

Compact Design, Best for Installing in Nitrogen Reflow System

# Zirconia Oxygen Analyzer

Model : RF-400

Zirconia oxygen analyzer Model RF-400 is developed for Nitrogen reflow system, based on our long experience of oxygen analyzers for electronic industry.

It has achieved its higher durability due to equipped Toray unique zirconia mini-sensor available for long-term stable and precise measurement, and additional oxygen sensor protection system. This model with simple operation and compact size is most suitable to be installed in Nitrogen reflow or other system.

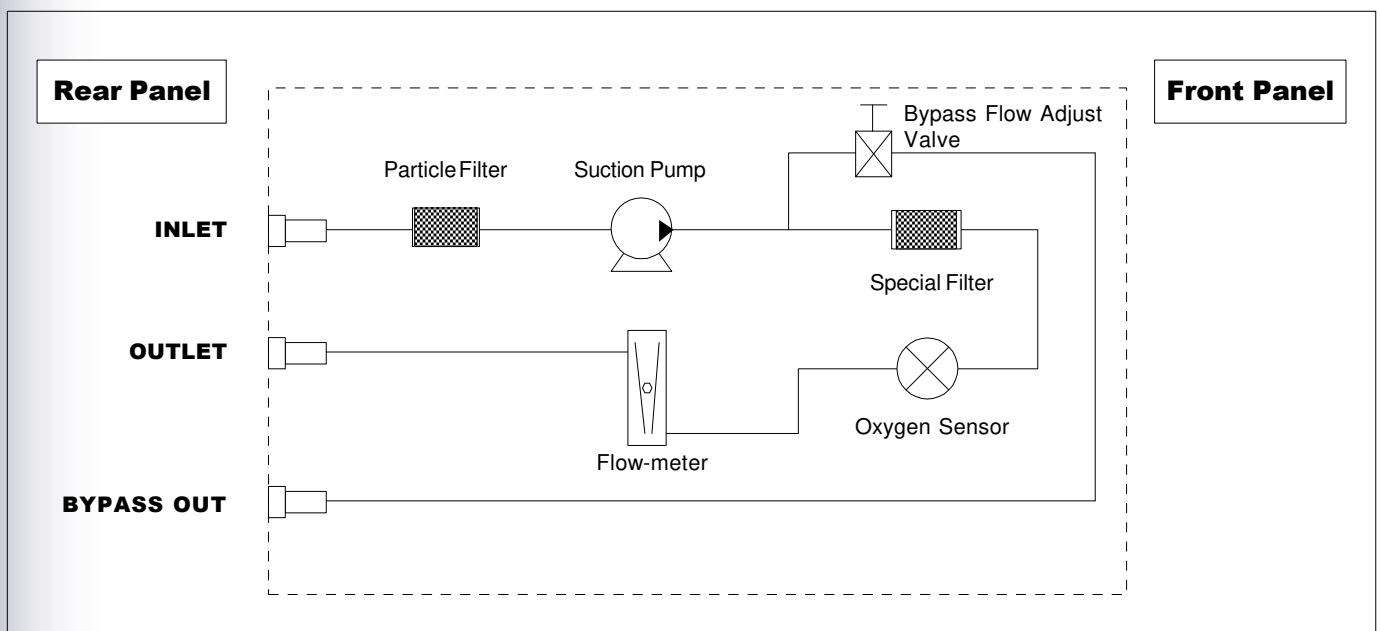
## Features

- New-type Particle Filter**  
 Filter change timing is easy to know by color function in response to oil. It can be replaced without removing oxygen analyzer from equipment.
- Special Filter**  
 It makes the sensor life longer, and is ready for various depleted materials.
- Wide Power Supply**  
 AC100V-240V power supply is available.
- Convenient Measurement Range**  
 0-10000 ppm range generally used at Nitrogen reflow system is settable (0-1 % range is also selectable).
- Micromini Sensor Unit Dedicated for RF-400**  
 Micromini oxygen sensor is newly developed.
- Compact Design and Easy Installation**  
 The size of depth shorten, save an installation space.



