

PRELIMINARY COPY

Type E37 Transducer

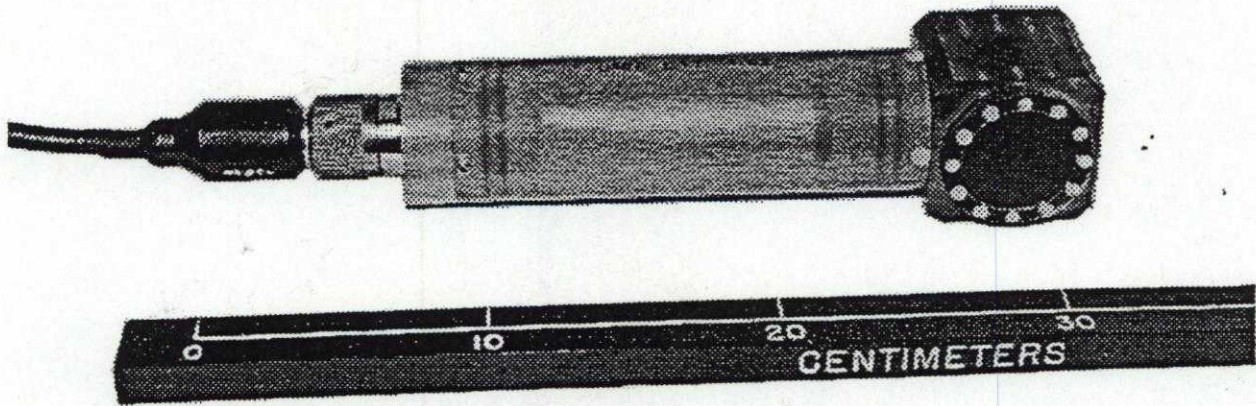


Fig. E37-1 - Type E37 transducer.

FUNCTION: A reversible transducer and a standard hydrophone for high ultrasonic frequencies.

DESIGN: A 2-cm-diam lead titanate disk in an oil-filled chamber with a rubber window. A preamplifier provides gain for driving the cable length in receive mode. When the preamplifier is turned off, the unit can be used as a projector.

FREQUENCY RANGE: 100 to 2,000 kHz

FFVS: Nominally -194 dB re 1 V/ μ Pa See Fig. E37-2

TVR: See Fig. E37-3

TCR: See Fig. E37-4

DIRECTIVITY: See Fig. E37-5

ACOUSTIC CENTER: See Fig. E37-6

MAXIMUM DEPTH: 2,109 m (20.684 MPa)

TEMPERATURE RANGE: 5 to 35°C

MAXIMUM DRIVING SIGNAL: 75 Volts continuous

WEIGHT: 3.2 kg (7 lbs)

SHIPPING WEIGHT: 6.8 kg (15 lbs)

CABLE LENGTH: 15 m

CABLE CODE: coaxial center	high signal
coaxial shield	low signal
red or white	+24VDC
black	ground

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INSTRUCTIONS FOR THE USER:

- See Appendix D for preparation steps.
- See Fig. E37-6 for acoustic center.
- Align acoustic axis by maximum signal vs azimuth and rotation at maximum frequency.
- Acoustic window is natural rubber vulnerable to abrasion, sunlight, ozone, and solvents and in time becomes tacky. This does not affect acoustic performance, but the transducer should be returned to USRD for maintenance.
- The E37 can be used as a hydrophone with or without the preamplifier. When used without the preamplifier, the output must be taken from the transmit connector with the mode switch in XMIT mode. The transducer can be used to transmit or receive in this manner (reciprocal operation). When used with the preamplifier, the E37 is reversible.
- The preamplifier is automatically bypassed for transmitting when the power is turned off.
- The preamplifier is turned on and off by a toggle switch on the control box. A current meter is included to monitor preamp current draw, typically 30 - 40 mA. Two BNC connectors on the control box are used for the input and output depending upon the position of the transmit/receive mode switch. Do not apply a transmit signal to the unit while the preamplifier is turned on.

