

(様式 EO-H0525-13)



PRODUCT SPECIFICATIONS

OZONE MONITOR

MODEL EG-700EIV

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1. General description

The ozone monitor, Model EG-700EIV (hereafter referred as the monitor for short) is a UV absorption monitor which has a small size and light weight and also which can select following wide measurement range, 0–20, 0–50, 0–100 and 0–200 ppm.

The monitor will regularly introduce zero gas and it can follow up to correct zero point at that time, so that it is possible to measure ozone of low concentration in steady state.

Regarding sampling gas, the monitor should be equipped with only piping from the source to its inlet (SAM), and then built-in pump can absorb the sample and the device can be set under its operation.

2. Measuring principle

This monitor is a UV absorption type ozone monitor which can detect and measure quantity of absorption of UV rays by ozone in the sample gas (ozone leakage) introduced into the detector. A low-pressure mercury lamp (emission wavelength 253.7 nm) is used for the light source. As the quantum of light absorbed by ozone existing within the optical path 'T' obeys the Lambert-Beer's Law, concentration of ozone can be measured as follows.

$$C = \frac{A}{\alpha T} \times \log\left(\frac{I_0}{I_x}\right)$$

where: C= Ozone concentration
 α = Specific absorption coefficient
 T= Path length of cell
 I_0 = Light intensity through the sample free of Ozone
 I_x = Light intensity passed through sample Ozone
 A= Constant

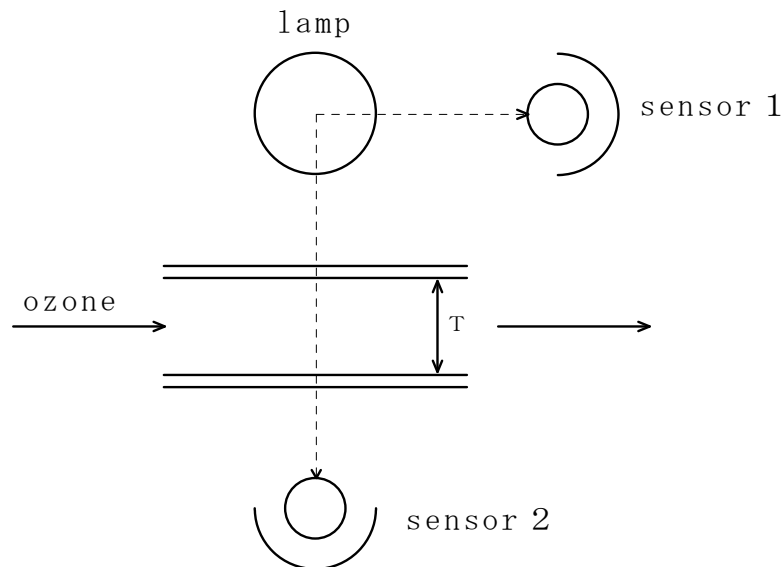


Figure-1 Logic diagram

3. Basic specifications

Model & Product name	EG-700EIV Ozone monitor
Measuring principle	UV absorption method
Service	Ozone gas
Measuring ranges	0–20, 0–50, 0–100 and 0–200 (unit ppm) (* note 1) Note: Deterioration or contamination of the material which is caused by ozone is not covered by the warranty.
Measuring method	interval measurement (20 seconds cycle)
Sampling method	by an internal sucking pump
Flow rate	over than 0.6 L/min
Normal pressure (inlet/outlet)	within ± 1.47 kPa (G)
Span drift	within $\pm 1\%$ FS/month (* note 2)
Zero drift	within $\pm 3\%$ FS/month (* note 2)
Linearity	within $\pm 1\%$ FS (* note 2)
Repeatability	less than 1% FS (* note 2)
Process wetting parts	Includes aluminum, quartz, FEP, fluorine rubber, SUS304/316, PVC, polybutylene terephthalate*, polyamide resin*, etc. (material used for the filter housing: PVDF) Note: Materials with (*) mark are used in process line not contained with ozone gas. If another material was contained in the sample gas excepting one of ozone, it may corrode or stain inside of the monitor's process wetted portion with white color. In case that the monitor has a failure trouble and also becomes to be unable to measure the concentration, we can not have a duty to pay the warranty.
Piping connection	piping diameter OD 6 mm \times ID 4 mm, union tube fitting for panel
Display	in 3 digits as follows; - 20 ppm: 0.0–20.0 - 50 ppm: 0.0–50.0 - 100 ppm: 0.0–100.0 - 200 ppm: 0–200
Span adjustment	by digital setting (0.000–2.000)
Self-diagnostic Function	Detecting and displaying abnormality of light intensity, computation in the circuit and flow-rate etc.
Environment	5–40°C, 80% RH below (not condensed)
Power supply	24 \pm4 V DC (approx. 0.65 A in normal operation, approx. 0.9 A at

