



**PI 1978**

For technical personnel only!

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# PRODUCT INFORMATION

## EXHAUST GAS TEMPERATURE SENSORS

Exhaust gas temperature sensors are essential for preventing components in the hot exhaust gas flow from overheating.

Motorservice offers more than 130 exhaust gas temperature sensors, which cover around 1,700 vehicle types. These articles complement the existing Pierburg range of lambda sensors and differential pressure sensors, which are also used in the exhaust gas flow.

This range of OE-quality sensors has a potential market of more than 34 million vehicles in Europe alone, with multiple sensors frequently fitted in each vehicle.

New products are added to the range all the time.

**MORE THAN 130 ARTICLES**  
**1,700 VEHICLE TYPES**  
**34 MILLION VEHICLES**



The four exhaust gas temperature sensors in a Mercedes-Benz E-Class (W212.202)

OEM	Potential <sup>1)</sup> in Europe	Pierburg no.
ALFA ROMEO, FIAT, JEEP, LANCIA, CITROËN, PEUGEOT	1,600,000	7.08369.35.0/.57.0/.71.0/.98.0/.99.0; 7.11020.04.0/.08.0/.09.0/.10.0/.15.0
CHEVROLET, OPEL, SAAB, VAUXHALL	3,800,000	7.08369.05.0/.15.0/.17.0/.32.0/.38.0/.46.0/.49.0/.54.0/.67.0/.70.0/.74.0/.75.0; 7.11020.27.0/.34.0
MERCEDES-BENZ, SMART	6,800,000	7.08369.06.0/.12.0/.30.0/.51.0/.60.0/.61.0/.76.0/.77.0/.80.0/.85.0/.87.0/.88.0/.89.0/.90.0/.91.0/.94.0/.97.0; 7.11020.00.0/.01.0/.05.0/.11.0/.12.0/.28.0/.29.0/.30.0/0.32.0/.33.0
AUDI, SEAT, SKODA, VW	20,900,000	7.08369.00.0 ... .04.0/.07.0 ... .09.0/.11.0/.13.0/.14.0/.16.0/.18.0 ... .26.0/.31.0/.33.0/.34.0/.36.0/.37.0/ .39.0 ... .45.0/.47.0/.48.0/.50.0/.52.0/.53.0/.56.0/.58.0/.59.0/.62.0 ... .66.0/.68.0/.72.0/.73.0/.78.0/.79.0/.81.0 ... .84.0/.86.0/.92.0/.93.0/.95.0/.96.0; 7.11020.02.0/.03.0/.06.0/.07.0/.17.0 ... .26.0/.31.0
VOLVO	1,000,000	7.08369.27.0/.55.0/.69.0; 7.11020.13.0/.14.0
<b>Σ 34,100,000</b>		

1) Fleet, i.e. number of vehicles covered

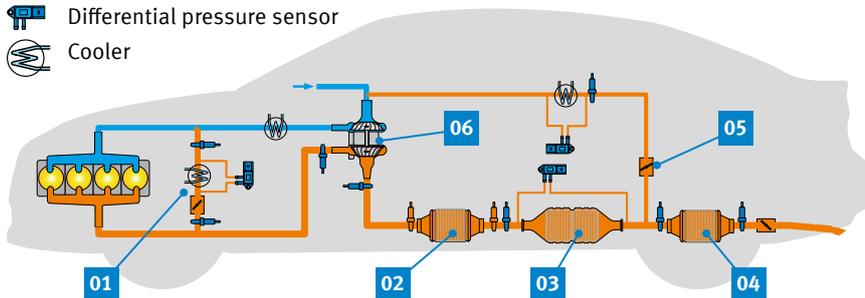
All content including pictures and diagrams is subject to change. For assignment and replacement, refer to the current catalogues or systems based on TecAlliance.



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-  Exhaust gas temperature sensor
-  Lambda sensor
-  Differential pressure sensor
-  Cooler



- 01 EGR valve / EGR cooler
- 02 Oxidation catalytic converter (diesel)
- 03 Diesel particulate filter
- 04 SCR catalytic converter
- 05 Low-pressure EGR valve
- 06 Turbocharger

### APPLICATIONS

Typical applications include:

- Protecting temperature-sensitive components, such as turbochargers and all types of catalytic converters (three-way, NO<sub>x</sub> storage, SCR or oxidation catalytic converters)
- Monitoring the diesel particulate filter burn-off (regeneration) process
- Monitoring the optimal temperature window of catalytic converters
- Measuring the EGR exhaust gas temperature as part of on-board diagnostics (OBD)

Emission control systems are becoming more extensive and complex as a result of increasingly stringent emissions regulations.

One consequence of these changes is the fact that temperature monitoring is required for an ever-greater number of components in the exhaust tract, such as gasoline particulate filters for petrol engines.



### NOTE

There are often multiple exhaust gas temperature sensors fitted in a single vehicle. For this reason, please check the specified installation location when ordering.

### DESIGNS

The actual measuring element is a semiconductor resistor. As the temperature rises, the resistance increases (PTC) or decreases (NTC).

A temperature is assigned to each measured resistance value in the control unit.

On "open" models, the protective tube has holes around the measuring tip. Open models have a short response time but are more sensitive to soiling.

Models with a "closed" protective tube are not affected by soot deposits. However, they respond more slowly and transfer more heat to the surrounding area via the protective tube.

### CHARACTERISTICS

- Used with petrol and diesel engines
- Temperature range: -40 ... +1,000°C
- High precision, short response time
- High long-term stability
- Resilient to mechanical, thermal and chemical stress
- NTC or PTC variants
- Open or closed models
- Vehicle-specific cable lengths and plug types

### DAMAGE – CAUSES AND CONSEQUENCES

Exhaust gas temperature sensors are subject to a certain amount of wear, which can increase under adverse conditions: Severe shocks and vibrations can cause mechanical damage to an exhaust gas temperature sensor.

Excessively high temperatures resulting from scenarios such as incorrect mixture formation can lead to a shift in the characteristic curve.

Poor start-up behaviour and handling may indicate a defective exhaust gas temperature sensor.

The diesel particulate filter may require regeneration at shorter intervals than usual or the process may take significantly longer than normal. This can lead to engine control errors and therefore increased fuel consumption, or even damage to the engine.

Selecting a high-quality product is vital for all of these reasons.