## Measurement Principles

Toray's Zirconia Oxygen analyzers determine oxygen concentration using the conductivity of a zirconia ceramic cell. Zirconia ceramic cells only allow oxygen ions to pass through at high temperatures. With reference gas on one side and sample gas on the other, oxygen ions move from the side with the highest concentration of oxygen to that with the lowest concentration. The movement of ions generates an Electro Motive Force, which can be measured to determine the oxygen content. This is in accordance with the so-called Nernst Equation.



RF-400 Sample Flow

# Specifications

## 1. Instruments Specifications

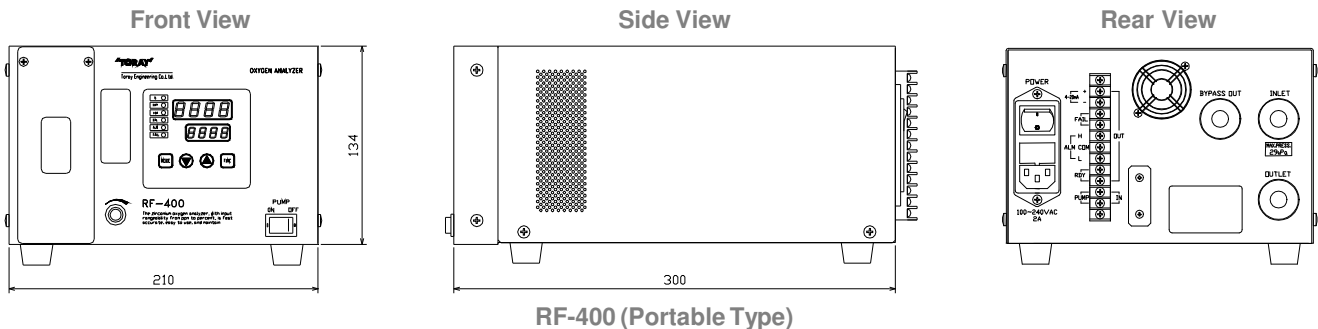
Type	Portable or Panel Mounted	
Display	Digital 4 Digits (O <sub>2</sub> Concentration Display)	
Meas. Range	10ppm~100vol%O <sub>2</sub> 0-1/10/100/1000/10000ppm (1)/10/100% 10 <sup>-20</sup> -10 <sup>-9</sup> atm ※Less than 10ppm is no guarantee. ※0-10000ppm or 0-1% range is selectable.	
Sampling	Continuous suction by built-in pump	
Supplied Gas	1000~2000ml/min	
Sensor Gas	60±10ml/min	
Gas Connection	INLET (Sample Gas)	Rc1/4
	BYPASSOUT (Bypass Outlet)	Rc1/4
	OUTLET (Sample Gas)	Rc1/4
Reference Gas	Atmospheric Gas	
Weight	Approx. 6.5kg	
Color	Munsell N3 Matte Coating (Matte-black)	

## 2. Performance

Repeatability	±1%FS (More than 0-10000ppm Range) ±2%FS (Less than 0-10000ppm Range) (Less than 0-10ppm is no guarantee.)
Air Point Stability	±1%FS/24h

## 3. Engineering Specifications

Meas. Value Output	External Output ; DC4~20mA
Limit Alarm	LED Display (Upper and Lower limits) Contact Output ; 2a Independently Capacity ; AC30V, DC30V, 1A
Self Diagnosis	Warm-up Error, Thermo-Couple Error, Over Heat Error, CPU Error, Furnace Error, Asymmetry Potential Error O <sub>2</sub> Sensor Resistance Error AIR Point Calibration Error SPAN Point Calibration Error
Sample Gas Conditions	Neither Flammable Gas, Halogen Gas, Silica, Corrosive Gas nor Vapor shall be contained. Pressure ; 0.03Mpa or Less required Flow Rate ; 1000~2000ml/min Temperature ; 50°C or Less Humidity ; Dew point shall be lower than ambient temperature.
Power Source	Voltage ; AC100V~240V Frequency ; 50/60Hz
Installed Location	Indoors, Non Explosion Area Ambient Temperature ; 0~50°C Ambient Humidity ; 45~85%RH, No dew generated
Option	Communication (Conformed to RS-232C Single way) Activated Carbon Filter, Cotton Filter Sintered Metal Filter



### Cautions

For your safety and correct operation, please read the instruction manual carefully before use.

■ The design and specifications may be changed without notice for improvement.

■ Please send any questions or requests to the following address.

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