



The SA10 is a true electrodynamic one-to-three axis 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 sensitivity make this sensor one of the best products available in the international market.

Simplicity

The SA10 is compact, reliable, and easy to deploy and use. It comes from our lab with the calibration certificate and its transfer function expressed in poles and zeroes according to the international standards like SEED or GSE for a easy ground motion deconvolution also with use of SEISMOWIN or other restitution software like SAC or SEISAN.

Energy

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

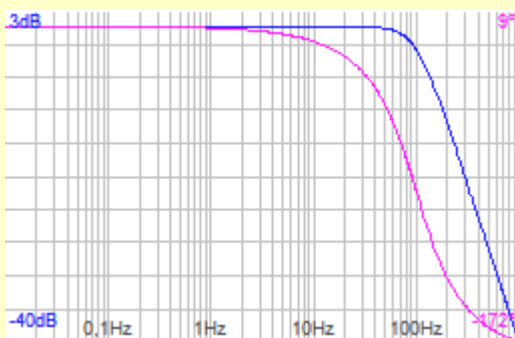
Precision

The SA10 sensor uses a true force balance closed loop configuration without the use of any additional band-pass filter. Assembled in a case milled out from a solid block of aluminum, orthogonality and precision leveling is guaranteed. Anchoring holes and keys are provided in the case also with precision leveling screws.

Flexibility

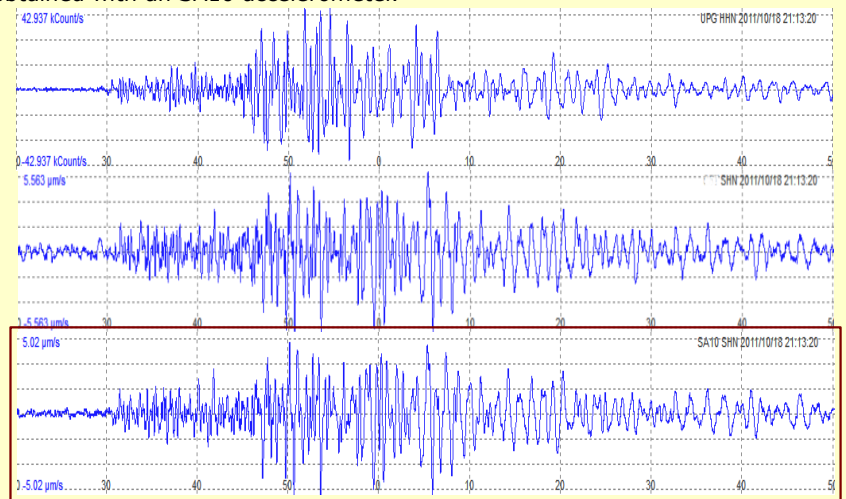
One, two or three differential outputs with customizable sensitivity (to be specified at order) allow the unit to be connected to any third-party digitizers.

The following diagram shows a standard transfer function. Customization, within bounds, are possible according to the user's need.



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.

SA-10 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 |
| Leveling: | manual, with adjusting knobs |
| Casing: | solid block of aluminum CNC milled and treated against corrosion |
| Dimensions: | 140x155x85 (except connectors) |
| Weight: | about 3 kg |
| Protection grade: | IP66 |
| Tolerated humidity: | 0-100% |
| Temperature operative range: | -20 to +70°C |
| Bandwidth: | DC-200Hz (standard, 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: | 0.000001 g/°C |
| Span drift: | 200 ppm/°C |
| Nonlinearity: | <= 0.1% |
| Cross axis sensitivity: | <= 0.1% |
| Power supply: | 10-15Vdc (80mA for 3 axes unit) |
| Connector: | MIL-C-10 pin connectors |
| Conformity: | CE |

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