



Environment-Resistant Switches

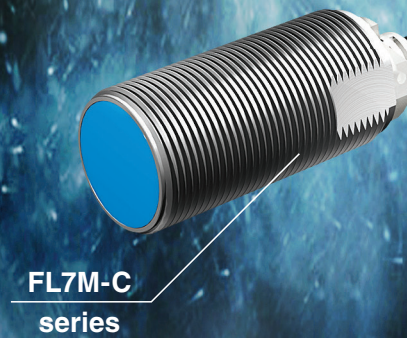
Excellent performance in harsh metalworking environments

Photoelectric switches

Proximity switches

Limit switches

Highly penetrating water-soluble coolants have serious effects on the resin and rubber materials used in many kinds of sensors. Cracking of resin materials and cracking of rubber materials due to swelling or hardening, together with corrosion and breaking of springs, all of which normally occur due to deterioration with age, are increasingly occurring in a shorter period of time, necessitating early product replacement. Azbil offers various sensors and switches equipped with countermeasures against highly penetrating water-soluble coolants.



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Azbil Corporation
 Advanced Automation Company

Yamatake Corporation changed its name to Azbil Corporation on April 1, 2012.

1-12-2 Kawana, Fujisawa
 Kanagawa 251-8522 Japan
 URL: <http://www.azbil.com>

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

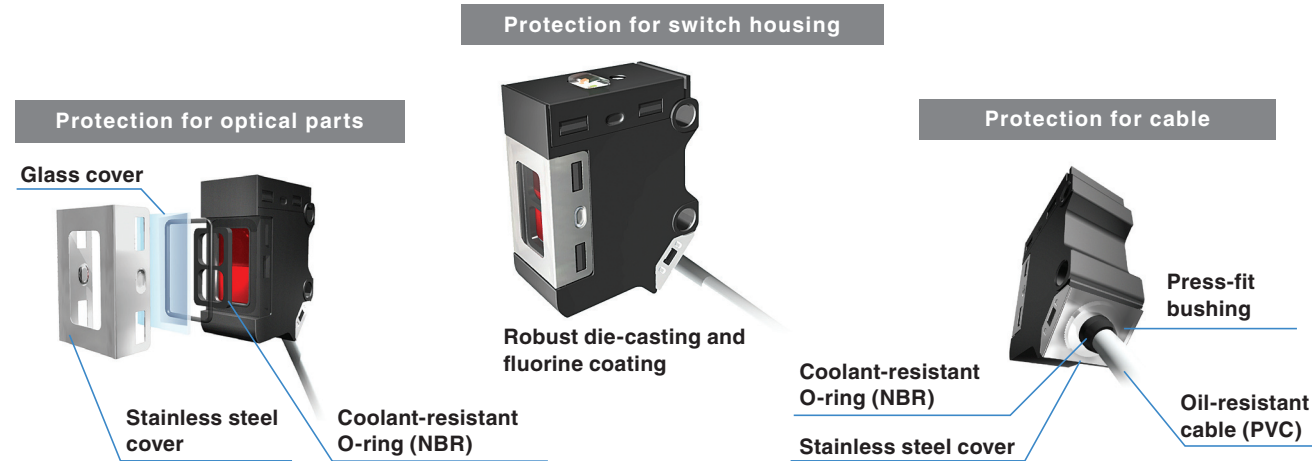
Oil type	JIS classification	Oil name	HP800	FL7M-C
Water-soluble cutting fluid (emulsion)	A1 No.1 equivalent	EC50-T3	Pass	Pass
Water-soluble cutting fluid (soluble/synthetic)	A2 No.1 equivalent	PFS760	Pass	Pass

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

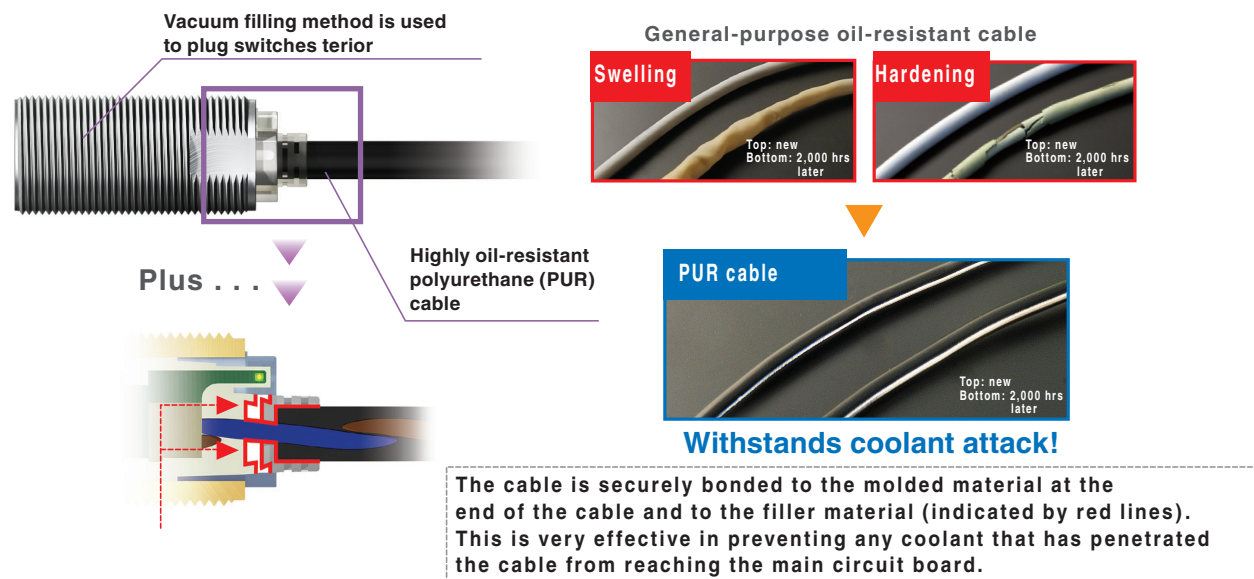


HP800 series environment-resistant photoelectric switches

- 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.

