PRODUCT BRIEF

XENSIV™ - KP300 & KP305 Pressure sensors

ISO 26262-compliant pressure sensor for side crash, pedestrian impact and front crash detection

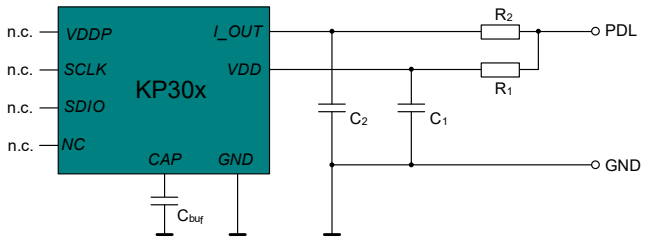
Passive safety vehicle systems have improved significantly over the last years, especially for front-impact, side-impact and pedestrian impact detection. Legal regulations and consumer tests have been the main drivers (e.g. FMVSS 214, UN-ECE-R135, NCAP) for increased penetration. Infineon Technologies' next generation PSI5 safety pressure sensor family enables very fast reaction times and will help you to fulfill existing and future tests.

In the side airbag application, the pressure sensor is assembled in a module located within the car's side doors. When the door is compressed due to a side impact, the KP30x provides a signal pulse, which is proportional to the pressure change inside the door. In the pedestrian protection application, the pressure sensing system based on KP30x is mounted within the front bumper of the car. In case of an impact a pedestrian protection device is triggered. The KP30x extended pressure range allows common pedestrian protection systems to support front-impact detection scenarios.

Infineon Technologies' KP30x is a monolithically integrated pressure sensor featuring a programmable PSI5 interface and compliance to AK-LV29/38. An intelligent state machine provides a pressure signal output enabling simple threshold detection algorithms. The amplitude of the signal pulse is independent of the ambient pressure, but dependent on the relative pressure change. Several output formats are selectable to provide more design flexibilities to the system.

The KP30x family forms the next generation of safety pressure sensors and is application compatible with Infineon's previous generation of safety pressure sensors. ISO 26262 compliant development and corresponding functional safety documentation support the usage of the KP30x in ASIL-B(D) systems.

Based on its new chip technology the KP30x offers best-in-class cost performance and is already delivered fully calibrated.





Key features

- Fully compliant to PSI5 and AK-LV29/38 and extended pressure range addendum
- ISO 26262-compliant development to be used in ASIL B(D) systems
- Patented built-in diagnosis for pressure cells and circuitry
- SMD package: DSOF-8-164

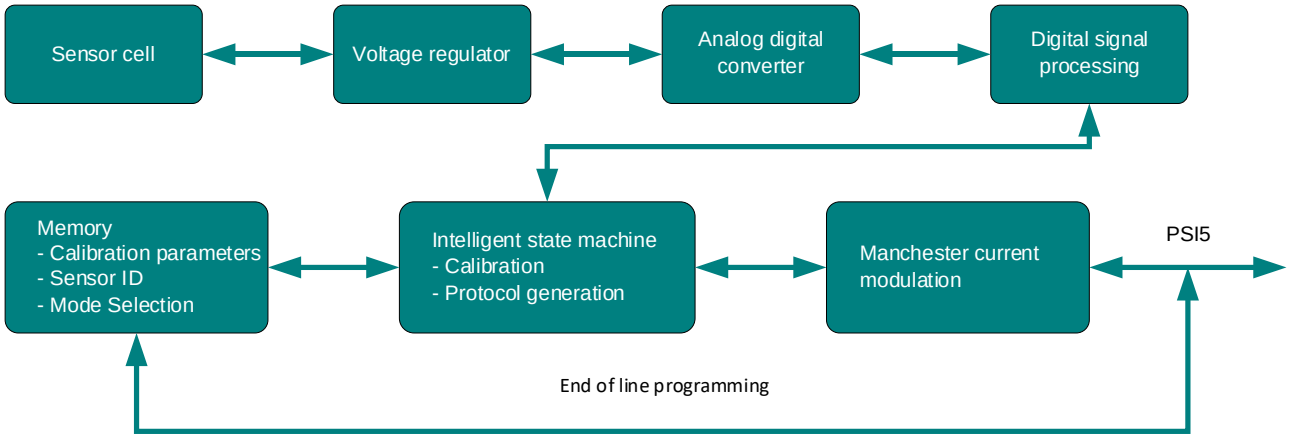
KP300
- Side crash detection

KP305
- Pedestrian impact detection
- Front crash detection
- Side crash detection

Key benefits

- Easy customization with end of line programming via PSI5 interface in the final customer module
- Low design-in effort due to drop-in compatibility to previous safety pressure sensor family
- Best-in-class cost performance

Block diagram KP30x



Key parameters

Type	Supply Voltage [V]	Temperature [°C]	Ambient pressure range [kPa]	Dynamci range [%]	Sensitivity
KP300	4.5 … 11	-40 … 90	45.5 … 110	-5 … +15	20.48%/LSB
KP305	4.5 … 11	-40 … 125	45.5 … 110 45.5 … 140	-5 … +15 -15 … 23.4 -15 … 100	20.48%/LSB 20.48%/LSB 20.48%/LSB / 4.8%/LSB

Product summary

Type	Description	Application	Package	Ordering Code
KP300	Integrated pressure sensors	Side crash detection	DSOF-8-164	SP001236060
KP305	Integrated pressure sensors	Side crash detection Pedestrian impact detection Front crash detection	DSOF-8-164	SP001236060

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