

## Ready-to-fit modules

### Measurement with long-term stability – TorqueSense

In order to achieve maximum efficiency in industrial drive trains and processes, it is essential to have precise knowledge of the torque and its distribution.

Schaeffler's TorqueSense torque measurement module offers a mechatronic solution that allows applications and processes to be monitored and controlled with significantly greater precision as the torque is recorded right where it is applied.

#### Features:

- High resolution, high linearity, and high repeat accuracy
- Resistant to shocks, vibrations, and temperatures
- Wear-free due to non-contact scanning
- Optionally available with speed measurement and detection of the direction of rotation
- Torque signal via an analog voltage output or a CAN field bus
- Non-contact measurement directly on the machine element that is subjected to load
- Simple installation and initial operation



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Digitalization

**SCHAEFFLER**



We pioneer motion

## TorqueSense

Torque measurement module

# Enhance availability and increase productivity

Added value through digitalization



### Tangibly shape Industry 4.0 with Schaeffler

The digital revolution and the linking of components and systems increase the efficiency of machines and equipment. Schaeffler is actively shaping this digital transformation. You too can benefit from our proven Industry 4.0 solutions.

Our systems and components are installed in machines at exactly the points where the most important data are generated. Schaeffler

components are equipped with intelligent sensors that make them essential enablers for Industry 4.0. Customers benefit from Schaeffler's domain know-how: Sensor solutions and cloud-based digital services continuously provide you with information on the condition of your machines and equipment.

### Directly from practical application

Schaeffler is putting Industry 4.0 into practice – for increased customer benefit, sustainability, and efficiency. Even today, customers from a range of sectors are already reaping the benefits of our 4.0 solutions. Smart sensors such as the TorqueSense from Schaeffler record data at the central points of any type of machine during operation. When combined with Schaeffler's system and modeling expertise, these operating data form the basis for a digital image of the machine that makes further analyses and digital services possible.

Contact us to find out how you too can benefit from Schaeffler's Industry 4.0 solutions.

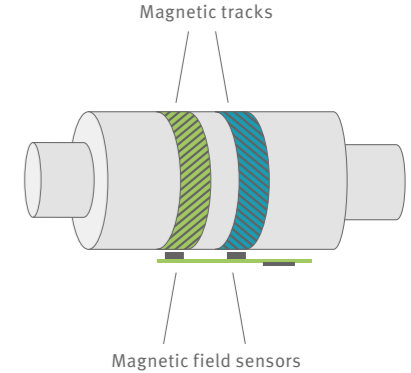
# Schaeffler TorqueSense

Recording of the torque signals that are relevant for the drive train with optional speed measurement directly on the rotating machine element. The non-contact measurement is carried out using a robust and ready-to-fit sensor unit.



### Functional principle:

The Schaeffler TorqueSense comprises a magnetically coded shaft section, a sensor housing, a cable, a plug, and a standard electrical interface. The magnetically coded shaft with multiple measuring tracks is the primary part. The secondary part (the magnetic field sensors and an additional signal processing unit) is fitted in the housing. With Schaeffler TorqueSense, customer and application-specific shaft diameters of up to approximately 45 mm are possible. The measuring range is from 0 to 4,000 Nm. The sensors have high linearity and extremely small hysteresis due to the measurement principle used.



The application of torque to a magnetized shaft changes its magnetic field. The sensor function is primarily based on the linearity between the torque and the magnetic field.