

C A BRIGGS COMPANY



THE LEVELWORKS® PEOPLE

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

BREATHING APPARATUS (SCBA) GEMS 3100 SERIES PRESSURE SENSOR



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Human safety is the number one priority when working in oil fields or in underground mines. Providing fresh air to the workers in these environments relies on several critical systems working correctly to ensure no harm comes to the workers. The worker will put on a SCBA (or Self-Contained Breathing Apparatus) device over their face and mouth. This keeps the bad air out and allows the worker to only breathe fresh air from the oxygen supply tank.

What is critical to the SCBA system is monitoring the pressure in the oxygen supply tanks. The tanks can hold only a certain amount of air so letting the worker know how much time is left is crucial. Pressure sensors are mounted near the tank and monitor the tank's pressure. The worker has a handheld device (dongle) that displays to them the amount of time used as well as amount of time left. Constantly monitoring the pressure can also send a signal to the system that pressure is getting low and trigger a very loud signal to the

user if the tanks is running low.

Oil fields and underground mines are very rough environments. Equipment is bumped around, dropped and not handled delicately.

Challenge: Finding a rugged pressure sensor that can provide an accurate signal even when exposed to a high number of cycles as well as be airtight to prevent leaks.

Since the workers rely on the air to survive, a leaking supply system is not an option. When dealing with gases (air, oxygen, etc.) the molecules tend to be very small and will leak very easily thru any gaps in the plumbing or piping system. The whole system needs to be leak-free so all the air that the tank can store is available to the worker and not leaked out to the atmosphere. Also, many of these applications have a high number of repetitious cycles. The pressure sensor needs to be able to withstand these repetitive cycles and demonstrate a long-life span to avoid premature failure.

Solution: 3100 Series Pressure Sensors



The 3100 Series Pressure Sensors use no internal O-rings in the chamber that holds the media (air, oxygen, etc.). O-rings can break down being exposed to temperature, cleaning chemicals as well as over time and cause leaks. The stainless-steel pressure ports and sensing diaphragms are laser-welded together to make an air-tight leak-proof seal. This will prevent leaks today as well as years in the future. Able to operate up to +125C and along with the 100 million cycle lifetime, the 3100 Series Pressure Sensors are a perfect fit to provide a continuous feedback of coolant pressure for your Solid-State Pressure Regulator application.



Adding the 3100 Series Pressure Sensors to your Solid-State Pressure Regulator application is a large asset to ensure your equipment will have a long life and low maintenance requirement.

Features of the Gems 3100 Series Pressure Sensors:

- Exceptional Long-Term Stability = No need for costly field calibration or replacement
- Thermally compensated = Consistent performance under wide temperature conditions
- Stainless Steel body = Able to with stand harsh chemicals and gasses
- Sealed to IP67 = heavy water spray, power-washing
- Enhanced RFI, EMI, and ESD Protection = Clear uninterrupted signal in harsh electrical environments
- Computer Controlled Calibration = High 1:1 Interchangeability from unit to unit
- Passes 20G Vibration test and IEC Free Fall test = Rugged design to handle excessive shock and vibration conditions

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