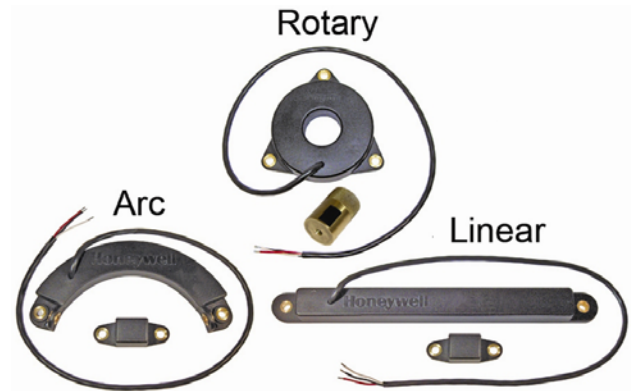


NOTICE: This document contains preliminary specifications for use in obtaining Voice of the Customer feedback. Specifications are subject to change. This product is scheduled to be introduced for general sales in 2009. To obtain a product sample, please contact Al Buisker at (815) 235-6701 or alan.buisker@honeywell.com.

Product Sheet

SMART Position Sensor

Accurate, Reliable, Thinking



DESCRIPTION

The SMART Position Sensor is a non-contacting sensing solution for arc, rotary and linear absolute position sensing with enhanced speed and accuracy.

This product uses a patented combination of ASIC (Application-Specific Integrated Circuit) technology and an array of MR (magneto-resistive) sensors to determine the position of a magnet attached to a moving object. The array measures the outputs of the sensors mounted along the magnet's direction of travel. The outputs and the sensor sequence determine the nearest pair of sensors to the center of the magnet location. The output of these two sensors is then used to determine the position of the magnet between them.

FEATURES

- High resolution of 16 bits provides enhanced accuracy
- Non-contacting technology designed to provide enhanced product life and durability with less downtime
- Combined patented MR sensor and ASIC technology provide enhanced differentiation and performance
- Three packaging styles eases 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

The SMART Position Sensor is available in three configurations. Each configuration comes with a separate magnet:

- Arc: senses position of magnet relative to the sensor from 0 degrees to 100 degrees.
- Rotary: senses position of magnet relative to the sensor from 0 degrees to 360 degrees.
- Linear: senses position of a magnet relative to the sensor from 0 mm to 200 mm [0 in to 7.87 in].

The sensor may be connected to a PC (personal computer) using the interface box and standard USB cable.

POTENTIAL APPLICATIONS

- Plastic molding machines
- Press position measurement
- Woodworking machinery
- Cutting and slitting machinery
- Packaging applications
- Valve position
- Elevators
- Bottling machines
- Electronic assembly processes
- Wafer handling equipment
- Material handling
- Construction equipment

NOTICE

- Specifications given in Table 1 apply to the prototype sensors in the sample kit only. General sales sensors will have different specifications.
- These products are for evaluation purposes only and are not intended for use in application environments.

SMART Position Sensor

Table 1. Prototype General Specifications

Characteristic	Parameter
Supply voltage	5 V
Resolution	16 bits
Sensor output	RS232 at TTL voltage levels
Update rate	800 μ s
Baud rate	57.6 kbaud
Startup time	<10 ms
Operating temperature	25 °C [77 °F]
Storage temperature	25 °C [77 °F]
Air gap	20 mm [0.79 in]
Connector	flying leads (red = power, black = ground, white =output)
Mounting	[0.25 in] mounting screws
Housing material	thermoplastic
Sealing	none on samples
Shock	to be determined
Vibration	to be determined

Table 2. Prototype Arc Sensor Specifications

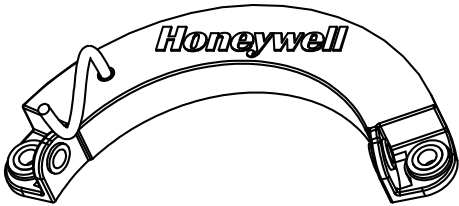
	Characteristic	Parameter
	Sensing range	0 degrees to 100 degrees
	Sensing area	<ul style="list-style-type: none"> axial (along the inside) radial (along the outside)

Table 3. Prototype Rotary Sensor Specifications

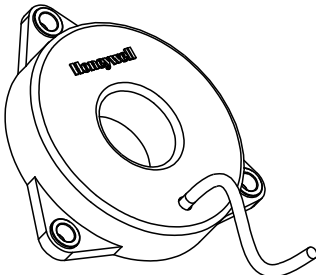
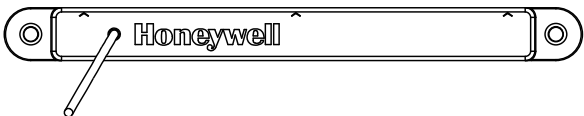
	Characteristic	Parameter
	Sensing range	0 degrees to 360 degrees
	Sensing area	<ul style="list-style-type: none"> axial (along the inside) radial (along the outside)

Table 4. Prototype Linear Sensor Specifications

	Characteristic	Parameter
	Sensing range	0 mm to 200 mm [0 in to 7.87 in]
	Mounting	<ul style="list-style-type: none"> horizontal vertical

