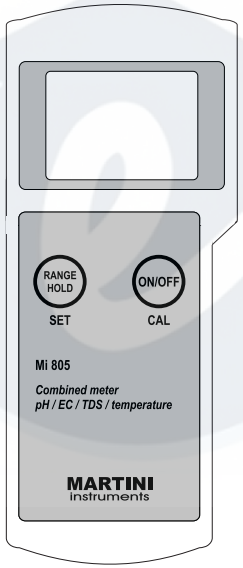
# USER MANUAL

# MI 805

## pH/EC/TDS/Temperature Portable Meter

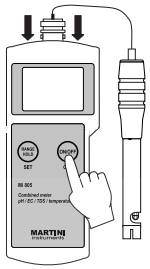



**MARTINI**
instruments

IST/MI805R1 09/04

***GENERAL OPERATION***

- The meter is supplied complete with a 9V battery. Remove the battery cover on the back of the meter and install the battery while paying attention to its polarity.



- Connect the **MA851D/1** probe to the meter and turn it on by pressing the ON/OFF key.
- At start-up, the LCD shows the percentage of the remaining battery life for a few seconds, and then the current measurement.


- To select the temperature measurement unit (°C or °F), press and hold the "ON/OFF" key until "TEMP" and the current temperature unit are displayed on the secondary LCD. Use the "SET" button to select the unit, then press "ON/OFF" a couple of times to return to normal mode.
- To activate the HOLD function, keep pressed the "HOLD" key. The measured value will be frozen on the display and the "HOLD" message appears on the secondary LCD.


- To set the measurement range (pH, µS, ppm), press the "RANGE" key. The chosen mode will be stored until next change.
- Before taking any measurement, make sure that the meter has been calibrated (the "CAL" tag is displayed on the left lower corner of the LCD).
- After measurements, switch the meter off by pressing the "ON/OFF" key. The "OFF" message appears on the LCD; release the button.
- Store the electrode with a few drops of storage solution in the protective cap.

***TAKING pH MEASUREMENTS***

- 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 **M10000** rinse solution for a few minutes to reactivate it.
- Select the pH range with the "RANGE" key.
- Immerse the tip (2.5 cm) of the probe into the sample and stir gently.
- Read the pH value when the clock symbol stops blinking.

***pH CALIBRATION PROCEDURE***

A) Preparation, Buffer solutions:

1. **pH 7.01** / **6.86 (MA9007 / MA9006)**
2. **pH 4.01** (**MA9004**) for acidic calibration (pH < 7) or **pH 10.01 / 9.18** (**MA9010 / MA9009**) for alkaline range (pH > 7).

Use two beakers for each buffer solution: one beaker for rinsing the probe, the other for calibration. In this way the cross contamination between solutions is minimized.

B) Procedure:

- Enter the pH mode with the "RANGE" key.
  Select calibration buffer set: press and hold the "ON/OFF" key until the LCD shows "TEMP". Press again this key and the "BUFF" message will appear; then select the desired buffer set with the "SET" key: "7.01 pH BUFF" (for standard solutions: pH 4.01, 7.01, 10.01) or "6.86 pH BUFF" (for NIST solutions: pH 4.01, 6.86, 9.18). Press "ON/OFF" again to exit.
- Remove the protective cap, then immerse the probe in the first buffer solution.
- Press and hold the "ON/OFF" key until "CAL" is displayed on the lower LCD. Release the button and the message "7.01 pH USE" (or "6.86 pH USE" for NIST buffer set) will be displayed.


- For a single point pH calibration, place the probe in any buffer from the selected set (e.g. pH 4.01 or 7.01/6.86 or 10.01/9.18). The meter will automatically recognize the buffer value, store the calibration point and return to normal mode.
- If using pH 7.01 (or pH 6.86), after recognition of the buffer press the "ON/OFF" button to return to normal mode.
- For a two point pH calibration, place the probe in pH 7.01 buffer (or pH 6.86, if the NIST buffer set was selected).
  The meter will recognize the buffer value and then display pH 4.01 USE.


- Place the probe in the second buffer (pH 4.01 or 10.01, or, if using NIST, pH 4.01 or 9.18). When the second buffer is recognized, the LCD will display "OK" for 1 second and the meter will return to normal mode.
- The "CAL" tag is displayed on the LCD to indicate that the meter is calibrated.

