Metrohm

780 pH Meter
781 pH/Ion Meter

pH ion

The measure of all things

Flexible and easy to operate

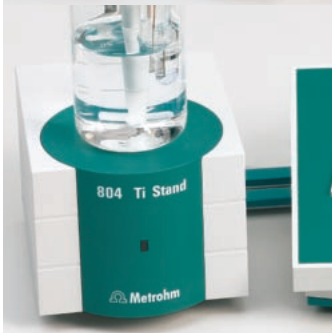
The 780 pH Meter and the 781 pH/Ion Meter combine the highest Metrohm quality with advanced design.

pH Meter and Ion Meter
This pH meter generation offers numerous possibilities. In addition to the general functions for measuring pH, potential and temperature, the new pH meters boast features such as the optimized GLP-compliant electrode test as well as monitoring and service intervals.

With the 781 pH/Ion Meter you can determine ion concentrations at a level of comfort offered only by Metrohm.

801 Magnetic Stirrer on the 781 pH/Ion Meter.

The 804 Ti-Stand with 802 Rod Stirrer offers an alternative way of stirring.



Stirrers
The stirrers are directly controlled by the pH meter via the MSB interface (MSB = Metrohm Serial Bus). The stirring speed is set on the pH Meter. This assures that measurements are always carried out under the same conditions.

You can choose between the 801 Magnetic Stirrer and the 802 Rod Stirrer.

Electrodes
Metrohm offers a large range of pH and ion-selective electrodes. Please find an overview of our electrode program under www.metrohm.com

The package of the 780 pH Meter and 781 pH/Ion Meter contain the 6.0258.600 Unitrode pH electrode with integrated Pt1000 temperature sensor.

Switch on and measure
Despite the many functions they offer, operation of the pH meters is easy. After switching on the instrument you can immediately measure using the inherent standard parameters. The large display accommodates several lines. It provides an excellent overview and facilitates the necessary adjustments, which you can then store as your own method under a meaningful name.

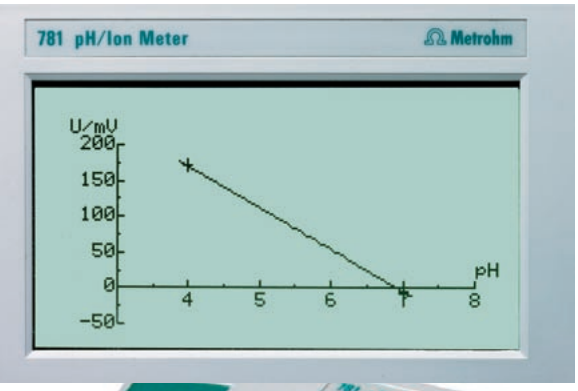
Sample identification can consist of up to 15 ASCII characters. You have the option to attach a PC keyboard or – even more comfortable – to use a barcode reader for entering sample identifications.

Display of 780 pH Meter
with pH value in large characters.
Temperature, date and time are also displayed.

Practical quality control

Unique: GLP-compliant electrode test
For years Metrohm, as the only manufacturer worldwide, has offered pH meters with GLP-compliant electrode test. With the pH meters you can carry out a test that is specially adapted to your electrode type, be it a pH electrode with aqueous, non-aqueous or gel electrolyte. The electrode test yields specific information such as response time, zero point or slope as well as an overall statement that informs you about the condition of the membrane and the diaphragm.

pH calibration with automatic buffer recognition
With the 780 pH Meter and the 781 pH/Ion Meter you can perform pH calibrations with up to 9 buffers. Calibrations are made easy by the sophisticated user guidance, automatic buffer recognition and evaluation. You can store the calibration data including curve under the corresponding electrode identification and view it any time.



Should you wish to use buffers different from those stored in the instrument, you are free to do so. Just enter the values of your buffers, either for a given temperature or as a function of temperature.

Calibration line of a pH electrode.

User identification
Thanks to the user identification you can always find out, by viewing the report, who performed which determination and at what time. The user has also the possibility to confirm the results with his signature in the field provided for this purpose on the printout.

