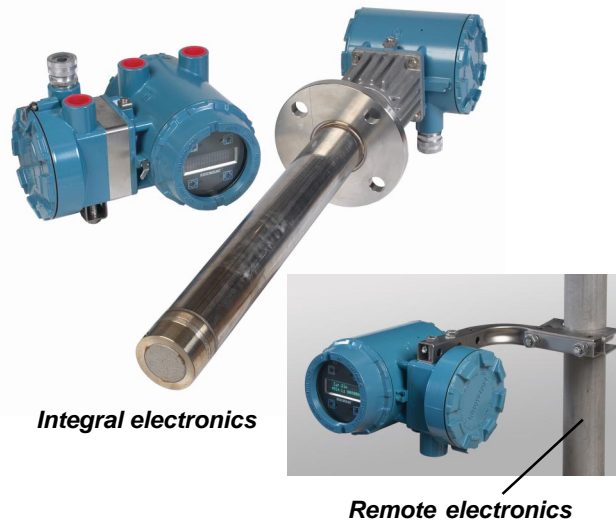


# In Situ Oxygen Transmitter

- Outstanding accuracy
- Electronics mounted to probe or separate
- Adaptable to any existing O<sub>2</sub> 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® communications FOUNDATION™ fieldbus
  - 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
- process heaters
- kilns
- 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. 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.

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

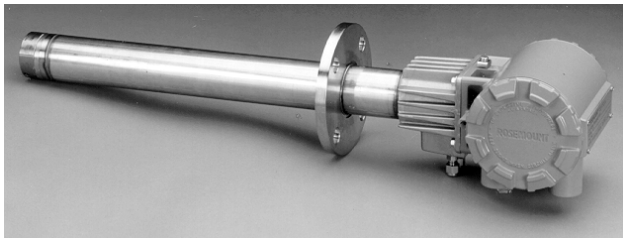
# THE OXYMITTER OXYGEN TRANSMITTER IS COMPLETELY FIELD-REPAIRABLE



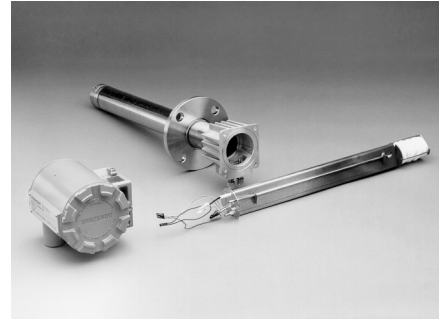
**Diffusion Filter and Sensor Cell Assembly**

- Outstanding accuracy— + or - .75% of reading or .05% O<sub>2</sub>
- Special cells for tough service in SO<sub>2</sub> and HCL
- Rugged steel cell holder – cells will not crack

## General Purpose – OXT4A/5A



- Lengths from 18" (.9m) to 18' (5.5m)
- ANSI, DIN and special flanges (1.8m) (5.5m)
- Flat-faced (snubber), Hastelloy and Ceramic Diffusers



**Heater/Thermocouple Assembly**

## Hazardous Area – OXT4C/5C

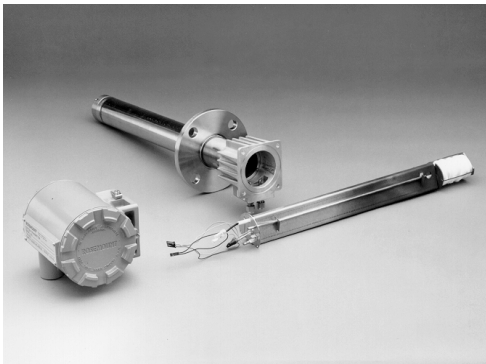


- ATEX II 2 G EExd IIB + H2 T2
- CSA/FM Class I, Div. I, Groups B, C and D
- Lengths from 18" (.9m) to 6'

## 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



- Lowest cost of installation
- No cable or conduit between probe and electronics
- No separate electronics to mount

### Remote Mounted



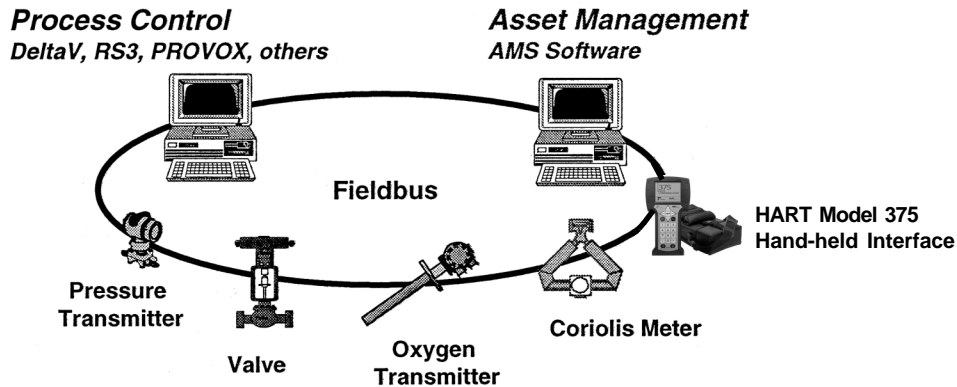
- Probe to electronics cable lengths to 200 feet
- Bright gas fluorescent local operator interface (LOI)
- Thru-glass infrared pushbuttons (LOI also available on integral electronics version)

