OCS3

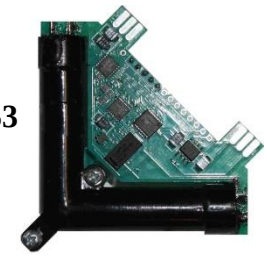
Miniature Oxygen Sensor (±1.5%)
Analog 0 - 5V, USART, LCD
No Flow Alarm

Miniature any Oxygen OCS3 is powered by 8V to 32V / 7ma Unregulated DC Power Supply. OCS3 outputs via USART & 0-5Vdc %O_2 & Temperature[°C]. Thermal characteristics allow flexible environmental Oxygen concentration measurement. No Flow Alarm output can serve to detect condition of occluded outlet – No/reverse Flow. OCS3 can be customer calibrated.

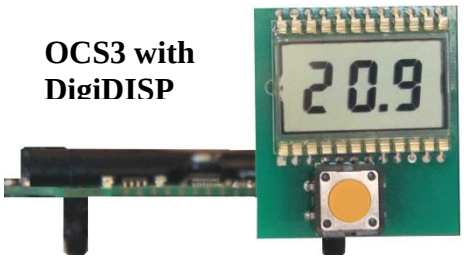
Applications:

- Oxygen concentrators
- Oxygen Mixers
- Respiratory equipment

OCS3



OCS3 with DigiDISP



Specification:

Size	2.5" x 2.5" x 0.5" / 20g
Oxygen types	Controlled by J1.4 0V - O2 concentrator 5V - air mixtures with pure O2
Outputs	USART, LCD, Analog
Analog O2 output	0 to 5V DC Linearly proportional to 0—100% O2
Power Supply	Unregulated 8V to 32V DC / 7 ma
Display Switch	Performs Field Calibrations
O2 Accuracy	±1.5% @ –5 to +45°C; ±2% @ -45°C to –5°C, 45°C to +70°C
O2 Range	20.8% - 95.7%, 20.8% - 100%
Max pressure	30 psig
Thermal change response	1°C per Minute
Thermal Gradient$_{max}$	50 K/ meter
Operating Temperature	-45 to 70°C
Survival Temperature	-85 to +85°C
RS232 transmit Rate	19200 bits/sec
Calibration Retention	More than **10 years**
Calibration	Factory. Optional customer site, or field calibration is provided.
Flow I/O	**Bi-directional via 1/8" male barbs**
Response Time - O2	100 milliseconds
Response Time - Flow	10 milli-seconds
USART Frame content	O2 [%], Temperature [°C]
No Flow Indicator	J1.3—Open Drain

DigiFLO, Inc., USA, http://www.dgflo.com, info@dgflo.com,
Tel. 206-232-2193

Features

USART / RS-232 output—TTL level
DigiFLO Computer Download Program is available.
Linear Analog outputs
LCD display output

CONNECTORS

J1– Through Hole

Pin

1. (Square pad) 8 to 32V Unregulated DC Power Supply (+)
2. Temperature Analog Out. (0 to $5V_{DC}$ Linearly proportional to 0- 50°C)
3. No Flow alarm. Open drain output: 0v when active.
4. Oxygen type Input. 3.5 - 5V (‘1’) indicates 100% O_2 / Air mix. 0 - 0.5V (‘0’) indicates Oxygen concentrator
5. N/A
6. N/A
7. Oxygen Analog Out. (0 to $5V_{DC}$ Linearly proportional to 0- 100%)
8. USART TTL level TXD. Provides %O2 & Temperature(°C)
9. N/A
10. N/A
11. N/A
12. N/A
13. 8 to 30V Unregulated DC Power Supply (-) – GND

J2 (RS232) – RS-232 I/O - Board Edge

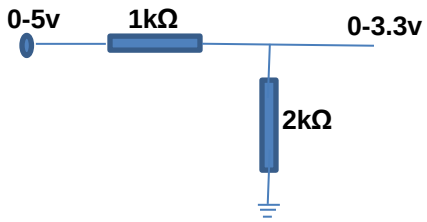
Connects to DigiRS232
For RS232 protocol see OCS3 User Interface document.

J3 (DISPLAY)—Board Edge

Connect to DigiDISP

Connecting to a 3.3v Microcontroller

0 to 5v UART and / or Proportional analog outputs need to be reduced to a 0 to 3.3v range. This can be accomplished via a resistor circuit as follows:



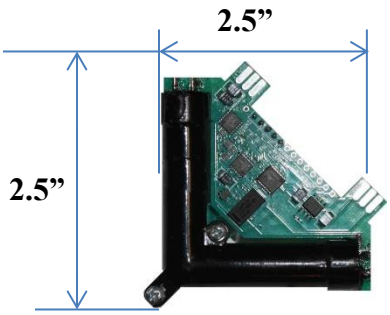
Connecting OCS3 to a computer via a COM port

Via DigiRS232 OCS3 can be connected to a computer COM port, such that OCS3 measured Oxygen content and Temperature, along with a time mark can be stored in a file. DigiFLO program is available.

RS232 & Field Calibrations

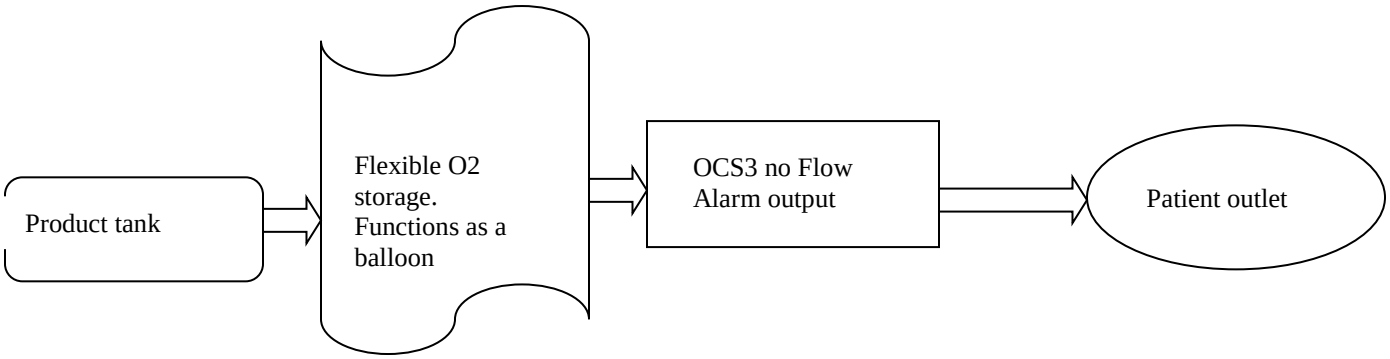
See OCS3 User Interface document.

OFS3 Dimensions Drawing



How to Detect Start of Breath:

Flexible O2 storage inflates during breath cycle and partially deflates by the patient to indicate Start of breath. OCS1 utilizes its speed, resolution and accuracy to detect patient forced deflating flow rate.



Connecting OCS1 to a computer via a COM port

Via DigiRS232 OCS1 can be connected to a computer COM port, such that OCS1 measured Oxygen content, Temperature and hours of operation can be stored in a file. DigiFLO program is available.

RS232 & Field Calibrations

See OCS3 User Interface document.

CMH_2O **Sensor Pressure Drop Vs. Flow Rate**