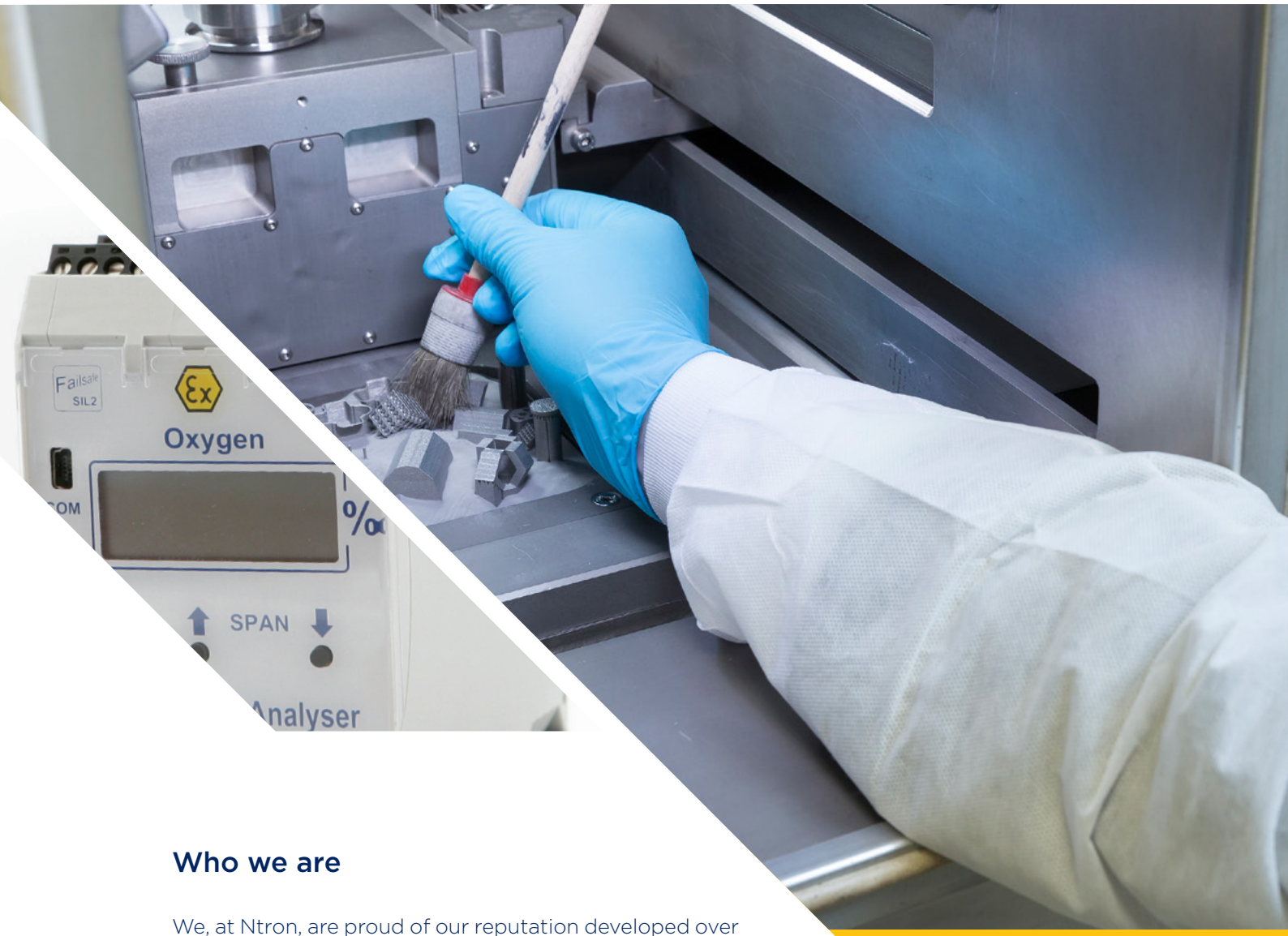
NITRON
Gas Measurement

Fail-safe Oxygen Measurement in Additive Manufacturing

EXCELLENCE
THROUGH DIVERSITY



Who we are

We, at Ntron, are proud of our reputation developed over the last 30 years. We have established ourselves as market leaders in the design and manufacturing of Oxygen Measurement Systems for process and people safety across a wide variety of industrial applications.

Today, Ntron strives to exceed customer expectations through continuous innovation; by developing better and more efficient gas analysis and control solutions, by helping to maximize process efficiencies, by improving product quality to protect the health and safety of personnel and the environment and also by preserving capital equipment and investments.

Our experienced team provides customised solutions across a wide range of sectors internationally. Our goal is to ensure qualitative and efficient gas measurement systems for your specific gas measurement requirements.

Over 30 years experience in providing Fail-safe Oxygen Measurement across a range of industries.

Ntron is the market leader for the supply of oxygen analysis-based inerting control systems for safety critical applications.

We have the ability to supply either in-line or extractive oxygen measurement systems designed to maintain an inert environment for product quality and process safety applications.

We have developed successful relationships with several OEM manufacturers within the Additive Manufacturing industry for both Plastic Laser Sintering Sytems and Direct Metal Laser Sintering Systems.

Our success is based on supplying reliable and fail-safe oxygen measurement on harsh applications within the AM industry.

We can assure you through our cross-industry experience and our SIL 2 (IEC 61508) rated solutions that we can provide the most suitable option to your individual needs.

