

Side-Viewing Sensors - RC Models

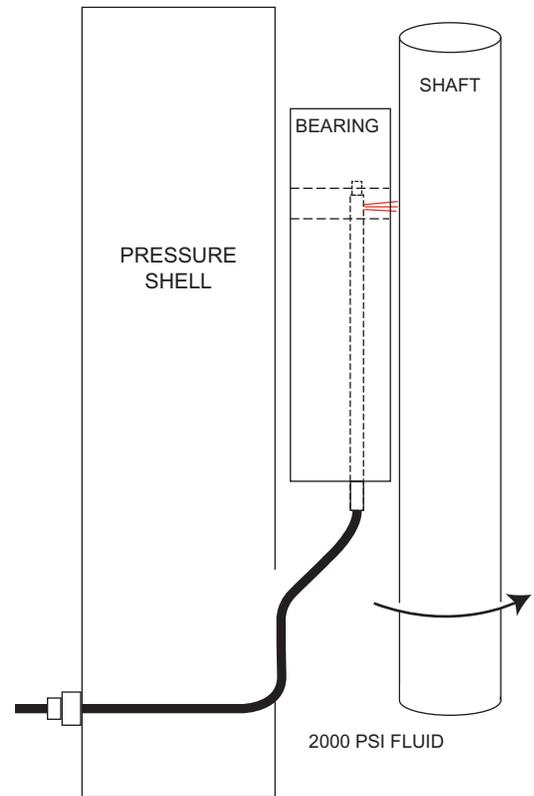
THE PROBLEM

Sensors were needed to measure shaft orbits and vibrations in a 2,000 psi fluid environment. Accessibility was extremely limited. Additional sensor requirements:

- 0.5 mm bearing clearance
- Standoff distance to the sensor would be 2.5 - 4 mm
- 15 μm resolution

THE SOLUTION

Philtec's side-viewing sensor model RC171-ST7 was designed into the application. The sensor tip was ruggedly constructed for pressure support with a right angle prism solidly embedded inside of a $\text{Ø } 7.9 \times 400$ mm long probe. Three probes with 10 μm resolution at 20 KHz bandwidth were supplied for mounting at 120° spacing about the shaft.



Side-Viewing Probes

Side-viewing probes turn the light signal 90° in minimal space by utilizing a right angle prism bonded to the face of the fiberoptic bundle.

With standard end-viewing models, the RC sensor output approaches zero volts at zero gap.

With side-viewing RC probes, the output sensitivity and linear ranges are somewhat reduced due to the presence of the prism in the optical signal path.

