

SPECIFICATION FOR APPROVAL

Product Name : Ultrasonic Oxygen Concentration/Flow SensorSpecification : OCS-3R100

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





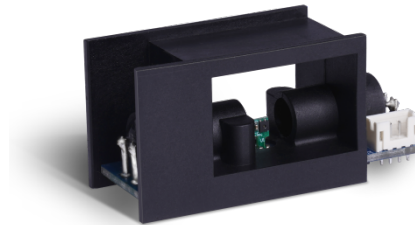
Ultrasonic Oxygen Concentration sensor

User Manual

The OCS-3R100 Ultrasonic Oxygen Sensor is a new type of gas sensor. It can be used to measure the concentration of the gas mixed by Air and Pure Oxygen or PSA Oxygen. It uses UART digital output. Mostly used for transnasal high flow oxygen therapy (HFNC).

Features:

- ◆ High accuracy
- ◆ Strong anti-interference ability
- ◆ Response quickly
- ◆ Long-term stability
- ◆ Without calibration
- ◆ Built in atmospheric pressure and ambient humidity compensation



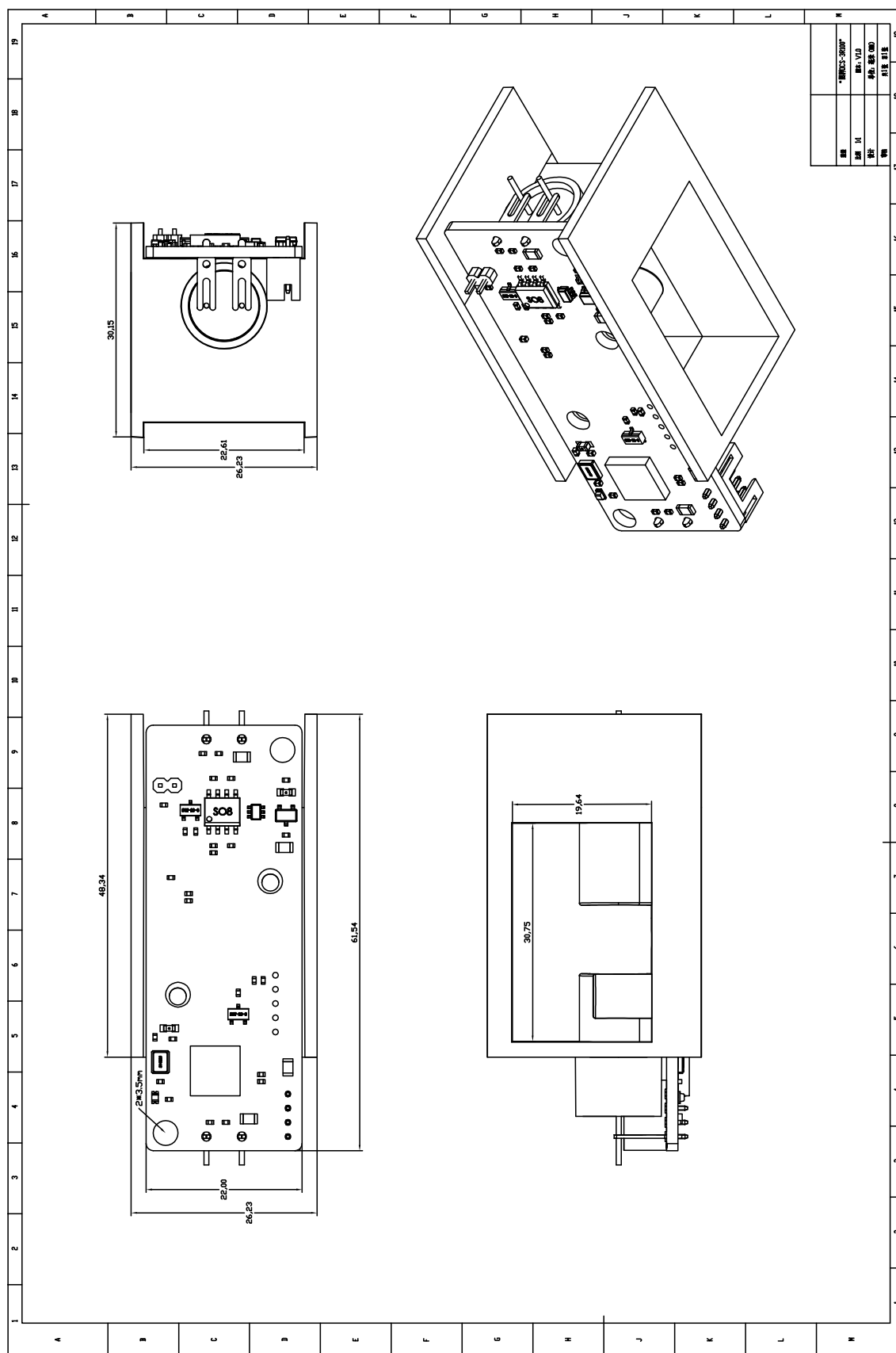
Application

- ◆ HFNC High-Flow Nasal Cannula

Technology Indicators

Range of concentration	0%-99.9%
Resolution	0.1%
Accuracy	±1.5%FS @ (5 - 55) °C
Sample gas requirements	Dry (no condensation); dust filter (<1um)
Data send cycle	500ms
Warm-up Time	Sensor works as soon as power on
Communication Protocol	9600bps UART Compatible 3.3V TTV level
Gas Flow Direction	Any side is ok
Working temperature	10~50°C
Storage temperature	-5~65°C
Working humidity	5~95%RH
Maximum Pressure	150 kPa
Power Supply	5-12VDC, 50mA
Dimensions	63mm x 26mm x 30mm (L x W x H)
Weight	20g





UART Communication Instruction**Hardware**

Connect sensor pin V+-RX-TX-GND with 5V-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

Instruction:	The sensor send twelve bytes every 500ms	Number
The sensor answers	16 09 01 (AIR_PSAH AIR_PSAL) (RH)(AP) (TH TL) (AIR_O2H AIR_O2L) [CS] The low byte of the sum of all these bytes is zero!	12

Reply method Instruction (Choose one of them)

Inquiry Mode	Host sends: 11 01 01 ED (inquiry command) Sensor replies: 16 09 01 (AIR_PSA) (RH) (AP)(Temp)(AIR_O2)[CS] Instruction: (AIR_PSA) (Air PSA Gas Mixture): Result = (AIR_PSAH*256+ AIR_PSAL)/(10), uint:(%)。 (RH) (Relative Humidity): Result =RH, uint: (%)。 (AP) (Atmospheric Pressure): Result =AP, uint: (Kpa)。 (Temp) (Temperature): Result =(TH*256+ TL)/(10), uint: (°C)。 (AIR_O2) (Air Oxygen Mixture): Result =(AIR_O2H*256+ AIR_O2L)/(10), uint: (%)。 Example: The sensor sends: "16 09 01 01 F4 32 64 00 D2 01 F4 8E" (O2) (Concentration of Air PSA Gas Mixture) = 50.0% = 0x01F4; (O2) (Relative Humidity of Gas Mixture) = 50% = 0x32 ; (O2) (Atmospheric Pressure) = 100Kpa = 0x64; (O2) (Temperature of Gas Mixture) = 21°C = 0x00D2; (O2) (Concentration of Air Oxygen Mixture) = 50.0% = 0x01F4;
Auto Mode	The sensor sends these bytes automatically in the period of 500ms. Auto send model is the default working mode of the sensor.

