

PRODUCT DATASHEET

Zircomat

In-Situ Stack Gas Oxygen Analyzer



Fast

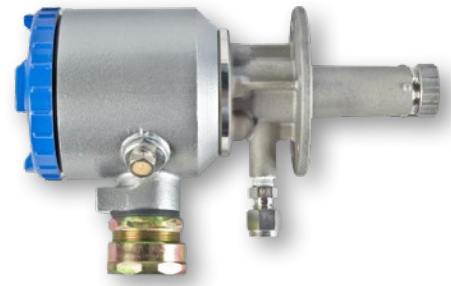
Accurate

Low Maintenance

- Efficient stack gas oxygen analyzer
- Ideal for power plants, refinery process heaters, blast furnaces, coke ovens, incinerators and small boiler and furnace installations
- Great for harsh, dirty and "hot" environments

Zircomat Stack Gas Oxygen Analyzer

The measurement of excess oxygen to improve energy efficiency has been well documented and is largely responsible for the reduced fuel consumption now common in power plants, refineries and even automotive. COSA Xentaur Zircomat (ZRM) stack gas oxygen analyzers are proven performers in many tough, hot, and dirty industrial applications where other systems fail.



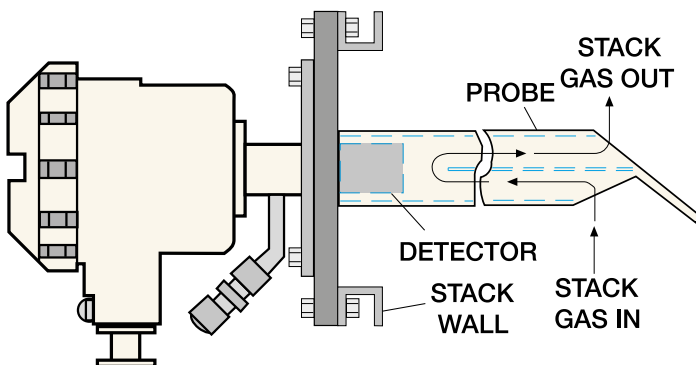
The Zircomat Oxygen Analyzers are well-proven with thousands of installations in power plants, refinery process heaters, blast furnaces, coke ovens, incinerators and small boiler and furnace installations worldwide.

The small detector can easily be serviced or replaced while the probe remains in place, thus no disruption of the process is required. The sample gas diffuser protects the sensor from exposure to sample gas contaminants and a built in verification port exposes the sensor to calibration gas. Calibrations can be performed manually or automatically at user programmable intervals.

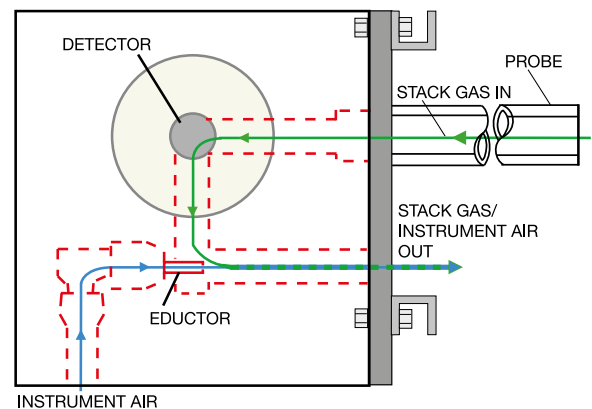
The detector remains the same for all Zircomat stack gas oxygen analyzers, regardless of probe configuration, materials, or lengths. Thus, inventory and maintenance requirements are greatly simplified.

Unique Probe Measurement Concept

The Zircomat stack gas oxygen analyzer utilizes a unique probe measurement concept. Gas sample flow is deflected to the base of the probe where the detector is installed. The flow deflection is caused by one of two means - either by a specially designed flow guide tube taking advantage of the pressure of the stack (ZFK, ZTB), or by an educator system, using a continuous small flow of compressed air. In either case, the probe remains in the stack while the detector can be replaced external of the stack.



ZFK, ZTB



High Temperature ZTA

Zirconat Electronic Transmitter

The transmitter, housed in a weatherproof enclosure, receives its signal through a cable (1000 feet max.) that is terminated at the detector. Oxygen concentrations are displayed on a large 3-digit LED display. Alarm conditions and operating mode are indicated by three LEDs. A second LCD display is used to display additional information and for interactive setup of the instrument utilizing the keypad.



