

Tips & Technology

For Bosch Partners

Current topics for successful workshops No. 66/2013

Electrics / Electronics



BOSCH

Invented for life

Sensors – Applications and Features

The Bosch sensors program offers over 2 100 different products in original-equipment quality. All Bosch sensors are perfectly attuned to the respective vehicle and easy to replace. Bosch is offering all important types of sensors – ranging from engine management to driving safety.

Angular-Position Sensors



PN 0265 0054XX

Applications:

Angular-position sensor used for ESP® measurement of the opening angle of the throttle valve influencing the amount of fuel injected, door / window opening angle, setting-lever angles in monitoring and control installations.

Features:

- Multiturn capability
- CAN interface
- Self-diagnostic function
- Steering-angle detection: -780 to +780 °
- Throttle sensor: 0 - 86 °

Yaw Sensors



PN 02650056XX

Applications:

Stabilization of motor vehicles, commercial vehicles, agricultural and forestry vehicles. Used on vehicle-dynamics control (ESP®) to measure yaw rate and lateral acceleration, and for vehicle-navigation and vehicle-stability systems.

Features:

- Flexible sensor cluster with highly integrated electronics
- Multiple use of sensor signals for future highly dynamic safety and convenience systems

Rotational-Speed Sensors



PN 0265006XXX

Applications:

Wheel-speed measurement for ABS/ TCS/ESP®, acceleration and deceleration measurement for safety, control and protective systems in lifts, cableways, forklift trucks, conveyor belts, machines, wind-power stations.

Features:

- Contactless and thus wear-free measurement of rotational speed
- Robust construction for heavy strains
- Direction-dependent measurement

Camshaft Sensors



PN 0232101XXX, 0232103XXX

Applications:

Angle for engine management: Camshaft sensors detect the camshaft position for the injection sequence.

Features:

- Contactless position detection
- Reliable digital measurement of angles and distances

Crankshaft Sensors



PN 0261210XXX

Applications:

Detection of the engine speed: The engine speed is the main control variable for the ignition timing.

Features:

- Precise digital measurement of rotational speeds
- Contactless
- Resistant to mineral-oil products

Knock Sensors



PN 0261231XXX

Applications:

Engine-knock detection for anti-knock control in engine-management systems: Engine vibrations of combustion engines are registered to set the ignition timing. Reliable detection of structure-borne sound to protect machines and engines.

Features:

- Broadband type, 5 to 22 kHz
- Linear characteristics over large frequency range
- Monitoring of structure-borne sounds, cavitations detection, reduced fuel consumption

Hall-Effect Crankshaft Sensors



PN 0265006XXX, 0265007XXX

Applications:

Measurement of rotational and engine speeds: Contactless displacement and angular measurement, definition of end and limit settings for motor vehicles, industrial machines, robots, and installations of all types.

Features:

- Precise and reliable digital measurement of speeds, angles and distances
- Measurement of speed and detection of direction
- Resistant to media

Differential-Pressure Sensors



PN 0 261 230 XXX, 0 281 002 7 XX

Applications:

Measurement of the pressure within the fuel lines: monitoring of overpressure and negative pressure, pressure limiters, filled-level measurement.

Features:

- Measurement of gas-pressure differences for pressure compensation, overpressure and negative-pressure monitoring
- Highly accurate and equipped with temperature compensation

Absolute-Pressure Sensors



PN 0 261 230 XXX, 0 281 002 4 XX, 5 XX, 6 XX

Applications:

Measurement of the intake-manifold pressure, measurement of the charge-air pressure for the injection of the optimal amount of fuel, pressure control in electronic vacuum cleaners, monitoring of pneumatic production lines, meters for air-pressure, altitude, blood pressure, manometers, storm-warning devices.

Features:

- With integrated analytic circuit for signal amplification, temperature compensation and characteristic-curve setting
- Extremely sturdy design

High-Pressure Sensors



PN 0261545XXX, 0281002XXX

Applications:

Pressure sensors of this type are used in motor vehicles to measure the pressure in braking systems, in the fuel rail of gasoline direct-injection engines or in the commonrail system of diesel engines.

Features:

- Excellent media resistance as the medium only comes into contact with stainless steel
- Resistant to brake fluids, mineral oils, fuel, water and air
- Offset and sensitivity self-monitoring

Pressure Sensors for CNG and LPG



PN 0261230XXX, 0280005620 , 0280006243

Applications:

Measurement of pressures in the context of CNG or LPG applications. Applicable just like any other pressure sensor.

Features:

- All sensors are resistant to fuels (including diesel) and oils, e.g. engine oil
- With temperature compensation

Air-Mass Meters



PN 0280218XXX, 0281006XXX

Applications:

Flow-rate measurement of the intake air. Important for the correct composition of the air-fuel mixture.

Features:

- Fast response time
- Compact design
- Return-flow detection

Lambda Sensors



PN 0258XXXXXX

Applications:

Optimized control of the combustion for reduced emissions. Emission control for millions of vehicles

Features:

- The LSU wide-band lambda sensor is a planar ZrO₂ two-cell limit-current sensor with integrated heater
- It is suitable to measure the oxygen content and the λ value of exhaust gases in vehicle engines
- A constant characteristic curve in the range from $\lambda = 0.65$ to air makes it suitable for universal use for $\lambda = 1$ and for other ranges

NTC Temperature Sensors



PN 0280130XXX

Applications:

Display of outside and inside temperature, control of air conditioners and inside temperature, control of radiators and thermostats, measurement of lube-oil, coolant, and engine temperature.

Features:

- Measurement with temperature-sensitive NTC resistors
- Broad temperature range