SMART Position Sensor

Table 5. Prototype Magnet Specifications

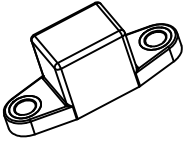

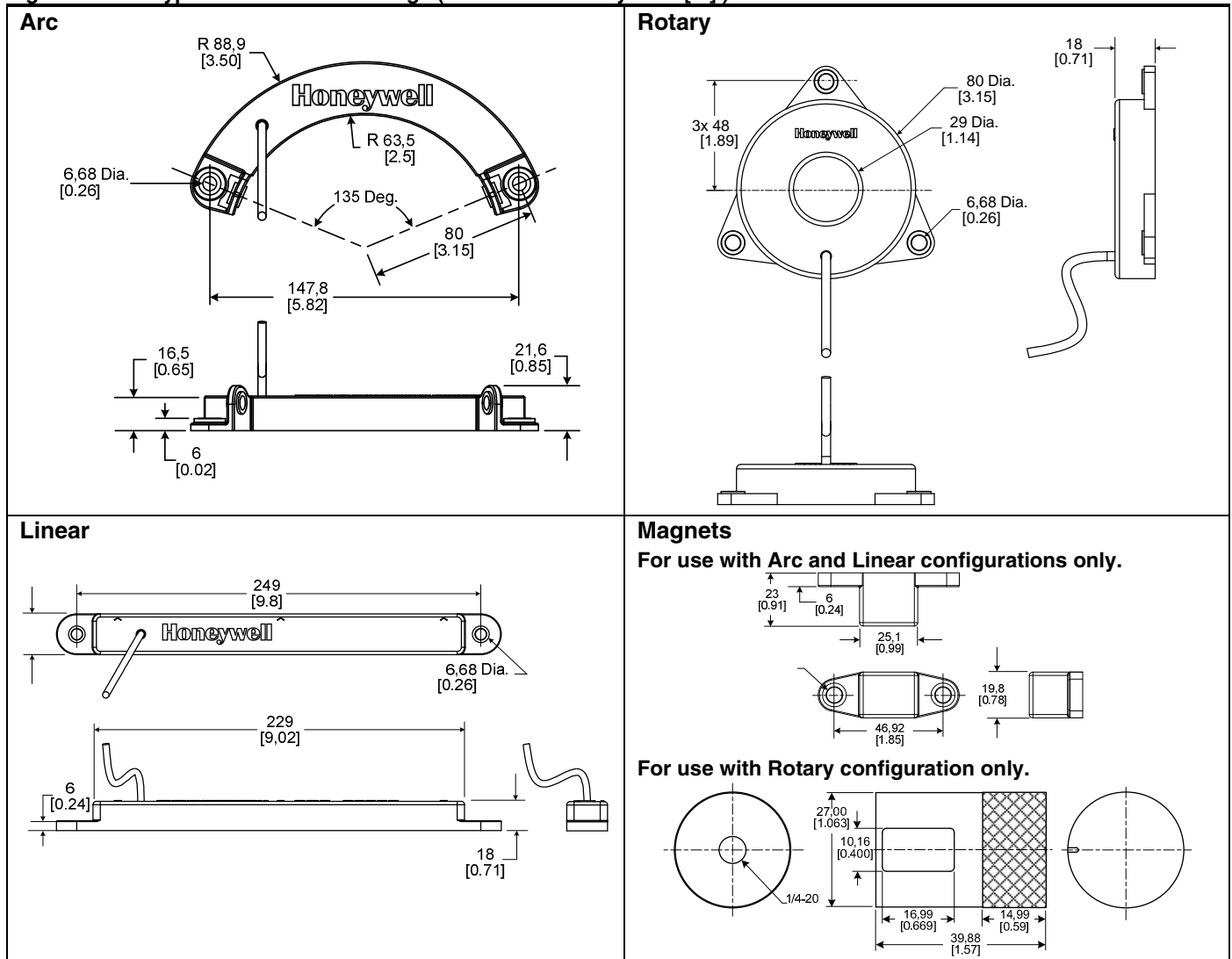
For use with Arc and Linear configurations only.	For use with Rotary configuration only.	Characteristic	Parameter
		material	neodymium

Figure 1. Block Diagram



Figure 2. Prototype Dimensional Drawings (For reference only: mm/[in.])



Order Guide

Catalog Listing	Description
SPS-Arc	SMART Position Sensor, arc configuration, magnet included
SPS-Rotary	SMART Position Sensor, rotary configuration, magnet included
SPS-Linear	SMART Position Sensor, linear configuration, magnet included

NOTICE

EVALUATION PRODUCTS

THESE PRODUCTS ARE PROTOTYPE, PREPRODUCTION ITEMS THAT HAVE YET TO COMPLETE ALL PHASES OF PRODUCT RELEASE TESTING AND ARE FOR CUSTOMER EVALUATION ONLY.

THESE ITEMS ARE SOLD "AS IS" WITH NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING THAT OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT WILL HONEYWELL BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGE.

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.

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet 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

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P r e l i m i n a r y

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