

BOTTOM PRESSURE RECORDER



HIGH STABILITY,
AzeroA CORRECTION

The RBR*quartz*⁴ BPR|zero bottom pressure recorder implements the AzeroA technique to minimise the long-term drift in the Paroscientific Digiquartz[®] pressure gauge. This instrument is intended for deep, long-term deployments, where high stability and resolution of absolute pressure measurements are critical.

FEATURES



The RBR*quartz*⁴ BPR|zero integrates a Paroscientific Digiquartz[®] pressure gauge, an internal quartz barometer, an accelerometer, and a switching valve in a compact titanium housing. The AzeroA drift correction technique periodically activates the valve to perform reference measurements of internal housing pressure. The resulting long term drift is several hundred times lower than with uncompensated measurements. In addition, the RBR*quartz*⁴ BPR|zero provides tilt compensation.

The RBR*quartz*⁴ BPR|zero requires external power to operate the valve, such as an RBR*fermata* underwater battery canister, or it can connect via cable to an observatory for external power and realtime data access.

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Specifications

Physical

Storage	1.38 Billion readings
Power	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	402mm x Ø100mm
Weight	7.4kg in air, 4.1kg in water

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 7000m (with AzeroA drift correction)

Deployment estimates

Speed	RBRfermata (with the valve activated every 30 days)	
	Time	
32Hz	1 Year	
16Hz	2 years	
8Hz	4 years	
4Hz	8 years	
2Hz	10+ years	
1Hz	10+ years	



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