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# HIGH POWER TRANSDUCER\*\* MODEL TR-109

The Model TR-109 transducer is a rugged, high-powered unit designed for use at 3.5 kHz and for operation at 600 watts maximum input power for up to 30% duty cycle, and 200 watts maximum input for continuous operation. In shallow water the maximum output is cavitation limited. Minimum depths of approximately 30 and 100 feet are recommended for input powers of 200 and 600 watts, respectively, to avoid cavitation. The active radiating portion of the transducer is a circular piston, driven by lead-zirconate-titanate

elements. An integral transformer provides nominal 125-ohm impedance at 3.5 kHz at the terminals of the waterproof connector. TR-109 transducers have uniform performance characteristics and will operate with long-time stability. The modular design of the TR-109 transducer facilitates its assembly into multiple arrays in any configuration to achieve the beam patterns and source level desired. Arrays\*from 2 to 16 units are normally recommended, depending on the application required.

\*\*The Model TR-109 is a direct replacement for the TR-75A transducer and is usually available from stock.



**Cabling Specifications /TR-109**

CABLE....Meets MIL-C-915E/8E / DSS-2  
 (watertight, 2conductor, AWG,overall shielded)

CABLE DIAMETER.....0.37-0.39

CABLE LENGTH.....30 Feet (9.1m)

SHIELDING.....Isolated from both leads, and housing.

INSULATION.....Withstand 600V RMS

**Electrical Specifications / TR-109 @ 3.5 kHz Frequency**

- Power Rating.....600 W @ 30% duty cycle, 200 watts input, continuous
- Transmitting Response/Volt.....+156 dBa re 1Pa@ 1m.
- Transmitting Response/Amp.....+192 dB re 1Pa@ 1m
- Source Level/Watt..... +175 dB re 1Pa @ 1 m
- Receiving Response..... -174 dB re 1Pa @ 1 m
- Impedance, Nominal.....125 Ohms
- Beam Angle.....-3 dB 31° / -6dB 45°
- Maximum Depth.....To 300Meters / Full Ocean depth possible,w/multiple array.
- Weight 25-3/4 lbs.