



YOKOGAWA 

# OX100 Series Zirconia-Sensor Environmental Oxygen Analyzer



- One Instrument measures 100 ppm to 25% Oxygen
- Simple "One Touch" Calibration
- Self Diagnostics Assure High Reliability
- "One Touch" Sensor Replacement
- Compact Size
- Accessories to Assure Accuracy
  - Dedicated Sampling Unit (Separate from Oxygen Analyzer)  
(Removes Dust, Mist and Organic Solvents)
  - Calibration Kit  
Simple On-Site Calibration  
(Using 1 liter Gas Cylinder)



Bulletin 11M10A01-03E

# A Compact Environmental Oxygen Analy

MODEL

# OX102



## Enhanced Oxygen Analyzer

### Applications

- N<sub>2</sub> reflow furnaces ■ Semiconductor maker environmental monitoring ■ ppm-level O<sub>2</sub> measurement
- Monitoring purity of N<sub>2</sub>, Ar separated from air ■ Monitoring for deficiency of O<sub>2</sub>

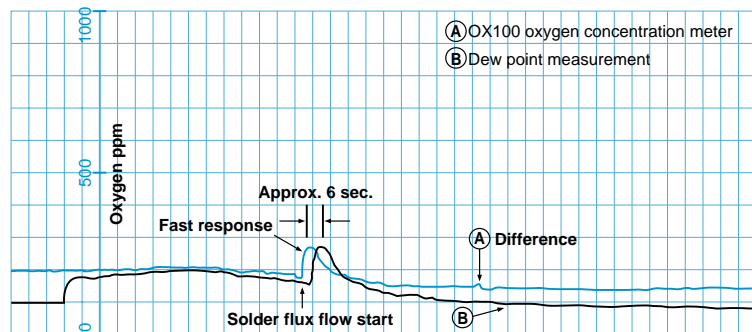
- Low range 0 to 100 ppm
- Autoranging in four ranges from 0-100 ppm to 0-25%
- High and Low Alarms

- Oxygen concentration
- FAIL lamp
- High, Low Alarm lamps
- Alarm
- Fixed-range 4-20 mA / 1-5 V, Autorange 4-20 mA, keys
- Calibration keys
- Sensor holder: 17 mm (\*1) dia. or G3/8
- Sensor (\*2)
- Plastic sensor holder (Specify Option code /J or L9811LA(\*3))
- Lit when range is 1.0 to 25% between 0 to 1.0% and 0 to 25% other than 0 to 10,000ppm
- Lit when range is 0 to 10,000 ppm
- Validates parameter entry
- Sensor plus cable: ●5 m (OX100), ●5, 10 or 30 m (OX102)  
OX100 and OX102 sensors are not interchangeable

1 : When mount in 17 mm hole in panel, panel thickness can be up to 4 mm. 2 : Within 5 cm of sensor tip, can reach 250°C.  
3 : Specify Option code /S, or Model K9424DB, for metal nipple.

### Example: N<sub>2</sub> reflow furnace

- Temperature : 120-130°C
- Gas flow : 1m/sec.
- Environment : Alcohol / Rosin / Flux, Oxygen 100 ppm  
Compared with oxygen meter it replaced,
- Response was faster, so changes were quickly detected
- Easy maintenance for Sampling unit (easy replacement of filter, activated carbon)



# zer with the usual Yokogawa reliability

MODEL

# OX100



## General-Purpose Oxygen Analyzer

- Spans 1000 ppm to 25%
- Autoranging in two ranges, 0-1000 ppm and 0-25%
- High Alarm

### Applications

- Development lab., globe box ■ Clean room for testing, environment, fermentation, biochemical
- Continuous monitoring of gas flow in food packing ■ Aging machine

