

# Transmission technology

Transmission sensors



**BOSCH**

Invented for life



## PRODUCT BENEFITS

- ▶ Robust design
- ▶ High measuring precision and reliability
- ▶ For flexible use with different transmission types
- ▶ High media resistance

1 Transmission pressure sensor

2 Transmission speed sensor



# flexible design

of the transmission speed sensor for different installation space requirements

## TASK

Transmission speed sensors detect the input, output or intermediate speed of the transmission and transmit this information to the transmission control unit (TCU). The TCU uses this signal to regulate the shifting pressure and to decide upon the gear to be engaged. The transmission pressure sensor measures the pressure of the hydraulic oil in different transmission applications and contributes to precisely and reliably realizing the shifting pressure.

## FUNCTION

The transmission speed sensor is built as Hall or inductive sensor. The sensor performs contactless scanning of the steel or multipole trigger wheels. The sensor element of the transmission pressure sensor consists of a membrane, that is deformed by the applied pressure. The deformation will be converted into an electric voltage which is proportional to the pressure. The voltage is then amplified and digitalized by an electronic evaluation circuit.

## VARIANTS

Transmission speed sensors from Bosch are available as active or inductive variants. The active variant is characterized by its high electromagnetic compatibility (EMC/ESD), a small and flexible design, low weight and an optional rotation direction recognition. The inductive variant convinces with a high output signal at low speed and a position-independent mounting (TIM).

For transmission pressure sensors different plug and hydraulic connections are possible. A mounting position inside or outside of transmission is possible.

# increased driving comfort

due to improved shifting and clutch reaction with the transmission pressure sensor

## TECHNICAL FEATURES TRANSMISSION SPEED SENSOR

	active	inductive
Function principle	differential Hall (multiple Hall principle) with or without rotation direction recognition	inductive
Temperature range	–40 to +150 °C	–40 to +130 °C
Trigger wheel	steel or multipole trigger wheel	steel trigger wheel

## TECHNICAL FEATURES TRANSMISSION PRESSURE SENSOR

	high-pressure	medium-pressure
Mounting place	in or on transmission	
Technology	steel membrane with metal thin-film strain gauges on top and hermetic sealing	silicium membrane with Wheatstone bridge for signal processing
Circuit	digital	digital
Output signal	analog (digital)	analog (digital)
Connector	oil-tight	oil-tight
Characteristics	5 V	5 V
Pressure range	7 MPa	2.5 MPa
Fault diagnostics	by way of a signal range test	by way of a signal range test
Sealing	O-ring	O-ring