Coolant immersion test (1000-hour accelerated product life test)

<table>
<thead>
<tr>
<th>Oil type</th>
<th>JIS classification</th>
<th>Oil name</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-soluble cutting fluid (emulsion)</td>
<td>A1 No.1 equivalent</td>
<td>EC50-T3</td>
<td>Pass/Fail</td>
</tr>
<tr>
<td>Water-soluble cutting fluid (soluble/synthetic)</td>
<td>42 No.1 equivalent</td>
<td>PFS760</td>
<td>Pass/Fail</td>
</tr>
</tbody>
</table>

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Please read “Terms and Conditions” from the following URL before ordering and use:
http://www.azbil.com/products/factory/order.html

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URL: http://www.azbil.com

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**Anti-Coolant Countermeasures**

**Photoelectric switches**
- Problems:
  - Mist coolants are often used near photoelectric sensors. Since most sensors are made of resin, coolant intrusion through cracks in the case or lens, attenuation of light intensity, and similar problems occur after a short period of time, and the number of such cases is increasing.

**Structural reinforcement to resist coolants**
- Protection for switch housing
- Protection for optical parts
- Robust die-casting and fluorine coating
- Coolant-resistant O-ring (NBR)
- Stainless steel cover
- Oil-resistant cable (PVC)

**HP800 series environment-resistant photoelectric switches**
- No more need to worry about cracked cases or attenuation of light due to lens fogging
- High sealing performance ensures normal operation even after 1,000-hour immersion heat cycle test

**Proximity switches**
- Problems:
  - Disconnection following cable deterioration and hardening
  - Cable failure, etc., caused by coolant penetration
  - The number of problems occurring after a short period of time is increasing.

**Limit switches**
- Problems:
  - Internal plunger cup seal deteriorates, causing insulation failure
  - Springs break due to corrosion, causing faulty operation
  - The number of problems occurring after a short period of time is increasing.

**SL1-C series environment-resistant limit switch**
- New cup seal shape remedies problem of cracking followed by insulation deterioration
- Cobalt alloy C springs resist corrosion by coolant

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**General-purpose oil-resistant cable**
- Highly oil-resistant polyurethane (PUR) cable
- The cable is securely bonded to the molded material at the end of the cable and to the filler material (indicated by red lines). This is very effective in preventing any coolant that has penetrated the cable from reaching the main circuit board.

**FL7M-C series environment-resistant proximity sensors**
- Greatly enhanced sealing performance through elimination of cable deterioration caused by water-soluble coolants
- Resistance to cable hardening has been significantly improved
- Passes coolant immersion test (1,000 hours at 70 °C)

**1LS-J___-MD03 series environment-resistant limit switch**
- V-ring and O-ring between the head and shaft provide a double seal
- The internal switch terminals, the cable core, and the conduit section are filled with epoxy resin after the connector is tightened
- The joint between the housing and cover is sealed by O-ring and epoxy resin filling

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**Cobalt alloy C springs resist corrosion**
- Integrally molded seal (pin/rubber)
- Structure that does not easily crack during sliding
- Coolant is shut out

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**Various types are available**

<table>
<thead>
<tr>
<th>Model</th>
<th>Actuator type</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL1-AC</td>
<td>Roller plunger</td>
</tr>
<tr>
<td>SL1-BC</td>
<td>Boot seal roller plunger</td>
</tr>
<tr>
<td>SL1-DC</td>
<td>Cross roller plunger</td>
</tr>
<tr>
<td>SL1-EC</td>
<td>Long roller plunger</td>
</tr>
<tr>
<td>SL1-HC</td>
<td>Plunger</td>
</tr>
<tr>
<td>SL1-PC</td>
<td>Short roller lever</td>
</tr>
</tbody>
</table>

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**V-ring and O-ring provide a double seal**
- Secured by O-ring and epoxy filling
- Filled with epoxy resin