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ABB MEASUREMENT & ANALYTICS | DATA SHEET | DS/AUV509-EN REV. B

# UviTec™ Sensor

## Ozone



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# Measurement made easy

## Water quality monitoring solutions

### **About ABB Continuous Water Analysis**

ABB's Continuous Water Analysis product line is a world leader with a broad portfolio that measures...

Aluminum, Ammonia, Benzene, BOD, COD, Chlorine, Chromium VI, Color, Conductivity, Dissolved Oxygen, DOC, Fluoride, Hydrazine, Hydrocarbons, Iron, Manganese, Monochloramine, Nitrate, Nitrite, Permanganate, pH, ORP, Phosphate, Silica, Sodium, Surfactants, TOC, TSS, Turbidity, UV254, UVT and more!

### **About UviTec products**

UviTec products use spectrophotometric and fluorescence measuring techniques to deliver lab-quality water analysis results in the process environment. Through the power of UV/VIS technology, UviTec solutions enable rapid detection of a wide range of water quality parameters and compounds in real time.

### **Features & benefits of this product**

- Affordable real-time ozone (O<sub>3</sub>) monitoring
- Multiple wavelength sensor uses UV LED technology for superior measurement performance
- Wastewater to high purity measurement ranges
- Operator-friendly, low-maintenance UV LED design
- Reagent-free optical measurements
- Simple to install and operate

## UviTec Ozone Sensor

ABB's UviTec Ozone sensor provides affordable real-time measurement of ozone (O<sub>3</sub>) in water or wastewater. Designed to meet the needs of many monitoring applications, the O3L series offers multiple sensor path length selections to meet the desired measurement range.

## Controllers and accessories

Our innovative modular product platform ensures our clients gain the real-time water quality monitoring system that meets their specific demands and budget. With multiple sensor, controller and accessory options available, ABB provides a total solution for all of your unique water quality needs.

## Liquid Ai-compatible

Our Liquid Ai™ data services complement our real-time water quality monitoring systems. Our Remote Monitoring platform is a powerful data management and visualization tool that enables access to data anywhere, anytime.

## Measurement principle

ABB's UviTec Ozone sensor provides superior measurement performance across multiple wavelengths of light using UV LEDs. Many compounds absorb light in the UV-VIS spectrum, and how much the compounds absorb is directly proportional to their concentration. Compounds that may interfere with ozone measurement are compensated for using additional reference wavelengths. ABB's UviTec Ozone is advancing water and wastewater management.

## Areas of application

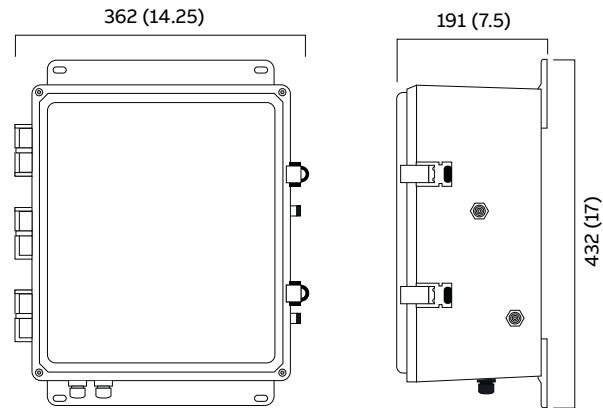
- Municipal drinking water
- Municipal wastewater.
- Industrial process water
- Industrial wastewater.

## Dimensions

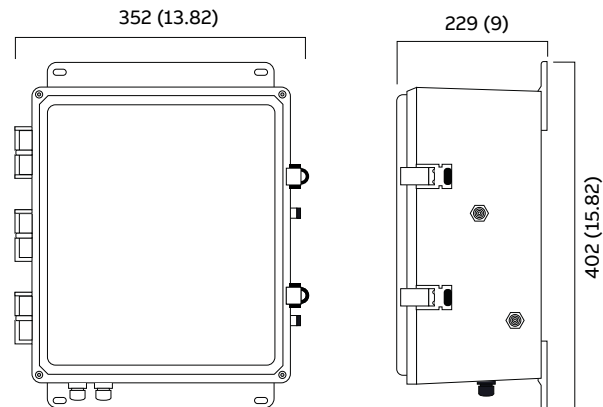
The UviTec Ozone sensor is a bypass cabinet instrument installed directly on a wall, railing or system backboard. Sample is supplied to the sensor from either a pressurized source or from an open-channel using an accessory pumping system.

Dimensions shown in mm (in).

### Dimensions for 2000 Series



### Dimensions for 4000 Series



## Sensor selection

Table 1 Sensor selection

Model	Description
2000	Ideal for general water monitoring applications
4000	Ideal for high purity water monitoring applications

## Specifications

### Model series

2000 Series  
4000 Series

### Path length

2000 Series  
1, 2, 4, 8 mm  
4000 Series  
25, 50, 100, 150 mm

### Parameters

Ozone (O<sub>3</sub>)

### Range

Depends on model selected.  
Refer to Table 2 on page 5.

### Accuracy

± 1 % full scale

### Units

mg/L, ppm

### Sampling time

30 seconds

### Calibration

Factory calibrated. Field adjustment of calibration is possible.