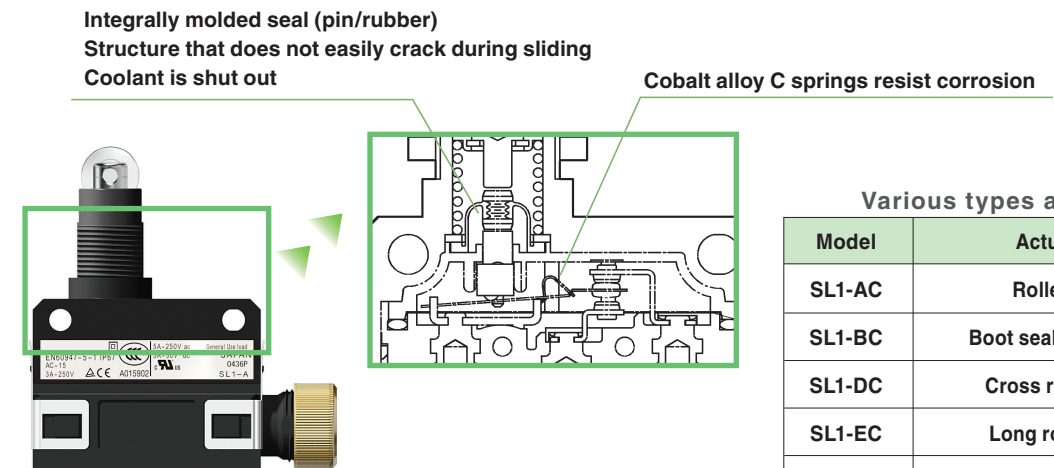


FL7M-C series environment-resistant proximity sensors

- 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)

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.

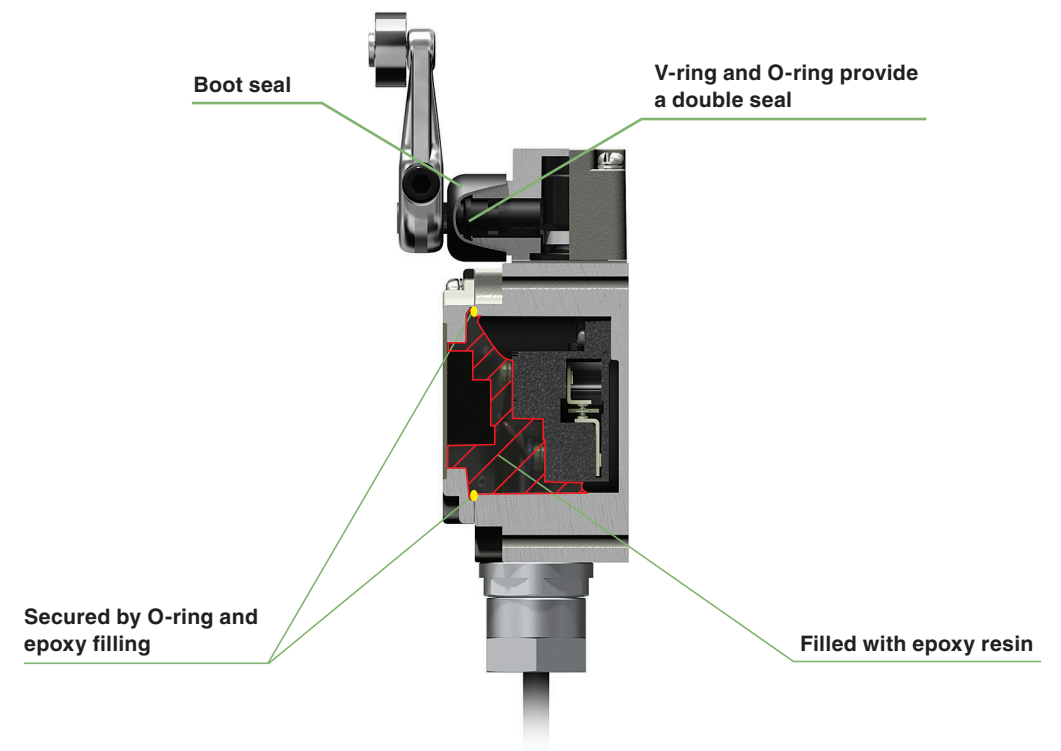


Various types are available

Model	Actuator type
SL1-AC	Roller plunger
SL1-BC	Boot seal roller plunger
SL1-DC	Cross roller plunger
SL1-EC	Long roller plunger
SL1-HC	Plunger
SL1-PC	Short roller lever

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



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