## DIGITAL COMMUNICATIONS

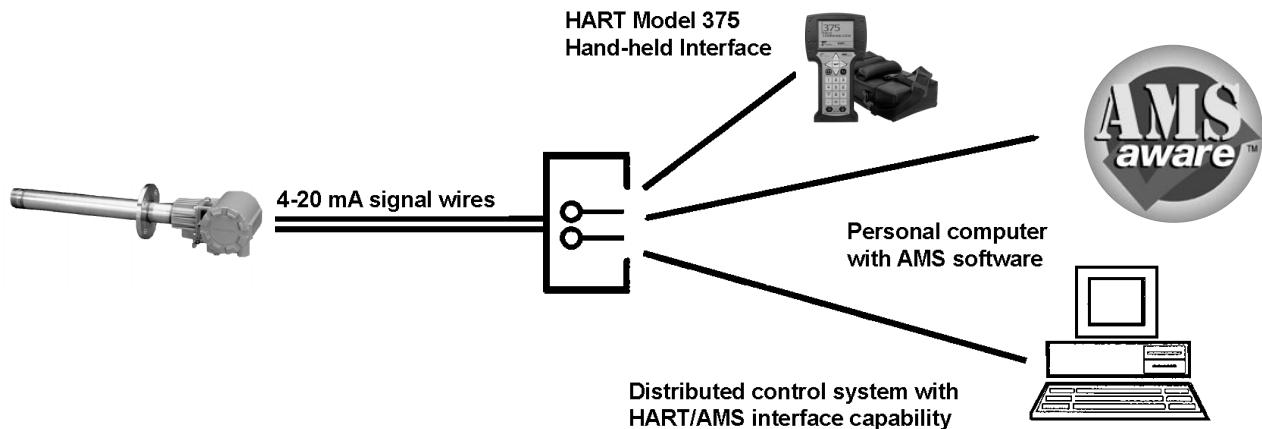
### Communicate with the Oxymitter via the FOUNDATION™ Fieldbus Protocol

#### OXYMITTER OXYGEN TRANSMITTER FEATURES AND BENEFITS

Features	Benefits
Rapid, accurate and reliable measurement of excess oxygen with a single in situ transmitter.	Provides inputs for significant fuel savings which normally pay for the analyzer in less than one year; best accuracy specification in the industry!
Integrated oxygen probe and electronics simplifies installation.	Eliminates costs of mounting separate electronics. Eliminates cabling and conduit between probe and electronics.
In situ design. No sample system, sample probes, scrubbers, or pumps are necessary; test gas calibration check without disturbing the probe.	Low installation and maintenance costs.
Fast speed of response.	In situ design ideal for closed loop control.
"Calibration recommended" indication. On-line electrical CAL check indicates need for calibration.	Optimizes plant resources; reduces maintenance and calibration costs.
Field-replaceable cell, heater/thermocouple assembly and plug-in electronics module.	Ease of maintenance.
Suitable for use in process temperatures up to 1300°F (700°C). Optionally up to 1832°F (1000°C).	Suitable for use in most combustion applications.
Material of construction 316 LSS (all wetted parts).	High resistance to corrosion.
Cell sensitivity increases logarithmically when oxygen decreases.	Very useful for low oxygen levels. Ideal for low excess air burners.
Automatic line voltage selections.	Automatically selects from 100 to 240 VAC and 50/60 Hz. without configuration or set-up.



### Communicate with the Oxymitter from almost anywhere via the HART™ Protocol

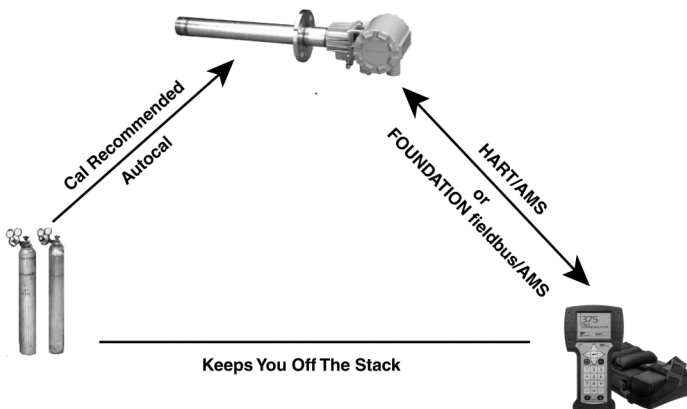


## AUTOMATIC CALIBRATION OPTIONS

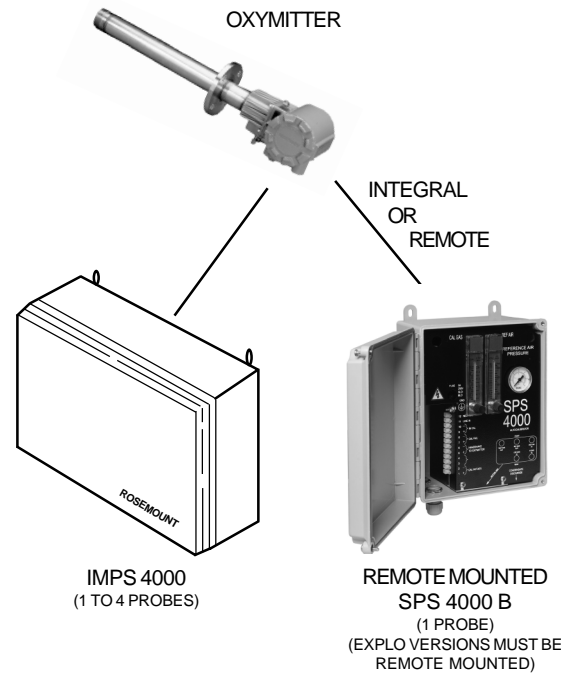
Plant personnel often ask how often an oxygen analyzer requires calibration. The answer is very application-dependent, based upon the fuels being burned, normal levels of oxygen and the sulfur content in the flue gases. The Oxymitter addresses this concern by providing an on-line diagnostic that determines when a calibration should be conducted. The Oxymitter electronics has an on-line impedance measurement of the sensing cell. This feature can trigger a fully automatic calibration via the SPS 4000, ensuring that the analyzer is always accurate. Also, many needless calibrations based on "time in service" are eliminated.

