Benthowave Instrument Inc.

Transducer Specification

Part Number:	BII-7506/20			
Signal Type:	Pulsed SINE, Chirp, PSK, FSK, etc.; Pulsed Square Waveform			
Resonant Frequency fs:	20 kHz ± 5%			
Quality Factor:	4.1			
TVR:	157.6 dB µPa/V@1m @ fs. Transmitting Voltage Response			
FFVS:	-173.2 dB V/µPa @ fs. Free-field Voltage Sensitivity			
-3dB Beam Width:	30°			
Beam Pattern:	Conical			
Side Lobe Level:	≤ -17.7 (dB)			
Free Capacitance:	25.5 nF @ 1kHz			
Dissipation:	0.005 @ 1kHz			
Admittance or Impedance:	Refer to Admittance Graph.			
Driving Voltage:	600 Vrms, Maximum.			
MIPP:	2000 Watts, Maximum Input Pulse Power.			
MPW @ MIPP:	100 Seconds, Maximum Pulse Width			
MCIP:	60 Watts, Maximum Continuous Input Power.			
Operating Depth:	Maximum, 50 m and Limited by the cable length if the cable has wire leads or a non-waterproof connector.			
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) 7. Flush Mounting (FSM) Please refer to online document **AcousticSystem.pdf** for a complete list of Mounting Options and more details.			
Cable:	1. Two Conductor Shielded Cable (SC) 2. 50 Ω RG58 Coax (RG58)			
Cable Length:	1. Default: 1 m 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) Note: Underwater Mateable Connector is for underwater uses. Other connectors and wire leads are for dry uses and are non-waterproof.			
Size:	ΦD xH = Φ168 x 100 mm, actual length depends on Mounting Parts.			
Weight:	7.0 kg with 10m cable. Actual weight depends on Mounting Parts, Cable Types and Length.			
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.			
Handling:	Do not use the cable to support transducer weight in air and water. Do not bend the cable.			
Wiring:	**Two Conductor Shielded Cable**	**Coax/BNC**	**Underwater Connector**	**MIL-5015 Connector**
Signal	White or Red	Center Contact	Contact 2	Contact C
Signal Common	Black	Shield	Contact 1	Contact B
Shielding and Grounding	Shield	Shield	Contact 3	Contact A

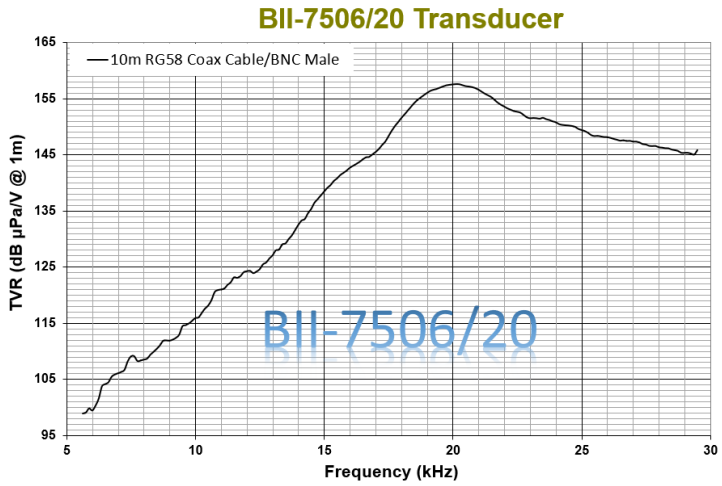
How to determine pulse width, duty cycle and off-time with input pulse power (peak power):

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.

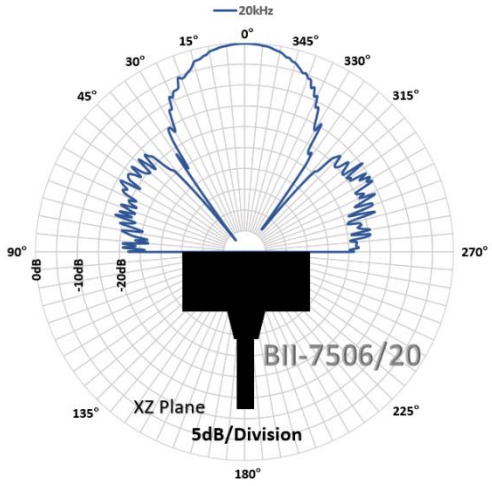
WARNING: DANGER — HIGH VOLTAGE on wires. Wires shall be insulated for safety. DO NOT TOUCH THE WIRES BEFORE THE DRIVING SIGNAL IS SHUT DOWN. Cable shield must be grounded firmly for safety.

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.

TVR Transmitting Voltage Response



Directional Response Pattern



Admittance