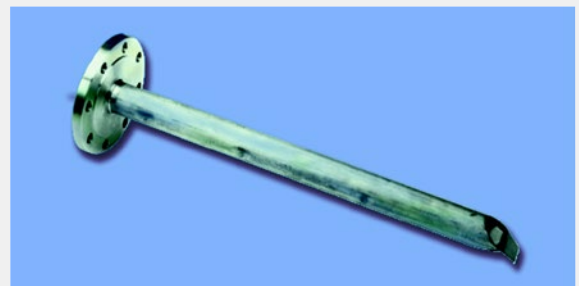
- Connections of the detector cable are made on a clearly labeled screw-terminal block located at the bottom of the transmitter inside the weatherproof enclosure.
- Measurement range of the transmitter is programmable from 0 to 2%(v) oxygen to 0 to 50%(v) oxygen in steps of 0.5%(v). The 4-20mA output signal is linear over the selected range and can be placed on hold for calibration and blow-down cycles.
- Blow-down, calibration, zero and span reference gas values are user programmable and are stored in non-volatile memory.
- Has four programmable alarm relays rated at 250VAC, 2A. Indications are HI/LO alarm, fault condition and operating mode (maintenance, calibration, blow-down).

Probe Choices

Four different probe types available in different lengths for demanding combustion situations.

Standard ZFK

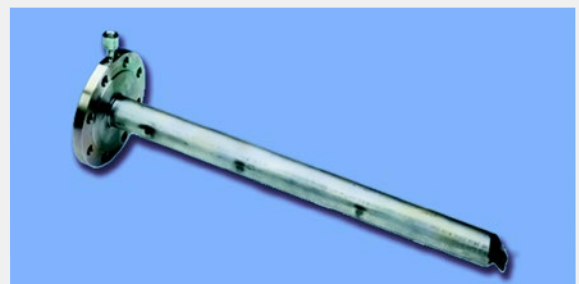
The ZFK is designed for oil or gas fired operations with stack gas temperatures up to 1150°F. This probe uses the natural pressure drop created from stack gas passing across the probe tip to deflect the sample gas past the oxygen detector for measurement. The detector detaches from the probe for service without removing the probe from the stack.



Standard ZFK

ZTB Self-Cleaning

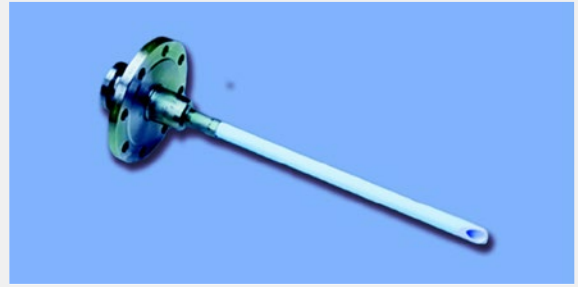
Designed for dirty applications with sample gas temperatures up to 1150°F, the ZTB probe uses plant air to clean the detector's sample gas filter automatically at programmable time intervals and is recommended for coal and black liquor fired boilers or incinerator applications with high fly ash content. The detector detaches from the probe for service without probe removal.



ZTB Self-Cleaning

ZFK-St High Temperature

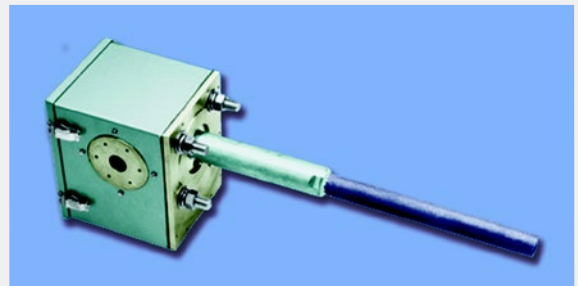
This probe is manufactured from ceramic and can be used on applications burning oil or gas as a fuel with stack gas temperatures up to 2200°F. The detector detaches from the probe for service without removing the probe from the stack. For special applications, high temperature alloys can also be supplied.



ZFK-St High Temperature

ZTA High Temperature

The ZTA probe is used for sample gas temperatures up to 2900°F and is available with a self-cleaning function. It uses compressed air to educt the sample from the stack. Applications include waste incinerators, soaking pits, and glass furnaces. A built-in heater maintains the sample above the dewpoint during start-up. The detector detaches for service without probe removal.