A contact closure notifies the control room when a calibration is taking place. The oxygen output signal can be held at its last value, or released during calibration. The Oxymitter can also initiate calibrations by traditional methods:

- Contact closure from the user's control room
- Time since last calibration feature – established by the autocalibration system
- Local operator interface (LOI) or keypad
- HART/FOUNDATION™ fieldbus communications or Asset Management Solution



## OXYMITTER AUTOCALIBRATION SYSTEM INSTALLATION OPTIONS (For details, see Product Data Sheet 106-340AC)



See page 16 for ordering information.

# SPECIFICATIONS <sup>1</sup>

## OXYMITTER OXYGEN TRANSMITTER

### STOICHIOMETER SPECIFICATION

**Net O<sub>2</sub> Range:** 0-10%, 0-40% variable O<sub>2</sub>

**Accuracy:** Typically ±0.75% of reading or 0.05% O<sub>2</sub>, whichever is greater  
Lowest detectable limit – .05% O<sub>2</sub>

**System Response to Test Gas:**

Initial response in less than 3 seconds  
T<sub>90</sub> in less than 8 seconds

### 843 C SPECIFICATION

**Temperature Limits:**

**Process:** 32° to 1300°F (0° to 704°C) up to 1832°F (1000°C) with optional accessories

**Electronics/Probe:**

-40° to 185°F (-40° to 85°C) actual temperature inside electronics

**Local operator interface:**

-40° to 185°F (-40° to 85°C)

**IR thru-glass push buttons:**

-40° to 158°F (-40° to 70°C)

**Probe Lengths, Nominal 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)

**Mounting and Mounting Position:**

Vertical or horizontal  
Spool pieces are available, P/N 3D39761G02, to offset transmitter housing from hot duct work.

**Materials:**

**Probe:** Wetted or welded parts – 316L stainless steel  
Non-wetted parts – 304 stainless steel, low-copper aluminum

**Electronics Enclosure:**

Low-copper aluminum

**Calibration:** Semi-automatic or automatic

**Calibration Gas Mixtures Recommended:**

0.4% O<sub>2</sub>, balance N<sub>2</sub>, 8% O<sub>2</sub>, balance N<sub>2</sub>  
(Ref. test gas kit #6296A27G01)

**Calibration Gas Flow:**

5 scfh (2.5 l/m)

**Reference Air (optional):** 2 scfh (1 l/m), clean, dry, instrument-quality air (20.95% O<sub>2</sub>), regulated to 5 psi (34 kPa)

**Electronics:** NEMA 4X, IP 66 with fitting and pipe on reference exhaust port to clean dry atmosphere

**Electrical Noise:**

Meets EN 55082 Generic Emissions Standard  
EN 61000-4-2 Electrostatic Discharge  
EN 61000-4-3 Radio Frequency Interference  
EN 61000-4-6 Radio Frequency Interference  
EN 61000-4-4 Fast Transient Immunity

**Optional Hazardous Area**

**Certifications:**

**Hazardous Area Oxymitter with Integral Electronics:**

KEMA/ATEX II 2 G EEx d IIB+H<sub>2</sub> T6 (Elect Comp)/T2 (Probe)

CSA Class I, Division 1, Groups B, C, D T2  
Class I, Zone 1, Ex d IIB+H<sub>2</sub> T2  
Class I, Zone 1, AEx d IIB+H<sub>2</sub> T2

FM Class I, Division 1, Groups B, C, D T2  
Class I, Zone 1, AEx d IIB+H<sub>2</sub> T2

**Hazardous Area Oxymitter with Remote Electronics:**

KEMA/ATEX II 2 G EEx d IIB+H<sub>2</sub> T2 (Remote Probe)  
II 2 G EEx de IIB+H<sub>2</sub> T6 (Remote Electronics)

CSA Class I, Zone 1, Ex d IIB+H<sub>2</sub> T2 (Remote Probe)  
Class I, Zone 1, Ex de IIB+H<sub>2</sub> T6 (Remote Electronics)  
Class I, Zone 1, AEx d IIB+H<sub>2</sub> T2 (Remote Probe)  
Class I, Zone 1, AEx de IIB+H<sub>2</sub> T6 (Remote Electronics)

FM Class I, Zone 1, AEx d IIB+H<sub>2</sub> T2 (Remote Probe)  
Class I, Zone 1, AEx de IIB+H<sub>2</sub> T6 (Remote Electronics)

**Line Voltage:** Universal 100 to 240 ± 10% VAC, 50-60 HZ  
no switches or jumpers required 3/4"  
– 14 NPT conduit port

**Isolated Output/Hart or FOUNDATION™ fieldbus:**

One 4-20mAdc, 950 ohm maximum load  
isolated with Hart capability for 4000 or  
digital FOUNDATION fieldbus signal for 5000.