## *EC/TDS OPERATIONS*

- The user can select the EC/TDS conversion factor (CONV), as well as the ß coefficient (BETA) for automatic temperature compensation.
- Enter the EC or TDS mode with the "RANGE" key, then press and hold the "ON/OFF" key until "TEMP" is displayed on the secondary LCD. Press this key again to show the current conversion factor (CONV).


- Press the "SET" button to change the value, then press again this key to show the current temperature coefficient (BETA).


- Press "SET" to change the value, then press "ON/OFF" key to return to normal operation.
- For taking EC or TDS measurements, immerse the probe in the solution to be tested.
- Select either EC or TDS mode with "RANGE".
- Stir gently and wait for the reading to stabilize (the clock symbol stops blinking).

## *EC/TDS CALIBRATION PROCEDURE*

- Clean the probe with **M10000** solution.
- Enter the EC mode with the "RANGE" key.
- Immerse the probe in **MA9061** (1413 µS/cm) calibration solution.
- Press and hold the "ON/OFF" key until "CAL" is displayed on the LCD. Release the button and the message "1413 µS USE" appears.


- The meter will perform automatic calibration, and then display "OK" for 1 second before returning to normal mode.
- The calibration is now complete and the "CAL" tag is displayed on the LCD to indicate that the meter is calibrated.

## *BATTERY REPLACEMENT*

The meter shows the remaining battery percentage every time it is switched on. When the battery level is below 5%, the battery symbol on the bottom left of the LCD lights up to alert the user.

The meter is also provided with BEPS (Battery Error Prevention System), which automatically switches the meter off if the battery level is so low to cause erroneous readings. It is recommended to replace immediately the battery.

Turn the meter off, remove the battery compartment cover from the rear of the meter and replace the rundown 9V battery with a new one.

Install the battery while paying attention to its polarity and reattach the cover.

## *NOTES*

- If reading is over-range, the display will flash the closest full scale value.
- To clear a previous calibration, press "ON/OFF" after entering the calibration mode. The lower LCD will display ESC for 1 second and the meter will return to normal measurement mode. The "CAL" symbol on the LCD will disappear and the meter is reset to the default calibration.

## *ACCESSORIES*

| | |
|---|---|
| **MA851D/1** | Amplified pH/EC/TDS/Temperature probe with DIN connector and 1 m (3.3') cable. |
| **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 |
| **MA9061** | 1413 µS/cm solution, 230 ml |
| **MA9015** | Probe storage solution, 230 ml |
| **MA9016** | General cleaning solution, 230 ml |
| **M10000B** | Rinse solution, 20 ml (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 effected free of charge.

Damages due to accidents, misuse, tampering or lack of prescribed maintenance are not covered.

## *SPECIFICATIONS*

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|---|---|
| **RANGE** | 0.00 to 14.00 pH<br>0 to 3999 µS/cm<br>0 to 1999 ppm<br>0.0 to 60.0ºC or 32.0 to 140.0°F |
| **RESOLUTION** | 0.01 pH<br>1 µS/cm<br>1 ppm<br>0.1°C or 0.1°F |
| **ACCURACY (@25°C)** | ±0.01pH<br>±2% FS (EC/TDS)<br>±0.5°C or ±1°F |
| **TYPICAL EMC DEV.** | ±0.02 pH<br>±2% FS (EC/TDS)<br>±0.5°C or ±1°F |
| **TEMPERATURE COMPENSATION** | Automatic from 0 to 60ºC;<br>ß adj. from 0.0 to 2.4%/°C |
| **pH CALIBRATION** | 1 or 2-point<br>with automatic buffer recognition |
| **EC CALIBRATION** | Automatic, 1 point |
| **EC/TDS FACTOR (CONV)** | Adj. from 0.45 to 1.00 |
| **PROBE (included)** | **MA851D/1**<br>amplified pH/EC/TDS/Temperature probe with DIN connector and 1 m (3.3') cable. |
| **ENVIRONMENT** | 0 to 50°C (32 to 122°F);<br>100% RH max. |
| **BATTERY TYPE** | 1 x 9V alkaline (included) |
| **BATTERY LIFE** | approx. 300 hours |
| **AUTO-OFF** | after 8 minutes |
| **DIMENSIONS** | 200 x 85 x 50 mm |
| **WEIGHT** | 260 g (with battery) |