Outdoor Use Compact Limit Switches

Optimum for outdoor use, as in automated parking facilities

- Release force is approx. 1.5 times stronger than that of general-purpose limit switches, ensuring that there will be no lever return problem.
- Wide -30 to +80˚C operating temperature range (no freezing allowed).
- Superior weather-resistant metals and resins are used.
- Mounting is compatible with Yamatake's 14CE and LS switches.
- Standard M12 connector for easy installation at the work site.
- Lever can be reliably set on the shaft at 15˚ intervals due to the gear type lever fixing method.
- Rugged aluminum die-cast housing

**Catalog Listing**

<table>
<thead>
<tr>
<th>Model</th>
<th>Contact material</th>
<th>Connector and cable</th>
<th>LSP5-□□□□-PD□□ Operating force (O.F.) = 5N</th>
<th>LSP5-2□□□□-PD□□ Operating force (O.F.) = 4N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roller lever</strong></td>
<td>Gold alloy</td>
<td>M12 connector</td>
<td>LSP5-1A10-PD</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M12 preleaded connector, 30cm</td>
<td>LSP5-1A10-PD03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silver</td>
<td>M12 connector</td>
<td>LSP5-1A30-PD</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td>M12 preleaded connector, 30cm</td>
<td>LSP5-1A30-PD03</td>
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<tr>
<td><strong>Non-lever (Note1)</strong></td>
<td>Gold alloy</td>
<td>M12 connector</td>
<td></td>
<td>LSP5-2B11-PD</td>
</tr>
<tr>
<td></td>
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<td>M12 preleaded connector, 30cm</td>
<td></td>
<td>LSP5-2B11-PD03</td>
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<tr>
<td></td>
<td>Silver</td>
<td>M12 connector</td>
<td></td>
<td>LSP5-2B31-PD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M12 preleaded connector, 30cm</td>
<td></td>
<td>LSP5-2B31-PD03</td>
</tr>
<tr>
<td><strong>Adjustable Roller lever</strong></td>
<td>Gold alloy</td>
<td>M12 connector</td>
<td>LSP5-3A10-PD</td>
<td></td>
</tr>
<tr>
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<td>M12 preleaded connector, 30cm</td>
<td>LSP5-3A10-PD03</td>
<td></td>
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<tr>
<td></td>
<td>Silver</td>
<td>M12 connector</td>
<td>LSP5-3A30-PD</td>
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<td>M12 preleaded connector, 30cm</td>
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Note: The operating force (O.F.) value is for a lever length of 60mm

Note1: Use in combination with general-purpose LS levers (6PA-J148, LS-6PA58, etc.)
# SPECIFICATIONS

<table>
<thead>
<tr>
<th>Catalog listing</th>
<th>LSPS-□A10-PD□</th>
<th>LSPS-□A30-PD□</th>
<th>LSPS-□B11-PD□</th>
<th>LSPS-□B31-PD□</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Gold alloy contacts</td>
<td>Silver contacts</td>
<td>Gold alloy crossbar</td>
<td>Silver rivet</td>
</tr>
</tbody>
</table>

## Standards
- Certification: GB 14048.5-2001
- Compliance: NECA C 6201-5-1

## Structure
- Contact type: C(SPDT)
- Contact shape: Gold alloy crossbar
- Protective structure: IP67 (IEC 60529, JIS C 0920)

## Electrical performance
- **Electrical rating**
  - AC: 125Vac 0.1A
  - DC: 30Vdc 0.1A
  - AC: 250Vac 3A
  - DC: 30Vdc 1A
- **Dielectric strength**
  - Between non-continuous terminals: 650Vac at 50/60Hz for 1 minute
  - Between each terminal and ground: 2,000Vac at 50/60Hz for 1 minute
  - Between each terminal and non-live metal part: 2,000Vac at 50/60Hz for 1 minute
- **Insulation resistance**
  - Max. 100MΩ (by 500Vdc megger)
- **Initial contact resistance**
  - Switch: 100mΩ max.
  - Connector: 40mΩ max.
- **Recommended minimum voltage and current**
  - 5Vdc 5mA
  - 24Vdc 10mA, or 12Vdc 20mA

## Mechanical performance
- **Actuator strength**
  - Withstands 25N load in operating direction for 1 minute.
- **Impact resistance**
  - 300m/s². Contact release in 1ms max. in free position and operating limit position.
- **Vibration resistance**
  - Frequency 10 to 55Hz, 1.5mm peak-to-peak amplitude for 2 continuous hours.
  - Contact release in 1ms max. in free position and operating limit position.
- **Allowable operating speed**
  - 1mm/s to 0.5m/s
  - Min. speed: unstable state at 0.1s or less
  - Max. speed: actuator not damaged
- **Operating frequency**
  - Max. 60 operations/minute
- **Connector inserting/pulling force**
  - 0.4 to 4.0N (per pin)
- **Inserting/pulling cycle endurance**
  - 50 times min.
- **Tightening strength of coupling**
  - 0.8N m

## Life
- **Mechanical**
  - 5N operating force type: min. 100,000 cycles
  - 4N operating force type: min. 1 million cycles
  - For both, overtravel is 70% to 100% of standard value.
- **Electrical**
  - 100,000 operations or more
  - Rated load: 6A 30Vdc
  - Operating cycles: 20/min

## Ambient conditions
- **Operating temperature**
  - –30 to +60°C (no freezing allowed)
- **Operating humidity**
  - 95% RH max.

## Recommended tightening torque
- **Body**
  - 5 to 6N m (M5 hexagon socket head bolt)
  - 4 to 5.2N m (M5 hexagonal nut)
- **Lever**
  - 0.4 to 0.6N m (M12 x 1)
- **Connector**
  - 0.4 to 0.6N m (M12 x 1)
**EXTERNAL DIMENSIONS**

**Connector type**

- **Roller lever type**
  - Roller: 17.4 dia. x 7.1 wide Sintered stainless steel
  - Roller lever can also be attached on opposite side.

- **Adjustable roller lever type**
  - Roller: 17.4 dia. x 7.1 wide Sintered stainless steel
  - Roller lever can also be attached on opposite side.

- **Non-lever type**
  - Boby
    - Shaft: Stainless steel
    - Stainless steel M5 hexagonal nut
    - M12 connector Polyamide
    - 5.2 mounting holes (2)

- **With 6PA-J148**
  - Roller lever can also be attached on opposite side.
  - Roller: 17.4 dia. x 7.1 wide Sintered stainless steel
  - M5 x 13 Hexagon socket head bolt

- **With LS-6PA58**
  - Roller lever can also be attached on opposite side.
  - Roller: 17.4 dia. x 7.1 wide Sintered stainless steel
  - M5 x 16 Hexagon socket head bolt

[unit: mm]
● Preleaded connector type (Dimensions of body are same as for connector-type switch)

![Connector Diagram]

### OPERATING CHARACTERISTICS

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<td>5.0N max</td>
<td>6.3N max</td>
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<tr>
<td>R.F. (release force)</td>
<td>1.1N min</td>
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<tr>
<td>P.T. (pretravel)</td>
<td>30° max</td>
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Note: O.F. and R.F. values are for a lever length of 60mm.

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Note: O.F. and R.F. values are for a lever length of 38.1mm.

### CIRCUIT DIAGRAM

1 COM (to connector pin No. 1) — 2 NC (to connector pin No. 2)
— 4 NO (to connector pin No. 4)

### CONNECTOR PIN LAYOUT