

WDG-IV FLUE GAS OXYGEN ANALYZER

Close-coupled extractive design for fast response in a wide range of flue gas applications up to 3000°F (1648°C). Completely field serviceable.



SENSOR

Principle of Operation: Zirconium oxide for net oxygen measurement.

Output Range: From 0-1% to 0-100%

Accuracy: ± 0.75% of measured value or ± 0.05% oxygen, whichever is greater

Response: 90% of a step change < 5 sec.

Drift: < 0.1% of cell output per month (< 0.005% O₂ per month with 2% O₂ applied)

Aspirator Air Requirements: 10 to 20 scfh (4.7 to 9.4 L/min) at 15 to 100 psig (1 to 7 kg/cm²)

Max. Flue Gas Temp / Probe Type:
1300°F (704°C) / 316 SS
1875°F (1024°C) / 310 SS
3000°F (1648°C) / Hexoloy®

Probe Lengths:
SS: 24" - 108" (60 cm - 271 cm)
Hexoloy®: 24" - 72" (60 cm - 182 cm)

Max. Sample Dewpoint: 392°F (200°C) standard. High dewpoint option for sample dewpoints up to 700°F (371°C).

Sample Pressure: ± 10 in. water gauge

Environment:
Ambient Temp.: -5°F to 160°F (-20°C to 71°C); -5°F to 140°F (-20°C to 60°C) with Div. 2 Option
Relative Humidity: 10% to 90%, non-condensing

Enclosure: Lift-off NEMA 3R, weather resistant, stainless steel. Optional hinged NEMA 4X (IP56), explosion-proof, purged, and floor mount versions available.

Power Requirements: 115 VAC, ± 10%, 47-63 Hz, 600 VA max. (650 VA max. floor mount option); 230 VAC, ± 10%, 47-63 Hz, 1850 VA max. (1900 VA max. floor mount option)

Calibration Gas Requirements: Use calibration gases @ 10 psig, 1.5 scfh (0.70 kg/cm², 0.7 L/min.)

O₂ Span Gas: Air or from 1.0 to 100% O₂, balance N₂

O₂ Zero Gas: 2% or from 0.1 to 10% O₂, balance N₂

Communications: RS-485 2-way addressable

Environment:

Ambient Temp: 14°F to 122°F (-10°C to 50°C)

Relative Humidity: 10% to 80%, non-condensing

Enclosure: Standard weatherproof NEMA 4 (IP 56) wall/panel mount. Optional GP (General Purpose) wall mount, GP 19" rack mount, GP panel mount, or stainless steel weatherproof NEMA 4X (IP 56) wall/panel mount. All are UL Listed for NEC Class I, Division 2 areas. Purged and explosion-proof versions also available.

Calibration: Oxygen cell lifetime extender. Calibrate or verify calibration. Store last calibration and verification data. Selectable calibration gas run time and process recovery time. Timed automatic calibration with optional Remote Calibration Unit.

Power Requirements: Nominal 115-230 VAC ± 10%, 47-63 Hz, 75 VA max.

System Compliance:
EMC Directive 2004/108/EC
Low Voltage Directive 73/23/EEC

SERIES 2000 CONTROL UNIT

Display: Four-line x 20-character vacuum fluorescent. Displays combinations of oxygen, time and date, cell temperature, user programmable text, thermocouple mV or cell mV. Password protection, programmable pressure compensation and context-sensitive help are also provided.

Analog Output: Two isolated linear current outputs. Select O₂, cell temperature, thermocouple mV or cell mV. Each output can be 4-20 mA, 0-20 mA, 20-4 mA or 20-0 mA and is fully scalable. Hold or track during calibration and select degree of damping. Maximum load 1200 ohms.

Alarms: Two independent oxygen alarms, each high or low selectable. One alarm can be assigned as oxygen, calibrate or verify. Set relays to energize or de-energize on alarm.

Contact Rating: 0.5 A, 30V, 10 VA max. noninductive load, AC or DC

Diagnostics: Watchdog timer and service alarms. System test for A/D, RAM, EEPROM, and keypad. Display line 4 reserved for full text error and diagnostic messages. Twenty-entry event log.

EXCESS FUEL OPTION

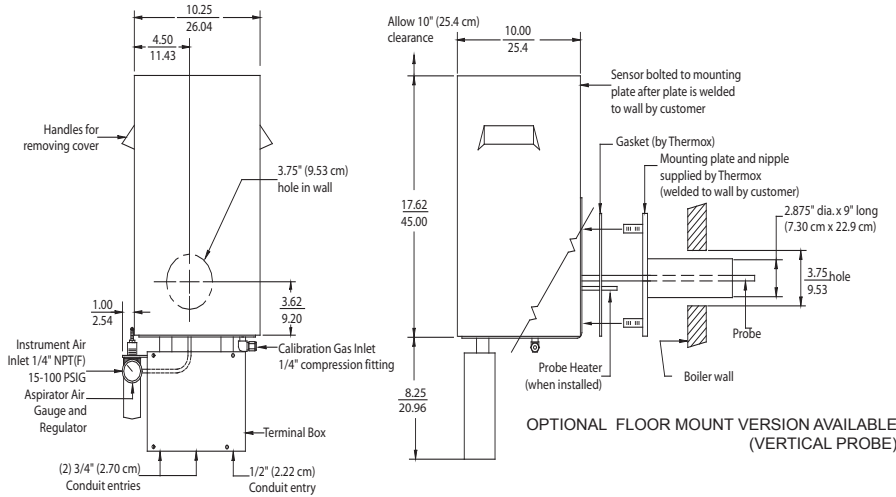
Extends operating range of analyzer from excess oxygen only to include substoichiometric conditions (excess fuel). Allows two-point calibration in excess fuel range. Measure, display, and provide alarms and analog outputs as follows:

