LLC آکنی‌تی
۱-۲-۹ نی‌وای‌دانی
میناتو اوزاکا
〒۵۶۲-۰۰۱۱
ژاپن

Dissolved ozone sensor for wastewater

The Ozone Waste Water Sensor is a compact and reliable solution for measuring dissolved ozone in water. This sensor is designed for situations where accuracy, speed, and stability are essential – from industrial processes to water treatment and laboratory applications. Where ozone is used for disinfection or process monitoring, reliable measurement is essential. The ELP-۲۰۰ helps to guarantee that the measurement is continuous. Thanks to innovative technology and a robust design, this system delivers stable results, even in challenging environments. The operation is simple, and the measurement results can be read immediately. This makes our Ozone Waste Water Sensor very practical to use. The system seamlessly integrates with existing processes, contributing to efficient and safe business operations. Whether you work in the pharmaceutical, food industry, water purification, or research, with the Ozone Waste Water Sensor from Acniti, you get a proven and user-friendly measurement solution that does what it is supposed to do: provide reliable insight into the quality of the water.

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- Reliable, interference-free measurements
- Instant insight into ozone levels
- Fast and accurate response
- Automatic temperature compensation
- Smart alarm and control outputs
- Compact, durable, and long-lasting
- Amperometric Ozone Sensor specifically polarographic

What makes the Acniti Ozone Waste Water Sensor unique?

The Ozone Wastewater Sensor of Acniti utilizes a proven electrochemical measurement principle, in which dissolved ozone diffuses through a polymeric membrane and reacts within an electrolyte layer. This reaction generates an electric current that is directly proportional to the ozone concentration. Thanks to the use of three electrodes (working, counter, and reference), the measurement remains stable, and the sensor is less susceptible to aging or contamination.

Applications

- Water treatment facilities
- Pharmaceutical production
- Food and beverage industry
- Research laboratories
- Disinfection control in process water

Key Benefits

- **Accurate**: Measurements within ±۲.۵٪ of full scale
- **Fast**: ۹۰٪ response within ۶۰ seconds
- **Compact**: Lightweight and easy to mount
- **Flexible**: Available in measurement ranges of ۰–۱.۰۰ mg/L and ۰–۱۰.۰ mg/L
- **Automatically compensated** (For temperature variations ۵–۳۰ °C

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- **Versatile output**: Isolated ۴–۲۰ mA output + contact alarms
- **Cost-effective**: No additional control equipment needed

Easy Installation

The sensor comes with a mounting board and all necessary accessories. The flow cell is pre-installed, and smart connectors make the sensor quick and easy to set up. For calibration of the unit CX۱۰۰, a calibration kit is required.

Measuring Principle

The ELP-۲۰۰ dissolved ozone sensor is an electrochemical sensor that uses a "membrane ozone monitor" based on the polarographic measurement principle. As an electrochemical device, it operates by facilitating a chemical reaction (specifically, reduction or oxidation) of ozone at an electrode, which produces an electrical current proportional to the ozone concentration. The inclusion of a membrane allows only ozone to pass through and reach the electrode, enhancing selectivity and reducing interference. In this context, "polarographic" refers to a type of amperometric electrochemical measurement in which the sensor detects ozone by measuring the current generated during the redox reaction at the electrode surface, thereby translating chemical information into a quantifiable electrical signal.

Ozone penetrates a membrane

– Ozone (O_3) present in the water diffuses through a special polymer membrane to the inside of the sensor.

Ozone reaches the electrolyte layer

– Between the working and counter electrodes, there is a thin layer of electrolyte. The ozone dissolves here as it passes through the membrane.

Electrochemical reaction

– At the surface of the working electrode, the ozone reacts:

In acidic conditions:

$$O_3 + 2H^+ + 2e^- \rightarrow O_2 + H_2O$$

In basic conditions:

$$^-O_3 + H_2O + 2e^- \rightarrow O_2 + 2OH$$

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Simultaneously, an oxidation reaction takes place at the counter electrode, releasing – electrons.

