OCS1

Oxygen (20.8 to 100%),
FLOW (0 to ±10 L/M ±0.1 L/M)

Miniature any Oxygen and Flow Rate sensor. OCS1 is powered by 8V to 35V / 7ma Unregulated DC Power Supply. OCS1 outputs: USART & 0-5Vdc O_2 concentration and Flow Rate proportional outputs. Thermal characteristics allow any Oxygen concentration measurement. No Flow Alarm output can serve to detect condition of No Flow. Customer or field calibrations are provided.

Specification:

Size	4.7" x 0.8" x 0.5" / 25g
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
Analog Flow output	0 to 5V DC Linearly proportional to 0—10 L/M
Power Supply	Unregulated 8V to 35V 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%
Flow Rate Accuracy	±0.1 L/M
Flow Rate Range	0 to ±10 L/M
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 [%], Flow Rate [L/M]
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

POSTS / STANDOFFS

The following 3/16" posts / standoffs were found fit:
LYNTRON – lyntron.com –
AA6978-0.187-00 (M - Aluminum); NY6978-0.187-00 (M-Nylon)
AA6950-0256-0.250-00 (F - Aluminum); NY6950-0256-0.250-00 (F-Nylon)

M – Male
F - Female

CONNECTORS

J1– Through Hole

Pin

1. (Square pad) 8 to 30V Unregulated DC Power Supply (+)
2. Flow Rate Analog Out. (0 to $5V_{DC}$ Linearly proportional to 0- 10 L/M)
3. Condition of No Flow. Open drain output: 0v when active.
4. Oxygen type indicator - If connected to GND (J1.9) - indicates 100% O_2 / Air mix; No Contact indicates Oxygen concentrator gas.
5. N/A
6. Dual Function pin
   - 10Hz 5V 50% DS Square wave output.
   - PB Switch contact. Performs field calibrations in conjunction with DigiDISP LCD
7. Oxygen Analog Out. (0 to $5V_{DC}$ Linearly proportional to 0- 100%)
8. USART TTL level TXD. Provides Flow Rate & $\%O_2$
9. 8 to 30V Unregulated DC Power Supply (-) - GND

J2 (RS232) – RS-232 I/O - Board Edge

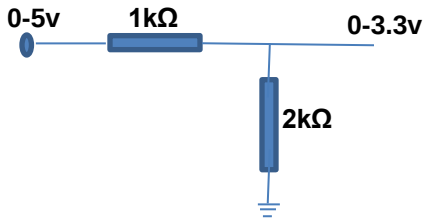
Connects to DigiRS232
For RS232 protocol see OFS1 User Interface document.

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 OCS1 to a computer via a COM port

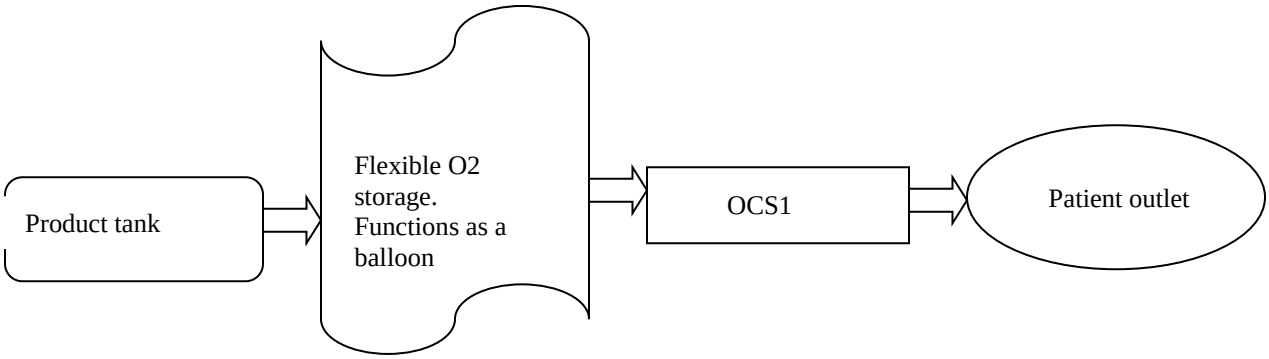
Via DigiRS232 OCS1 can be connected to a computer COM port, such that OCS1 measured Oxygen content and Flow rate, can be stored in a file. DigiFLO program is available.

RS232 & Field Calibrations

See OCS1 User Interface document.

