

Product Data Sheet

PDS 340.C01

May, 2010

Oxymitter™

Now
Offered With
Xi Advanced Electronics

In Situ Oxygen Transmitter for Hazardous Area Applications

- Outstanding accuracy
- Electronics mounted to probe or separate
- Optional Xi advanced electronics
 - large backlit LCD display
 - advanced software features
 - Wireless - via THUM™ Adaptor
- Adaptable to any existing O₂ probe installation
- Advanced sensor diagnostics
 - alarm indicates when calibration is recommended
- Optional explosion-proof rating
 - ATEX II 2 G EExd IIB + H2 T2/T6
 - Class I, Div. I, Groups B, C and D
- Digital HART® or FOUNDATION™ fieldbus communications
 - AMS/PlantWeb® compatible
- Fully field-repairable

THE LATEST BREAKTHROUGH FOR COMBUSTION FLUE GAS ANALYSIS

The Oxymitter In Situ Oxygen Transmitter was the world's first in situ, zirconium oxide-based oxygen transmitter for flue gas measurement. These oxygen measurements can be used in a control system or by a boiler operator to fine tune burner fuel/air ratios for maximum efficiency. Ideal for:

- boilers
- kilns
- process heaters
- reheat furnaces

Emerson Process Management is the leader in oxygen flue gas analyzer technology. Our in situ, zirconium oxide oxygen analyzers have long been established as industry standards. We've combined our expertise with the latest Rosemount transmitter technology to create a truly revolutionary package – the Oxymitter.

The Oxymitter integrates an oxygen probe and field electronics into a single, compact package. The probe inserts directly into a flue gas duct to measure oxygen in combustion processes. No sampling system is required.

A NEMA 4X, IP 66 Rosemount transmitter housing mounts directly to the probe and contains the transmitter's electronics, replacing common stand-alone field electronics.

ROSEMOUNT
Analytical

Visit our website at www.raihome.com
On-line ordering available.



This integrated design minimizes the costs of installing separate probe cable, conduit and electronics. The Oxymitter electronics also require 95% less power to operate. So, its components last longer. Traditional architecture with remote-mounted electronics is also offered.

The HART® protocol provides a link into Emerson Process Management's PlantWeb® field-based architecture. Instrument technicians can interface with the Oxymitter from the control room or any location where the transmitter's signal wires terminate. Service diagnostics and calibrations can be performed remotely with a HART hand-held communicator or a personal computer equipped with AMS.

The Oxymitter is fully field-repairable. The probe's design provides convenient access to internal probe components so technicians can service the unit in house. The cell and heater/thermocouple are fully field-replaceable. The Oxymitter contains no potentiometer adjustments or jumpers.

The Oxymitter In Situ Oxygen Transmitter operates at process temperatures up to 1300°F (700°C), providing a fast response with high accuracy and reliability. Available lengths from 18 inches to 18 feet.

Optional accessories for the Oxymitter include:

- auto calibration gas sequencer
- remote, loop-powered Vacuum Fluorescent display of oxygen reading
- high temperature accessories for temperatures up to 1832°F (1000°C)
- flame arrestor
- abrasive shield


EMERSON
Process Management

THE OXYMITTER OXYGEN TRANSMITTER IS COMPLETELY FIELD-REPAIRABLE



Diffusion Filter and Sensor Cell Assembly

- Outstanding accuracy— + or - .75% of reading or .05% O₂
- Special cells for tough service in SO₂ and HCL
- Rugged steel cell holder – cells will not crack



Heater/Thermocouple Assembly

Hazardous Area – OXT4C/5C



- ATEX II 2 G EExd IIB + H2 T2
- CSA/FM Class I, Div. I, Groups B, C and D
- Lengths from 18" (.9m) to 6'

Electronics

- -40°F to 185°F(-40°C to 70°C) ambient temperature limit
- HART or FOUNDATION™ fieldbus communications
- “Calibration Recommended” diagnostic

Integral to Probe or Remote Mounted



- Lowest cost of installation
- Bright gas fluorescent local operator interface (LOI)
- Thru-glass infrared pushbuttons are suitable for hazardous areas

Optional Xi Enhanced Interface



- Easy-to-read backlit display
- Easy-to-use keypad
- IP66 (NEMA 4X) enclosure (general purpose only)
- Advanced software features
- Loss of flame relay option turns heater off upon flame loss

Advanced Software features (available only with the Xi electronics)

Extended Process Temperature Range to 800°C (1562°F)

The X-STREAM oxygen analyzer employs a heater and thermocouple to maintain a temperature setpoint at 736°C (1357°F). Temperature control is maintained within $\pm 1^\circ\text{C}$ to process temperatures of about 705°C (1300°F). This is satisfactory for most applications, but excursions to higher temperatures can occur in many processes. In these instances, the heater is turned off and the process temperature is utilized to heat the sensing cell.

The oxygen reading is adjusted immediately to compensate for the varying process temperatures. It should be noted that cell life will be reduced by continuous operation at temperatures above 705°C (1300°F). If process temperatures are expected to continuously be above 705°C, we recommend the use of a bypass or probe mounting jacket accessory (see page 10).

Stoichiometer

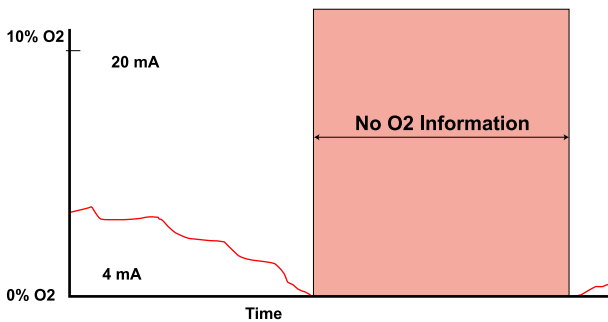
Process upsets can sometimes cause a combustion process to go into substoichiometric or reducing conditions. The oxygen readings from one or more probes may decline all the way to zero. The stoichiometer cell will measure the amount of oxygen deficiency during these reducing conditions. The trends in your DCS can be set up for a lower range limit of -1 or -2% oxygen to depict the level of oxygen deficiency.

The operator can see if his control actions to recover are having the desired effect. These types of events do not occur frequently, but knowing the parameters of the situation prevents overcorrecting while coming out of the reducing condition.