- II Display Options: Excess fuel, combustibles, oxides/ fuel, fuel/ oxides, combined excess oxygen/ excess fuel (combustibles)
- II Display Range: 0-50% excess fuel
- II Output Range: 0-1% to 0-50% excess fuel
- II Alarms: Standard alarms can be used for high or low excess fuel levels

WDG-IV ANALYZER

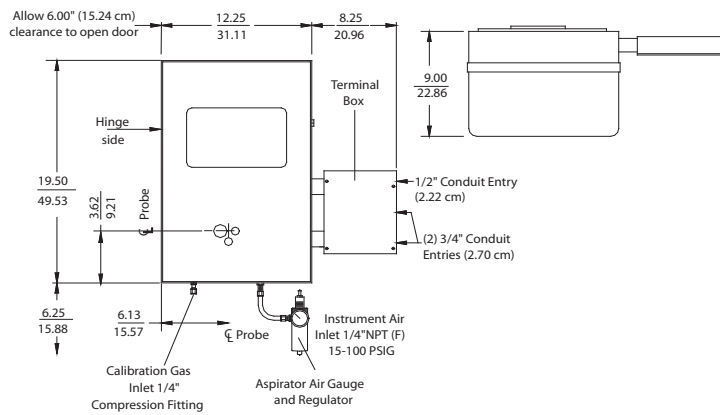
STANDARD LIFT-OFF SENSOR ENCLOSURE

APPROX. WEIGHT: 37.6 LB (17KG)



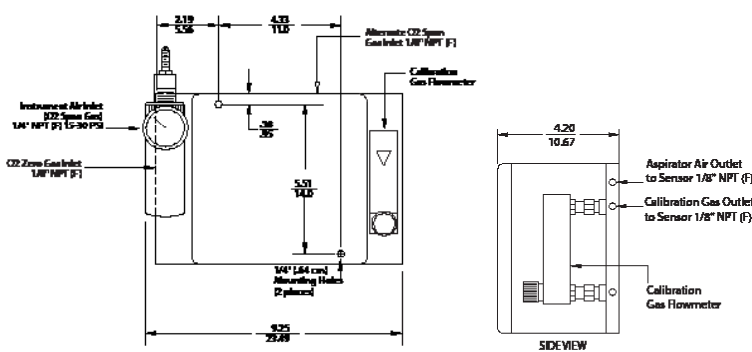
OPTIONAL: HINGED SENSOR ENCLOSURE

APPROX. WEIGHT: 53 LB (24 KG)



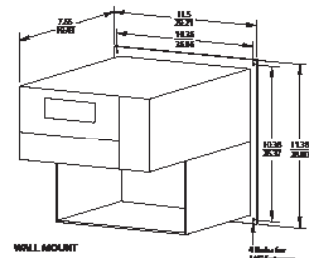
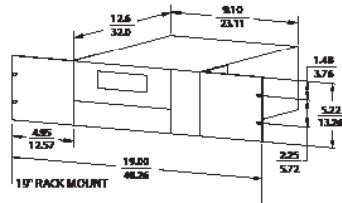
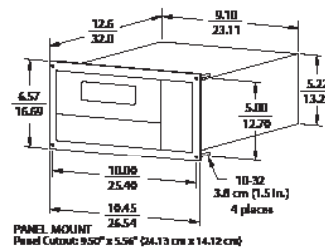
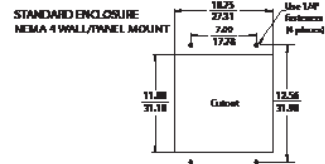
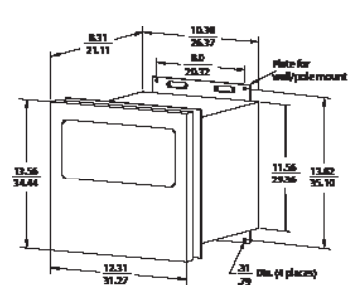
REMOTE CALIBRATION UNIT

RCU ENCLOSURE NEMA 4X - APPROX. WEIGHT: 8.0 LB (3.6 KG)



- NOTES:
1. All static performance characteristics are with operating variables constant.
 2. System accuracy referenced to 0.1 to 10% calibrated range.
 3. Response is to calibration gas (without flame arrestors).

CONTROL UNIT



APPROX. WEIGHTS
 NEMA 4 WALL/PANEL MOUNT: 28 LB (12.7 KG)
 19" RACK MOUNT: 14 LB (6.35 KG)
 PANEL MOUNT: 14 LB (6.35 KG)
 WALL MOUNT: 14 LB (6.35 KG)

THE THERMOX®

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