**2 Terminal Logic Contact:**

Configurable as either an alarm output (Relay or Logic) or as a bi-directional calibration handshake signal to calibration gas sequencer. Self-powered, (+5V) 340 ohm series resistance  
3/4"–14 NPT (one threaded hole for both analog output and logic I/O)

**Power Consumption Limits:**

**Power Consumption of Probe Heater:**

175 W nominal maximum

**Power Consumption of Electronics:**

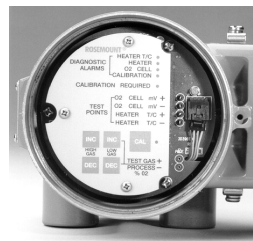
10 W nominal maximum

**Fieldbus Segment Power Consumption:**

17.5 or 19mA



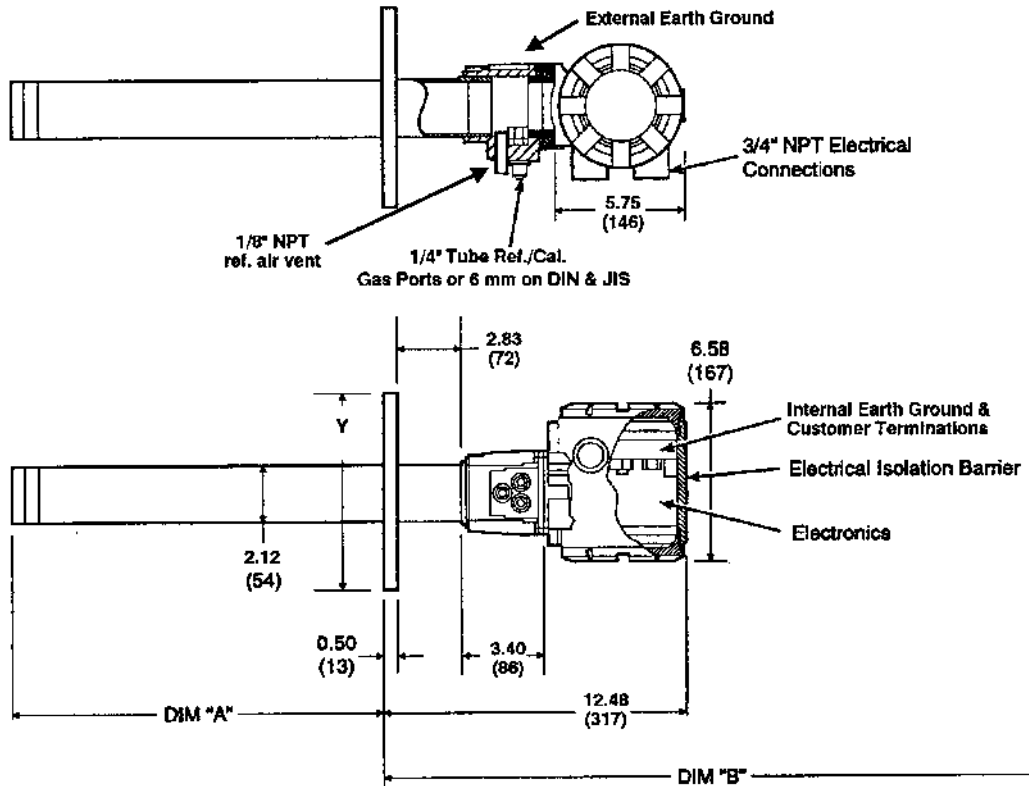
Emerson Process Management has satisfied all obligations coming from the European legislation to harmonize the product requirements in Europe.



The Oxymitter field electronics mount directly to the oxygen probe in a standard NEMA 4X, IP 66 housing.

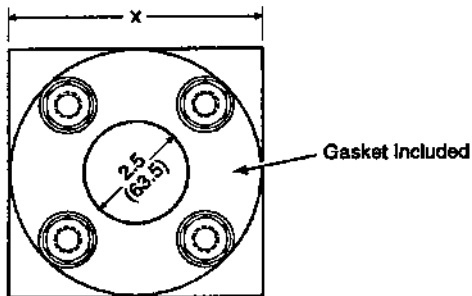
<sup>1</sup> All static performance characteristics are with operating variables constant. Specifications subject to change without notice.

# OUTLINE DIMENSIONS FOR OXYMETER OXYGEN TRANSMITTER FOR GENERAL PURPOSE APPLICATIONS

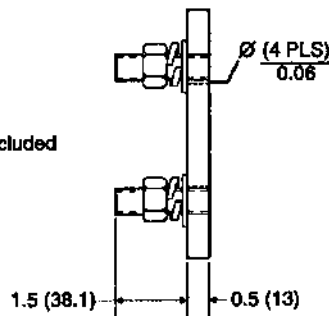


Note: All dimensions are in inches with millimeters in parentheses.

## Adapter Plate Outline



Refer to Table 1 for dimensions.