	maximum, approx. 2 A at power-on) * Maximum power consumption: 24 VA
Weight	5 kgf (typical)
Monitor output	Relay output (rating: 100 V AC, 1 A or 30 V DC, 1 A and form 1a or 1b [Resistance load]) (* note 3) 1) monitor error When monitor operation is abnormal (regarding lamp, sample flow by pump), this will enable its output. 2) concentration alarm 2 system outputs
Analog output	- Voltage output 0–1 V DC or 0–10 V DC (* note 4) - Current output 4–20 mA DC (insulated output) (* note 5)
Outside dimension	270 W × 200 H × 110 D mm (* note 6)
Installation pitch	Refer to the attached drawing (* note 7)
Accessories	Time lag type Fuse, 250 V AC, 1 A approved by UL standard: 1 pc Filter (with joint): 1 pc

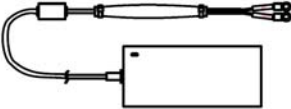
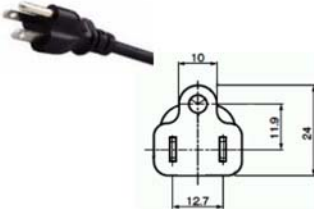
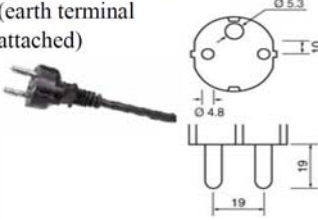
Supplementary information

- * note 1: Please select one when you order.
- * note 2: This value is based on the condition when ambient temperature variation is less than $\pm 3^{\circ}\text{C}$ and when one of sample gas temperature is also less than $\pm 3^{\circ}\text{C}$
- * note 3: Relay contact form is set when shipping, so that it should be specified when you order.
- * note 4: Allowable load resistance is over than 10 k Ω .
Select the voltage range which one (0–1 V DC or 0–10 V DC) is better when you order.
- * note 5: Allowable load resistance is less than 750 Ω .
- * note 6: The protruding portions and mounting legs are not included.
- * note 7: Even if the monitor is put on the floor, it should be fixed with the tightening screws.

4. Optional function

1) AC Power adaptor

Though the power supply voltage of this ozone monitor, Model EG-700EIV is 24 ± 4 V DC, the monitor can be operated with AC power supply by using the optional power adaptor. Choose the adaptor and the power cable corresponded with the following table.

	AC adaptor for common use	AC power cable for Japanese use	AC power cable for abroad use
specification	input: 100–240 V AC, 50/60 Hz output: 24 V DC, 60W form of input connector: Inlet type (3P)	withstand voltage: 125 V AC	withstand voltage: 250 V AC
external appearance (form of power connector)		type A for domestic use 	type C for abroad use (earth terminal attached) 
codes of goods (when ordered a single unit)	EN047□	EK040□: This cable cannot use out of Japan.	EK041□: This cable can use for the outside countries only.
codes of goods (set)	for domestic use: BZ293□ (EN047□ + EK040□) Note: This equipment cannot use in the outside countries.		
	for abroad use: BZ294□ (EN047□ + EK041□) Note: This equipment cannot use in Japan.		

Note 1: Regarding another voltage or connection type in the above, please consult with us about this problem and/or purchase them on the market.

Note 2: The above dimension unit is mm.