Current intensity = ozone concentration

– The amount of electrical current generated is directly proportional to the amount of ozone in the water. This is known as the limiting current region – a voltage range where the measured current remains constant despite increasing voltage.

Stable and linear measurement

– Thanks to the stable design with three electrodes (working, counter, and reference electrodes), the measurement remains reliable over a long period, with minimal sensor contamination.

In short, the Ozone Waste Water Sensor converts ozone in water into an electrical signal that precisely indicates the amount of ozone present. Reliable, linear, and accurate, exactly what you want in a critical measurement application.

Important Specifications

Feature	Specification
Model	ELP-۲۰۰
Measurement Principle	Electrochemical via a gas-permeable membrane
Measurement Range	۰.۰-۱۰ mg/L dissolved ozone
Accuracy	±۲.۵٪ of full scale
Response Time	۹۰٪ response within ۶۰ seconds
Temperature Range	Water: ۵–۳۰°C; Ambient: ۵–۴۰°C
Power Supply	۱۰۰ – ۲۲۰ VA ~۵) ۵۰/۶۰ Hz, V AC)
Connections	Stainless steel fittings for water inlet and outlet
Dimensions	۱۲۵ mm x ۸۱ x ۵۶۰
Calibration	CX۱۰۰ is required

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elp-۲۰۰

	شرح	متریک	امپریال
۱	اسم مدل	ELP-۲۰۰	ELP-۲۰۰
۲	شماره مدل	ELP-۲۰۰	ELP-۲۰۰
	عایق	متریک	امپریال
۳	حداقل جریان / دقیقه	۰.۵ لیتر	۰.۱ گالن
۴	حداکثر جریان / دقیقه	۱.۰ لیتر	۰.۳ گالن
۵	حداقل جریان / ساعت	۳۰ لیتر	۷.۹ گالن
۶	حداکثر جریان / ساعت	۶۰ لیتر	۱۶ گالن
۷	حداقل دمای آب	۵ °C	۴۱ °F
۸	حداکثر دمای آب	۳۰ °C	۸۶ °F
۹	موجودیت و اندازه صافی		
	محیط	متریک	امپریال
۱۰	حداقل دمای محیط	۵ °C	۴۱ °F
۱۱	حداکثر دمای محیط	۴۰ °C	۱۰۴ °F
۱۲	حداقل رطوبت نسبی	۰ ٪	۰ ٪
۱۳	حداکثر رطوبت نسبی	۹۰ ٪	۹۰ ٪
	گاز	متریک	امپریال
۱۴	کیفیت گاز		
۱۵	تذکر گاز		
	برقی	متریک	امپریال
۱۶	ولتاژ فاز Ø واحد		AC ۱۰۰~۲۴۰V ۵۰/۶۰Hz
۱۷	مصرف برق واحد		۵ VA
۱۸	قطعات خیس شده		
۱۹	مدل پمپ		
۲۰	ولتاژ فاز Ø پمپ		

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	برقی	متریک	امپریال
۲۱	فاز پمپ Ø ولتاژ ۶۰ هرتز		
۲۲	تنظیم فشار پمپ		
۲۳	کنترل		
	اتصالات	متریک	امپریال
۲۴	ورودی آب		Fitting straight tightening joint stainless steel
۲۵	مجرای خروج آب		
۲۶	ورودی گاز		
	ابعاد و وزن	متریک	امپریال
۲۷	ابعاد. (عرض) X (طول) X (ارتفاع)	۱۲۵ X ۸۱ X ۵۶۰ میلی متر	۴.۹ X ۳.۲ X ۲۲.۰ اینچ
	ملاحظات		
۲۸	سایر اظهارات	Dissolved ozone analyzer for sewage.	
		Measures dissolved ozone through a gas-permeable membrane, not easily affected to residual chlorine and dissolved organic substance.	
		This compact dissolved ozone monitor uses a diaphragm polarograph sensor with excellent selectivity and is not easily affected by various metal ions or conductivity in the sample water.	
		The three-electrode configuration greatly suppresses the formation of electrode reaction byproducts that deteriorate the sensor's aging characteristics.	

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