Application

Metal Additive Manufacturing is the process of creating a 3D object from a CAD model by building it up from metal powder, layer by layer. This technology can produce complex shapes that are not possible with traditional manufacturing methods.

The most common industries to commission production of specific components are aerospace, defence and transport, so reducing the chances of oxidisation of the metal during the build process is essential as this can lead to a build failure, stress test failure or also a density test failure due to low quality standards. Interstitial absorption of any oxide embrittles the weld and may render the component useless.

In nearly all cases, the future adoption of this technology in many industries critically depends on the measuring of the oxygen level within the Additive Manufacturing process. Ntron Ltd have been working alongside some of the leaders in AM machine manufacturing to supply high perfomance oxygen analysers measuring from 1 ppm up to 25% oxygen within the process. These analysers are supplied as OEM components in order to be adopted seamlessly according to the client's specific requirements.

Ntron employs zirconia sensor technology which has been specially developed for harsh process applications.

We have the ability to supply a SIL2 rated Oxygen Analyser designed to comply with the requirements of IEC 61508 for the fail-safe oxygen measurement on inert gas blanketing applications.

Safe

- Ntron's Fail Safe analysers are a reliable solution to the safety concerns of a range of industries.
- SIL-O2 is rated to SIL2, with a probability of failure on demand (PFD) of less than 0.01
- Software validated to IEC 61508.

Reliable

- Zirconia sensor with 20,000 hours operation in 20.9% O2.
- Robust performance proven in harsh corrosive environments.
- Suited to inert gas blanketing applications.

Accuracy

- Capable of detecting 1ppm O2.
- Operating ranges from 0-10ppm to 0-96%.
- Response time T90 <10 seconds.

The Ntron Solution

Ntron has developed an in-line SIL 2 rated Oxygen Analyser designed specifically for harsh applications within the additive manufacturing industry.

SenzTx Zirconia Oxygen Transmitter which has a long life and fast speed of response. This has a measurement range of 1ppm up to 25% Oxygen

SIL-O2 is a SIL2 rated oxygen analyser that has been developed specifically for the measurement of oxygen for safety critical applications.

This SILO2 meets the requirements of IEC 61508 (SIL 2)

Products

1. Senz-Tx Oxygen Sensor Transmitter

The Senz-Tx is a highly reliable and cost-effective two-wire, loop-powered oxygen transmitter which employs zirconia technology. The Senz-Tx has an analog 4 to 20 mAmp and RS 485 Modbus communication. It has a measurement range from 1 ppm up to 25% oxygen.

This analyser utilises zirconia technology to give a reliable and fast response time, long life and no drift from oxygen measurement.

2. Microx Oxygen Analyser

The Ntron Microx oxygen analysers are a range of low-cost ppm or % oxygen measurement analysers for OEMs which utilise zirconia technology. They give a reliable and fast response time, long life and no drift from oxygen measurement.

They are available in panel, wall or din rail configuration and have an analogue output of 4-20 mA and RS232 for communication with customer's Programmable Logic Controller (PLC). They also have an LCD display and 3 configurable alarm contacts.

3. SIL O2 LT Oxygen Analyser

This SIL2 rated oxygen analyser has been developed specifically for the measurement and control of oxygen for safety critical applications within the additive manufacturing industry. The SILO2 LT analyser employs zirconia technology which has been developed specifically for harsh process applications which is ideally suited for additive manufacturing.

Applications for this analyser include the measurement of oxygen on inerting applications for explosion prevention. This analyser has 3 configurable alarm outputs, 4-20 mA and RS232/ RS485 communication. The complete analyser solution (sensor & analyser) meets the requirements of IEC61508 SIL 2.

4. GazTrak Oxygen & Moisture Analyser

The Ntron GazTrak is a compact transportable oxygen & moisture analyser providing an affordable and versatile solution for the measurement of oxygen and moisture.

Housed in an ergonomic high impact case the GazTrak has a large touch screen and has onboard data logging. The GazTrak has a reliable long life zirconia sensor with a fast response time from 1ppm to 25% Oxygen. The moisture transmitter has a gold plated capacitance sensor with a measurement range of 0 to 1,000ppm Moisture. The GazTrak has a 4-20 mAmp output for both the moisture and oxygen transmitter with 2 configurable alarm contacts for each channel. Onboard data logging is available via a SSD card

5. OxyTx Oxygen Analyser

The Ntron OxyTx oxygen analyser is an ATEX certified for Zone 20/22 (1 GD) applications for the measurement of oxygen on safety critical applications.

The solid state ceramic oxygen sensor has a sensor life of 3 to 5 years with minimal sensor drift over the life of the sensor.

The ATEX certified transmitter generates an analog 4 to 20 mAmp for a measurement range of 0 -25% with a lowest detectable limit of 0.01% oxygen.

6. OxyExtract Oxygen Analyser

The OxyExtract Range of IECEx/ATEX approved retractable in-line oxygen sensor along with the OxyOne analyser and ACCU calibration unit, provide a cost effective solution to meet your process safety requirements.

The primary advantage of the OxyExtract is the ability to measure oxygen concentration directly in the process gas stream without the need for complex sampling systems.

The sensor can be removed/replaced without opening the process to ambient air.

Two basic versions are available; One for manual insertion and retraction of the sensor probe, and the other for remote (pneumatic) insertion and retraction of the sensor probe.The OxyExtract is available in 316 stainless steel and Hastelloy C22 and has a variety of tri-clamp and flange process connections.

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