



Ozone Module

(Model : ZQ02-03)

Manual

Version: 1.0

Valid from: 2020-04-15

Zhengzhou Winsen Electronics Technology Co., Ltd

Statement

This manual copyright belongs to Zhengzhou Winsen Electronics Technology Co., LTD. Without the written permission, any part of this manual shall not be copied, translated, stored in database or retrieval system, also can't spread through electronic, copying, record ways.

Thanks for purchasing our product. In order to let customers use it better and reduce the faults caused by misuse, please read the manual carefully and operate it correctly in accordance with the instructions. If users disobey the terms or remove, disassemble, change the components inside of the sensor, we shall not be responsible for the loss.

The specific such as color, appearance, sizes &etc, please in kind prevail.

We are devoting ourselves to products development and technical innovation, so we reserve the right to improve the products without notice. Please confirm it is the valid version before using this manual. At the same time, users' comments on optimized using way are welcome.

Please keep the manual properly, in order to get help if you have questions during the usage in the future.

Zhengzhou Winsen Electronics Technology CO., LTD.

ZQ02-O3 Ozone Module

Profile

ZQ02-O3 adopts thick film semiconductor sensor, it has the basic function of household ozone concentration exceeding alarm; provides status indication, switching signal outputs by buzzer and supports the reset of alarm value.

Features: Mini size & Quick response

Application: Development for household ozone alarm device.



Specifications

Model No.	ZQ02-O3
Detection Gas	Ozone
Sensor Type	Semiconductor
Response Time	< 30 s
Resume Time	< 30 s
Working Voltage	DC (5±0.1) V
Working Current	< 150 mA
Detection Range	10-1000PPB
Solution	10PPB
Alarm point	500PPb ± 200PPb
Lifespan	5 years
Working conditions	Temp.: -10 ~ 55 °C
	Humidity: 20% ~ 90% RH
Storage conditions	Temp.: -20 ~ 60 °C
	Humidity: 20% ~ 65% RH
Dimension	22.5 mm×24 mm×27 mm (L×W×H)

Table 1

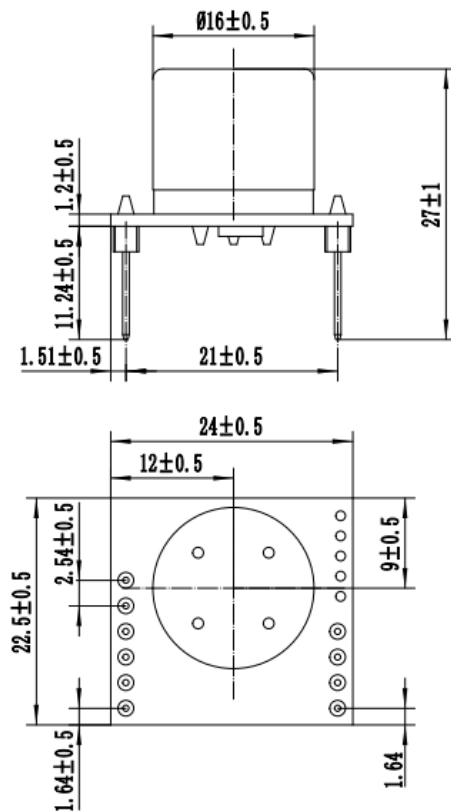


Fig1. Module structure

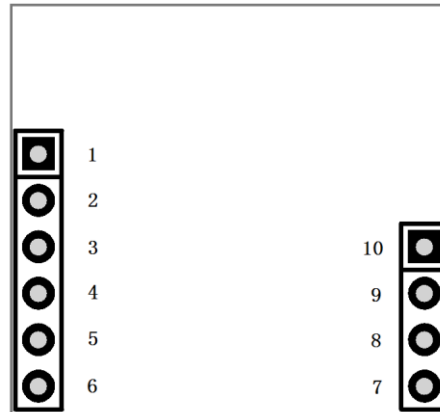
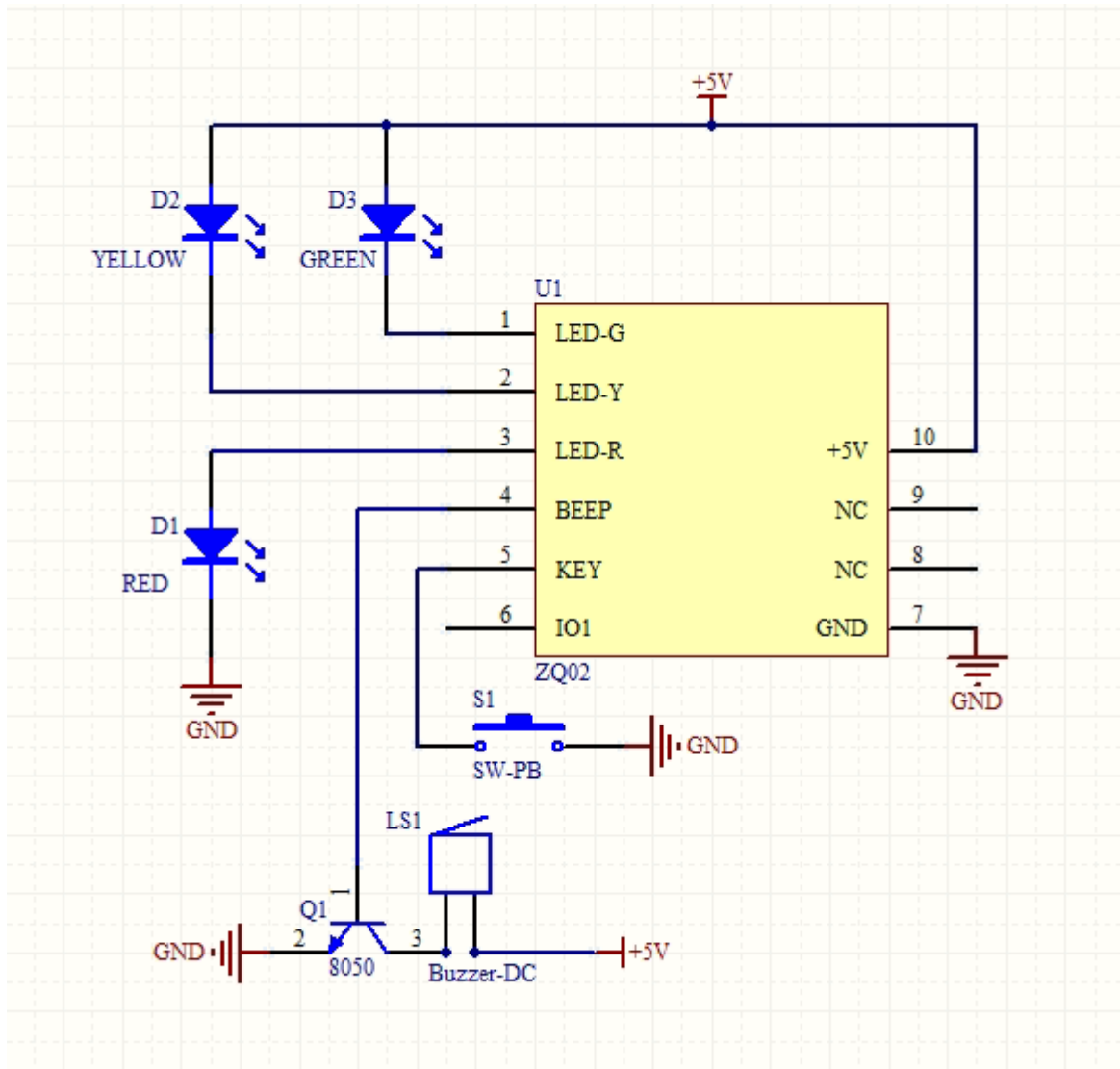
Pin Function Description


