

# XZR400TS Series

## Oxygen Analyzer

The XZR400TS touch-screen oxygen analyzer detects trace oxygen in gas and is used to control the purity of gases such as Nitrogen, Argon, Helium and Carbon Dioxide. It is available in wall-mountable, rack-mountable and portable versions, each suited to a range of applications.



### Highlights

- Super-fast response time
- Simple and easy operation
- Low maintenance and cost of ownership
- No need for instrument air
- High accuracy with built-in pressure compensation
- Highly stable sensor
- Multiple outputs with 4-20 mA, RS485 Modbus and optional RS232

### Applications

- Gas quality measurements
- Environmental control applications
- Control of pure gas for semiconductor and nuclear industries
- Control of gas purity for industrial gas manufacturers
- Tracing leaks in glove boxes
- Measuring oxygen traces in Carbon Dioxide for breweries
- Heat-treating applications such as galvanizing furnaces
- Simulation in laboratories

## Michell XZR400TS Clean Gas Analyzers MSRS Technology

The MSRS (Metallic Sealed Reference Sensor) technology was developed from a sensor originally designed for ultra harsh applications in volcanoes. The miniature design with the fast speed of response and long life-time makes it the instrument of choice for oxygen measurement in a range of applications such as industrial gas purity.



The MSRS responds quickly, within seconds, for 90% of a step change. It is based on a metallic sealed reference which not only shows superior performance over other sensors on the market, but also makes the MSRS resistant

to pollution and virtually drift-free, reducing the need for calibration.

In field tests, the drift is less than 140 ppb in one month for concentrations of oxygen at 1ppm, compared to other sensors which required weekly calibration.

The XZR400TS series from Michell Instruments is designed to detect trace oxygen in clean gases, such as Nitrogen, Argon, Helium and Carbon Dioxide, to monitor their purity both in production and when used in processes.

The XZR400TS detects trace amounts of oxygen very rapidly. It is an ideal instrument for detecting leaks and reacting quickly to avoid costly contamination of the pure product. The rack- or wall- mount versions are best suited to fixed installations, while the portable version allows spot-checks on packaged gas.



## Highlights and Benefits

### Super fast response time

Due to its miniature size and unique design the MSRS Technology-based sensor of the XZR400TS series responds to input changes in less than 1 second.



### Simple and easy operation

The intuitive touch screen offers two operation levels with basic mode for daily work and an expert mode that can only be entered by authorized personnel with an access code preventing accidental or unauthorized operation. The operation follows the NAMUR recommendation.

### Low maintenance and cost of ownership

MSRS technology-based sensors have an extremely long life expectation and are very easy to calibrate using dry air, for example. For more simplicity, Michell offers an optional Auto Calibration Kit in addition to a choice of two calibration kits. Due to the extraordinary sensor stability no weekly or monthly calibration is needed.

Michell recommends performing the calibration only once or twice a year allowing for significant cost savings.

### No need for instrument air

MSRS Technology based sensors do not require reference air to be connected to the reference side of the sensor. The analyzer can be calibrated using just dry air as a calibration gas.

### High accuracy with built-in pressure compensation

Pressure has a significant influence on measurements. The XZR400 maintains high accuracy of less than 2% of reading across the full range due to the built-in atmospheric pressure compensation. System pressure influence can be compensated via the external pressure sensor input.

**Highly stable and drift free**

All miniature MSRS technology-based sensors are resistant to pollution and operate virtually drift free. This positively impacts on both the maintenance and calibration costs.

**Multiple outputs**

The XZR400RM offers two 4-20 mA outputs, flow alarms and RS485 Modbus communication. Other models offer additional output and digital communication. With the second analog output an Autoranging option is available.

**Customized versions available**

All standard analyzers can be adjusted to customer requirements.

**XZR400TS Range**



**XZR400TS-WM**

Available in a wall-mountable case for permanent fixing in a variety of situations.

This model can also be fitted in a sturdy travel-case making it ideal for applications requiring temporary installation.



**XZR400TS-RM**

The rack-mountable version has all the features of the WM and PT models, but fits into all standard rack sizes.

**Ordering Information**

Order code	Description
XZR400TS-WM	Trace Oxygen Analyzer for inert gases with MSRS technology, requiring no ambient or pressurized air, with built-in atmospheric pressure compensation. (Wall mountable version.)
XZR400TS-RM	Trace Oxygen Analyzer for inert gases with MSRS technology, requiring no ambient or pressurized air, with built-in atmospheric pressure compensation. (Rack mountable version.)

