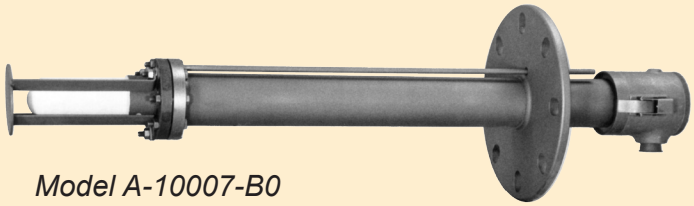
Hays Cleveland
Division of UniControl Inc.

Model A10007-B0

Zirconium Oxide In Stack

OXYPROBE™

Oxygen Analyzer Probe



Model A-10007-B0
O_2 Analyzer Probe

Model A-10050-A0
O_2 Analyzer Electronics

STANDARD FEATURES

- O_2 trim and monitoring for water tube & utility boiler applications.
- In-situ field-repairable probe.
- 18" to 12' probe lengths.
- Stable probe reduces calibration frequency.
- Rated for process applications.
- Flame arrestor option.
- Semi-automatic & automatic calibration methods.
- Single calibration gas.
- High accuracy, +/- 1% full scale.
- Response time less than 1 second.
- Used with Model A-10050-A0 Electronics to provide many features such as Combustion Efficiency, Probe Diagnostics, and I/O for Control & Safety.

INTRODUCTION

Hays Cleveland is a pioneer in the development and application of zirconium oxide probes for flue gas oxygen analysis. The Model A-10007-B0 OXYPROBE™ has long been recognized as the most reliable and stable probe for boiler, rotary kiln, and other severe duty applications. Now this analyzer is offered with our state of the art electronics, Model A-10050-A0 .

The OXYPROBE™ probe's patented zirconium oxide cell with low voltage heater and high temperature RTD offers remarkable stability and accuracy even at the high levels of oxygen found in applications including flue gas mixing and many processes. The use of the RTD to control the heater temperature is unique to our design and is the basis for its stability compared to probes using thermocouples for cell temperature control.

The components of the OXYPROBE™ include the probe, electronics, cable and flow (calibration) panel, with one set of regulator and gauges. Semi-automatic and automatic calibration options are available. Typically, because of the stability of the probe, the semi-automatic calibration method is employed unless auto-calibration is a site requirement. The semi-automatic calibration method includes a flow panel (Model C06) for continuous control of the reference air and for calibration air. This probe requires only a single calibration gas (nominal 4.5% O_2 in N_2) supplied in a cylinder with a regulator and gauges (Model FZ1-FZ2). An annual calibration check is recommended.

The Model A-10050-A0 Oxygen Analyzer Electronics controls the heater to maintain the probe at a constant temperature for accuracy and long cell life. RS 485 Modbus communications is standard. Inputs for fuel type(s), flue gas temperature and combustion air temperature are options for computing combustion efficiency. The Model A-10050-A0 electronics replaces earlier electronics units. For more information, please refer to Bulletin BA10050A0.

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SPECIFICATIONS

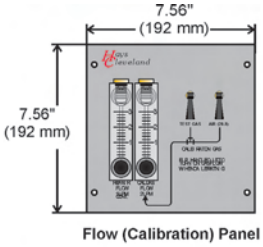
Series A-10007-B0 OXYPROBE™ Zirconium Oxide In Stack Oxygen Analyzer Probe	
Fuel Types	Gas, oil, coal, bagasse, biomass, wood.
Power Requirements	115 VA ± 15% 50/60 Hz.,170 VA startup, 40-100 VA operating, with A-10050-A0 Electronics.
Range	0-1% to 0-25% with A-10050-A0 Electronics.
Response Time	Initial within 1 second in flue gas through filter.
Accuracy	±1% full scale, complete system.
Filter	5 micron ceramic, bolt-on.
Cable, Probe-to-Electronics	20' (standard); 50' optional; multiconductor in weather-tight flexible conduit.
Probe Material	304, 316 & 446 SS, primary metals.
Flue Gas Temperature	-40 to 1200F (-40 to 650C), noncondensing.
Test Gas & Reference Air	Reference air: dry instrument air at 1LPM at 10 psig. Calibration air: dry instrument air at 2LPM at 10 psig. Calibration gas: nominal 4.5% O_2 in N_2, 2LPM at 10 psig.
Connector Wiring	Quick disconnect; 3 shielded pairs in ¾" flex conduit.
Electronics	Refer to Bulletin BA-10050-A0 for Series A-10050-A0 Microprocessor O_2 Analyzer Electronics.
Shipping Weight	Contact Factory.

