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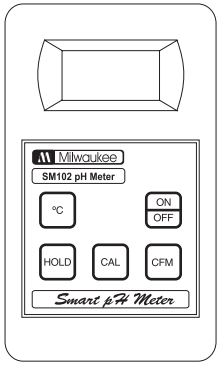
USER MANUAL

PORTABLE uP-BASED pH METER MODEL: SM102

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 probe 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 change.

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

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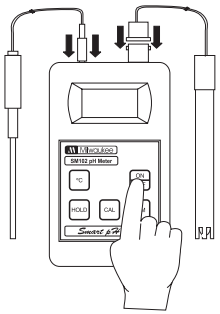
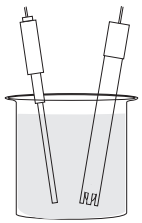
OPERATION:

- The meter is supplied complete with a 9V battery. Slide off the battery compartment cover on the back of the meter and install the battery while paying attention to its 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 and the temperature probe to the sockets on the meter's top. The temperature probe can be used independently to take temperature measurements, or it can be used in conjunction with the pH electrode to utilize the meter's ATC capability.



- Turn the instrument on by pressing the ON/OFF key.
- Before taking any measurements, make sure that the meter has already been calibrated.



- Immerse the tip (2.5 cm) of the pH electrode and the temperature probe into the sample and stir gently.
- Take the pH reading when the hourglass symbol stops blinking.
- To display the measured temperature, press and hold the °C key.

When the key is released, the display will return to the pH reading.

- The HOLD function is activated by keeping pressed the HOLD key. The measured value is frozen on the display and the "HOLD" tag lights up.

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

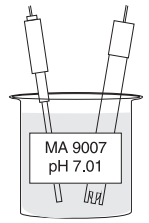
- Error message on display:
  - Blinking full scale value: reading is over range;
  - "Eb": battery low voltage indication;
  - "Ec": wrong buffer solution;
  - "Clr": the calibration data have been lost and recalibration is needed.

CALIBRATION PROCEDURE:

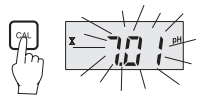
A) Preparation:
Reference solutions:
1. **pH 7.01** (**MA 9007**)
2. **pH 4.01** (**MA 9004**) for measuring in the acid range (pH lower than 7) or **pH 10.01** (**MA 9010**) for measuring in the alkaline range (pH higher than 7).

Use two beakers for each reference solution. One beaker for rinsing the electrode, the other for calibration. This way contamination between solutions during calibration is minimized.

B) Procedure:



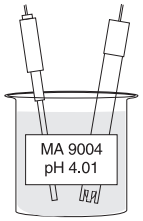
- Remove the electrode protective cap and rinse the tip with some pH7.01 solution, then immerse the electrode and the temperature probe into a pH7.01 buffer solution.
- Press the CAL key to enter the Calibration mode. The display flashes "pH 7.01" and the hourglass lights up.



Note: Pressing the CAL key again will change the required buffer value, making possible a single point calibration at pH 4.01 or pH 10.01.

- Wait till the hourglass symbol on the display turns off and the “pH” tag stops blinking, then press the CFM key to confirm the offset calibration. “pH 4.01” will flash on the LCD.

- Rinse the pH electrode and the temperature probe in the first pH4.01 beaker, then immerse them into the second pH4.01 beaker.



- Follow the same procedure if using the pH10.01 solution; select the correct buffer by pressing the CAL key.
- Wait till the hourglass symbol on the LCD turns off, then press the CFM key to confirm the slope calibration.

Notes:

- To exit the calibration mode, turn the meter off by pressing the ON/OFF key.
- To perform a single point calibration (offset) at pH7.01, press the ON/OFF key when the second buffer is asked.
- After battery replacement, the meter displays the “Clr” message and recalibration is needed.

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BATTERY REPLACEMENT:

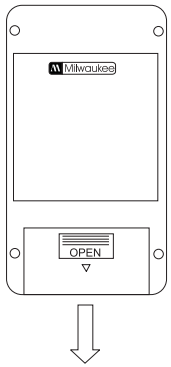
When the battery becomes so weak that no reliable measurement can be guaranteed, the meter will display “Eb” for a while and then turns off.

It is recommended to replace immediately the battery.

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

Turn the meter off, slide off the battery compartment cover at the rear of the meter and replace the 9V battery with a new one.

Make sure the battery contacts are tight and secure, seat the battery in its compartment and insert back 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
MA830R	Temperature probe
MA950	Portable meter wall fixing kit

SPECIFICATIONS:

RANGE	-2.00 to 16.00 pH -5 to 70°C
RESOLUTION	0.01 pH / 0.1°C
ACCURACY (@25°C)	±0.02 pH / ±0.5°C
TYPICAL EMC DEV.	±0.02 pH / ±0.5°C
TEMPERATURE COMPENSATION	Automatic, 0 to 70°C
CALIBRATION	Automatic, at 1 or 2 points
pH ELECTRODE	**MA911B/1** (included)
TEMPERATURE PROBE	**MA830R** (included)
ENVIRONMENT	0 to 50°C; RH 95% max.
BATTERY TYPE	1 x 9V alkaline (included)
BATTERY LIFE	approx. 750 hours of use
AUTO-OFF	after 8 minutes of non-use
DIMENSIONS	145 x 80 x 40 mm
WEIGHT	220 g (with battery)

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