

SPECIFICATION FOR APPROVAL

Product Name : Ultrasonic Oxygen Concentration/Flow SensorSpecification : OCS-3L1.4

Customer : _____

CUST P/N : _____

Supplies : Winpower Technology Co., Ltd.

Date : _____

CUSTOMER APPROVAL	CHK	APPD

DWN	CHK	APPD

- The product specification is for reference only and shall be signed for confirmation in case of batch supply



Introduction

The ultrasonic oxygen sensor is a new type of gas sensor. It can be used to measure the concentration of the PSA oxygen generator. It uses UART digital output, LED lights and other means to send the test results.

Features

- ◆ Excellent stability, fast response
- ◆ 5-50 °C, temperature compensation
- ◆ No-consuming parts, long Lifespan
- ◆ RoHS certificated
- ◆ Lifetime up to 5 years
- ◆ Factory calibrated
- ◆ Higher accuracy



Application

- ◆ PSA oxygen generator/ concentrator
- ◆ HFNC

Precautions for use

Ensure that the detected gas is free of water, oil and dust.

Sensor installation position: air reservoir - pressure regulating valve - float flowmeter / electronic flowmeter / control knob - check valve - humidification bottle

The sensor shall not be disassembled without the permission of the manufacturer. The manufacturer will not guarantee or repair the sensor damage caused by non-measurement.

This sensor and data manual may be changed due to product technical improvement without prior notice. Please forgive me.

The company has the final right to interpret the sensor data manual.

If there are other special customization requirements, please consult: 86-0755-82415317 phc@winpower.com.cn