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.



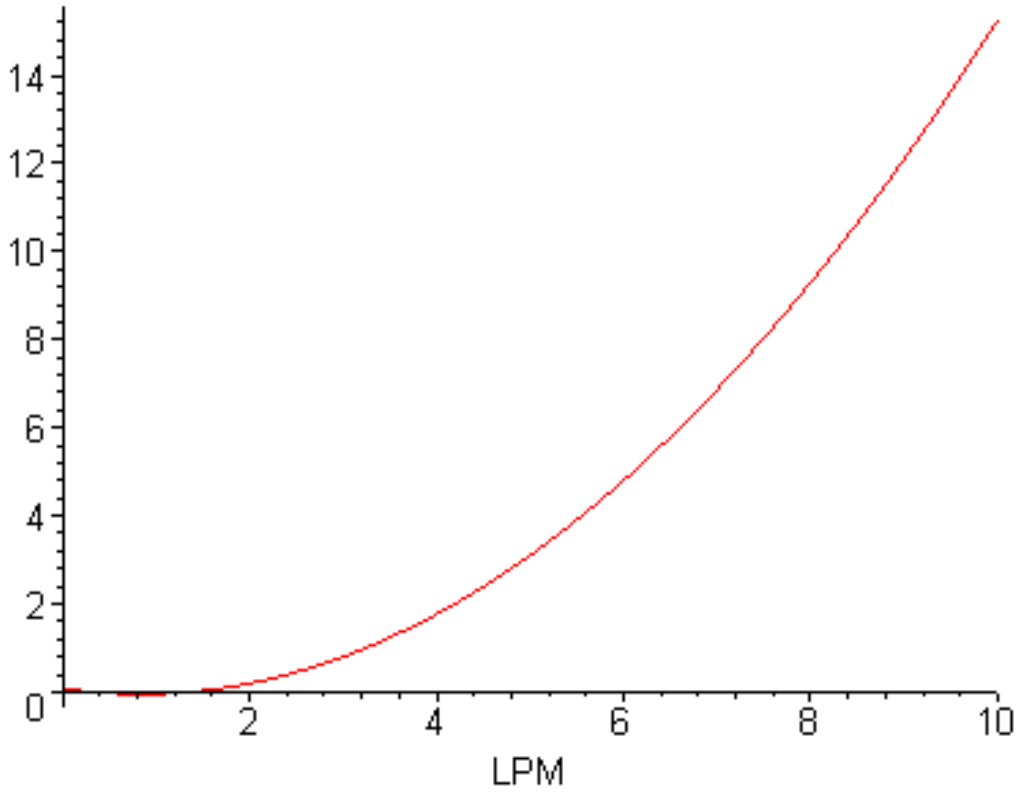
Connecting OCS1 to a computer via a COM port

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

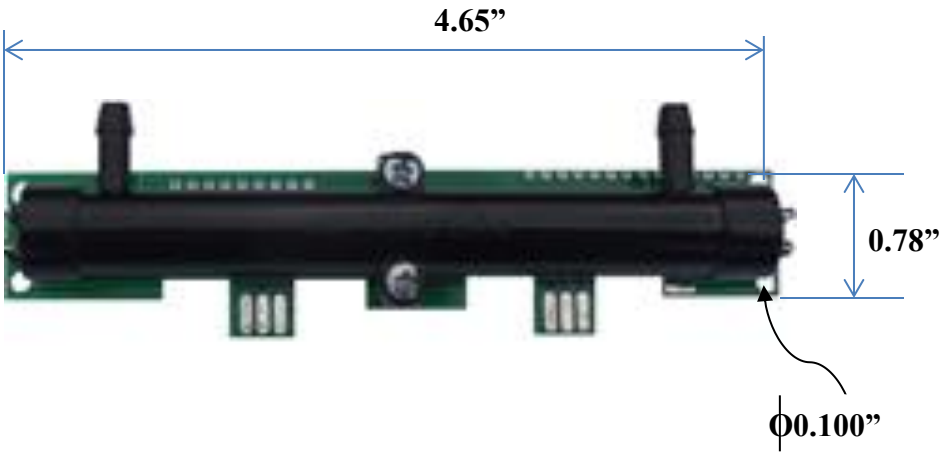
See OCS1 User Interface document.

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



OFS1 Dimensions Drawing

Mounting holes spacing: 0.58” x 4.5”



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