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## 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-200 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

## 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  $\pm 2.5\%$  of full scale
- **Fast:** 90% response within 60 seconds
- **Compact:** Lightweight and easy to mount
- **Flexible:** Available in measurement ranges of 0–1.00 mg/L and 0–10.0 mg/L
- **Automatically compensated:** For temperature variations (5–30°C)
- **Versatile output:** Isolated 4–20 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 CX100, a calibration kit is required.

## Measuring Principle

The Ozone Waste Water Sensor measures dissolved ozone in water based on the polarographic measurement principle, utilizing a polymer membrane —a proven method in electrochemical analysis.

### Ozone penetrates a membrane

- Ozone (O<sub>3</sub>) present in the water diffuses through a special polymer membrane to the inside of the sensor.

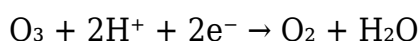
### Ozone reaches the electrolyte layer

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

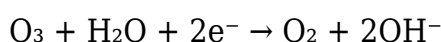
### Electrochemical reaction

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

In acidic conditions:



In basic conditions:



- 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-200                                             |
| Measurement Principle | Electrochemical via a gas-permeable membrane        |
| Measurement Range     | 0-10 mg/L dissolved ozone                           |
| Accuracy              | ±2.5% of full scale                                 |
| Response Time         | 90% response within 60 seconds                      |
| Temperature Range     | Water: 5-30°C; Ambient: 5-40°C                      |
| Power Supply          | 100 - 220 V AC, 50/60 Hz (~5 VA)                    |
| Connections           | Stainless steel fittings for water inlet and outlet |
| Dimensions            | 125 x 81 x 560 mm                                   |
| Calibration           | CX100 is required                                   |

# elp-200

| Beschreibung          |                             | Metrisch                                          | Kaiserlich                                        |
|-----------------------|-----------------------------|---------------------------------------------------|---------------------------------------------------|
| 1                     | Model name                  | ELP-200                                           | ELP-200                                           |
| 2                     | Model number                | ELP-200                                           | ELP-200                                           |
| Flüssigkeit           |                             | Metrisch                                          | Kaiserlich                                        |
| 3                     | Minimum flow / minute       | 0.5 Liter                                         | 0.1 Gallone                                       |
| 4                     | Maximum flow / minute       | 1.0 Liter                                         | 0.3 Gallone                                       |
| 5                     | Minimum flow / hour         | 30 Liter                                          | 7.9 Gallone                                       |
| 6                     | Maximum flow / hour         | 60 Liter                                          | 16 Gallone                                        |
| 7                     | water temperature minimum   | 5 °C                                              | 41 °F                                             |
| 8                     | water temperature maximum   | 30 °C                                             | 86 °F                                             |
| Umgebung              |                             | Metrisch                                          | Kaiserlich                                        |
| 9                     | Ambient temperature minimum | 5 °C                                              | 41 °F                                             |
| 10                    | Ambient temperature maximum | 40 °C                                             | 104 °F                                            |
| 11                    | Relative humidity minimum   | 0 %                                               | 0 %                                               |
| 12                    | Relative humidity maximum   | 90 %                                              | 90 %                                              |
| Elektrisch            |                             | Metrisch                                          | Kaiserlich                                        |
| 13                    | Unit phase Ø voltage        | AC 100~240V 50/60Hz                               | AC 100~240V 50/60Hz                               |
| 14                    | Unit power consumption      | 5 VA                                              | 5 VA                                              |
| Verbindungen          |                             | Metrisch                                          | Kaiserlich                                        |
| 15                    | Water inlet                 | Fitting straight tightening joint stainless steel | Fitting straight tightening joint stainless steel |
| Abmessungen & Gewicht |                             | Metrisch                                          | Kaiserlich                                        |

| Abmessungen & Gewicht |                      | Metrisch                                                                                                                               | Kaiserlich            |
|-----------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 16                    | Abm. (B) x (T) x (H) | 125 x 81 x 560 mm                                                                                                                      | 4.9 x 3.2 x 22.0 Zoll |
| Bemerkungen           |                      |                                                                                                                                        |                       |
| 17                    | Other remarks        | ✓ Dissolved ozone analyzer for sewage.                                                                                                 |                       |
|                       |                      | ✓ Measures dissolved ozone through a gas-permeable membrane, not easily affected to residual chlorine and dissolved organic substance. |                       |
|                       |                      | ✓                                                                                                                                      |                       |
|                       |                      | ✓                                                                                                                                      |                       |