	Dimensions Dia. in. (mm)		
	ANSI	DIN	JIS
Mtg. Plate (x)	6.0 (153)	7.5 (190)	6.5 (165)
Stud Size	5/8" – 11	M16 x 2	M12 x 1.75
4 Studs Eq. Sp. on BC	4.75 BC (121) BC	5.71 BC (145) BC	5.12 BC (130) BC
Flange (Y)	6.0 (153)	7.3 (185)	6.1 (155)

	Dim "A" Insertion Depth	Dim. "B" Removal Envelope
18 in. (457 mm) Probes	16.00 (407)	28.6 (725)
3 ft. (0.91 m) Probes	34.00 (864)	46.6 (1182)
6 ft. (1.83 m) Probes	70.00 (1778)	82.6 (2097)
9 ft. (0.91 m) Probes	106.00 (2692)	118.6 (3011)
12 ft. (3.66 m) Probes	142.00 (3607)	154.6 (3926)

## ORDERING INFORMATION – General Purpose Oxymitter with 4-20 mA Output Signal, and HART® Communications

Model	Description
OXT4A	In Situ Oxygen Transmitter – HART Smart (Oxymitter)

Level 1	Sensing Probe Type	
	1	Ceramic diffusion element probe (ANSI)
	2	Flame arrestor probe (ANSI) (ceramic diffusion element)
	3	Snubber diffusion element (ANSI)
	4	Ceramic diffusion element probe (DIN)
	5	Flame arrestor probe (DIN) (snubber diffusion element)
	6	Snubber diffusion element (DIN)
	7	Ceramic diffusion element probe (JIS)
	8	Flame arrestor probe (JIS) (ceramic diffusion element)
	9	Snubber diffusion element (JIS)

Level 2	Probe Assembly	
	0	18 in. (457 mm) probe
	1	18 in. (457 mm) probe with abrasive shield <sup>1</sup>
	2	3 ft. (0.91 m) probe
	3	3 ft. (0.91 m) probe with abrasive shield <sup>1</sup>
	4	6 ft. (1.83 m) probe
	5	6 ft. (1.83 m) probe with abrasive shield <sup>1</sup>
	6	9 ft. (2.74 m) probe
	7	9 ft. (2.74 m) probe with abrasive shield <sup>1</sup>
	8	12 ft. (3.66 m) probe
	9	12 ft. (3.66 m) probe with abrasive shield <sup>1</sup>
	A	15 ft. (4.57 m) probe with abrasive shield <sup>1</sup>
	B	18 ft. (5.49 m) probe with abrasive shield <sup>1</sup>

Level 3	Mounting Hardware (stack side)	
	0	No mounting hardware (must be chosen under mounting adapter – probe side)
	1	New Installation – square weld plate with studs
	2	Mounting to Model 218 mounting plate (with Model 218 shield removed)
	3	Mounting to existing Model 218 support shield
	4	Mounting to other mounting <sup>2</sup>
	5	Mounting to Model 132 adapter plate

Level 4	Mounting Hardware (probe side)	
	0	No mounting hardware
	1	Probe only (ANSI)
	2	New bypass or new abrasive shield (ANSI)
	4	Probe only (DIN)
	5	New bypass or new abrasive shield (DIN)
	7	Probe only (JIS)
	8	New bypass or new abrasive shield (JIS)

Level 5	Electronic Housing and Filtered Customer Termination – NEMA 4X, IP 66	
	11	Electronics integrally mounted to probe with standard filtered termination
	12	For HART® electronics integrally mounted to probe with transient protected filtered termination
	13	Electronics mounted remotely with standard filtered termination; requires cable
	14	For HART® electronics mounted remotely with transient protected filtered termination – requires cable

Level 6	Communications	
	1	Membrane keypad – HART capable, blind cover
	2	Membrane keypad – HART capable, glass cover
	3	Gas florescent LOI HART capable, glass cover, English only

## ORDERING INFORMATION (continued)

Level 7 Language LOI Accepts English Language Only	
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 ref. pressure regulator
02	Autocalibration Systems – order by separate part number, for safe areas only or purged by user

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

**Note:**

<sup>1</sup> Recommended usages: high velocity particulates in flue stream, installation within 10 ft. (3.5 m) of soot blowers or heavy salt cake build-up. Applications: pulverized coal, recovery boilers, lime kiln. Regardless of application, abrasive shields with support brackets are recommended for 9 ft. and 12 ft. probe installations, particularly horizontal installations.

<sup>2</sup> Where possible, specify SPS number; otherwise provide details of existing mounting plate as follows:

Plate with studs	Bolt circle diameter, number and arrangement of studs, stud thread, stud height above mounting plate.
Plate without studs	Bolt circle diameter, number and arrangement of holes, thread, depth of stud mounting plate with accessories.



## ORDERING INFORMATION – General Purpose Oxymitter with FOUNDATION™ Fieldbus Communications

Model	Description
OXT5A	In Situ Oxygen Transmitter – with FOUNDATION™ fieldbus (Oxymitter 5000)

Level 1	Sensing Probe Type	
	1	Ceramic diffusion element (ANSI)
	2	Ceramic diffusion element flame arrestor (ANSI) general purpose only
	3	Snubber diffusion element (ANSI)
	4	Ceramic diffusion element (DIN)
	5	Snubber diffusion element flame arrestor (DIN) general purpose only
	6	Snubber diffusion element (DIN)
	7	Ceramic diffusion element (JIS)
	8	Ceramic diffusion element flame arrestor (JIS) general purpose only
	9	Snubber diffusion element (JIS)

