

**NOTICE:** This document contains preliminary specifications for use in obtaining Voice of the Customer feedback. Specifications are subject to change. This product is scheduled to be introduced for general sales in 2009. To obtain a product sample, please contact Al Buisker at (815) 235-6701 or [alan.buisker@honeywell.com](mailto:alan.buisker@honeywell.com).

## Application Note

# SMART Position Sensor

Accurate, Reliable, Thinking

## Construction Equipment Boom Arm Angle Detection

### BACKGROUND

A large back hoe or other piece of construction equipment is working on an incline with the boom arm extended. A method is needed to determine the angular position of the boom arm in order to avoid a potentially dangerous situation.

### SOLUTION

The Arc configuration of the SMART Position Sensor (Figure 1) calculates the angle of the boom arm and provides position information to the operator, aiding in preventing tipping and enhancing safety and productivity. Figure 2 shows the sensor placed around the pivot joint of the boom. The magnet is placed on the boom itself.

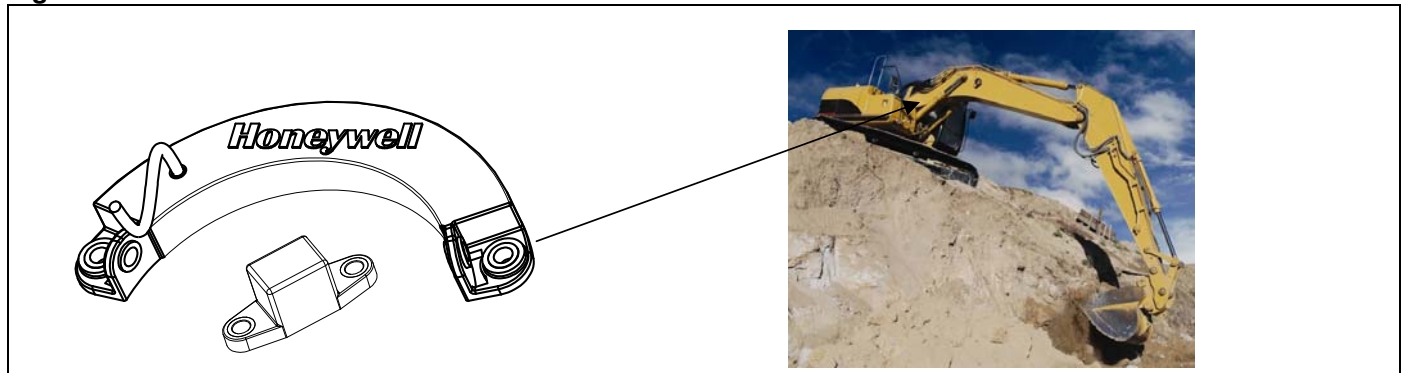
### SMART POSITION SENSOR BENEFITS

- High resolution of 16 bits provides enhanced accuracy
- Non-contacting technology designed to enhance product life and durability with less downtime
- Combined patented MR sensor and ASIC technology provide enhanced differentiation and performance
- Three packaging styles ease integration and compatibility with legacy systems and provides increased application flexibility
- Large air gap of up to 20 mm [0.79 in] between sensor and magnet increases application flexibility
- Self-diagnostics feature reduces equipment downtime
- Programmability increases flexibility, allowing the user to adjust the parameters without having to develop new equipment
- Small size, which takes up 50% less space than most competitive technologies, for use where space is at a premium

**Figure 1. Product Used in this Application**



**Figure 2. SMART Position Sensor**



# SMART Position Sensor

## WARNING

### PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

## WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

## WARNING

### MISUSE OF DOCUMENTATION

- The information presented in this application note is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

## SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

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