

Laboratory instrumentation and software

High performance pressure sensors



Key features

Covers depth and impact measurements

Two sensor head configurations available

17 mm diameter flush diaphragm sensor

0-5V DC output signal

Power and data acquisition for multiple sensors via TOPS unit

The high performance pressure sensors are ideally suited for measurements in hydraulic models.

These sensors can measure;

- > impact pressures on structures, with a flush mounted diaphragm with male G $\frac{1}{2}$ thread;
- > water depth or the wave pressure under rubble mounds, with a protective nose cone;
- > pressure in pipes or other vessels, with a male G $\frac{1}{4}$ thread.

The all welded diaphragm and body are manufactured from 316 stainless steel and the cable has an internal vent tube and strainer wire.

The sensing element consists of a micro-machined silicon diaphragm with piezo-resistive strain gauges diffused into the surface. The sensing element is mounted behind a thin diaphragm to produce a rugged assembly. The combined linearity and hysteresis errors are less than 0.25 % of full scale range.

Each pressure sensor can be connected to two data acquisition options:

Transducer Output and Power Supply unit (TOPS)

Pressure sensors can be supplied with a self-contained interface TOPS unit that feeds up to eight separate compatible pressure sensors in the range -10V to +10V to a data acquisition PC via a USB link. It has eight input sockets each able to supply 24V at approximately 100mA to any compatible sensor or transducer.

Power to the sensors is provided from an external desktop-style PSU and two panel-mounted LEDs provide power-on and USB activity indication. Readings can be viewed in your chosen data acquisition software, such as HRDAQ. Here, individual sensor calibrations can be added. Power lead, USB lead and USB driver software are also supplied.

Display unit

It is possible to supply a dedicated Network Instrument Display unit that is used to power one pressure sensor and provides a local display of the gauge output. In addition this unit provides a 0-5Vdc analogue output and also allows connection directly to a data acquisition PC through a standard RJ45 type network cable to digitally record the output. It is also possible to link the display unit up with seven other devices. The separate power supply allows the instrument to be used with either 110V AC or 220V AC supplies.

Specifications

Sensor

Full scale range (m WG)	2	5	10	20	50
Max over pressure (m WG)	4	4	4	12	40
Flush face		✓	✓	✓	✓
Threaded adaptor	✓	✓	✓	✓	✓
Resonant frequency in air	2 kHz				
Flush face diaphragm diameter	17 mm				
Combined non-linearity and hysteresis	0.5 % full scale all ranges				
Temperature effects	± 1.0 % FS/°C over 0-50°C				

TOPS unit

Display	None
Unit supply	24V DC or 90-240V AC
Unit output - analogue	None
Unit output - digital	USB 2.0
Case dimensions	250 x 230 x 85mm (Including connectors)
Unit weight	500g (1.4Kgs Inc power supply pack)



Display unit

Display supply	100 – 240V AC (40 – 60Hz)
System resolution	12 Bit
Unit output - analogue	0-5V DC
Unit output - digital	RJ45 Ethernet (UDP)
Case dimensions	128 x 33 x 180 mm (Including connectors)
Unit weight	750g (1.65Kgs including the power supply pack)

