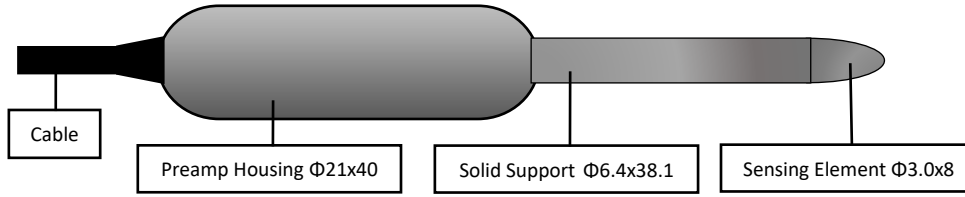


## Hydrophone Specification

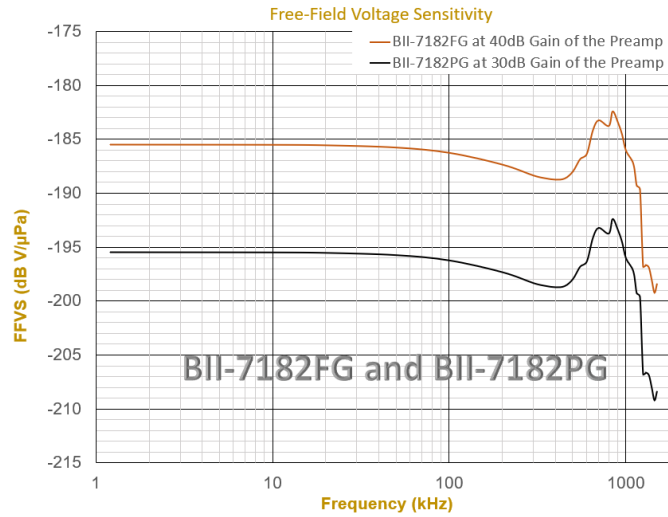
<b>Part Number:</b>	BII-7182FG	BII-7182PG	
Sensitivity at 1 kHz:	-225.5 + Preamp Gain. Variation: $\pm 2$ dB.		
Free-field Voltage Sensitivity:	Refer to Graph of <b>FFVS vs. Frequency</b> .		
Usable Frequency in Water:	1Hz ~ 1.6MHz at $\pm 3$ dB V/ $\mu$ Pa.		
Usable Frequency in Air:	1Hz ~ 25kHz at -3dB V/ $\mu$ Pa.		
-3dB Beam Width:	Refer to Graph of <b>Directivity Pattern</b> .		
Bespoke Preamp Gain (dB):	Fixed Gain: Default 40 dB, -40 to +40 dB available.	Digitally Programmable Gain Preamp: 30, 60 dB.	
Gain Selection Voltage:	N/A	CMOS/TTL Compatible. Logic Low 0: Gain Selection Wire to COM or 0 to +0.8 VDC. Logic High 1: Gain Selection Wire Open or +2.4 VDC to Vs. Vs: Power Supply Voltage; COM: Power Supply Common.	
Built-in Bandpass Filter:	1. Default: -3 dB bandwidth 15 Hz to 2 MHz. 2. Bespoke, specify when ordering.	1. Default: -3 dB bandwidth 30 Hz to 2 MHz. 2. Bespoke, specify when ordering.	
Maximum Output Vomax:	(Supply Voltage Vs - 4) Vpp	(Supply Voltage Vs - 3.4) Vpp	
Overload Pressure Level:	20*log(Vomax/2.828) - Sensitivity, in dB $\mu$ Pa.		
Output Type:	Single Ended.		
Acceleration Sensitivity:	121.0 dB re $\mu$ Pa/(m/s <sup>2</sup> )		
Maximum Operating Depth:	50 m and limited by the cable length if the cable has wire leads or a non-waterproof connector.		
Mounting Options:	<ol style="list-style-type: none"> <li>Free Hanging (FH)</li> <li>Free-hanging with Male Underwater Connector (FHUWC)</li> <li>Thru-hole Mounting with Single O-ring (THSO)</li> <li>Thru-hole Mounting with Double O-ring (THDO)</li> <li>Bolt Fastening Mounting (Plastics) (BFMP)</li> <li>Bolt Fastening Mounting (Stainless Steel) (BFMSS)</li> </ol> Please refer to online document <a href="#">AcousticSystem.pdf</a> for a complete list of Mounting Options and more details.		
Cable:	Four Conductor Shielded Cable (SC)	Six Conductor Shielded Cable (SC) or Cable Bundle	
Cable Length:	<ol style="list-style-type: none"> <li>Default: 10 m.</li> <li>Custom-fit up to 200 m.</li> </ol>		
Connector:	<ol style="list-style-type: none"> <li>Default: Wire Leads (WL)</li> <li>BNC Male (BNC)</li> <li>SMC Plug with Female Socket (SMC)</li> <li>LEMO (Plug Male Pins) (LEMO)</li> <li>Underwater Mateable Connector (UMC)</li> <li>+9VDC Battery Snap (BS) (Exclusive to preamplified hydrophone)</li> <li>Custom (custom)</li> </ol>		
