ELEN
industrial vehicles sensors

SPEED SENSORS

SPEED SENSORS – Product features

Hall-effect speed sensors detect the rotation of any kind of ferrous material endowed with protruding parts, usually gear units and phonic wheels. They integrate an hall-effect reverse polarized electronic chip, that detects the change of the magnetic field in the wheel's full-empty space, by giving a frequency digital output signal. In double output versions , through the reading of the two A and B signals, it is possible to determine the clockwise and counter-clockwise direction; more in details, the rotation direction is revealed through a square-wave signal detecting the time delay or in advance between the two signals or, in alternative, through a switch signal.
They are typically used on motors, transmissions, differential axles, turbines and pumps, and they can operate in the hardest conditions concerning temperature, pressure, vibrations, electromagnetic interferences and external agents. Output signals are available in many different configurations and diagnostics, as for example: CAN BUS protocol, current output signal and innovative "ALIVE" feature.

HIGH-PERFORMANCE

- Operating frequency from 50 HZ to 30,000 HZ
- Zero speed (position reading even when wheel is still)
- Air gap: 2 mm
- Signal shifting accuracy (2 outputs version) ±20°

VERSATILE

- Voltage (NPN, PNP, Push-pull), current and CAN BUS output signal
- Single or double output signal
- Pull-up or pull-down inner resistor (optional)
- Available fixings: adjustable, flanged, with union nut; Configurations can be completely customized
- Special versions for high pressure with o-ring seal and increased thickness of the bottom surface
- Cable length and connector at customer's

RELIABLE

- Working temperature from -40°C to +150°C
- High-pressure resistance till 500 bar
- Immunity to vibrations and electromagnetic interferences

FUNCTIONAL SAFE

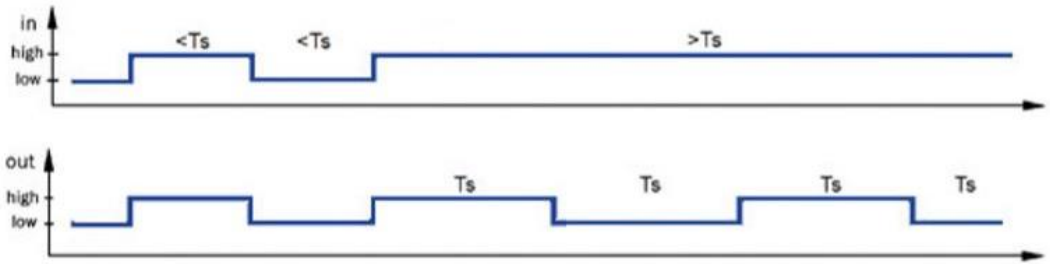
- Short-circuits diagnostics towards Gnd and Vcc
- Innovative alive signal
- Diagnostic LED (optional)

Hall-effect smart RPM sensor with « ALIVE » diagnostic signal

NEW

Ts = check half-period time

f_{ALIVE} = 1 / 2Ts (frequency ALIVE)



SPEED SENSOR WITH ALIVE OUTPUT SIGNAL

→ Higher level of safety and diagnostics: the sensor gives a low-frequency signal even if the controller gear unit is still. The constant presence of a frequency signal allows to know immediately if there is an electric malfunctioning and if the sensor operates properly or not.

→ Different mechanical housings available

APPLICATIONS

- Detects the rotational speed of axle components
- Measure the number of revolutions of the components inside or outside the axle

SPEED SENSORS - Mechanical configurations

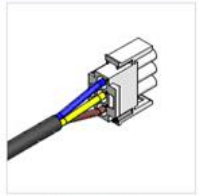
	Flanged	Threaded	Adjustable
Metal Housing			
Plastic Housing			

Connectors

Tyco/AMP Superseal 1.5 Series Plug connector

Tyco/AMP Superseal 1.5 Series Cap connector

Deutsch DT04/ Amphenol AT04



Tyco Mate-n-Lok

Cables

Corrugated cable

Accessories

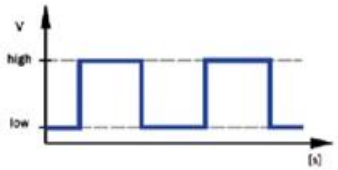
Locknut

O-Ring

SPEED SENSORS – Electronic configurations

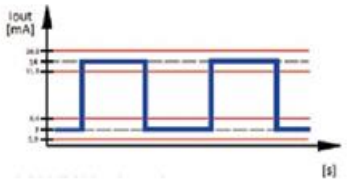
SINGLE SIGNAL

Square Wave - Tension



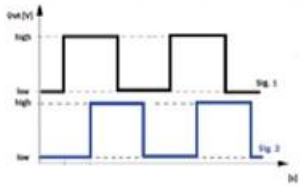
- NPN
- PNP
- PUSH-PULL

Current



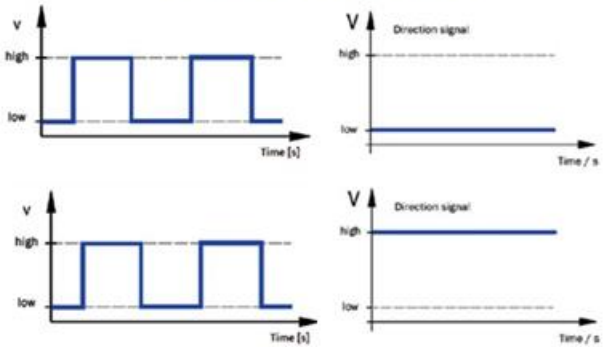
DOUBLE SIGNAL

Double Square Wave - Tension



- NPN
- PNP
- PUSH-PULL

Square Wave + Digital Signal



CAN BUS