Level 2	Probe Assembly	
	0	18 in. (457 mm) probe
	1	18 in. (457 mm) probe with abrasive shield <sup>1</sup>
	2	3 ft. (0.91 m) probe
	3	3 ft. (0.91 m) probe with abrasive shield <sup>1</sup>
	4	6 ft. (1.83 m) probe
	5	6 ft. (1.83 m) probe with abrasive shield <sup>1</sup>
	6	9 ft. (2.74 m) probe
	7	9 ft. (2.74 m) probe with abrasive shield <sup>1</sup>
	8	12 ft. (3.66 m) probe
	9	12 ft. (3.66 m) probe with abrasive shield <sup>1</sup>
	A	15 ft. (4.57 m) probe with abrasive shield <sup>1</sup>
	B	18 ft. (5.49 m) probe with abrasive shield <sup>1</sup>

Level 3	Mounting Hardware (stack side)	
	0	No adapter plate
	1	New Installation – square weld plate with studs
	2	Mounting to Model 218 (with Model 218 shield removed)
	3	Mounting to existing Model 218 support shield
	4	Competitor's mount <sup>2</sup>
	5	Mounting to Model 132 adapter plate

Level 4	Mounting Hardware (probe side)	
	0	No mounting hardware in adapter plate
	1	Probe only (ANSI)
	2	New bypass or new abrasive shield (ANSI)
	4	Probe only (DIN)
	5	New bypass or new abrasive shield (DIN)
	7	Probe only (JIS)
	8	New probe or abrasive shield (JIS)

Level 5	Electronic Housing – NEMA 4X, IP 66	
	12	Transient protected filtered termination, integrally mounted to probe
	14	Transient protected filtered termination, mounted remotely – requires cable

Level 6	Communications/Operator Interface	
	1	Membrane keypad – fieldbus, blind cover
	2	Membrane keypad – fieldbus, glass cover
	3	Gas florescent LOI, fieldbus, glass 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. gas rotometer and ref. gas set
02	Autocalibration Systems – order by separate part number, for safe areas only

Level 10 Control Suite Functionality	
00	Basic control suite
01	Deduct basic control suite

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

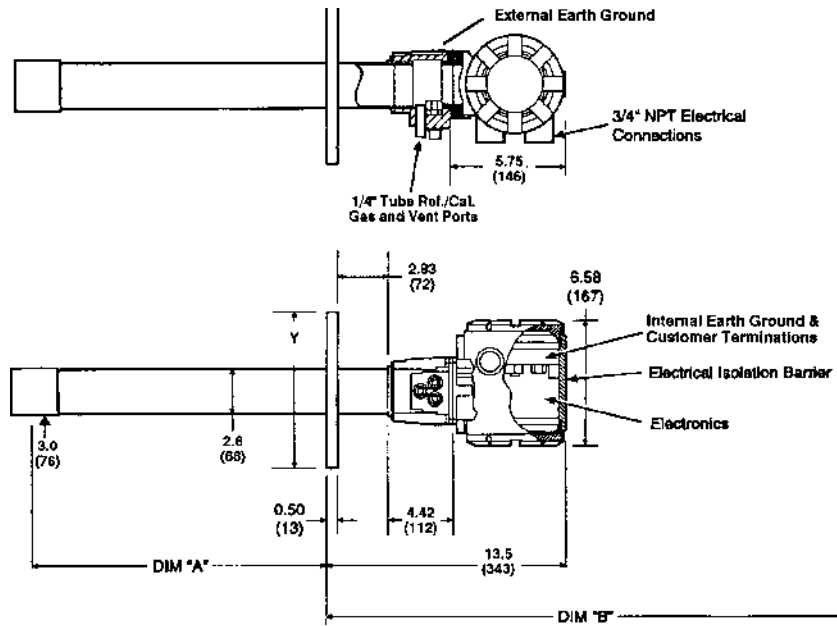
**Note:**

<sup>1</sup> Recommended usages: high velocity particulates in flue stream, installation within 10 ft. (3.5 m) of soot blowers or heavy salt cake build-up. Applications: pulverized coal, recovery boilers, lime kiln. Regardless of application, abrasive shields with support brackets are recommended for 9 ft. and 12 ft. probe installations, particularly horizontal installations.

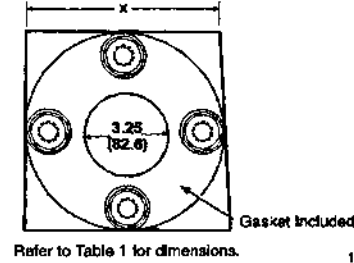
<sup>2</sup> Where possible, specify SPS number; otherwise provide details of existing mounting plate as follows:

Plate with studs	Bolt circle diameter, number and arrangement of studs, stud thread, stud height above mounting plate.
Plate without studs	Bolt circle diameter, number and arrangement of holes, thread, depth of stud mounting plate with accessories.

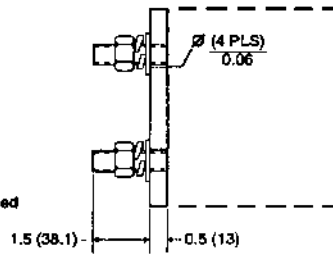
# OUTLINE DIMENSIONS FOR OXYMITTER HAZARDOUS AREA OXYGEN TRANSMITTER



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

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) <sup>1</sup>
	8	Ceramic diffusion element probe (ANSI 4" 300 lb. bolt circle) <sup>1</sup>

Level 2	Probe Assembly	
	0	18 in. probe
	1	18 in. probe with 3 ft. bypass
	2	18 in. probe with abrasive shield <sup>2</sup>
	3	3 ft. probe
	4	3 ft. probe with abrasive shield <sup>2</sup>
	5	6 ft. probe
	6	6 ft. probe with abrasive shield <sup>2</sup>

