

# High Performance with Compact Design and Low Cost Zirconia Oxygen Analyzer

**Model : SD/LD-450**

SD/LD-450 is a high-performance oxygen analyzer developed for various devices such as vacuum devices on the basis of our longtime reliability and performance in the electronics market.

SD/LD-450 is more durable than ever because our own compact zirconia sensor, by which the long-term stable and precise measurement is available, and oxygen sensor protection mechanism are mounted. In addition, SD/LD-450 can be set to more suitable measurement place by separating oxygen sensor from converter and making the converter wall mounting type. This is the best oxygen analyzer for building into various treatment devices with easy operation.

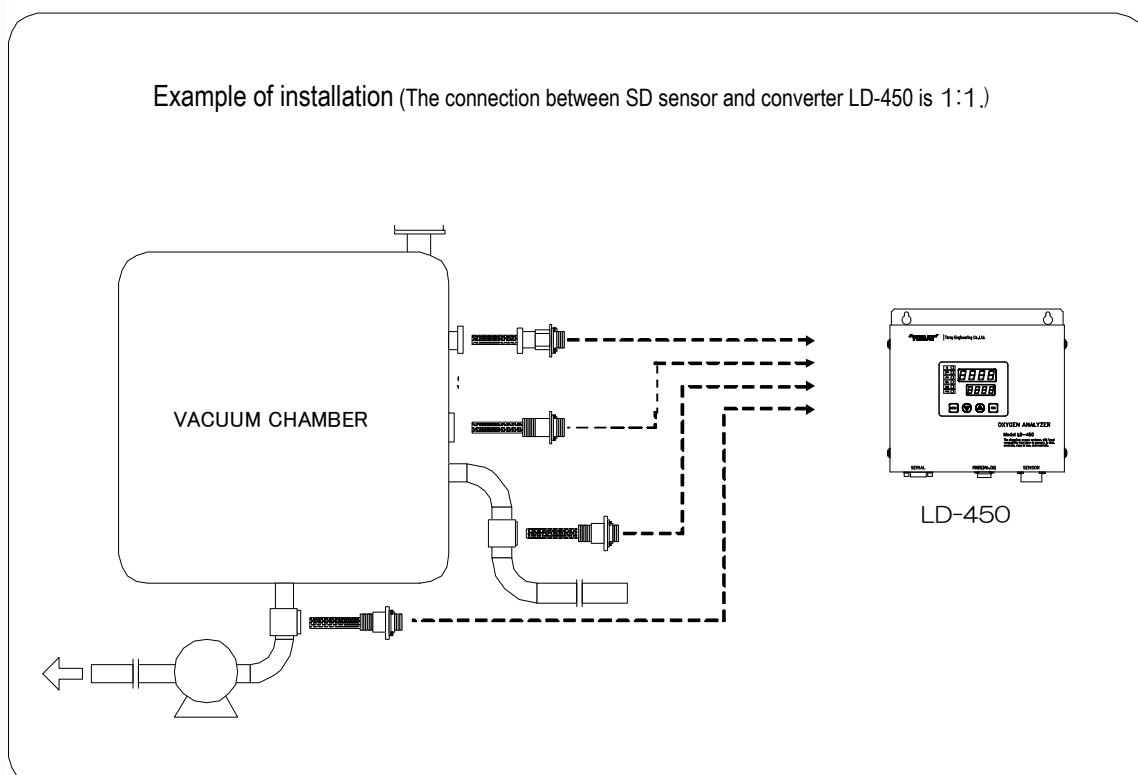
## Features

- **Setup layout is flexible.**  
The separated structure of oxygen sensor and thin converter greatly relaxed the limit of installation location.
- **Space saving**  
New developed thin wall mounting type converter resolved the concerns about depth.
- **Super high speed response**  
The shortest response can be achieved by separated sensor.
- **High durable sensor**  
The sensor with special coating realized high durability.
- **Compliant standard**  
Compliant with CE marking, EN61010-1, EN61326-1, and RoHS



## Measurement Principle

Toray 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.



