www.growland.net / www.growland-hydroponics.com
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https://www.growland.nl / https://www.growland.it
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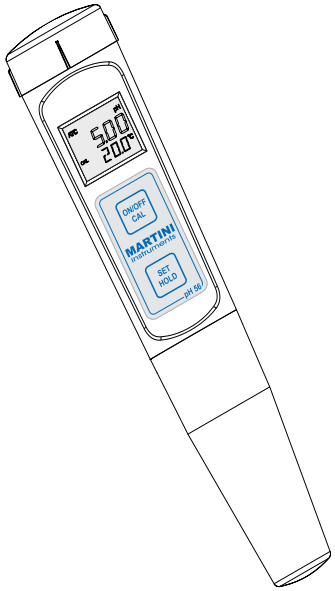
USER MANUAL

pH 55 • pH 56

Pocket-size pH/°C/°F Meters



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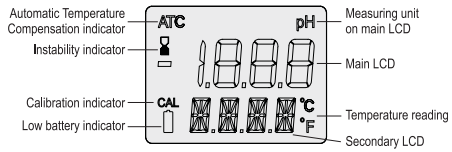

OPERATIONAL GUIDE

- Remove the electrode cap and immerse the meter in **MA9015** storage solution for 2 hours to activate the electrode.
- Turn the meter on by pressing the ON/OFF button. All the used segments on the LCD will be visible for 1 second or as long as the button is pressed.
- Immerse the electrode in the solution to be tested. Stir gently and wait for the reading to stabilize, i.e. the instability indicator (hourglass) on the LCD turns off.
- The pH value is automatically compensated for temperature and will be displayed on the main LCD, while the temperature is shown on the secondary LCD.
- *To freeze the display*, while in measurement mode, press and hold the SET/HOLD button. The "HOLD" message appears on the secondary display and the reading will be frozen on the LCD.
  Press any button to return to normal mode.
- *To turn the meter off*, press the ON/OFF button. The "OFF" message will appear on the secondary display. Release the button.

Note:

- Before taking any measurement, make sure the meter is calibrated (the CAL tag is on).
- After use always turn the meter OFF, rinse the electrode with water to minimize contamination and store it with a few drops of storage (**MA9015**) or pH7 (**M10007**) solution in the protective cap.

NEVER USE DISTILLED OR DEIONIZED WATER FOR STORAGE PURPOSE.

CALIBRATION PROCEDURE

For better accuracy, frequent calibration of the tester is recommended. Calibration is also necessary after electrode replacement, after testing aggressive chemicals and where extreme accuracy is required.

- From normal operation mode, press and hold the ON/OFF/CAL button until the "OFF" message on the secondary LCD is substituted by "CAL". Release the button.
- The instrument enters the calibration mode by displaying "pH 7.01 USE" (or "pH 6.86 USE" if the NIST buffer set was selected).
- For a *single-point calibration*, immerse the electrode in any buffer, i.e. pH 4.01, 7.01 (or 6.86), 10.01 (or 9.18).
- The meter activates the automatic buffer recognition. If no valid buffer is detected, the meter keeps the USE indication active for 12 seconds, and then replaces it with WRNG, indicating that the sample being measured is not a valid buffer. Otherwise, if a valid buffer is detected, then its value is shown on the primary display, and REC appears on the secondary LCD.
- If the pH 7.01 (or pH 6.86) was used, press the SET button to exit the Calibration mode and the "OK 1" message will appear on the display. The first calibration point is stored and the meter returns to normal measurement mode.

For better accuracy, it is always recommended to perform a 2-point calibration.

- For a *two-point calibration*, immerse the electrode in pH 7.01 (or pH 6.86) buffer solution.
- After the first point has been accepted, the meter will then ask for the second buffer and the message "pH 4.01 USE" will appear.
- Rinse the electrode and immerse it in the second solution (pH 4.01, 10.01 or 9.18).
- If a valid buffer value is detected, the REC message is displayed and the meter completes the calibration procedure. The LCD shows the accepted value with the "OK 2" message and the instrument returns to the normal measurement mode. Otherwise, if no valid buffer is detected, the meter displays the WRNG message.

Note: When the calibration procedure is completed, the CAL tag is turned on.

