High Accuracy Sensor for Air Cylinder (Oil Resistant)  

**Model No. Indication**

**J ES 0000 - 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>JES00000-02G</th>
<th>JES00000-02LG</th>
<th>JES00000-02GP</th>
<th>JES00000-02LGP</th>
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<tr>
<td>WPT0500</td>
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<td>WPT1000</td>
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**Specifications**

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<th>Model No.</th>
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<th>JES00000-02LG</th>
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<tr>
<td>Wiring Method</td>
<td>3-Wire</td>
<td></td>
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<tr>
<td>Applicable Load</td>
<td>Relay, Programmable Logic Controller (PLC)</td>
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<td></td>
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<tr>
<td>Voltage</td>
<td>DC 5 ~ 24V</td>
<td></td>
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<tr>
<td>Output Specification</td>
<td>NPN (ON when in proximity)</td>
<td>PNP (ON when in proximity)</td>
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<tr>
<td>Output Current</td>
<td>15mA Max.</td>
<td>80mA Max.</td>
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<td>Current Consumption</td>
<td>4mA Max.</td>
<td>12mA Max.</td>
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<td>Response Speed</td>
<td>16 μsec or less</td>
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<td>Case Material</td>
<td>GF Reinforced PBT : Black</td>
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<tr>
<td>Indicator Light</td>
<td>Red</td>
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<tr>
<td>Withstand Voltage</td>
<td>AC1000V (1 minute / Packaged Charging Part / between the Case)</td>
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<tr>
<td>Insulation Resistance</td>
<td>DC250V (20MΩ or more in Megohms, between the Case)</td>
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<td>Operating Temperature Range</td>
<td>-20°C ~ +85°C (Make sure no condensation)</td>
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<td>Operating Humidity Range</td>
<td>20 ~ 95%RH</td>
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<td>Protection Grade</td>
<td>IP67</td>
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<td>Cable Length</td>
<td>1m</td>
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**Performance Curve**

JES detects only the magnetic force that is 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 □

- Brown Cable (+)
- Black Cable (Output) Max. 15mA
- DC 5 ~ 24V

**PNP Output**

JES0000-02GP □
JES0000-02LGP □

- Brown Cable (+)
- Black Cable (Output) Max. 80mA
- DC 5 ~ 24V

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

![Diagram](image)

- **Dimensions**: 15, 2, 8.2 (mm)
- **Set Screw**
- **Tightening Torque**: 0.06N・m

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

![Diagram](image)

- **Dimensions**: 16, 2, 8.2 (mm)
- **Set Screw**
- **Tightening Torque**: 0.06N・m
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.288 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 operated by qualified personnel.
   ● The hydraulic and pneumatic equipment should be operated and maintained by qualified personnel.

2) Do not operate or remove the product unless the safety protocols are ensured.
   ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
   ② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
   ③ After stopping the product, do not remove until the temperature drops.
   ④ Make sure there is no trouble/issue 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.

● Maintenance and Inspection

1) Removal of the Product and Shut-off of Pressure Source
   ● Before removing the product, make sure that safety devices and preventive devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
   ● Make sure there is no trouble/issue 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. Replace a sensor for air cylinder or repair the reed if the electric cable is damaged.

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.

※ Please refer to P.716 for common cautions.
Cautions

Notes on Handling
1) It should be operated by qualified personnel.
   ● The hydraulic machine and air compressor should be operated and maintained by qualified personnel.
2) Do not operate or remove the product unless the safety protocols are ensured.
   ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
   ② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
   ③ After stopping the product, do not remove until the temperature drops.
   ④ Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.
3) Do not touch a clamp (cylinder) while it is working. Otherwise, your hands may be injured.

4) Do not disassemble or modify.
   ● If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

Maintenance and Inspection
1) Removal of the Machine and Shut-off of Pressure Source
   ● Before removing the product, make sure that the safety devices are in place. Shut off the pressure and power source and make sure no pressure exists in the air and hydraulic circuits.
   ● Make sure there is no trouble/issue in the bolts and respective parts before restarting.
2) Regularly clean the area around the piston rod and plunger.
   ● If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage.