Note 3: Identification number for our company (e.g. A, B, C ...) is described in “□” at the end of the Goods code. When you order consumables, please inform us of the 5-digit Goods code starting with the alphabet (e.g. BZ123).

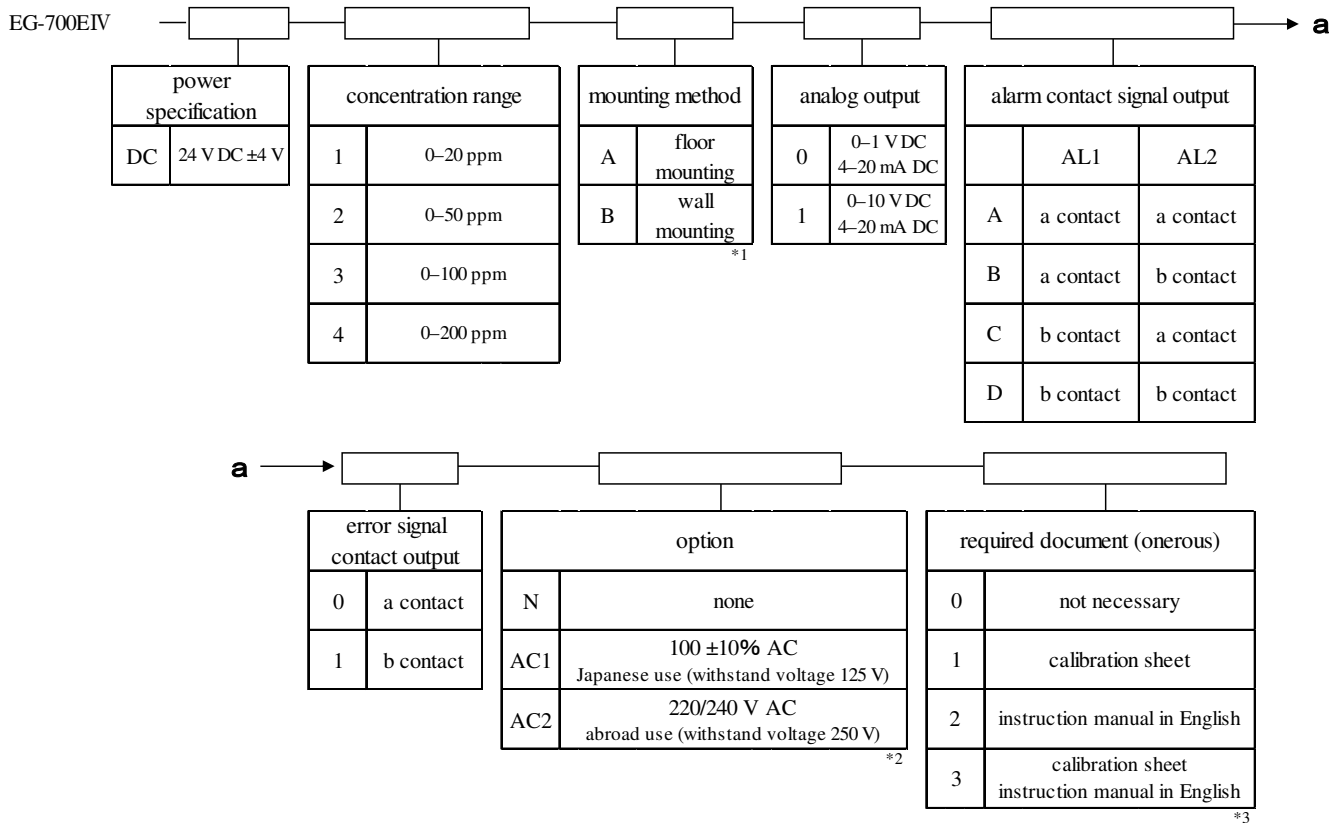
5. Consumable parts

The component parts used in the monitor have an operating life. All the parts are warranted for one year from the date of delivery. And then, deterioration and/or corruption of materials by ozone reaction are out of our duty for warranty. Replacing criteria of the main parts are as follows.

