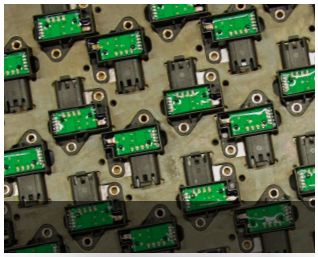


TE Connectivity's

SENSOR TECHNOLOGIES

for the Automotive Industry

Platform Sensors

INTRODUCTION

In the automotive industry, development time is a key factor for successful market positioning. TE Connectivity's answer is a platform strategy for non-contact travel, angle and speed sensors.

Standardized designs and production processes offer short-term availability of fully functional sensors for system testing and low-volume production. Depending on the field of application, different technologies will be used.

The first platform is the PLCD travel sensor for measurement ranges up to 55mm. Thanks to the system's robustness, the possibility of large-scale integration and the high linear performance of PLCD in high-vibration and high-temperature applications, this technology is preferred for harsh environment systems (e.g. transmission, clutch).

The second platform TE Connectivity can offer is the hall technology based travel and angular sensor for measurement ranges up to 40mm or angle up to 360°. Travel and angle measurement can be realized within one sensor package. The hall technology used is a 2D/3D measurement principle that results in a significant measurement performance increase compared to existing hall sensors.

This sensor exhibits high performance related to linearity error and temperature drift. It also enables the opportunity to incorporate 12V board net supply, safety level B according ISO 26262 and up to three outputs, which can operate as programmable linear or switch outputs.

Compared to inductive systems, TE Connectivity's hall sensor platform needs a minimum of space and makes more cost-effective production possible. Our platform sensors are all suitable for IP class applications of 69K, which makes them suitable for harsh automotive environments. At the same time, the hall platform sensors can be programmed to suit customer specifications regarding measurement range and electrical interface (PWM or analog).

Our third platform is the speed sensor for gear speed measurement. This back-biased hall sensor is triggered by ferromagnetic gear or tone wheel. Thanks to its compact and robust packaging with integrated sealed connector interface (IP69K), it can be used for all kinds of application (e.g. transmission). The sensor also provides diagnostic functionality, thanks to two-wire technology, and is validated for a temperature range from -40° C to +150° C.

Multi-Coil Resolver (MCR)

Industry	Automotive
Application	E-Motor for hybrid and electrical vehicles
Functions	Measuring rotor position of E-Motor
Technology	MCR (Multi-Coil Resolver)
Features	• Non-contact measurement of rotor position • Analog output • High accuracy • Temperature up to +150° C • Rotational speed up to 20.000 rpm • Adaptable to pole pairs of E-Motor

Single Coil Resolver (SCR)

Industry	Automotive
Application	E-Motor for hybrid and electrical vehicles
Functions	Measuring rotor position of E-Motor
Technology	SCR (Single Coil Resolver)
Features	• Non-contact measurement of rotor position • Analog output • High accuracy for high temperature applications • Slim design for IMG applications in combination with oil • Rotational speed up to 20.000 rpm • Adaptable to pole pairs of E-Motor

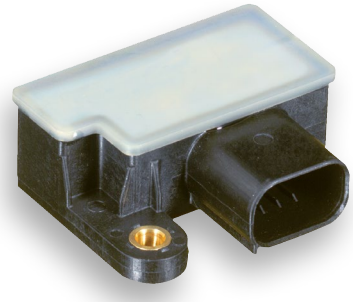
Speed Sensor

Industry	Automotive
Application	Transmission
Functions	Measuring gear speed
Technology	Hall (with integrated magnet)
Features	• Triggered by ferromagnetic gear wheel • Current interface with direction detection • Sealed connector interface • Diagnostics ability due to two-wire interface • IP6K9 • Temperature range –40° C up to +150° C

H2TG/D Defogging Sensor

Industry	Automotive
Application	Cabin energy management and defogging (HVAC)
Functions	Measuring dew point and windshield temperature measurement
Technology	Capacitive
Features	• Humidity range: 0 % RH to 100 % RH • Temperature range: -40° C to +125° C • Calibration: ± 1.5° DP at 10° C, ± 0.8° C at 25° C • Operating voltage: 12 V • Analog and digital (LIN) output

PLCD-15M

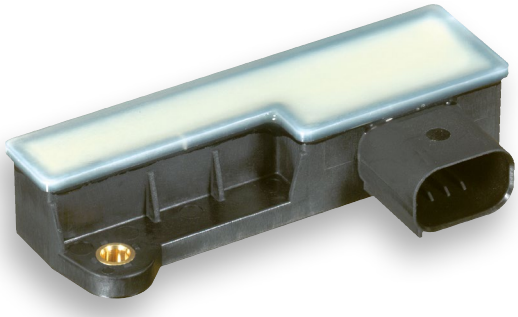


Industry	Automotive
Application	Transmission, Chassis, Engine
Functions	Measuring travel or angle position
Technology	Active PLCD (moving magnet)
Features	• Measurement range 5–18mm • Highly insensitive to vibration • Temperature up to 150° C • Redundancy possible • Analog or PWM interface • Supply 5V (optional 12V) • 4-way MQS sealed contact • Wide range of magnet design

PLCD-25M

Industry	Automotive
Application	Transmission, Brake, Clutch, Steering, Engine
Functions	Measuring travel or angle position
Technology	Active PLCD (moving magnet)
Features	• Measurement range 15–28mm • Highly insensitive to vibration • Temperature up to 150° C • Redundancy possible • Analog or PWM interface • Supply 5V (optional 12V) • 4-way MQS sealed contact • Wide range of magnet design

PLCD-50M



Industry	Automotive
Application	Transmission, Brake, Clutch, Steering, Engine
Functions	Measuring travel or angle position
Technology	Active PLCD (moving magnet)
Features	• Measurement range 25–53mm • Highly insensitive to vibration • Temperature up to 150° C • Redundancy possible • Analog or PWM interface • Supply 5V (optional 12V) • 4-way MQS sealed contact • Wide range of magnet design