

**Transducer Specification**

<b>Part Number:</b>	BII-7506/3.5			
<b>Signal Type:</b>	Pulsed SINE, Chirp, PSK, FSK, etc.; Pulsed Square Waveform			
<b>Resonant Frequency fs:</b>	3.5 kHz			
<b>Quality Factor:</b>	5			
<b>Transmitting Voltage Response:</b>	130.5 dB $\mu$ Pa/V@1m @ fs			
<b>Free-field Voltage Sensitivity:</b>	-176.4 dB V/ $\mu$ Pa @ fs.			
<b>-3dB Beam Width:</b>	136°			
<b>Beam Pattern:</b>	Conical			
<b>Side Lobe Level:</b>	No Side Lobes			
<b>Free Capacitance:</b>	15.5 nF @ 1kHz			
<b>Dissipation:</b>	0.005 @ 1kHz			
<b>Admittance or Impedance:</b>	G=0.7 mS, B=0.8 mS @ fs			
<b>MIPP:</b>	120 Watts, Maximum Input Pulse Power. Note: with built-in impedance matching unit, MIPP can reach 450W. Contact BII for details.			
<b>MPW @ MIPP:</b>	1500 Seconds, Maximum Pulse Width			
<b>MCIP:</b>	10 Watts, Maximum Continuous Input Power.			
<b>Cable:</b>	1. Two Conductor Shielded Cable (SC) 2. 50 $\Omega$ RG58 Coax (RG58) Note: Operating depth is limited by the cable length without a suitable underwater sealing part.			
<b>Cable Length:</b>	1. Default: 1m 2. Custom			
<b>Connector:</b>	1. Default: Wire Leads (WL) 2. 50 $\Omega$ BNC Male (BNC) 3. Underwater Mateable Connector (UMC) 4. MIL-5015 Style (5015) 5. Custom (custom) Note: Underwater Mateable Connector is for uses underwater. Other connectors and wire leads are for dry uses, and are not water proofed.			
<b>Mounting Options:</b>	1. Default: Free Hanging (FH) 2. Thru-hole Mounting with Single O-ring (THSO) 3. Thru-hole Mounting with Double O-ring (THDO) 4. Bolt Fastening Mounting (Stainless Steel): (BFMSS) 5. End-face Mounting: (EFM) 6. Flange Mounting: (FGM)			
<b>Maximum Operating Depth:</b>	50m, Limited by cable length with wire leads.			
<b>Size:</b>	$\Phi$ D xH = $\Phi$ 168 x 160 mm, actual length depends on Mounting Parts.			
<b>Weight:</b>	7.5 kg with 10m cable. Actual weight depends on Mounting Parts, Cable Types and Length.			
<b>Operation Temperature:</b>	-10°C to +60°C or 14°F to 140°F.			
<b>Storage Temperature:</b>	-20°C to +60°C or -4°F to 140°F.			
<b>Wiring:</b>	<b>Two Conductor Shielded Cable</b>	<b>Coax/BNC</b>	<b>Underwater Connector</b>	<b>MIL-5015 Connector</b>
Transmitting +	White or Red	Center Contact	Contact 2	Contact C
Transmitting -	Black	Shield	Contact 1	Contact B
Shielding and System Grounding	Shield	Shield	Contact 3	Contact A
<b>How to determine pulse width, duty cycle and off-time with input pulse power (peak power):</b>				
1. Determine the input pulse power (IPP, peak power) with sound intensity required by the project. IPP MUST be less than MIPP;				
2. Pulse Width $\leq$ (MIPP * MPW*(120°C-T)/103°C)/IPP; T: Water Temperature in °C.				
3. Duty Cycle D $\leq$ MCIP*(120°C-T)/103°C)/IPP;				
4. Off-time $\geq$ PW*(1-D)/D.				
<b>WARNING: DANGER — HIGH VOLTAGE on wires. Wires shall be insulated for safety. DO NOT TOUCH THE WIRES BEFORE THE DRIVING SIGNAL IS SHUT DOWN. Cable shield must be grounded firmly for safety.</b>				
for 50 $\Omega$ BNC Male connector, it is buyer's sole responsibility to make sure that the (female) BNC shield of the signal source is firmly grounded for operating safety before hooking up transducer/hydrophone to the signal source. Coax with BNC is not intended for hand-held use at voltages above 30Vac/60Vdc.				