

MEASURING EQUIPMENT

Handheld pH Meter, pH 3150i

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German Cathodic Protection



The 3150i handheld meters provide reliable measurements under difficult conditions both in the Lab and in the field. Lightweight and compact, the meters are impact-resistant, hose-proof to IP 66 and meet the requirements for IP 67.

- For routine measurements
- Reliable, accurate
- Simple operation

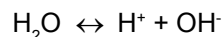
Simple operation means that measuring errors are avoided. All the function keys of the 3150i can be operated even when wearing gloves; automatic calibration and AutoRead functions ensure stable and reproducible results. The multifunctional display for pH, oxygen, conductivity and temperature is easy to read.

The handheld pH meters are optimized for use on-site and field use, but can also be used in the laboratory.

The 3150i handheld meters are robust and waterproof battery-operated pH/mV meter. Measuring errors are avoided by the silicone keypad with only 5 keys and a simplified calibration method with automatic buffer recognition and display for standard buffers. AutoRead ensures stable and reproducible results.

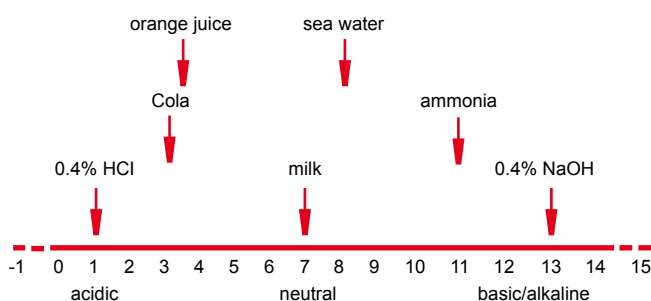
pH-Value

The water molecule has the property of dissociating into two ionic components in aqueous solutions.



The H^+ ion is termed hydrogen ion or proton, the OH^- ion hydroxide ion.

The pH value describes the activity of hydrogen ions in aqueous solutions on a scale of -1 to 15. Based on this scale, liquids are characterized as being acidic, alkaline or neutral: a solution which is neither acidic or alkaline is neutral. This corresponds to a value of 7 on the scale. Acidity indicates a higher activity of hydrogen ions and a pH value lower than 7. Alkaline solutions are characterized by a lower hydrogen ion activity or higher hydroxide ion activity, respectively and a pH value above 7. The graph below uses examples to illustrate the pH scale.



No longer available!
Replaced by Meter pH3110



Technical data

Model	pH 3150i
Range pH	-2.00 16.00 pH
Range mV	-1999 +1999
Range Temperature	-5.0 +105.0 °C (23 221 °F)
Accuracy pH	(±1 digit) ±0.01 pH
Accuracy mV	(±1 digit) ±0.3 mV at +15 °C 35 °C
Accuracy Temperature	(±1 digit) ±0.1 K
Display	5 1/2 digit LCD
Power supply	Four 1.5 V AA batteries
Battery life time	3000 hours
Dimensions	3-1/8"W x 6-3/4"H x 1-1/2"D
Callibration	Simplified 1, 2 or 3 point callibration with automatic buffer recognition AutoCal automatic 3-point callibration with DIN buffers

The pH scale is logarithmic. A difference of one pH unit represents a tenfold, or ten times increase or reduction of hydrogen ion activity in the solution. This explains how a solution's aggressiveness increases with the distance from the neutral point.

The pH value can be measured using electrochemical measuring systems, litmus paper, indicators and colorimeters. Of these methods, electrochemical sensors provide the most accurate results.

The pH electrode is an electrochemical sensor which consists of a measuring electrode and a reference electrode. The measuring electrode is made of special glass which, due to its surface properties, is particularly sensitive to hydrogen ions. It is filled with a buffer solution which has a pH value of 7. When placing the pH electrode into a test solution, the change in voltage is measured by the electrode by comparing the measured voltage to the stable reference electrode. This change is recorded by the meter and converted into the pH value displayed.