Table 1: OXYPROBE™ Dimensions					
Nominal Probe Length	1.5 ft. (0.5M)	3 ft. (1M)	6 ft. (2M)	9 ft. (3M)	12 ft. (4M)
Model Suffix (no Flame Arrestor)	**-A01**	**-A02**	**-A03**	**-A04**	**-A05**
L1 Reference Dimension	23.9 in. (607mm)	41.9 in. (1064mm)	77.9 in. (1979mm)	113.9 in. (2893mm)	149.9 in. (3807mm)
L2 Nominal Insertion	15.6 in. (396mm)	33.6 in. (853mm)	69.6 in. (1768mm)	105.6 in. (2682mm)	141.6 in. (3597mm)
Model Suffix (with Flame Arrestor)	**-A06**	**-A07**	**-A08**	**-A09**	**-A10**
L1 Reference Dimension	25 in. (635mm)	43 in. (1092mm)	79 in. (2007mm)	115 in. (2921mm)	151 in. (3835mm)
L2 Nominal Insertion	16.7 in. (424mm)	34.7 in. (881mm)	70.7 in. (1796mm)	106.7 in. (2710mm)	142.7 in. (3625mm)

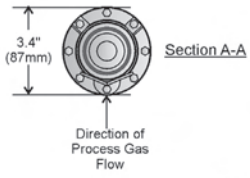
NOMENCLATURE

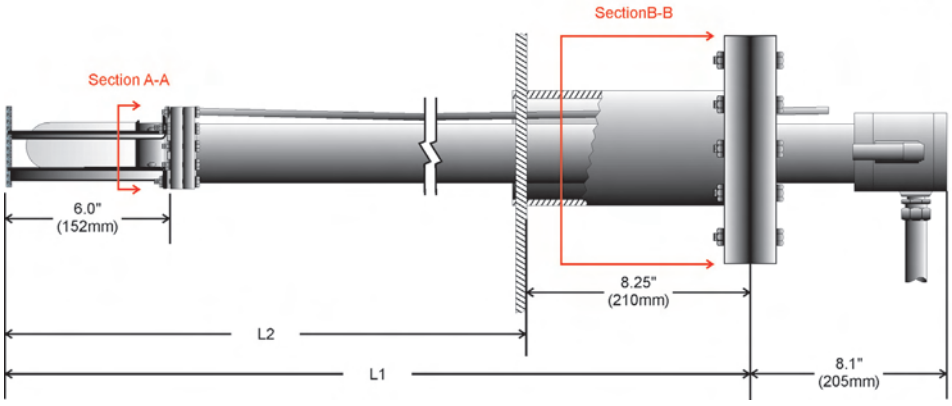
Model Code: A-10007-B0 - __ - __ - __ - __ - __	
Codes	**Description**
Base	A-10007-B0-
Probe Selection: Refer to Table 1, below.	
Electronics Options: Refer to Bulletin BA-10050-A0.	
Calibration Method	
C05	Air filter for dry instrument air; air set with gauge and manual drain.
C06	Semi-automatic Flow (Calibration) Panel: uses manually-operated valves and flow meters for reference air and calibration gas; DIN size. One per probe required.
C07	Automatic Flow (Calibration) Panel: uses solenoid-operated valves.
Probe-to-Electronics Cables	
D01	Cable, loose kit, 20 feet.
D02	Cable, prewired to probe connector, 20 feet.
D03	Cable, loose kit, 50 feet.
D04	Cable, prewired to probe connector, 50 feet.
Calibration Gas Accessories	
FZ1	Calibration gas, 4.5 to 5.0% O_2 in N_2 (oxygen in nitrogen), disposable cylinder.
FZ2	Dual-stage regulator and gauges for FZ1.
Mounting Hardware Option	
G02	Probe mounting hardware for steel ducts, 4"/150# flange, not welded to a 4" x 8.75" long nipple. Used with 18", 3', and 6' probes only.

Typical Model Code: A-10007-B0-A01-C05-C06-D02-FZ1-FZ2.

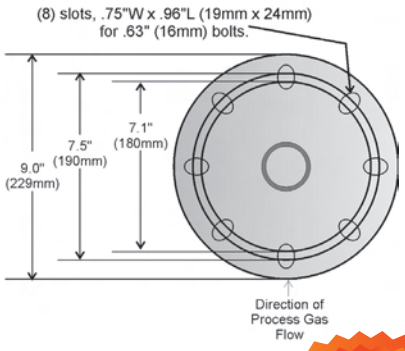


Flow (Calibration) Panel





Section B-B



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