

Portable Oxygen Analyzer TB—FI series



What's TB-FI series

Detective element is made of Zirconia electrolyte.

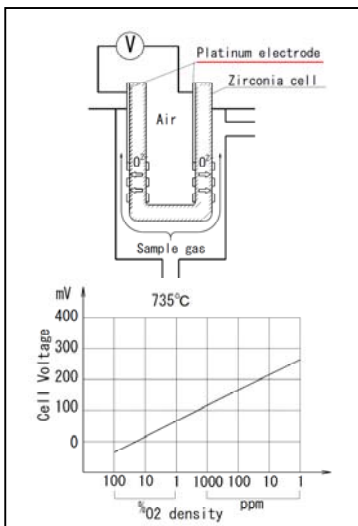
TB—IF—P sensor and C—101 control unit are installed altogether in a box for portable uses.

This analyzer can be used for every application where range of 1ppm to 100%, but for accurate measurement of high % oxygen, we recommend FG-X series.

Feature

- ⊙ Wide range application, from 1ppm to 100%O₂.
- ⊙ Built-in multi-filter protects detector from dirt and corrosion.
- ⊙ Output range can select freely.
- ⊙ Serial communication function is equipped normally.
- ⊙ AC85V~260V power supply can be applied.

Principle



Sensing cell is a closed end, 90mm length and 7mm diameter. Tube made of Zirconium oxide. When it is red hot, it becomes a oxygen measuring cell because of movement of oxygen ions in its crystal structure.

If there are two different oxygen gases on both side of the cell, a voltage is produced.

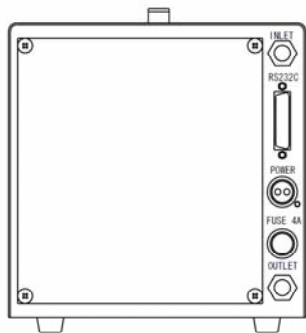
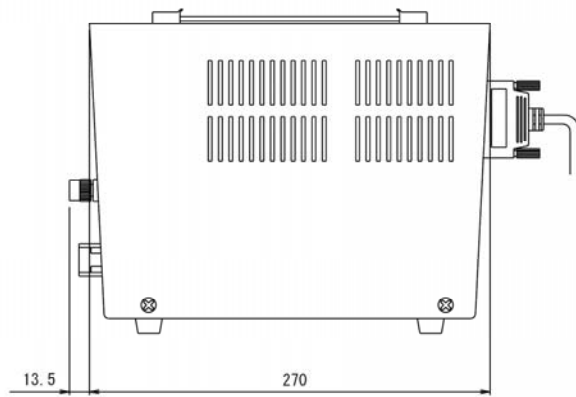
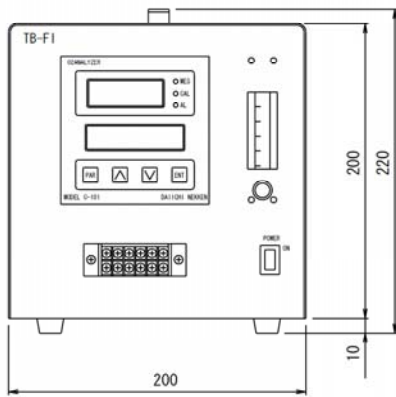
For the oxygen in combustible gases, the oxygen value is calculated from following formula:

$$E = 0.0496 \cdot T \log \frac{\text{Air (20.6\% = 206,000ppm = 0.206atm)}}{\text{Sample = O}_2\%, \text{ O}_2\text{ppm, O}_2\text{atm}} + C$$

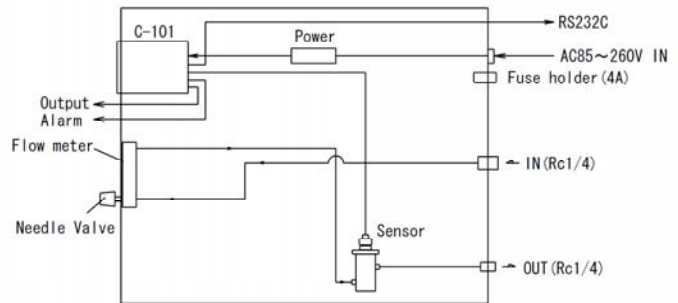
E: cell voltage (mV) T: absolute cell temperature C: cell constant (mV)
O₂atm: vol% of oxygen of the sample gas (atomic pressure)

