Winsen
炜盛科技

Laser Dust Sensor

(Model: T Z J08)

Manual

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Taiyuan Tengxing sensor technology Co., Ltd

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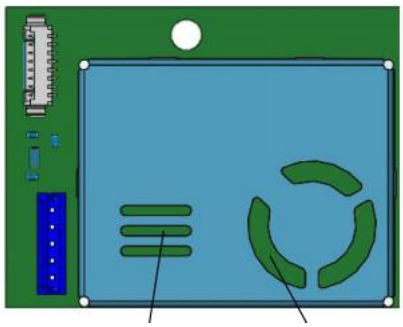
TZJ08 Laser dust sensor

Description:

Laser Dust sensor module is a common type, small size sensor, using laser scattering principle to detect the dust particles in air, with good consistency and stability. It is easy to use, with UART & PWM output;Small size is suitable for integrating.



Dust Collecting Hole (Inlet)

Outlet

Features:

Good consistency

Real time response

Accurate data

Low power consumption

Minus resolution of particle diameter is 0.3 μm

Main Applications:

Air purifiers

Ventilation systems

Portable instrument

Air quality monitoring equipment

Air conditioner

Smart home fields

Technical parameters:

Model	TZJ08
Types of Detection	PM1.0, PM2.5, PM10
Preheating Time	30
Output	UART_TTL Output (3.3V level)
	PWM Output (3.3V level)
Working Voltage	4.9V ~ 5.5V(DC)
Working Current	< 120mA
Dormancy Current	< 20mA
Response Time	T90 < 45s
Working Humidity	0 ~ 80%RH(No Condensation)
Working Tem	- 10 ~ 50℃
Storage Tem	- 30 ~ 70℃
Dimension	58.5×44.5×14.8mm(L×W×H)

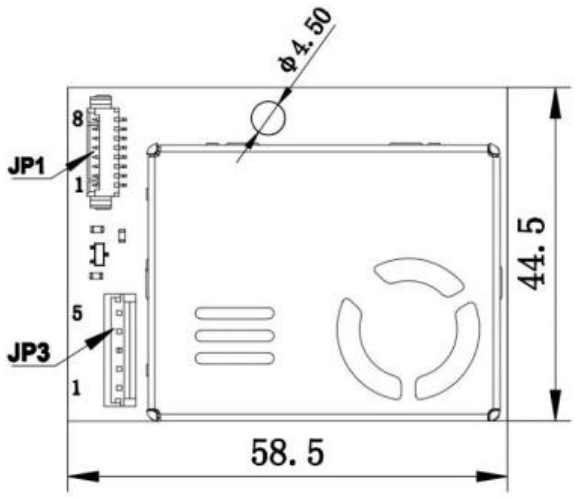


Fig1.

JP1 Line Sequence Definition			JP3 Line Sequence Definition		
Specification: MOLEX-1.25*8			Specification: JST-EH2.54		
Pin	**Definition**	**Parameters**	**Pin**	**Definition**	**Parameters**
1	**VDD**	**4.9-5.5V**	**1**	**GND**	
2	**GND**		**2**	**TXD**	**TTL@3.3V**
3	**Reserve**		**3**	**VDD**	**4.9-5.5V**
4	**RXD**	**TTL@3.3V**	**4**	**PWM(L)***	**5V(Low -level effective)**
5	**TXD**	**TTL@3.3V**	**5**	**RXD**	**TTL@3.3V**
6	**Reserve**	**NC**			
7	**NC**				
8	**PWM(H)***	**3.3V(High-level effective)**			

Table 2.

