

ABSOLUTE POSITION SENSOR

Mounted in the head of the hydraulic cylinder

Parker Hannifin has released the Intellinder linear encoder. The product comes with a CAN interface supporting optionally J1939 and CANopen safety.

The hydraulic cylinder's integrated sensor system supports several functions: electronic cushioning, load monitoring, auto-level, steer-by-wire, and return-to-position. By marking the piston rod with a unique non-repeating pattern and integrating an optoelectronic sensor into the cylinder head, this virtual plug-and-play technology provides continuous feedback of the cylinder linear position. The Intellinder cylinders are offered with rod diameters ranging from 25 mm to 127 mm combined with suitable bore sizes and stroke lengths up to 2,4 m.

The provided CAN interface supports the company's proprietary IQAN protocol. Optionally, J1939 and CANopen safety software is provided. IQAN and J1939 are using the extended frame format with 29-bit CAN-IDs. By default, the bitrate is 250 kbit/s. Functional safety can be further enhanced by multiple redundancies – utilizing two or more sensors mounted around the rod.

Because absolute position monitoring – as used on Intellinder cylinders - does not need to measure from a reference point on start-up, it is faster and delivers higher performance compared to incremental techniques, explained the supplier. The cylinder with integrated linear encoder is completely assembled and tested. The product is IP68-rated. Once the cylinder is mounted and connected to the hydraulic system, installation can be completed just by a single electrical connection to the controller.



Via the CAN interface position values and health condition data are communicated (Photo: Parker Hannifin)

Based on bar-codes

(Photo: Parker Hannifin)

Parker Hannifin's position sensor integrated in the hydraulic cylinders eliminates the time and cost associated with gun drilling, as well as unprotected external sensors with complex linkages. Cylinder feedback installation is virtually plug-and-play.

The Intellinder sensor signals absolute positioning, rather than position relative to the starting location of the rod. Position identifying bar codes are marked right on the rod so its position is communicated continually and directly to the controller. Position report occurs at power-on. The design allows for utilization of double-rod cylinder applications requiring position feedback. This technology has undergone exhaustive laboratory and field testing to validate its ability to maintain signal fidelity in extremely challenging environments.

The absolute position sensor sustains performance in applications exposed to vibration, dust, gravel, corrosives, chemicals, axial load, side load, and immersion. It remains impervious to electronic noise and has been tested to ensure signal strength in the most rigorous applications.

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