MODEL

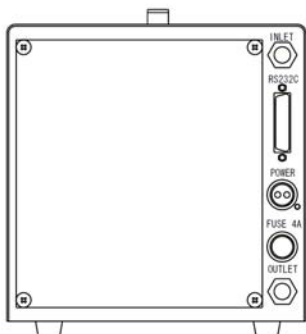
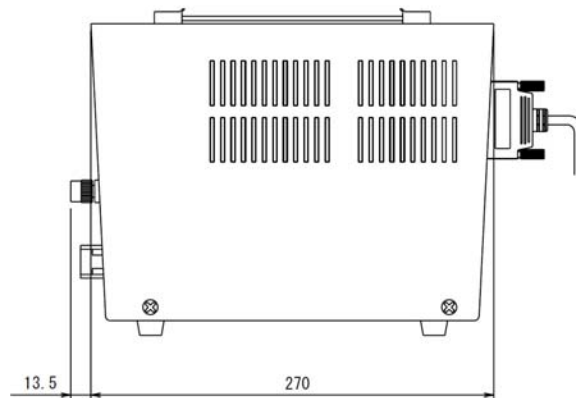
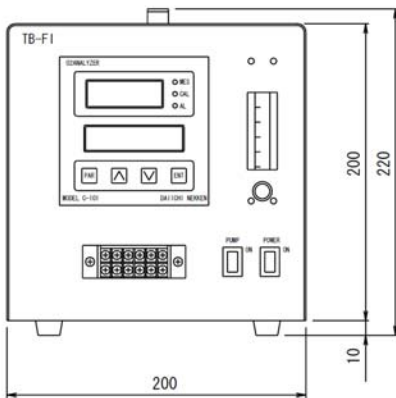
TB-FI



