



The SA10/3D, 2D and 1D are true electrodynamic force balance accelerometer (FBA) designed for seismic or industrial applications regarding weak, middle and strong motion earthquake monitoring and/or vibration monitoring.

The sensor is entirely designed and manufactured in our laboratory and it is featuring an excellent dynamic range, compactness and high sensitivity.

It is available in 1, 2 or 3 axial versions.

This sensor is one of the best products available in the international market.

SA10/3D

In our standard sensor's housing for triaxial unit of 140x155x85mm (except connectors) its weight is 3.2Kg. Assembled in case milled out from a solid block of aluminum, orthogonality and precision levelling are guaranteed. Anchoring holes and keys are provided in the case also with precision levelling paddles.

SA10/2D and SA10/1D

With the SA10C we improved the compactness allowing biaxial and monoaxial units to be deployed in buildings where space is a critical factor.



Dimensions are: 175x85x70mm (except connector) and weight is 1.1kg for monoaxial unit and 1.35kg for biaxial unit.

Energy

With a total power consumption of 80mA @ 12V (triaxial version) the SA10 can be used also in installation where the power consumption is a critical factor.

Precision

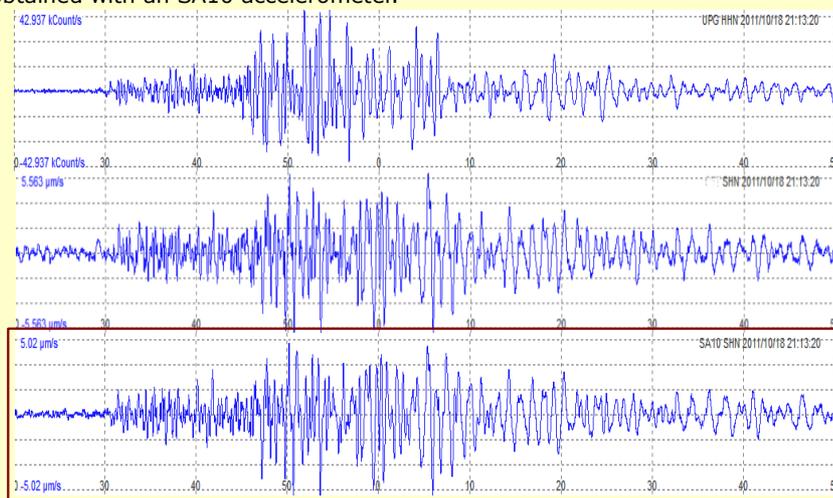
The SA10 sensor uses a true force balance closed loop configuration without the use of any additional band-pass filter.

It is strictly tuned and calibrated at the specified frequency, damping and sensitivity. It comes out from our lab with the calibration certificate and its transfer function expressed in poles and zeroes according to the international standards.

True differential outputs with customizable sensitivity (to be specified at order) allows the unit to be connected to any third-party digitizers and guarantee the maximum signal to noise ratio.

One example

Here some seismograms (in velocity) of an earthquake of ML3.3 recorded at a distance of 130 km with epicenter at 9 km depth recorded on hard rock. The first diagram is recorded with a broad-band velocimeter unit; the second is recorded with a concurrent accelerometers and corrected to velocity*; the third, corrected to velocity* as well, is boxed in red, and is the recording obtained with an SA10 accelerometer.



You can notice that, being P and S waves of same amplitude, the background noise of the first 10 seconds is much lower in the SA10 and also more clean in the respect of the competitor.

* Seismographs has been filtered in the band pass of 0.5-8Hz for all sensors.

SA10/3D, 2D and 1D main technical specifications

Number of axes:	1, 2 or 3 in X, Y, Z or any combinations of the three
Orientation:	horizontal or vertical (wall mount) to be specified at order
Levelling:	manual, with adjusting knobs
Casing:	solid block of aluminum CNC milled and treated against corrosion
Protection grade:	IP67
Tolerated humidity:	0-100%
Temperature operative range:	-20 to +70°C
Bandwidth:	DC-100Hz/DC-200Hz (standards, other customization are possible)
Damping:	0.707
Inertial mass weight:	15 g
Standard sensitivity:	5 V/g (2g at full scale)
Full scale:	+/- 2 g (standard, 1g or 4g upon request)
Output:	+/-10V fully differential (50 ohm)
Dynamic range:	> 165dB (from 0.1Hz to 20Hz with 1g full scale version)
Offset drift:	0.0001 g/°C horizontal axes, 0.00025 g/°C vertical axis
Span drift:	200 ppm/°C
Nonlinearity:	< 0.1%
Cross axis sensitivity:	< 0.5%
Power supply:	10-15Vdc (80mA for 3 axes unit)
Connector:	MIL-C-10 pin connectors
Conformity:	CE

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