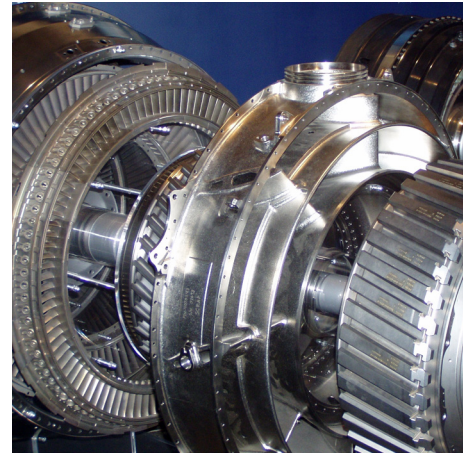


Intellinder™

Sensor Enabled Smart Cylinders

Absolute position feedback sensor for Hydraulic, Pneumatic and Electromechanical Actuators for the Power Generation Market



Customer Value Proposition:

The evolution of position sensing technology has taken a smart step forward with the Intellinder sensor enabled smart cylinder design. By integrating a highly engineered sensor into the hydraulic, pneumatic or electromechanical actuator, this Parker design 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. Our design allows for full utilization of double-rod cylinder applications requiring position feedback.

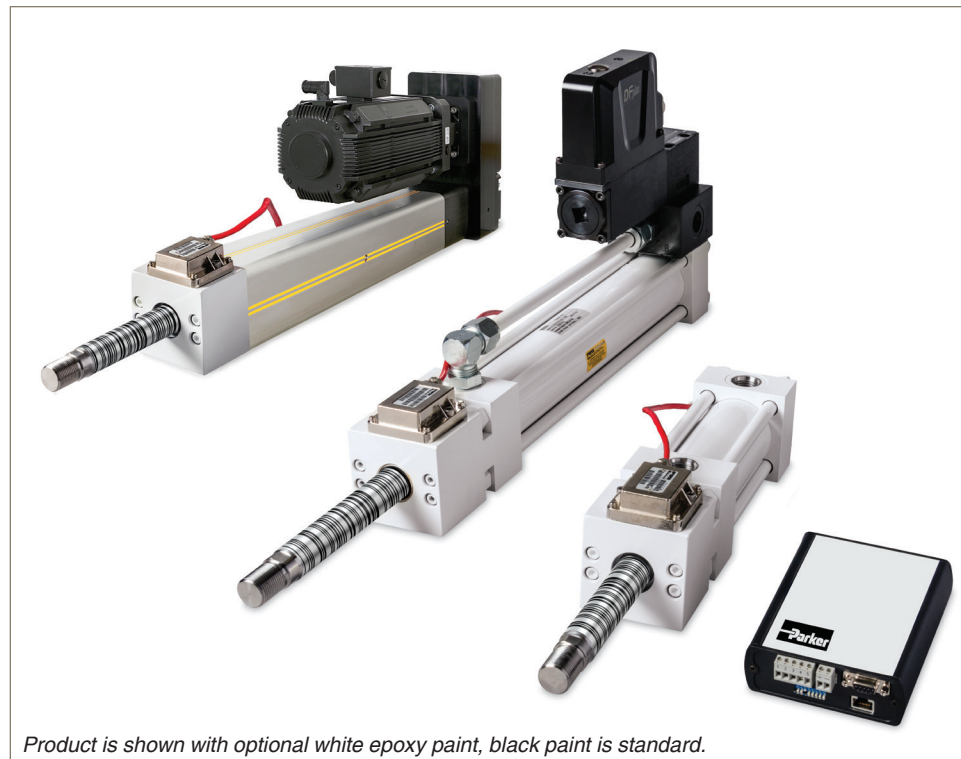
This proprietary technology has undergone exhaustive laboratory and field testing to validate its ability to maintain signal fidelity in extremely challenging environments.

Contact Information:

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Product is shown with optional white epoxy paint, black paint is standard.

Product Features:

- Sustains performance in applications exposed to vibration, dust, gravel, corrosives and chemicals.
- Performs across a wide range of temperatures and provides long stroke capabilities of 20 feet (6,096 mm).
- Remains impervious to electronic noise and has been tested to ensure signal strength in the most rigorous applications.
- Features highly sensitive health monitoring to detect and diagnose potential cylinder malfunctions before they can disrupt operations.

Power Gen Applications:

- Hydroelectric Gate Actuation and Controls
- Wind Turbine Blade Pitch Control
- Solar Panel Tracking Systems
- Gas Turbine Fuel Control

ENGINEERING YOUR SUCCESS.

