RBR

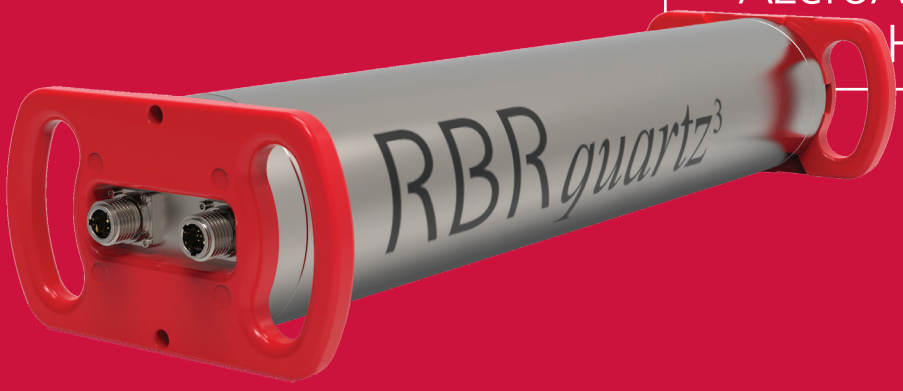
MEASURE THE BLUE PLANET

rbr-global.com

RBR*quartz*³ BPR|zero

BOTTOM PRESSURE RECORDER

AzeroA CORRECTION, HIGH STABILITY



The RBR*quartz*³ BPR|zero is a special version of the robust RBR*quartz*³ BPR implementing an internal quartz barometer and switching valve. The novel AzeroA technique is used to provide in-situ reference measurements to correct for long term drift in the Paroscientific Digiquartz® pressure gauge. Configured with one or two Digiquartz® pressure gauges, an internal barometer is used in conjunction with a hydraulic manifold to periodically make reference measurements of internal housing pressure. This instrument is intended for deep water, long-term deployments where high stability and resolution of absolute pressure measurements are critical. The RBR*quartz*³ BPR|zero may be supplied with external power from RBR*fermata* (power) or RBR*cervata* (power and memory) canisters or cabled to an observatory for external power and realtime data access.

FEATURES

- Long deployments
- High accuracy
- Quartz stability
- Up to 16Hz sampling rate
- AzeroA drift verification
- 10ppb resolution

The RBR*quartz*³ BPR|zero uses the AzeroA technique to assess drift in the Digiquartz® pressure gauge. This is done by periodically switching the applied pressure that the gauge measures from seawater to the atmospheric conditions inside the housing. The drift in quartz sensors is proportional to the full-scale rating, so a reference barometer - with hundreds of times less drift that the marine gauge - is used to determine the behaviour of the marine pressure measurements.

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Specifications

Physical

Storage:	240M readings
Power:	Requires external power
External power:	9.5-30 VDC
Communication:	USB-C, RS-232/485, Ethernet
Clock drift:	±60 seconds/year
Depth rating:	7,000m
Housing:	Titanium
Size:	750mm x Ø140mm
Weight:	~30kg in air (one Paros) ~18kg in water (one Paros)

Temperature

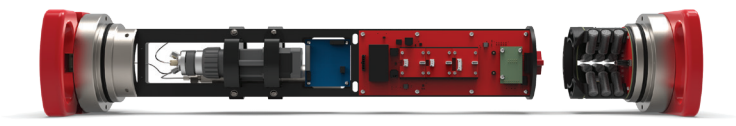
Range:	-5 to 35°C
Accuracy:	±0.002°C
Time constant:	~3 minutes
Typical stability:	0.002°C/year

Depth

Range:	1350 / 2000 / 4000 / 7000 dbar
Initial accuracy:	±0.01% FS
Resolution:	10ppb (1s integration)
Stability analysis:	Typically <1cm/year at 7000 dbar

Accelerometer (optional)

Range:	±3g
Resolution:	<100ng



Deployment Estimates

RBR*fermata* alkaline pack

Sampling Period (Sea)	Sampling Period (Baro)	Deployment Time (One Paros Digiquartz®)	Deployment Time (Two Paros Digiquartz®)
60s	10 days	10+ years	10+ years
10s	10 days	8.2 years	5.5 years (memory limited)
1Hz	10 days	610 days (memory limited)	435 days (memory limited)
16Hz	10 days	4.2 years (with RBR*cervata*)	2.9 years (with RBR*cervata*)

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