

Acceleration sensor | SMA8

Vast field experience

gained from hundreds of millions sensors

Safe and precise

integrated sensor solution for systems up to ASIL D

Function



The SMA8 is a state-of-the-art acceleration sensor designed specifically for automotive passive safety systems like airbag systems. Engineered for providing front or side crash information, the SMA8 distinguishes itself through exceptional EMC robustness and superior technical specifications.

Application



Airbag control units:

SMA8 provides a state-of-the-art SPI communication interface according to SafeSPI 2.0 standard.

Peripheral airbag systems:

PSI5 communication interface according to PSI5 standard. Power and digital communication are handled via the same 2-wire connection.

Key Features



High EMC Robustness: Ensures reliable operation even in the most demanding environments.

Acceleration Measurement: Provides acceleration data on up to three axes (X, Y, Z).

Compact Design: Easy integration into existing systems without compromising performance.

Customizable Features: Allows customers to configure advanced PSI5 features to meet their unique requirements, enhancing versatility

Safety



SMA8 is suitable for the use as ASIL B(D) component in an ASIL D system according to the ASIL decomposition concept of ISO26262:2018.



Technical features

Package	DFN, 3 x 3 mm	
Communication Interface	SPI (in & out-of-frame)	PSI5
Supply voltage	3.3 V, 6.7 V	4.5 – 11 V
Supply current	< 6 mA	< 8 mA
Operating temperature	-40 to +125 °C	-40 to +125 °C
Data resolution	14 bit	10 bit 16 bit
	Accel	Accel
Sensing axes	X, Y, Z	X, Y, Z
Range	64, 128, 256 g (X, Y) 32, 256 g (Z)	120 g 240 g 480 g (X, Y, Z)

Performance

Accelerometer	typ	unit
Sensitivity err (x, y, z) ¹	1,25 / 1,75	%
Non-linearity	1	%
Offset over temp. ²	6	mg
Band width selectable	53, 217, 426, 857, 1704	Hz

1 Depending on sensor variant/axis
2 SPI variant SMA860 (X/Y) 426Hz mode