Current (Quiescent):	8 mA	11 mA	
Supply Voltage Vs:	+8.5 to +30 VDC	+6 to +30 VDC	
Suggested DC Supply:	+9VDC Battery, Marine Battery, Automobile Battery, Fixed DC Linear Power Supply, Not Included. DO NOT use variable power supply whose maximum supply voltage is higher than the rated voltage. DO NOT use switching mode DC power supply.		
Size:	Sensing Element: $\Phi$ DxL= $\Phi$ 3.0x8mm; Solid Support: $\Phi$ DxL= $\Phi$ 6.4x38.1mm; Preamp Housing: $\Phi$ DxL= $\Phi$ 21x40mm. Varies with options.		
Weight:	0.56 kg with 10 m cables, Varies with options.		
Operation Temperature:	-10 °C to +60 °C or 14 °F to 140 °F.		
Storage Temperature:	-20 °C to +60 °C or -4 °F to 140 °F.		
<b>Sound Measurement in Air:</b> The hydrophones can be used to detect sounds in air. Receiving sensitivity in air is same to the one in water in low frequency range.			
<b>Wiring Information of Hydrophones with Fixed-gain Preamps:</b>			
<b>Wiring of Single Ended Output:</b>	<b>Wire Leads</b>	<b>BNC Male/SMA/SMC and 9V Battery Snap</b>	<b>Underwater Connector</b>
+VDC	Red	Female Snap	Pin 3
Common	Black	Male Snap	Pin 1
Signal	White	Center Pin or Contact	Pin 2
Signal Common	Blue, Green, or Yellow	BNC/SMA/SMC Shield	Pin 4
Shielding	Shield	N/A	N/A
<b>Wiring Information of Hydrophones with One-bit Programmable Gain Preamps:</b>			
<b>Wiring of Single-Ended Output:</b>	<b>Wire Leads</b>	<b>Underwater Connector</b>	<b>BNC Male/SMA/SMC + 9V Battery Snap</b>
+VDC	Red	Pin 3	Battery Female Snap
Common	Black	Pin 1	Battery Male Snap, XLR Pin 1.
Digital Common	Yellow or Brown	Pin 5	Yellow or Brown
Digital A0 (FFVS Selection)	Blue	Pin 6	Blue
Output Signal	White	Pin 2	Center Pin or Contact
Output Signal Common	Green	Pin 4	BNC/SMA/SMC Shield
Shielding	Shield	N/A	N/A
<b>Selecting Sensitivity of One-bit Digitally Programmable</b>			
<b>Gain Selection Wire A0</b>	<b>Hydrophone Sensitivity</b>		
0 (Logic Low)	225.5 + 30 dB V/ $\mu$ Pa		
1 (Logic High)	225.5 + 60 dB V/ $\mu$ Pa		

**Physical Size (Dimension Unit: mm):**



Customization of Length Reduction of the Hydrophone: Hydrophone can be made as "L" shape with solid support perpendicular to the housing wall. Appending "L" to the part number BII-7182FGL or BII-7182PGL when ordering to specify L-shaped Hydrophone.

**Free-field Voltage Sensitivity (Bespoke)**



**Directivity Pattern:**

