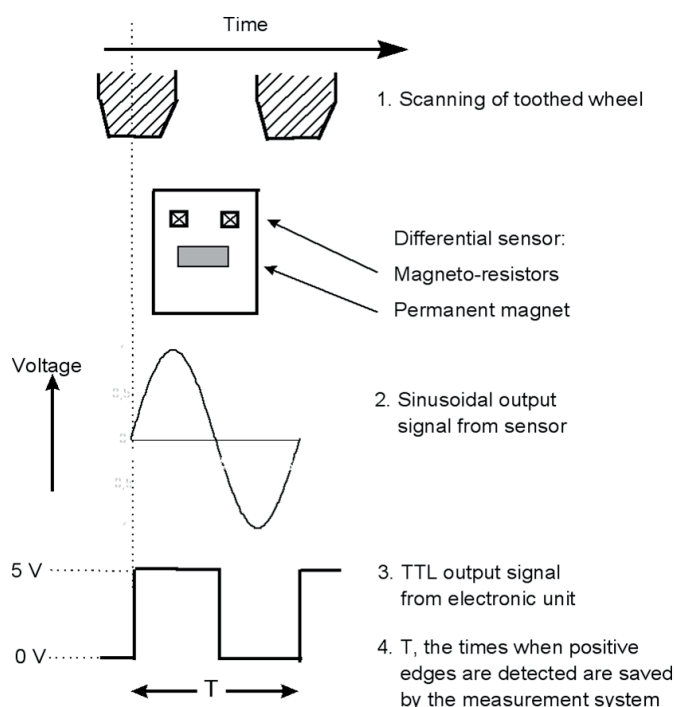**VISPIRON ROTEC**

Standard Speed Sensors

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.

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. The electronic unit operates for the tooth frequency range 0.1 Hz to 20 kHz, i.e. a tooth must be detected at least once every ten seconds. 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.

Measurement Principle:

1. Scanning of toothed wheel

Differential sensor:
Magneto-resistors
Permanent magnet

2. Sinusoidal output signal from sensor

3. TTL output signal from electronic unit

4. T, the times when positive edges are detected are saved by the measurement system

Technical Specifications	

• outer thread M10x1
• ferromagnetic target wheel
   • module 0.6 to 2.4
   • pitch 1.9 mm to 7.7 mm
• tooth frequency range: 0.1 Hz to 20 kHz
• sensing gap: 0 to 5 mm
• pulse width: 10 ns
	• sensor electronic:
	   • input 5 mV up to approx. 80 V
	   • output square wave TTL (0/5 V)
	• temperature range: -15°C to + 80°C
	  (for high temperature
	  sensors up to + 120°C)

Standard Speed Sensors

Sensor Type A
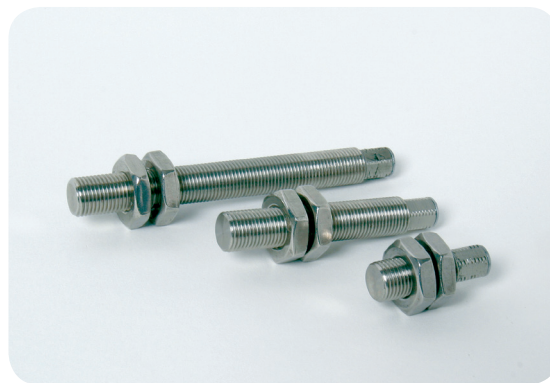
Sensor Type B

Sensor Type C

Cable for Sensor Type B and C

Standard Sensor Electronic Unit

Inline Sensor Electronic Unit