

Acceleration Modules

Type KCD15760, KCD15951,
KCD15911

SAA (1-axis), DAA (2-axis), TAA (3-axis)

Measuring modules for dynamic acceleration measurement.

- Integrated 1-, 2- or 3-axis measurement
- Measurement range ± 3 g, others on request
- Limit frequency 5 Hz
- 7 ... 42 V power supply
- Operating temperature range $-40 \dots 85$ °C
- Housing made of anodized die cast aluminum



Description

Utilizing a measurement structure micro-machined in silicon, the low-weight, compact accelerometer modules are robust enough to withstand the punishment of harsh industrial and automotive environments.

The measurement signal is generated via a change in the capacitive property of the structure, caused by a change in velocity, i.e. acceleration, and converted into an electrical signal which is amplified, filtered, and voltage-compensated, resulting in a highly accurate and linear measurement.

Application

- Measurements of lateral and longitudinal acceleration
- Ride comfort measurements
- Position and motion sensing
- Tilt sensing
- Vibration analysis
- Crash sensing

Technical Data

Performance Specifications

Sensitivity		
Nominal value	mV/g	666
Tolerance	%FSO	± 1
Measurement range	g	± 3
Zero g bias output		
Nominal value	VDC	+2,5
Tolerance	mV	± 100
Full scale span		
Nominal value	VDC	$\pm 2,0$
Tolerance	%FSO	± 1

Frequency response		
Nominal value	Hz	5
	dB	-3
Tolerance	%	± 10
RMS noise		
Nominal value		
RMS typ.	μ g	560
Band width	Hz	5
Tolerance	%	± 15
Nonlinearity, nominal value	%	$\pm 0,2$
Alignment		
Nominal value	°	± 2
Tolerance	°	± 1
Transverse sensitivity, nominal value	%FSO	± 2
Zero rate bias drift ($-40 \dots 85$ °C) max.	g	0,2

System Specifications

Supply voltage	VDC	7 ... 42
Supply current (no load)		
SAA (1-axis)	mA	4 ± 1
DAA (2-axis)	mA	8 ± 2
TAA (3-axis)	mA	12 ± 3

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Technical Data (Continuation)

System Specifications

Temperature range		
Operation	°C	-40 ... 85
Storage	°C	-65 ... 100
Dimensions (LxWxH)	mm	50,8x34,3x19,1
Weight		
Nominal value	grams	45
Tolerance	grams	±10
Shock		
Operation	g	500
Transport	g	1 000

Note: Additional ranges and limit frequencies available.

Dimensions

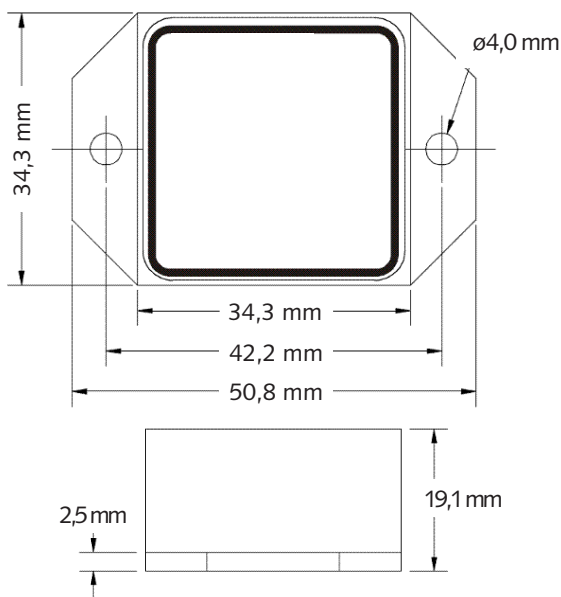


Fig. 1: Dimensions acceleration module

Pin Assignment

Pin	Color	Signal
1	red	DC power supply
2	green	only with TAA: Signal axis A3
3	blue	Signal GND
4	yellow	only with DAA/TAA: Signal axis A2
5	white	Signal axis A1
6	black	DC GND

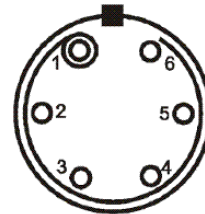


Fig. 2: 6 pin Lemo connector

Note: Cables are not included in the scope of delivery and must be ordered additionally.

Cables

- 6 pin LEMO for SAA, l = 5 m
- 6 pin LEMO for DAA, l = 5 m
- 6 pin LEMO for TAA, l = 5 m

Ordering No.

- 18012577
- 18012589
- 18012634

Other cables on request.

Ordering Code

- Acceleration module SAA, 1-axis, ±3g
- Acceleration module DAA, 2-axis ±3g
- Acceleration module TAA, 3-axis ±3g

- 22000357
- 22000369
- 22000367

All other measurands on request.

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