

Data Sheet

Hall Effect Rotary Position Sensor

General Description

RPN Series rotary Position Sensor uses a magnetically biased Hall effect integrated circuit (IC) to accurately sense rotary movement of the actuator shaft. This IC, together with conditioning and protection circuitry and two permanent magnets, is sealed in a rugged package.

Operation

Rotation of the actuator shaft changes the Hall effect's IC position relative to the magnets. This results in a change in the flux density detected by the Hall effect IC as the shaft is rotated. The output of the IC converted to a linear output over 90° of travel.

Installation

The sensor is flange mounted. Sensor Termination is with a AMP Superseal 1.5 Series.

Typical Application

The compact design and rugged construction make this sensor the ideal solution for detecting position and movement of the features such as pedals, throttle, gear shift, levers, linkages, suspension height and hitches in:

- Trucks
- Off road vehicles
- Industrial vehicles and equipment
- Construction vehicles and equipment
- Agricultural vehicles and equipment
- Cranes



Features

- Solid state Hall effect technology
- Integrated reverse polarity, short circuit and EMC protection
- 90° measuring range with 360° allowable rotation
- Rugged sealed package with integrated connector

Benefits

- Long service life, low torque actuation and greatly reduced wear out mechanisms.
- Resistance to damage from incorrect wiring and electrical noise
- Wide operating angle tolerant to overtravel
- Durable in harsh environments

WARNING

All SST Sensing Ltd products are tested under nominal operating conditions during the production process. Applications for our products are varied and, as these are outside our control, specification information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their intended application.

CAUTION

Do not exceed maximum ratings. Carefully follow all wiring instructions, incorrect wiring can cause permanent damage to the device. Do not use chemical cleaning agents.

Failure to comply with these instructions may result in product damage.

General Note: SST Sensing Ltd reserves the right to make changes in product specifications without notice or liability. All information is subject to SST's own data and considered accurate at time of going to print.

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Product Specification	DWS10-1	DWS10-3
Package Style	Plastic Housing w/Flange mount	Plastic Housing w/Shaft mount
Actuation	Plastic lever plate fitted shaft	6mm diameter plain shaft
Supply Voltage	10 to 30V _{DC}	
Supply Current (max. @ 25°C)	20mA max.	
Output Signal	0.25 to 4.75V _{DC} (Linear Voltage)	
Load Resistance	20kΩ min.	
Linearity (% of Span)	± 2.5°	
Accuracy	± 0.5°	
Measuring Range	± 45°	
Mechanical angle of rotation	360°	
Hysteresis	None	
Operating Temperature Range	-25 to +85°C	
Storage Temperature Range	-40 to +125°C	
Output Temperature Drift	≤ 1mV/°C	
Sealing	IP67	
EMC Protection	200V/m ISO 11452-3	
Protection	Reverse polarity protection and short circuit protection	
Expected Life	30 x 10 ⁶ Cycles	
PIN Assignments	Pin 1 = GND Pin 2 = Vcc Pin 3 = Output	
Termination Type	AMP Superseal 1.5 Series 3-Pin Connector Receptacle 282087-1	
Termination Mating Part	AMP Superseal 1.5 Series 3-Pin Connector Plug 282105	
Housing Material	PA66 Plastic	
Mechanical End Stop	No	

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