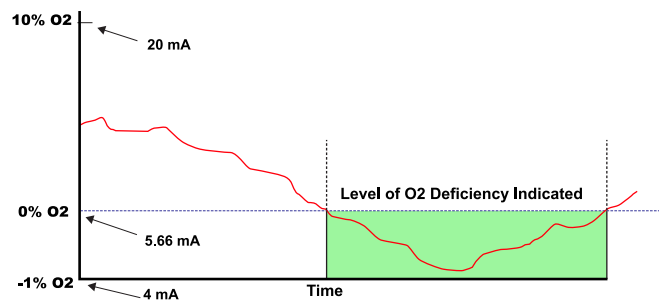


Acid-Resistant Stoichiometer Cell

Typical DCS Trend During a Reducing Process Event



DCS Trend With X-STREAM Stoichiometer Feature



Programmable Reference

The zirconium oxide sensing technology has historically measured process oxygen by using ambient or instrument air as a reference (20.95% oxygen). The sensor develops most of its signal at the low oxygen levels typically found in combustion flue gases (2-4% oxygen) and is most accurate at these levels. When measuring at levels near ambient, however, the sensor develops only a few millivolts of signal and accuracy degrades.

The programmable reference feature permits the user to use a bottled reference gas of low oxygen value (.4% oxygen recommended). When measuring at or near 21% oxygen, a strong negative oxygen signal results with much improved accuracy. A bottle of reference gas typically lasts about a month at the low flows required.

Typical applications include:

Flue Gas Recirculation – controlling the mixing of flue gases into the burner windbox prior to the burner to reduce NOx emissions.

Moisture Monitoring – measuring the amount of moisture coming off of industrial dryers by noting the dilution effect water vapor has on the normal 20.95% ambient drying air.

Enriched Oxygen Combustion – Pure oxygen is sometimes mixed in with the combustion air to increase heat at the flame. This is used in steel and other metals reduction processes and also in some catalyst regenerators.

SPECIFICATIONS 1

Measurement Specifications

Net O₂ Range: variable 0-10% to 0-40%
(Xi electronics offer 0-50% O₂ range)

Accuracy in Oxidizing conditions: ±0.75% of reading or 0.05% O₂, whichever is greater

Lowest detectable limit— .02% O₂

Process Temperature Effect— less than .05% O₂ from 100-700°C

System Speed of Response to Calibration Gas:

Initial response in less than 3 seconds, T90 in less than 8 seconds. Response to process gas changes will vary, depending on process gas velocity and particulate loading of the diffuser

Calibration Validity: Presentation of calibration gases matches the normal process to within ±.02% O₂

Accuracy in reducing conditions: ±.10% of reading, or .1% O₂, whichever is greater

System Response in Reducing Conditions:

going from oxidizing to reducing
-T90 in 120 sec.
going from reducing to oxidizing
-T90 in 30 sec.

Environmental Specifications

Transmitter Probe: Process-wetted materials are 316L or 304 stainless steel

Process

Temperature Limits: 0 to 705°C (32-1300°F) with Oxymitter electronics
0 to 800°C (32-11472°F) with Xi electronics
*reduced cell life can be expected if operated continuously at temperatures above 705°C (1300°F) optional bypass and jacket accessories permit operation to 1050°C (1922°F)

Oxymitter Transmitter

Electronics Housing

(integral to probe, or remote mounted): Low copper aluminum IP 66 (NEMA 4X), with reference air exhaust port piped to clean area

Oxymitter electronics ambient temp.

Limits: -40° to 80°C (-40° to 176°F)

Temperature limit as measured inside Oxymitter electronics:

-40° to 85°C (-40° to 185°F)

Temperature limit of see-thru IR pushbuttons:

-40° to 70°C (-40° to 158°F)

Optional

Xi Electronics: NEMA 4X, Polycarbonate Material

General Purpose Certifications:



Xi Ambient Temp.

Limits: -20° to 55°C (-4° to 131°F)

Xi Temp. Limits as measured inside the housing:

-20° to 55°C (-4° to 113°F)

Xi LCD display

Temp. Limits: -20° to 55°C (-4° to 131°F)

Installation Specifications

Probe Mounting

Flange:

vertical or horizontal — 2" 150# (4.75" (121mm) bolt circle)
DIN (145mm (5.71") bolt circle)

Note: flanges are flat-faced, and for mounting only. Flanges are not pressure-rated.

Spool piece P/N 3D39761G02 is available, to offset electronics housing from hot ductwork.

Many adaptor flanges are available to mate to existing flanges.

Probe Lengths and Approximate Shipping weights:

18 in. (457 mm) package:	16 pounds (7.3 kg)
3 foot (0.91 m) package:	21 pounds (9.5 kg)
6 foot (1.83 m) package:	27 pounds (12.2 kg)
9 foot (2.74 m) package:	33 pounds (15.0 kg)
12 foot (3.66 m) package:	39 pounds (17.7 kg)
15 foot (4.6 m) package:	45 pounds (20.5 kg)
18 foot (5.5 m) package:	51 pounds (23 kg)

Reference Air

(optional):

2 scfh (1l/m), clean, dry, instrument quality air (20.95% O₂), regulated to 2.5 psi (34kPa)

Calibration:

Semi-automatic or automatic

Cal Gases:

.4% O₂ and 8%, balance N₂ recommended

Cal Gas Flow:

5 scfh (2.5 l/m)

Heater Electrical

Power:

100 - 240V, ±10% 50/60 Hz 1/2" — 14" NPT conduit ports

Traditional

Architecture Cable:

200 foot (61m) maximum length

Power Consumption

of Probe Heater:

776VA maximum during warm-up

Electrical Power of Oxymitter or optional

Xi electronics:

120 to 240V, ±10% 50/60 Hz

Power Consumption

of Xi:

10 watts maximum

Xi Alarms Relays:

2 provided - 2 amps, 30 VDC

Xi Optional Loss of Flame Contact:

Removes heater power

Electrical Noise:

Meets EN 61326, Class A

Optional Hazardous Area Certifications:

Hazardous Area Oxymitter with Integral Electronics:

KEMA/ATEX II 2 G EEx d IIB+H₂ T6 (Elect Comp)/T2 (Probe)
CSA Class I, Division 1, Groups B, C, D T2
Class I, Zone 1, Ex d IIB+H₂ T2
Class I, Zone 1, AEx d IIB+H₂ T2
FM Class I, Division 1, Groups B, C, D T2
Class I, Zone 1, AEx d IIB+H₂ T2

Hazardous Area Oxymitter with Remote Electronics:

KEMA/ATEX II 2 G EEx d IIB+H₂ T2 (Remote Probe)
II 2 G EEx de IIB+H₂ T6 (Remote Electronics)
CSA Class I, Zone 1, Ex d IIB+H₂ T2 (Remote Probe)
Class I, Zone 1, Ex de IIB+H₂ T6 (Remote Electronics)
Class I, Zone 1, AEx d IIB+H₂ T2 (Remote Probe)
Class I, Zone 1, AEx de IIB+H₂ T6 (Remote Electronics)
FM Class I, Zone 1, AEx d IIB+H₂ T2 (Remote Probe)
Class I, Zone 1, AEx de IIB+H₂ T6 (Remote Electronics)

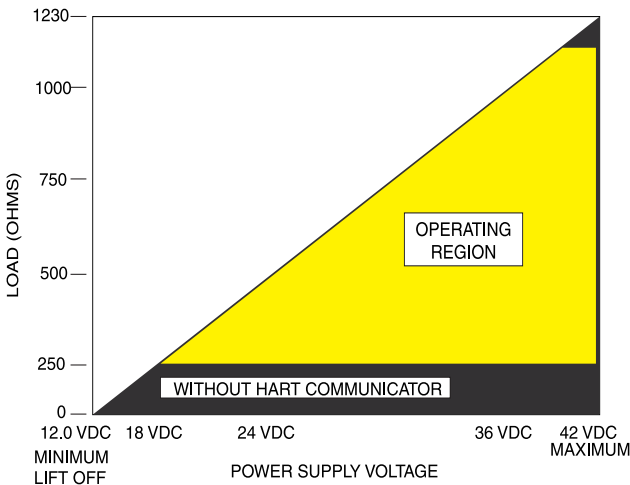
* **Note that optional Xi electronics are designed for general purpose use only.**

Traditional Architecture

Cable: 200ft (61m) maximum length

Power Consumption of Probe Heater: 776VA maximum during warm-up

Transmitter Electrical Power: 12 – 42VDC, (loop-powered from the control room or from the Xi box)



Power Supply and Load Requirements

Electrical Power

for Xi: 100-240V ±10%, 50-60Hz

Power Consumption

of Xi: 12VA maximum or
776VA maximum with Traditional Architecture, 120V, Probes.
450VA maximum with Traditional Architecture, 44V Probes

Alarm Relay Outputs: Two provided - 2 Amperes, 30 VDC, Form-C

Optional Loss of Flame Input:

internally power input to remove heater power, actuated via dry contact output from prove of flame device.



Emerson Process Management has satisfied all obligations coming from the European legislation to harmonize the product requirements in Europe. ¹ All static performance characteristics are with operating variables constant. Specifications subject to change without notice.

Probe Selection Guide

Hazardous Area

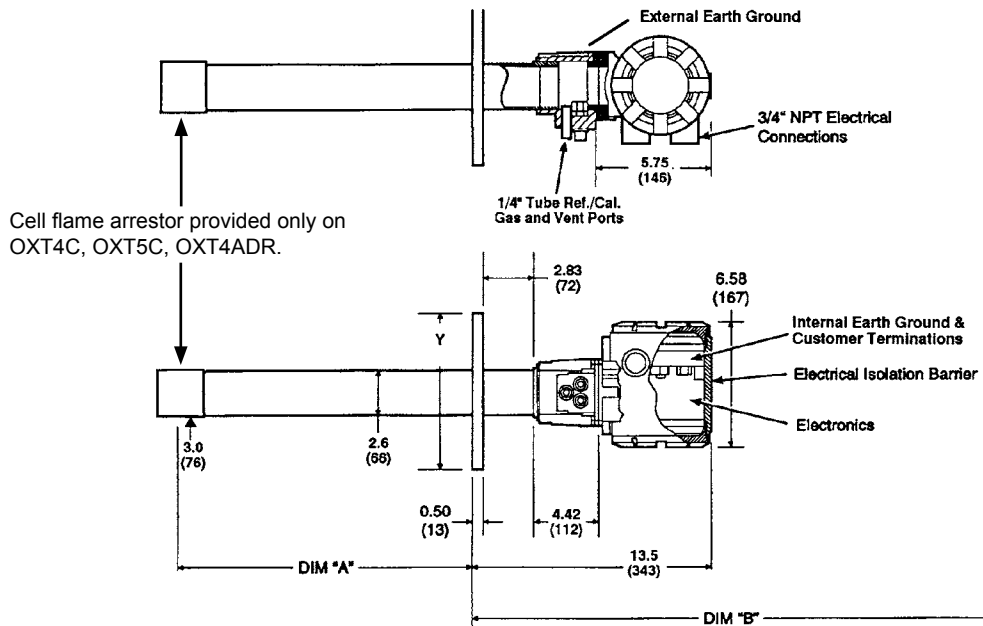
With cell flame arrestor (process is considered to be within hazardous area)

HART communications - OXT4C.....	pg. 8
FOUNDATION Fieldbus™ Communications - OXT5C	pg. 10
Direct Replacement Probe (for use with existing electronics) - OXT4CDR.....	pg. 12

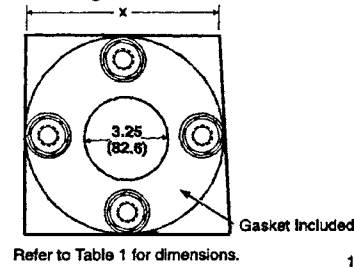
Without cell flame arrestor (process is not considered to be within hazardous area)

HART communications- OXT4CNF	pg. 13
FOUNDATION Fieldbus™ Communications - OXT5CNF.....	pg. 14
Direct Replacement Probe (for use with existing electronics) - OXT4CDRNF	pg. 16
Xi enhanced interface (safe area only).....	pg. 19
Autocalibraton Accessories (safe area only)	pg. 20

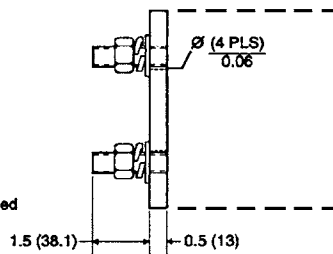
OUTLINE DIMENSIONS FOR OXYMITTER HAZARDOUS AREA OXYGEN TRANSMITTER



Mounting Plate Outline



Note: All dimensions are in inches with millimeters in parentheses.