# Specification

## 1. Instrument Specification

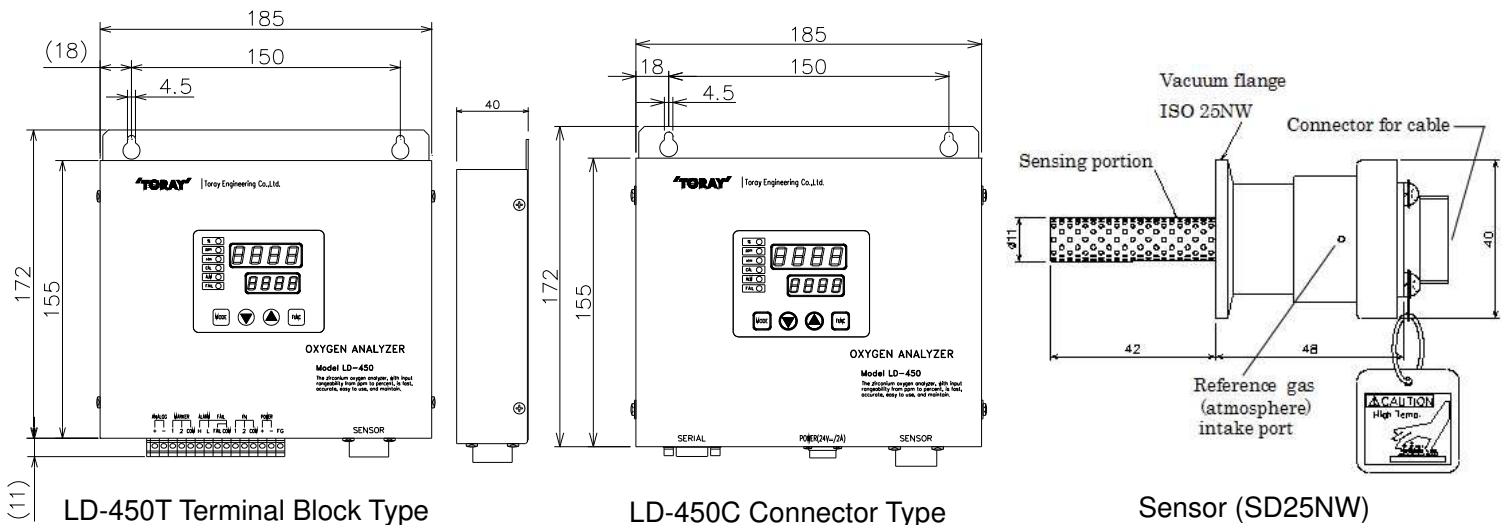
Type	Separation Type (Converter : Wall mounting type, Sensor : Direct insert type)
Display	LED Digital 3 Digits + Unit (%) Auto Range (Concentration Display) :LED Digital 4 Digits (Display Operation/Setting Content) 0.001ppm - 100vol%O <sub>2</sub> 10 <sup>-20</sup> -10 <sup>-0</sup> atm
Measurement Range	0-1/10/100/1000ppm/1/10/100% 10 <sup>-20</sup> -10 <sup>-0</sup> atm
Sensor Connection	ISO Vacuum Flange NW16,25,40 or R3/8 screw
Reference Gas	Atmospheric Gas
Weight	Converter Approx. 1.2kg Sensor Approx. 0.5kg
Color	LD-450 : Mat White Sensor : Paintless
Dimension	185W×155H×40Dmm (excluding protrusion)
Repeatability	±0.5%FS (1% range or more) ±1.0%F.S or ±0.1ppm whichever is bigger (Less than 1% range)
Air Point Stability	±1%FS or less / 24hr

## 2. Feature

## 3. Engineering Specification

Measurement value Output	LD-450T : DC4 - 20mA LD-450C : RS-232C
Recorder Output Range	Select 0-1%, 0-5%, 0-10%, 0-25% or 0-100%
Concentration Alarm Output	H/L LD-450T : 2 points non-voltage contact output LD-450C : Transmission Output
Equipment Error Output	LD-450T : 1 point non-voltage output LD-450C : Transmission Output
Sample Gas Condition	No Combustible/Corroded Component, No Halogen, No Silica, No Waterdrop Pressure : Atmosphere - 1 x 10 <sup>-3</sup> Pa Flow : 500 - 2000ml/min Humidity : Dew point below ambient temperature
Power Source	Voltage : DC24V±10%
Installation Condition	Location : Indoors, Non Explosion Area Ambient Temperature : 0 - 40°C Ambient Humidity : 45 - 85%RH
Warm-up Time	6 min. or less

\*Please confer with us separately for any request other than above specifications.



### Cautions

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

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

■ Please contact us at the following address if you have any questions or requests.

**TORAY**

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