

New challenges for engine sensors in hybrid powertrains

Infineon Technologies AG



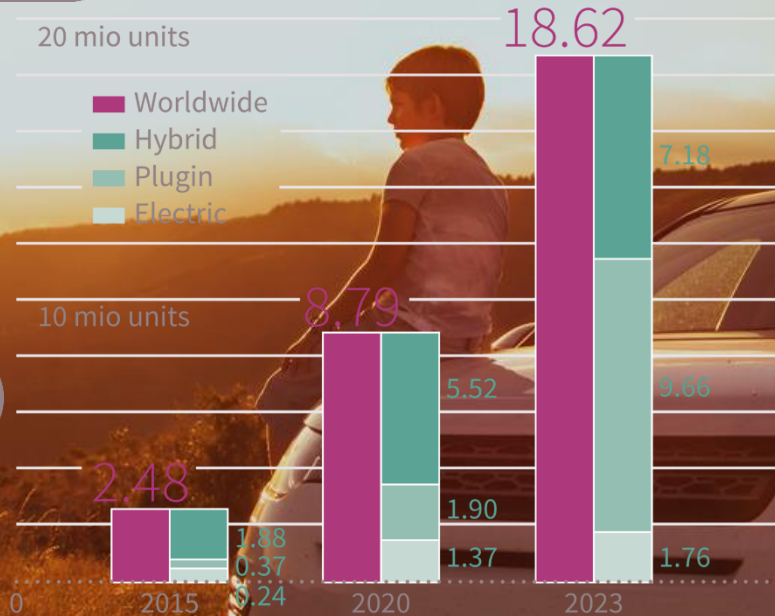
New challenges for engine sensors by emission regulations