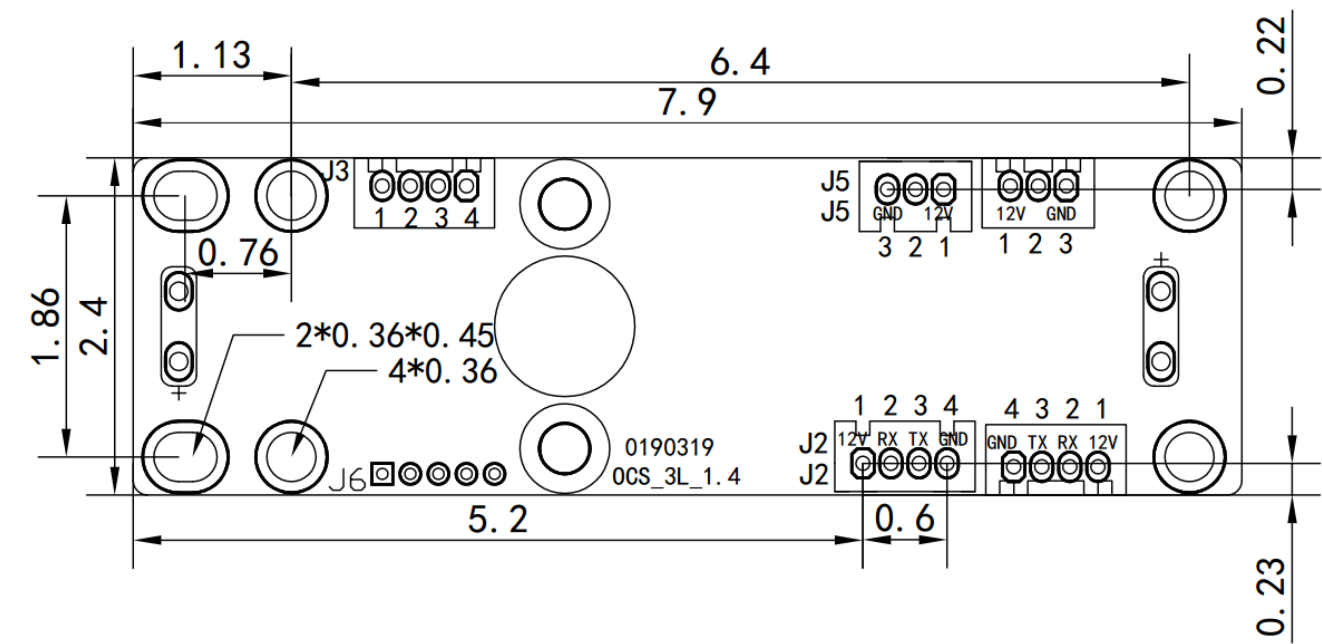
Specification

Range of Concentration	21%~95.6%
Resolution	0.1%
Accuracy	±1.8%FS@(5 - 55) °C
Response Time	0. 5s
Warm-up Time	Sensor works as soon as power on; 10s to within specified accuracy;
Digital Output	9600bps UART 3.3V TTV level
LED Output	GREEN: Concentration >82% YELLOW: 82%>Concentration>50% RED: 50%> Concentration (Settings are adjustable according to customer's requirement)
Direction	Any side is ok
Operating Temperature Range	5~50°C
Operating Humidity Range	5~85%RH (non-condensing)
Power Supply	DC 6.5-12VDC , 50mA
Dimensions	78mm x 24mm x 24mm (L x W x H)
Weight	25g
Sample gas	no water vapor (no condensing); no dust (<1 µm)



Connectors

Socket And Size (J2、J3 are 4P*2.0mm , J1、J5 is 3P*2.0mm)



Socket number	Function
J2	Power and Communication (UART)
J3	LED Output
J5	Power Supply

Power and Communication Socket J2

Pin1	+5V/10mA power output , or +12V power input
Pin2	RXD
Pin3	TXD
Pin4	GND

Attention : The pin1 of J2 could either be the +12VDC power input, or the +5VDC power output. When there is external +12VDC applied to pin1, this pin acts as the power input. When there is no external voltage applied to pin1, it acts as the +5VDC output. The exchange is completed automatically. The customer can use just one connector to fulfill both power supply and digital output functions.

LED Output Socket J3

Pin1	COM
Pin2	Green LED: O2>=82%
Pin3	Yellow LED: 82%>O2>=50%
Pin4	Red LED: 50%>O2

Power Supply Socket J5

Pin1	+12V Power
Pin2	NC
Pin3	GND

UART communication parameters

UART communication parameters

Hardware

Connect sensor pin Vin-RXD-TXD-GND with 12V-TXD-RXD-GND. (Customers must use 3.3v/5vTTL level. RS232 level needs conversion)。

Software

BaudRate: 9600

DataBits: 8

StopBits: 1

Parity(check bits): NO

Mode 1 (Autosend model)

The sensor sends the data automatically in the period of 500ms. Autosend model is the default working mode of the sensor.

The data format is as follows:

0x16	0x09	0x01	0x01	0xF4	0x00	0x63	0x00	0xD2	0x00	0x00	0xB6
Protocol header			Concent (High Byte)	Concent (Low Byte)	reserved	reserved	Temperature (High Byte)	Temperature (Low Byte)	ST1	ST2	Checksum

Hex to Decimal:

	Decimal	Hex
Concent	= 50.0%	=0x01F4
Temperature	=21.0 °C	=0x00D2

Checksum: C language:

```
unsigned char getChecksum(unsigned char *getbuff)
{
    unsigned char i, checksum;
    for( i = 0; i < 11; i++)
    {
        checksum += getbuff [i];
    }
    checksum = 0x00 - checksum;
    return checksum;
}
```

Mode 2 (QueryMode)

When the sensor can not receive query data for 4s continuously, it sends the data automatically in the period of 500ms.

Host sends	11 01 01 ED	4 BYTE
The sensor answers	16 09 01 (Concent-High) (Concent-Low) (reserved)(reserved)(Temperature-High)(Temperature Low)) [ST1] [ST2] [CS]	12 BYTE

Note: Query mode needs customization, if you need this mode, please communicate in advance .

Package

Small box: 30 packings per layer * 4 layers = 120PCS Length, width and height: 42*30*24cm	Logistics box: length, width and height: 50*32*44cm Two small boxes inside: 120*2=240PCS	Net weight:5KG Gross weight: 10KG
		

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