



# Alcohol Sensor Module

User's Manual V1.1

(Model No.: ZE29A-C2H5OH)

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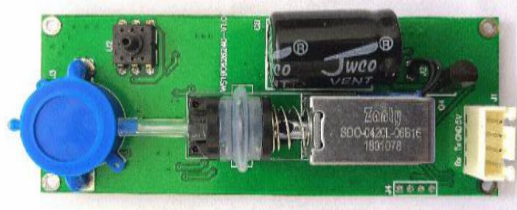
## Electrochemical Alcohol Module ZE29A-C2H5OH

### Profile

The ZE29A-C2H5OH electrochemical alcohol sensor module is to detect exhaled alcohol gas. With electrochemical alcohol sensor as core part and built-in temperature compensation sensor, it has high accuracy, high sensitivity, and strong anti-interference ability. It's integrated with pressure sensor, which can realize blowing action detection to further ensure the accuracy of measurement. This product is suitable for alcohol detection of drunk driving or before work.

### Features

- High-precision and high-sensitivity
- UART output
- Blow interruption alarm
- High stability and strong anti-interference ability

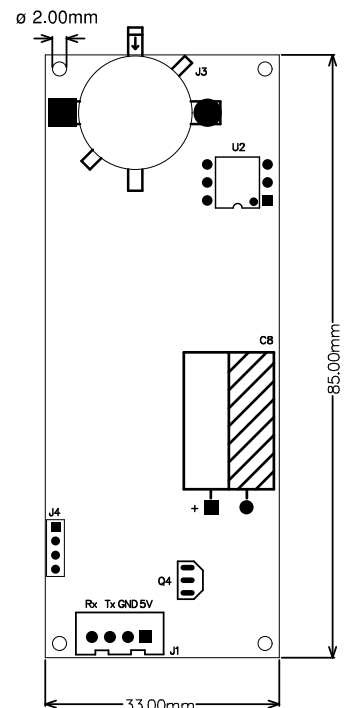


### Application

- Portable alcohol detector;
- Car alcohol testing

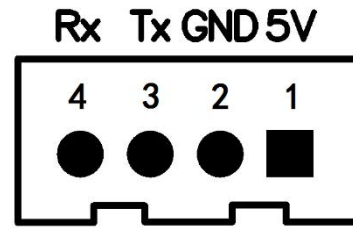
### Technical Parameters table1.

Model No.	ZE29A-C2H5OH	
Sensor Type	Fuel cell alcohol sensor	
Target Gas	Alcohol	
Output	UART (3.3V TTL)	
Working Voltage	5V ± 0.3V	
Working Current	< 500mA	
Preheating time	≤ 10s	
Detection Range	0~1.0 mg/l	
Display accuracy	Gas concentration(mg/l)	Accuracy
	C < 0.400	±0.050mg/l
	C ≥ 0.400	±10%
Blow continuity detection	4 second(can be customized, flow: ≥ 10L/min)	
Working temperature	10°C~40°C	
Storage temperature	-10°C~70°C	
Module size	85*33*18mm	



**PIN Definition**

Pin	Pin definition
1	Vin (voltage input 5V)
2	GND
3	UART (TXD) 3.3V TTL OUTPUT
4	UART (RXD) 3.3V TTL INPUT



**Communication protocol**

General setting

Baud Rate	9600
Data Byte	8 bits
Stop Byte	1 bits
Check Byte	Null

Frame format

	Command	Function description							
		Data 0	Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7
SEND	Start	address	command	Data					Check sum
	0xFF	0x01		Data 1	Data 2	Data 3	Data 4	Data 5	
	Data 0	Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8
Return	Start	Command	Data					Check sum	
	0xFF		Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	
	Data 0	Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8

1. The module address is fixed as: 0x01.
2. Integer data has the high byte first and the low byte last.
3. Check value algorithm: (negative (data 1 + data 2 + ... + data 7)) + 1.
4. Command code:
  - 0x85: Query module status
  - 0x86: read test results
  - 0x87: Switch module working status
  - 0x88: Read blow time
  - 0x89: Set the blowing time
  - 0x90: Read drinking threshold
  - 0x91: Set drunk threshold
  - 0x92: Read blow pressure threshold
  - 0x93: Set blow pressure threshold

## Note:

1. The module needs to be used in conjunction with the blowpipe when using it. The blowpipe structure must be designed by the customer.
2. Pay attention to the connection of the 5V power supply.
3. In the mold design, the alcohol sensor needs to be fixed on the structure to prevent the alcohol sensor from loosening after long-term work, which will cause failure.
4. When designing the blowpipe structure, two points need to be paid special attention to. One is that a barrier is needed in the blowpipe to generate piezoresistance. In addition, the blowing direction of the blow pipe needs to be fixed, that is, the pressure sampling hole needs to be in the front and the alcohol sampling hole is behind in the blowing direction.
5. The module must not be used in the environment containing corrosive gas, which will damage the sensor.
6. The air inlet of the sensor on the module must not be blocked or polluted.
7. The module must not be subjected to excessive impact or vibration.
8. After long-term use in a high-concentration gas environment, the time for the sensor to recover to its initial state is slow.

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