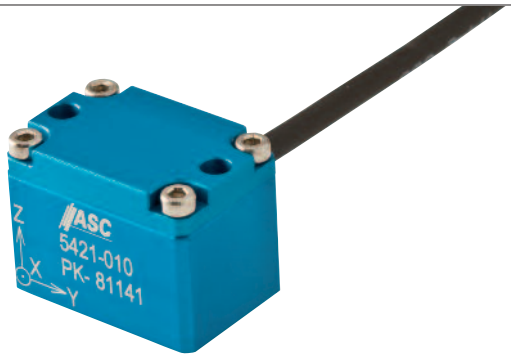
Capacitive Accelerometer

ASC 5421 / ASC 5425

Triaxial
5, 8 or 12 wire system
Amplified Output
Aluminium Housing

Triaxial
5, 8 or 12 wire system
Amplified Output
Stainless Steel Housing



Features

- Range 1g to 200g
- High Shock Resistant
- Gas Damping
- DC Response
- Excellent Bias Stability
- Excellent Scale Factor Stability

Options

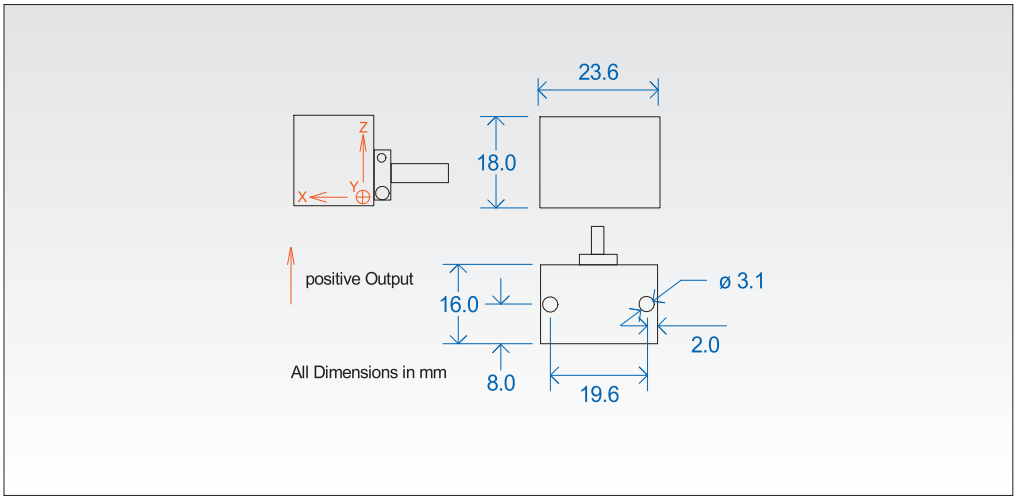
- Customized Cable Length
- Customized Connector
- ASC-Teds Module
- Dallas ID Module

Applications

- Automotive
- Motor Sports
- Train Control
- Wind Energy
- Marine
- Environment
- Aerospace
- Engineering

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 models **ASC 5421** and **ASC 5425** have been developed for the demanding requirements of different applications. The highly robust housing and the connecting cables are suitable for the rough application areas in automotive, train, military and so on. These ASC accelerometers benefit from the high stability of the chip technology with a low bias and an excellent scale factor temperature coefficient.*

*The **ASC 5421** and **ASC 5425** are fully compensated over a wide temperature range and are factory calibrated. As 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. **ASC 5421** and **ASC 5425** are equipped with 6 meter cable as standard.*

General Technical Data

Supply Voltage	8 VDC - 30 VDC
Operation Current	2 mA max.
Linearity FSO	< 0.8% typ.
Damping Ratio	0.7 typ.
Transvers Sensitivity	2% typ.
Signal Output	+/- 2000 mVDC FSO
Zero Output	2500 mVDC +/-10 mV
Reference Output	2500 mVDC
Output Impedance	10 kOhm
TC Span	all 100 ppm/°C typ.
Shock Resistant	7000g
Operating Temperature	-40 °C to +100 °C
Storage Temperature	-55 °C to +125 °C

Individual Technical Data

	Sensitivity	Frequency +/- 5%	Noise	TC Zero
Range +/-1g	2000 mV/g	100 Hz	9 µg/√Hz	0.05 mg/ °C typ.
Range +/-2g	1000 mV/g	100 Hz	18 µg/√Hz	0.1 mg/ °C typ.
Range +/-5g	400 mV/g	100 Hz	45 µg/√Hz	0.3 mg/ °C typ.
Range +/-10g	200 mV/g	800 Hz	90 µg/√Hz	0.5 mg/ °C typ.
Range +/-30g	66 mV/g	1000 Hz	125 µg/√Hz	1.5 mg/ °C typ.
Range +/-50g	40 mV/g	1500 Hz	379 µg/√Hz	2.5 mg/ °C typ.
Range +/-100g	20 mV/g	1500 Hz	625 µg/√Hz	5.0 mg/ °C typ.
Range +/-200g	10 mV/g	1700 Hz	1.25 mg/√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			
ASC 5421	20 gram	Aluminium	23.6 mm x 16.0 mm x 18.0 mm
ASC 5425	40 gram	Stainless Steel	23.6 mm x 16.0 mm x 18.0 mm
Cable			
5 Wire System	12 gram/meter	AWG 30, Polyurethan (PUR)	Diameter 3.0 mm
8 Wire System	30 gram/meter	AWG 30, Polyurethan (PUR)	Diameter 4.4 mm
12 Wire System	30 gram/meter	AWG 30, Polyurethan (PUR)	Diameter 4.4 mm

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

Calibration

- Pendulum Calibration
- Sinusoidal Calibration

Calibration Data incl.:

- Sensitivity
- Frequency
- Offset
- Phase

Order Information
ASC 5421-XXX-6XX

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❶ Model: ASC 5421: Aluminium
ASC 5425: Stainless Steel
❷ Range: e.g. 050 is 50g
❸ Cable: Length in Meter
❹ Connector and Pinout /
„A" is for No Connector

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