Sensor Construction:

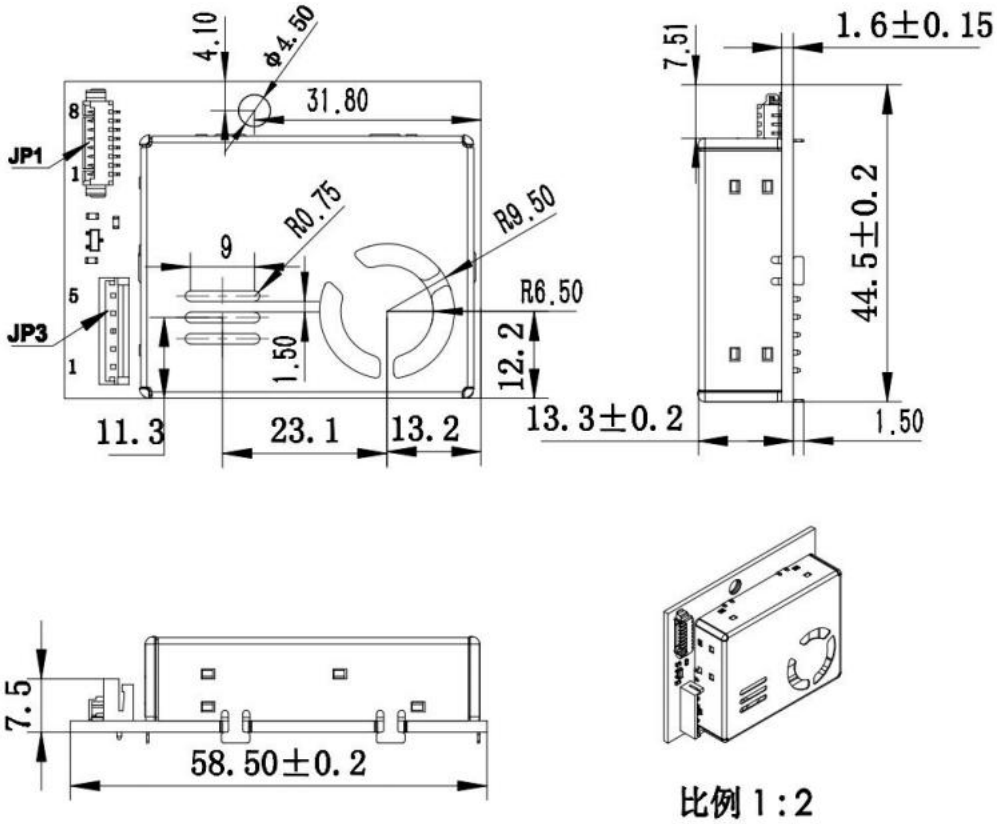
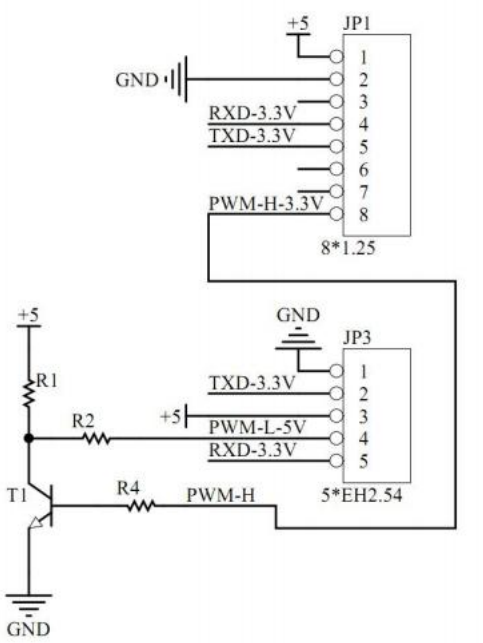


Fig2. Sizes (Tolerance:±0.5mm)

Installation Method:

The Sensor air inlets and outlets need to keep in good contact with external air. When the sensor is installed and working, must avoid strong airflow interference around the sensor; if it cannot be avoided, try to keep the external airflow direction perpendicular to the the inlet or outlet.



JP1 and JP3PWM signal level conversion circuit

Attentions:

1. Prohibit changes and displacement electronic components installation status;
2. Modules cannot withstand excessive impact or vibration;
3. Avoid the air flow inside the sensor being affected by the external air flow;
4. Avoid sticky particles from entering the sensor and prevent moisture from affecting performance ;
5. The location of the fan is the air outlet, and the dust collection hole is the air inlet, please ensure that the air inlet and air outlet are unobstructed to the outside world;
6. The supporting terminal pins and pads and sensors stainless steel shielding masks avoid short circuits.