	Dimensions Dia. in. (mm)	
	ANSI	DIN
Mtg. Plate (x)	7.75 (197)	8.5 (215)
Stud Size	5/8" - 11	M16 x 2
4 Studs Eq. Sp. on BC	6.00 BC (152.4) BC	6.70 BC (170) BC
Flange (Y)	7.5 (190)	8.27 (210)

	Dim "A" Insertion Depth	Dim. "B" Removal Envelope
18 in. (457 mm) Probes	18.1 (460)	31.6 (803)
3 ft. (0.91 m) Probes	36.1 (917)	57.0 (1448)
6 ft. (1.83 m) Probes	72.1 (1831)	85.6 (2174)

ORDERING INFORMATION – Hazardous Area Oxymitter with HART® Communications. Cell flame arrestor included (process gases are considered to be within hazardous area). Optional Xi electronics not applicable.

Model	Description
OXT4C	In Situ Oxygen Transmitter – Explo-Proof – HART® Smart (Oxymitter 4000)

Level 1 Sensing Probe Type With Flame Arrestor

1	Ceramic diffusion element probe (ANSI) 3" 150 lb. bolt circle
2	Snubber diffusion element (ANSI) 3" 150 lb. bolt circle
3	Ceramic diffusion element probe (DIN 2527) 1/4" tube fittings
4	Snubber diffusion element (DIN 2527) 1/4" tube fittings
7	Ceramic diffusion element probe (ANSI) 3" 300 lb. bolt circle
8	Ceramic diffusion element probe (ANSI) 4" 300 lb. bolt circle

Level 2 Probe Assembly

0	18 in. (457mm) probe
3	3 ft. (0.91m) probe
5	6 ft. (1.83m) probe

Level 3 Mounting Adapter (stack side)

0	No adapter plate (0 must also be chosen under mounting adapter – probe side)
1	New Installation – square weld plate with studs
2	Model 218 mounting plate (with Model 218 shield removed)
3	Competitor's mount

Level 4 Mounting Adapter (probe side)

0	No adapter plate
1	Probe only (ANSI)
4	Probe only (DIN)

Level 5 Electronic Housing and Filtered Customer Termination – NEMA 4X, IP 66

12	HART® electronics, mounted integral to probe, transient protected termination, ATEX EExd IIB + H2 T2
14	HART® electronics, mounted remotely, transient protected termination, requires cable ATEX EExd IIB + H2 T2
22	HART® electronics, mounted integral to probe, transient protected termination, Class I, Div I, Group B, C and D
24	HART® electronics, mounted remotely, transient protected termination; requires cable CSA/FM Class I, Div. I, Group B, C and D

Level 6 Communications

1	Membrane keypad – HART capable
2	Membrane keypad – HART capable, glass window
3	Gas fluorescent LOI HART capable, glass window, English only

ORDERING INFORMATION (continued)

Level 7		Language
	1	English
	2	German
	3	French
	4	Spanish
	5	Italian

Level 8		Termination Filtering
	00	Specified as part of electronic housing

Level 9		Calibration Accessories
	00	No hardware
	01	Cal./ref. flowmeter and reference pressure regulator
	02	Autocalibration Systems – order by separate part number (for safe areas only)

Level 10		Hazardous Area Approval
	00	Specified as part of electronic housing

Level 11		Electronics to Probe Cable
	00	No cable – integral electronics
	10	20' (6m) cable – remote electronics
	11	40' (12m) cable – remote electronics
	12	60' (18m) cable – remote electronics
	13	80' (24m) cable – remote electronics
	14	100' (30m) cable – remote electronics
	15	150' (45m) cable – remote electronics
	16	200' (61m) cable – remote electronics

ORDERING INFORMATION – Hazardous Area with FOUNDATION™ Fieldbus Communications. Cell flame arrestor included (process gases are considered to be within hazardous area). Optional Xi electronics not applicable.

Model	Description
OXT5C	In Situ Oxygen Transmitter – Explo-Proof with FOUNDATION™ fieldbus (Oxymitter 5000)

Level 1 Sensing Probe Type With Flame Arrestor	
1	Ceramic diffusion element (ANSI) 3" 150 lb. bolt circle
2	Snubber diffusion element (ANSI) 3" 150 lb. bolt circle
3	Ceramic diffusion element (DIN 2527) 1/4" tube fittings
4	Snubber diffusion element (DIN 2527) 1/4" tube fittings
7	Ceramic diffusion element probe (ANSI) 3" 300 lb. bolt circle
8	Ceramic diffusion element probe (ANSI) 4" 300 lb. bolt circle

Level 2 Probe Assembly	
0	18" (457mm) probe
3	3' (0.91m) probe
5	6' (1.83m) probe

Level 3 Mounting Adapter (stack side)	
0	No adapter plate
1	New Installation – square weld plate with studs
2	Model 218 mounting plate (with Model 218 shield removed)
3	Competitor's mount

Level 4 Mounting Adapter (probe side)	
0	No adapter plate
1	Probe only (ANSI)
4	Probe only (DIN)

Level 5 Electronic Housing – NEMA 4X, IP 66	
12	FOUNDATION™ fieldbus electronics, mounted integral to probe, transient protected termination, ATEX EExd IIB + H2 T2
14	FOUNDATION™ fieldbus electronics, mounted remotely with transient protected termination, requires cable ATEX EExd IIB + H2 T2
22	FOUNDATION™ fieldbus electronics, mounted integral to probe, transient protected termination, Class I, Div I, Group B, C and D
24	FOUNDATION™ fieldbus electronics, mounted remotely, transient protected termination; requires cable Class I, Div. I, Groups B, C and D

Level 6 Operator Interface	
1	Membrane keypad – fieldbus blind cover
2	Membrane keypad – fieldbus, window cover
3	Gas fluorescent LOI, fieldbus, English only, window cover

