The ROTEC sensors described here are designed for non-contact measurement of the rotational speed of a toothed wheel. Each sensor consists of two magnetoresistive elements and a permanent magnet enclosed in a stainless steel cylindrical housing with M10x1 outer thread. The sensor itself is entirely passive. For operation it requires an accompanying electronic unit which converts its analogue output to a TTL signal. The sensor exhibits minimal temperature dependence and its operation is not impaired by dirt or oil films. The output signal amplitude is independent of the rotational speed. A variety of lengths and designs is available.

**MEASUREMENT PRINCIPLE:**

1. Scanning of toothed wheel
2. Differential sensor: Magnetoresistors
   Permanent magnet
3. TTL output signal from electronic unit
4. Times when positive edges are detected are shown by the measurement system

**TECHNICAL SPECIFICATIONS**

- Gearwheel frequency from ROTEC-sensors: 0.1 Hz up to 20 kHz
- Frequency of the DSA: < 70 kHz
- Ferromagnetic target wheel module 0.6 to 2.4
  pitch 1.9 mm to 7.7 mm
- Sensing gap: 0 to 5 mm
- Temperature range: -15°C to + 80°C
  (for high temperature sensors up to + 120°C)
- Min. sensitivity of DSA: 5 mV
- Max. input-voltage DSA: 10 V

The sensor’s stainless steel cylindrical housing has an M10x1 outer thread. The target wheel should have a gear module in the range 0.6 to 2.4 mm, a pitch between 1.9 and 7.7 mm and a thickness of at least 5 mm. A sensing gap from sensor to wheel of up to 5 mm is allowed for. Differential magnetoresistive sensors need to be carefully positioned for both optimal adjustment of orientation w.r.t. the target wheel and setting of sensing distance.

It is recommended to use the DSA only with ROTEC-sensors. When it is technically necessary to use non-ROTEC-sensors, please be sure that the sensor’s output voltage must not exceed the limitation of -10 V to +10 V, as this will cause unplausible signals at the analog scope-output and may damage the device.
Standard Speed Sensors

- Sensor Type A
- Sensor Type B
- Sensor Type C
- Cable for Sensor Type B and C
- Differential Sensor Adapter
- High temperature versions