Intellinder Sensor Enabled Smart Cylinder is ideal for applications such as:

- Hydro-Dams Gate Actuation and Control
 - Civil Lock and Flood Control Dams
 - Wind Turbine Rotor Actuation
 - Solar Panel Tracking
 - Oil and Gas*
 - Electric Power Generation*
- *ATEX Pending

Universal Optical Reader

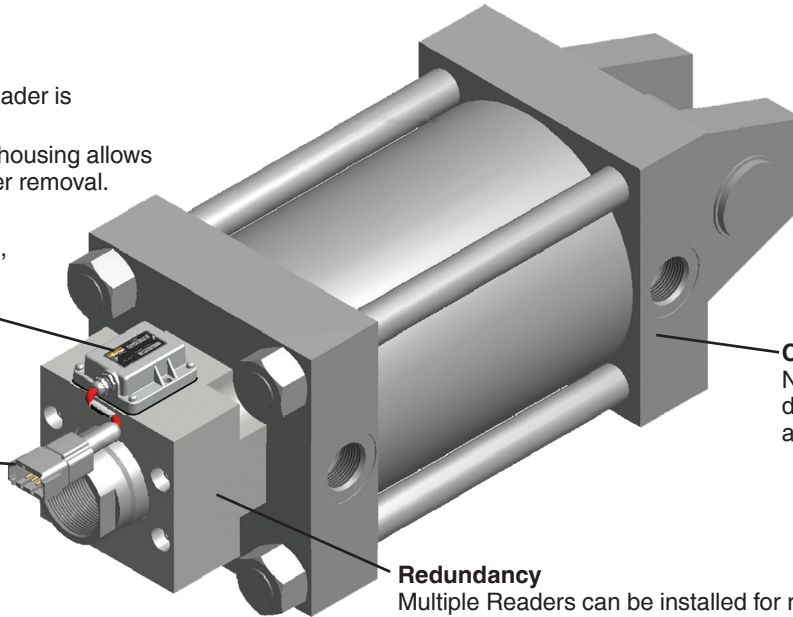
No need to stock multiple probes, reader is standard across all stroke lengths.

Quick change out, non-pressurized housing allows for easy replacement without cylinder removal.

Absolute position monitoring, upon power up will provide actual position, no homing required.

Connectivity

Up to 300 feet cable length between Cylinder and Electronics.
Deutsch Style Connector with M12 circular adapter cable for cylinder ID tag and Bus termination.



Cylinder Construction
NFPA Standard cylinder dimension, only require addition of reader block.

Redundancy

Multiple Readers can be installed for redundant position measurement requirements.

General Specifications (Sensor)

Resolution	0.0013 in (0.03 mm)*
Hysteresis	0.0038 in (0.10 mm)
Repeatability	0.0014 in (0.036 mm)
Linearity	0.0026 in (0.0027% FS)
Maximum Velocity	40 in/s (1 m/sec)
Bore Diameter	No Limit
Rod Diameter	1" to 10"
Stroke Length	up to 240 in (6100 mm)
Rod Material	Chrome plated 1045
	Chrome plated 17-4 PH Stainless
Mechanical	Vibration: 12g, 25Hz-2KHz
	Shock: 100g
Null Zone	None
Dead Zone	None
Cable Length	300 feet between Cylinder and module **
	1 foot between reader and Y junction

Electrical Specifications (Sensor)

Input Power	8-32VDC, <2W
Data I/O	Generic CAN, 250 KBaud, 29-bit ID
Networking	Up to 8 sensors per CAN network (Separate PGNs)
Connector	Deutsch 8-Pin (DTM06-8S), M12 5 Pin male (adapter cable assembly)
Update Rate	1-100 Hz (10-1,000 ms)
Temperature	Operating: -40° F to 221° F (SAE J1455)
Ingression	Immersion: IP 68 (10m, 30 min)
	Pressure wash: IP65
Electro-magnetic compatibility (EMC)	EN 61000-6-2 (Radiated susceptibility)
	EN 61000-6-4 (Radiated emission)
Electric	Overvoltage to +36 VDC
	Reverse Polarity to -36VDC
	Short to GND, Short to 32VDC
	ESD: ±8kV

Analog Output Modules (single and 4 axis units)

Input Power	9-60 VDC
Current Draw	Single Axis: 29 mA at 24 VDC, 4 axis: 160 mA at 24 VDC
Outputs	0-10V, ±10 V, 4-20 mA
Connector	Deutsch 8-Pin (DT06-8S), M12 5 Pin female (adapter cable assembly)
Update Rate	100 Hz (10 ms)
Output Resolution	.015%
Output Accuracy	.5%
Temperature	Operating: -40° F to 185° F
	Storage: -67° F to 257° F
Protection	IP67
Scale & Offset	Factory set, adjustable with Intellinder MD3 accessory.

* On cylinder stroke lengths greater than 65", (1651 mm) analog resolution is 0.004" (0.1 mm).

** Above 130 feet terminating resistor values need to be evaluated, consult factory for values.