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 <sup>2</sup>

Level 4	Mounting Adapter (probe side)	
	0	No adapter plate
	1	Probe only (ANSI)
	2	New bypass or new abrasive shield (ANSI)
	4	Probe only (DIN)
	5	New bypass or new abrasive shield (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 certification
	14	HART® electronics, mounted remotely with transient protected termination, requires cable ATEX EExd IIB + H2 T2 certification
	22	HART® electronics, mounted integral to probe, transient protected termination, CSA/FM Class I, Zone I, Groups B, C and D
	24	HART® electronics, mounted remotely, transient protected termination; requires cable CSA/FM Class I, Div. I, Groups B, C and D

Level 6	Communications	
	1	Membrane keypad – HART capable
	2	Membrane keypad – HART capable, glass window
	3	Gas florescent LOI HART capable, glass window, English only

## ORDERING INFORMATION (continued)

Level 7 Language LOI Accepts English Language Only		
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 ref. pressure regulator
02		Autocalibration Systems – order by separate part number, for safe areas only or purged by user

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

### NOTES:

<sup>1</sup> Probe is set up for high acid service in catalytic regenerators; includes: SO<sub>2</sub>/HCL resistant cell, Hastelloy C and Viton materials for calibration gas line larger than standard flange. Acid service cells are available for other probes ordered separately.

<sup>2</sup> Recommended usages: high velocity particulates in flue stream, installation within 10 ft. (3.5 m) of soot blowers or heavy salt cake build-up. Applications: pulverized coal, recovery boilers, lime kiln. Regardless of application, abrasive shields with support brackets are recommended for 9 ft. (2.74 m) and 12 ft. (3.65 m) probe installations, particularly horizontal installations.

<sup>3</sup> Where possible, specify SPS number; otherwise provide details of the existing mounting plate as follows:

Plate with studs	Bolt circle diameter, number and arrangement of studs, stud thread, stud height above mounting plate.
Plate without studs	Bolt circle diameter, number and arrangement of holes, thread, depth of stud mounting plate with accessories.

## ORDERING INFORMATION – Hazardous Area with FOUNDATION™ Fieldbus Communications

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 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) <sup>1</sup>
	8	Ceramic diffusion element probe (ANSI 4" 300 lb. bolt circle) <sup>1</sup>

Level 2	Probe Assembly	
	0	18 in. probe
	2	18 in. probe with abrasive shield <sup>2</sup>
	3	3 ft. probe
	4	3 ft. probe with abrasive shield <sup>2</sup>
	5	6 ft. probe
	6	6 ft. probe with abrasive shield <sup>2</sup>

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 <sup>2</sup>

Level 4	Mounting Adapter (probe side)	
	0	No adapter plate
	1	Probe only (ANSI)
	2	New bypass or new abrasive shield (ANSI)
	4	Probe only (DIN)
	5	New bypass or new abrasive shield (DIN)
	7	Probe only (JIS)
	8	New bypass or new abrasive shield (JIS)

Level 5	Electronic Housing – NEMA 4X, IP 66	
	12	FOUNDATION™ fieldbus electronics, mounted integral to probe, transient protected termination, ATEX EExd IIB + H2 T2 certification
	14	FOUNDATION™ fieldbus electronics, mounted remotely with transient protected termination, requires cable ATEX EExd IIB + H2 T2 certification
	22	FOUNDATION™ fieldbus electronics, mounted integral to probe, transient protected termination, Class I, Div I, Groups 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 florescent 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 ref. pressure regulator
02		Autocalibration Systems – order by separate part number, for safe areas only, or purged by user

Level 10		Hazardous Area Approval
10		ATEX
20		CSA – Class I, Division I, Groups B, C and D, T2/T6 (electronics)

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 ft. (6 m) cable – remote electronics
11		40 ft. (12 m) cable – remote electronics
12		60 ft. (18 m) cable – remote electronics
13		80 ft. (24 m) cable – remote electronics
14		100 ft. (30 m) cable – remote electronics
15		150 ft. (45 m) cable – remote electronics
16		200 ft. (61 m) cable – remote electronics

### NOTES:

- <sup>1</sup> Probe is set up for high acid service in catalytic regenerators; includes: SO<sub>2</sub>/HCL resistant cell, Hastelloy C and Viton materials for calibration gas line larger than standard flange. Acid service cells are available for other probes ordered separately.
- <sup>2</sup> Recommended usages: high velocity particulates in flue stream, installation within 10 ft. (3.5 m) of soot blowers or heavy salt cake build-up. Applications: pulverized coal, recovery boilers, lime kiln. Regardless of application, abrasive shields with support brackets are recommended for 9 ft. (2.74 m) and 12 ft. (3.65 m) probe installations, particularly horizontal installations.
- <sup>3</sup> Where possible, specify SPS number; otherwise provide details of the existing mounting plate as follows:

Plate with studs	Bolt circle diameter, number and arrangement of studs, stud thread, stud height above mounting plate.
Plate without studs	Bolt circle diameter, number and arrangement of holes, thread, depth of stud mounting plate with accessories.

## Automatic Calibration Systems

Single Probe Sequencer (SPS) – Calibrates one probe for safe areas only or purged by user. (Each probe also requires a check valve kit part number 7307A56G01)



### LIST PART NUMBERS AS SEPARATE LINE ITEMS:

The Intelligent Multiprobe Sequencer (IMPS) will automatically calibrate up to 4 probes.

