

ABB MEASUREMENT & ANALYTICS | DATA SHEET | DS/AUV513-EN REV. B

# UviTec™ Sensor

## Benzene



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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 benzene monitoring
- Multiple wavelength sensor uses UV LED technology for superior measurement performance
- Wastewater to high purity measurement ranges
- Bypass style sensor with multiple flow cell selections to meet application demands
- Operator friendly, low maintenance UV LED design
- Reagent free optical measurements
- Simple to install and operate

## UviTec Benzene sensor

ABB's UviTec Benzene provides affordable real-time measurement of benzene in water or wastewater. Designed to meet the needs of many monitoring applications, the BZL series offers multiple flow cell designs and 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 controller and accessory options available such as automatic chemical cleaning systems that lower maintenance while improving system performance, 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. Calibration Health Monitoring ensures accuracy and reliability are maintained so our clients can have the utmost confidence in their results, while our Remote Monitoring platform enables access to data anywhere, anytime.

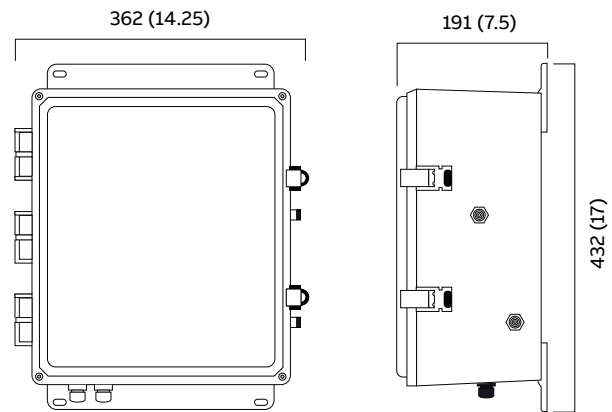
## Measurement principle

ABB's UviTec Benzene 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 benzene measurement are compensated for using additional reference wavelengths. ABB's innovative Benzene sensor is advancing water and wastewater management.

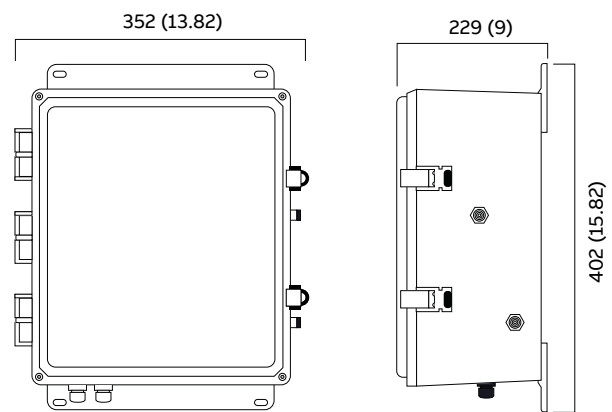
## Dimensions

The UviTec Benzene 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 1000 & 2000 Series



### Dimensions for 4000 Series



## Sensor selection

Table 1 Sensor selection

Model	Description
1000	Ideal for closed loop, high pressure or high solids wastewater monitoring applications
2000	Ideal for general water monitoring applications
4000	Ideal for high purity water monitoring applications

## Specifications

### Model series

1000 Series  
2000 Series  
4000 Series

### Path length

1000 Series  
0.5, 1, 2, 4, 10 mm  
2000 Series  
1, 2, 4, 8 mm  
4000 Series  
25, 50, 100, 150 mm

### Parameters

Benzene

### Range

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

### Units

mg/L, ppm, µg/L

### 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

### Wavelength

Multiple wavelengths

### Light source

UV LED

### Flow rate

1000 Series  
500 to 1,000 mL/min  
2000 & 4000 Series  
300 to 1,000 mL/min

### Pressure rating

1000 Series  
5.86 bar (85 psi) max.  
2000 & 4000 Series  
1.38 bar (20 psi) max.

### Fluid connections

1000 Series  
9.5 mm (0.375 in) OD tube push-in fittings  
2000 & 4000 Series  
6.35 mm (0.25 in) OD tube push-in fittings

### Wetted materials

1000 Series  
Kynar®, FEP, Quartz, SS316L, Viton™  
2000 & 4000 Series  
Kynar, Polyethylene, Quartz, SS 316L, Viton

### Electrical/comm.

From Controller

### Ambient temp.

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

1000 & 2000 Series  
10 kg (22 lb)  
4000 Series  
11 kg (24 lb)

### Dimensions (H × W × D)

1000 & 2000 Series  
432 × 362 × 191 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 benzene sensor, flow cell, calibration bottle, and dehumidifier.

Controller and accessories sold separately.

Table 2 Sensor models and range

Model	Path length	Benzene (mg/L)
BZL1005	0.5 mm	0 to 22,000
BZL1010	1 mm	0 to 11,000
BZL1020	2 mm	0 to 5,500
BZL1040	4 mm	0 to 2,750
BZL1100	10 mm	0 to 1,100
BZL2010	1 mm	0 to 11,000
BZL2020	2 mm	0 to 5,500
BZL2040	4 mm	0 to 2,750
BZL2080	8 mm	0 to 1,375
BZL4025	25 mm	0 to 440
BZL4050	50 mm	0 to 220
BZL4100	100 mm	0 to 110
BZL4150	150 mm	0 to 70

## 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
3KXA300000U0003	UviTec Pump Clean System I	Self-priming pump and automatic chemical cleaning for use with 2000 and 3000 series models
3KXA300000U0004	UviTec Pump Clean System II	Self-priming pump and automatic chemical cleaning 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 Benzene Sensor (ABB part number: 3KXA300513 V)	AUV513/	XXX	X	XXX	Options
<b>Parameter</b>					
Benzene		BZL			
<b>Series</b>					
1000 Series for closed loop, high pressure/high solids wastewater monitoring			1		
2000 Series for general water monitoring			2		
4000 Series for high purity water monitoring			4		
<b>Path length*</b>					
0.5 mm				005	
1 mm				010	
2 mm				020	
4 mm				040	
8 mm				080	
10 mm				100	
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:

#### Sample handling

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

#### Pump Clean Pro Upgrades (multiple sel)

Rinse valve	PUR
Second cleaning valve	PUS
Compressed Air system	PUC

#### Additional sample handling (multiple sel)

De-bubbler to remove bubbles from sample	SH1
Dual Feed II system enables measurement of two water samples with one analyzer	SH3

#### Documentation language

English	M5
German	M1
Italian	M2
Spanish	M3
French	M4

#### Liquid Ai – Calibration service

Calibration health – One time (basic)	LC1
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#### Liquid Ai – Annual subscriptions

Remote monitoring dashboard - Annual	LD4
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## Trademarks

- Kynar is a registered trademark of Arkema Inc.
- Liquid Ai is a trademark of ABB Limited.
- 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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