

MEAS AD-101 AIR BUBBLE DETECTOR

APPLICATION NOTE

Technology Overview

Bubble detection is critical in applications such as infusion pumps, hemodialysis and blood flow monitoring. TE Sensor Solutions has recently developed the new compact AD-101 for non-invasive continuous monitoring of fluid for air bubble detection. Using ultrasonic technology the AD-101 is capable of positively identifying the presence of a break in flow of any type of liquid.



Key Features

- Detects bubble size as small as 1 μ L
- Sensor can be customized to fit tube or pipe
- Tubing size from 0.5 mm to 100 mm
- Non-invasive design eliminates sterility and fluid compatibility concerns
- High noise immunity to EMI/RFI
- Acoustic coupling agent not required
- Integral Electronics

Operating Parameters & Specifications

- Temperature range: 0°C - 65°C
- Response time: 2ms
- Input: 5VDC-20VDC
- Output: TTL Logic

Electrical Connections

To power the ABD simply use a standard DC power supply of between 5VDC and 20VDC. The ABD is wired with a 4 pin configuration with red wire designating the input and black wire designating the return connection. The sensor output can be measured by using a multi-meter between the white wire and the return connection of the DC power supply. The self-test output can be measured between the yellow wire and the return connection. Each output signal is based on TTL logic.

Applications

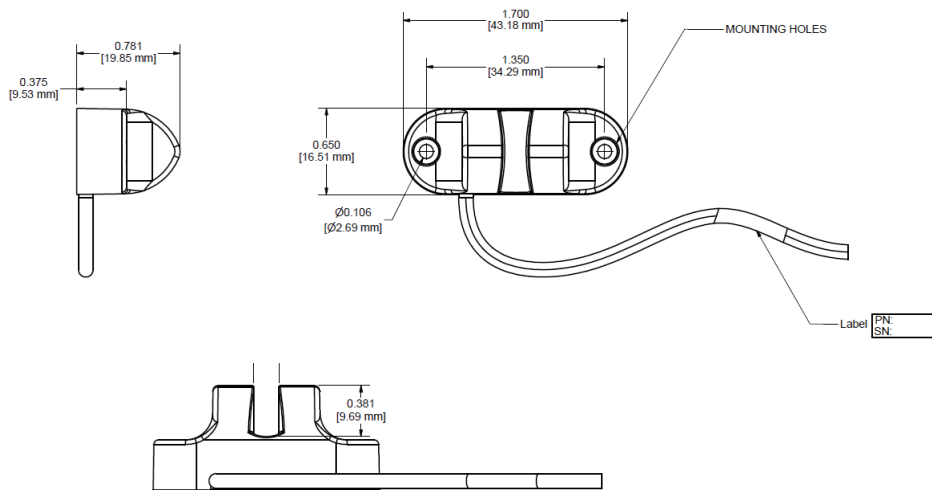
- Infusion Pump
- Apheresis/Auto-transfusion
- Biotech/DNA Analysis
- Blood Processing
- Immunoassay
- Chemical Analysis
- Hemodialysis
- IN-VIVO Detection of Gas



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Dimensions



Wiring

Input	Red = 5 – 20 VDC Black = GND
Sensor Output	White = Output Open Collector NPN, Low When Liquid Present, Open When Bubble Present
Self-Test Output	Yellow = Self-test output, Open Collector NPN, Low When Pass, Open When Fail
Response Time	2 Milliseconds
Temp. Spec	65°C Maximum
Material	ABS/PC (55/45) Plastic Blend, Injection Molded Parts, UL 94 V-2 Rated
Cable	3 Conductor 28AWG, 350MM Long UL Style Number 2725
Electronics	Integral

Pin Out

Pin	Color	Function
1	Black	GND
2	White	Output
3	Yellow	Self-test
4	Red	5 - 20 VDC

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