



# SMART SENSOR CYLINDERS



EXPERIENCE • EXPERTISE • QUALITY • SERVICE



# SMART SENSOR

**RAM** Smart Sensor cylinders are designed to incorporate position sensing technologies for end user applications. Referred to by many names such as: electronic position-sensing, electro-hydraulic control, intelligent cylinders and smart cylinders; this technology utilizes linear transducers (sensors) to communicate the cylinder's piston position back to the overall hydraulic system.

Increased control, functionality and sensor-instrumented cylinders are becoming more important and more common in heavy industrial, mobile, and agricultural equipment.

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.

Some 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 manlift booms
- Street sanding sensors
- Mold injection applications
- Wheelchair lifts



**SMART SENSOR  
CYLINDERS**

## 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.

## BUILT TO YOUR SPECIFICATIONS

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





## **RAM** INDUSTRIES INC.

PO Box 5007 33 York Rd E Yorkton, SK S3N3Z4 Canada  
T: 1-877-799-1005 • F: (306) 786-2651  
[www.ramindustries.com](http://www.ramindustries.com) • [sales@ramindustries.com](mailto:sales@ramindustries.com)



[www.ramindustries.com](http://www.ramindustries.com)

Hydraulic Cylinder Design & Manufacturing • Precision Custom Machining