

Application Note

Troubleshooting in pH mode

1. Clear all existing standards.
2. Place electrode in standard, stir until reading is steady, record value
pH 4 _____
pH 7 _____
pH 10 _____
3. Convert pH to mV:
 - a. subtract the pH value of your reading from 7
 - b. multiply this number by 59.16 mV/pH
4. Calculate your slope:
 - a. subtract the mV of the 7 buffer from your other buffer (4 or 10)
 - b. divide this number by 177.48 and multiply by 100

A good electrode has a mV of 0 +/- 30 mV in pH 7. The slope should be 90 to 105%.

Example:

Readings

pH 4 : 4.29

pH 7 : 7.43

Convert pH 7 reading to mV

$7 - 7.43 = -0.43 \text{ pH} * 59.16 \text{ mV/pH} = -25.44$ (this value is okay because it is within 0 +/- 30 mV)

Convert pH 4 reading to mV

$7 - 4.29 = 2.71 \text{ pH} * 59.16 \text{ mV/pH} = 160.32$

Calculate slope

$160.32 - (-25.44) = 185.76 \text{ mV} / 177.48 \text{ mV} * 100 = 105 \%$ (this value is borderline as 105% is the upper limit)