

# GS4200-USB<sup>®</sup>

USB-POWERED  
DIGITAL PRESSURE TRANSDUCER



- SILICON-ON-SAPPHIRE SENSOR TECHNOLOGY
- AUTO DETECTION & CONFIGURATION
- USB 1.1 AND USB 2.0 FULL SPEED COMPATIBLE
- ESI-USB<sup>®</sup> SOFTWARE SUPPLIED
- EXTREMELY HIGH 21 BIT RESOLUTION
- EXCELLENT STABILITY AND REPEATABILITY
- INCLUDES BUILT-IN TEMPERATURE MONITORING
- IP68 USB CABLE INCLUDED
- CREATE AND PRINT CALIBRATION CERTIFICATES
- AVAILABLE IN HIGH PRESSURE RANGES
- MEASURE UP TO 16 INPUTS SIMULTANEOUSLY

The GS4200-USB<sup>®</sup> Digital Pressure Transducer has been designed to measure, analyse and record pressure directly on your computer without the need for costly I/O interface boards. It allows the user to measure up to 16 pressure inputs simultaneously.

The transducer is powered by the computer's USB port, data is then presented on the PC via the ESI-USB<sup>®</sup> configurable Windows Interface software supplied with the transducer. It has instant connection with auto-detection, and will configure automatically with your desktop or laptop pc via USB protocol. The fast sample rate enables dynamic pressures to be measured with up to 21 bit resolution. For real-time analysis, data transferred to the PC is achieved without loss of accuracy or bandwidth. This pressure transducer is USB 1.1 and USB 2.0 compatible, the ESI-USB<sup>®</sup> interface configuration and analysis software is compatible with Windows<sup>®</sup> 98, 98SE, 2000, ME, XP & Vista. Data can be displayed in graphical or tabular form, with a choice of pressure units and fully adjustable scales. Data can be saved to a file or exported to Excel.

The unique Silicon-on-Sapphire sensor technology provides outstanding performance and gives excellent stability over a wide temperature range. The advanced sensor design consists of a piezoresistive silicon strain gauge circuit, which is epitaxially grown onto the surface of a sapphire diaphragm to form a single crystalline structure. The sapphire sensor element is then molecularly bonded to a Titanium alloy sub-diaphragm. This enables the sensor to endure higher over-pressures and provides superb corrosion resistance. The completed sensor exhibits virtually no hysteresis and excellent long-term stability. With outstanding insulation properties, the sapphire substrate protects the strain gauge circuit from electromagnetic pulse radiation and allows the sensor to operate over a very wide temperature range without loss of performance. Excellent measurement accuracy provides high resolution with a precision greater than 1 in 10,000. Pressure ranges are available from 500mbar to 3000bar in gauge or absolute reference.



Tel: +44 (0) 1978 262255



Fax: +44 (0) 1978 262233

**ellison sensors international**

Sensor House, Wrexham Technology Park, Wrexham, LL13 7YP, Wales, UK  
sales@esi-tec.com      www.esi-tec.com

# GS4200-USB<sup>©</sup> USB-POWERED DIGITAL PRESSURE TRANSDUCER

## SPECIFICATION

### PRESSURE RANGES:

500mbar to 1500bar, see table below for list of all standard pressure ranges.

### OVERPRESSURE:

Pressure can exceed rated range by the multiple shown below with no damage or change in calibration above  $\pm 0.5\%$ FS.

4x for 0.5bar range  
2x for ranges 1bar to 600bar  
1.5x for 1000bar  
1.1x for 1500bar

### OUTPUT SIGNAL:

USB 1.1 and USB 2.0 full speed connection.

### RECALIBRATION

Fully configured and re-calibrated via PC software, including pressure unit selection linearity and temperature compensation adjustment.

### SUPPLY VOLTAGE:

5Vdc via USB bus.

### COMBINED NON-LINEARITY AND HYSTERESIS:

$\pm 0.05\%$  FS best fit straight line definition.

### REPEATABILITY:

$\pm 0.1\%$  FS defined as maximum error between three consecutive pressure cycles.