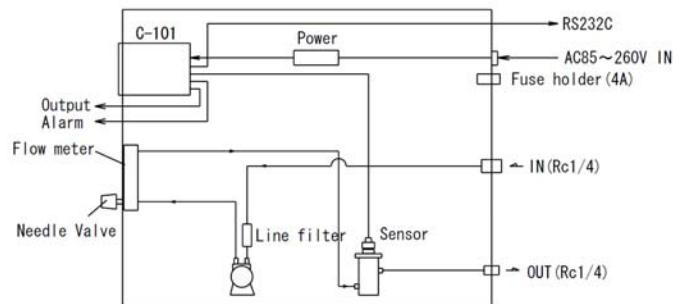
Flow Diagram



TB-FI-P

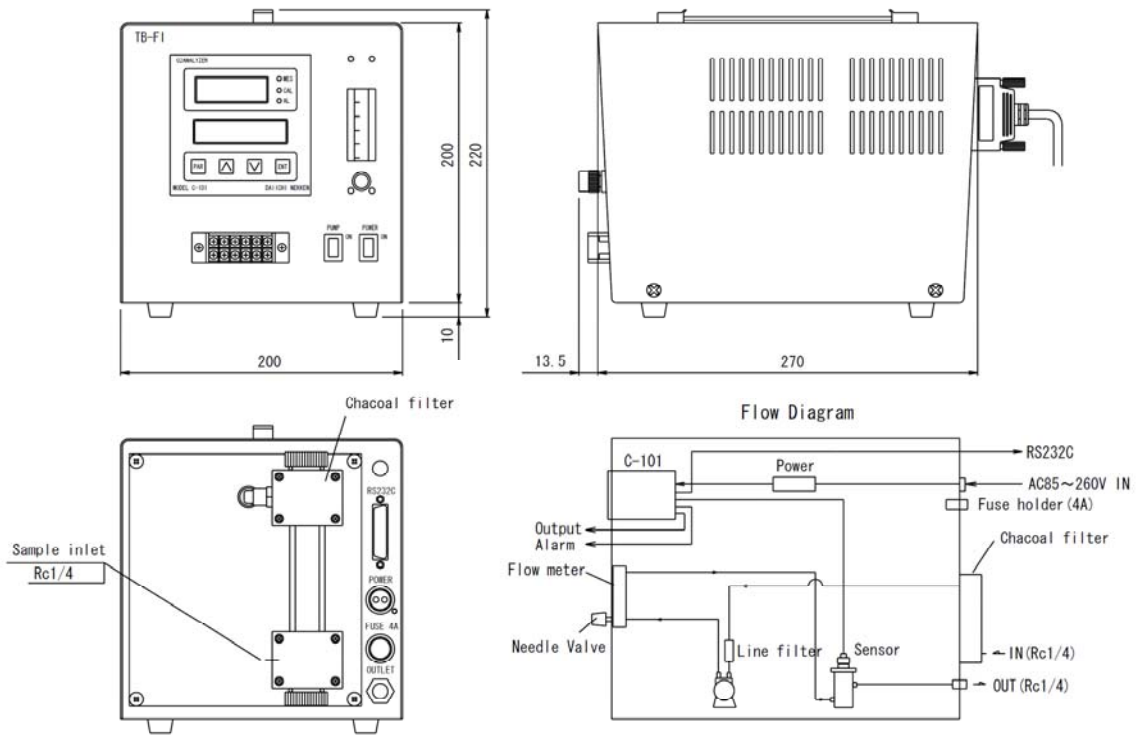


Flow Diagram

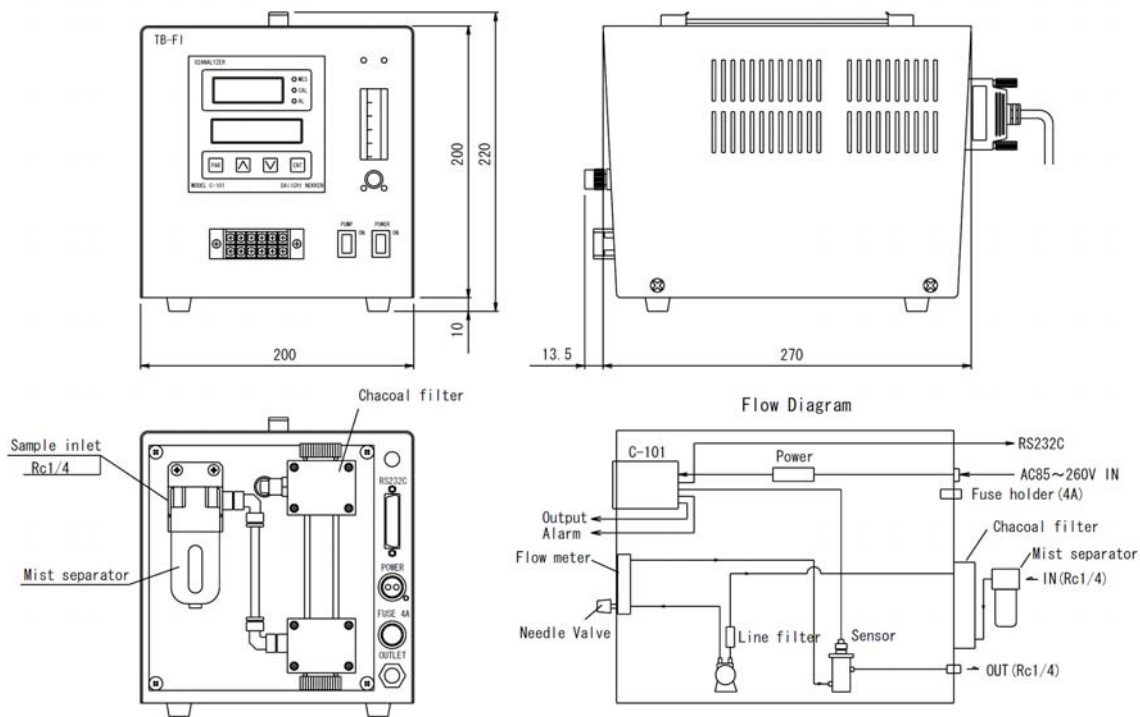


MODEL

TB-FI-PC



TB-FI-PR



Specifications

Principle	Zirconia electro-chemical cell	
Structure	SS box, TB-II P sensor, C-101 control unit, needle valve, flow meter etc.	
Model	TB-FI	Pressurized sample
	TB-FI-P	Sampling pump installed
	TB-FI-PC	Sampling pump and charcoal filter installed
	TB-FI-PR	Sampling pump and charcoal filter and mist-separator installed
Measuring range	1ppm~100%O ₂	
Display	% : 0~99.99%O ₂ ppm : 0~9999ppmO ₂	
Output	D.C. 4~20mA, 0~1V or 0~10V (isolated) F.S. can be set within the range of the above-mentioned display freely. RS232C	
Range change	Auto/Manual	
Initial setting	0~25%O ₂ /0~1000ppmO ₂	
Alarm	Output : Hi/Lo, HHi/Hi or Lo/LLo (each A Point of contact • LCD Display) Failure : Disconnection of Heater, RTD (LCD Display)	
Linearity	Large one either of less than $\pm 1\%FS$ or $\pm 1ppm$	
Repeatability	Large one either of less than $\pm 1\%FS$ or $\pm 1ppm$	
Response	90% reading 10sec. (Swinging to a high density side)	
Drift	Less than $\pm 2\%FS/wk$	
Piping	Rc1/4	
Sample Flow Rate	0.2~2L/min	
Sample Temp.	300°C MAX.	
Sample pressure	Others 203kPa~ $1.33 \times 10^{-1}Pa$ (2atm~ $10^{-3}Torr$)	
Warm up time	About 20 minutes	
AC Power	AC85V~AC260V	
Accessory	Power supply code	

※For the improvement, the specification and design may be changed without prior notice.

Inquiry

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