



**PSC-D**  
PROSENS PLATFORM DEDICATED FOR HIGH  
SPEED MIXED PARAMETERS MEASUREMENTS



**PSP-62**  
INTERFEROMETRIC TECHNOLOGY (WLPI)  
MODULE FOR MEASURING TEMPERATURE,  
PRESSURE, STRAIN AND DISPLACEMENT

Use with Opsens' WLPI and GaAs (SCBG) fiber optic sensors

## Key Features

- Modular platform accepting up to 8 modules
- High speed modules (1000 Hz sampling rate)
- High linearity, precision and resolution
- Ethernet, CAN Bus and RS-232 interfaces
- Individual  $\pm 5V$  analog outputs
- Host-independent graphical user interface (GUI)
- 6.5" Front panel touch-screen color display

## Applications

- Electro-explosive device testing (RADHAZ and HERO applications - see RadSens datasheet)
- High speed simultaneous measurements of temperature, pressure, strain and/or displacement
- High speed simultaneous measurements in civil engineering
- LifeScience
- Military and aerospace
- Fast transient measurements
- Well suited for most laboratory experiments

## Description

The ProSens is a polyvalent, scalable system that includes a control unit (PSC-D), modular signal conditioner units (PSP-62 and/or PSR-100 modules), a comprehensive graphical user-interface environment, and a variety of fiber optic sensors for measuring temperature, pressure, strain and displacement. The ProSens is readily adaptable for the most demanding applications for high speed measurement of temperature, pressure, strain, and displacement.

The ProSens system offers a memory card up to 4 G for user who wishes to work directly on the system. User can also perform system control and data acquisition via the Ethernet port using Opsens SoftProSens software. The SoftProSens software is specifically designed for the ProSens system with advanced features and GUI interface.

By accepting any combination of PSP-62 WLPI modules and PSR-100 GaAs modules, the ProSens allows the user to select the most appropriate technology for delivering the best performance for every point of the measurement chain.

### Opsens

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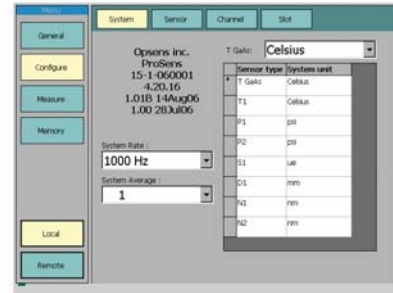
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## PSC-D ProSens Platform

The ProSens has been developed with cutting edge technologies to provide the user with the most flexible tool for performing temperature, pressure, strain or displacement measurements in the most adverse conditions. Both WLPI (interferometric) and SCBG (GaAs-based) fiber optic sensing technologies can be mixed together within the PCS-D ProSens chassis, then getting the most out of your measurement applications and future needs.

### Control Unit with GUI Touch-Screen Display

The PSC-D ProSens chassis offers a Windows CE based single board computer with a graphical user interface 6.5" TFT color touch-screen display. This GUI is ideal for easy system control and set-up, fast data collection and storage.



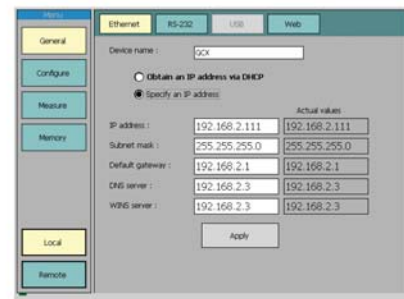
### Control Unit with 8 measuring slots

The PSC-D ProSens chassis accepts up to 8 measuring modules. The slots can be populated with any mix of PSP-62 (WLPI) modules and PSR-100 (SCBG) modules. Mixing technologies do not make the operation of the ProSens any trickier.



### Ethernet communication interface

Easy configurable Ethernet communication interface provides the throughput necessary for real time data transfer between the ProSens and remote computer.



### SoftProSens user interface software

Opsens' SoftProSens software runs on a PC computer as a remote replicate of the ProSens graphical user interface (GUI). The user has the ability to control, display, acquire and save data in the same way as with the ProSens GUI.





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PROSENS/RADSENS CHASSIS  
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- Individual  $\pm 5V$  analog outputs
- Host-independent graphical user interface (GUI)
- 6.5" Front panel touch-screen color display

### Applications

- Electro-explosive device testing (RADHAZ and HERO applications - see RadSens datasheet)
- High speed simultaneous measurements of temperature, pressure, strain and/or displacement
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### Description

The PSC-D is a 19" rackmount chassis, a control unit houses a reliable, low power, Intel™ XScale processor based computer running under real time Windows CE™.

It is capable to contain up to 8 optoelectronics modules with on computer for real time data acquisition and transfer.

System set-up, data collection and data storage are no longer a headache for the user with the most comprehensive graphical user interface. Through the Ethernet RJ-45 connection, the user can easily interface with a PC computer and get access to real time data with no loss of accuracy due to digital to analog, back to digital conversion.

