

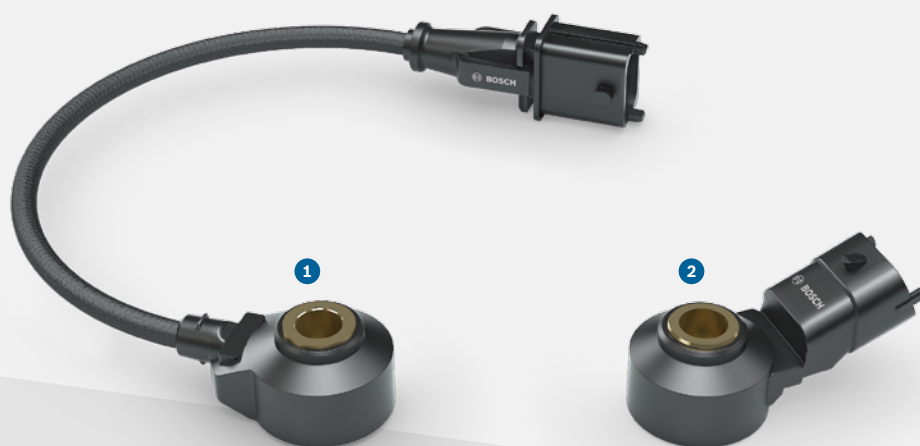
Engine management

Knock sensor



BOSCH

Invented for life



PRODUCT BENEFITS

- ▶ Linear characteristics also at high frequencies
- ▶ Very high temperature resistance up to 160 °C
- ▶ Robust and compact design
- ▶ Reliable signal output to trigger knock-control function at different circumstances (various fuel qualities)

1 Knock sensor KS-4-K1

2 Knock sensor KS-4-S



up to
160 °C

Even at very high temperatures, the knock sensor operates safely and reliably.

TASK

“Knocking” occurs when the air-fuel mixture self ignites prematurely. Sustained knocking combustion causes damage primarily to the cylinder head gasket and cylinder head. The risk of knocking can be reduced by moving the ignition point toward “late”. The aim is to obtain the maximum energy yield from any fuel quality by starting ignition as early as possible. Engines with knock control can achieve up to 9% fuel savings and 5% torque increase.

FUNCTION

The knock sensor is mounted on the crankcase and measures the structure-borne noise using a piezoelectric measuring element. Knocking is discernible by its higher sound frequencies.

more than
1,000 cycles

The knock sensor is extremely robust against changes in temperature.

TECHNICAL CHARACTERISTICS

Characteristics	linear over a large frequency range
Operating temperature range	-40 °C to +160 °C
Technology	piezoelectric measuring element (ring-shaped piezo ceramic)
Type	direct connector or cable type

- 1 Seismic mass
- 2 Over-molding
- 3 Pressure sleeve
- 4 Disk spring
- 5 Insulation ring
- 6 Contact plate
- 7 Direct connector or cable (optional)
- 8 Shunt resistor (optional)
- 9 Piezo ceramic element

