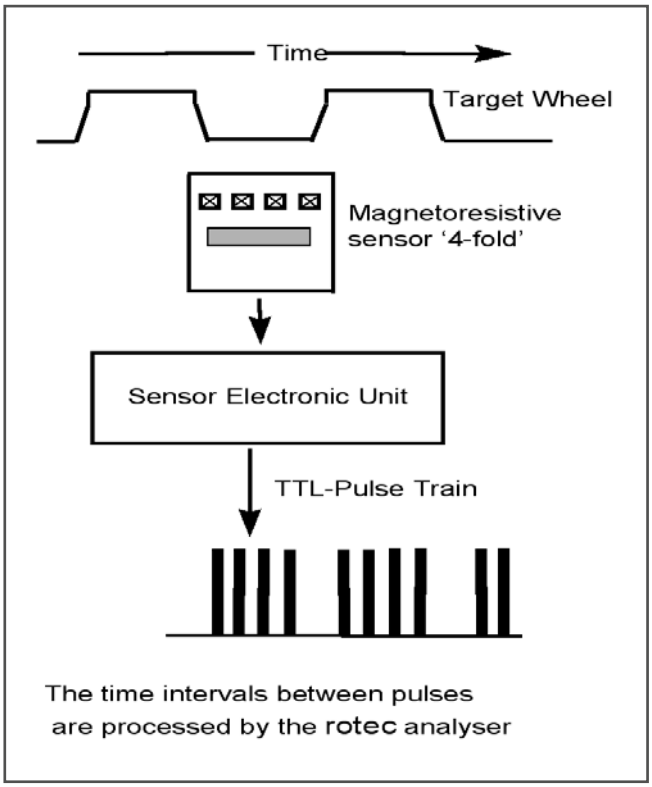
4-fold Speed Sensor

The ROTEC 4-fold sensor is used in order to increase the angular resolution of rotational speed measurements. The sensor is used when the target wheels have a relatively small number of teeth, e.g. chain sprockets or gears within a gearbox. Each scanned tooth provides four data points. The sensor comprises four magnetoresistive elements with a permanent magnet enclosed in a stainless steel casing with M10x1 outer thread. The sensor requires an accompanying electronic unit which converts its analogue output voltage to square wave TTL level. The sensor is contactless, exhibits minimal temperature dependence and its operation is not impaired by dirt or oil films.

The sensor's stainless steel cylindrical housing has an M10x1 outer thread. The target wheel should have a pitch around 2.5 mm and a thickness of at least 5 mm. A sensing gap from sensor to wheel of up to 1.5 mm is allowed for. The electronic unit operates for a tooth frequency between 1 Hz and approx. 45 kHz. The magnetoresistive arrangements require the sensor to be properly aligned for both optimal adjustment of orientation w.r.t. the target wheel and setting of sensing distance. An 8-fold sensor providing eight pulses per tooth is also available.

Measurement Principle:



Technical Specifications

- outer thread M10x1
- target wheel made of ferromagnetic material:
  pitch approx. 2.5 mm
- sensing gap: up to 1.5 mm
- tooth frequency range: 1 Hz to approx. 45 kHz
- sensor only analog Typ A