Liquid Leak Detectors with Self-Contained Amplifier

HPQ-D Series | **Built-in amplifier, liquid absorbing paper not needed, usable with various liquids.** * For product details, contact one of our sales representatives or an Azbil dealer.

- **Acids or alkaline liquids, IPA (isopropyl alcohol), pure water, Fluorinert, Galden, etc.**
- **Body and cable are protected by PFA.**
- **Easy maintenance**

***For explosion-proof applications, be sure to select a suitable fiber type.**

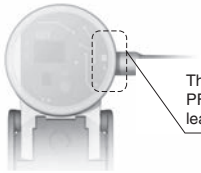
FEATURES

Acids or alkaline liquids, IPA (isopropyl alcohol), pure water, Fluorinert, Galden, etc.

Notes: For explosion-proof applications, be sure to select a suitable fiber type.Fluorinert and Galden are registered trademarks of 3M and Solvay Solexis respectively.

Body and cable are protected by PFA.

PVC brackets are available for acidic or alkaline liquids. PFA (partially SUS) brackets are available for organic solvents.

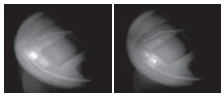


IP67

The cable exits the detect or through a PFA tube fused to the case. Therefore, leaking liquid cannot enter the detector.

Easy maintenance

After leak detection, simply wipe the detector surface—a much easier process than with detection tape or a liquid-absorbing model.



Operation indicator

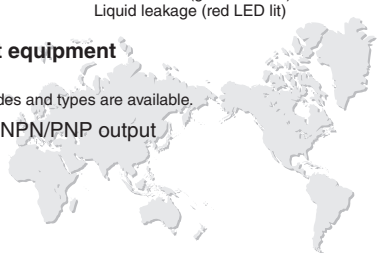
Switch status can be checked from the body side.

Normal state (green LED lit)
Liquid leakage (red LED lit)

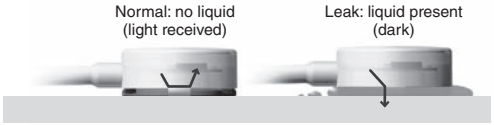
Suitable for export equipment

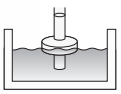
CE marking, UL certified.
Wide variety of output modes and types are available.

●NO/NC output ●NPN/PNP output



DETECTION PRINCIPLE





Install this switch in the pan by stud or adhesive (for PVC bracket type). Unlike the float type, switch does not require a concave surface underneath.

Note: This switch is not explosion-proof. Do not use it where the use of an explosion-proof product is specified.

CATALOG LISTING

●Body

Detection method & shape	Bracket material	Operation mode	Output mode	Catalog listing
Retroreflective 	PVC	NC	NC, NPN, PVC bracket type	**HPQ-D11**
		NC	NC, PNP, PVC bracket type	**HPQ-D12**
		NO	NO, NPN, PVC bracket type	**HPQ-D13**
	PFA	NC	NC, NPN, PFA bracket type	**HPQ-D21**
		NC	NC, PNP, PFA bracket type	**HPQ-D22**
		NO	NO, NPN, PFA bracket type	**HPQ-D23**

Accessory

Specifications	Catalog listing
PVC bracket (10 units)	**HPQ-B01**
PFA(SUS) bracket (10 units)	**HPQ-B02**

Notes: For **HPQ-D11/12/21** models, a switch with 5 m cable (2 m PFA tube) is also available, specially produced for the U.S. market (-L05).
Normally open type: no UL certification.
Some UL-certified models are available. For details, contact Azbil Corporation.