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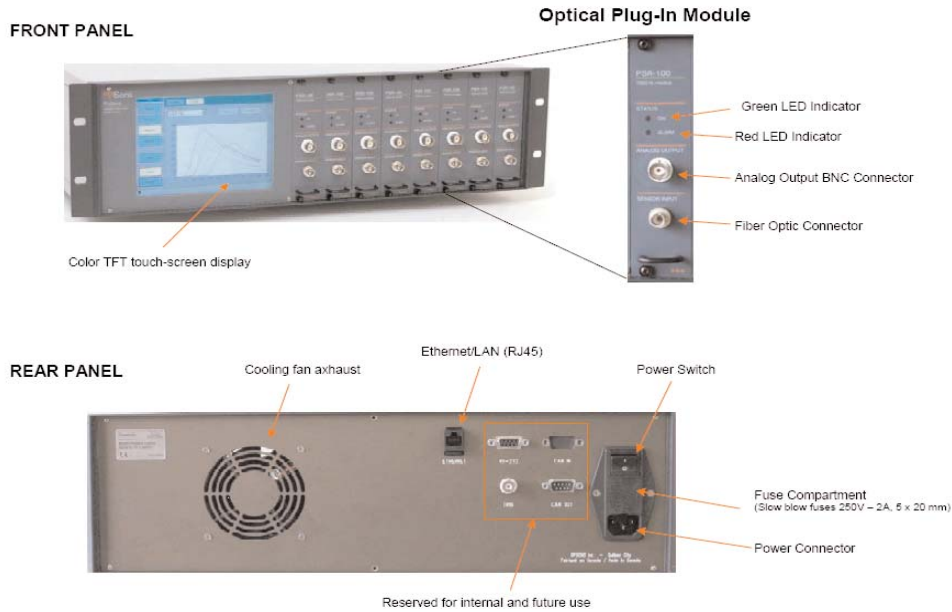
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## Specifications

Number of measuring slots	8
Compatibility	PSP-62 module and PSR-100 module
I/O interfaces	Ethernet 10/100 Base-T interface
Graphical user interface	TFT 6.5" Touch-screen color display
Internal data storage memory (optional)	Up to 4Gbytes
Input power	90 to 230 VAC
Dimension	19" rack mount, 3U
Power consumption	2W (excluding signal conditioner modules)
Storage temperature	- 40 °C to 70 °C
Operating temperature	10 °C to 35 °C
Humidity	95 % non condensing

All specifications are subject to change without prior notifications



## PSR-100 GAAS-BASED TECHNOLOGY FOR HIGH SPEED TEMPERATURE MEASUREMENTS

Use with Opsens' OTG-R GaAs (SCBG) temperature fiber optic sensors

### Key Features

- High speed modules (1000 Hz sampling rate)
- High linearity, precision and resolution
- No gauge factor entry
- Absolute temperature measurement
- Individual  $\pm 5V$  analog outputs

### Applications

- Electro-explosive device testing (RADHAZ and HERO applications)
- Static or dynamic temperature measurements conducted under confined space, hazardous and strong EMI/RFI/MRI environments
- High speed simultaneous measurements of temperature
- Hazardous environments
- Fast transient measurements

### Description

The PSR-100 is a GaAs-based spectrophotometric module that measures the spectral position of the temperature-dependent bandgap of a GaAs crystal affix at the end of a 100 microns core optical fiber. This module is compatible with Opsens' SCBG (GaAs-based) fiber optic temperature sensors and hence, it requires no calibration factor.

The PSR-100 can be configured to sample measurements at rates varying from 100 Hz to 1000 Hz. The analog output scale and offset are adjustable, with averaging capability for improved resolution.

The PSR-100 is dedicated solely to temperature measurements. Although they are not as accurate as with the WLPI-based sensors, GaAs (SCBG) temperature sensors can be made very small, hence providing extremely fast response time of the order of milliseconds.

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## Specifications

Sensing Technology	SCBG: GaAs-based spectrophotometry
Sensor Compatibility	All of Opsens' GaAs-based temperature sensors with 100 microns core optical fiber
Fiber optic core size	100 microns
Fiber Optic Connector	ST type
Analog output	±5 Volts output, BNC connector
Sampling rate	Adjustable from 100 Hz to 1000 Hz
Measuring range	-20°C to 250°C (other range available upon request)
Accuracy	± 1.5 °C (include sensor error)
Resolution	± 0.1 °C
Power consumption	2W
Light source life span	60 000 hours MTBF
Dimension	19" rack mount, 3U (140mm x 449mm x 316mm)
Storage temperature	-40 °C to 70 °C
Operating temperature	10 °C to 35 °C

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**Applications**

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**Description**

The PSP-62 is an interferometric module that measures the absolute path length difference of any of Opsens' WLPI sensor. Each sensor comes with a calibration factor that is easily entered via the GUI touch-screen display or with the SoftProSens remote interface.

The PSP-62 can be configured to sample measurements at rates varying from 100 Hz to 1000 Hz. The analog output scale and offset are adjustable, with averaging capability for improved resolution.

The PSP-62 is a multi-parameter module compatible with all of Opsens' WLPI sensors, hence allowing the user to perform temperature, pressure, strain and/or displacement measurements.

This technology is best suited for higher accuracy measurements.

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## Specifications

Sensing Technology	WLPI: White-Light Polarization Interferometry
Sensor Compatibility	All of Opsens' WLPI sensors
Fiber optic core size	62.5 microns
Fiber Optic Connector	SC type
Analog output	±5 Volts output, BNC connector
Sampling rate	Adjustable from 100 Hz to 1000 Hz
Full scale	30 000 nm (path length difference)
Precision	±.02 % of F.S.
Resolution	±.007 % of F.S.
Power consumption	9W
Light source life span	5000 hours MTBF
Dimension	19" rack mount, 3U (140mm x 449mm x 316mm)
Storage temperature	-40 °C to 70 °C
Operating temperature	10 °C to 35 °C
Humidity	95 % non condensing

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