PRECISION ACOUSTICS

1-3 piezo-composite transducer

Precision Acoustics Ltd are pleased to be able to offer a range of Submersible Preamplifier & DC Couplers. Conventional bulk piezo-ceramics tend to require physical large transducers once the operating frequency is below 1 MHz. Submersible Preamplifier & DC Couplers overcome some of these limitations and enable devices operating below 1MHz to be a more compact size. All Submersible Preamplifier & DC Couplers from Precision Acoustics Ltd are bespoke to the customer's requirement and are designed using our in-house model. This enables devices to be optimised for a range of different operating parameters including: operating frequency, bandwidth and efficiency.

Precision Acoustics Ltd Hampton Farm Business Park, Higher Bockhampton, Dorchester, Dorset DT2 8QH, UK

t. +44 (0) 1305 264669 **e.** office@acoustics.co.uk **w.** acoustics.co.uk

BASIC INFORMATION

All our Submersible Preamplifier & DC Couplers are bespoke; they are designed to meet the specific measurements requirements of each individual customer. The table below provides an indication of the range of values within which we can design a transducer. Please contact Precision Acoustics Ltd with your specification.

Sensor material	1-3 Piezo-electric composite
Active element diameter	20 mm to 67 mm
Nominal centre frequency	0.15 MHz to 1.0 MHz
Typical -6 dB bandwidth	25 to 55 % of centre frequency
Case material	316L Stainless steel or polymer
Front face	Rho-C matched or rigid resin wear plate

TRANSMIT VOLTAGE RESPONSE

Figure 1 shows the Transmit Voltage Response (TVR) of a 44mm diameter 500 kHz centre frequency Submersible Preamplifier & DC Coupler evaluated at 1m. This transducer was optimised to provide a compromise between transmit and receive capability and has moderate damping and a -6 dB TVR bandwidth of approximately 50% of centre frequency.

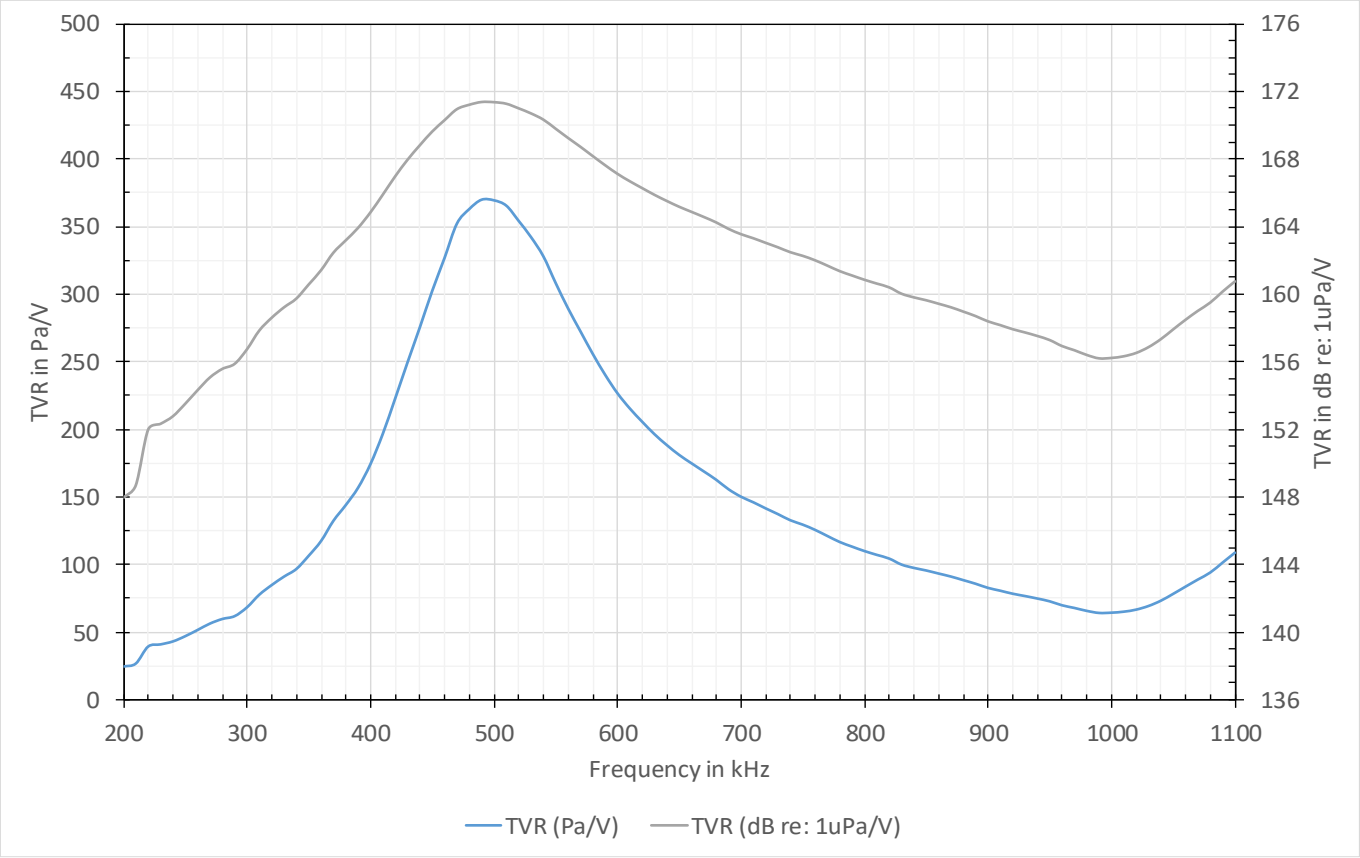

Figure 1 –Transmit voltage response @1m of a 500 kHz centre frequency Submersible Preamplifier & DC Coupler

All information is based on results gained from experience and tests, and is believed to be accurate but is given without acceptance of liability for loss or damage attributable to reliance thereon as conditions of use lie outside the control of Precision Acoustics Ltd or Acoustic Polymers Limited.