Delphi Flat Response Knock Sensor

Delphi offers sensors and actuators that can help provide essential data and control for all major powertrain management and chassis systems. With global capabilities, Delphi has the experience and the expertise to provide a single device or a multifunctional "smart" module to meet specific customer needs.

Description – Delphi's flat response knock sensor is a self-generating piezoelectric sensor. Mounted on an engine block or cylinder head, it produces an output voltage in proportion to the engine vibrations caused by knock. When knock is present on the sensor signal, the powertrain control module (PCM) controls knock by retarding spark timing.

Typical Application – The Delphi flat response knock sensor is designed for use on any spark ignition engine, including two stroke engines, alternative fuel engines, and flexible fuel engines.

Performance Advantages – The Delphi flat response knock sensor has a flat frequency response over the range of 5 to 18 kHz. This allows the same sensor to be used on different engines by simply adjusting the filter frequency of the signal processing electronics to match the knock frequency of the engine. In addition, the sensor responds to knock frequencies higher than the primary knock frequency. This allows the higher knock frequencies to be used by a control system, either individually or combined with the primary knock frequency.

Features	Benefits
Self-generating piezoelectric design	– No power to sensor is needed
Flat frequency response	– The same sensor can be used on different engines; sensor responds to knock frequencies higher than the primary frequency
Ground-isolated design with two-wire shielded harness	– Designed to protect sensor signal from electro-magnetic interference (EMI)
Large mounting hole	– Accommodates mounting bolts up to 10 mm in diameter

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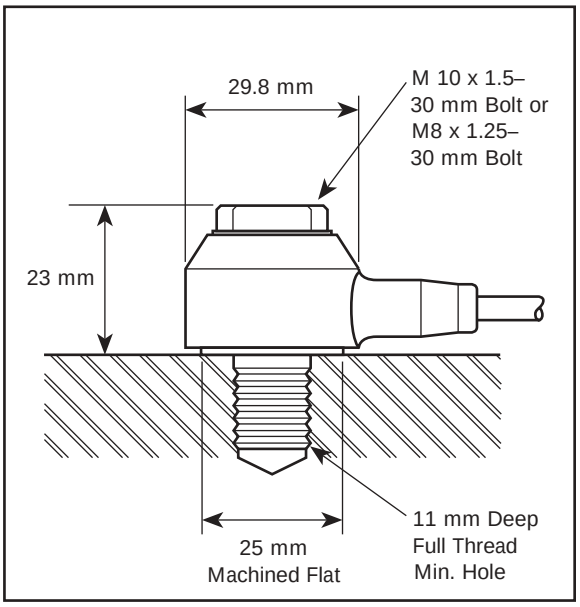
Specifications	
Voltage output	Average output 27 ± 10 mV/g over 5 to 18 kHz into a 100 KOhm resistive load
Linearity	Output stays within a ± 15 percent of average value at the limits of 5 to 18 kHz
Mounting hole	Accommodates mounting bolts up to 10 mm in diameter
Operating temperature range	-40°C to 150°C
Environment	Sensor and connector are sealed to withstand humidity, salt spray, automotive fluids, and general underhood automotive environment
Electrical connectors	Various harness lengths, alternative connectors, or connector at sensor body can be accommodated

Typical Installation



Typical Transfer Function Axial Input Only