

THE RIGHT ANALYZER FOR *YOUR* APPLICATION!

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: 63% of a process step change < 3 secs.

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

Aspirator Air Requirements: 10 to 20 scfh (4.72 to 9.4 L/min) at 15 to 100 psig (1.05 to 7.04 kg/cm²)

Max. Flue Gas Temp / Probe Type / Lengths:
 1300°F (704°C) / 316 SS / 36" - 108" (91 cm - 271 cm)
 1875°F (1024°C) / RA330 / 36" - 108" (91 cm - 271 cm)
 3000°F (1649°C) / Hexoloy[®] / 24" - 72" (60 cm-182 cm)

Max. Sample Dewpoint: 450°F (232°C) standard. High dewpoint sensors are available for sample dewpoints up to 700°F (371°C).

Sample Pressure:
 ± 2 psig: no adjustments required
 ± 2 to ± 9 psig: software selectable
 ± 10 psig and above: consult factory

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

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: 1 A, 30V 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.

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 89/336/EEC
 Low Voltage Directive 73/23/EEC

Excess Fuel Software 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:

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

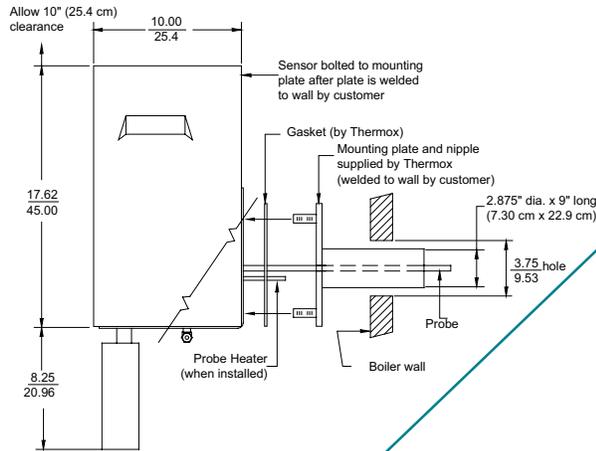
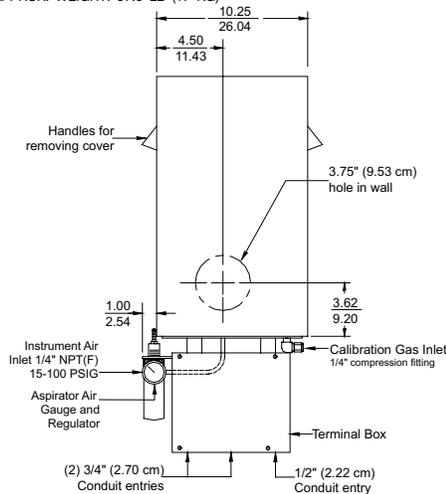
DIMENSIONS

SENSOR

APPROX. WEIGHT: 37.6 LB (17 KG)

STANDARD LIFT-OFF ENCLOSURE

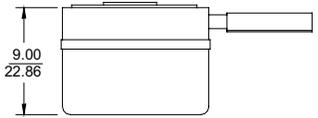
INCHES
CM



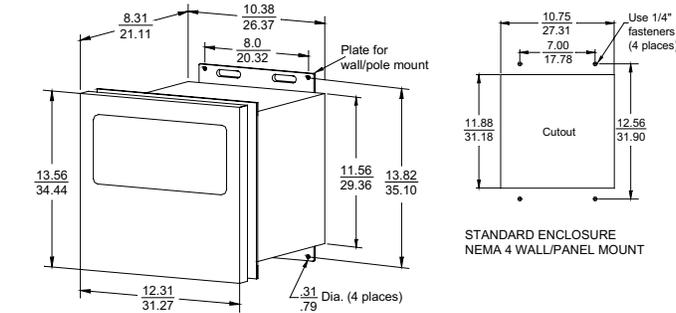
OPTIONAL FLOOR MOUNT VERSION AVAILABLE (VERTICAL PROBE)

OPTIONAL HINGED ENCLOSURE

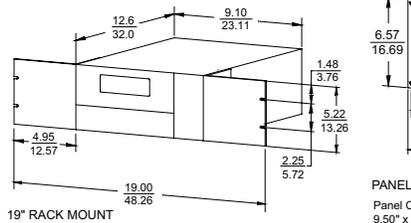
APPROX. WEIGHT: 53.0 LB (24.0 KG)



