

## Mi180

## pH/ORP/EC/TDS/NaCl/Temperature Laboratory Bench Meter

Mi180 measures 6 different parameters: pH, ORP, EC, TDS (Total Dissolved Solids), percentage of NaCl and temperature in a variety of ranges.

pH calibration can be performed in 3 points selectable between 7 memorized buffers, to provide a very accurate calibration curve even when testing different samples, where very wide differences in pH can be found.

The auto-ranging feature for EC and TDS measurements automatically sets the resolution suitable to the tested sample. All measurements can be temperature compensated at 20 or 25°C and the compensation coefficient is selectable by the user.

The automatic temperature compensation can also be disabled for measuring the actual conductivity value.

The stability indicator on the LCD ensures accuracy. Conductivity readings are performed with the 4-ring probe supplied with the meter.

The GLP feature allows users to store and recall data on system status. PC compatible through an RS232 port or USB.



Specifications		Mi180
Range	pH	-2.00 to 16.00 pH; -2.000 to 16.000 pH
	mV	±699.9 mV; ±2000 mV
	EC	0.00 to 29.99 $\mu\text{S}/\text{cm}$ ; 30.0 to 299.9 $\mu\text{S}/\text{cm}$ ; 300 to 2999 $\mu\text{S}/\text{cm}$ ;
	TDS	3.00 to 29.99 mS/cm; 30.0 to 200.0 mS/cm; up to 500.0 mS/cm (uncompensated EC*)
	NaCl	0.0 to 14.99 mg/L (ppm); 15.0 to 149.9 mg/L (ppm); 150 to 1499 mg/L (ppm);
Resolution	Temp	up to 400.0 g/L actual TDS (with 0.80 factor)
	NaCl	0.0 to 400.0%
	Temp	-20.0 to 120.0°C / -4.0 to 248.0°F
	pH	0.01 pH; 0.001 pH
	mV	0.1 mV; 1 mV
Accuracy	EC	0.01 $\mu\text{S}/\text{cm}$ ; 0.1 $\mu\text{S}/\text{cm}$ ; 1 $\mu\text{S}/\text{cm}$ ; 0.01 mS/cm; 0.1 mS/cm;
	TDS	0.01 mg/L; 0.1 mg/L; 1.0 mg/L; 0.01 g/L; 0.1 g/L
	NaCl	0.1%
	Temp	0.1°C / 0.1°F
	pH	±0.01 pH; ±0.002 pH
Rel mV offset	mV	±0.2 mV; ±1 mV
	EC	±1% of reading ±(0.05 $\mu\text{S}/\text{cm}$ or 1 digit)
	TDS	±1% of reading ±(0.03 ppm or 1 digit)
	NaCl	±1% reading
	Temp	±0.4°C / ±0.8°F
Calibration	pH	±2000 mV
Temperature Compensation	EC	1, 2 or 3 points calibration, with 7 memorized buffers (pH 1.68, 4.01, 6.86, 7.01, 9.18, 10.01 and 12.45)
	Temp	1 point slope calibration with 6 memorized solutions: (84 $\mu\text{S}/\text{cm}$ , 1413 $\mu\text{S}/\text{cm}$ , 5.00 mS/cm, 12.88 $\mu\text{S}/\text{cm}$ , 80.0 $\mu\text{S}/\text{cm}$ , 111.8 mS/cm)
	NaCl	1 point, with MA9066 solution
	Temp	2 point, at 0 and 50°C / 32 and 122°F
	Temp	automatic or manual, from -20.0 to 120.0°C / -4.0 to 248.0°F
Temperature Coefficient		selectable from 0.00 to 6.00%/°C (EC and TDS only)
pH Electrodes & Temp Probe		MA917B/1 & MA831R (included)
EC/TDS/Temp Probe		MA814DB/1 (included)
TDS Factor		0.40 to 0.80 (default value is 0.50)
Log on demand		up to 50 samples on each range (pH, mV, EC, TDS, NaCl)
GLP		last pH, EC, NaCl calibration data
PC Interface		RS232 / USB Opto-isolated
Environment		0 to 50°C / 32 and 122°F; max RH 95%
Input Impedance		10 <sup>12</sup> Ohm
Power supply		12 VDC power adapter (included)
Dimensions		230 x 160 x 95 mm
Weight		0.9 kg

(\*) Uncompensated conductivity (or TDS) is the conductivity (or TDS) value without temperature compensation.

## Ordering Information

Mi180 is supplied complete with

- MA917B/1 pH Electrode
- MA814DB/1 EC/TDS/Temperature probe
- MA831R Temperature Probe

- MA9315 Electrode Holder
- M10004 pH 4.01 Sachet Buffer solution
- M10007 pH 7.01 Sachet Buffer solution
- M10010 pH 10.01 Sachet Buffer solution
- M10030 12880  $\mu\text{S}/\text{cm}$  calibration solution
- M10031 1413  $\mu\text{S}/\text{cm}$  calibration solution

## Accessories



- MA9001 pH 1.68 buffer, 230 mL bottle
- 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
- MA9012 Refilling solution for double junction electrode, 230 mL bottle
- MA9015 Electrode storage solution, 230 mL bottle
- MA9016 Electrode cleaning solution, 230 mL bottle
- MA9112 pH 12.45 buffer solution, 230 mL bottle
- MA9060 12880  $\mu\text{S}/\text{cm}$  calibration solution, 230 mL bottle
- MA9061 1413  $\mu\text{S}/\text{cm}$  calibration solution, 230 mL bottle
- MA9063 84  $\mu\text{S}/\text{cm}$  calibration solution, 230 mL bottle
- MA9065 111.8 mS/cm calibration solution, 230 mL bottle
- MA9066 100% NaCl calibration solution, 230 mL bottle
- MA9069 5000  $\mu\text{S}/\text{cm}$  solution, 230 mL bottle
- MA9310 12 VDC Adapter, 220 V
- MA9311 12 VDC Adapter, 110 V
- MA9315 Electrode Holder
- MA917B/1 Double junction refillable pH electrode
- MA814DB/1 EC/TDS/Temperature probe with DIN connector and 1 m cable
- MA921B/1 Double junction, gel filled ORP electrode
- MA831R Temperature probe
- MA9350 RS232 connection cable with 2 meters cable

- M10016 Sachet Electrode Cleaning solution
- Mi5200 Application Software
- MA9350 RS232 connection cable with 2 meters cable
- Graduate Pipet, 12 VDC Adapter & Instruction manual