

CALplug™

Pressure-Indicating Spark Plug



- Miniature (1.5mm ø) Pressure Sensor Integrated with Production Spark Plug
- Flush Mounted Sensor Eliminates Channel Errors
- Matches Performance of Water-Cooled Head-Mounted Piezoelectric Transducers
- $\pm 1\%$ Full Scale Output Total Pressure Reading Accuracy
- User-Selected, Modified Production Spark Plug Retains Original Thermal and Electrical Characteristics
- Ideal for High Speed Engines
- Inexpensive and Durable

CALplug™ combines a user-selected, modified production spark plug with Optrand's 1.5mm diameter fiber optic based pressure sensor flush mounted in the spark plug shell. By permanently mounting the temperature compensated AutoPSI-TC transducer in the spark plug, the calibrated $\pm 1\%$ Full Scale Output pressure reading accuracy is achieved, including the linearity & hysteresis, thermal shock, repeatability, and calibration stability. Thus, the CALplug is the world's only pressure indicating device that offers performance of water-cooled head-mounted sensors, without the need for engine head drilling and sensor water cooling, at a fraction of cost.

The CALplug has been specifically designed for engine knock detection, calibration, and mapping applications. When used with portable data acquisition equipment, the CALplug is the perfect device for in-vehicle operation. In addition the CALplug is particularly suitable for racing applications where a flush mounted sensor eliminates any channel artifacts under high RPMs.

Specifications

<i>Pressure Range</i>	0-100 bar (~1,500 psi)
	0-200bar (~3,000 psi)
<i>Over Pressure</i>	1.5 x Pressure Range
<i>Accuracy</i>	±1% FSO
<i>Frequency Range</i>	0.1 Hz to 15 kHz
	0.1 Hz to 30 kHz
<i>Sensor Output Signal</i>	Analog, 0.5V to 5V
<i>Power Supply</i>	9 to 18V DC
<i>Fibe-Optic Cable Operating Temperature Range</i>	-40° to 200°C (~390°F)
<i>Fiber-Optic Cable Length</i>	2m (6.5') Standard; Custom Length Optional
<i>Fiber-Optic Cable Minimum Bending Radius</i>	5mm (5/16")
<i>Signal Conditioner Operating Temperature Range</i>	-40 to 65°C (~150°F)
	-40 to 125°C (~260°F)
<i>Output Impedance</i>	250 ohm
<i>Spark Plug Thread Sizes</i>	M14 through M18