ZTA High Temperature

SPECIFICATIONS

Detector ZFK

Gas measured:	Oxygen in flue gas
Sensor:	Zirconia Oxide
Measurement Range:	0-2%(v) - 50%(v), in 0.5%(v) increments
Repeatability:	±0.5% of full scale
Linearity:	±1.0% of full scale
Sample gas temperature:	With Standard Probe (ZFK) -4°F to 1150°F (621°C) With High-Temperature Probe (ZFK-ST) -4°F to 2200°F (1204°C) With High Temperature Probe (ZTA) -4°F to 2900°F (1593°C)
Sample gas pressure:	-3 kPa to +3 kPa
Sample filter:	Alumina (50µm) and quartz paper
Wetted parts:	Zirconia, 316 stainless steel, platinum
Ambient temperature:	-4 to +140°F for cable section <260°F at flange surface when powered up
Calibration gas inlet:	316 stainless steel, for 1/4" tube
Reference air inlet (optional):	1/8 NPT, 1/8rc

Enclosure: Rating: IP55 equivalent
Color: Silver SS metallic
Dimensions: 8.3" x 3.9" (length x diameter)
Weight: 3.5 lbs
Detector mounting: Flange, horizontal plane $\pm 45^\circ$, ambient clean air surrounding

ZTA (Ejector system)

Air flow: 5-10 liters/minute
Blow down air pressure: 30-45 PSI
Exhaust gas processing: Returned to flue
Heater alarm: Alarm triggered when temperature drops below 212°F

Transmitter ZRM

Indication: Oxygen concentration: 3 digit LED
Mode display: 3 digit LED
Setup and additional information: LCD with 2 lines @ 16 digits

Output Signal: 4-20mA 500 Ω or 0-1V 100 Ω isolated, linear span over selected range. Output signal on hold during calibration and maintenance; hold can be released.

Communications: RS 485 (optional)

Output contacts: 4 contacts, normally open
Electrical rating: 250VAC, 2A
Function: Under maintenance, under cleaning, span gas, zero gas

Selectable alarms: High limit, low limit, high/low limit, fault alarm

Input contacts: 2 contacts
Electrical rating: ON at 1 Ω or less
Functions: Start automatic calibration, disable calibration

Calibration procedures: Manual with key operation, autocalibration (standard function) Programmable at intervals from 0 day 0 hours to 90 days 60 hours

Calibration range gas settings: Zero gas: 0.010%-50.000% O₂
Span gas: 8.000%-23.000% O₂

Features: Blowdown function (optional probe): Probe is periodically cleaned by blow-down with compressed air. Intervals between and duration of cleanings are programmable. (Interval: 00 hour 00 minutes to 99 hours 60 minutes; duration: 00 minutes 00 seconds to 9 minutes 60 seconds)
Optional combustion efficiency display: Calculates and displays combustion efficiency (requires K or R type thermocouple).
Rich mode display: When detector output voltage exceeds 200mV (0.0023%(vol) O₂), the LCD display indicates fuel rich condition and the LED displaying the detector output voltage flickers.
Self diagnosis: Error indication in event of detector temperature fault, zero calibration fault, span calibration fault, calibration disable, detector output fault.

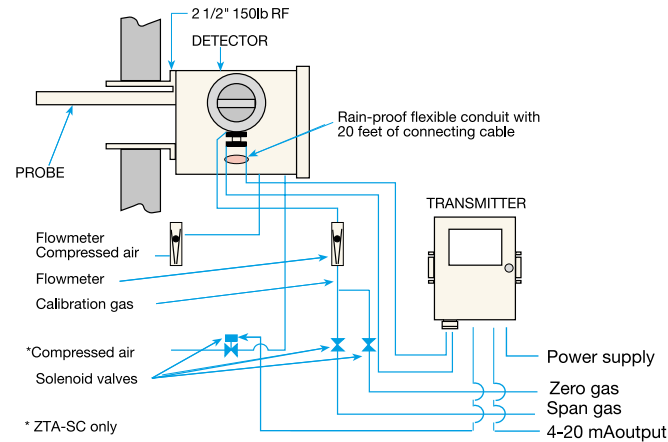
Ambient temperature: 14°F to 122°F (-10, +50C)

