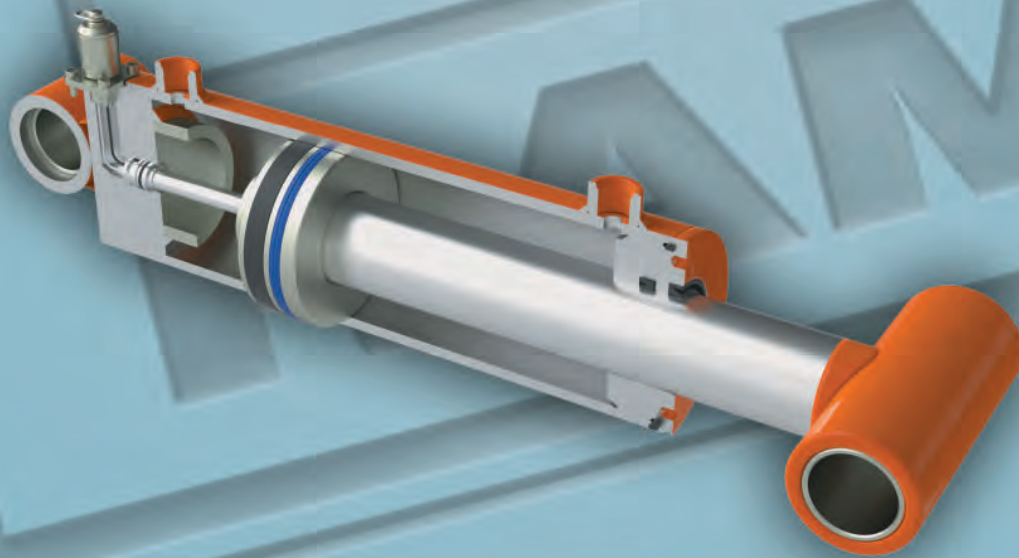




SMART SENSOR CYLINDERS



OEM HYDRAULIC CYLINDER SPECIALISTS



SMART SENSOR

RAM Smart Sensor cylinders incorporate position sensing technology that streamlines equipment operation. With trends toward automation, position sensing hydraulic cylinders provide the smart integration required to complete an intelligent hydraulic system. With the increased demand for this technology, applications that utilize loading and unloading, transporting, lifting, and processing will benefit from these position sensing cylinders.

RAM cylinders incorporate Linear Displacement Transducers (LDTs), often referred to as linear position sensors. This technology can capture positional data and relay feedback through a signal to the hydraulic control system. The electronic feedback generates semi-automated or automated responses in the system triggering actions or sounding alarms as dictated by the specific application.

This innovative componentry achieves digital precision that responds to operational conditions as they occur. This real-time response creates efficiencies through automated responses and optimizes work for operators improving productivity and efficiency through increased output.

RAM can incorporate position sensing technologies in any custom designed hydraulic cylinder.

A variety of bore sizes, stroke lengths, and mounting options can be configured to meet your overall design and industry needs. When you are designing your intelligent systems, look to RAM Industries to provide smart hydraulic cylinders that will perfectly integrate into your system.

Applications where Smart Sensor cylinder technologies have been implemented include:

- Height control on spray booms
- GPS controlled steering
- Bucket position control
- Trailer outriggers
- Snowplow control sensing
- Stabilize cranes
- Asphalt depth control
- Height control on man lift booms
- Street sanding sensors
- Mold injection applications
- Wheelchair lifts

BUILT TO YOUR SPECIFICATIONS

Rated Pressure:	Up to 4750 PSI	Temperature:	Output optional
Rod Size:	Up to 12" diameter	Velocity:	Output optional
Barrel Size:	Minimum 2.50" bore size	Power:	Various input options
Stroke:	2" to 120"	Transducer:	ATEX and IEC external approved linear transducer available
Resolution:	0.02" standard	Other:	High vibration & shock resistance
Connector:	M12		High cycle life
Output:	Analog or digital		

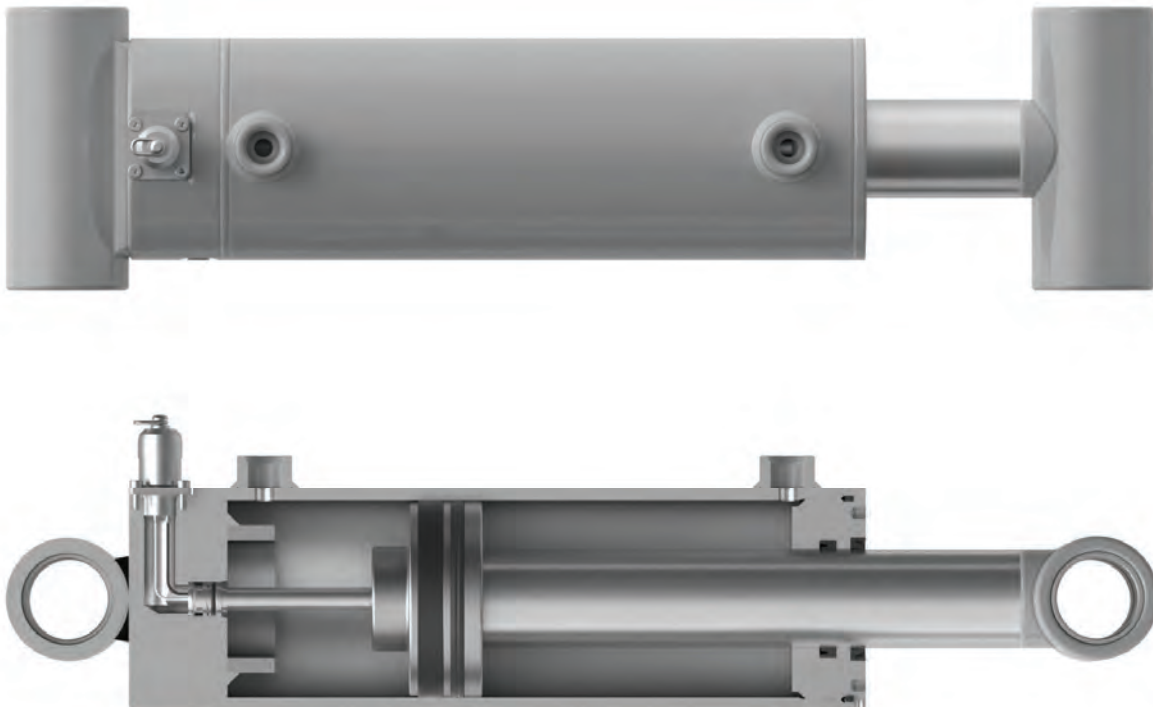


EXTERNAL SENSOR SOLUTION

An external sensor option involves mounting a transducer externally onto a standard carbon steel cylinder. The cylinder position is measured when a pre-fitted, permanently embedded magnet in the piston is moved by hydraulic pressure. The externally mounted transducer allows equipment operators and maintenance personnel to access and replace the sensor if necessary and can provide a more economical solution than an internal sensor. This method is recommended for cylinders that are not exposed to harsh environments.

INTERNAL SENSOR SOLUTION

An internal sensor option involves the transducer being configured for mounting inside a cylinder. This internal configuration features a hole that is gun drilled down the center of the cylinder rod. The cylinder end cap is machined to accommodate the transducer. This method usually consumes the least amount of space, however, the transducer is less accessible than mounting it externally. This method of internal mounting shields the transducer from external environmental conditions, thus increasing its life span.





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