Fig2. ZQ02 Pins from top

Table 2

Pin No.	Function	Functional description
Pin1	Power indicator	1) Preheating status: 500ms high level, 500ms low level. Time: 3 minutes. 2) Working status: low level for long
Pin2	Fault indicator	1) Working status: high level for long 2) Fault status: 750ms high level, 750ms low level
Pin3	Alarm indicator	1) Working status: low level for long 2) Alarm status: 70ms high level, 130ms low level
Pin4	Buzzer driving	1) Working status: low level for long 2) Fault status: 750ms high level, 750ms low level 3) Alarm status: 70ms high level, 130ms low level
Pin5	Key input	Keypad interface
Pin6、Pin8、Pin9	Reserved	Reserved pin
Pin7	GND	GND
Pin10	VCC	Power input, DC5V±0.1. If the voltage is higher than 5.2V or lower than 4.8V, the module will alarm for malfunction.

Application Principles



Indication for module’s status

Preheating status: Power indicator is shining once power on and it gets light for long in three minutes after preheating is finished

Fault status: When the sensor malfunctions, yellow indicator enters the cycle of light on for 750ms and off for 750ms.

Alarm status: When the gas concentration reaches the threshold, red indicator enters the cycle of light on for 70ms and off for 130ms.

Application

Development of household ozone alarm device and household ozone detector.

Cautions

1 .Following conditions must be prohibited

1.1 Exposed to organic silicon steam

Module will lose sensitivity and never recover if it absorbs organic silicon steam. Module must avoid exposing to silicon bond, fixture, silicon latex, putty or plastic contain silicon environment.

1.2 High Corrosive gas

If the sensors are exposed to high concentration corrosive gas (such as H₂S, SO_x, Cl₂, HCl etc.), it will not only result in corrosion of sensors structure, also it cause sincere sensitivity attenuation.

1.3 Touch water

Sensitivity of the sensors will be reduced when spattered or dipped in water.

1.4 Freezing

Do avoid icing on sensor's surface, otherwise sensing material will be broken and lost sensitivity.

2 .Following conditions must be avoided

2.1 Water Condensation

Indoor conditions, slight water condensation will influence sensors' performance lightly. However, if water condensation on sensing material surface and keep a certain period, sensors' sensitive will decrease.

2.2 Used in target gas with high concentration

No matter the sensor is electrified or not, if it is placed in high gas concentration for long time, sensors characteristic will be affected. If lighter gas sprays the sensor, it will cause extremely damage.

2.3 Long time storage

The sensors resistance will drift reversibly if the module is stored for long time without electrify, this drift is related with storage conditions. Modules should be stored in airproof bag without volatile silicon compound. For the modules with long time storage but no electrify, they need long galvanical aging time for stability before using. The suggested aging time as follow:

Table3.

Storage Time	Proposed aging time
Less than one month	No less than 48 hours
1 ~ 6 months	No less than 72 hours
More than six months	No less than 168 hours

2.4 Long time exposing in adverse environment

No matter the modules electrified or not, if exposed to adverse environment for long time, such as high humidity, high temperature, or high pollution etc., it will influence the module's performance badly.

3. If there are conformal coating around the environment, please be sure the coating gets dry totally before using the module.

4. Before resetting the alarm value, please contact our technical support team.

Zhengzhou Winsen Electronics Technology Co., Ltd

Add: No.299, Jinsuo Road, National Hi-Tech Zone,
Zhengzhou 450001 China

Tel: +86-371-67169097/67169670

Fax: +86-371-60932988

E-mail: sales@winsensor.com

Website: www.winsen-sensor.com