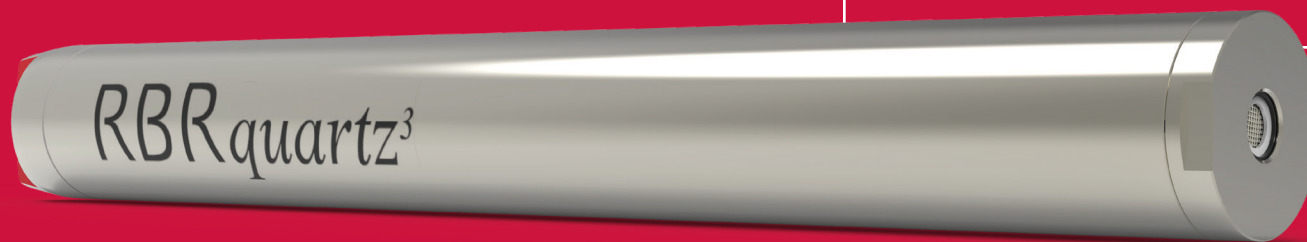# BOTTOM PRESSURE RECORDER

**10ppb RESOLUTION
FULL OCEAN DEPTH
TSUNAMI MONITORING**

The RBR*quartz*³ BPR (bottom pressure recorder) uses an integrated Paroscientific Digiquartz® pressure sensor for the best-in-class initial accuracy, resolution and low drift performance. The RBR*quartz*³ BPR is intended for long-term autonomous or real-time observations of water level, tides, and tsunamis in deep water. The high resolution (10ppb) and accuracy (0.01% FS) quartz pressure sensor is able to detect minuscule changes in water level from the bottom of the ocean. Continuous measurements allow the RBR*quartz*³ BPR to be used for tsunami detection and early-warning systems when connected to a cabled real-time network. Flexible measurement schedules and configurable integration times permit applications for tide and sea level measurements when powered on internal batteries. The RBR*quartz*³ BPR has a large memory capacity, sufficient power for extended deployments, and USB-C download for large data files.

FEATURES

Long deployments	High accuracy	240M readings	Up to 16Hz sampling rate	USB-C download	10ppb resolution

The RBR*quartz*³ BPR uses the proven Digiquartz® pressure sensor to achieve high resolution measurements for full ocean depth water level and tide observations. The RBR*quartz*³ BPR can record instantaneous pressure measurements, average pressure measurements over specified sampling duration, and burst-sample pressure at up to 16Hz. A high accuracy marine temperature sensor is standard with every RBR*quartz*³ BPR and temperature data are recorded with each pressure measurement.

The RBR*quartz*³ BPR is ideal for applications such as tsunami detection and warning systems, long-term water level studies, and high-accuracy depth sensing in ROVs and AUVs. Online applications are enabled via RS-232 or RS-485 communications. Data transmission to a surface buoy can be performed reliably using the RBR inductive modem system. Dataset export to Matlab, Excel, OceanDataView®, or text files makes post processing with your own algorithms effortless.

BOTTOM PRESSURE RECORDER
FULL OCEAN DEPTH TSUNAMI MONITORING

Specifications

Physical

Storage:	240M readings
Power:	8 AA cells
External power:	4.5-30 VDC
Communication:	USB-C or RS-232/485
Clock drift:	±60 seconds/year
Depth rating:	10,000m
Housing:	Titanium
Size:	~540mm x Ø60mm
Weight:	~3.4kg in air
	~1.7kg in water

Temperature

Range:	-5 to 35°C
Accuracy:	±0.002°C
Time constant:	30s (embedded)
Typical stability:	0.002°C/year

Depth

Range:	1350 / 2000 / 4000 / 7000 dbar
Initial accuracy:	±0.01% FS
Resolution:	10ppb (at 1Hz sampling rate)

Deployment Estimates

Lithium iron cells

Sampling Period	Time	Samples
2s	35 days	1.5M
10s	175 days	1.5M
60s	2.5 years	1.5M
16Hz	35 days	48M

RBR*fermata* alkaline pack

Sampling Period	Time	Samples
2s	3 years	50M
16Hz	95 days	135M
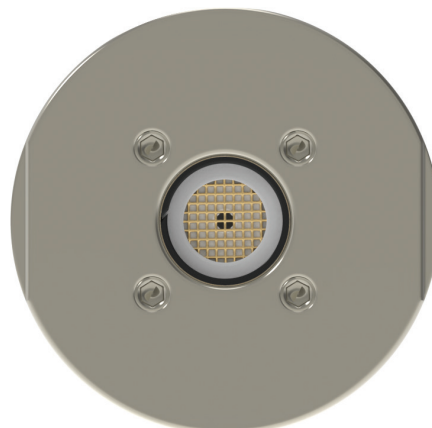
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