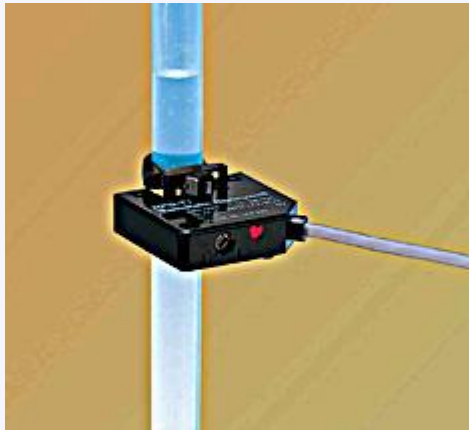




HPQ-T TUBE MOUNTED, SELF-CONTAINED LIQUID SENSOR



The HPQ-T sensor is designed specifically for liquid level detection by non-contact methods in clear or very translucent pipes. The sensor is mounted on a pipe that is between 3 to 7mm or 8 to 13mm in diameter and features an infrared light beam that becomes refracted and undetectable by the receiver when the liquid is present. The device runs on 10-28 VDC, has a response time of 2 msec max, has Light Operate/ Dark Operate Selectable output functioning, and has a 100 mA NPN or PNP output. There is minimal malfunction when air bubbles or water droplets are present. The indicator light is easy to view even when the sensors are gang mounted as all the controls and adjustments

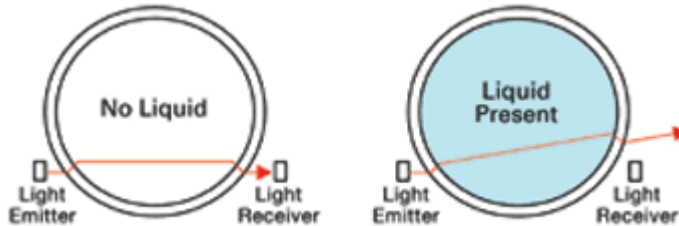
are located on the back side.

Features and Benefits

- Small compact size and non-invasive sensing make installation and height adjustment easy
- Many products to select from - provides flexibility to user based on concerns
- Thru scan principle where liquid refracts light beam - insures reliable detection
- Infrared beam can help penetrate slurries and other solids with similar detection effect as water/liquid. This can be used in mixing sections of the process.
- Light operate / dark operate selector switch provides output flexibility.
- Indicator lamp is easy to view even when sensors are gang mounted



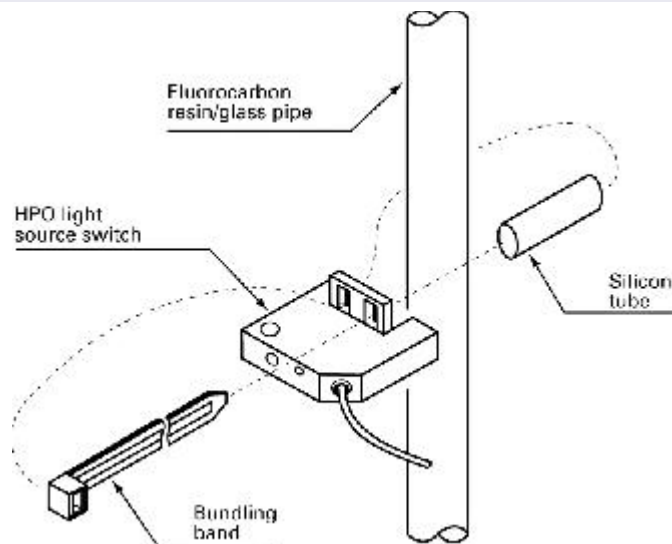
Operating Principle



Usage Recommendation

The standard gain setting versions work with most liquids. The 25% gain reduction should be used when large quantities of bubbles are present or where mixing in chambers requires the sensor to be able to detect water/fluid, solids, and mixture of solids/fluids equally. We recommend that the prospective user evaluate their chemical combinations and mixing situations to determine which sensor works best before finalizing the specification for use.

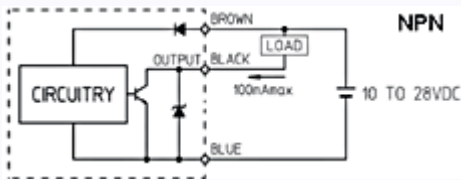
Mounting Assembly



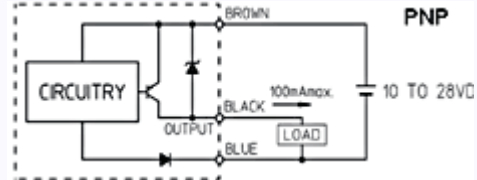
Dimensions

Contact us for
HPQ Pipe Mounted, Self Contained Liquid Sensor dimensions document.

