



Product Brief

TLE4922

Highly robust, easy-to-use mono-Hall speed sensor with Twist Independent Mounting (TIM) mounting for 2-wheeler, automotive vehicle speed and industrial application

TLE4922 is a mono-Hall sensor which detects motion and position of ferromagnetic magnet structures by measuring the change of the magnetic field induced by this structure. The ferromagnetic structure can be a magnetic encoder wheel, ferromagnetic gear wheel or any similar structure.

The sensor is specially designed to provide an easy-to-use, robust and cost effective solution for vehicle or industrial speed sensing applications. As thus TLE4922 can be back biased, using a simple, low-cost bulk magnet while providing good air gap performance and switching accuracy. It is resistant against vibration during startup calibration. Its hidden adaptive hysteresis algorithm ensures a good accuracy over airgap jumps, vibrations, run-out events, and more.

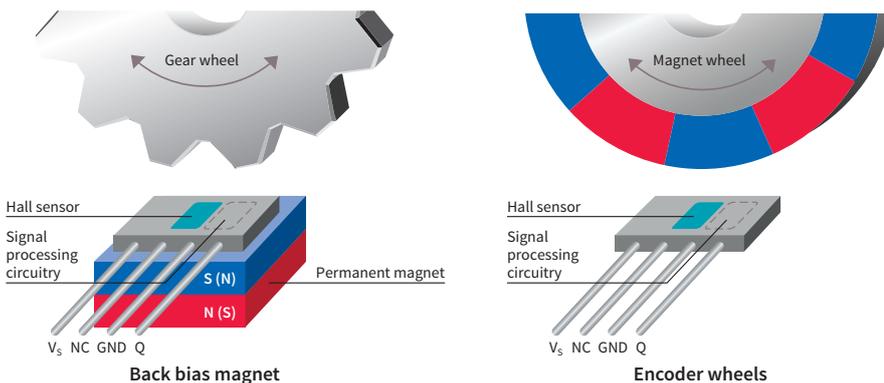
With the use of a mono-cell design, the TLE4922 is the perfect choice for applications requiring Twist Independent Mounting (TIM). As a result, the TLE4922 is well suited for replacing passive sensors like variable reluctance (VR) sensors, in automotive and 2-wheeler applications by providing the user with higher accuracy and better jitter performance. In most vehicle speed applications accuracy and jitter performance are especially critically at lower speed/rotation frequency, here the TLE4922 provides all its advantages over passive solutions.

Furthermore special care has been taken to equip the sensor with sophisticated protection technologies, improved EMC, ESD and temperature robustness, well suited for usage in harsh environmental conditions prevalent in automotive or dedicated industrial applications. The TLE4922 is delivered in a thin 4-pin SSO-4-1 package using a standard 3-wire voltage interface.

Features

- > Large operating air gap capability
- > Twist independent mounting
- > Hidden adaptive hysteresis
- > Resistant against vibration during startup calibration
- > Low current consumption
- > Reverse magnetic polarity capability
- > Sophisticated protection technology
 - Reverse voltage protection at V_s -pin
 - Short circuit protection
 - Overtemperature protection
- > Wide operating temperature ranges of $-40^{\circ}\text{C} \leq T_j \leq +150^{\circ}\text{C}$
- > High ESD robustness up to ± 4 kV HBM
- > 3-wire PWM voltage interface

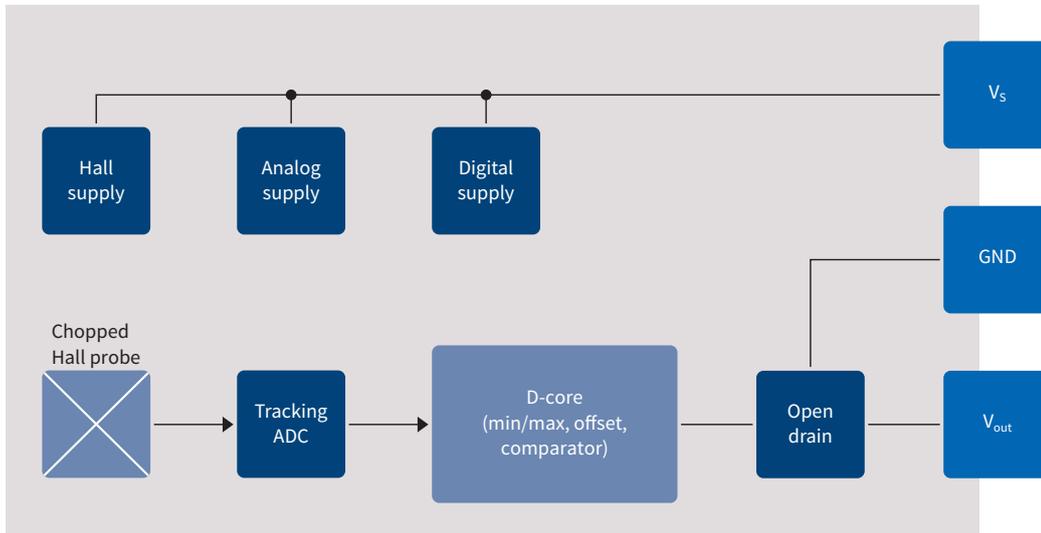
TLE4922: Typical sensor setup for gear wheel application with back bias magnet and magnetic encoder wheel application



TLE4922

Highly robust, easy-to-use mono-Hall speed sensor with Twist Independent Mounting (TIM) mounting for 2-wheeler, automotive vehicle speed and industrial application

TLE4922 block diagram



TLE4922 in a 2-wheeler application



Product summary

Sales name	Description	Order Code
TLE4922-XAN-F	TLE4922 mono-Hall speed sensor	SP001106758

Published by
Infineon Technologies AG
85579 Neubiberg, Germany

© 2016 Infineon Technologies AG.
All Rights Reserved.

Please note!

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.