

# Azbil

# Технические характеристики

# Фотоэлектрические обнаружители

HPF, HPQ

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## Liquid Leakage Fiber Units - Model: HPF-D040

Inherently safe product. PFA protects sensor and cable. Saves space.



### Description

The HPF-D040 fiber-optic leak detector is inherently safe as there is no circuitry at the sensing point, only light from the associated amplifier (recommended HPX-AG series).

Using the HPF-D040 and the [HPX-AG](#) amplifier together, output can be latched. This function is effective in detection of a small leak of volatile liquid and in early detection of a leak's location. The amplifier would be mounted out of the immediate sensing area. The small and narrow sensing head and bracket are composed of chemically resistant Teflon(r) PFA material.

A detachable mounting bracket block with an integral 316SS mounting grommet insures adequate retention and provides easy maintenance. The 5 meters of cable length has a 60 micron covering of PFA material that provides chemical protection along with field cut-to-desired-length ability.

The selection of the amplifier influences the capabilities of the leak detector, 1 ml of liquid is minimally required to change the amplifier's state. The failsafe design is achieved by conducting light back to the amplifier when liquid is not present.

Liquid presence or a cable break will stop the light from being returned.

Unlike the self-contained version ([HPQ-D series](#)) and competitors' models, the customer's pan is used to stabilize and adjust the light return when setting the amplifier. If the sensor becomes unattached and no longer sees the pan reflection, the output will turn off. This is called "floating head detection".

### Features

- Space-saving switch head height of only 9,9 mm
- Can be used in explosion-proof atmospheres because the cable is an optical fiber

## Liquid Leak Detectors with Built-in Amplifier - Model: HPQ-DP

Built-in amplifier, no absorbent paper required, usable with various liquids.



### Features

- For pure water, industrial water, Fluorinert, Galden, etc.
- Optical method directly detects leaks  
Detection is possible immediately after installation even without sensitivity adjustment. Accessories used in indirect detection of leaks, such as absorbent paper, are unnecessary. Detection performance does not depend on the conductivity of the target liquid
- Fast and easy maintenance  
After leak detection, simply wipe off the detector's surface - a much easier process than with detection tape or a liquid-absorbing model

## Fiber Units for Small Parts Passage Detection - Model: HPF-T047

Reliable detection of small parts moving through a pipe.



### Features

- Reliably detects parts in the pipe
- Weighs only 12 g
- A highly bend-tolerant optical fiber cable is used, making the HPF-T047 extremely suitable for operations inside a moving device
- Cables lead-out is in the same direction as the pipe, for tight installation spaces
- By changing the attachment, the width of the detection area can be adjusted to match the pipe diameter

# Liquid Leak Detectors with Self-Contained Amplifier - Model: HPQ-D

Built-in amplifier, no absorbent paper required, usable with various liquids.

## Description

The HPQ-D leak detection sensor is the first of its kind to be constructed entirely of sealed, Teflon(r) PFA material and be configured in a self-contained package smaller than a quarter. It does not require a fiber-optic amplifier since there is a useable NPN or PNP transistor output with each sensor.

Typically, only 1 ml of liquid in contact with the optical focal point will change the sensor's output. This enables early detection of caustic chemical spills and can be used to shut down the tool immediately, which minimizes the environmental impact.



A large gain signal difference between no liquid and liquid detection ensures low probability of false detection. The failsafe design provides a normally closed output that turns off when liquid is detected.

Easily viewable green LED signifies normal operation and an orange LED turns on when liquid is detected and output is shut off.

The bracket assembly is made of CPVC material and has an over/under patented style that assures solid retention once locked down and the ability to remove the sensor for maintenance or output checking.

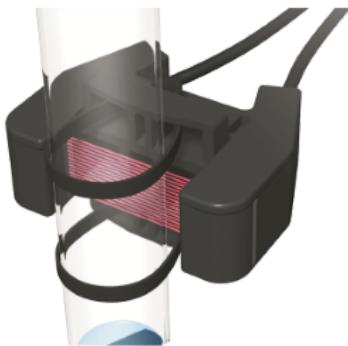
## Features

- The underside of the bracket is flat and has perforated mounting holes making installation possible by using hardware or simple adhesive
- Acids or alkaline liquids, IPA (isopropyl alcohol), pure water, Fluor inert, Galden, etc.
- Body and cable are protected by PFA
- Easy maintenance  
After leak detection, simply wipe the detector surface - a much easier process than with detection tape or a liquid-absorbing model

Read more about azbil's solution for [Liquid Leak Detection](#) in the [Semiconductor industry](#).

# Pipe-Mounted Liquid Level Fiber Units - Model: HPF-T032/T032E/T034/T034E

The HPF-T032(E) & HPF-T034(E) fiber units feature a Fail-safe design using an array style light beam. This Fail-safe detection is available by using two different sensing methods for the upper and lower limits on the level of liquid in a tank.



## Description

Unlike all known competitive models, the HPF-T032(E) & HPF-T034(E) emitter/receiver arrangement requires a beam refraction of 1,33 to 1,7 in order for the light to be transmitted. This prevents any kind of false detection due to deposits on the inside of the chemical piping.

The array arrangement of the fibers provides a much higher contrast signal level and the ability to be unaffected by bubbles as small as 3 mm. The housing is made from GE Ultem(r) plastic, which is highly resistant to most organic solvents and is capable of high temperature exposure.

The HPF-T032(E) can be used with pipe sizes from 3 to 13 mm. The HPF-T034(E) takes care of any larger sized pipe sizes from 8 to 19 mm. Each sensor is shipped with a fiber cutter and mounting hardware.

Depending on the selected model, PFA or Polyethylene material protects the 5 meter fiber cable from chemical attacks.

## Features

- An array of 16 optical axes eliminates the effects of air bubbles and water droplets
- PFA- or Polyethylene-jacketed fiber
- Fits a wide range of pipe diameters
- Location of the optical axes is clearly marked
- The cable diameter of the HPF-T032(E) & HPF-T034(E) is 2,3 mm

Azbil recommends that the HPX-AG or the HPX-EG series be used in conjunction with this fiber to insure insertion ability without scraping Teflon film upon insertion. The AG and EG sensor series are visible red in nature so penetration through slurries and ability to sense slurries same as clear liquid may be limited. the HPF-T032(E) and HPF-T034(E) are not sealed from liquid penetration, so remember to protect the polycarbonate prisms in the sensing head from chemical attacks.

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