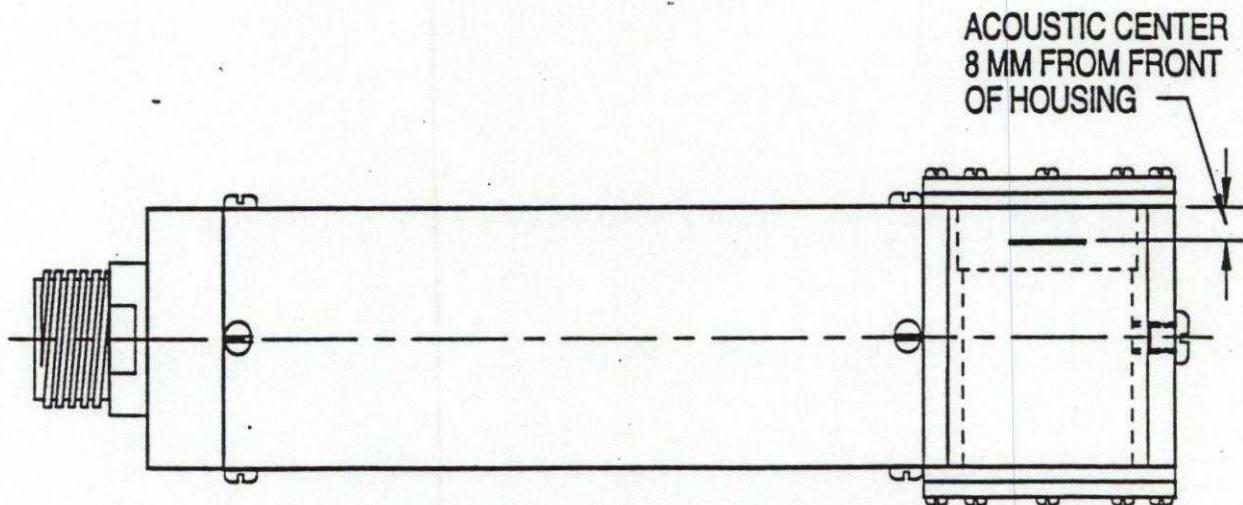


Fig. E37-6 Acoustic center of USRD Type E37 transducer.

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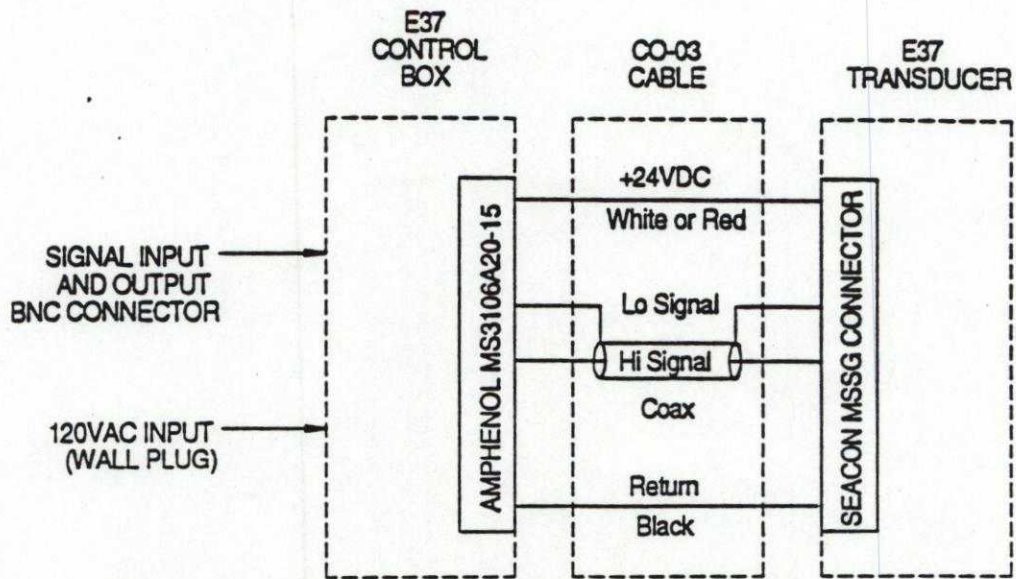


Fig. E37-7 Block diagram of USRD Type E37 transducer.