ORDERING INFORMATION (continued)

Level 7		Language
1	English	
2	German	
3	French	
4	Spanish	
5	Italian	

Level 8		Termination Filtering
00	No option – specified as part of electronic housing	

Level 9		Calibration Accessories
00	No hardware	
01	Cal./ref. flowmeter and reference pressure regulator	
02	Autocalibration Systems – order by separate part number (for safe areas only)	

Level 10		Hazardous Area Approval
00	Certification selected elsewhere	

Level 11		Control Suite Functionality
00	Basic Control Suite	
01	Deduct Basic Control Suite	

Level 12		Electronics to Probe Cable
00	No cable – integral electronics	
10	20' (6m) cable – remote electronics	
11	40' (12m) cable – remote electronics	
12	60' (18m) cable – remote electronics	
13	80' (24m) cable – remote electronics	
14	100' (30m) cable – remote electronics	
15	150' (45m) cable – remote electronics	
16	200' (61m) cable – remote electronics	

ORDERING INFORMATION – Hazardous Area Direct Replacement Oxymitter Probe Replaces older Westinghouse and Rosemount Analytical probes as well as most competitive probes. Cell flame arrestor included (process gases are considered to be within hazardous area).Optional Xi electronics may be used, but in a general purpose area only.

Model	Description
OXT4CDR	DIRECT REPLACEMENT PROBE

Level 1 Sensing Probe Type, with Flame Arrestor

1	Ceramic diffusion element probe (ANSI) 115V heater
2	Snubber diffusion element (ANSI) 115V heater
3	Ceramic diffusion element probe (DIN) 115V heater
4	Snubber diffusion element (DIN) 115V heater
7	Ceramic diffusion element probe (ANSI) 3" 300 LB. ¹
8	Ceramic diffusion element probe (ANSI) 4" 300 LB. ¹
A	Ceramic diffusion element probe (ANSI), with flame arrestor, 44V heater
B	Snubber diffusion element (ANSI), with flame arrestor , 44V heater
C	Ceramic diffusion element probe (DIN), with flame arrestor , 44V heater
D	Snubber diffusion element (DIN), with flame arrestor , 44V heater

Level 2 Probe Assembly

0	18" (457mm) Probe
3	3' (0.91m) Probe
5	6' (1.83m) Probe

Level 3 Mounting Adapter – Stack Side ²

0	No adapter plate
1	Mounting to stack (new installation)
2	Mounting to model 218 mounting plate (with model 218 shield removed)
3	Competitor's mount-supply existing flange dimensions

Level 4 Mounting Adapter – Probe Side

0	No mounting hardware
1	Mounting probe only (ANSI)
4	Mounting probe only (DIN)

Level 5 Termination Unit

11	Standard filtered termination
12	Transient protected filtered termination

Level 6 Arrangement-Existing Electronics

03	No hardware. For use with 218 analog electronics, world-class IFT electronics or Oxymitter electronics, Xi electronics
04	Westinghouse 218A digital electronics
05	Westinghouse/Rosemount digital electronics
07	Yokogawa series electronics – maximum operating temperature of junction box is 65°C
08	Other competitive electronics – specify brand and model
09	For use with other competitive oxygen analyzer systems

Level 7 Hazardous Area Approval

10	ATEX – EExd IIB + H2T2
20	CSA/FM – Class I, Div. I, Groups B, C, D, T2

Note: **Order manual calibration accessories separately**
 263C152G01 Reference gas regulator/filter
 771B635H01 (2 required) Calibration and reference air flowmeters

ORDERING INFORMATION – Hazardous Area Oxymitter 4000 - In Situ Oxygen Transmitter without process end flame arrestor (process gases are not to be considered in hazardous area).

Model	Description
OXT4CNF	Oxymitter 4000 In Situ Oxygen Transmitter

Level 1	Sensing Probe Type	
	1	Ceramic diffusion element probe (ANSI) 3" 150 lb. flange
	2	Snubber diffusion element (ANSI) 3" 150 lb. flange
	3	Ceramic diffusion element probe (DIN) 210mm dia. flange
	4	Snubber diffusion element (DIN) 210mm dia. flange
	7	Ceramic diffusion element probe (ANSI) 3" 300 lb. flange for acidic service
	8	Ceramic diffusion element probe (ANSI) 4" 300 lb. flange for acidic service

Level 2	Probe Assembly	
	0	18" (457 mm) probe
	3	3' (0.91 m) probe
	5	6' (1.83 m) probe

Level 3	Mounting Hardware (stack side)	
	0	No adapter plate ("0" must also be chosen under Mounting Adaptor- Probe side" below)
	1	New Installation – square weld plate with studs
	2	Model 218 mounting plate (with Model 218 shield removed)
	3	Competitor's mount

Level 4	Mounting Hardware (probe side)	
	0	No adapter plate
	1	Probe only (ANSI)
	4	Probe only (DIN)

Level 5	Electronic Housing and Filtered Customer Termination – NEMA 4X, IP 66	
	12	Integral - transient protected filtered termination – ATEX
	14	Split Architecture - transient protected filtered termination – ATEX
	22	Integral - transient protected filtered termination – CSA
	24	Split Architecture - transient protected filtered termination – CSA

Level 6	Communications	
	1	Electronics with membrane keypad w/blind cover
	2	Electronics with membrane keypad w/window cover
	3	Electronics with LOI display w/window cover (English only)

Level 7	Language	
	1	English
	2	German
	3	French
	4	Spanish
	5	Italian

Level 8	Calibration Accessories	
	00	No hardware
	01	Cal/Ref flowmeters & Ref pressure regulator

Level 9	Electronics to Probe cable	
	00	No Cable - intergal electronics or re-using existing cable
	10	20' (6m) cable
	11	40' (12m) cable
	12	60' (18m) cable
	13	80' (24m) cable
	14	100' (30m) cable
	15	150' (45m) cable
	16	200' (60m) cable

ORDERING INFORMATION – Hazardous Area with FOUNDATION™ Fieldbus Communications In Situ Oxygen Transmitter without process end flame arrestor (process gases are not considered within hazardous area).