Part Number	Description	Number of Probes
3D39695G01	Intelligent multiprobe sequencer (IMPS)	1
3D39695G02	Intelligent multiprobe sequencer (IMPS)	2
3D39695G03	Intelligent multiprobe sequencer (IMPS)	3
3D39695G04	Intelligent multiprobe sequencer (IMPS)	4
3D39695G05	Intelligent multiprobe sequencer (IMPS) w/115V heater	1
3D39695G06	Intelligent multiprobe sequencer (IMPS) w/115V heater	2
3D39695G07	Intelligent multiprobe sequencer (IMPS) w/115V heater	3
3D39695G08	Intelligent multiprobe sequencer (IMPS) w/115V heater	4
3D39695G09	Intelligent multiprobe sequencer (IMPS) w/115V heater	1
3D39695G10	Intelligent multiprobe sequencer (IMPS) w/115V heater	2
3D39695G11	Intelligent multiprobe sequencer (IMPS) w/115V heater	3
3D39695G12	Intelligent multiprobe sequencer (IMPS) w/115V heater	4

Rosemount Analytical no longer offers an integral Z-purge option for its oxygen (O<sub>2</sub>) analyzers. However, the IFT, MPS and IMPS enclosures are still capable of Z or X purge by the customer.

### CALIBRATION GAS BOTTLES <sup>1</sup>

Part Number	Description
1A99119G01	Two disposable gas bottles – .4% and 8% O <sub>2</sub> balance nitrogen 550 liters each
1A99119G02	Two pressure regulators for cal. gas bottles
1A99119G03	Bottle rack

<sup>1</sup> Bottles cannot be shipped via airfreight.



## 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.

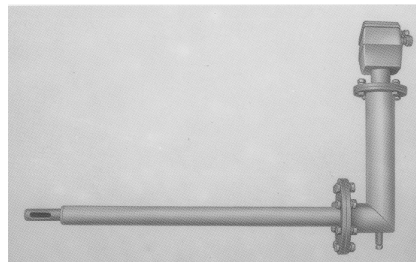
For more information, call Rosemount Analytical at 1-800-433-6076.



### 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.



### O<sub>2</sub> Calibration Gas Kits

Rosemount Analytical's O<sub>2</sub> 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.



## SPECIAL ARRANGEMENTS

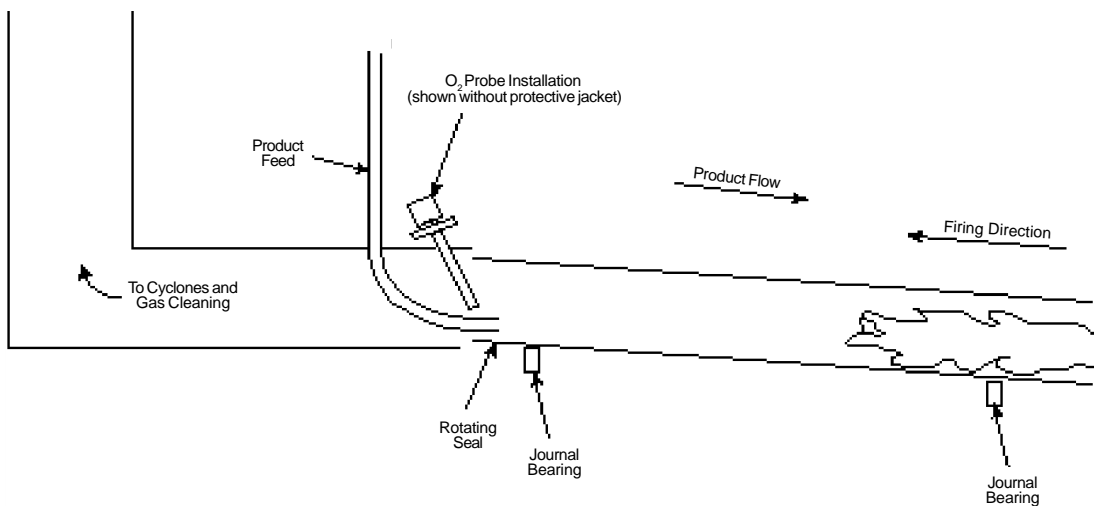
### Special Cells for High Acid Service

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



### Kiln Applications

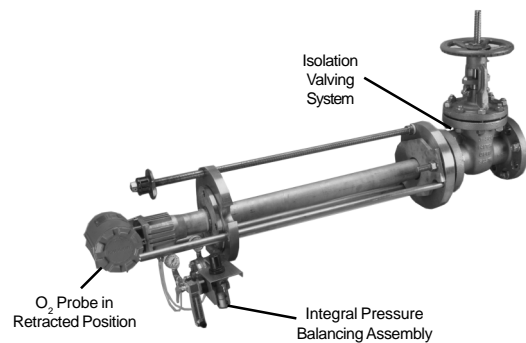
An in situ  $O_2$  probe can reach into the kiln past the rotating seal, eliminating the effect of the tramp air leaking through the rotating seals.  $O_2$  and  $NO_x$  levels are closely related, providing a good indication of Calcining rate. Probes are offered in lengths of up to 18 ft. Probes can be operated to 1500°F with only an outer abrasive shield and to 2000°F with optional cooling jackets (6 ft. length limit.) See Application Data Sheet ADS 106-300F.A01.



**Proper installation of an  $O_2$  probe in a rotating cement kiln**

### 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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