Consumable parts list

Product name	Goods code	quantity /unit	replacement term	Remarks	working level
low-pressure mercury lamp	EO018_□	1 pc	every 2 years	The mercury lamp has a life, so that it may have a drop of light quantity or it may allow the lamp not to give light.	possible to replace by user
Sampling pump set	BZ400_□	1 set	every 1 year	This sampling set consists of a pump with tube and withstand vibration gum. A diaphragm portion and motor of the pump becomes to be deteriorated and the pump begins so as not to get specified flow rate.	
3 ways solenoid valve	BZ136_□	1 pc	every 1 year	By abrasion, the valve becomes not to change the sample gas.	
zero gas cartridge	zero gas generator BZ031_□	1 pcs	every 1 year	Corresponding used time, this may not be able to generate the zero gas.	
	ozone destructor BZ031_□	1 pcs	every 2 years		
filter	NF012_□	1 pc	every 1 year	According to the using environment, choking the filter with contamination becomes not to get specified flow rate.	
O-ring (used in the cell block)	—	1 set	at any time	O-ring is used as sealing material. As sealing characteristics will decrease by ozone reaction, it should be replaced when maintenance, if needed.	necessary to replace by our service man
joint and tubing	—	1 set	at any time	In accordance with using environment, O-ring installed in the piping and/or joint, its sealing characteristics become to be deteriorated, so that it should be replaced when maintenance if needed.	
UV sensor	—	2 pcs	4-5 years	Sensing change or deterioration will occur under using condition.	

6. Model and code



*1 For mounting method, customer can be changed by optional order.

*2 In case of optional AC power supply, AC adaptor used in outside is attached.

*3 One copy of English version of instruction manual and one copy of calibration sheet are available as required documents.

(One copy of Japanese instruction manual and one copy of inspection certificate are attached to the instrument as standard accessories.)

When purchase the monitor, indicate your suitable model and code in the above.

7. Warranty

Our products are warranted for 12 months from the date of delivery.

However, note that the following cases are not covered by this warranty.

◇ Following failures or damages occurred within the warranty period.

- (1) Failure caused by misuse.**
- (2) Failure caused by inappropriate repair or modification using non-genuine parts.**
- (3) Failure or damage occurred during transportation or by drop after delivery.**
- (4) Failure or damage resulting from fire, brine, gas, earthquake, wind, flood, lightning, abnormal voltage or other natural disasters.**
- (5) Failure caused by degradation of consumable parts (packings or seals).**

