High Accuracy Sensor for Air Cylinder (Oil Resistant) model JES

Model No. Indication

JES 000 0 - 02 L GN

1 Design No.
- 0 : Revision Number

2 Shape
- **Blank** : Straight Shaped
- **L** : L Shaped

3 Output Format · Detection Polarity
- **GN** : NPN Output N-Pole Sensor (Cable Color: Black)
- **GS** : NPN Output S-Pole Sensor (Cable Color: Gray)
- **GPN** : PNP Output N-Pole Sensor (Cable Color: Black)
- **GPS** : PNP Output S-Pole Sensor (Cable Color: Gray)

For detecting both lock and release actions, both the N-pole sensor and the S-pole sensor are required.

Application Table

<table>
<thead>
<tr>
<th>Model No.</th>
<th>JES0000-02G</th>
<th>JES0000-02LG</th>
<th>JES0000-02GP</th>
<th>JES0000-02LGP</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPT0500</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>WPT0600</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Specifications

- **Model No.**
  - JES0000-02G
  - JES0000-02LG
  - JES0000-02GP
  - JES0000-02LGP

<table>
<thead>
<tr>
<th>Wiring Method</th>
<th>3-Wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable Load</td>
<td>Relay, Programmable Logic Controller (PLC)</td>
</tr>
<tr>
<td>Voltage</td>
<td>DC 5～24V</td>
</tr>
<tr>
<td>Output Specification</td>
<td>NPN (ON when in proximity) PNP (ON when in proximity)</td>
</tr>
<tr>
<td>Output Current</td>
<td>15mA Max. 80mA Max.</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>4mA Max. 12mA Max.</td>
</tr>
<tr>
<td>Response Speed</td>
<td>16 μsec or less</td>
</tr>
<tr>
<td>Case Material</td>
<td>GF Reinforced PBT : Black</td>
</tr>
<tr>
<td>Indicator Light</td>
<td>Red</td>
</tr>
<tr>
<td>Withstand Voltage</td>
<td>AC1000V (1 minute / Packaged Charging Part / between the Case)</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>DC250V (20MΩ or more in Megohms, between the Case)</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-20°C ~ +85°C (Make sure no condensation)</td>
</tr>
<tr>
<td>Operating Humidity Range</td>
<td>20～95%RH</td>
</tr>
<tr>
<td>Protection Grade</td>
<td>IP67</td>
</tr>
<tr>
<td>Cable Length</td>
<td>1m</td>
</tr>
</tbody>
</table>

Performance Curve

JES detects only magnetic force vertical to the detection surface. The operating curve is shown below. Operating point is on the steep part of the operating curve, so even small stroke can be surely detected.
Electric Circuit Diagram

NPN Output
- JES0000-02G
- JES0000-02LG

PNP Output
- JES0000-02GP
- JES0000-02LGP

External Dimensions (Straight Shaped): JES0000-02G, JES0000-02GP

External Dimensions (L Shaped): JES0000-02LG, JES0000-02LGP
Cautions

• Notes for Design

1) Check the Specifications
   • Please use each product according to the specifications. The product may be damaged or malfunction if used outside the range of load or specifications.

2) Notes on Use in the Interlock Circuit
   • When the sensor is used for an interlock signal that requires high reliability, please use a double interlock system by providing a mechanical protection function. Or by using another sensor together with the product. Also, please perform periodic maintenance and confirm proper operation.

3) Please avoid using loads that generate surge voltage.
   • If driving a relay, put a Zener diode in parallel for surge protection.

• Notes on Operating Environment

1) Never use the product in an atmosphere with explosive gases.
   • Sensor for Air Cylinder is not designed to prevent explosion. Do not use the product in an atmosphere with explosive gases since it may cause serious explosions.

2) The product may malfunction if an intense magnetic field is applied to a pole body.

3) Make sure to prepare shield measures when using in the following environments.
   • Where large current and/or strong magnetic field are generated.
   • Where noise occurs due to static electricity, etc.
   • Where magnetic powder or dust such as iron powder occurs or scatters.

4) Do not use the product in an environment where it is continuously exposed to coolant or chemical liquid.
   • Although IEC standard IP67 structure is satisfied, please avoid using sensors in an environment where continuously exposed to coolant or chemical liquid. This may cause insulation failure or malfunction.

5) Do not use the product in an environment with oil or chemicals.
   • If sensors are used in an environment with coolant or cleaning solvent, even in a short time, they may be adversely affected by improper insulation, malfunction due to swelling of potting resin and or hardening of electric cable.

6) Do not use the product in an environment with excessive vibrations or impacts.

• Installation Notes

1) Electric Wiring Reverse Connection Protection
   • Follow the electric circuit diagram on P.12 and make sure to connect properly. Never connect the power reversely.

2) Tighten sensors with appropriate tightening torque.
   • Use the set screw mounted on the sensor body and tighten it with the following torque.
     JES0000 : 0.06N • m

3) Wiring
   • Do not damage the cables. Damaged, forcibly bended, stretched, winded, load applied or pinched cables will cause fire, electric shock, and/or malfunction due to electric leakage and/or continuity failure.
   • Do not apply excessive stress on the cable port of the sensor.
   • Minimum bending radius of the cable port is R7.
   • If cables are to move, fix the middle of the cables so that no stress is applied to the cable port.

4) Mounting position of the sensor should be adjusted by checking actual operating state.
Notes on Handling

1) It should be handled by qualified personnel.
   - The hydraulic and pneumatic equipment should be handled and maintained by qualified personnel.

2) Do not handle or remove the product unless safety protocols are ensured.
   - The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.
   - Before the product is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
   - After stopping the product, do not remove until the equipment cools down.
   - Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.

3) Do not disassemble or modify.
   - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period. Never modify the product as it contains a powerful magnet.

4) Keep more than one meter away from this product if you have a heart pacemaker, etc.
   - It may be malfunctioned by strong magnetism.

5) This sensor is made by ASA Electronics Industry Co. Ltd.
   - Please contact us or ASA Electronics Industry for further inquiries.

Warranty

1) Warranty Period
   - The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

2) Warranty Scope
   - If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
   - Defects or failures caused by the following are not covered.
     - If the stipulated maintenance and inspection are not carried out.
     - If the product is used while it is not suitable for use based on the operator’s judgment, resulting in defect.
     - If it is used or handled in inappropriate way by the operator.
       - (Including damage caused by the misconduct of the third party.)
     - If the defect is caused by reasons other than our responsibility.
     - If repair or modifications are carried out by anyone other than Kosmek, without our approval and confirmation, it will void warranty.
     - Other caused by natural disasters or calamities not attributable to our company.
     - Parts or replacement expenses due to parts consumption and deterioration.
       - (Such as rubber, plastic, seal material and some electric components.)
     - Damages excluding from direct result of a product defect shall be excluded from the warranty.

Maintenance and Inspection

1) Removal of the Product and Shut-off of Pressure Source
   - Before the product is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
   - Make sure there is no abnormality in the bolts and respective parts before restarting.

2) Never touch terminals while the power is on.
   - Otherwise it will cause electric shock, malfunction and damage to the sensor for air cylinder.

3) Retightening of Set Screw
   - When mounting position of the sensor for air cylinder is shifted due to looseness of set screw, retighten it after adjusting the mounting position.

4) Check if the electric cable is damaged or not.
   - Damaged cables may cause insulation failure.
     - Exchange the sensor for air cylinder or repair the reed if there is damage on the electric cable.

5) Product Storage
   - The products should be stored in the cool and dark place without direct sunshine or moisture.

6) Please contact us for replacement.