

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 ± 25 g, others on request
- Limit frequency 500 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	V/g	0,08 \pm 1 g
Tolerance	%FSO	\pm 1
Measurement range		
	g	\pm 25
Zero g bias output		
Nominal value	VDC	+2,5
Tolerance	mV	\pm 100
Full scale span		
Nominal value, at ± 25 g	VDC	\pm 2,0
Tolerance	%FSO	\pm 1



Frequency response		
Nominal value	Hz	500
	dB	-3
Tolerance	%	\pm 10
RMS noise		
Nominal value		
RMS typ.	g	0,036
RMS max.	g	0,1
Band width	Hz	500
Tolerance	%	\pm 15
Nonlinearity, nominal value	%	\pm 0,2
Alignment		
Nominal value	°	\pm 3
Tolerance	°	\pm 1
Transverse sensitivity, nominal value	%FSO	\pm 2
Zero rate bias drift ($-40 \dots 85$ °C)		
Typ.	g	0,2
Max.	g	1

System Specifications

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

KCD15760_000-913e-04.12

Technical Data (Continuation)

System Specifications

Temperature range		
Operation	°C	-40 ... 85
Storage	°C	-65 ... 125
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

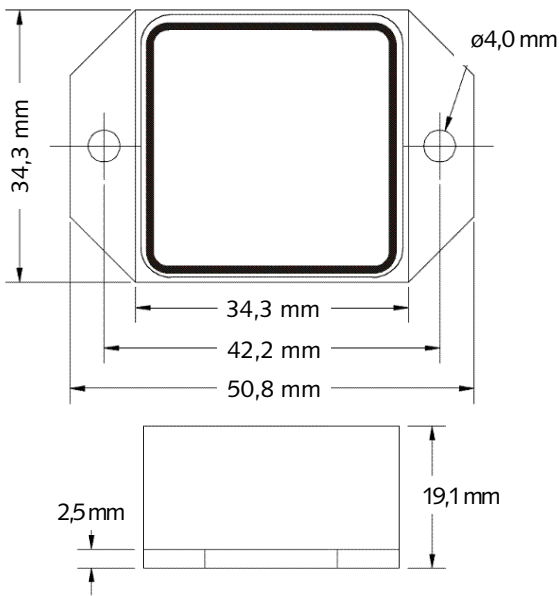


Fig. 1: Dimensions acceleration module

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

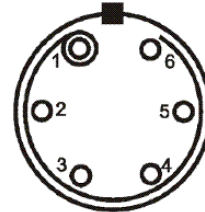


Fig. 2: 6 pin Lemo connector

Please Note: The accelerations modules described here are equipped with a new connector and are not compatible with the cables of the former +5 V modules! New cables are not included in the scope of delivery and must be ordered additionally.

Ordering Code

- Acceleration module SAA, **Type KCD15760**
 1-axis, g, ±3g
- Acceleration module DAA, **Type KCD15951**
 2-axis, ±3g
- Acceleration module TAA, **Type KCD15911**
 3-axis, ±3g

All other measurands on request.

KCD15760_000-913e-04.12