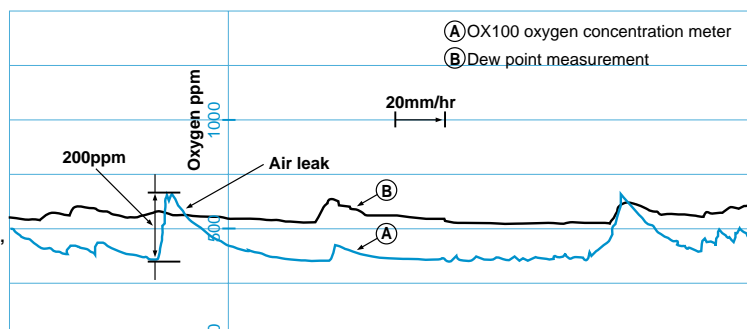


Main applications	Usage cautions
Globe box (processing crystal parts)	Box is to be filled with inert gas
Globe box (in research lab.)	If organic solvents in box, use sampling unit
N <sub>2</sub> reflow furnace / auto soldering	Use sampling unit, keep alcohol / flux from furnace
Clean room	Use sampling unit if organic solvents present
Etching machine	High temperatures, so use gold nipple K9424B
Monitoring for deficiency of O <sub>2</sub>	Use OX102 with Hi/Lo Alarms, or OX100-3 (Lo)
Foodstuffs	Use sampling unit if disinfectant is alcohol-based

Measurement cautions \* 1 : Sensor should not be exposed to silicone vapor, etc.  
 \* 2 : Corrosive or flammable gases, halogens, Freon, or organic solvents may adversely affect sensor.

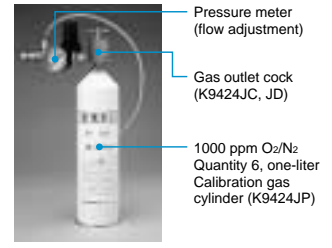
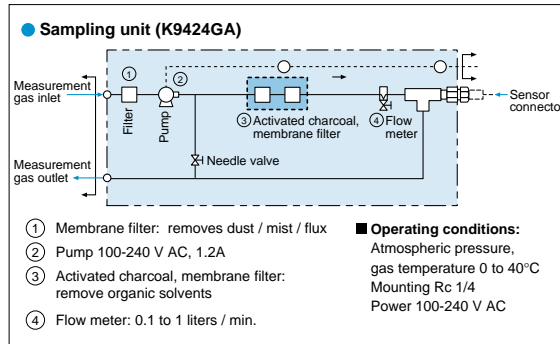
### Example: Measuring oxygen concentration in welding furnace

- Temperature : Room temperature, atmospheric pressure
- Gas flow : 30 Nl/min. (N<sub>2</sub>)
- Environment : Oxygen about 500 ppm in N<sub>2</sub>
- Low oxygen concentration in furnace: safety precautions required  
 OX100 can detect atmospheric air leakage into furnace which causes oxygen to rise to 200 ppm, so can help with welding quality assurance.





