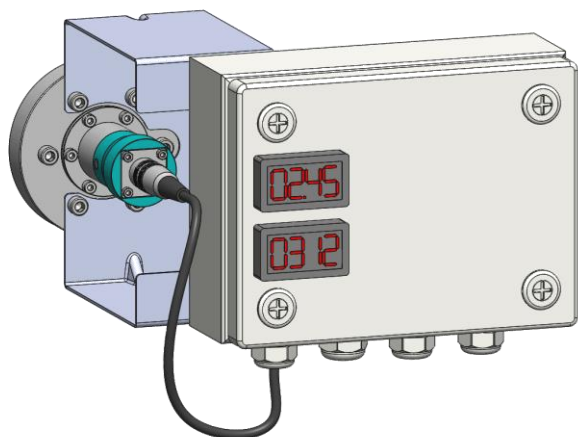


AFiN: IN SITU ZIRCONIUM OXYGEN & REDUCTORS INTEGRATED ANALYZER FOR COMBUSTION CONTROL



- > Integrated analyzer for combustion control up to 300°C
- > Key device to be integrated and added in every combustion regulation system
- > Revolutionizes the state-of-the-art in standard design for zirconia sensors used in O₂ analysis
- > High throughput manufacturing
- > Streamlined integration:
 - FiNCORE sensor with DIN connector.
 - Standard filter holder 100mm flange made from SS316L.
 - FiNCORE controller transmitter board.
 - FiNCORE standard cabinet with 2 x 4-20mA analog displays
 - Standard 24V DC power connection
 - Modbus RTU RS-485 communication
 - 2x 4-20mA NAMUR analog outputs

ZrO₂ FiNCORE OVERVIEW

The oxygen measurement enables the control of burner fuel/air ratios to ensure combustion efficiency and process safety. FiNCORE in-situ Combustion Control Analyzers can be installed in hazardous areas and can withstand critical environments such as:

- > Refinery process heaters
- > Petrochemical reactor furnaces
- > Industrial large-scale boilers
- > Metal fusion/Treatment furnaces
- > Glass industry furnaces
- > Large scale dryers (Paper, Wood...)

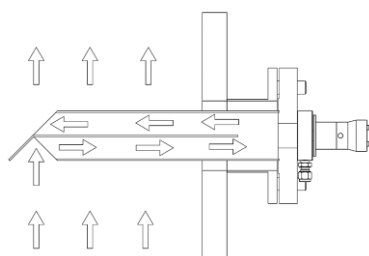
New Generation Analyzer with highest standard of accuracy and reliability

- > Multiplex long life sensor
 - O₂ with air/gas reference, acc. to Nernst law
 - pRed (Reducing potential), unburnt compounds production indicator
- > Sensibility down to 10ppm H₂ or CO
- > Robust versatile electronic board
- > Low maintenance probe design
- > Low response time
- > Built-in heater & thermocouple
- > Low heating inertia and gradient
- > Consistent repeatability
- > Superior linearity
- > High reproducibility due to serial production

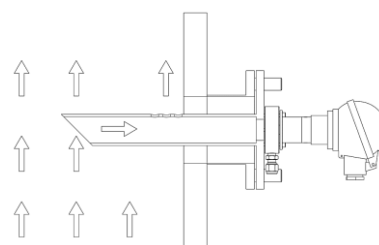
Sampling principle

- > Passive flue gas deviation
- > Low-maintenance cost & robustness
- > Low sampling response Time
- > Range of design, custom made:
 - Flue Dimension: 200mm to 5m
 - Flue gas Temp.: up to 300°C
 - Mating Flange dimension and type

Bypass Tube



Direct Tube



Analysis capabilities and configuration:

- > O₂ – 0.1% to 100% for combustion regulation
- > O₂ + O₂ – Redundancy with two probes or in one probe design
- > O₂ + pRed – For combustion efficiency assessment
- > O₂ / O₂ – Built-in redundancy for enhanced reliability and lower maintenance/calibration

Zr | O2 FiNCORE AFiN CHARACTERISTICS:

APPLICATION	In situ O2%, pRed, in combustion flue gas for process control
MEASUREMENT PRINCIPLE	Zirconium oxide Sensor
MEASUREMENT RANGE	O2: 0.1 - 100% pRed: 10 - 200 ppm H2, 5000ppm CO
MEASURED GAS TEMPERATURE	Up to 300°C
MEASURED GAS PRESSURE	-0.5 to +0.5 bar
RESPONSE TIME	At sampling port: T ₆₀ < 15s At calibration port: T ₆₀ < 4s
REPETABILITY	+/- 0.5% of full scale
LINEARITY	+/- 2% of value, not lower than 0.1%
SENSOR TEMPERATURE	600 to 800°C - regulated
POWER SUPPLY / CONSUMPTION	24V DC Average 10W – Up to 20W

CALIBRATION GAS	Recommended concentrations: Offset gas: 20.9% O ₂ (Instr. Air) Span gas: 1.0% O ₂
IN SITU SAMPLING SYSTEM	Probe mounted on made to order sampling tube inserted into the flue gas duct. See relevant data sheet
OUTPUT SIGNALS	4-20mA – NAMUR – max 1000 Ω RS485 RTU/MODBUS
WARM-UP TIME	< 10 min.
SENSOR HEATING REGULATION	S type thermocouple
STORAGE	Ambient temperature, <95%RH > 1 year
ACCESSORIES	Sampling tube: Direct, By-pass, Flow booster Calibration set

ORDERING INFORMATION:

Analyzer type AFiN - (process temperature up to 300°C – integrated transmitter)

FiNCORE SENSOR	
Product Number	Product Description
ZRPO2S-D	FiNCORE sensor with DIN connector for O2 measurement
ZRPC2S-D	FiNCORE sensor with DIN connector for O2 + pRed measurement

FILTER HOLDER WITH CALIBRATION PORT	
Product Number	Product Description
ZRF6-LO	Filter holder Ø 60 mm with SS316L filter and 6mm calibration port
ZRF0-LO	Filter holder Ø 100 mm with SS316L filter and 6mm calibration port

(¼" calibration port can be fitted upon request)

FiNCORE CONTROLLER BOARD	
Product Number	Product Description
ZRTOS-1GOM0	FiNCORE controller board for O2 measurement
ZRTCS-1GOM0	FiNCORE controller board for O2 + pRed measurement

SAMPLING TUBE	
Product Number	Product Description
STDL***FDY	Direct sampling tube, SS316L, 4"150 FF flange
STBL***FDY	By-pass sampling tube, SS316L, 4"150 FF flange

(***: tube length and flange dimension/type can be adjusted upon request)

CABINET AND ACCESSORIES	
Product Number	Product Description
ZMCI0-003	RAL 7035 painted steel cabinet, wall mounted, 1x 4-20mA display, 24V DC
ZMCIR-003	RAL 7035 painted steel cabinet, wall mounted, 2x 4-20mA display, 24V DC

OPTION: CALIBRATION SET	
Manual calibration set for O2 or O2+pRed analyzer upon demand	