

## BOTTOM PRESSURE RECORDER



HIGH STABILITY,  
AzeroA CORRECTION

The RBR*quartz*<sup>3</sup> BPR|zero is a special version of the robust RBR*quartz*<sup>3</sup> BPR implementing the AzeroA technique to correct for the long-term drift in the Paroscientific Digiquartz<sup>®</sup> pressure gauge. This instrument is intended for deep, long-term deployments, where high stability and resolution of absolute pressure measurements are critical.

### FEATURES



Long  
deployments



High  
accuracy



Quartz  
stability



Up to 8Hz  
sampling rate



AzeroA drift  
correction



10ppb  
resolution

The RBR*quartz*<sup>3</sup> BPR|zero integrates one or two Paroscientific Digiquartz<sup>®</sup> pressure gauges, an internal quartz barometer, and a switching valve. The AzeroA drift correction technique periodically activates the switching valve to perform reference measurements of internal housing pressure. The resulting long term drift is several hundred times lower than with uncompensated measurements.

The RBR*quartz*<sup>3</sup> BPR|zero requires external power to operate the valve, and can use RBR*fermata* underwater battery canisters, or connect via cable to an observatory for external power and realtime data access.

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#### Specifications

##### Physical

Storage	240M readings
Power	Internal: 8 AA cells External: 9.5V to 30V
Communication	Internal: USB-C External: RS-232/485, or Ethernet
Clock drift	±60 seconds/year
Depth rating	7000m
Housing	Titanium
Size	788mm x Ø140mm
Weight	30kg in air, 18kg in water (single pressure unit, with batteries)

##### Deployment estimates<sup>1</sup>

Speed	Internal batteries only (no valve operation)		RBRfermata (with the valve activated every 20 days)	
	Time	# samples	Time	# samples
8Hz	32 days	22 million	75 days	45 million
4Hz	32 days	11 million	150 days	45 million
2Hz	32 days	~6 million	300 days	45 million
1Hz	32 days	~3 million	610 days	45 million

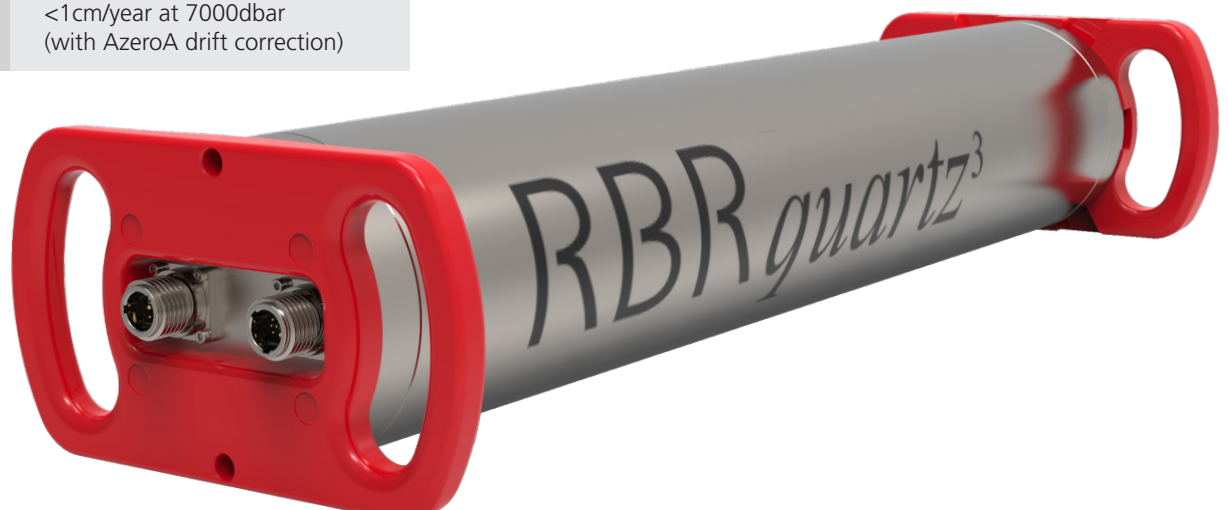
<sup>1</sup> Deployment estimates are for a single pressure unit, with lithium thionyl chloride cells.

##### Temperature

Range	-5 to 35°C
Initial accuracy	±0.002°C
Resolution	0.00005°C
Typical stability	0.002°C/year
Time constant	~3 minutes

##### Pressure

Range	1000 / 2000 / 4000 / 7000dbar
Initial accuracy	±0.01% full scale
Resolution	10ppb (at 1Hz sampling rate)
Typical stability	<1cm/year at 7000dbar (with AzeroA drift correction)



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