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THE LEVELWORKS® PEOPLE

Level, Flow, Pressure, Temperature and Gas Detection Solutions
for Industrial Process, Machine Control and Gas Distribution

MEDICAL GAS MONITORING – GEMS 3100 SERIES



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Hospitals and [Medical](#) Facilities rely on varying medical grade gases to assist their patients with breathing and respiratory therapy as well as administering anesthesia for surgery, carbon dioxide for laparoscopy even Heliox for bronchial asthma. Monitoring these gases to ensure the supply is adequate as well as within the specified range relies on [pressure sensors](#) to provide feedback from the gas supply back to the main controller, valve or modulator.

Ensuring that this gas supply line is kept clean to medical quality levels is the number one priority when using pressure sensors in this type of application. If a contaminant was to enter the gas lines, it can get into the breathing system which then has a chance to enter the human body.

Challenge: Finding a sensor that will be accurate, clean for medical applications and will not cross-contaminate the gas supply

Many industrial-grade devices leave factories not clean enough to be used with breathing air or are stored in non-ideal environments. They can be contaminated by debris, dust, items falling on them, oils used during the manufacturing process, etc.

Also, many pressure sensors in the market are utilizing a type of oil-filled diaphragm to isolate the sensing element from the media. If this oil-filled diaphragm were to rupture, oil could leak out and get into the gas supply which would then contaminate the required clean gas supply.

If these two situations happen and contaminate a medical gas supply, people can get hurt.

Solution: The Gems Sensors 3100 series with the optional "Cleaned for Oxygen Service"

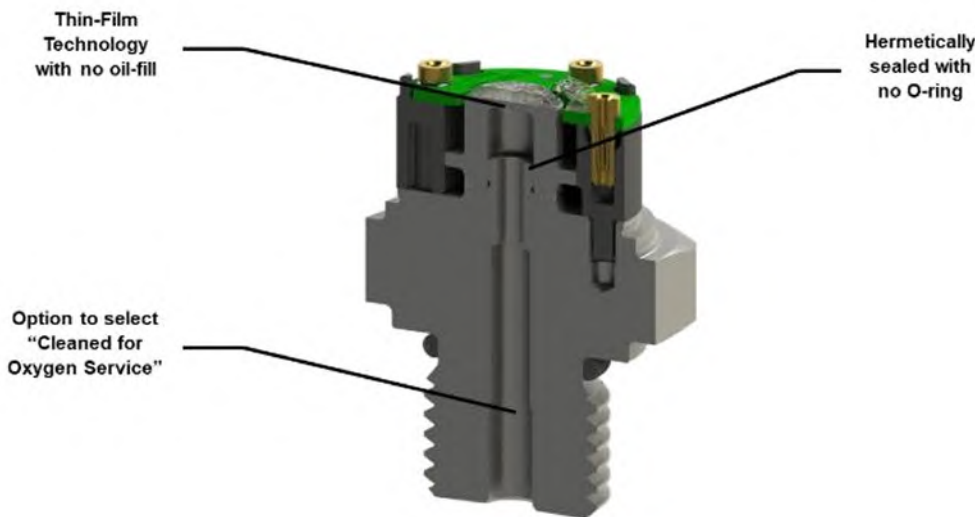


The 3100 Series Pressure Sensor offers medical OEM's three major benefits:

1. No internal O-rings. Many low-cost manufacturers use an internal O-ring to seal the junction between the pressure port and the pressure sensing element. O-rings can break down over time and cause leaks. Gems laser welds the sensing element to the pressure port creating a hermetic seal that will last for 100 Million pressure cycles ensuring a long-life sensor.

2. It is offered with a "Cleaned for Oxygen Service" option. The sensor has an additional process that is performed at the end of the manufacturing process where all oils and debris are removed from the sensor. Then it is sealed in a heat-sealed bag so no further contamination can occur. This avoids introducing contamination to the customer's gas supply.

3. The [3100](#) utilizes thin-film technology with its sensing element directly behind the stainless-steel diaphragm. With no oil being used in the sensing element area, there is no risk of a leaking diaphragm leaking oil into the gas supply if the diaphragm were to be ruptured.



Medical Certifications:

- [ISO-9001 and ISO-13485](#)

Markets:

- [Medical](#)
- [Food & Beverage](#)
- [Semiconductors](#)