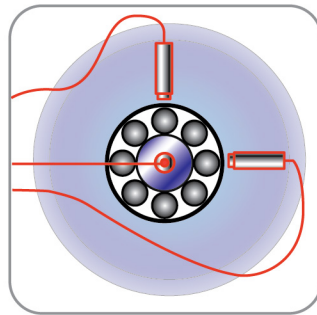


BEARING MEASUREMENT CASE STUDY

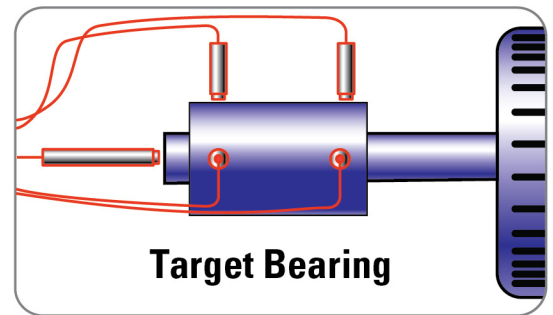
USING A 5-CHANNEL CPL230 TO MEASURE
VIBRATION OF A BEARING IN MULTIPLE AXES



END VIEW



SIDE VIEW

**APPLICATION:**

Using capacitive sensors to detect vibration of a bearing in multiple axes

SENSOR SOLUTION:

CPL230 with C8S-3.2-2.0 Probes

**BENEFITS:**

Integrating capacitive sensors increased the reliability and resolution of the readings and reduced electrical noise compared to the previous solution.

Five Precision Probes

Used to simultaneously measure all five error motions in a precision bearing.

**CPL230 Capacitive Driver**

Capacitive Sensors measure displacement in a single direction. For this application multiple sensors were positioned to measure the runout and vibration of bearings in a production environment. Utilizing multiple probes yields simultaneous readings of the different axes. A multi-channel enclosure is a compact and convenient way to get the output from all probes at once. Another advantage of a multi-channel enclosure is that the signals are synchronized internally to prevent cross-talk when multiple channels are measuring the same target.

Our Customer, a bearing manufacturer was using a competitor's inductive sensor to measure displacement at various points on a pressed-in shaft with inadequate results. Lion Precision's solution was a CPL230 with C8-3.2-2.0 and C8S-3.2-2.0 probes. Due to space constraints the customer used the short versions of the probes which have identical performance characteristics to their larger counterparts. The shaft was spinning in the bearing as the measurements were taken. Both vibration and runout were measured simultaneously in five axes giving a complete picture of the bearing's motion and mapping the error results. Lion Precision equipment was a critical component of testing the bearing's stability and ensuring that they were within the manufacturer's specifications.