CO₂

NO₂

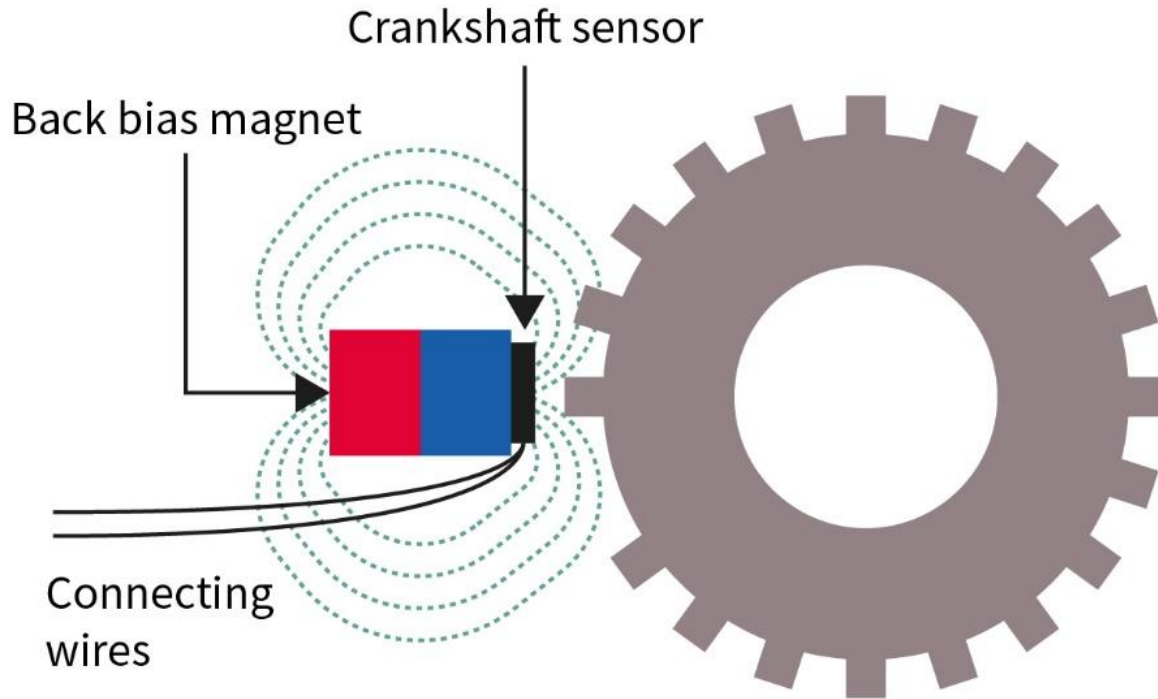
SO₂



Source: IHS Markit

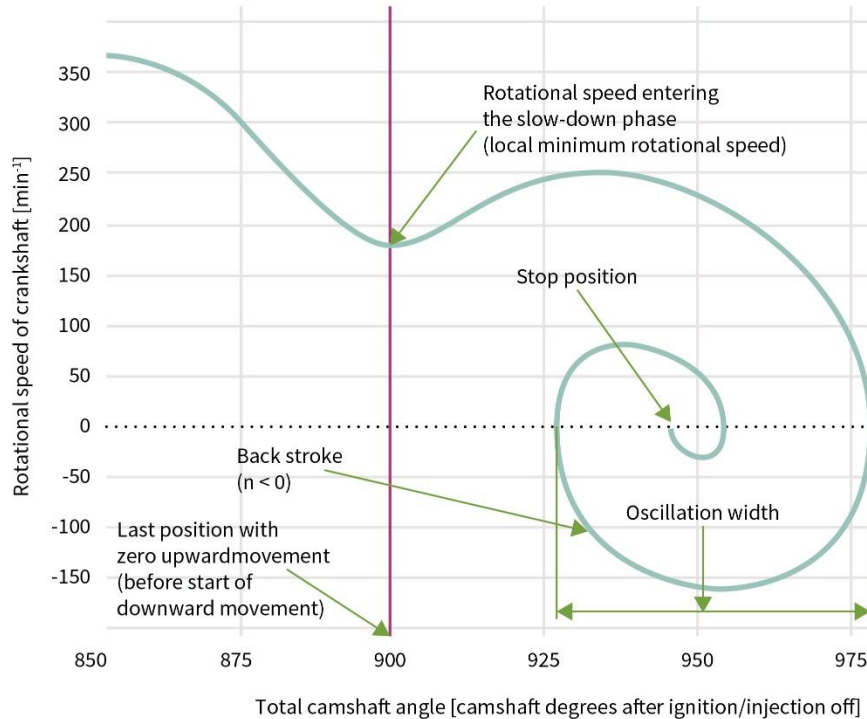
- > Emission regulations worldwide drive electrification of powertrains.
- > Hybrid and Plugin-Hybrid powertrains are key enabler technologies here.
- > Combustion engine utilization will change significantly.
- > This brings new challenges for sensors in engine control.

What is a crankshaft sensor system?

