



ROTATIONAL FORCE-BALANCED BROADBAND LOW-NOISE SEISMOMETER **RSB20**



RSB20 is the next generation rotational seismometer¹ based on the proprietary electrochemical transducer technology. *All three identical sensors are completely insensitive to translational motion.* In comparison with its predecessors, this instrument is equipped with the force-balancing magneto-hydrodynamic feedback than not only significantly improves its linearity, dynamic range and parameter stability but also provides means for accurate calibration even in the field conditions. The increase of the dynamic range to 144dB with the simultaneous 18dB noise reduction as compared to R-1 makes this instrument

equally suitable for scientific purposes as well as for structural monitoring; in other words, the **RSB20** picks up well both very weak and very strong rotational motions in a much broader passband. **RSB20** seismometer can be equipped with an optional microcontroller to internally generate calibrating sine or other waveform signals. The calibration can be initiated by applying a logic level to the Calibration Enable input or via an optional serial port. If the latter is provided, the user can choose another option that allows for selection the Generator Constant value in the 50-1,000 V/rad/s range. Still another option includes additional three axes of highly sensitive translational force-balanced accelerometers providing 6 outputs covering all possible modes of ground motion.

RSB20 DOES NOT require mass lock or mass centering, special installation equipment, or technical installation procedures. The **RSB20** seismometers provide low cost of ownership, **REQUIRING no** maintenance over the life of the instrument. Three and five-year extended warranties are available.

¹ Patent pending

RSB20 Specifications

PARAMETER	RSB20
Operating principle	Proprietary Electrochemical Sensor with Force-balancing Magneto-Hydrodynamic Feedback
Output signals	3 identical broad band sensors with rotational velocity flat response
Standard output swing:	± 10 V single-ended; 40 V p-p differential
Resolution:	0.6E-8 rad/sec @ 1Hz
Dynamic Range	144 dB
Clip Level	~ 0.1 rad/s @ 1Hz
Bandwidth:	0.01 – 50 Hz; Optionally longer period cutoffs available
Generator constant	Factory preset: 15 – 1,000 V/r/s or optionally user selected via serial port
Calibration input	Std: 1k Ω ; 1V in – 1V out; Optional – internally generated calibration waveforms initiated via optional serial port
Mass Lock	NONE REQUIRED
Mass centering	NONE REQUIRED
Mechanical resonances	none
Cross-axis sensitivity	$\leq 0.1\%$
Environmental	Waterproof, submersible (1m)
Temperature range	-12 to + 55 °C
Housing material	Aluminum
Dimensions:	160x160x160 mm
Weight	~ 2 kg
Mounting connection	Std: threaded mounting holes on the bottom; mounting flange optional
Power – Regular	9 – 30 Vdc; (Nominal 12Vdc); 28mA
Connectors	Main: 14-pin circular Optional Serial Port: 3-pin circular