

# Hydroponics

pH Sensors

# Agriculture Process



**BROADLEY  
JAMES**  
CORPORATION

*Manufacturers of  
pH & D.O. Sensors for  
Science and Industry*

# Broadley-James™

## pH Sensors for Agricultural Applications are:

### Economical

Broadley-James pH sensors are a cost-effective component of hydroponics systems. Whether pH is measured as part of an in-line nutrient dosing unit or the pH of the hydroponics bays is tested manually, the affordable pH sensor is a vital part of a nutrient management system. Broadley-James pH sensors can be used with nearly all systems that are available on the market. The company has more than two decades of experience in horticultural pH measurement and control applications.

### Long Lasting

Broadley-James pH sensors are durable and designed for maximum performance. With proper care and maintenance, Broadley-James pH sensors will continually help maintain optimal growing conditions in hydroponics bays. Accurate measurement of pH is critical to provide precise pH control and dosing of the nutrients to achieve the highest yields. Easy to maintain and exchange when needed, these pH sensors can be quickly replaced to minimize loss in production time.

### Compatible

Broadley-James is the most complete source of replacement pH sensors for hydroponics, and has an extensive selection of pH sensors to fit the most widely used systems. Whether using a conventional housing, the newer twist-lock housing, or measuring pH manually, Broadley-James has pH sensors that are compatible with all brands of electronics and controllers.

If you do not see your style of pH sensor pictured here, call a Broadley-James representative today for further assistance.

## High Pressure In-Line

The pH sensor shown below is designed to fit into the built-in housings of the dosing units on the most widely used automated liquid fertilization systems in the hydroponics industry.

Part Number  
C1101A-32A-A10BC

pH Sensor easily  
fits into both types  
of housings



## Why pH?

The pH of the water-nutrient mixture is of prime importance to efficient dosing systems in hydroponics. All the nutrients the plants need for growth may be present, but if the pH of the solution is too alkaline or too acidic the plants will not be able to absorb the nutrients that have been provided. Correct pH levels are important for the plants to be able to utilize all the nutrients supplied in the solution.

## High Pressure In-Line with Integral Housing

The pH sensor shown below has its own integral housing so that it can be installed into any 1/2" NPT pipe fitting. No separate housing is needed because the sensor and the threaded housing are built into one unit.

Part Number  
C1121K-32A-A10BC



pH Sensor is threaded to fit directly into the pipe

Standard 1/2" Tee joint

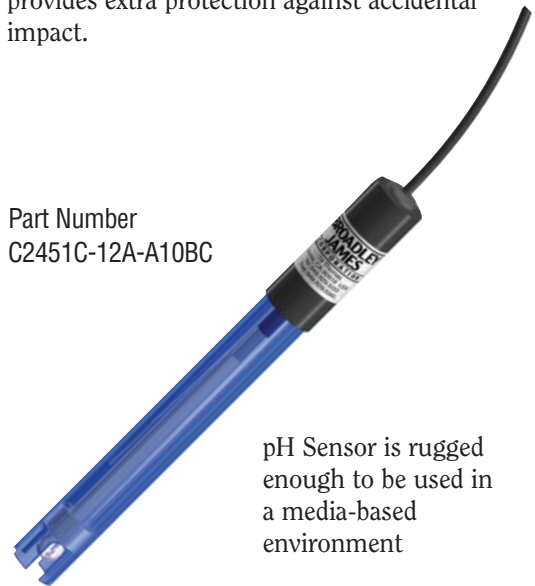


## Low Pressure Handheld

This pH sensor is used for low-pressure in-line measurements and handheld measurements. Useful for almost any low-pressure application, it can be used to manually measure samples and even used with a compression fitting to measure samples in-line.

The rugged polymer body of this sensor is thicker than most other polymer models and provides extra protection against accidental impact.

Part Number  
C2451C-12A-A10BC



pH Sensor is rugged enough to be used in a media-based environment

## Tips & Hints

One of the most common problems that growers encounter with pH sensors in agricultural applications is corrosion of the connectors due to moisture. If the connectors get wet, the output of the sensor will be shorted making calibration of the pH sensor impossible. To prevent the sensor from malfunctioning, it is very important to keep the connectors dry in a water-culture system.

# Specifications

## Part Numbers:

C1101A-32A-A10BC and C1121K-32A-A10BC

pH Range . . . . . 0–13 pH  
Temperature Range . . . . . -5–100°C  
Glass Membrane Type . . . . . HT-3, Low Sodium  
Ion error  
Membrane Resistance . . . . . 100 Megohms  
Reference System . . . . . Ag/AgCl  
Pressure Rating . . . . . ≤ 150 psig (10 bar)  
@ 25°C

## Part Number:

C2451C-12A-A10BC

pH Range . . . . . 0–12 pH  
Temperature Range . . . . . 0–80°C  
Glass Membrane Type . . . . . HT-3, Low Sodium  
Ion error  
Membrane Resistance . . . . . 100 Megohms  
Reference System . . . . . Ag/AgCl



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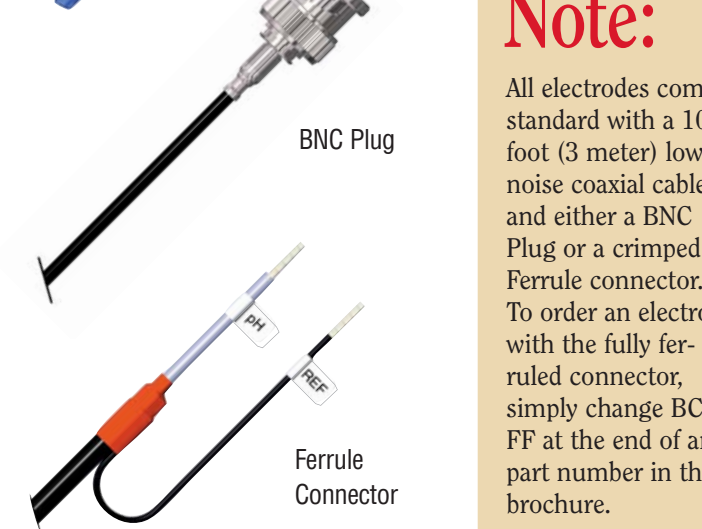
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Part Number  
C1101A-32A-A10BC



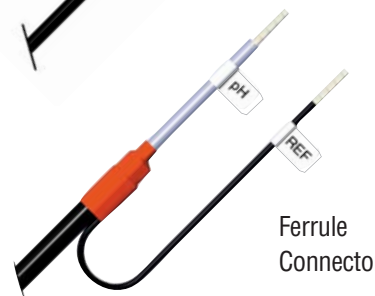
Part Number  
C1121K-32A-A10BC



Part Number  
C2451C-12A-A10BC



BNC Plug



Ferrule  
Connector

## Note:

All electrodes come standard with a 10 foot (3 meter) low noise coaxial cable and either a BNC Plug or a crimped Ferrule connector. To order an electrode with the fully ferruled connector, simply change BC to FF at the end of any part number in this brochure.