● Sampling unit (K9424GA)  
215 x 272 x 140 (mm), approx 4.8kg

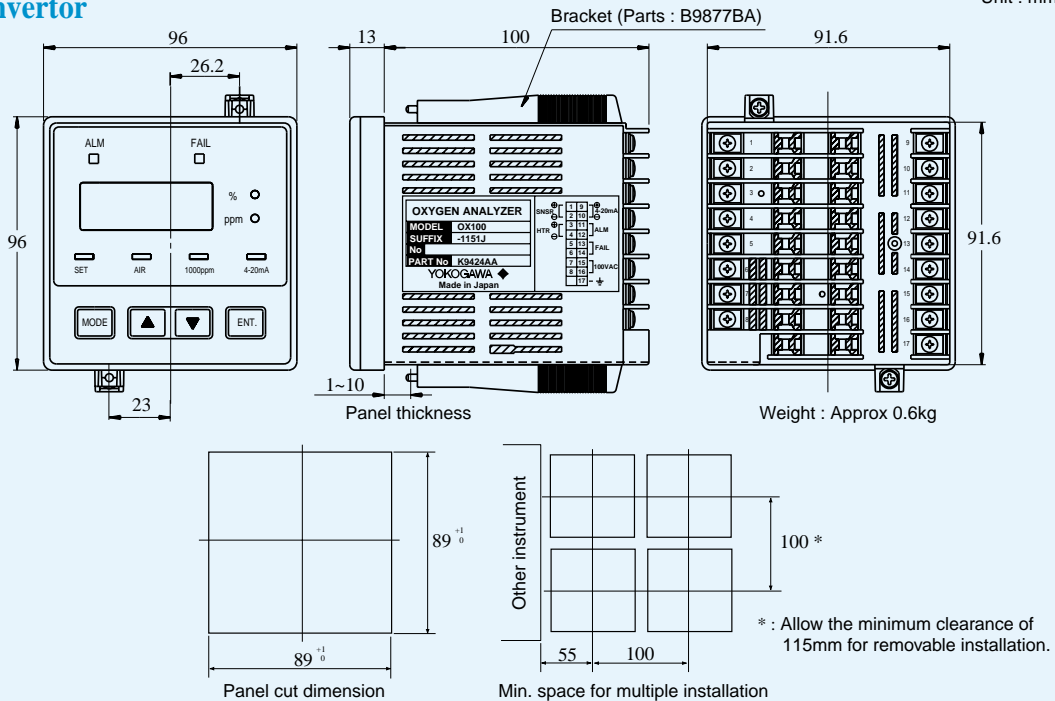


● Calibration kit (K9424JA, JB)  
Gas outlet cock + Qty. 6, one  
Calibration gas cylinder -  
210 x 75 x 335 mm, approx 800 g.