Model	Description
OXT5CNF	Oxymitter 5000 In Situ Oxygen Transmitter

Level 1	Sensing Probe Type	
	1	Ceramic diffusion element probe (ANSI) 3" 150 lb. flange
	2	Snubber diffusion element (ANSI) 3" 150 lb. flange
	3	Ceramic diffusion element probe (DIN) 210mm dia. flange
	4	Snubber diffusion element (DIN) 210mm dia. flange
	7	Ceramic diffusion element probe (ANSI) 3 inch 300 lb. flange for acidic service
	8	Ceramic diffusion element probe (ANSI) 4 inch 300 lb. flange for acidic service

Level 2	Probe Assembly	
	0	18" (457 mm) probe
	3	3' (0.91 m) probe
	5	6' (1.83 m) probe

Level 3	Mounting Hardware (stack side)	
	0	No adapter plate ("0" must also be chosen under "Mounting Adaptor" - Probe side" below)
	1	New Installation – square weld plate with studs
	2	Model 218 mounting plate (with Model 218 shield removed)
	3	Competitor's mount

Level 4	Mounting Hardware (probe side)	
	0	No adapter plate
	1	Probe only (ANSI)
	4	Probe only (DIN)

Level 5	Electronic Housing and Filtered Customer Termination – NEMA 4X, IP 66	
	12	Integral - transient protected filtered termination – ATEX
	14	Split Architecture - transient protected filtered termination – ATEX
	22	Integral - transient protected filtered termination – CSA
	24	Split Architecture - transient protected filtered termination – CSA

Level 6	Communications	
	1	Electronics with membrane keypad w/blind cover
	2	Electronics with membrane keypad w/window cover
	3	Electronics with LOI display w/window cover (English only)

Level 7	Language	
	1	English
	2	German
	3	French
	4	Spanish
	5	Italian

Level 8	Calibration Accessories	
	00	No hardware
	01	Cal/Ref flowmeters & Ref pressure regulator

Level 9	Control Suite Functionality	
	00	Control Suite
	01	Deduct Control Suite

ORDERING INFORMATION – Hazardous Area with FOUNDATION™ Fieldbus Communications In Situ Oxygen Transmitter without process end flame arrestor (process gases are not considered within hazardous area).

Level	11	Electronics to Probe cable
	00	No Cable - intergal electronics or re-using existing cable
	10	20' (6m) cable
	11	40' (12m) cable
	12	60' (18m) cable
	13	80' (24m) cable
	14	100' (30m) cable
	15	150' (45m) cable
	16	200' (60m) cable

ORDERING INFORMATION – Hazardous Area Oxymitter DR - In Situ Oxygen Transmitter without process end flame arrestor. Optional Xi electronics may be used, but in a general purpose area only.

Model	Description
OXT4CDRNF	Oxymitter DR In Situ Oxygen Transmitter, optional Xi advanced electronics may be used, but in safe area only.

Level 1 Sensing Probe Type	
1	Ceramic diffusion element probe (ANSI) 3" 150 lb. flange
2	Snubber diffusion element (ANSI) 3" 150 lb. flange
3	Ceramic diffusion element probe (DIN) 210mm dia. flange
4	Snubber diffusion element (DIN) 210mm dia. flange
7	Ceramic diffusion element probe (ANSI) 3 inch 300 lb. flange for acidic service
8	Ceramic diffusion element probe (ANSI) 4 inch 300 lb. flange for acidic service

Level 2 Probe Assembly	
0	18" (457mm) probe
3	3' (0.91m) probe
5	6' (1.83m) probe

Level 3 Mounting Adapter (stack side)	
0	No adapter plate ("0" must also be chosen under "Mounting Adaptor- Probe side" below)
1	New Installation – square weld plate with studs
2	Model 218 mounting plate (with Model 218 shield removed)
3	Competitor's mount

Level 4 Mounting Adapter (probe side)	
0	No adapter plate
1	Probe only (ANSI)
4	Probe only (DIN)

Level 5 Electronic Housing and Filtered Customer Termination – NEMA 4X, IP 66	
12	Transient protected filtered termination

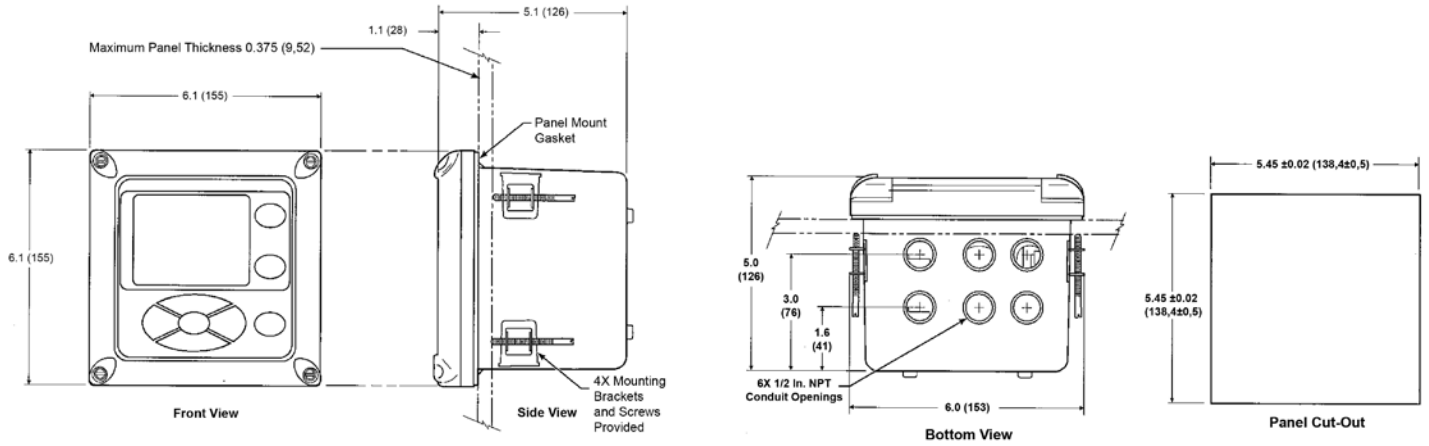
Level 6 Arrangement	
03	No hardware. For use with 218 analog electronics, world-class IFT electronics or Oxymitter electronics, Xi electronics
04	(1A) Digital
05	(1A) Veritrim
07	(1A) Model 132 Digital
08	Yokagawa Electronics
09	Other competitive electronics

