PRODUCT BRIEF

XENSIV™ – TLE5555 TMR speed sensor

TMR transmission speed sensors: A new era of performance and flexibility

At the forefront of technological advancements, TMR (Tunneling Magneto-resistance) speed sensors have emerged as the superior choice over traditional Hall speed sensors. Engineered with groundbreaking innovation, TMR speed sensors revolutionize speed sensing applications, offering unparalleled performance, reliability, and efficiency.

Unmatched performance:
TMR speed sensors outshine Hall sensors in every aspect. TMR speed sensors offer an extraordinary level of precision, delivering highly accurate measurements with exceptional resolution. Utilizing the TMR effect, our sensors are capable of detecting even the slightest changes in magnetic fields, resulting in precise speed measurements that surpass the capabilities of hitherto existing sensors.
With their fast response times and wide operational range, TMR sensors effortlessly handle high-speed applications while maintaining accuracy. Whether in traditional automatic transmissions, DHTs or transmissions for BeV, TMR speed sensors excel in delivering realtime data that empowers your systems to perform at their best.

Top-read capability:
Probably the most compelling standout feature that sets TMR speed sensors apart from Hall speed sensors is their unique top-read capability. This groundbreaking feature enhances the efficiency and versatility of speed sensing applications, providing a significant competitive edge in various industries. With their top-read capability, TMR speed sensors offer unprecedented flexibility in speed measurement. Unlike Hall or GMR sensors that typically require a perpendicular approach to the target surface, TMR sensors can measure the rotational speed even when placed parallel to the moving target. This revolutionary design enables seamless integration into space-constrained systems, where the traditional perpendicular placement of sensors is impractical or impossible. TMR speed sensors eliminate the need for complex mechanical module setups, reducing costs and streamlining installation processes.

Expanded application possibilities:
The top-read capability of TMR speed sensors opens up new possibilities for a wide range of applications. From space-constrained environments to complex machinery with non-traditional surfaces, TMR sensors provide a versatile solution

Key features

- Extraordinary level of precision, delivering highly accurate measurements with exceptional resolution
- Top-read and large air gap capability enabling total cost reduction
- Increased performance: Excellent jitter and air gap (also when backbiased)
- Available with all standard protocols
- Allowing simple, low cost Ferrite magnets for backbiasing; also available integrated (iBB)
- Safety: ISO 26262-compliant development

Key benefits

- Best performance for a wide range of target wheels
- Allowing innovative, cost and space saving hardware design due to TMR-inherent top-read capability
- Total system cost saving



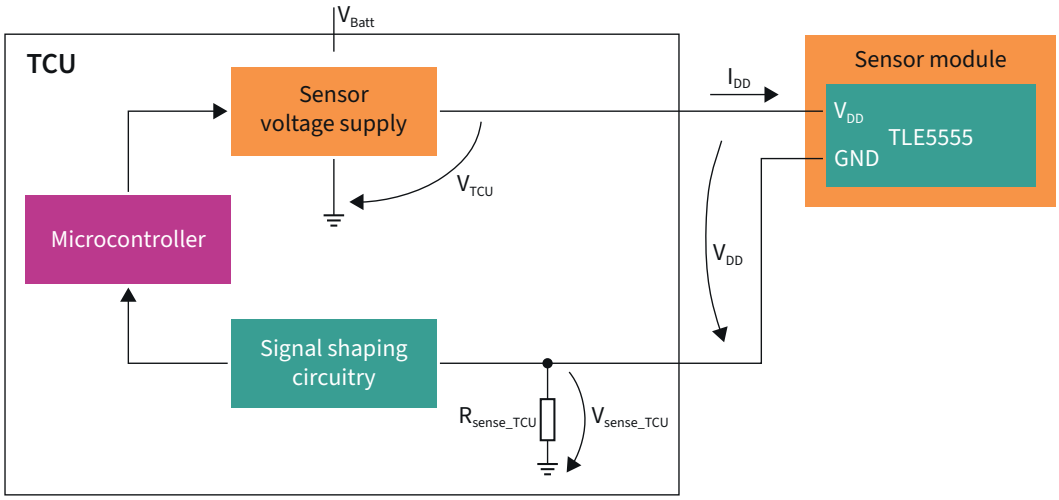
PRO SIL

ISO 26262 compliant

www.infineon.com/speed-sensors

Embrace the power of top-read:
Experience the transformative power of top-read capability with TMR speed sensors. By offering unparalleled flexibility, accuracy, and reliability, these sensors revolutionize speed sensing applications, ensuring optimal performance in any environment. Say goodbye to limitations and unlock a new level of efficiency and productivity in your systems.

Example block diagram



Available variants

Product	Description	Classification	SP Number	Package
TLE5555iC ME E0	For polewheel (top + side-read), E0 protocol	ISO 26262-compliant	SP003883456	PG-SSO-2-51
TLE5555iC ME E1	For polewheel (top + side-read), E1 protocol		SP005832719	PG-SSO-2-51
TLE5555iC ME E4B	For polewheel (top + side-read), E4B protocol		SP005829763	PG-SSO-2-51
TLE5555iCB E0-top	For steelwheel (top-read), E0 protocol, incl. backbias magnet		SP003883500	PG-SSOA22-2-51
TLE5555iCB E1-top	For steelwheel (top-read), E1 protocol, incl. backbias magnet		SP005401486	PG-SSOA22-2-51
TLE5555iCB E4B-top	For steelwheel (top-read), E4B protocol, incl. backbias magnet		SP005832705	PG-SSOA22-2-51

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