## OX100 EXTERNAL DIMENSIONS

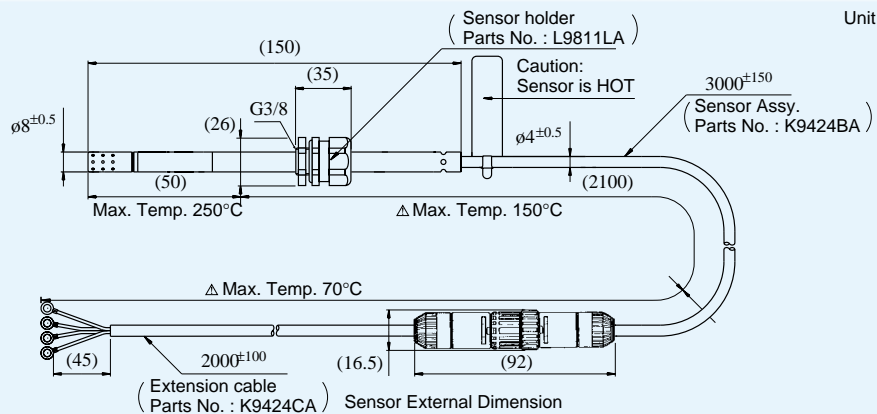
### Converter

Unit : mm



### Sensor

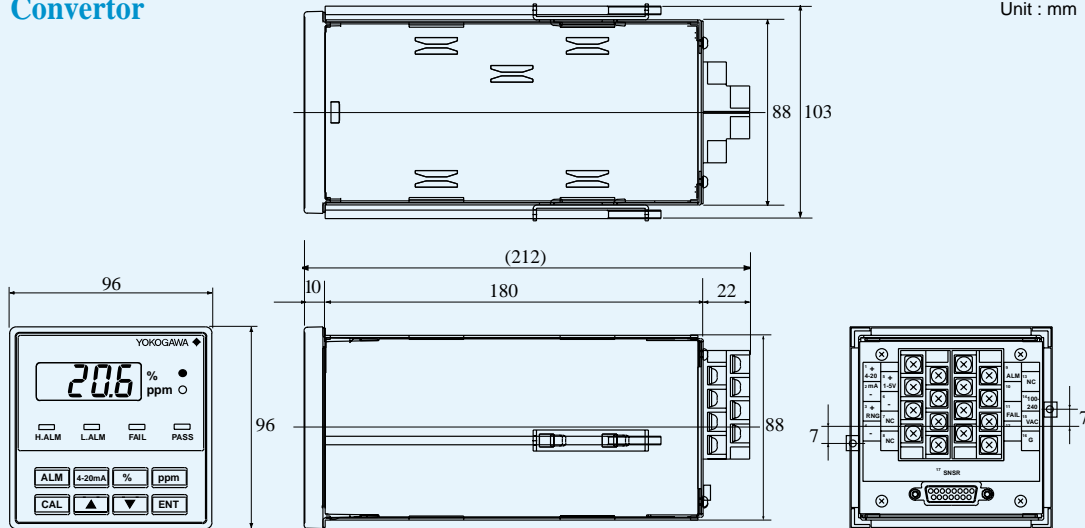
Unit : mm



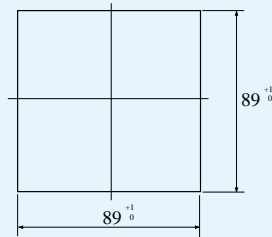
## OX102 EXTERNAL DIMENSIONS

### Converter

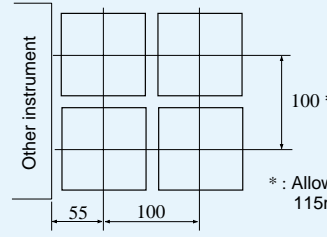
Unit : mm



Weight : Approx 1.2kg



Panel cut dimension

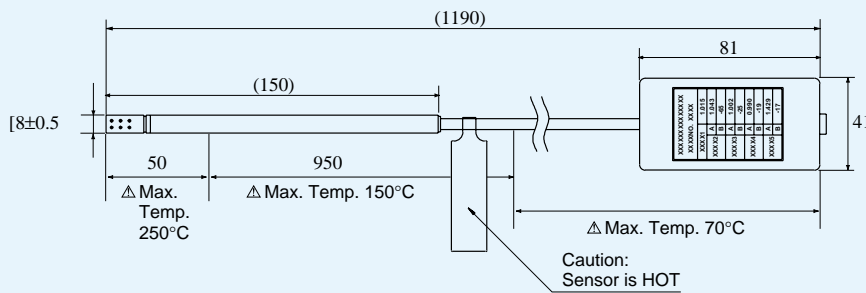


Min. space for multiple installation

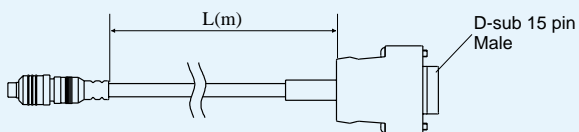
\* : Allow a minimum distance of 115mm for ease of removal.

