

ASC Current Output Accelerometers

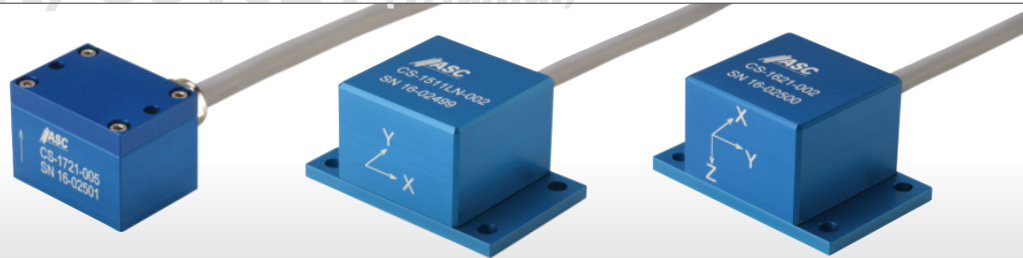


ASC CS1711LN, CS1721 (Uniaxial)

ASC CS1511LN, CS1521 (Biaxial)

ASC CS1611LN, CS1621 (Triaxial)

- ▶ Uniaxial / Biaxial / Triaxial
- ▶ Anodised Aluminium
- ▶ IP67
- ▶ Made in Germany



ASC CS1711LN, CS1721 (Uniaxial) ASC CS1511LN, CS1521 (Biaxial) ASC CS1611LN, CS1621 (Triaxial)

Features

- ▶ 4-20mA Current Output
- ▶ Low noise
- ▶ Wide Bandwidth (down to DC)
- ▶ $\pm 2g$, $\pm 5g$, $\pm 10g$ and $\pm 50g$ Ranges
- ▶ Excellent Immunity against EMI
- ▶ Loss-free Signal Transmission over long distances

Options

- ▶ Customised Cable Length
- ▶ DAkKS Certified Calibration
- ▶ Protection Class IP68

Applications

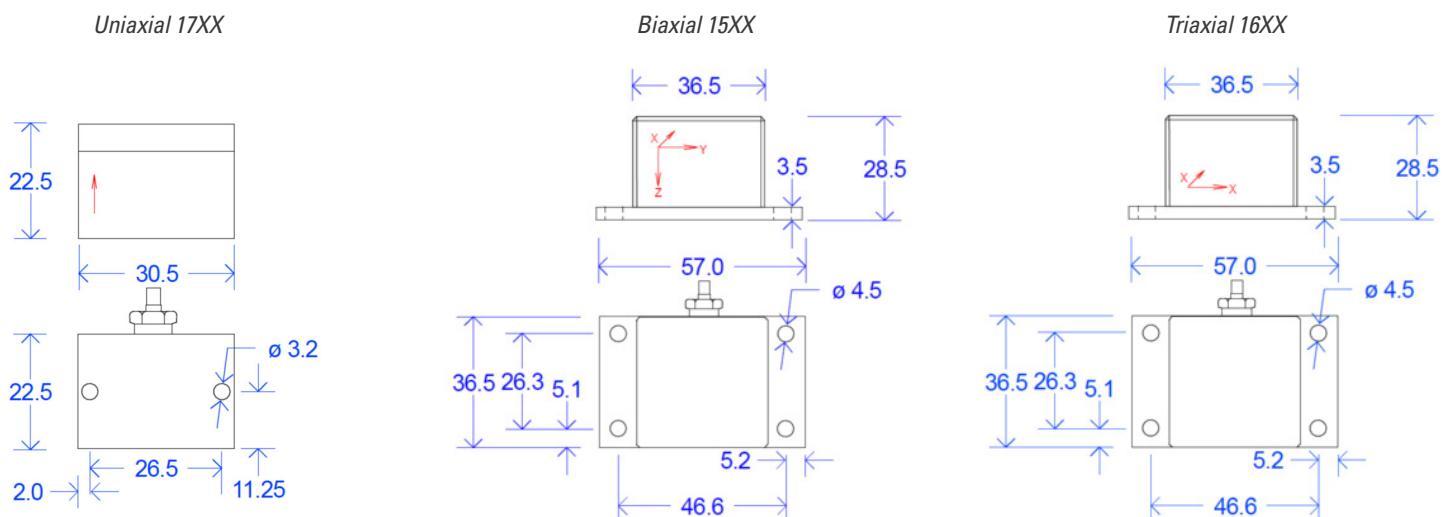
- ▶ Bridge Monitoring
- ▶ Seismic Applications
- ▶ Geology
- ▶ Wind Energy
- ▶ Process Control
- ▶ Predictive Maintenance