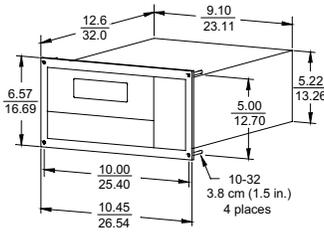
CONTROL UNIT



STANDARD ENCLOSURE NEMA 4 WALL/PANEL MOUNT

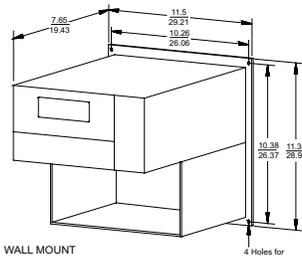


19" RACK MOUNT

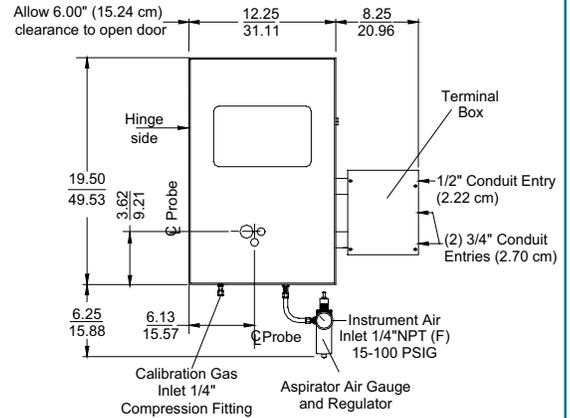


PANEL MOUNT

Panel Cutout 9.50" x 5.56" (24.13 cm x 14.12 cm)

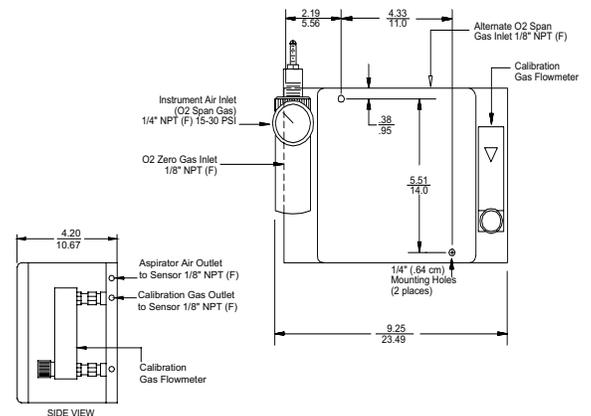


APPROX. WEIGHTS
NEMA 4 WALL/PANEL MOUNT: 28 LB (12.7 KG)
19" RACK MOUNT: 14 LB (6.35 KG)
PANEL MOUNT: 14 LB (6.35 KG)
WALL MOUNT: 14 LB (6.35 KG)



REMOTE CALIBRATION UNIT

RCU ENCLOSURE NEMA 4X
APPROX. WEIGHT: 8 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.

One of a family of innovative process analyzer solutions from AMETEK Process Instruments. Specifications subject to change without notice.

USA - Pennsylvania
150 Freeport Road
Pittsburgh, PA 15238
Ph. 412-828-9040
Fax 412-826-0399

MANUFACTURING LOCATIONS



CANADA
2876 Sunridge Way N.E
Calgary, AB T1Y 7H9
Ph. 403-235-8400
Fax 403-248-3550

USA - Delaware
455 Corporate Blvd.
Newark, DE 19702
Ph. 302-456-4400
Fax 302-456-4444

USA - Oklahoma
2001 N. Indianwood Ave.
Broken Arrow, OK 74012
Ph. 918-250-7200
Fax 918-459-0165

AMETEK
PROCESS INSTRUMENTS
www.thermox.com

© 2003, by AMETEK, Inc. All rights reserved.
605PDF (P260)



SUPPORT LOCATIONS

USA - Texas
Ph. 281-463-2820
Fax 281-463-2701

CHINA - Beijing
Ph. 86-10-85262111
Fax 86-10-85262141

CHINA - Shanghai
Ph. 86 21 6426 8111
Fax 86 21 6426 7054

FRANCE
Ph. 33 1 30 68 89 00
Fax 33 1 30 68 89 99

GERMANY
Ph. 49 21 59 91 36 0
Fax 49 21 59 91 36 80

MIDDLE EAST - Dubai
Ph. 971-4-881 2052
Fax 971-4-881 2053

SINGAPORE
Ph. 65-6484-2388
Fax 65-6481-6588