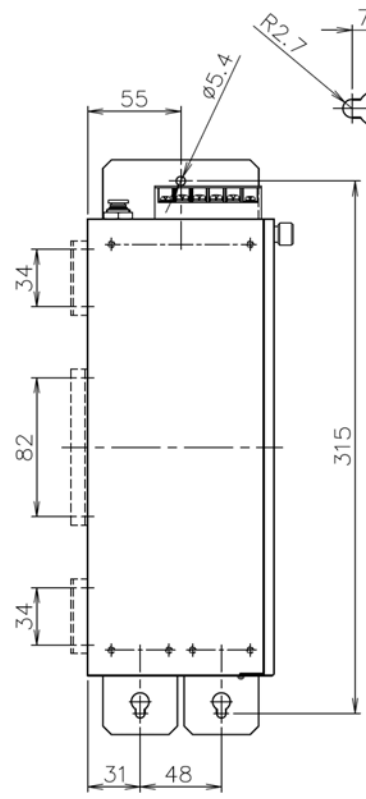
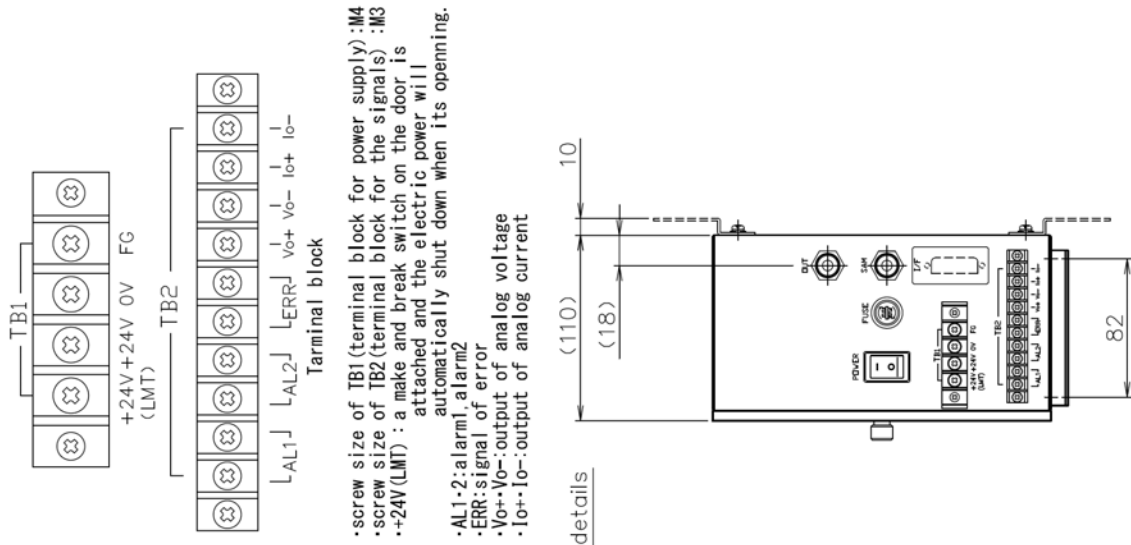
Well, we can not warrant you for defects of the related devices, injury of human body and your any loosed profits even if when their in and out of guarantee terms.

◇ Others

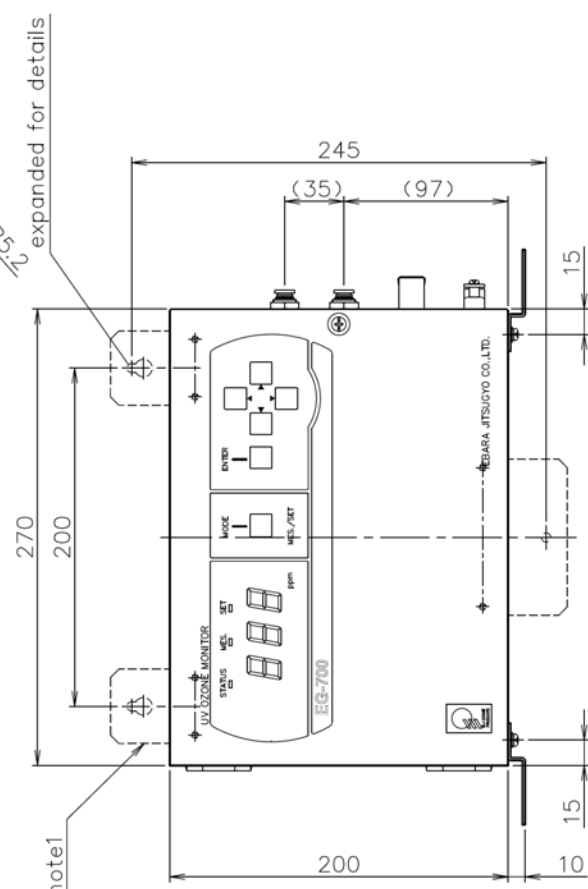
- (1) Contact the dealer when repair is needed.**
- (2) This instrument is repaired at our side after it is sent from the user.**
- (3) The minimum storage period of repair parts and necessary parts for this instrument is seven years after discontinuation of the instrument's production.**
 - * The "repair parts and necessary parts" stated here means the parts required to keep the product performance.**
- (4) The coverage of warranty for any event that has not occurred in the past is discussed as it arises.**

The specification may have to change without its announcement for improving and remodeling the equipment.

