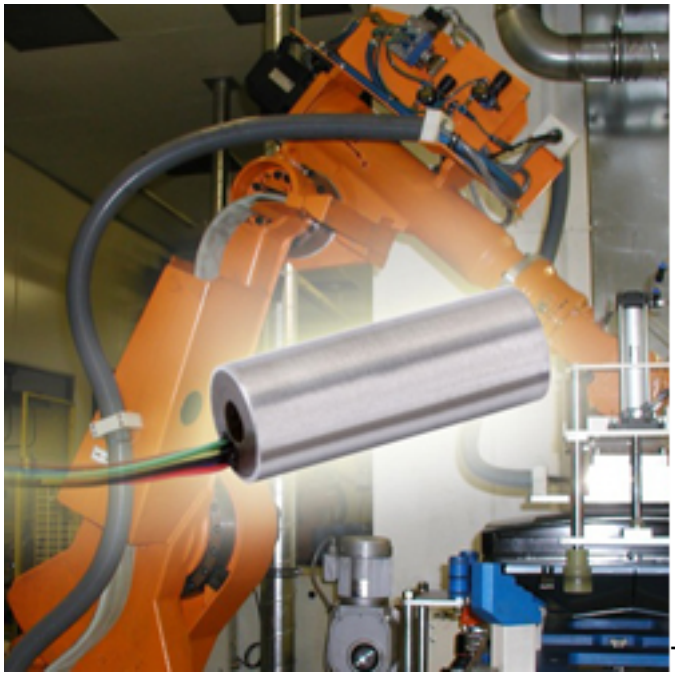
Miniature LVDT Position Sensors Provide Position Feedback in Robotic Applications



The compact size and highly accurate output of Macro Sensors (www.macrosensors.com [1]) CD 375 Series of miniature LVDTs make the linear position sensors ideal for providing displacement feedback in different robotic applications.

Robots and robotic arms rely on sensors to determine range of motion or force applied to an object. Attached to a robotic arm, the Macro Sensors miniature LVDT linear position sensors detect position change when an actuator moves the robotic arm, providing an analog voltage signal, proportional to the amount of motion, to a controller that makes appropriate adjustments based on programmable set points. With the data provided by the sensor, the controller can determine when the robotic arm should stop or slow down. For example, on a pick and place machine, if the robotic arm exceeded its travel distance, it could drive right through the board it intended to populate. Macro Sensors miniature linear position sensors evaluate the robotic arm movement for optimum performance.

In addition to industrial robots, Macro Sensors CD 375 miniature LVDTs are suitable as an integral part of devices such as hydraulic actuators, servo valves, medical equipment and other small mechanisms. A compact 3/8” diameter design and lightweight low mass core make the small contactless position sensors ideal for applications having high dynamic response requirements such as ATMs, copy machines, plastic injection molding machines and automatic inspection equipment.

Available in full-scale measurement ranges from ±0.025” (±0.63mm) to ±2.0” (±50.0mm), these
AC operated linear position sensors offer a 50% larger core-to-bore radial clearance

(0.012”) than similar sized competitive units. Units feature excellent repeatability (error of <0.01% of FSO), high resolution and the highest sensitivity consistent with good linearity (maximum linearity error of ±0.25% FRO).

Environmentally robust, the CD 375 Series operate in temperature extremes of -65°F to +220°F (-55°C to +105°C). Stainless steel housings and epoxy encapsulation protects units from environmentally hostile conditions. External sealing of the miniature position sensors meets IEC standard IP-61.

Interchangeable with most manufacturer units, the CD 375 Series LVDTs operate with any conventional differential input LVDT signal conditioners. Macro Sensors manufactures a full line of LVDT signal conditioners that offer optimum performance from any CD 375 Series LVDTs.

For more information, please refer to the web site at http://www.macrosensors.com/CD_375.html [2] or send an inquiry to postionsensors@macrosensors.com [3]

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