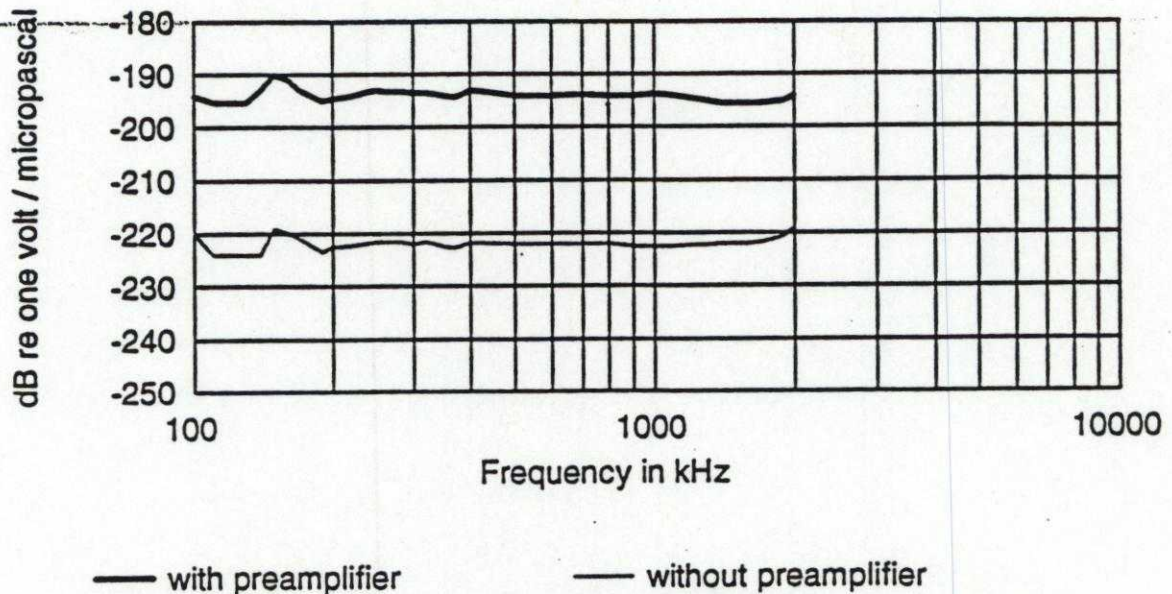


Fig. E37-2 Typical FFVS of USRD Type E37 transducer.

