electrical interferences
- Withstands nuclear, high temperature, high voltage and other harsh environments
- High accuracy and system reliability
- Low cost OEM solution

To know more

about the latest advancement
in Opsens systems

call us at **1.418.682.9996**

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