### Sensor

Unit : mm



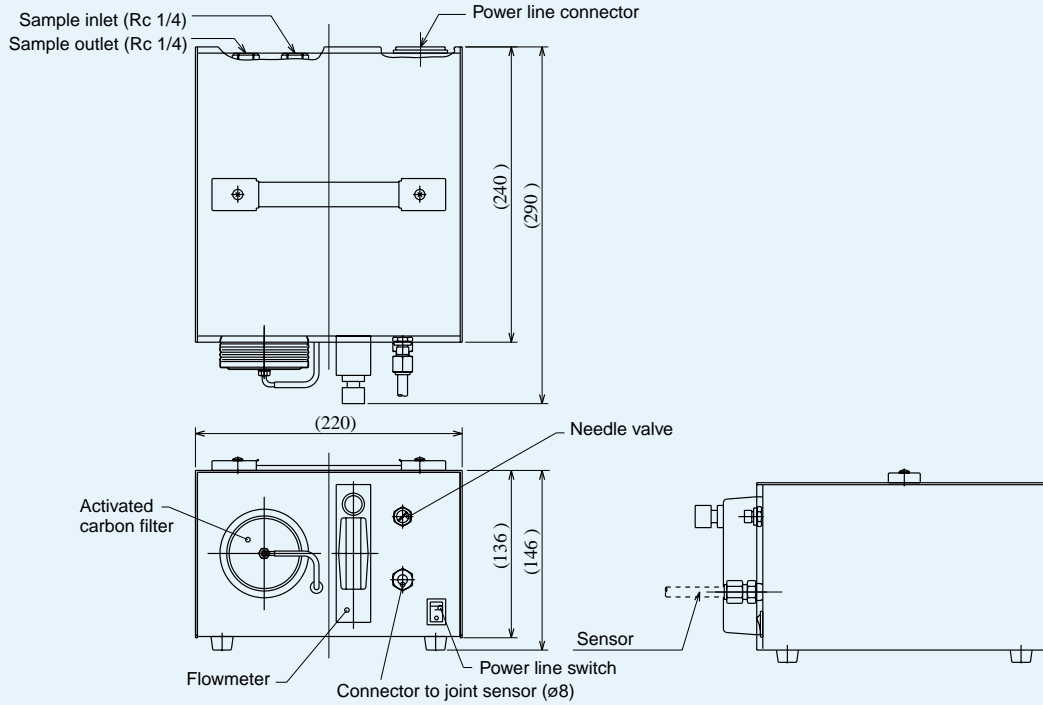
Sensor External Dimension



Model Code	L (m)
OX102-11 <input type="checkbox"/>	4
OX102-12 <input type="checkbox"/>	9
OX102-13 <input type="checkbox"/>	29

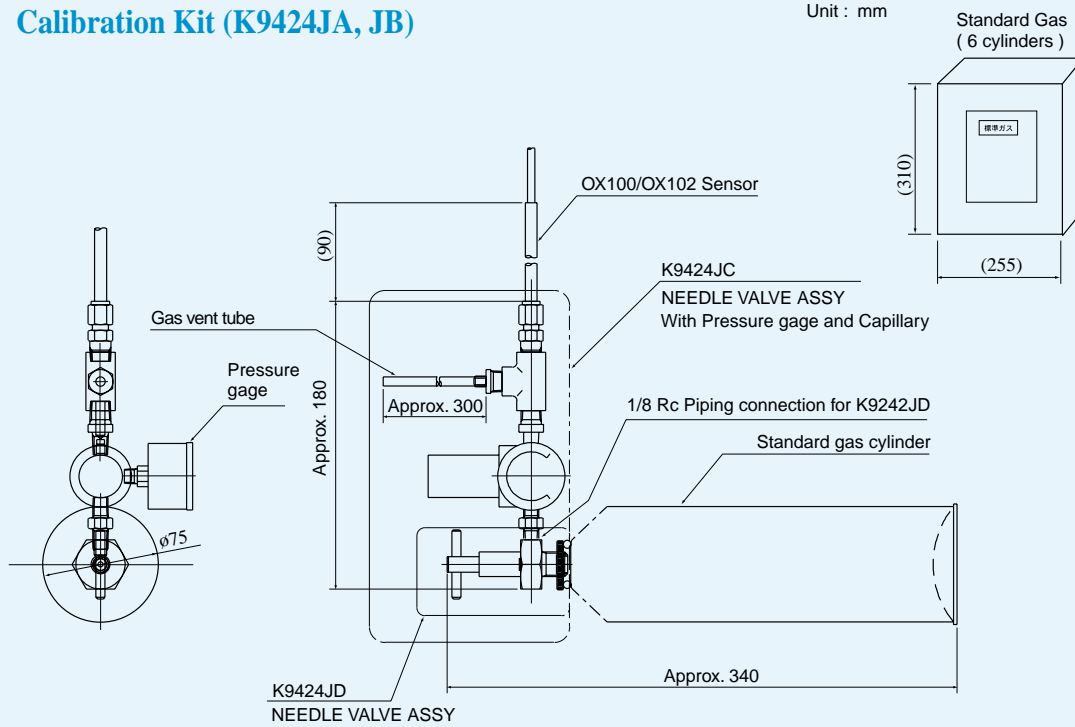
## Sampling Unit (K9424GA)