Power supply: 90 to 220 or 230 VAC, 50/60 Hz

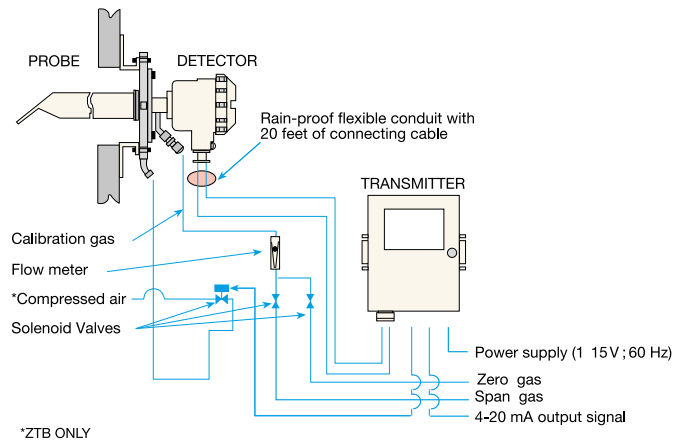
Enclosure: Material: Steel
 Color: Munsell 2.5Y8.4/1.2
 Rating: IP53 (dust proof, rain proof)
 Dimensions: 8.6" x 7.6" x 3.5"
 Weight: 7.7 lbs
 Mounting: Flush, panel, pipe

Multichannel O₂, CEM systems, and Portable Emission Analyzers are also available

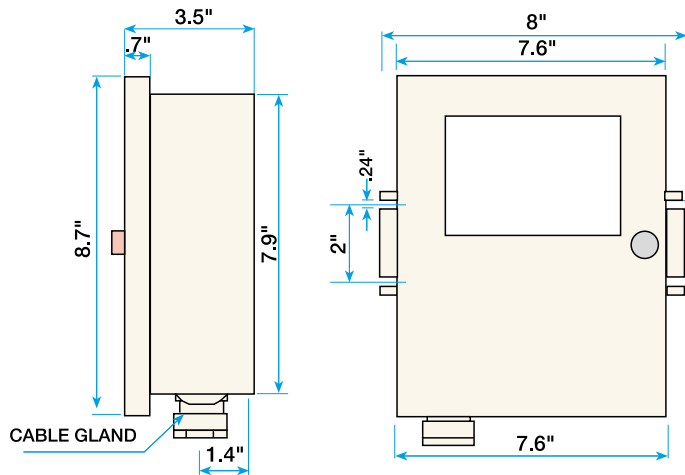
Diagrams and Dimensions



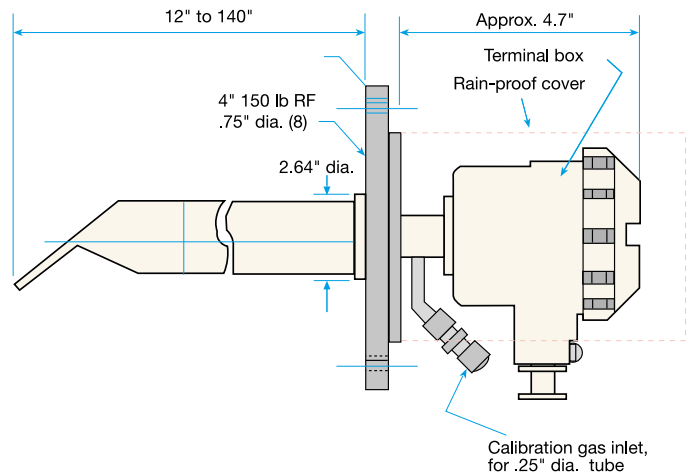
ZTA System Diagram



ZFK-ZTB System Diagram



ZRM Transmitter Dimensions



ZFK-ZTB Probe Dimensions

GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights manufactures and delivers premium sensors, monitors, detectors, analyzers, instrumentation, and software that are mission-critical to keep your operations, personnel, and the environment safe – every day across the globe.

Get the most reliable, precision analytical technologies available on the market today. We will work to match your needs and budget, and provide the optimal, and most stable process analysis solution for your application.

CENTERS OF EXCELLENCE | PROVIDING PROVEN SOLUTIONS

Process Insights is committed to solving our customers' most complex analytical, process, and measurement challenges everyday.

Process Insights The Americas

4140 World Houston Parkway
Suite 180
Houston, TX 77032
USA
+1 713 947 9591

Process Insights EMEA

ATRICOM
Lyoner Strasse 15
60528 Frankfurt
Germany
+49 69 20436910


Process Insights APAC

Wujiang Economic and Technology
Development Zone
No. 258 Yi He Road
215200 Suzhou
Jiangsu Province, China
+86 400 086 0106

For a complete range of products, applications, systems, and service options, please contact us at:
info@process-insights.com

For a complete list of sales & manufacturing sites, please visit:
<https://www.process-insights.com/about-us/locations/>

COSA Xentaur is a trademark of Process Insights, Inc. All other marks are property of their respective owners.



REVOLUTIONIZING MEASUREMENT

EVERYWHERE