Accessories and spare parts
Choice of Communication/Digital Interfaces
Pressure Compensation
Optional Pumps – internal and embedded
Flow Alarm
Auto Calibration
Calibration Kit
Gas Cylinders for Calibration

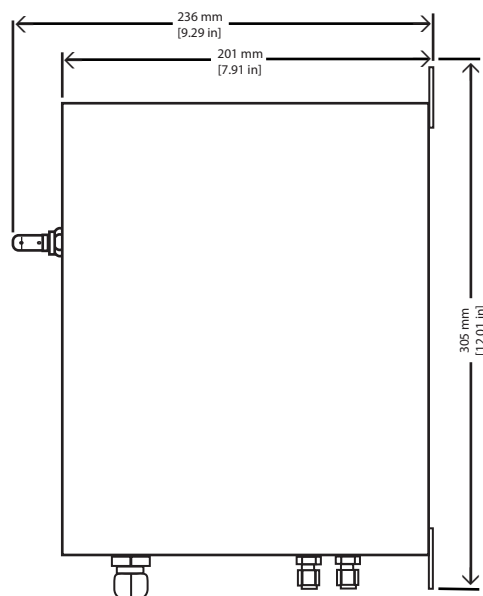
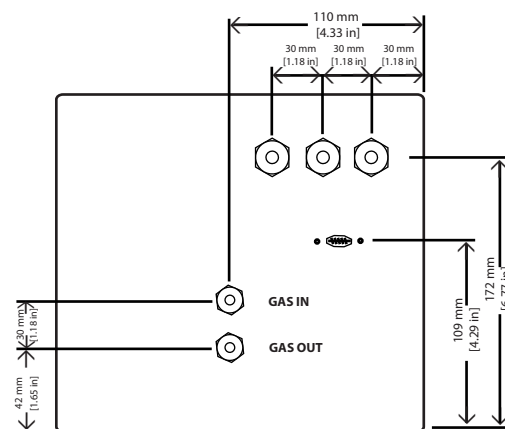
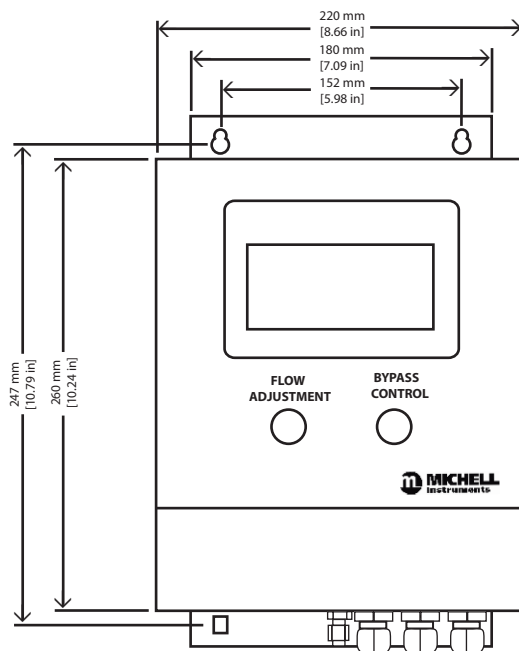
Please contact Michell Instruments for a full list of accessories and spares with order codes and prices.





# Technical Specifications

<b>Sensor Type</b>	
<b>Measurement Principle</b>	Zirconium Oxide Sensor with Metallic Sealed Reference and S Type T/C
<b>Performance</b>	
<b>Gas</b>	Clean and Dry
<b>Measurement Range</b>	0.01 ppm to 25% Oxygen (up to 100% optional)
<b>Accuracy</b>	Less than 2% of reading
<b>Response Time</b>	Less than 1s for 90% step change
<b>Repeatability</b>	±0.1%
<b>Linearity</b>	Better than ±1%
<b>Sample Flow Rate</b>	1 to 3 l/h with built-in fast loop
<b>Maximum Sample Pressure</b>	3 barg
<b>Maximum Sample Temperature</b>	100°C
<b>Atmospheric Pressure Compensation</b>	Built-in as standard
<b>Outputs</b>	
<b>Output Signal</b>	One 4-20 mA Linear with Galvanic Isolation Outputs; 2nd optional freely configurable 4-20mA output; One optional RS485 output – ModBus communication protocol
<b>Output Load</b>	Over 1000 Ohms
<b>Self-diagnostics</b>	Via touch-screen interface
<b>Output Ranges</b>	0.1ppm to 25%, freely configurable (up to 100% optional)
<b>Alarms</b>	2 threshold alarms, freely configurable 1 general fault alarm including flow alarm 1 remote flow alarm (optional)
<b>Display Resolution</b>	0.01 ppm between 0.01 ppm and 10 ppm 0.1 ppm between 10 ppm and 10 000 ppm 0.01% between 1% to 10% 0.1% between 10 to 25%
<b>Power Supply</b>	90 to 264 V AC, 47/63Hz
<b>Power Consumption</b>	50 VA
<b>Operating conditions</b>	
<b>Ambient Temperature Range</b>	0°C to 55°C
<b>Sensor Temperature</b>	600 to 800°C, optimised at 634°C
<b>Operating Humidity</b>	5 to 90% RH without condensation
<b>Mechanical specification</b>	
<b>Dimensions and weight</b>	Wall mount version: 200x220x290mm, 5kg Rack mount version: 19", 3U, 482.5x133x371.5mm, 10kg



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Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.  
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