



Air Bubble Detectors

Description



The Ultrasonic Point Level System 5600 Series is designed to non-invasively detect the presence or absence of liquid in a tube using Ultrasonic Technology to transmit and receive sound. This could also be viewed as detecting the presence of bubbles in a tube or an Air Bubble Detector. There are no moving parts to the sensors. It is not dependent on the color, dielectric constant, density, viscosity of the liquid or the color, opacity and material of the tube.

The miniaturized electronics are built in the sensor. The sensors can be built to any type of tube to detect the presence of bubbles or Air-In-Line that range in size from 1mm to 19mm. Consult Sensaras for sensors requiring a larger tube size. There is no calibration or adjustment as each sensor is designed for the specific size tube, flow rate of the liquid, input and output of the user's specifications and requirements.

Operation

The 5600 Series unit consists of one or two piezoelectric elements mounted across a gap in where the tube is freely inserted by the user. These elements convert electrical energy to mechanical energy in the form of an ultrasonic signal detecting the presence of liquid. The ultrasonic signal is attenuated with no liquid present and passes freely across the gap with the tube when liquid is present. The circuit detects the presence or absence of the ultrasonic signal and through a series of processing and filtering of the signal reliably determines the presence of bubbles and converts the signal to the desired output.

Applications

*Infusion pumps / Air Bubble Alarm
Drip chamber
Chemical, Vapor, Atomic Layer Deposition
Chemical dispensing / Low level switch
Liquid food dispensing
Fill bottle machine
Pump leak detection*

Industries Served

*Medical / Pharmaceutical
Semiconductor / Chemical
Food / Beverage
Automation*

Specifications

Design Features

Housing: Epoxy, PCV, Ultem,

Input: 3.3VDC, 5VDC, 6-24VDC

Output: NPN (Sink),
PNP (Source),
TTL

Current consumption: Typical 25mA max

Temperature: -0 to 65°C

Bubble size: Typical +/- 60% of ID of tube
(depending on material)

Cable: 12" Standard

Response time: 200uS

Design Options

Self-test: On Demand, Continuous

Connector: Available (specify)

Remote Electronic module

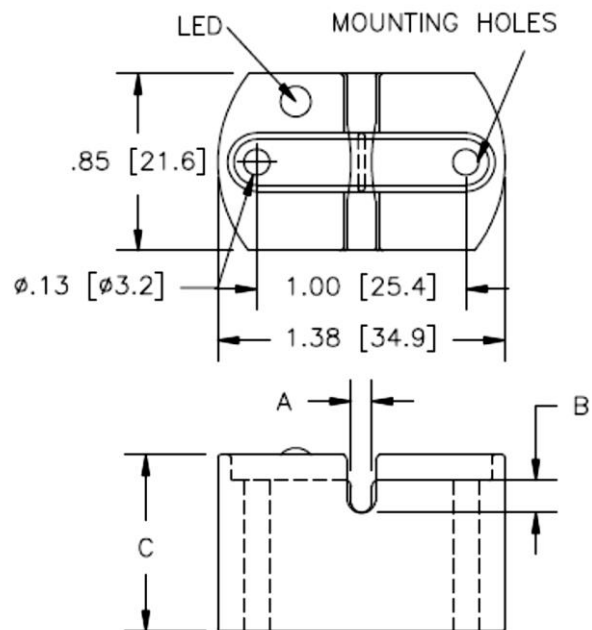
Status LED

Reverse Output logic

Custom response time

Custom design to fix users form and fit

Dimensions



WIRING:

RED:	+VDC
WHITE:	OUTPUT
BLACK:	RETURN
YELLOW:	TEST

DIMENSIONS ARE DEPENDENT
ON O.D OF THE TUBE CONSULT
FACTORY FOR DIMENSIONS

Performance Guarantee

Should the unit not perform as we claim within 45 days of delivery and was properly installed consistent with our stated requirements and specifications Sensaras will gladly accept a return of the unit for a full credit.

Please call Sensaras for part numbers for the sensors

Warranty

Sensaras' level sensors are warranted against inherent defects for a period of 24 months from the date of shipment.

Disclaimer: Due to technical progress all Data Sheets are subject to change without notice. Sensaras believes all information in this Data Sheet is correct but is not responsible for any inaccuracies. Sensaras is not liable for any damages. It is the customer's responsibility to install, operate and maintain products properly.