

## Transducer Specification

<b>Part Number:</b>	BII-7502/23			
Signal Type:	Pulsed SINE, Chirp, PSK, FSK, etc.; Pulsed Square Waveform.			
Resonant Frequency $f_s$ :	23 kHz $\pm$ 5%			
Quality Factor $Q_m$ :	5			
Transmitting Voltage Response:	142.0 dB $\mu$ Pa/V@1m @ fs			
Free-field Voltage Sensitivity:	-199.2 dB V/ $\mu$ Pa @ fs			
-3dB Beam Width:	87°			
Beam Pattern:	Conical			
Side Lobe Level:	No side lobes			
Free Capacitance:	5.5 nF $\pm$ 5% @ 1kHz (1m Shielded Cable)			
Dissipation:	0.005 @ 1kHz			
Admittance or Impedance:	Gmax = 0.56 mS, B = 0.86 mS @ fs			
MIPP:	1400 Watts, Maximum Input Pulse Power.			
MPW @ MIPP:	130 Seconds, Maximum Pulse Width.			
MCIP:	57 Watts, Maximum Continuous Input Power.			
Cable:	1. Two Conductor Shielded Cable (SC) 2. 50 $\Omega$ RG58 Coax (RG58)			
Cable Length:	1. Default: 1m 2. Custom			
Connector:	1. Default: Wire Leads (WL) 2. 50 $\Omega$ BNC Male (BNC) 3. Underwater Mateable Connector (UMC) 4. MIL-5015 Style (5015) 5. Custom (custom)			
Mounting Options:	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)			
Maximum Operating Depth:	100 m, Limited by cable length with wire leads.			
Size:	$\Phi$ 60 x 96 mm			
Weight:	1.2 kg in Air			
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>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.				