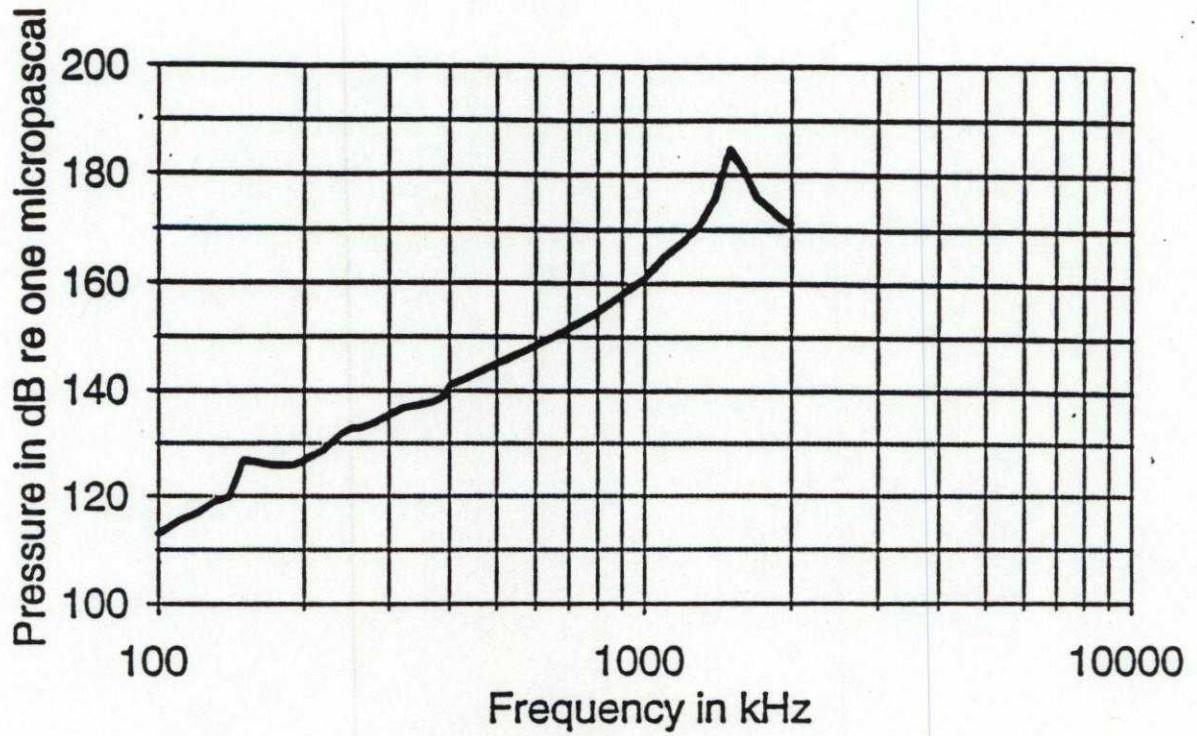


Fig. E37-3 Typical TVR of USRD Type E37 transducer.