Level 7 Hazardous Area Approval	
10	ATEX
20	CSA

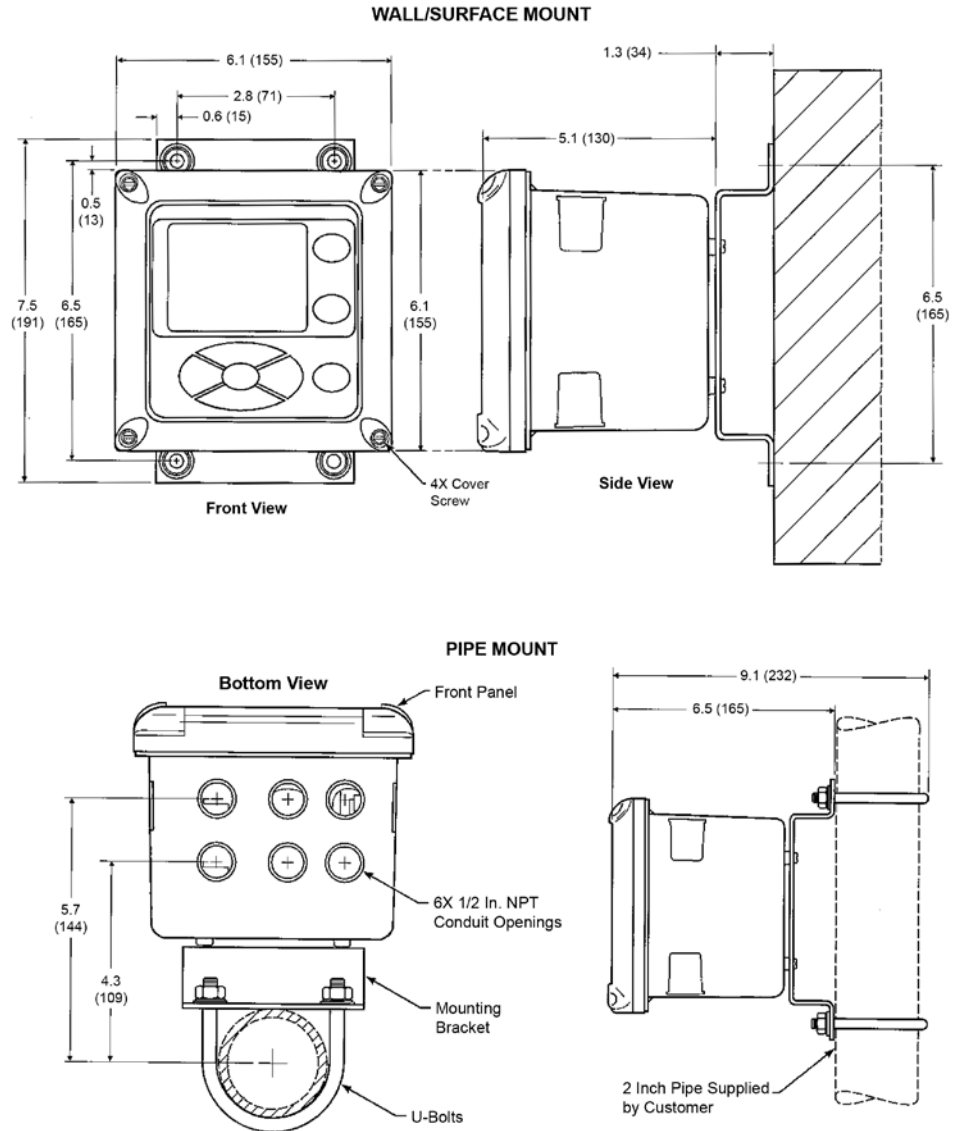
Note: **Order manual calibration accessories separately**
 263C152G01 Reference gas regulator/filter
 771B635H01 (2 required) Calibration and reference air flowmeters

Option Notes for all preceding matrices	
General Notes:	<p>In-Situ Oxygen Transmitter – Explo-Proof – HART® Smart</p> <p>High Sulfur Service: High sulfur cell can be selected for any probe; add a line item note to your purchase order requesting the high sulfur ZrO₂ cell in place of the standard ZrO₂ cell. Add 4232 UOM to the system matrix UOM total.</p> <p>Example: Note: Delete – standard cell P/N 4847B63G01 Add – high sulfur cell P/N 4847B63G02</p> <p>Cell replacement kits for high sulfur service are also available. Consult P/N 4849B94XX in the Combustion Solutions Center Spare Parts list.</p>
Level 1:	<p>Option: 7, 8</p> <p>Probe is set up for high acid service in Catalytic Regenerators; includes: SO₂/HCL resistant cell, Hastelloy C and Viton materials for calibration gas line larger than standard flange.</p>
Level 3:	<p>Option: 3</p> <p>Where possible, specify SPS number; otherwise provide details of the existing mounting plate as follows:</p> <p style="padding-left: 40px;">Plate with studs: Bolt circle diameter, number and arrangement of studs, stud thread, stud height above mounting plate.</p> <p style="padding-left: 40px;">Plate without studs: Bolt circle diameter, number and arrangement of holes, thread, depth of stud mounting plate with accessories.</p>
Level 6:	<p>Option: 1</p> <p>Startup, calibration and operation can be implemented using the standard membrane keypad. Remote access and additional functionality available via HART® /FOUNDATION Fieldbus Communications (Model 375 Hand-held Communicator or AMS) with Oxymitter device descriptor (DD) required.</p>

Xi Enhanced Interface - Panel Mounting Details



Xi Enhanced Interface - Wall/Surface and Pipe Mounting Details



ORDERING INFORMATION – OPTIONAL Xi ADVANCED ELECTRONICS SAFE AREA ONLY

Model	Description
Xi	O ₂ Advanced electronics

Level 1 Xi Type	
01	Future
02	Future
03	Future
04	Traditional Architecture Xi - all signal conditioning and operator interface via the Xi. Cable required, single channel only.
05	Traditional Architecture Xi - all signal conditioning and operator interface via the Xi. Cable required, single channel only, set up to run 44V world class probe

Level 2 Mounting	
00	None
01	Panel Mount Kit with Gasket
02	2" Pipe/Wall Mount Kit

Level 3 Cable (For Traditional Architecture Xi Only)	
00	None
10	20' (6m) Cable
11	40' (12m) Cable
12	60' (18m) Cable
13	80' (24m) Cable
14	100' (30m) Cable
15	150' (45m) Cable
16	200' (60m) Cable

Level 4 Stoichiometer Function	
00	No
01	Single Channel
02	Dual Channel, (second channel not available for traditional architecture Xi)

Level 5 Programmable Reference Function	
00	No
01	Single Channel
02	Dual Channel, (second channel not available for traditional architecture Xi)

Level 6 825 Deg C Process Function	
00	No
01	Single Channel
02	Dual Channel, (second channel not available for traditional architecture Xi)

NOTES: Order Direct Replacement Oxymitter probe separately

ORDERING INFORMATION — AUTOCALIBRATION ACCESSORIES - must be mounted in a safe area.

