



DATASHEET

L01 Series Sensor Module

Air Bubble Detector

Enquiry: info@dypsensord.com

<https://dypsensord.en.alibaba.com>

SHENZHEN DIANYINGPU TECHNOLOGY CO., LTD.

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Product Description

1. General

The L01 series bubble sensor module is a module that uses ultrasonic sensing technology for detection. It uses high-quality components, the product is stable and reliable, and has a long service life. This product is used for bubble detection in infusion pump products, automatic infusion alarms, and real-time monitoring of bubbles in other equipment and equipment pipelines.

2. Features

- High sensitivity
- Low power consumption
- Good temperature performance
- Strong anti-interference ability
- Detection threshold and response time can be set according to user requirements
- Five output modes are available
- 3.3~24V power supply
- Non-contact measurement, no contact with liquid, no pollution to the test liquid
- It is not affected by changes in fluid color and pipe material, and can detect bubbles in most liquids
- Suitable for 3.5~4.5mm outer diameter transfusion tube, other specifications can be customized according to user requirements

3. Applications

Used to detect the presence of air, bubbles, and bubbles in the flowing liquid in the pipeline

Alarm if there is liquid in the pipeline

The tested media include sterilized water, 5% sodium bicarbonate, compound sodium chloride, 10% concentrated sodium chloride, 0.9% sodium chloride, glucose sodium chloride, 5%-50% concentration glucose, etc.

Module specification

1. Operating specification

Item Description	Specification	Unit	Remark
Operating voltage	3.3~24	V	DC
Peak current	≤25	mA	(1)
Average operating current	≤15	mA	(1)
Response time	0.2~100	ms	
Tube diameter	3.5~4.5	mm	Infusion tube
Minimum bubble volume	10	uL	(2)
Duration	2		

Note:

- (1) At room temperature, the power supply is 5V, and the typical data obtained by the test.
 (2) Typical data obtained by testing with a 3.5mm diameter infusion tube under normal temperature, power supply 5V, measured medium is normal saline.

2. Environment

Item	Minimum value	Typical value	Max value	Unit	Remark
Storage Temp	-25	25	60	°C	
Storage Humidity		65%	90%	RH	
Operating Temp.	0	25	45	°C	

Operating Humidity		65%	80%	RH	
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3. Electronics

Item	Minimum value	Typical value	Max value	Unit	Remark
Operating voltage	3.2	5.0	24	V	Peak value
Peak current	18		25	mA	Peak value
Input Ripple			50	mV	Peak value
Input Noise			100	mV	Peak value

Sensor Selection instruction

This series of modules has five output modes. NPN output is not compatible with the other four output hardware. Users can choose the corresponding model according to actual application needs.

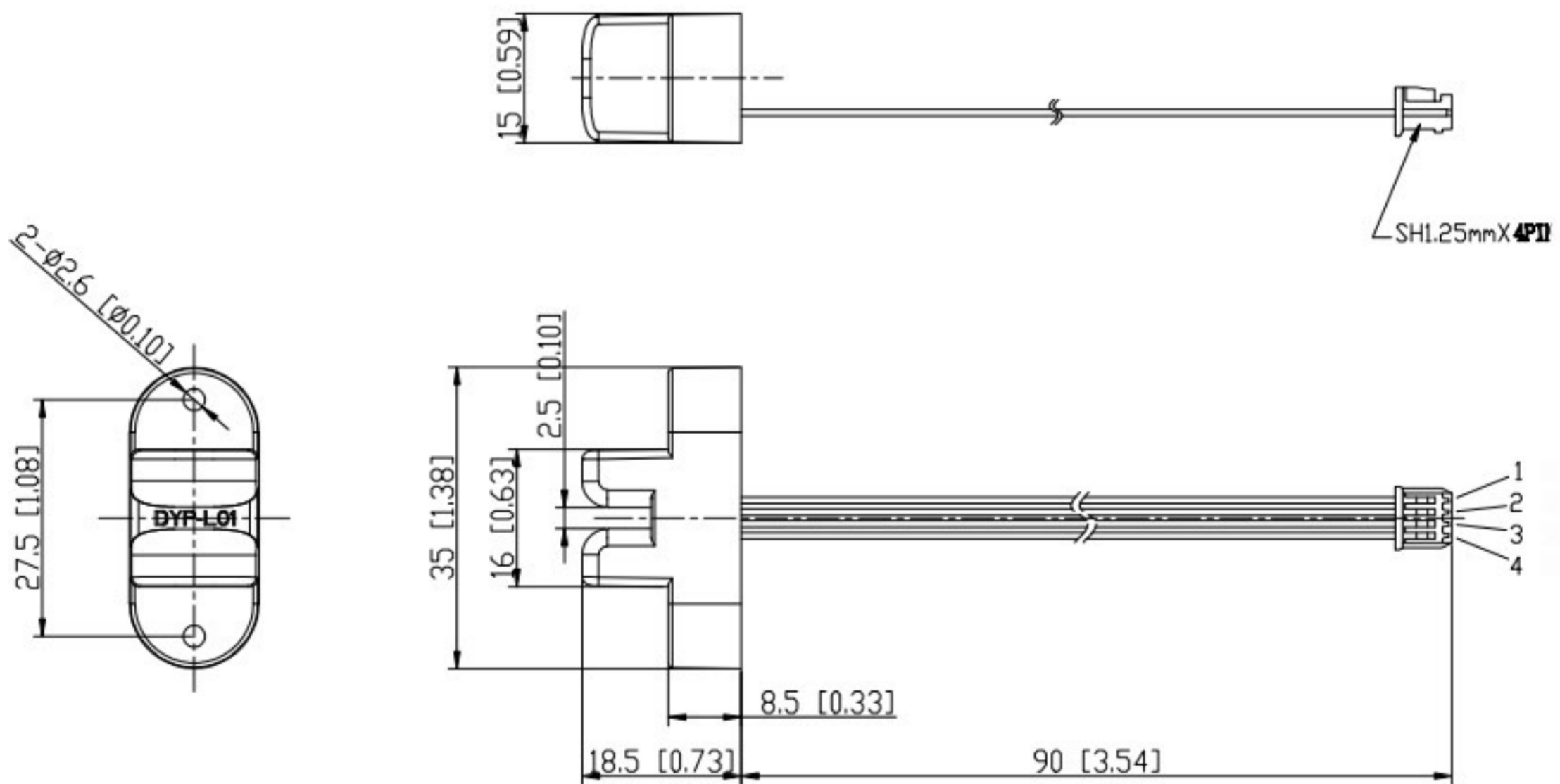
No.	Output interface	Model No.	Remark
L01	Switch Positive GND-VCC	DYP-L012MPW-V1.0	
	Switch Negative VCC-GND	DYP-L012MNW-V1.0	
	NPN	DYP-L012MN1W-V1.0	
	TTL High level	DYP-L012MGW-V1.0	
	TTL Low level	DYP-L012MDW-V1.0	