4-20mA Technology

ASC's Current Output sensors are based on the capacitive MEMS sensing principle. Using a built-in voltage to current converter, the analog voltage output from the capacitive sensor is transformed into a 4-20mA current output. The output signal span is $\pm 8mA$ centered about 12mA bias (zero-g offset). The accelerometer thus outputs a 4-20mA current signal that is proportional to the overall acceleration and the sensor can readily interface to the existing PLCs, process control and predictive maintenance equipment.

Description

ASC's current output sensors, CS series, are available in two versions: LN (low-noise) and standard (high bandwidth). These sensors are used typically in industrial environments with strong electromagnetic interference and in applications demanding no loss in transmission of acceleration data over long distances. The ASC CS series features an anodised aluminium housing, which is light-weight and provides case isolation against ground loops. The sensor sensitivity and bias is extremely stable over a wide temperature range from $-20^{\circ}C$ to $+70^{\circ}C$. The CS series is available in uniaxial (ASC CS1711LN, ASC CS1721), biaxial (ASC CS1511LN, ASC CS1521) and triaxial (ASC CS1611LN, ASC CS1621) configurations.



All dimensions are in mm

Typical Specifications

LOW-NOISE MODELS: UNIAXIAL ASC CS1711LN ; BIAXIAL: ASC CS1511LN ; TRIAXIAL: ASC CS1611LN

DYNAMIC

		Measurement Range (\pm g)			
		\pm 2g	\pm 5g	\pm 10g	\pm 50g
Sensitivity	mA/g	4	1.6	0.8	0.16
Frequency response: \pm 5%	Hz	100		300	650
Amplitude non-linearity	% FSO			<1	
Transverse sensitivity	%			<3	
Shock limit	\pm g	1000			2000
Recovery time	ms		1		

ELECTRICAL

Excitation voltage	V DC	8 to 30			
Zero acceleration output	mA	12			
Output Impedance	Ω	100			
Isolation		Case Isolated			
Spectral noise (typical)	μ g/ \sqrt Hz	10	15	20	100
Broadband noise (\pm 5% frequency range, typical)	μ V	0.4	0.2	0.3	0.4

ENVIRONMENTAL

Temperature coefficient of sensitivity	%/ $^{\circ}$ C	0.02			
Operating temperature range	$^{\circ}$ C	-20 to +70			
Storage temperature range	$^{\circ}$ C	-30 to +80			
Sealing		IP67			

PHYSICAL

Sensing element	MEMS Capacitive				
Case material	Anodised Aluminium				
Connector	Cable gland (Binder / Comtronic)				
Mounting	M3 / M5 Screws				
Weight (without cable)	gram	Uniaxial: 27 Biaxial: 35 Triaxial: 65			
Cable	Uniaxial: 2m, PVC (2 x 0.5mm ²) Biaxial: 2m, PVC (4 x 2 x 0.22mm ²) Triaxial: 2m, PVC (6 x 0.25mm ²)				

Typical Specifications

HIGH-BANDWIDTH MODELS: UNIAXIAL ASC CS1721 ; BIAXIAL: ASC CS1521 ; TRIAXIAL: ASC CS1621

DYNAMIC

		Measurement Range (\pm g)			
		\pm 2g	\pm 5g	\pm 10g	\pm 50g
Sensitivity	mA/g	4	1.6	0.8	0.16
Frequency response: \pm 5%	Hz	100		800	1000
Amplitude non-linearity	% FSO			<1	
Transverse sensitivity	%			<3	
Shock limit	\pm g	1000			2000
Recovery time	ms		1		