Schematics



NPN



PNP

Specifications

	NPN Models	PNP Models
Scanning Type	Through Scan	
Supply Voltage	10 to 28 V DC (ripple 10% max.)	
Current consumption	25 mA max.	
Usable Pipe	see catalog listing chart	
Standard detecting object	Water Note 1	
Repetitive detecting agency	1 mm max.	
Operating Mode	Light-operated/dark-operated selectable (with L-On/D-On selector) Detecting object: dark, Non-detecting object: light	
Output	Open collector of NPN transistor	Open collector of PNP transistor
Response time	2ms max.	
Light Source	Infrared LED	
Indicator	Red "on" with detection	
Ambient Light	Incandescent 1000 lx max.	
Operating temperature	-10 ~ +55°C	
Storage temperature	-25 ~ +70°C	
Humidity	35~85% RH (without condensation)	
Insulation resistance	20 M min. (at 500 V DC)	
Dielectric strength	1000 V A 50/60 Hz 1 minute	
Vibration	10~55 Hz, 15 mm double amplitude, 2 hours in each direction of X,Y,Z	
Shock	500 m/s ² (approx. 50g) 2 times in each direction of X,Y,Z	

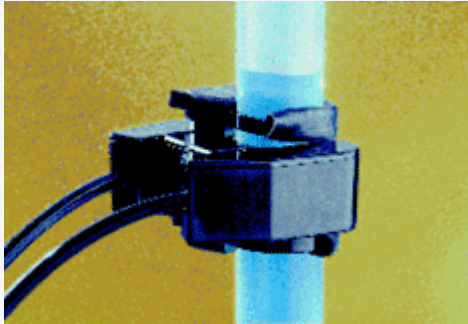


Sealing	IP50 (IEC standard)
Mass	Approx. 25g
Protection	False pulse protection (20ms type), reverse polarity protection
Approvals-CE to be completed by end 2002	

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PIPE MOUNTED, FIBER CABLE TYPE LIQUID SENSOR (INHERENTLY SAFE)



The HPF-T032 fiber cable liquid sensor features a Fail Safe design using an array style light beam. Unlike all know competitive offerings, the HPF-T032 emitter/receiver arrangement requires a beam refraction of 1.33 to 1.7 in order for the light to be transmitted. This provides the utmost prevention 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 not be affected by bubbles of even 3mm size.

The housing is made from GE Ultem(r) plastic that is highly resistant to most organic solvents and is capable of high temperature exposure. The HPF-T032 sensor can be used with pipe sizes from 1/8" to 1/2" (3-13mm) and the fiber cutter and mounting hardware is shipped with each sensor. A 60 micron covering of Teflon(r) PFA material protects the 5 meter fiber length from chemical attack.

Features and Benefits

- Fail Safe Design (Semi S2 Compliant)
- Chemically Resistant Materials
- Pipe Size 1/8" to 1/2" (3-13mm)
- Uses Multiple Beam Array - High Contrast Level
- Inherently Safe - Optical Light

Catalog Listings

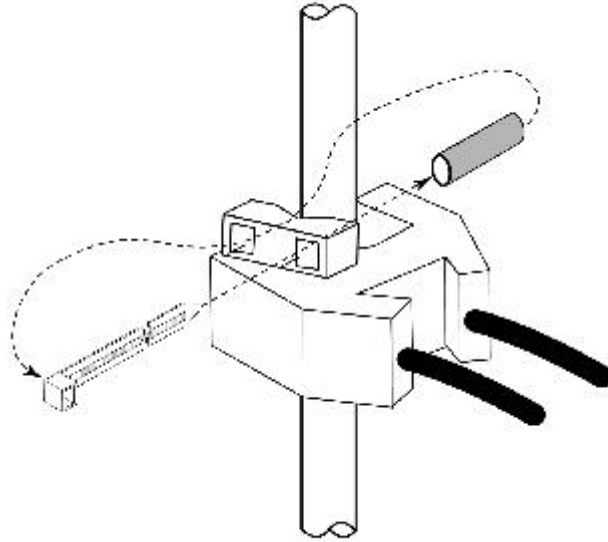
HPF-T032	5 meter Fiberoptic Cable Liquid Sensor
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Usage Recommendation

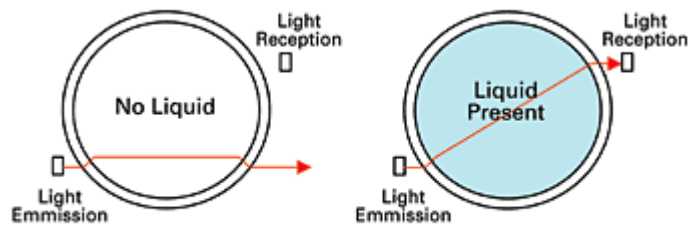
The HPF-T032 fiber sensor has an outside fiber dimension of 2.3mm. We recommend that the HPX-NT or the HPX-ET series be used in conjunction with this fiber to insure insertion ability without scraping Teflon film upon insertion. The NT and ET sensor series are visible red in nature so penetration through slurries and ability to sense slurries same as clear liquid may be limited. The HPF-T032 is not sealed from liquid penetration so care should be taken to protect polycarbonate prisms in sensing head from chemical attack. Please request assistance from Yamatake for programming options that will work in your specific application.



Mounting Assembly



Operating Principle



Dimensions

Contact us for
Pipe Mounted, Fiber Cable Type Liquid Sensor (Inherently Safe) dimensions document.

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