Unit:mm



## Calibration Kit (K9424JA, JB)

Unit : mm



## OX102 Basic Specifications

Model	OX102			
<b>Meas. principle:</b>	Zirconium sensor, current-limited operation			
<b>Sampling:</b>	Natural diffusion			
<b>Gas sample:</b>	Temperature 0 - 150°C, Humidity 20 - 80% RH (dew free), Pressure 1013 ± 40 hPa			
<b>Measured gas:</b>	O <sub>2</sub> in N <sub>2</sub> or mixed gases; can't contain silicone vapor, flammable gas or organic solvent			
<b>Mounting:</b>	Indoor, panel mounting			
<b>Meas. ranges:</b>	0-100ppm	0-1000ppm	0-10000ppm	0-25%
<b>Ranging:</b>	Autoranging or manual ranging, 0 - 25%			
<b>Range/</b>	20-100ppm	100-1000ppm	0-10000ppm	1-25%
<b>Repeatability:</b>	±15ppm	±25ppm	±3% of span (for reading of 1,000-5,000)	±0.25% of span
<b>Calibration:</b>	1. Atmospheric pressure calibration (between 15 to 25% O <sub>2</sub> ) 2. 100 ppm calibration (between 80 and 120 ppm) 3. 1000 ppm calibration (between 900 and 1100 ppm) 4. 9000 ppm calibration (between 8500 and 9500 ppm) 5. Atmospheric pressure, 20, 100, 500, 1000 and 9000 ppm calibration			
<b>Fine tune mode :</b>	The measuring value can be adjusted to true analyzed value.			
<b>External output:</b>	1. 4-20 mA isolated, fixed range (0-100, 0-1000, 0-10,000 ppm, 0-25% selectable), or 4-20 mA autoranging. 2. 1-5 V, fixed range 0-100, 0-1000, 0-10,000 ppm, 0-25% selectable, 3., Zone signal output for 4-20 mA autoranging			
<b>Contact output:</b>	Two outputs, rated 110 V AC, 24 V DC, 1 A Abnormal Hi or Lo alarm			
<b>Self-diagnostics:</b>	Sensor resistance monitored (open circuit check)			
<b>Hi, Lo alarm settings:</b>	Alarm contact output if sensor open circuit Setting range 1 ppm to 24.9%			
<b>Storage environment:</b>	Sensor and converter temperature 0 to 70°C (dew free)			
<b>Operating Temp. range:</b>	Sensor : 0 to 150°C, up to 250°C for 5cm of the sensor tip Converter : 0 to 50°C			
<b>Operating pressure:</b>	1013 ± 40 hPa			
<b>Power:</b>	100-240V AC ±10%, 50/60Hz 15VA			
<b>Converter size:</b>	96 x 96 x 190 mm			

## OX100 Basic Specifications

Model	OX100			
<b>Meas. principle:</b>	Zirconium sensor, current-limited operation			
<b>Sampling:</b>	Natural diffusion			
<b>Gas sample:</b>	Temperature 0 - 150°C, Humidity 20 - 80% RH (dew free), Pressure 1013 ± 40 hPa			
<b>Measured gas:</b>	O <sub>2</sub> in N <sub>2</sub> or mixed gases; can't contain silicone vapor, flammable gas or organic Solvent			
<b>Mounting:</b>	Indoor, panel mounting			
<b>Meas. ranges:</b>	0-1000ppm	0-25%	0-25%	
<b>Ranging:</b>	Autoranging or manual ranging 0 - 25%			
<b>Range/</b>	0-1000 ppm O <sub>2</sub> range	0.1-25% O <sub>2</sub>		
<b>Repeatability:</b>	±2% of span (100-1,000 ppm)	±2% of span		
<b>Calibration:</b>	1. Atmospheric pressure calibration (between 15 to 25% O <sub>2</sub> ) 2. 1000 ppm standard gas calibration (1000±50 ppm)			
<b>Sensor cable:</b>	5 m (Standard)			
<b>External output:</b>	4-20 mA isolated, fixed range (0-1000 ppm, 0-25% selectable), (for 0-25%, 4 mA DC corresponds to 1500 ppm or less).			
<b>Contact output:</b>	Two outputs, rated 110 V AC, 24 V DC, 1 A			
<b>Alarm output:</b>	High alarm contact output if concentration abnormal			
<b>Self-diagnostics:</b>	Alarm contact output if sensor open circuit			
<b>Hi alarm setting:</b>	Only concentration abnormal Hi alarm setting			
<b>Storage environment:</b>	Sensor and converter temperature 0 to 70°C (dew free)			
<b>Operating Temp. range:</b>	Sensor: 0 to 150°C, up to 250°C within 5 cm of the sensor tip Converter: 0 to 50°C			
<b>Operating pressure:</b>	1013±40 hPa			
<b>Power:</b>	100 V AC ±10%, 50/60 Hz, 15 VA			
<b>Converter size:</b>	96 x 96 x 190 mm			

- OX100 measuring principles, measured gas, and system configuration are same as for OX102
- If you want an oxygen (concentration) control range of 0.2 to 0.5%, please consult with us, or your Yokogawa salesperson or representative.

