



PMD
SCIENTIFIC, INC

HIGH PERFORMANCE VERY BROAD BAND SEISMOMETERS BB603, BB603-OBS



The **BB603** represents the new generation of low noise very broadband seismometers equally suitable for vault, field and OBS (reduced power version) applications. The sensor's highly efficient electrodynamic force-balancing feedback provides for an extended dynamic range, excellent stability and linearity across the entire passband.

The instrument uses three identical proprietary electrochemical sensors¹ mounted orthogonally along the N, E, and Z-axes. These sensors have many advantages over traditional electromechanical devices. In particular, they have much larger ground motion-to-voltage conversion ratio that results in a uniquely shaped noise curve that it starts bending up at much longer periods and then raises more shallow than the traditional 1/f curves.

BB603 contains a microcontroller which maintains exceptionally accurate parameter stability over the full operating temperature range and over the life of the instrument. Optionally, the microcontroller can also generate internally 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 also select and set the Generator Constant value in the 350-20,000 V/m/s range

Similarly to other PMD seismometers, the **BB603** is extremely rugged which makes it ideal for field use. This seismometer *does not* require a mass lock, mass centering, or special installation equipment or procedures. It has low power consumption, operates over a wide temperature range; it is waterproof up to the one-meter depths, and stays operational within a wide range of installation tilts. It provides low cost of ownership, *requiring no maintenance* over the life of the instrument. Three and five-year extended warranties are available.

BB603 is also offered as:

- A 128 mm diameter borehole seismometer with optional internal inclinometers.
- An ocean floor (OBS) low power seismometer with analog or digital (**BB603D-OBD**) outputs placed in various customized housings (such as, for example, a titanium cylinder as shown above on the right).

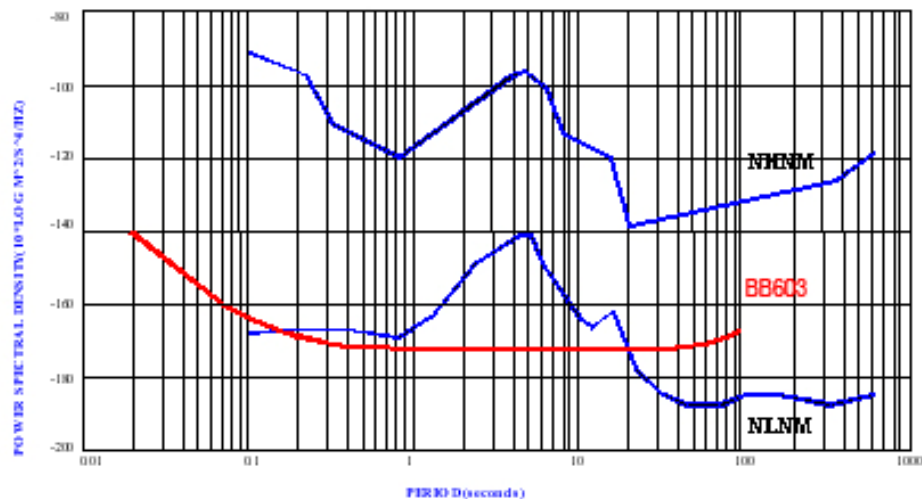


¹ U.S. Patent No.6,576,103

BB603 Specifications

PARAMETER	BB603	BB603-OBS
Operating principle:	Electrochemical motion transducer with force-balancing feedback	
Output signals	2 horizontal, 1 vertical; very broad passband, velocity flat response	
Output signal swing	±10V (±20 V p-p differential)	
Dynamic Range	150 dB @ 1Hz	
Bandwidth	Standard: 0.0167 – 50 Hz; Optional: 0.0083 – 50 Hz	
Self-noise	Below USGS NLNM in 0.05 – 5Hz range; -170dB @ 0.033Hz. (See noise curve below)	
Generator constant ²	Standard: 2000 V/m/s; Opt.: 350 – 20,000 V/m/s	
Calibration input	Std: 1kΩ; 1V in – 1V out; Optional – internally generated calibration waveforms initiated via optional serial port	
Mass Lock	NONE REQUIRED	
Mass Centering	NONE REQUIRED	
Maximum installation tilt ³	±10°	
Mechanical resonances	>140 Hz	
Environmental	Waterproof, submersible (1m)	Vacuum tight to 0.5 atm
Temperature range	Standard: -12 to + 55 °C	
Case diameter	200 mm	Custom
Case height	220 mm	Custom
Weight (Al housing)	11 kg	Custom
Power – Regular	9 – 30 Vdc; (Nominal 12Vdc); 28mA	
Power – Low power ⁴	5 – 15 Vdc; 12mA @ 12 Vdc	
Connector	Main: 14-pin circular ; Optional Serial Port: 3-pin circular	Custom

BB603 SEISMOMETER NOISE CURVE



² Factory preset or user selected via an optional serial port

³ All three sensors stay fully operational; however their sensitivity axes will rotate in accordance with the tilt.

⁴ Low-power option requires external battery or a regulated power source

Specifications subject to change without notice

105-F West Dudleytown Road, Bloomfield, CT 06002 USA

Tel: 1-860-242-8177 Fax: 1-860-242-7812

e-mail: sales@pmdsci.com Web Site: www.pmdsci.com