

## Application Note

# RTY Series Hall-Effect Rotary Position Sensors

### Background

The RTY Series Hall-Effect Rotary Position Sensors provide angle monitoring in harsh transportation and industrial applications at a competitive cost.

These products use a magnetically biased, Hall-effect integrated circuit (IC) to sense rotary movement of the actuator shaft over a set operating range. Rotation of the actuator shaft changes a magnet's position relative to the IC. The resulting flux density change is converted to a linear output.

The IC, together with conditioning and protection circuitry, and the permanent magnet, is sealed in an IP67-qualified rugged package for durability in most harsh environments.

Eight operating ranges (50°, 60°, 70°, 90°, 120°, 180°, 270° and 360°) are tolerant to over-travel and allow use in most common applications. Low voltage and high voltage versions cover an input voltage range of 4.5 Vdc to 30 Vdc.

Although most applications require no lever, a lever version is available. The lever may allow customers to reduce the number of mechanical linkages required for their application, which may reduce the cost of the overall customer solution. No brackets are necessary.

Buy from a proven partner and supplier in the transportation and industrial fields. Honeywell's industry-leading capabilities in research and development provide the customer with known quality and support.

### Solutions

#### TRANSPORTATION

**Tilt/Trim Position** may be used to sense the position of the boat engine tilt/trim.

*Customer Benefits:* Accurate position reporting helps the operator to maintain peak performance of the boat and protects against propeller damage. The IP67 rating, EMC testing, and AMP seal connector protect against marine conditions. The 35 M life cycle helps reduce end user replacement requirements.



Boat Engine

#### Throttle Position (trucks, buses, off-road vehicles, industrial/construction/agricultural vehicles and equipment, cranes)

may be used to sense throttle plate angle.

*Customer Benefits:* Accurate throttle position can enhance fuel economy and engine performance. The IP67 rating and EMC testing meet customer requirements. The 35 M life cycle helps reduce warranty concerns.



Throttle Position

# Application Note

## RTY Series Hall-Effect Rotary Position Sensors

**Bus/Truck Suspension/Kneeling Position** may be used to sense angular travel of the suspension system.

*Customer Benefits:* Accurate sensing validates the correct height for the application's system requirements, potentially aiding vehicle ingress/egress (liability), trailer height for warehouse docking (faster turns and liability), and suspension performance monitoring (diagnostic check). The IP67 rating and EMC testing meet customer requirements. The 35 M life cycle helps reduce warranty concerns.



Bus

### INDUSTRIAL

**HVAC Damper Control** may be used to sense damper position to regulate airflow.

*Customer Benefits:* Accurate sensing of the damper's open/close condition allows greater system efficiency and facility occupant comfort. The IP67 rating, EMC testing, and AMP seal connector protect against dust and wet conditions. The 35 M life cycle helps reduce warranty concerns. The wide temperature range (-40 °C to 125 °C [-40 °F to [257 °F]) of the sensor allows for use in hot and cold environments.



HVAC Ducting

**Valve Control** may be used to sense valve position to regulate flow.

*Customer Benefits:* Accurate sensing of the valve's open/close condition allows facilities to achieve greater throughputs and higher product quality levels. The IP67 rating, EMC testing, and AMP seal connector protect against dust and wet conditions. The 35 M life cycle helps reduce warranty concerns. The wide temperature range (-40 °C to 125 °C [-40 °F to [257 °F]) of the sensor allows for use in hot and cold environments.



Valves

**Irrigation Pivot Control** may be used to sense irrigation equipment steering angle.

*Customer Benefits:* Accurate positioning delivers water where it is needed, potentially reducing water consumption and increasing crop yield. The IP67 rating, EMC testing, and AMP seal connector protect against dust and wet conditions. The 35 M life cycle helps reduce end user replacement requirements and OEM warranty exposure. The wide temperature range (-40 °C to 125 °C [-40 °F to [257 °F]) of the sensor allows for use in hot and cold environments.



Irrigation System

# Application Note

## RTY Series Hall-Effect Rotary Position Sensors

RTY Series	Features and Benefits (★ - competitive differentiator)
 The image shows two views of the RTY Series Hall-Effect Rotary Position Sensor. The top view shows the sensor's housing with a central shaft and a connector. The bottom view shows the sensor's internal components, including the Hall-effect element and the connector.	<ul style="list-style-type: none"><li>★ <b>35 M cycle product life:</b> Provides long life in the application</li><li>• <b>Solid-state Hall-effect technology:</b> Provides non-contact operation, long service life, low torque actuation and reduces worn-out mechanisms</li><li>• <b>Rugged IP67-sealed package with integral connector:</b> Allows for use in harsh environments</li><li>• <b>Automotive-grade EMI/EMC testing, integrated reverse polarity, and short circuit:</b> Provides protection against installation errors and frequencies in the environment</li><li>• <b>Industry-standard AMP termination, 32 mm mounting pitch, North American and European pinout styles, and compact package:</b> Provides drop-in replacement</li><li>• <b>Eight operating ranges up to 360°:</b> Provides flexibility in multiple applications, allowing OEMs the range of travel needed for the application</li></ul>

### Find out more

To learn more about Honeywell's sensing and control products, call **1-800-537-6945**, visit **sensing.honeywell.com**, or e-mail inquiries to **info.sc@honeywell.com**

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