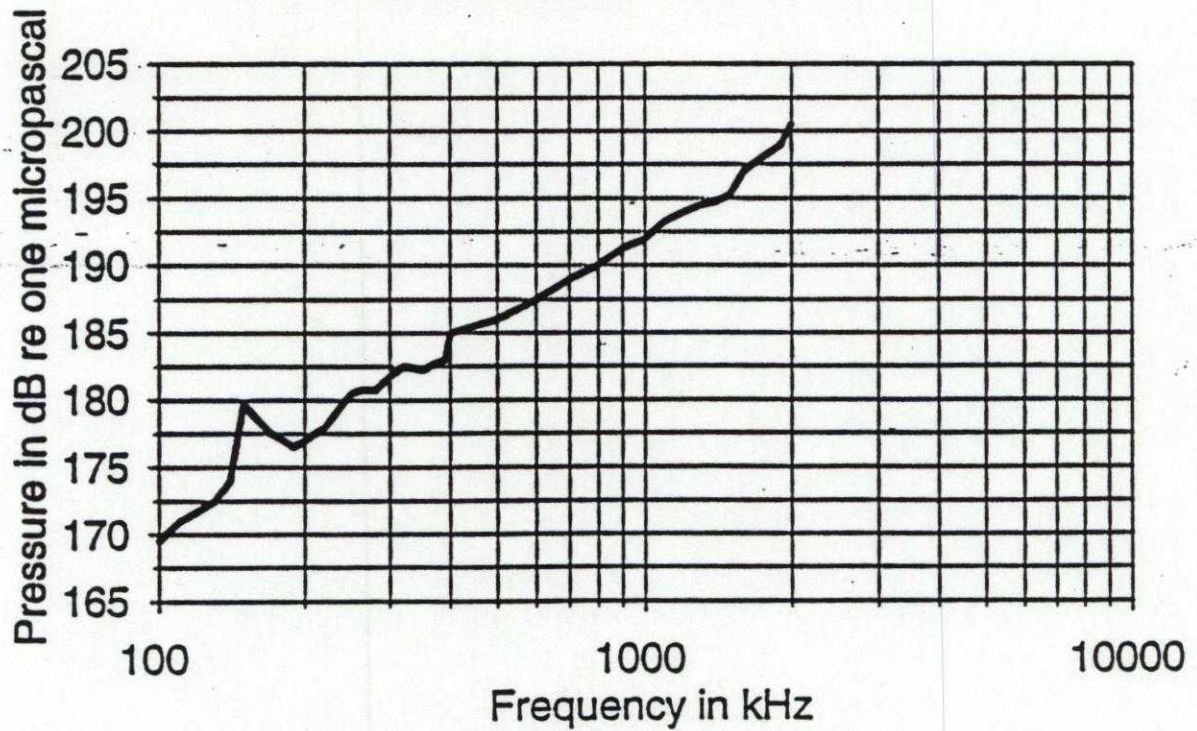
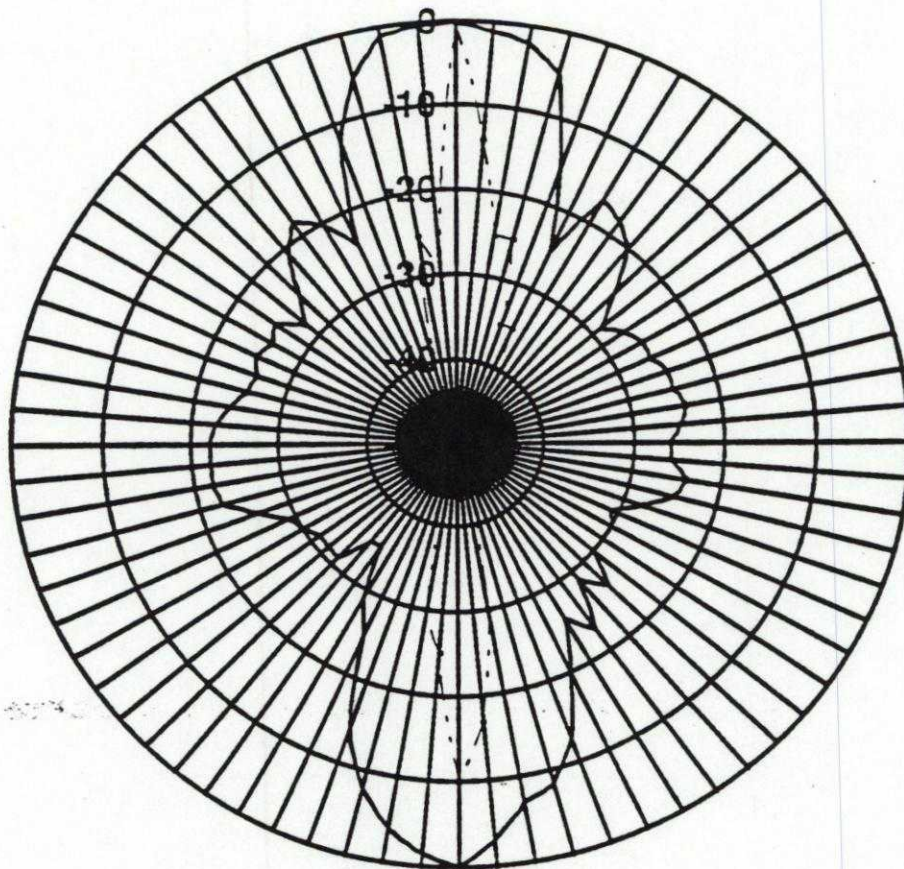


Fig. E37-4 Typical TCR of USRD Type E37 transducer.



—— 200 kHz - - - 1000 kHz

Fig. E37-5 Directional Response of USRD Type E37 transducer.