ELECTRICAL

Excitation voltage	V DC	8 to 30			
Zero acceleration output	mA	12			
Output Impedance	Ω	200			
Isolation		Case Isolated			
Spectral noise (typical)	μ g/ \sqrt Hz	25	55	150	750
Broadband noise (\pm 5% frequency range, typical)	μ A	1	1	3.5	4

ENVIRONMENTAL

Temperature coefficient of sensitivity	%/ $^{\circ}$ C	0.01			
Operating temperature range	$^{\circ}$ C	-20 to +70			
Storage temperature range	$^{\circ}$ C	-30 to +80			
Sealing		IP67			

PHYSICAL

Sensing element		MEMS Capacitive			
Case material		Anodised Aluminium			
Connector		Cable gland (Binder / Comtronic)			
Mounting		M3 / M5 Screws			
Weight (without cable)	gram	Uniaxial: 27 Biaxial: 35 Triaxial: 65			
Cable		Uniaxial: 2m, PVC (2 x 0.5mm ²) Biaxial: 2m, PVC (4 x 2 x 0.22mm ²) Triaxial: 2m, PVC (6 x 0.25mm ²)			

FACTORY CALIBRATION (SUPPLIED WITH THE SENSOR)**Low-noise series: ASC CS1711LN; ASC CS1511LN; ASC CS1611LN**

Range	±2g	±5g	±10g	±50g
Frequency Response	10Hz to 100Hz		10Hz to 300Hz	10Hz to 650Hz

High-bandwidth series: ASC CS1721; ASC CS1521; ASC CS1621

Range	±2g	±5g	±10g	±50g
Frequency Response	10Hz to 100Hz		10Hz to 800Hz	10Hz to 1kHz

CALIBRATION DIN ISO 17025 (ORDER SEPARATELY)***Low-noise series: ASC CS1711LN; ASC CS1511LN; ASC CS1611LN**

Range	±2g	±5g	±10g	±50g
Frequency Response	0.5Hz to 200Hz		0.5Hz to 1kHz	

High-bandwidth series: ASC CS1721; ASC CS1521; ASC CS1621

Range	±2g	±5g	±10g	±50g
Frequency Response	0.5Hz to 200Hz		0.5Hz to 1kHz	

Cable Code / Pin Configuration

Uniaxial, 3-wire: ASC CS1711LN
Supply +, Supply-, Signal

Uniaxial, 2-wire: ASC CS1721
Supply +, Supply- (Signal)

Biaxial, 6-wire: ASC CS1511LN
X-axis: Supply +, Supply-, Signal
Y-axis: Supply +, Supply-, Signal

Biaxial, 4-wire: ASC CS1521
X-axis: Supply +, Supply- (Signal)
Y-axis: Supply +, Supply- (Signal)

Triaxial, 9-wire: ASC CS1611LN
X-axis: Supply +, Supply-, Signal
Y-axis: Supply +, Supply-, Signal
Z-axis: Supply +, Supply-, Signal

Triaxial, 6-wire: ASC CS1621
X-axis: Supply +, Supply- (Signal)
Y-axis: Supply +, Supply- (Signal)
Z-axis: Supply +, Supply- (Signal)

ORDERING INFORMATION

Model	Range	Cable length	Connector	Protection class
ASC CS1721	XXX	YYY	A: open-ended cable	IPXX
ASC CS1711LN			(no connector at the DAQ end)	
ASC CS1521	002: ±2g	050: 50m		IP67 (standard)
ASC CS1511LN	005: ±5g	100: 100m	Contact factory for all available	IP68
ASC CS1621	010: ±10g	150: 150m	connector options such as Lemo,	
ASC CS1611LN	050: ±50g	200: 200m	BNC etc.	

*accredited by the German accreditation body (Deutsche Akkreditierungsstelle, DAkkS) to DIN EN ISO / IEC 17025

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