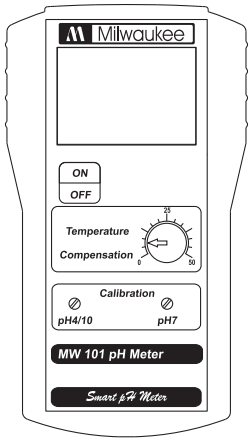
Milwaukee

USER MANUAL

PORTABLE pH METER
MODEL: MW101

Smart pH Meter



WARRANTY:

This instrument is warranted from all defects in materials and manufacturing for a period of **two years** from the date of purchase.

The **electrode is warranted for a period of six months**.

If during this period the repair or replacement of parts is required, where the damage is not due to negligence or erroneous operation by the user, please return the parts to either distributor or our office and the repair will be effected free of charge.

Note: We reserve the right to modify the design, construction and appearance of our products without advance notice.

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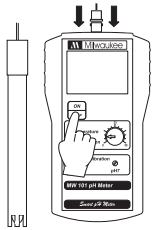
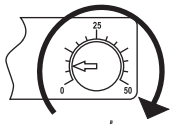
OPERATION:

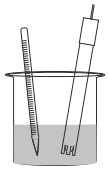
- The meter is supplied complete with a 9V battery. Slide off the battery compartment cover on the back of the meter. Install the battery into the battery clip connector while observing polarity.
- Always remove the electrode protective cap before taking any measurement. If the electrode has been left dry, soak the tip (bottom 2.5 cm) in rinse solution (**M10000B**) for a few minutes to reactivate it.
- Connect the pH electrode to the BNC socket on the top of the meter.
- Turn the instrument on by pressing the ON/OFF key.



- Make sure that the meter has been calibrated before taking any measurements (see Calibration Procedure).
- Set the temperature knob to the value of testing solution (measured with help of an accurate thermometer).



- Immerse the tip (2.5 cm) of the pH electrode into the sample and stir gently.



- After completing measurements, switch the meter off and store the electrode with a few drops of storage solution (**MA9015**) in the protective cap.

CALIBRATION PROCEDURE:

A) Preparation:

Two calibration buffers are required

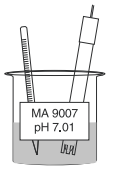
1. **pH 7.01** (**MA9007**)
2. **pH 4.01** (**MA9004**) if you are measuring in acid range (pH 0 - pH 7) or **pH 10.01** (**MA9010**) if you are measuring in alkaline range (pH 7 - pH 14).

Use two beakers for each pH buffer. One beaker for rinsing the electrode, the other for calibration.

Use a thermometer with 1ºC accuracy to measure the temperature of calibration solution.

B) Procedure:

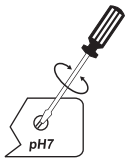
- Remove the protective cap from the electrode. Rinse the tip of the electrode with some pH 7.01 solution, then immerse the pH electrode into a pH 7.01 buffer solution.

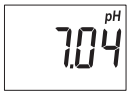


- Take the temperature of the buffer solution with a thermometer and set the temperature knob to the measured temperature (e.g. 15ºC).

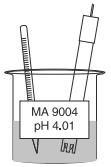
- Adjust the OFFSET trimmer (pH 7) on the front panel, with a small screwdriver until the LCD shows the pH value at temperature of the buffer (see the pH versus temperature chart).

  E.g. in this case, if the temperature is 15ºC, the meter display should be adjusted to read “pH 7.04”.





- Now rinse the pH electrode in the first pH 4.01 beaker, then immerse it into the second pH 4.01 beaker or follow the same procedure if using pH 10.01 buffer.



- Adjust the SLOPE trimmer (pH4/10) on the front panel, with a small screwdriver, until the LCD shows the pH value of the buffer at the temperature of measurement (see the pH versus temperature chart).

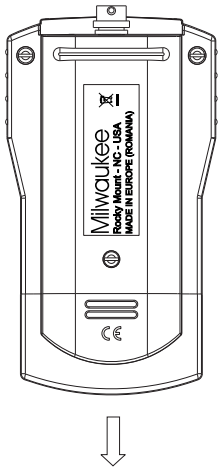
E.g. in this case, if the temperature is 15ºC, the meter display should be adjusted to read “pH 4.00” (or pH 10.01 would be adjusted to 10.12 pH).

Calibration is now complete.

pH VERSUS TEMPERATURE CHART:

TEMP		pH VALUES		
°C	°F	MA9004	MA9007	MA9010
0	32	4.01	7.13	10.32
5	41	4.00	7.10	10.24
10	50	4.00	7.07	10.18
15	59	4.00	7.04	10.12
20	68	4.00	7.03	10.06
25	77	4.01	7.01	10.01
30	86	4.02	7.00	9.96
35	95	4.03	6.99	9.92
40	104	4.04	6.98	9.85
45	113	4.05	6.98	9.85
50	122	4.06	6.98	9.82
55	131	4.07	6.98	9.79
60	140	4.09	6.98	9.77
65	149	4.11	6.99	9.76
70	158	4.12	6.99	9.75

BATTERY REPLACEMENT:



When the battery becomes weak the meter will display “”.

When the low battery indicator appears, only a few hours of battery life remain. A low battery will result in unreliable measurements. Prompt battery replacement is required.

Battery replacement must only take place in a non-hazardous area using an alkaline 9V battery.

Turn the meter off, slide the battery compartment cover located at the rear of the meter off and replace the 9V battery with a new one. Make sure the battery contacts are fully engaged in the connector, seat the battery in its compartment and replace the cover.

OPTIONAL ACCESSORIES:

MA 9004	pH4.01 buffer solution, 220 mL bottle
MA 9007	pH7.01 buffer solution, 220 mL bottle
MA 9010	pH10.01 buffer solution, 220 mL bottle
MA 9015	Electrode storage solution, 220 mL bottle
MA 9016	General cleaning solution, 220 mL bottle
M10000B	Rinse solution, 20 mL sachet (25 pcs.)
MA 911B/1	pH electrode with BNC connector and 1 m cable
MA950	Portable meter wall mounting kit

SPECIFICATIONS:

	MW 101
RANGE	0.00 to 14.00 pH
RESOLUTION	0.01 pH
ACCURACY (@25°C)	±0.02 pH
TEMPERTURE COMPENSATION	Manual setting 0 to 50ºC
CALIBRATION	Manual, 2-point with use of Offset and Slope trimmers
pH ELECTRODE	**MA911B/1** (included)
ENVIRONMENT	0 to 50°C, 95% RH max.
BATTERY TYPE	1 x 9V alkaline (included)
BATTERY LIFE	approx. 70 hours of use
DIMENSIONS	143 x 80 x 32 mm
WEIGHT	220 g (with battery) meter only

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