

CTC AppNotes

A series of technical documents written by members of the CTC community

Proximity probe measuring ranges

Eddy current proximity probes operate by sensing the changes induced in a magnetic field generated by the coil located in the probe tip. It makes sense that, in order to measure differing ranges of motion, different sizes of probes are required. As the coil increases in size, the magnetic field generated also increases in size. For this reason eddy current proximity probes are manufactured in several different sizes for use in differing applications and with different shaft sizes. CTC manufactures probes with tip sizes from 5mm to 25mm with each size having a particular effective range and purpose.

5mm Probes

PRO series 5mm FFv (focused face view) probes are

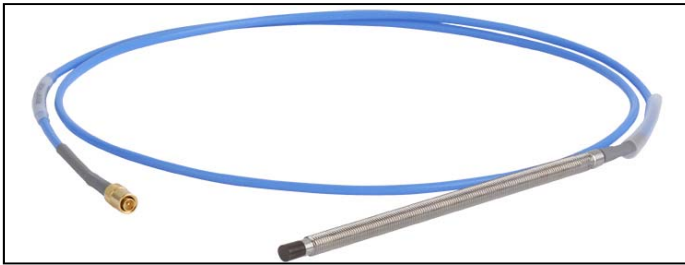


Figure 1– 5mm probe with integral cable

designed for use on under 2 inch diameter shafts and in places where 8mm probes may create “crosstalk”, or interference with the signal of adjacent probes. They have a range of 80 mils (2mm) and operate best in the 10 to 90 mil range.

8mm Probes

The most common probe tip size is 8mm. Designed for use with shafts greater than 2 inches in diameter, like the 5mm probes, 8mm probes operate with an 80 mil range (2mm) from 10-90 mils from the surface of the probe tip.

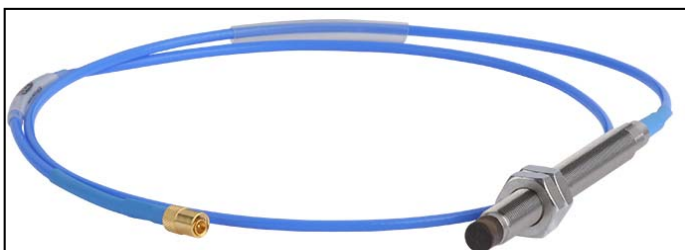


Figure 2– 8mm probe with integral cable

11mm Probes

With a range from 20 to 180 mils (160 mil or 4 mm range), the new 11mm probes are available with probe case sizes of 1/2-20 or M14 x 1.5. Generally used to monitor shafts with diameters that are great-

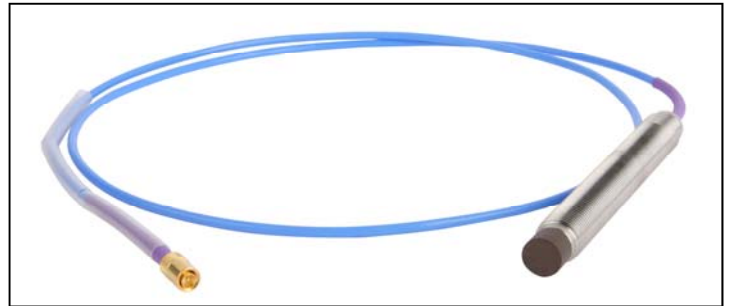


Figure 3 — 11mm probes are generally used for monitoring shafts larger than 6 inches in diameter

er than 6 inches (150mm), 11mm probes can also be used to monitor thrust position.

25mm Probes

The new PRO series 25mm probes have a linear range of 500 mils (12.7mm). Frequently used for

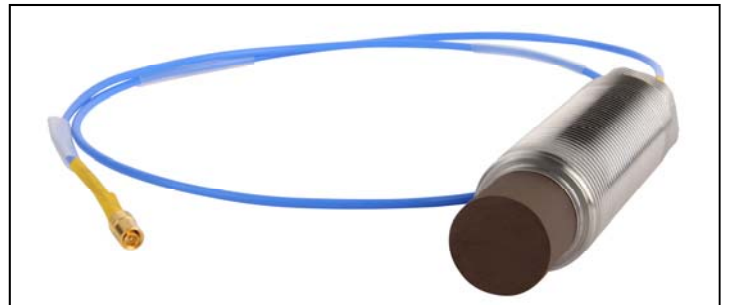


Figure 4– 25mm probe tip for monitoring differential expansion.

measuring differential expansion on steam turbine generators, 25mm probes measuring opposite faces of a thrust collar can be used to double the effective measurement range to 1000 mils (25mm).

If you have any questions or for further information feel free to contact CTC via Email techsupport@ctconline.com or call 1-800-999-5290 in the US and Canada or +1-585-924-5900 internationally.