SPECIFICATIONS

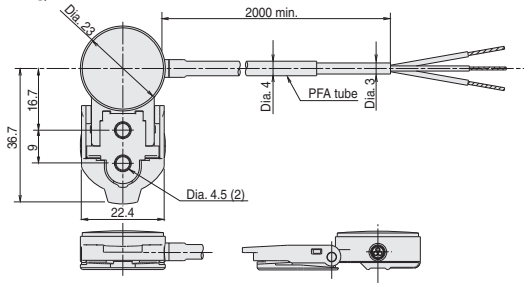
Catalog listing		HPQ-D11 / HPQ-D21	HPQ-D13 / HPQ-D23	HPQ-D12 / HPQ-D22
Detection method		Retroreflective		
Mounting surface		Polyvinyl chloride or stainless steel plate*		
Standard target object		Water*		
Light source		Infrared LED (peak emission wavelength 875 nm)		
Supply voltage		10.8 to 26.4 Vdc (ripple voltage 10 % max.)		
Current consumption		30 mA or less		
Operation mode		Normally ON, when leak detected OFF	Normally OFF, when leak detected ON	Normally ON, when leak detected OFF
Output mode		Open collector NPN		Open collector PNP
Control output	Switching current	50 mA or less (resistive load)		
	Output withstand voltage	30 Vdc		
	Residual voltage	1 V max. (at 50 mA switching current)		
Indicator		Normally green light ON, when leak detected orange light ON		
Operating temperature		-10 to +55 °C (without freezing)		
Storage temperature		-25 to +70 °C (without freezing)		
Operating humidity		30 to 85 % RH (without condensation)		
Dielectric strength		20 MΩ (at 500 Vdc)		
Withstand voltage		1,000 Vac, 50/60 Hz for 1 min between all electrically live metal and case		
Vibration resistance		10 to 55 Hz, 1.5 mm peak-to-peak amplitude, 2 h each in X, Y, and Z directions		
Shock resistance		500 m/s² 3 times each in X, Y, and Z directions		
Protective structure		IP67 (IEC standard)		
Protection circuits		Built-in reverse connection protection, malfunction prevention at power ON (approx. 20 ms), output short-circuit protection		
Connection method		Preleaded, 2 m cable		
Material		Body: PFA. Cable: PFA coating. Mounting base: PVC or PFA (SUS)		
Mass		Approx. 55 g (main unit with 2 m cable)		

*Operation may be unstable depending on the color and condition of the mounting surface or the liquid.Before use, carefully check switch operation in the actual situation.

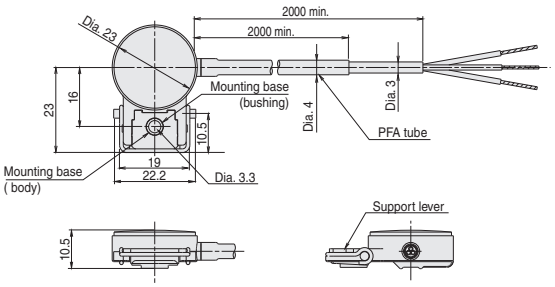
EXTERNAL DIMENSIONS

(unit: mm)

HPQ-D1□

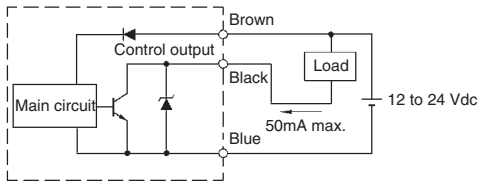


HPQ-D2□

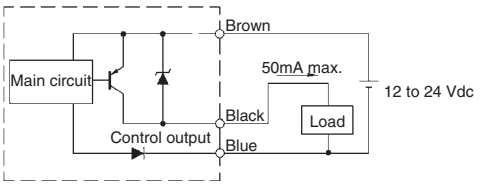


OUTPUT CIRCUIT DIAGRAM

HPQ-D□1(NPNtype)



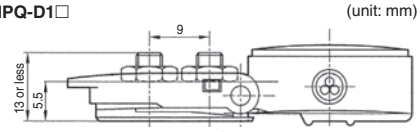
HPQ-D□2(PNPtype)



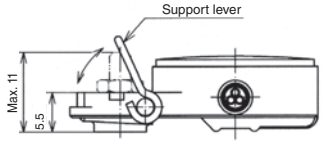
PRECAUTIONS FOR HANDLING

HPQ-D1□

(unit: mm)



HPQ-D2□



Installation

■ Install this switch on a horizontal surface.
After attaching the mounting base, insert the switch into the mounting base and push the support lever on the body down to fix the switch.

■ Screw mounting
In the case of a PVC mounting base, punch out the knockout holes in the base, put two stud bolts with M4 thread that are stud-welded to a stainless steel (etc.) metal pan through the holes, and secure the switch with two M4 nuts. For a PFA mounting base, install in the same manner but with a single M3 stud bolt.

■ Mounting with adhesive
The PVC type bracket can also be adhesive-mounted. If the surface on which the switch will be mounted is made of PVC (polyvinyl chloride), which is the same material as the mounting base, we recommend a monomer-based adhesive. However, regardless of the type of surface material, be sure to check the specifications of the adhesive to make sure that it is appropriate.

Before use, thoroughly read the “Precautions for use” and “Precautions for handling” in the Technical Guide on pages **A-141** to **A-156** as well as the instruction manual and product specification for this switch.