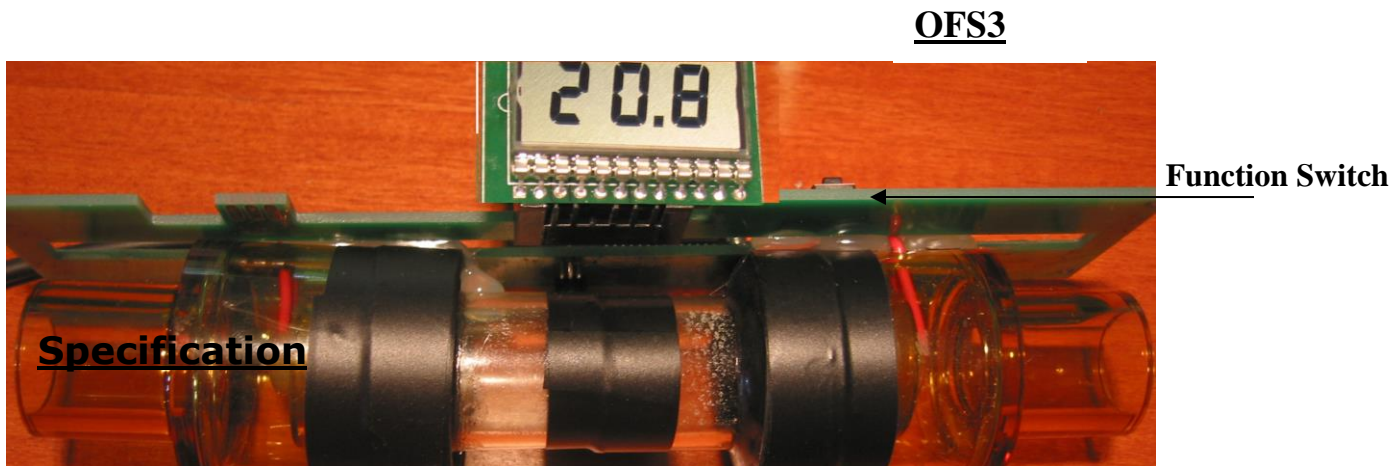


# OFS3

## 0 to 500LPM Flow Rate, 20.8 to 100% Oxygen Sensor Oxygen ( $\pm 1.8\%$ ) Flow rate ( $\pm 2$ LPM) Oxygen & Flow Rate 0 - 5V Analog outputs

This high Flow Rate Oxygen Concentration and Flow rate sensor was optimized for use in low pressure drop, applications. It's Demo version provides a Function Switch to switchover between O<sub>2</sub>, Flow Rate and Peak Flow Rate displays on DigiDISP (DigiFLO LCD display). OFS2 connects to 5V / 2ma Regulated Power Supply and is powered via a through hole connector. RS-232 connection is also provided. A technician can display and store O<sub>2</sub> concentration, Flow Rate and gas temperature over extended periods of time. A DigiFLO computer program for download to a PC is available. What's more, the OFS2 provides a No Flow Alarm output. Therefore, if patient gas flow suddenly stops - Alarm can sound.



Size	6.5" x 1.5" x 1.5" / 86g
Outputs	RS-232, SPI, LCD, Analog 0 to 5V (100% O <sub>2</sub> , 500 LPM)
Power Supply	Regulated 5V DC / 2 ma
OEM Version	OFS1
Demo Version	Demo-OFS2
Analog Outputs	0 to 5V DC Linearly proportional to 0-100% O <sub>2</sub> ; 0–500 LPM Flow
LCD Display	<a href="#">DigiDISP</a> Connects to J3; <a href="#">DigiRS232</a> connects to J2
O2 Accuracy	±1.8%
Flow Accuracy	±2 LPM
O2 Range	Concentration: 20.8% - 100%
Response Time	0.01 seconds
Flow Rate Range	0 - 500 LPM
Max pressure	10 psig
Temperature range	10 to 45°C
Alarm	No Flow Alarm
Temperature response	1°C per Minute
Calibration	Factory. Does not need to be re-calibrated
<b>Shock</b>	100 g peak 6 ms half-sine (3 drops, each direction of 3 axes)
<b>Flow Direction</b>	Unidirectional
<b>Availability</b>	Global
<b>UNSPSC Commodity</b>	411121 Transducers

## **Function Switch**

Switches between different display modes on [DigiDISP](#). Numerical display is preceded as follows:

- %Oxygen: **O2**
- Flow Rate: **FLO**
- Peak Flow Rate: **PFL**

# **CONNECTORS**

## **J1 – Through Hole**

Pin

1. (Square pad) – 5V Regulated DC Power Supply (+)
2. Analog Out. (0 to 5V Linearly proportional to 0-500 LPM)
3. 5V Regulated DC Power Supply (-)
4. Serial Clock
5. Serial Data
6. Serial Strobe
7. Analog Out. (0 to 5V Linearly proportional to 0-100% O2)
8. 5V Regulated DC Power Supply (-)

## **J2 (RS232) – RS-232 I/O - Board Edge**

Connects to [DigiRS232](#)

- 1 - +5V Regulated DC Power Supply
- 2 – RS232- TXD
- 3 - RS232- RXD
- 4 - NA
- 5 - +5V Regulated DC Power Supply
- 6 – Ground

## **J3 (DISPLAY) – Board Edge**

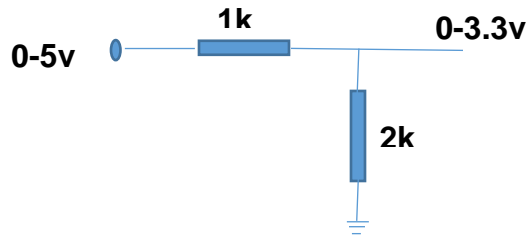
Connect to [DigiDISP](#)

Pin

1. 5V Regulated DC Power Supply (+)
2. N/A
3. Serial Clock
4. Serial Data
5. Serial Strobe
6. 5V Regulated DC Power Supply (-)

## 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:



## J4- Through Hole

No Flow Alarm: Open Drain output connects (-) pin to ground when 0 flow is detected.

## OFS3 serial Asynchronous RS-232 ready output (J2)

TTL USART - Any MCU containing a UART can easily communicate with the DigiOF UART RS232 ready output via TTL UART. Bit stream is as follows:

Baud Rate: 19.2K

Parity: None

Bits 8

Stop bits 1.

Frame rate: 6 / sec

### Frame:

Byte 1: 0xA5 (burst delimiter)

Byte 2: Flow Rate[L/min] / 10

Byte 3: Flow Rate[L/min] % 10

Byte 4: Instantaneous OXYGEN[%] / 10

Byte 5: Instantaneous OXYGEN[%] % 10

Byte 6: Peak Flow Rate[L/min] / 10

Byte 7: Peak Flow Rate[L/min] % 10

Byte 8: Oxygen temperature[oC] / 10

Byte 9: Oxygen temperature[oC] % 10

CMH<sub>2</sub>O

**Sensor Pressure Drop Vs. Flow Rate**

