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ABB MEASUREMENT & ANALYTICS | DATA SHEET

## **100E**

General purpose 12 mm  
pH/Redox (ORP) sensor



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## Measurement made easy

Cost-effective pH measurement for general applications

### **Economical**

- 12 mm combination pH/ORP sensor
- suitable for a wide range of general purpose and OEM applications
- excellent combination of price and performance

### **Accurate and reliable**

- low resistance pH glass provides accurate and reliable measurements across the full pH scale (0 to 14)
- double junction reference protection
- operates up to 60 °C (140 °F)

### **Robust construction**

- virtually unbreakable Ultem® body
- good chemical resistance
- notched design provides excellent mechanical protection for the pH glass, preventing accidental breakage

### **Easy installation**

- PG13.5 process connection for quick installation and removal
- choice of integral cable lengths and connections

## 100E overview

The 100E series of Ultem® pH and ORP electrodes provide accurate and reliable measurement in a robust 12 mm (0.47 in) diameter body offering a good combination of performance and price.

Designed primarily for clean water applications, the 100E series is ideal for measurement in general aqueous media up to 60 °C (140 °F).

The 100E pH electrode features low-resistance pH glass with an acrylamide-free gel electrolyte and double junction reference protection to provide accurate measurements across the full pH scale (0 to 14).

The Ultem® body combines strength with enhanced chemical resistance; the notched design offers mechanical protection for the pH glass. The integrated PT100 thermocouple rapidly compensates for changes in process temperature, providing extremely good measurement stability and accuracy. The 100E is supplied with an industry-standard PG 13.5 mm threaded connection, making it simple to install and remove for servicing and replacement.

Offered with a choice of connectors and integral cable lengths, the 100E provides uncomplicated pH/ORP measurement for a wide range of general purpose applications where highly cost-effective measurement is required.

## Areas of application

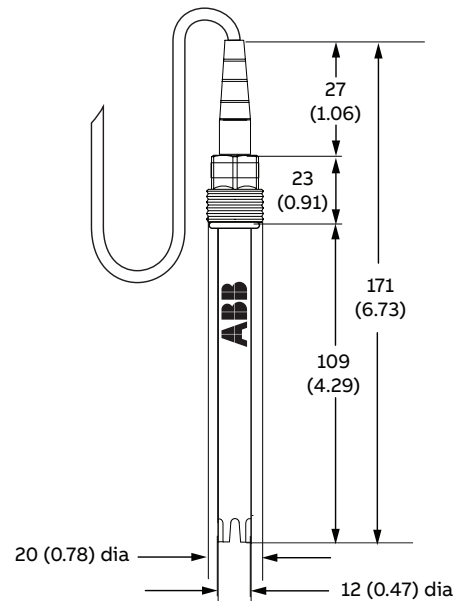
- Drinking water treatment
- Lightly-polluted process water and wastewater
- Environmental monitoring
- Hydroponics, greenhouse systems, irrigation control
- Aquaculture, aquariums
- Hand-held meters
- Swimming pools

The 100E is not recommended for:

- Industrial process water
- Industrial wastewater
- Ultra-pure water
- Sterilization processes
- High fouling applications

## Dimensions

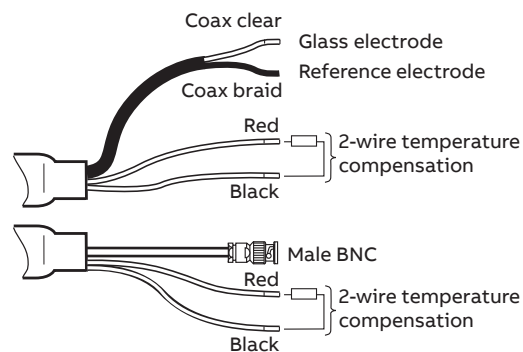
Dimensions in mm (in)



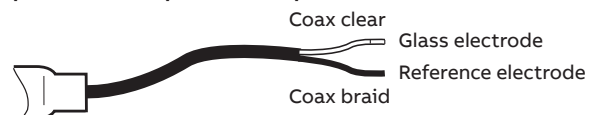
## Electrical connections

Tagged sensor terminations for direct connection to transmitter

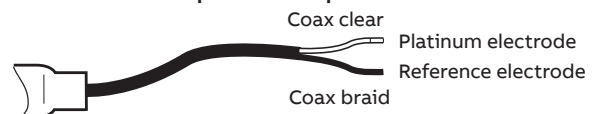
### pH with temperature compensation



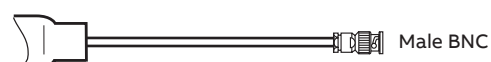
### pH without temperature compensation



### Redox without temperature compensation



### pH and redox (ORP) without temperature compensation



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## Specification

### Measuring range

pH 0 to 14 pH  
Redox (ORP) -2000 to 2000 mV

### Temperature range

0 to 60°C (32 to 140 °F)

### Pressure maximum

6 bar (90 psi) @ 25 °C (77 °F)

### Recommended minimum conductivity

100 µS/cm or higher

### Isopotential point

7.00 pH (0 mV)

### Offset

±0.20 pH

### Span

97 % of theoretical or higher

### Temperature compensator (pH sensors only)

Integral Pt100

### pH glass type

Bulb

### Reference system

Double junction Ag/AgCl 3.5M KCl in gel matrix

### Reference junction

Pellon

### Shelf life

12 months

### Storage temperature

0 to 50°C (32 to 122 °F)

### Wetted materials

pH electrode

Glass

Redox (ORP) electrode

Platinum

Body

Ultem®

Junction

Pellon, silicon bushing

O-ring

Nitrile

## Ordering information

100E 12 mm combination electrode	APS110/	XX	XX	X	XX
<b>Sensor type</b>					
pH		P1			
ORP (Redox) – Platinum		R1			
<b>Body style</b>					
Pg13.5 screw cap				T0	
Pg13.5 screw cap with temp (not available with ORP)				T1	
<b>Connector type</b>					
None (tinned leads)					T
BNC connector					B
<b>Cable length</b>					
1 m (3.3 ft.)					01
3 m (9.8 ft.)					03
5 m (16.4 ft.)					05



## Trademarks and acknowledgements

Ultem is a registered trademark of SABIC Global Technologies B.V

Sales



Service





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