Benthowave Instrument Inc.

Underwater Sound Solutions http://www.benthowave.com

Transducer Specification

Part Number:	BII-7502/15			
Signal Type:	Pulsed SINE, Chirp, PSK, FSK, etc.; Pulsed Square Waveform.			
Resonant Frequency fs:	15 kHz ± 5%			
Quality Factor:	6			
Transmitting Voltage Response:	136.0 dB µPa/V@1m @ fs			
Free-field Voltage Sensitivity:	-198.0 dB V/µPa @ fs			
-3dB Beam Width:	120°			
Beam Pattern:	Conical			
Side Lobe Level:	No side lobes			
Free Capacitance:	9.8 nF ± 5% @ 1kHz (1m Shielded Cable)			
Dissipation:	0.006 @ 1kHz			
Admittance or Impedance:	Gmax = 1.6 mS, B = 0.72 mS @ fs			
MIPP:	420 Watts, Maximum Input Pulse Power.			
MPW @ MIPP:	73 Seconds, Maximum Pulse Width.			
MCIP:	6 Watts, Maximum Continuous Input Power.			
Cable:	1. Two Conductor Shielded Cable (SC) 2. 50 Ω RG58 Coax (RG58)			
Cable Length:	1. Default: 1m 2. Custom			
Connector:	1. Default: Wire Leads (WL) 2. 50 Ω 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:	Φ60 x 115 mm			
Weight:	1.3 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.			
Wiring:	**Two Conductor Shielded Cable**	**Coax/BNC**	**Underwater Connector**	**MIL-5015 Connector**
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

How to determine pulse width, duty cycle and off-time with input pulse power (peak power):

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 ≤ (MIPP * MPW*(120°c-T)/103°c)/IPP; T: Water Temperature in °c.
3. Duty Cycle D ≤ MCIP*(120°c-T)/103°c)/IPP;
4. Off-time ≥ PW*(1-D)/D.

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.

for 50Ω 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.