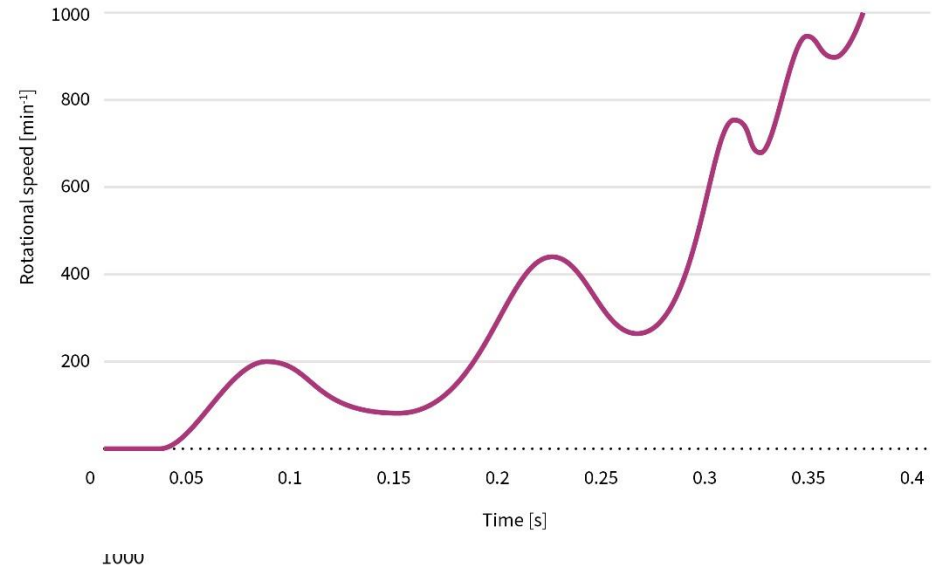


Stop-Start Application to reduce fuel consumption / save CO2

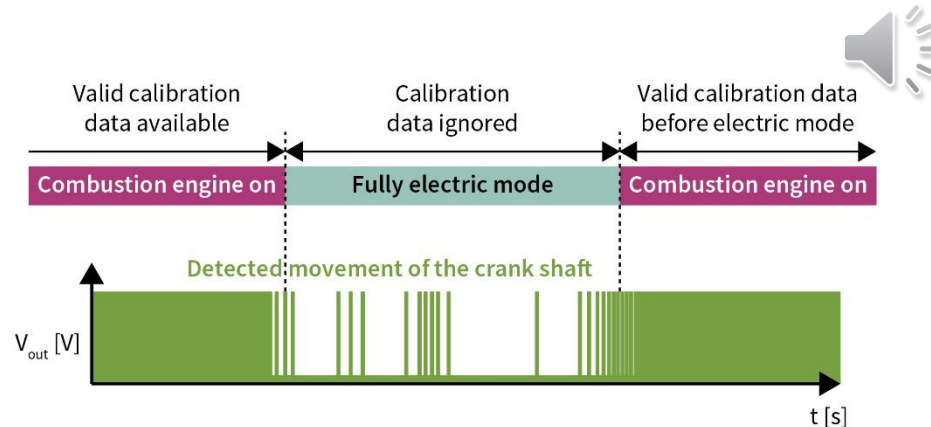
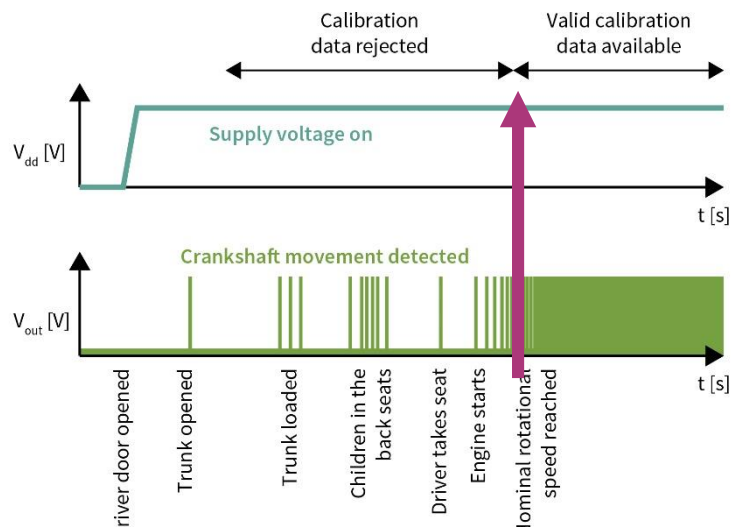
Rotational speed of crankshaft [min^{-1}]



Increase in rotational speed at engine temperature of 20°C



TLE4929C – The Solution for Hybrid Vehicle Crankshaft



Overview of Infineon XENSIV™ crankshaft sensors:

TLE4929C-XAx	First-generation low-jitter, Hall-based crankshaft sensor.
TLE4929C-XVA	Second generation includes several additional crankshaft protocols and a time watchdog to overcome start-up vibrations. In addition, this device is available with nickel plating for the first time.
TLE4929C-XHA	Third generation includes an additional dedicated hybrid watchdog and a new calibration feature to meet increased absolute phase accuracy requirements.



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