### Cleaning

In-situ chemical cleaning makes cleaning quick and easy.  
Automatic chemical cleaning is optional.

### Self-diagnostics

Detection and diagnosis of internal system fault

### Alarms

Dry contact terminals allow for operator configurable alarms for: high and low set points, low lamp output, leaks, system fault, etc.

### Humidity control

Humidity sensor with large plug-in regenerating desiccant system

### Wavelengths

Multiple wavelengths

### Light source

UV LED

### Flow rate

300 to 1,000 mL/min

### Pressure rating

1.38 bar (20 psi) max.

### Fluid connections

6.35 mm (0.25 in) OD tube push-in fittings

### Wetted materials

Kynar<sup>®</sup>, polyethylene, quartz, SS 316L, Viton<sup>™</sup>

### Electrical/comm.

From Controller

### Ambient temperature

0 to 45 °C  
(32 to 113 °F)

### Water temperature\*

0 to 90 °C (32 to 194 °F) at 21 °C (69.8 °F) ambient temperature

### Enclosure

NEMA 4X, wall-mountable

### Weight

2000 Series  
9.97 kg (22 lb)  
4000 Series  
10.88 kg (24 lb)

### Dimensions (H × W × D)

2000 Series  
432 × 362 × 190 mm  
(17 × 14.25 × 7.5 in)  
4000 Series  
402 × 351 × 229 mm  
(15.82 × 13.82 × 9.00 in)

\* Water temperature range based on material compatibility only. Contact ABB to verify application.

## Sensor models and range\*

Includes ozone sensor, flow cell, calibration bottle and dehumidifier.

Controller and accessories sold separately.

**Table 2** Sensor models and range

Model	Path length	Ozone (mg/L)
O3L2010	1 mm	0 to 128
O3L2020	2 mm	0 to 64
O3L2040	4 mm	0 to 32
O3L2080	8 mm	0 to 16
O3L4025	25 mm	0 to 6.4
O3L4050	50 mm	0 to 3.2
O3L4100	100 mm	0 to 1.6
O3L4150	150 mm	0 to 1

## Controllers

Controllers include proprietary inputs for UviTec sensors and accessories.

**Table 3** UviTec Controllers

Part number	Name	Description
3KXA300301 V	UviTec Controller	Wall-mounted controller with 4-line x 20-character backlit LCD display. Includes Modbus® RTU (RS485), 1 channel of 4 to 20 mA out and digital I/O module
3KXA300302 V	UviTec Controller Pro	Wall-mounted controller with 307 mm (12.1 in) color LCD touch panel PC interface (PC external on door model). Includes Modbus TCP

## Accessories

**Table 4** UviTec accessories

Part number	Name	Description
3KXA300000U0001	UviTec Clean System I	Automatic chemical cleaning system for use with 2000 series models
3KXA300000U0002	UviTec Clean System II	Automatic chemical cleaning system for use with 4000 series models
3KXA300000U0013	UviTec Dual Feed II	Dual feed option includes Digital I/O module for use with controllers

\* Stated ranges are approximate, dependent on industry, site and application. Contact ABB to confirm model selection.

## Ordering information

UviTec Ozone Sensor (ABB part number: 3KXA300509 V)	AUV509/	XXX	X	XXX	Options
<b>Parameter</b>					
Ozone		O3L			
<b>Series</b>					
2000 Series for general water monitoring			2		
4000 Series for high purity water monitoring			4		
<b>Path length*</b>					
1 mm				010	
2 mm				020	
4 mm				040	
8 mm				080	
25 mm				025	
50 mm				050	
100 mm				100	
150 mm				150	

### Optional ordering codes

Add 1 or more of the following codes after the standard ordering information to select any additional options if required:

<b>Sample handling</b>					
Clean System I for use with 2000 series models (pressurized samples) – Modbus					SC3
Clean System II for use with 4000 series models (pressurized samples) – Modbus					SC4
Pump Clean System I for use with 2000 series models (non-pressurized samples) – Modbus					SP3
Pump Clean System II for use with 4000 series models (non-pressurized samples) – Modbus					SP4
Pump Clean Pro System for use with 1000 series models (pressurized)					SP5
Pump Clean Pro System for use with 1000 series models (non-pressurized)					SP6
<b>Pump Clean Pro Upgrades (multiple sel)</b>					
Rinse valve					PUR
Second cleaning valve					PUS
Compressed Air system					PUC
<b>Additional sample handling (multiple sel)</b>					
De-bubbler to remove bubbles from sample					SH1
Dual Feed II system enables measurement of two water samples with one analyzer					SH3
<b>Documentation language</b>					
English					M5
German					M1
Italian					M2
Spanish					M3
French					M4
<b>Liquid Ai – Calibration service</b>					
Calibration health – One time (basic)					LC1
<b>Liquid Ai – Annual subscriptions</b>					
Remote monitoring dashboard – Annual					LD4

## Trademarks

- Liquid Ai is a trademark of ABB Limited.
- Kynar is a registered trademark of Arkema Inc.
- Modbus is a registered trademark of Schneider Electric USA, Inc.
- UviTec is a trademark of ABB Limited.
- Viton is a trademark of The Chemours Company FC, LLC.

\* Refer to path lengths available for each series in "Specifications" on page 4.



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