**OX102 Current-limited Zirconia-Sensor Environmental Oxygen Analyzer**

Model	Suffix Code	Option Code	Specifications
<b>OX102</b>	-----	-----	Enhanced Oxygen analyzer
Measuring range	-1 -----	-----	0-100/1000/10,000 ppm / 0-25% O <sub>2</sub>
Sensor	1 -----	-----	Yes (5 m; sensor assembly. 1m + cable 4 m)
	2 -----	-----	Yes (10 m; sensor assembly. 1m + cable 9 m)
	3 -----	-----	Yes (30 m; sensor assembly. 1m + cable 29 m)
	N -----	-----	No sensor assembly
Manual	J ---	-----	Japanese
	E ---	-----	English
Option code*	/S	-----	Metal sensor holder
	/J	-----	Plastic resin sensor holder

\*Standard Product does not have a sensor holder. To get the sensor holder, specify "/S" or "/J".  
(If using Sampling Unit, the sensor holder is not required.)

**OX100 Current limited Zirconia - Sensore Environmental Oxygen Analyzer**

Model	Suffix Code	Option Code	Specifications
<b>OX100</b>	-----	-----	General purpose Oxygen Analyzer
Application	-1 -----	-----	Oxygen Analyzer
	-2 -----	-----	For (N <sub>2</sub> ) reflow furnace
	-3 -----	-----	Monitoring for deficiency of Oxygen : with low alarm
Measuring Range	1 -----	-----	0-1000 ppm / 0-25% O <sub>2</sub>
Power supply	5 -----	-----	100 V AC ±10%, 50/60 Hz
Sensor	1 ----	-----	Sensor assy. cable 3m + extension 2m
	N ----	-----	No sensor assembly
Manual	J -----	-----	Japanese
	E -----	-----	English

L9811LA plastic resin sensor holder is provided as standard accessory.

**Sampling unit, Calibration kit**


Part	Specifications
<b>K9424GA</b>	Sampling unit
<b>K9424JA</b>	Calibration kit: Six 1-liter gas cylinder , gas outlet cock (with flow adjuster)
<b>K9424JB</b>	Calibration kit: Six 1-liter gas cylinder , gas outlet cock (without flow adjuster)

**Accessories**

Part	Specifications
<b>K9346WM</b>	Activated charcoal element, five per pack: for sampling unit
<b>K9424JC</b>	Gas outlet cock (with flow adjuster): qty. one
<b>K9424JD</b>	Gas outlet cock (without flow adjuster): qty. one
<b>K9424JP</b>	Standard gas cylinder ( 1000 ppm O <sub>2</sub> /N <sub>2</sub> ) : qty. six
<b>K9424BA</b>	Sensor assy. cable 3 m for OX100 only
<b>K9424CA</b>	Extension cable, 2 m: for OX100 only
<b>B9877BA</b>	Bracket for mounting OX100, two per set.
<b>K9424LA</b>	Sensor assy. One par set : for OX102 only
<b>K9424LB</b>	Extension cable, 4 m: for OX102 only
<b>K9424LC</b>	Extension cable, 9 m: for OX102 only
<b>K9424LD</b>	Extension cable, 29 m: for OX102 only
<b>K9424DB</b>	Sensor holder (metal) for OX100 or OX102
<b>L9811LA</b>	Sensor holder (plastic) for OX100 or OX102

**Restrictions**

- Can't be used in flammable or exhaust gas, corrosive gas, or organic solvent environment
- To use in an environment with organic silicon(e), flow furnace, or N<sub>2</sub> reflow furnace:  
(1) Use a sampling unit,  
(2) The maintenance requirements (filter and activated charcoal) depend on the measured gas.
- Don't hesitate to contact us if you have any questions.

 Be sure to read the manual and follow the safety precautions in it.



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