Product brief

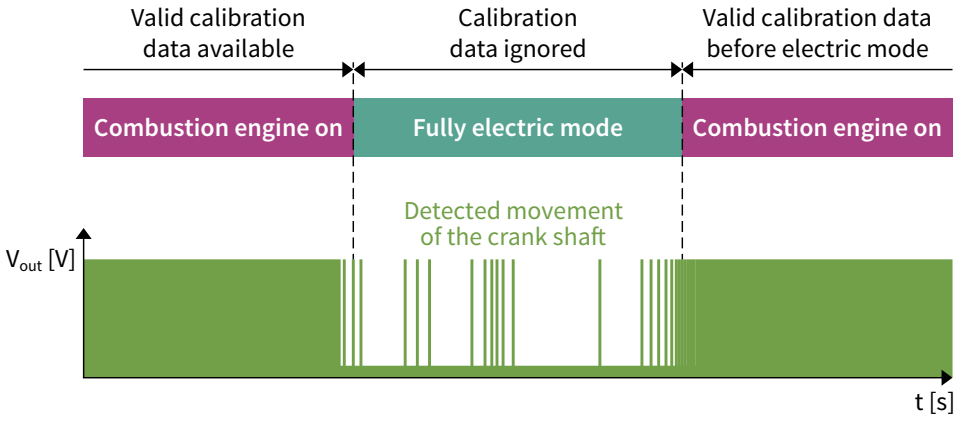
XENSIV™ – TLE4929C-XHA Hall-based crankshaft sensor for hybrid powertrains

The Infineon XENSIV™ TLE4929C-XHA products address new requirements for crankshaft speed sensing from hybrid powertrains. An advanced vibration detection algorithm ensures valid sensor data for any hybrid powertrain traction mode e.g. detecting unintended movements of the crankshaft while the car is driven by the e-motor. This improves efficiency of the engine start and helps to avoid misfiring or error messages by ECU caused by wrongly calibrated sensor data.

XENSIV™ TLE4929C-XHA sensors as well feature high adaptiveness to the diversity of crankshaft application. Using the adaptive K-Factor the default 50 percent switching threshold ($B_{max} - B_{min}$) can be trimmed to 16 values between 40 and 60 percent which allows to optimize phase accuracy for different encoder designs. Compared to predecessor products from Infineon also encoders with 34 or 56 teeth are supported now.

The PG-SSO-3-53 package with Ni plating, 3-wire voltage I/F and increased supply/output capacitance of up to 470 nF/1.8 nF supports high EMC robustness and with its unchanged mechanical specification a high backward compatibility with predecessor products TLE4929C-XVA, TLE4929C-XAF and TLE4929C-XAN is given and design switch cost are minimized.

A dedicated TLE4929C-XHA algorithm ensures valid sensor data for any hybrid powertrain traction mode



Key features

- An advanced vibration detection algorithm ensures valid sensor data for any hybrid powertrain traction mode for better efficiency and reliability of hybrid powertrain engine control
- The adaptive K-factor allows trimming of the switching threshold to 16 values between 40 and 60 percent to optimize phase accuracy for different encoder designs
- Enlarged coverage of encoders, now also for 34 or 56 teeth
- Package compatibility with Infineon's predecessor products (TLE4929C-XVA, TLE4929C-XAF, TLE4929C-XAN) helps to minimize design switch cost

Applications

- Crankshaft speed & direction sensing
- Missfire detection
- Ignition control

Speed sensor

AEC Qualified

www.infineon.com/speed-sensors

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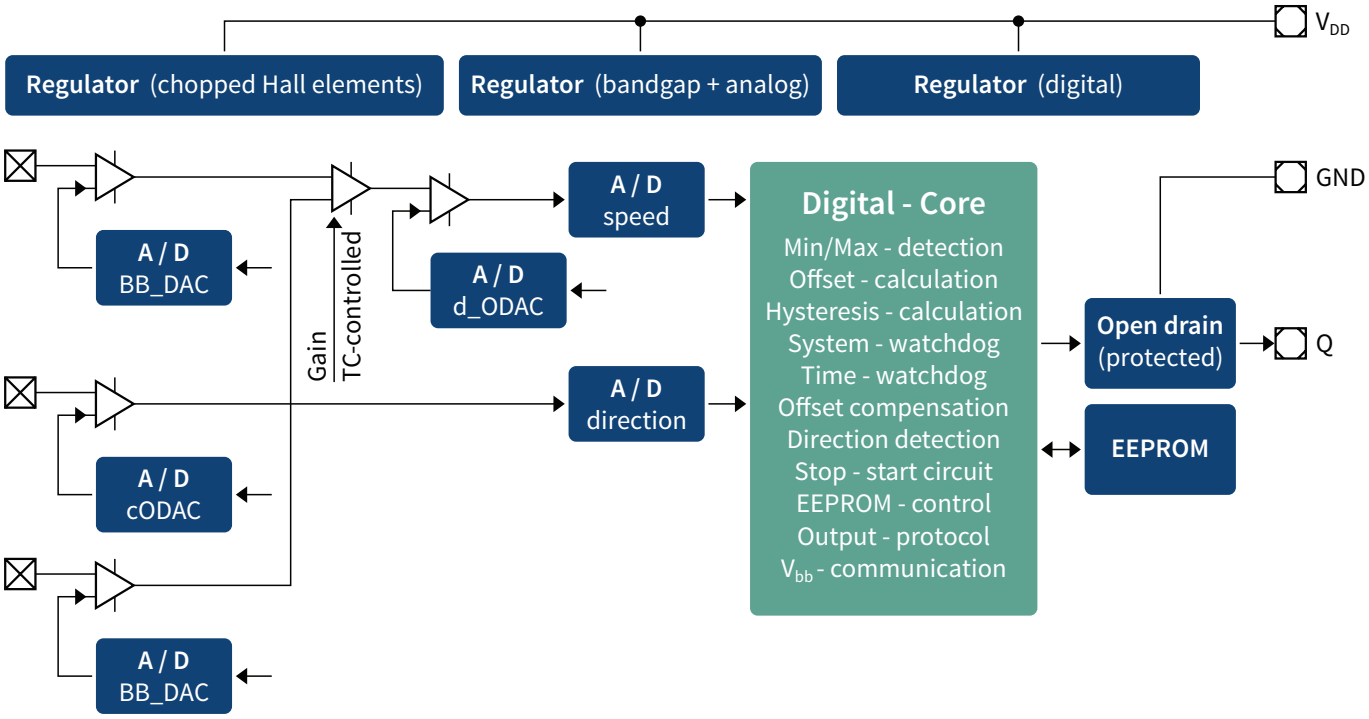
Block diagram TLE4929C-XHA



Product table

Product type	Supply/ Output capacitance [nF]	Package	Ordering code
TLE4929C-XHA-M18N	100/1.8	PG-SSO-3-53	SP005355349
TLE4929C-XHA-M38N	470/1.8	PG-SSO-3-53	SP005355351

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