Model	Description
XSO2CAL	O ₂ Autocalibration Accessories - apply to Oxymitter or Xi electronics. General purpose only.

Level 1	Single Probe Sequencers Autocalibration options	
	00	None
	01	SPS 4001 Single Probe Sequencer, general purpose NEMA 4X, includes check valve for probe

Level 2	Intelligent Multiprobe Sequencers (IMPS)	
	00	None
	01	IMPS Intelligent Probe Sequencer, single-probe, general purpose NEMX 4X, includes valve for probe
	02	IMPS Intelligent Probe Sequencer, two-probe, general purpose NEMX 4X, includes valve for probe
	03	IMPS Intelligent Probe Sequencer, three-probe, general purpose NEMX 4X, includes valve for probe
	04	IMPS Intelligent Probe Sequencer, four-probe, general purpose NEMX 4X, includes valve for probe
	05	IMPS Intelligent Probe Sequencer, single-probe, 115V heated general purpose NEMX 4X, includes valve for probe
	06	IMPS Intelligent Probe Sequencer, two-probe, 115V heated general purpose NEMX 4X, includes valve for probe
	07	IMPS Intelligent Probe Sequencer, three-probe, 115V heated general purpose NEMX 4X, includes valve for probe
	08	IMPS Intelligent Probe Sequencer, four-probe, 115V heated general purpose NEMX 4X, includes valve for probe
	09	IMPS Intelligent Probe Sequencer, single-probe, 220V heated general purpose NEMX 4X, includes valve for probe
	010	IMPS Intelligent Probe Sequencer, two-probe, 220V heated general purpose NEMX 4X, includes valve for probe
	011	IMPS Intelligent Probe Sequencer, three-probe, 220V heated general purpose NEMX 4X, includes valve for probe
	012	IMPS Intelligent Probe Sequencer, four-probe, 220V heated general purpose NEMX 4X, includes valve for probe

OXYMITTER ACCESSORIES

HART® Hand-held 375 Communicator

The FOUNDATION™ fieldbus 375 Communicator is an interface device that provides a common communication link to HART®/FOUNDATION fieldbus compatible instruments, such as the Sulfur-Resistant Oxymitter. HART® Communications Protocol permits all the information available from the Sulfur-Resistant Oxymitter electronics to be transmitted over standard 4-20 mA signal wires or FOUNDATION fieldbus wires. By attaching the hand-held communicator at a termination point along the signal line, a technician can diagnose problems and configure and calibrate the Sulfur-Resistant Oxymitter as if he or she were standing in front of the instrument.

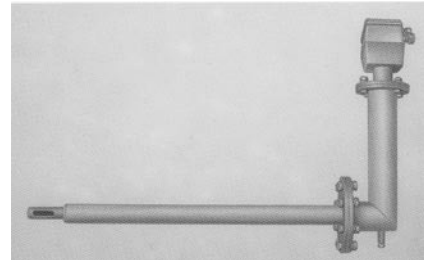
For more information, call Rosemount Analytical at 1-800-433-6076.



Bypass Packages

The specially designed Rosemount Analytical Bypass Package for oxygen analyzers has proven to withstand the high temperatures in process heaters while providing the same advantages offered by the in situ sensor. Inconel tubes provide effective resistance to corrosion, and the other components common to other sampling systems.

For more information, call Rosemount Analytical at 1-800-433-6076.



O₂ Calibration Gas Kits - pn. 6296A27G01

Rosemount Analytical's O₂ Calibration Gas and Service Kits have been carefully designed to provide a more convenient and fully portable means of testing, calibrating, and servicing Rosemount Analytical's oxygen analyzers. These lightweight, disposable gas cylinders eliminate the need to rent gas bottles.

For more information, call Rosemount Analytical at 1-800-433-6076.



Wireless THUM™ Adaptor

The Smart Wireless THUM Adaptor converts the standard 4-20mA signal from the Oxymitter or Xi electronics to a wireless signal. All HART information is transmitted in addition to the process O₂ value. Safe area only.

For more information, call Rosemount Analytical at 1-800-433-6076.



SPECIAL ARRANGEMENTS

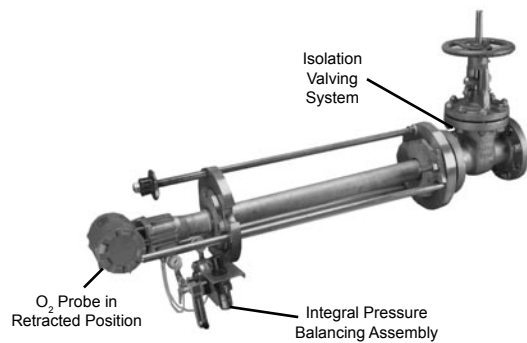
Special Cells for High Acid Service

Many combustion processes use fuels that contain sulfur or HCl. Special cells provide extended life in these difficult applications.



Catalyst Regeneration

Measure O_2 in regenerators at pressures up to 50 psi. In situ design resists plugging due to catalyst fines Class I, Div. I, Group B, C and D. Optional pressure balancing arrangement. Optional isolation valving system permits installation and withdrawal while the process is running. Specified by UOP. See Application Data Sheet ADS 106-300F.A01.



Pressure balanced in situ O_2 probe with optional isolation valving system (probe withdrawn)

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To find the local Rosemount Analytical specialist near you, go to:
http://www.emersonprocess.com/raihome/sp/contact_us.asp



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