- *To quit the procedure* and return to the last calibration data, after entering the calibration mode press the ON/OFF button.
  The secondary LCD displays “ESC” for 1 second and then the meter returns to the normal measurement mode.
- *To reset to the default values* and clear a previous calibration, press the SET/HOLD button after entering the calibration mode and before the first point is accepted.
  The secondary LCD displays “CLR” for 1 second, the meter resets to the default calibration and the CAL tag on the LCD turns off.

SETUP

Setup mode allows the selection of temperature (°C or °F) and pH buffer set for calibration.

To enter the Setup mode, press the ON/OFF button until “CAL” on the secondary LCD is replaced by “TEMP” and the current temperature unit (e.g. TEMP °C). Then:

- *for °C/°F selection*: use the SET/HOLD button; then press the ON/OFF button once to enter the buffer set selection or twice to return to the normal measurement mode.
- *to change the calibration buffer set:* after setting the temperature unit, press ON/OFF once and select the buffer set (“pH 7.01 BUFF” or “pH 6.86 BUFF” for NIST) by using the SET/HOLD button. Press ON/OFF to return to the normal measurement mode.

ELECTRODE REPLACEMENT

- Remove the protective cap and unscrew the plastic ring on the top of the electrode.
- Pull out the **MI56P** electrode and replace it with a new one.
- Make sure the gaskets are in place before screwing back the ring.

BATTERY REPLACEMENT

When the batteries become weak, the battery symbol on the LCD will light up to advise that only a few hours of working time is remaining.

The meter is also provided with BEPS (Battery Error Prevention System), which avoids any erroneous readings due to low battery level by automatically switching the meter off.

It is recommended to replace the batteries immediately.

To replace the batteries unscrew the battery compartment cap and replace all four 1.5V batteries while paying attention to their polarity. Make sure the gasket is in place before screwing back the cap.

Batteries should only be replaced in a non-hazardous area using the battery type specified in this instruction manual.

ACCESSORIES

MI 56P	Replaceable electrode for **pH 55** & **pH 56**
M10004B	pH 4.01 buffer, 20 ml sachet, 25 pcs.
M10007B	pH 7.01 buffer, 20 ml sachet, 25 pcs.
M10010B	pH 10.01 buffer, 20 ml sachet, 25 pcs.
MA9004	pH 4.01 buffer, 230 ml bottle
MA9006	pH 6.86 buffer, 230 ml bottle
MA9007	pH 7.01 buffer, 230 ml bottle
MA9009	pH 9.18 buffer, 230 ml bottle
MA9010	pH 10.01 buffer, 230 ml bottle
MA9015	Electrode storage solution, 230 ml
MA9016	Electrode cleaning solution, 230 ml
M10000B	Electrode rinse solution, 20 ml sachet, 25 pcs.

WARRANTY

This instrument is warranted against defects in materials and manufacturing for a period of two years from the date of purchase. Probe is warranted for 6 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 done free of charge.
Damages due to accidents, misuse, tampering or lack of prescribed maintenance are not covered. Milwaukee/Martini instruments reserves the right to make improvements in design, construction and appearance of its products without advance notice.

SPECIFICATIONS

RANGE	-2.0 to 16.0 pH (**pH 55**)
	-2.00 to 16.00 pH (**pH 56**)
	-5.0 to 60.0°C / 23.0 to 140.0°F
RESOLUTION	0.1 pH (**pH 55**)
	0.01 pH (**pH 56**)
	0.1°C / 0.1°F
ACCURACY (@25°C)	±0.1 pH (**pH 55**)
	±0.05 pH (**pH 56**)
	±0.5°C / ±1°F
TYPICAL EMC DEVIATION	±0.1 pH (**pH 55**)
	±0.02 pH (**pH 56**)
	±0.3°C / ±0.6°F
TEMPERATURE COMPENSATION	Automatic, from -5 to 60°C
CALIBRATION	Automatic, 1 or 2 points with 2 sets of memorized buffers (pH 4.01, 7.01, 10.01 or 4.01, 6.86, 9.18)
PROBE	Replaceable **MI 56P**
ENVIRONMENT	-5 to 50°C; 100% RH max.
BATTERY TYPE	4 x 1.5V; IEC LR44, A76
BATTERY LIFE	approx. 300 hours of use
AUTO-OFF	after 8 minutes of non-use
DIMENSIONS	200 x dia 38 mm
WEIGHT	100 g