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Abstract

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CAPACITANCE-BASED POSITION SENSOR

A position sensor 160, 162, 210, 260 for use in connection with a movable system having a pair of objects 106, 120 that are configured to move relative to one another along an axis through an operative range of motion.

10 The position sensor includes a first plate 178, 180, 222, 226, 266, 268 secured to one of the objects and a pair of second plates 166, 168, 172, 174, 214, 216, 220, 262, 264 secured to the other of the objects. The second plates are adjacent each other and coplanar. The first plate and second plates are configured so that the second plates are spaced from and parallel to the first

15 plate as the objects move relative to one another along the axis. The first plate and second plates are configured so that they form two variable, spaced-plate capacitors 192, 194, 240, 242, 244, 246 having capacitances that vary as the objects move relative to one another within the operative range along the axis. The position sensor is configured to use the capacitances to generate output

20 usable to determine relative position of the objects along the axis.

(FIG. 4)



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