

SA2-x and SA3-x

General



Figure 1: Static acceleration sensor SA2-1.7.

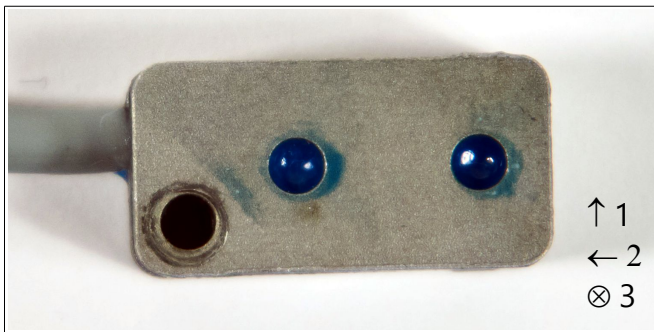


Figure 2: Static acceleration sensor SA3-1.7.

The names SA2-x and SA3-x are general names for a static acceleration sensor where x represents one element of the set of measurement ranges { 1.7 g, 18 g, 50 g }. SA2 stands for a two-dimensional sensor whereas SA3 stands for a three-dimensional static acceleration sensor.

Pin Assignment

PWR: This plug is manufactured by Binder (Binder Series 719).

Pin	Assignment
1	(unused)
2	Ground (0 V)
3	Output signal 1
4	Output signal 2
5	Reference/Supply voltage V_{ref} (e. g. $V_{ref} = 5.12$ V)

For SA3, the 2nd plug is almost identical to the 1st plug with following exceptions:

3	Output signal 3
4	(unused)

Voltage Output

Sensor	Voltage(Acceleration a)
SA2/3-1.7	$(0.2/g \cdot a + 0.5) \cdot V_{ref}$
SA2/3-18	$(0.02/g \cdot a + 0.5) \cdot V_{ref}$
SA2/3-50	$(0.0076/g \cdot a + 0.5) \cdot V_{ref}$

TEMES Settings

SA2/3-1.7	Acceleration	Voltage
1	-1 g	1.536 V
2	1 g	3.584 V
Min	-1.7 g	0.8192 V
Max	1.7 g	4.3008 V

SA2/3-18	Acceleration	Voltage
1	-1 g	2.4576 V
2	1 g	2.6624 V
Min	-18 g	0.7168 V
Max	18 g	4.4032 V

SA2/3-50	Acceleration	Voltage
1	-1 g	2.521088 V
2	1 g	2.598912 V
Min	-50 g	0.6144 V
Max	50 g	4.5056 V

Technical Data

Property	Description
Box dimensions:	SA2: 20 mm x 11 mm x 5 mm SA3: 22 mm x 12 mm x 10 mm
Typical weight:	SA2: 31 g / SA3: 36 g
Supply voltage V_{ref} :	SA2/3-1.7/18: 3 V ...6 V DC SA2/3-50: 4.75 V ... 5.25 V DC
Quiescent current consumption:	SA2: < 5 mA SA3: < 10 mA @ $V_{ref} = 5$ V
Chip set:	SA2/3-1.7, SA2/3-18: ADXL203 from Analog Devices SA2/3-50: ADXL278 from Analog Devices

Further Information

For the SA2/3-x exists an active low-pass filter LPF of 6th-order and with no overshoots.