   ● Locating products (except VRA/VRC/VX/VXE/VXF and SWR without air blow port) can remove contaminants with the cleaning function. When installing a workpiece or a pallet, make sure there are no contaminants such as thick sludge.
   ● Continuous use with dirt on components will lead to locating failure, fluid leakage and malfunction.

4) Regularly tighten pipe, mounting bolt, nut, snap ring, cylinder and others to ensure proper use.

5) Make sure the hydraulic fluid has not deteriorated.

6) Make sure there is a smooth action without an irregular noise.
   ● Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.

7) The products should be stored in the cool and dark place without direct sunshine or moisture.

8) Please contact us for overhaul and repair.
● 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.

1. If the stipulated maintenance and inspection are not carried out.
2. Failure caused by the use of the non-confirming state at the user’s discretion.
3. If it is used or operated in an inappropriate way by the operator.
   (Including damage caused by the misconduct of the third party.)
4. If the defect is caused by reasons other than our responsibility.
5. If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
6. Other caused by natural disasters or calamities not attributable to our company.
7. 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.
Sales Offices

Sales Offices across the World

<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
<th>TEL.</th>
<th>FAX.</th>
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<tbody>
<tr>
<td>JAPAN</td>
<td>HEAD OFFICE</td>
<td>TEL. +81-78-991-5162</td>
<td>FAX. +81-78-991-8787</td>
</tr>
<tr>
<td>Overseas Sales</td>
<td></td>
<td>KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241</td>
<td>兵庫県神戸市西区室谷2丁目1番5号</td>
</tr>
<tr>
<td>United States of America</td>
<td>KOSMEK (USA) LTD.</td>
<td>TEL. +1-630-620-7650</td>
<td>FAX. +1-630-620-9015</td>
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<tr>
<td>MEXICO</td>
<td>REPRESENTATIVE OFFICE</td>
<td>TEL. +52-442-161-2347</td>
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<tr>
<td>KOSMEK USA Mexico Office</td>
<td></td>
<td>Av. Santa Fe #103 int 59 Col. Santa Fe Juriquilla C.P. 76230 Queretaro, Qro Mexico</td>
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<tr>
<td>EUROPE</td>
<td>SUBSIDIARY</td>
<td>TEL. +43-463-287587</td>
<td>FAX. +43-463-287587-20</td>
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<tr>
<td>KOSMEK EUROPE GmbH</td>
<td></td>
<td>Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria</td>
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<td>CHINA</td>
<td>KOSMEK (CHINA) LTD.</td>
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<td>FAX. +86-21-54253709</td>
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<td>考世美（上海）贸易有限公司</td>
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<td>中国上海市浦东新区浦三路21弄55号银亿滨江中心601室 200125</td>
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<td>INDIA</td>
<td>BRANCH OFFICE</td>
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<tr>
<td>KOSMEK LTD - INDIA</td>
<td></td>
<td>F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore 560052 India</td>
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<td>THAILAND</td>
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<td>KOSMEK Thailand Representation Office</td>
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<td>67 Soi 5B, RAMA 9 Rd, Suanluang, Suanluang, Bangkok 10250, Thailand</td>
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<tr>
<td>TAIWAN</td>
<td>（Taiwan Exclusive Distributor）</td>
<td>TEL. +886-2-82261860</td>
<td>FAX. +886-2-82261890</td>
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<tr>
<td>Full Life Trading Co., Ltd.</td>
<td></td>
<td>16F-4, No.2, Jian Ba Rd, Zhonghe District, New Taipei City Taiwan 23511</td>
<td>台湾新北市中和區建八路2號16F-4(遠東世紀廣場)</td>
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<td>PHILIPPINES</td>
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<td>G.E.T. Inc., Phil.</td>
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<td>Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427</td>
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<td>INDONESIA</td>
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<td>PT. Yamata Machinery</td>
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Sales Offices in Japan

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<td>Fukuoka Sales Office</td>
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<td>TEL. 092-433-0424</td>
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<td>〒812-0006</td>
<td>福岡県福岡市博多区上平田1丁目8-10-101</td>
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</tbody>
</table>
Global Network

Asia Detailed Map

- Overseas Affiliates and Sales Offices
- Distributors

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