

Appendix A

COORDINATE SYSTEM FOR TRANSDUCER ORIENTATION

The coordinate system shown in the sketch below is assigned to the transducer and moves with it, regardless of its physical position. The angle η is a depression angle measured from the +Z axis; the angle ϕ is an azimuth angle in sonar operations.

Response and sensitivity measurements are made with sound propagated parallel to the positive X axis unless otherwise specified. Transducers are oriented as follows:

| ACTIVE ACOUSTIC SURFACE | ORIENTATION |
|-------------------------|--|
| Cylinder | The cylindrical axis is in the Z axis. A reference mark for another axis is specified. |
| Plane | The plane (or piston) face is in the YZ plane, with the X axis normal to the face at the geometric center. The top of the transducer is in the +Z direction. |
| Sphere | Specify points on the surface for any of the three axes. |
| Other | Provide a sketch of nonconforming configurations and offset acoustic centers. |

Directivity Patterns: Unless otherwise specified, the following apply:

| SPECIFIED PLANE | AXIS OF ROTATION | POSITION OF AXES ON POLAR PLOTS | | |
|-----------------|------------------|---------------------------------|----------|---------|
| | | +X AXIS | +Y AXIS | +Z AXIS |
| XY | Z | 0° | 90° cw | upward |
| XZ | Y | 0° | downward | 90° cw |
| YZ | Z | upward | 0° | 90° cw |

