Capacitive Accelerometer

ASC 5721

Triaxial
5, 8 or 12 Wire System
Amplified Output
Aluminum Housing

Features

- *Range: 1g to 200g*
- *Frequency Response starting at 0 Hz*
- *High Shock Resistant*
- *Gas Damped*

Options

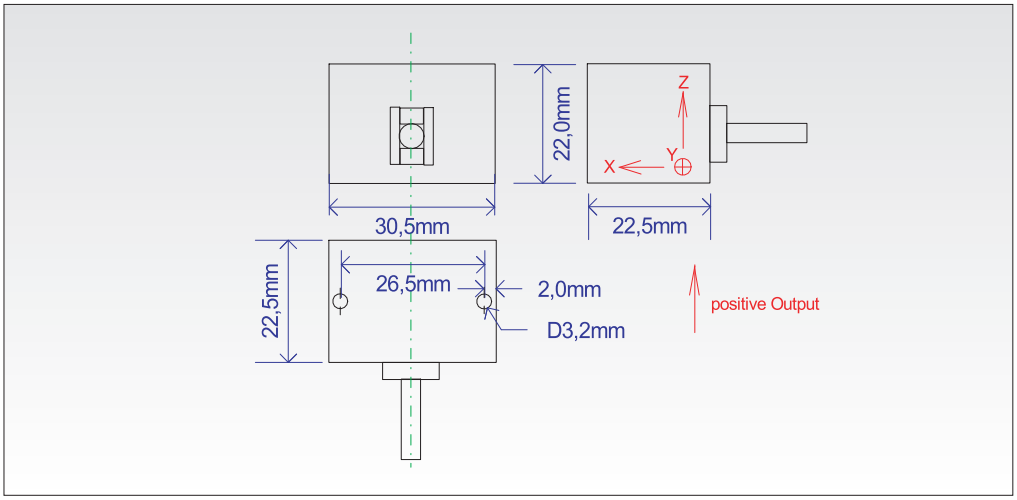
- *Customized cable length*
- *Customized connector*
- *ASC-Teds Module*
- *Dallas ID Module*

Applications

- *Vibration Monitoring*
- *General Vibrations*
- *Automotive Comfort Measurements*
- *High Speed Trains*
- *Seismic Measurements*
- *Military Applications*

Capacitive MEMS Technology

The accelerometers are based on a capacitive MEMS technology and can be used in a low frequency response up from 0 Hz. Inside the sensor element, the seismic mass is connected with two conductive capacitor plates. If the seismic mass oscillates between the two capacitor plates the capacitance will change. This capacitance change is converted via an ASIC (Application Specific Integrated Circuit) into an analog signal.



Description

The model ASC 5721 is a triaxial accelerometer based on capacitive MEMS technology. It is fully temperature compensated and factory calibrated. The sensor has specifically been developed for monitoring, tilt and comfort vibration measurings. The four wire output can be connected to all data management systems. The hard anodized aluminum housing is epoxy sealed and ground isolated.

The model ASC 5721 is based on Low Noise technology which provides an excellent resolution. Because capacitive technology is used, extremely small measuring ranges are possible. The amplified output is easy to use with a data acquisition unit.

The signal is independent from the power between +8 VDC to +30 VDC. A very high flexible and rugged cable provides a simple mounting. The ASC 5721 is equipped with 6 m cable as standard.

General Technical Data

Supply Voltage	8 VDC - 30 VDC
Damping Ratio typ.	0.7
Zero g Output typ.	+/- 50 mV
Noise	17 µV/RootHz
Output Impedance	10 kOhm
Operation Current max.	2 mA
TC Span (-20° C to +45° C)	100 ppm/°C (typ.)
Shock Resistant	5000g
Operating Temperature	-40° C to +100° C
Storage Temperature	-55° C to +125° C

Individual Technical Data

	Sensitivity	Frequency +/- 5%	TC Zero
Range +/-1g	2000 mV/g	100 Hz	0.1 mg/° C typ.
Range +/-2g	1000 mV/g	100 Hz	0.3 mg/° C typ.
Range +/-5g	400 mV/g	100 Hz	0.3 mg/° C typ.
Range +/-10g	200 mV/g	800 Hz	0.5 mg/° C typ.
Range +/-30g	66 mV/g	1000 Hz	1.5 mg/° C typ.
Range +/-50g	40 mV/g	1500 Hz	2,5 mg/° C typ.
Range +/-100g	20 mV/g	1500 Hz	5,0 mg/° C typ.
Range +/-200g	10 mV/g	1700 Hz	10 mg/° C typ.

At 10 VDC Supply and 25° C

5 wire system means single-ended mode. Signal response from 0.5 VDC to 4.5 VDC and the zero-g-signal is 2.5 VDC.

	Weight	Material	Dimensions
Housing	27 gram	Aluminium, hard anodized	30.5 x 22.5 x 22.0 mm
Cable			
5 wire system:	12 gram/meter	AWG 30, Polyuithan (PU)	diameter 3.0 mm,
8 wire system:	30 gram/meter	AWG 30, Polyuithan (PU)	diameter 4.4 mm,
12 wire system:	30 gram/meter	AWG 30, Polyuithan (PU)	diameter 4.4 mm

Calibration

- Sinusoidal Calibration

Calibration Data incl.:

- Sensitivity
- Frequency
- Offset
- Phase

Order Information
ASC 5721-XXX-6A

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❶ Model: 5721 Aluminum
❷ Range: e.g. 002 is 2 g
❸ Cable: Length in Meter
❹ Connector and Pinout / „A“ is for No Connector

Cable Code:

5 wire system:
red: Supply +
black: Supply -
white: Signal x-axis
yellow: Signal y-axis
green: Signal z-axis

8 wire system:
red: Supply +
black: Supply -
green/purple: Signal + x-axis
white/purple: Signal - x-axis
green/grey: Signal + y-axis
white/grey: Signal - y-axis
green: Signal + z-axis
white: Signal - z-axis

12 wire system:
red/purple: Supply + x-axis
black/purple: Supply - x-axis
green/purple: Signal + x-axis
white/purple: Signal - x-axis
red/grey: Supply + y-axis
black/grey: Supply - y-axis
green/grey: Signal + y-axis
white/grey: Signal - y-axis
red: Supply + z-axis
black: Supply - z-axis
green: Signal + z-axis
white: Signal - z-axis

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