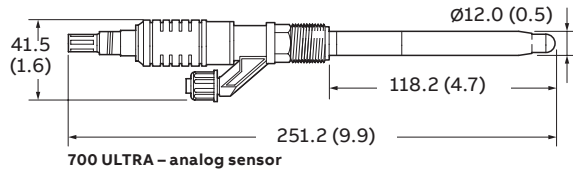
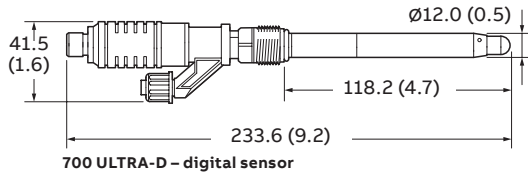


Dimensions

Dimensions in mm (in)



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 guide

Contact

ABB Measurement & Analytics

For your local ABB contact, visit:
www.abb.com/contacts

For more product information, visit:
www.abb.com/measurement

3KXA163700R5301

ABB MEASUREMENT & ANALYTICS

700 ULTRA

pH/ORP electrode



Introduction

The 700 ULTRA pH/ORP electrode is a 12 mm style electrode designed specifically for applications within the power and potable water industries. The flowing reference junction provides a very stable junction potential in high purity 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	Temp. range ¹
700 ULTRA/700 ULTRA-D	Atmospheric	-5 to 100 °C (23 to 212 °F)

¹ Dependent on glass electrode selection

Table 1 Operating conditions

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 cleaning and storage instructions can be found in the Operating Instruction ([OI/700-EN](#)).

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

Unpacking

Referring to Figure 1:

- 1 Remove sensor from storage bottle (A) by unscrewing cap (B) and sliding away from the electrode.
- 2 Ensure sensor is filled with electrolyte. Refer to Operating Instruction ([OI/700-EN](#)) for information regarding electrolyte maintenance.
- 3 Prior to commissioning, discard storage bung (C) by unscrewing sensor nut (D) and removing ferrule (E) from the sidearm. Pull on bung (C) to remove.

Refer to Instruction publication ([IN/ANAINST/040-EN](#)) for additional information regarding sensor connection to reservoir and flow cell assemblies.

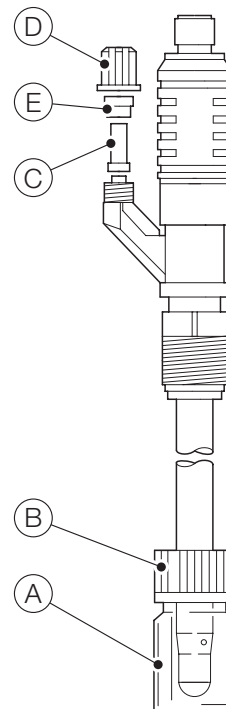


Figure 1 Unpacking the sensor

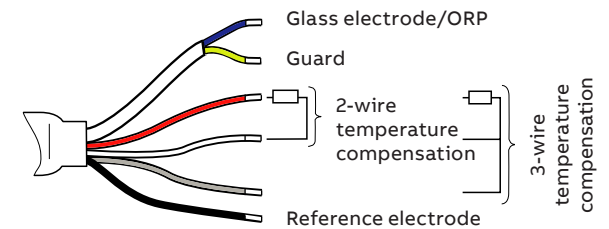
Electrical connections

Digital sensors

All digital sensors come with EZLink connectivity.

Analog sensors – pH/ORP with temperature compensation

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 rd wire

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.

If required, a fault analysis guide (Table 2, over) has been included as an additional resource.