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 and rack-mountable versions, both 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
- Rack and wall-mount versions available

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 a 90% 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 1 ppm, 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.

Highlights and Benefits

Fast response time
Due to its miniature size and unique design the MSRS Technology-based sensor of the XZR400TS responds to input changes in less than 11 seconds.

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 optional Auto Calibration in addition to a choice of calibration kits. Due to the extraordinary sensor stability no weekly or monthly calibration is needed.

Michell recommends performing the calibration as little as 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.

Minimal sample requirements
Due to the size and construction of the cell, only 2 l/hr sample is required – as opposed to other units requiring up to 1 l/min.

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 and RS485 Modbus communication as standard. An RS232 and flow alarm contact are available as options.

The wall mount is supplied with a single 4-20 mA as standard. It can also be supplied with a second 4-20 mA, RS232 or RS485 output plus a flow alarm.

With the second analog output an Autoranging option is available.

XZR400TS Range

XZR400TS-WM

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

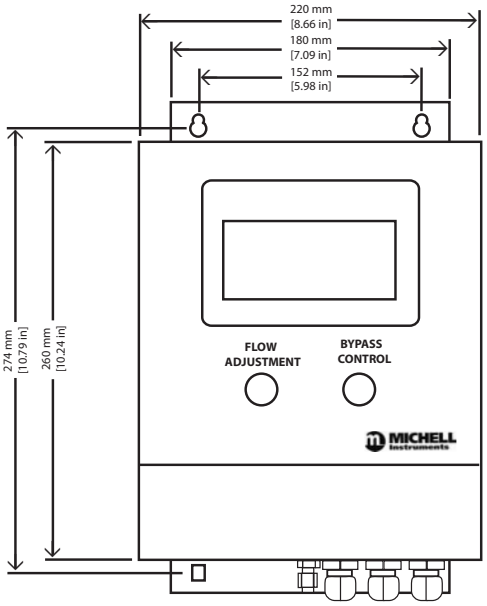
XZR400TS-RM

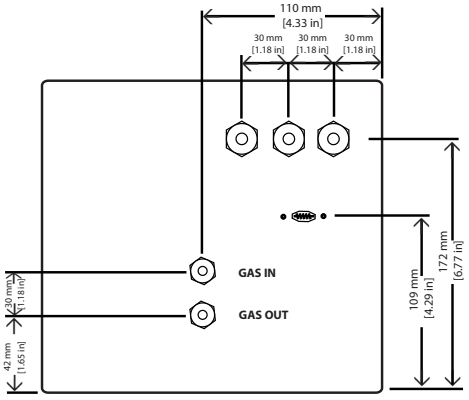
The rack-mountable version has all the features of the WM model, but fits into all standard rack sizes.

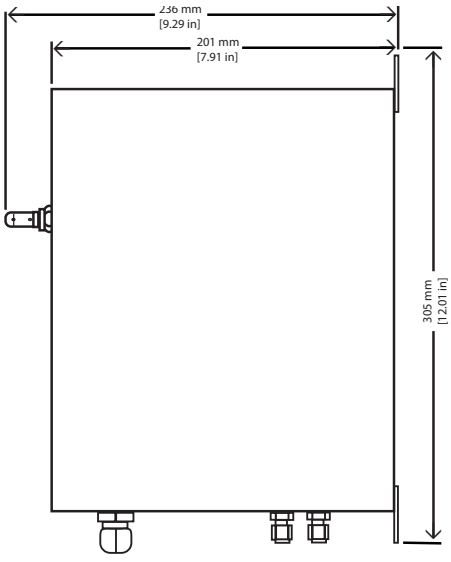
MICHELL Instruments

Technical Specifications

Sensor Type	
Measurement principle	Zirconium Oxide Sensor with Metallic Sealed Reference and S Type T/C
Performance	
Gas	Clean, dry, oil free with particles less than 3µm
Measurement range	0.01 ppm to 25% Oxygen (up to 100% optional)
Accuracy (intrinsic error)	Less than 2% of reading
Response time	<11 seconds
Repeatability	±0.1% of reading
Stability	1% per month
Linearity	Better than ±1%
Sample flow rate	1 to 3 l/h with built-in fast loop (0.04 to 0.11 scfh)
Drift	<1% of reading per week
Maximum sample pressure	2 barg (29 psig)
Maximum sample temperature	100°C (212°F)
Atmospheric pressure compensation	Built-in as standard
Outputs	
Output signal	One 4-20 mA Linear with Galvanic Isolation Output; 2nd freely configurable 4-20 mA output for RM version
Output load	Over 1000 Ω
Self-diagnostics	Via HMI
Output ranges	0.1 ppm to 25%, freely configurable (up to 100% optional)
Alarms	2 threshold alarms, freely configurable 1 general fault alarm including flow alarm 1 remote flow alarm (optional)
Display resolution	0.01 ppm between 0.1 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%
Power supply	90 to 264 V AC, 47/63Hz
Power consumption	50 VA
Operating Conditions	
Ambient temperature range	0 to +55°C (+32 to +131°F)
Sensor temperature	Optimized @ +634°C (+1172.2°F)
Operating humidity	5 to 90% RH without condensation
Mechanical Specification	
Dimensions and weight	Wall mount version: 200 x 220 x 290mm, 5kg (7.87 x 8.66 x 11.42", 11.02lb) Rack mount version: 19", 3U, 482.5 x 133 x 371.5mm, 10kg (18.99 x 5.24 x 14.63", 22.05lb)







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Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.
Issue no: XZR400_97204_V7_US_1113