

For Semiconductor Process

## Dissolved Ozone / Hydrogen Peroxide Concentration Monitor HZ-960 / HZ-960HPO-M Series



CE marking compliant

**Ideal for controlling the concentration of ozone and hydrogen peroxide in wet processing applications for semiconductor devices, liquid crystal, and glass manufacturing**

High concentration ozonated water is widely in used semiconductor wet process applications such as Post-CMP Cleans, FEOL Cleans, and Resist Stripping. The increasingly high functionality of smart phones and tablet computers have been driving demand for miniaturization of semiconductors and overall reduction in COO as low chemical concentration wet process applications come to predominate leading edge device manufacturing.

The HZ-960 provides a wide range of ozone concentration measurement up to a maximum of 500 ppm. The HZ-960HPO-M provides highly precise concentration measurement of hydrogen peroxide solutions with a maximum resolution of 1 ppm.



In-line type  
detector

### ● A wide selection of measurement ranges

In addition to the standard ranges 0 to 100 mg/L for ozone and 0 to 1 mass% for hydrogen peroxide, three additional measuring ranges are now available. Please consult with HORIBA to determine the optimum range for your application.

### ● A wide range of connecting piping sizes to choose from

In addition to the standard 3/4 inch, 1/2 inch and 1 inch are also available.

### ● Remote calibration

Equipped with a remote calibration mechanism which is controlled by external inputs for in-line use. This enables monitoring for errors through a self-diagnosis feature.

### ● Highly accurate repeatability and stability

Repeatability: FS  $\pm$ 0.2%

## Specifications Converter

Product name	Dissolved Ozone Concentration Monitor (converter)				Hydrogen Peroxide Concentration Monitor (converter)			
Model	HZ-960				HZ-960HPO-M			
Corresponding detector	ZH-10	ZH-40	ZH-100	ZH-500	ZH-10HPO	ZH-40HPO	ZH-100HPO	ZH-500HPO
Measurement target	Dissolved ozone concentration in pure water				Hydrogen peroxide concentration in pure water			
Display resolution	0.01mg/L (Minimum digit shows "0" over 10 mg/L)		0.1mg/L		1ppm		0.001%	
Transmission output	Number of output: 2 4 to 20 mA DC or 0 to 20 mA DC: input/output isolated type							
Contact output	Number of output: 5 ALARM contact R1, R2, R3, and R4 Contact type: No-voltage contact out put, Relay contact, SPST (1a) Contact function: · ON/OFF control · UV Low alarm · Remote zero calibration judgement signal				ALARM contact R1, R2, R3, and R4 Contact type: No-voltage contact out put, Relay contact, SPST (1a) Contact function: · ON/OFF control · UV Low alarm · In process of remote zero calibration signal · Remote zero calibration complete signal			
Self diagnosis contact RF	Contact type: No-voltage contact output, Relay contact, SPDT (1c) Contact function: Fail							
Contact input	Number of input: 2 Contact type: No-voltage "a" contact (Open collector) Contact function: Input 1: Remote zero calibration command (Calibration is started after receiving the signal. The reading value is held during signal received.) Input 2: Hold the reading value command							
Communication output	RS-485 communication							
Calibration function	Zero point calibration, span sensitivity adjustment							
Power supply	Rated voltage 24 ±10% V DC, 15 W (max.)							
Conforming standards	CE Marking EMC Directive (2004/108/EC) EN61326-1: IP00 FCC Rule FCC Part15							
Mass	Approx. 550g							

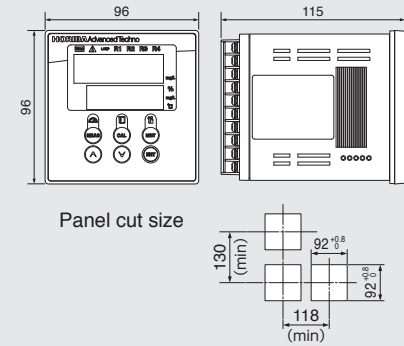
## Detector

Product name	Dissolved Ozone Concentration Monitor (detector)				Hydrogen Peroxide Concentration Monitor (detector)				
Model	ZH-10	ZH-40	ZH-100	ZH-500	ZH-10HPO	ZH-40HPO	ZH-100HPO	ZH-500HPO	
Corresponding converter	HZ-960				HZ-960HPO-M				
Measurement target	Chemical	Dissolved ozone concentration in pure water				Hydrogen peroxide concentration in pure water			
	Concentration	0 to 10.00 mg/L	0 to 40.00 mg/L	0 to 100.0 mg/L	0 to 500.0 mg/L	0 to 1000 ppm	0 to 4000 ppm	0 to 1,000 mass%	0 to 5,000 mass%
	Supply temperature	5 to 30°C *1		5 to 80°C *1		5 to 30°C *1		5 to 80°C *1	
	Supply pressure	Within 0.5 Mpa							
Tube diameter conditions	1/2 inch: 2 - 10 L/min *2				1/2 inch: 2 - 10 L/min *2				
	3/4 inch: 2 - 40 L/min *2				3/4 inch: 2 - 40 L/min *2				
	1 inch: 2 - 100 L/min *2				1 inch: 2 - 100 L/min *2				
Measurement principle	UV absorption (254 nm)								
Chemical contact material	PFA, PTFE, quartz glass								
Repeatability	Within ±0.2% of full scale								
Linearity	Within ±1.0% of full scale								
Stability	Zero point drift within 0.35%/week				Within ±0.7%/week of full scale		Within ±0.35%/week of full scale		
Response	Response is 99% within 60s								
Ambient temperature	5 to 40°C								
Relative humidity	85% or less (need to purge by clean dry air under the condition of internal condensation)								
Purge air inlet	φ6 mm								
Mass	Approx. 2 kg								
Expandable	Low-pressure mercury lamp Guaranteed life: i year Replacement cycle: 2 year								
Connecting cable	CK-05ZH (standard): 5m								

## External Dimensions Unit: mm

### Converter

#### HZ-960 / HZ-960HPO-M

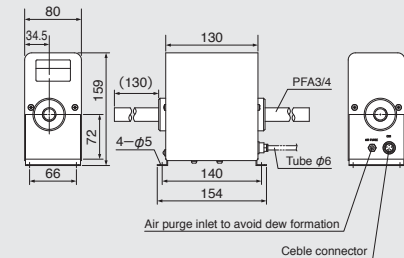


Panel cut size

### Detector

#### Dissolved Ozone Concentration Monitor ZH-10, ZH-40, ZH-100, ZH-500

#### Hydrogen Peroxide Concentration Monitor ZH-10HPO, ZH-40HPO, ZH-100HPO, ZH-500HPO



\*1 Unit should be purged with clean dry air in conditions where condensation is likely to occur.

\*2 Measurement can be made even when there is no flow. But, make a flow over 2L/mi for preventing the bubbles from forming on the cell.



Please read the operation manual before using this product to assure safe and proper handling of the product.

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