Notice

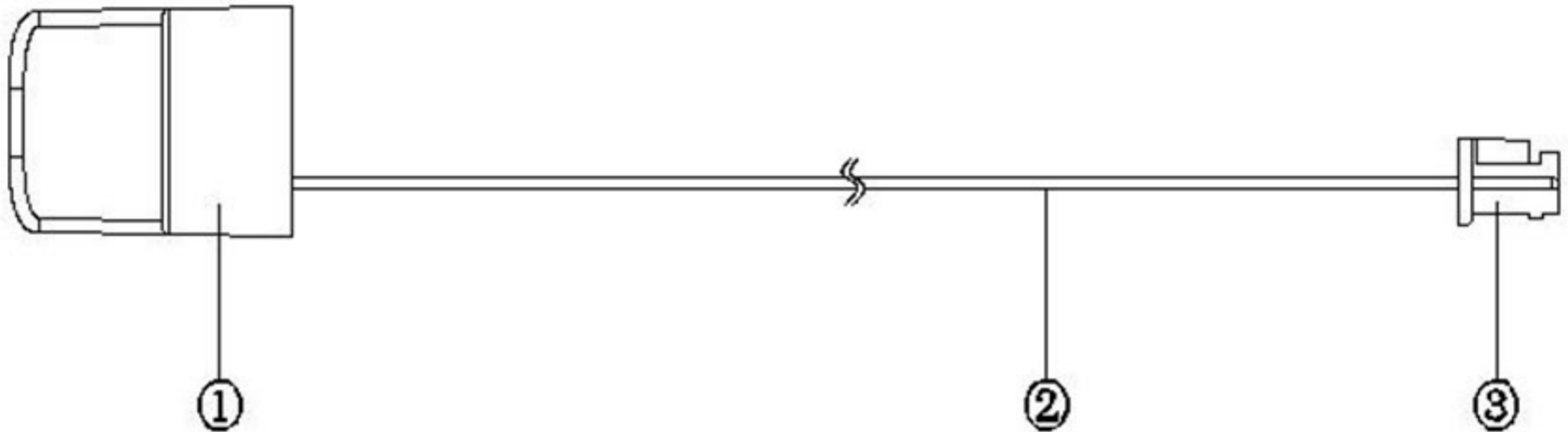
- (1). Please pay attention to the structural tolerances when designing. Unreasonable structural design may cause temporary abnormalities in module functions.
- (2). Please pay attention to the evaluation of electromagnetic compatibility when designing. Unreasonable system design may cause malfunction of the module.
- (3). When the boundary application of the product limit parameter is involved, you can contact after sale service dept. to confirm the relevant precautions.
- (4). The company reserves the right to change this document and update the functions without prior notice.

Mechanics

1. Mechanical Dimensions(mm-inch)



2. Parts Description



- ① Ultrasonic transder
- ② 4pin wire
- ③ SH1.25mmX4pin connector

3. Pin out



Pin No.	Mark	Description	Remark
①	VCC	Power Input	
②	GND	GND	
③	RX	UART input	different output modes have different functions
④	TX	Switch/UART output	different output modes have different functions

Note: The pin function setting followed customer's order, can't coexist with other output modes.