### LONG TERM STABILITY:

0.1 % FS/year non-cumulative.

### PRESSURE MEDIA:

All fluids compatible with titanium alloy.

### RESOLUTION:

Up to 21 bit pressure measurement.

### OPERATING TEMPERATURE RANGE:

Ambient:  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$   
Media:  $-50^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$   
Storage:  $5^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$

### TEMPERATURE EFFECTS:

Typical thermal zero and span coefficients  $\pm 0.005\%$ FS/ $^{\circ}\text{C}$

### ELECTROMAGNETIC-COMPATIBILITY:

Emissions EN61000-6-4  
Immunity EN61000-6-2

Certification CE marked

### PRESSURE CONNECTION:

1/4" Male or F250-C (Autoclave)

### WEIGHT:

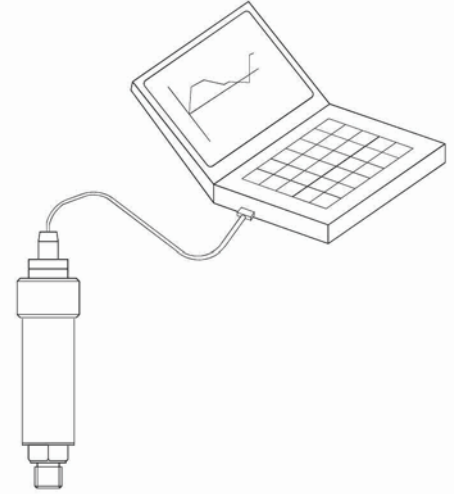
100grams for standard.

### ELECTRICAL CONNECTION:

Mating to USB Mini B socket for cable connection to PC

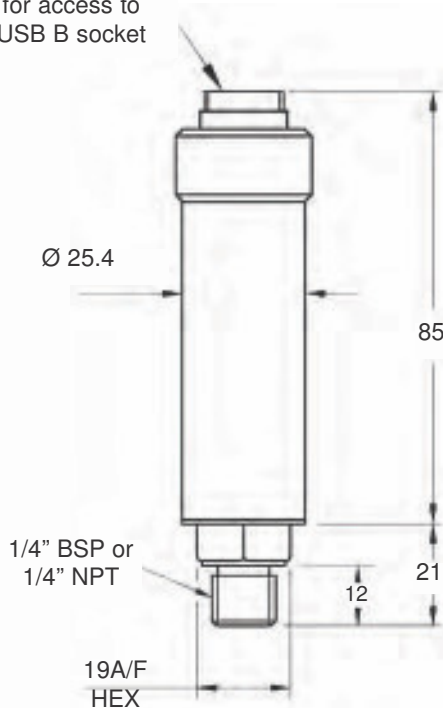
### PRESSURE REFERENCE:

Gauge or Absolute



## DIMENSIONS (in mm)

Remove dust cap  
for access to  
USB B socket



NB: FOR HIGH PRESSURE RANGES THE CONNECTION IS F250-C (AUTOCLAVE)

## ORDER DETAILS

State model number and pressure range required:-  
e.g. GS4200-USB 16bar

Model No.	DESCRIPTION
GS4200 - USB	USB digital pressure transducer

## PRESSURE RANGES

Type	Measurement Range
2.5bar	-1- 2.5bar
16bar	0-4 to 0-16bar
100bar	0-25 to 0-100bar
400bar	0-160 to 0-400bar
1500bar	0-600 to 0-1500bar
2000bar	0-2000bar
3000bar	0-3000bar

## CALIBRATION

All products manufactured by Ellison Sensors are calibrated using precision calibration equipment with traceability to international standards.

Ellison Sensors operates a policy of continuous product development. We reserve the right to change specification without prior notice.

Tel: +44 (0) 1978 262255



Fax: +44 (0) 1978 262233

**ellison sensors international**

Sensor House, Wrexham Technology Park, Wrexham, LL13 7YP, Wales, UK  
sales@esi-tec.com www.esi-tec.com