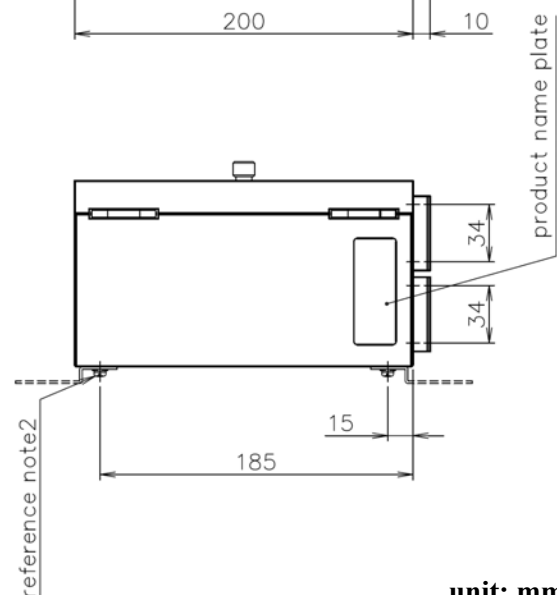
Attached drawing 1 Outline of Model EG-700EV ozone monitor



in case of opening the door



reference note1

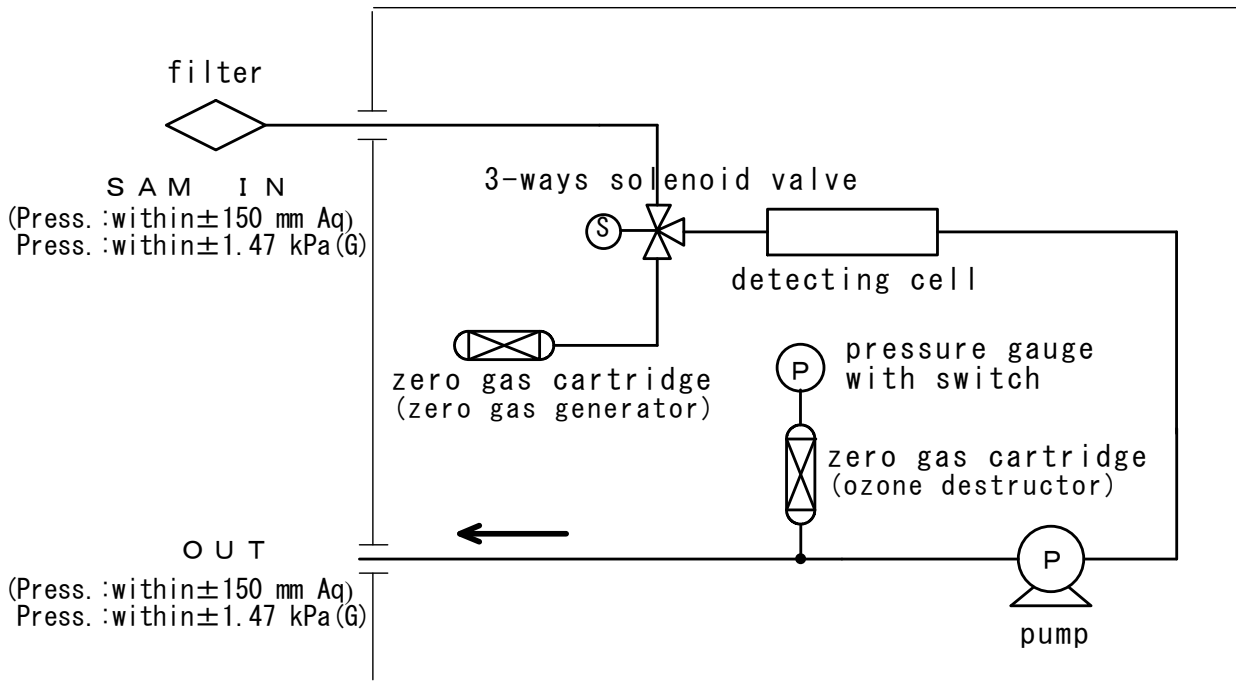


reference note2

note1: A dotted line is in case of the metal fitting for the wall mounting.
 note2: In case of wall mounting without the mounting foot, use the M4 x (6 + board thickness) –size screw.

unit: mm

Attached drawing 2 Flow line diagram of Model EG-700EIV ozone monitor



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