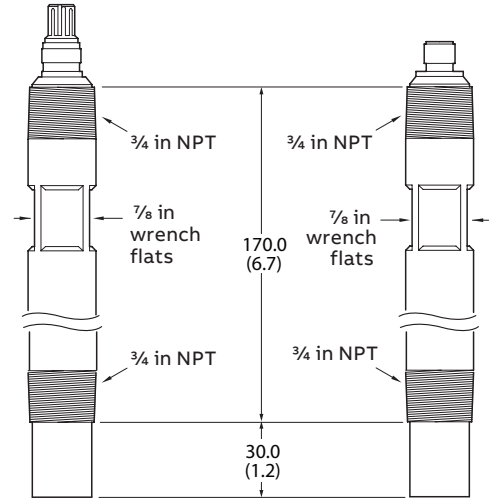


# Dimensions

Dimensions in mm (in)

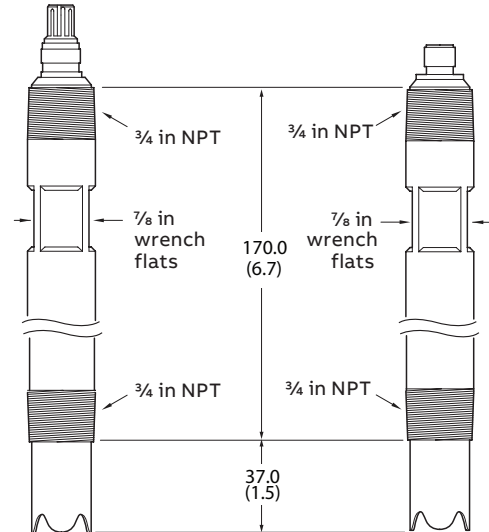
## 100 ULTRA, 100 GP, 500 PRO flush sensor body



Analog sensors

Digital sensors

## 100 ULTRA, 100 GP, 500 PRO notched sensor body



Analog sensors

Digital sensors

# Contact

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3KXA163100R5301

ABB MEASUREMENT & ANALYTICS

# 100 GP, 100 ULTRA, 500 PRO

pH/ORP electrode



# Introduction

The 100 GP, 100 ULTRA and 500 PRO pH/ORP electrodes are supplied in a durable Kynar®\* (PVDF) body featuring a sealed reference design that requires no maintenance and may be used in pressurized systems.

The ¾ in threaded sensor bodies are suitable for in-line, immersion or flow-through applications.

Additional information featuring mounting accessories can be found in the associated Information publications.

As reference, operating conditions are shown in Table 1 below.

Sensor	Max. pressure rating <sup>1</sup>	Temp. range <sup>2</sup>
100 GP/100 GP-D	6 bar (90 psi)	-5 to 60 °C (23 to 140 °F)
100 ULTRA/100 ULTRA-D	6 bar (90 psi)	-5 to 100 °C (23 to 212 °F)
500 PRO/500 PRO-D	10 bar (145 psi)	-5 to 105 °C (23 to 221 °F)

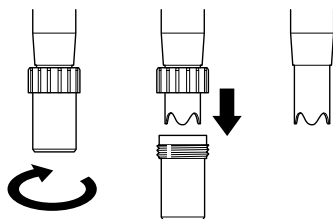
<sup>1</sup> at 25 °C (77 °F)

<sup>2</sup> Dependent on glass electrode selection

**Table 1** Operating conditions

# Unpacking

When commissioning, remove the sensor from its storage bottle (Figure 1) and rinse the end of the sensor with deionized water prior to use.



**Figure 1** Unpacking the sensor

# Flow cell/T-piece and process connections

When connecting the sensor to the flow cell/T-pieces and process connections:

- if using thread sealant/PTFE tape etc., follow manufacturers recommendations (avoid applying too much tape)
- tighten finger tight plus 1 to 2 turns maximum – do not exceed this limit

# Calibration

The frequency of calibration varies as this is a function of the sensor, mounting location, and process being measured.

Use fresh buffer solutions for calibration. Ensure proper buffer stabilization before accepting the value. Minimize cross-contamination of buffers by rinsing with deionized water.

# Fault analysis

Short scaling (low slope) or sluggish response	Glass sensor membrane dirty or coated – clean accordingly
No response to buffer solution	a. Ensure sensor wiring is connected correctly. b. Check that glass membrane is not broken or cracked.
Unstable readings	a. Ensure sensor wiring is connected correctly. b. Contaminated glass membrane or poisoned metal surface – clean accordingly. c. Dry or dirty reference junction – clean accordingly
Stable incorrect readings	a. Recalibrate using fresh buffer solutions. b. Check that the membrane is not broken. c. Ensure manual temperature setting is correct or verify automatic compensation is used.

**Table 2** Fault analysis

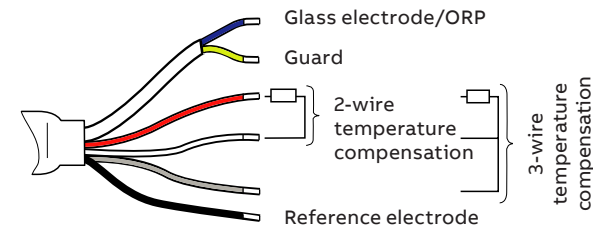
# Electrical connections

## Digital sensors

All digital sensors come with EZLink connectivity.

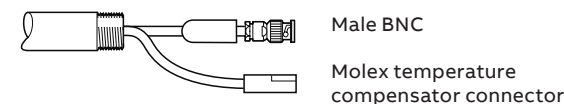
## Analog sensors – pH/ORP with temperature compensation

### 1 Tagged and VP sensor terminations:



Wire color	Function
Blue	Glass electrode/ORP
Yellow	Guard
Black	Reference electrode
Red	2-wire compensation
White	2-wire compensation
Grey	3 <sup>rd</sup> wire

### 2 BNC and Molex sensor terminations:



# Storage and cleaning

Always store the sensor in its original packaging until required for use. ABB recommends storing the electrode between 15 and 35 °C (59 and 95 °F).

Prior to commissioning or calibration, clean the sensor with deionized water using a soft, non-abrasive material.

Additional instructions for cleaning and storage can be found in the Operating Instruction: [\(OI/100/500-EN\)](#).

\*Kynar is a registered trademark of Arkema Inc.