

# UltimusPlus Dispense Timer Validation Instructions

## Introduction

The readout accuracy specification of the UltimusPlus™ Series dispense timer is  $\pm 0.05\%$  of the selected Time (dispense time) setting. Validation of the dispense timer readout accuracy is performed by measuring the End-of-Cycle (EOC) pulse with an oscilloscope and then comparing the pulse measurement to the Time setting for a single dispense shot. This End-of-Cycle pulse establishes the accuracy of the dispense timer for an UltimusPlus Series fluid dispenser.

**NOTE:** The pressure and vacuum readout accuracy of an UltimusPlus Series dispenser cannot be field-calibrated.

## Tektronix DPO2024B Oscilloscope Setup

The Tektronix® DPO2024B mixed signal oscilloscope, or another verified oscilloscope, can be used. Setup for a DPO2024B oscilloscope is provided below. The trigger function is used to measure the End-of-Cycle pulse. When a dispense cycle initiated at +24V goes low and then returns to +24V, the dispense is complete.

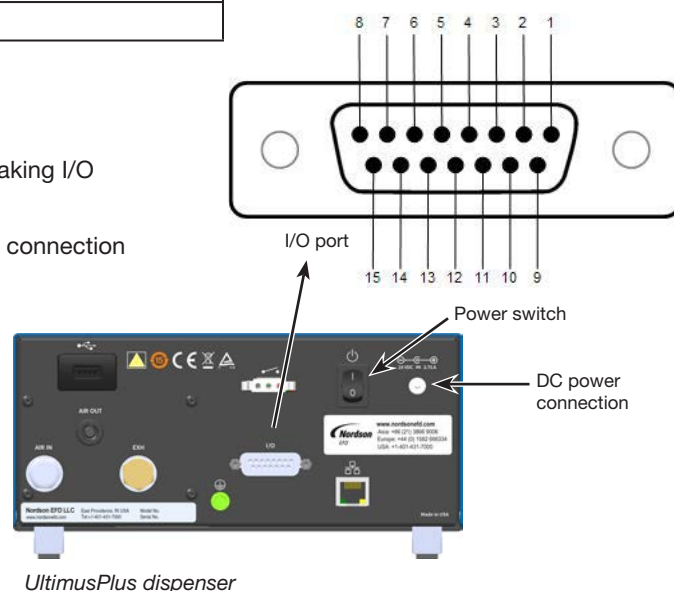
Tektronix DPO2024B	Configuration Settings for Dispense Timer Validation
Trigger	Edge, single shot
Trigger Level	1 V
Slope	Falling
Coupling	DC
Measure	-Width, maximum, minimum

## Validation Procedure

Refer to the UltimusPlus Series Operating Manual for instructions on making I/O connections and for using the TIMED mode.

1. Disconnect the UltimusPlus power supply cord from the DC power connection on the back of the dispenser and from the AC power source.
2. Configure the oscilloscope as described above.
3. Connect the oscilloscope input to the following I/O pins on the UltimusPlus dispenser:
  - Pin 8 (EOC out)
  - Pin 14 (ground)
4. Reconnect the UltimusPlus power supply cord to the back of the dispenser and to the AC power source.
5. Press the power switch to switch ON the UltimusPlus dispenser.
6. Select the TIMED mode.
7. Set the Time pulse to 10 s.
8. Use the foot pedal to initiate the 10 s Time pulse and observe the reading on the oscilloscope:

For a 10 s pulse, the acceptable readout range is 9.995–10.005 s.



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