Monitoring intervals
Forgot validation? Calibration or service interval expired? With the pH meters these are things of the past. Thanks to the integral monitoring functions you are alerted to the corresponding quality control tasks in time. The intervals can easily be adjusted to your specific requirements.

Each time the instrument is switched on it carries out an internal system diagnosis that ensures the correct functioning of the pH meter. To complete the documentation you can issue this instrument test as a system report.

Two outstanding instruments

Graphics display grants overview and facilitates operation

Recall of stored calibration data including calibration curve

Memory for measured values accommodates up to 100 data sets

Stirrer control by the pH meter ensures reproducible measuring results

Inherent quality control tool: pH electrode test for standard electrodes, gel electrodes and electrodes for non-aqueous media

Calibration with automatic buffer recognition, up to 9 calibration buffers

Measuring ion concentration by means of direct measurement, standard additions or sample additions. Automation using a Dosimat plus turns calibrations and additions into child's play while at the same time improving precision.

Top-of-the-line ion meter

Easy and comfortable measuring of ion concentrations – a Metrohm exclusive
With the 781 pH/Ion Meter you can determine the content of different ions using ion-selective electrodes. The determinations are either performed by establishing calibration curves or by carrying out standard or sample additions. Both techniques can be automated with an attached Dosimat plus. For the fully automatic standard addition you need only enter the concentration of your standard and the desired number of additions, the rest is taken care of by the pH/Ion Meter. Any name can be used for the determined species and the result unit is freely selectable.

Up to 19 standards can be used for calibrations. Evaluation of the calibration curves or of the additions is carried out automatically by the pH/Ion Meter.

You can obtain the following Metrosensor ion-selective electrodes from us:
- with crystal membrane: F^-, Cl^-, Pb^{2+}, Cu^{2+}, Ag^+, S^{2-}, CN^-, I^-, Br^-, Cd^{2+}, SCN^-
- with polymer membrane: Na^+, Ca^{2+}, NO_3^-, K^+
- with glass membrane: Na^+

Application know-how included – in the Internet, under www.metrohm.com, you will find our Application Notes as well as the list of all our Application Bulletins.

Profitable automation
Whenever larger numbers of samples have to be processed, using a sample changer is advantageous. For both meters we recommend the combination with the 869 Compact Auto Sampler.

Please contact us, we will be pleased to advise you about the optimal adaptation of one of our sample changer systems for your application.

Determination of the ion concentration with the 781 pH/Ion Meter. The Dosimat plus performs the fully automatic standard additions while the Custom DP40 printer documents the determination.

Stirrer
Metrohm
F⁻ standard 1000 ppm
20 mL
Metrohm
876 Dosimat plus
804 Ti Stand
Metrohm
Metrohm

Comparison of both instruments

Measuring ranges
pH
Potential
Temperature
Pt1000
NTC
Concentration

Resolution
pH
Potential
Temperature

Concentration mode
Automatic concentration calibration with Dosimat
Automatic standard or sample addition with Dosimat

pH calibration (number of buffers)
Automatic adjustment for the temperature characteristics of the stored buffer solutions
Automatic buffer recognition
Automatic temperature compensation
Automatic self-diagnosis
Automatic GLP-compliant electrode test for different types of pH electrodes
Stability control (drift indicator)
Simultaneous display of pH and temperature
Electrode input (high impendance)
Temperature measuring input for Pt1000 and NTC
Method memory
Memory for 100 measured values including additional data
GLP-compliant result printout
Automatic monitoring functions (validation, service, calibration, diagnosis)
User identification and field for signature on report
Plot function for pH, mV, °C, concentration versus time (concentration with 781 only)
Connection of printer or PC via RS 232C
MSB connection (Metrohm Serial Bus)
Connection for stirrer control
Connection for PC keyboard and barcode reader
«Remote» sample changer connection
Output lines for limit value check
Dialog guidance in the following languages
Power supply 100...240 V, 50...60 Hz

780 pH Meter	781 pH/Ion Meter
0...14 (±20.000)	0...14 (±20.000)
±2200 mV	±2200 mV
-150.0...+250.0 °C	-150.0...+250.0 °C
-20.0...+250.0 °C	-20.0...+250.0 °C
	$10^{-37}...10^{+38}$
0.001	0.001
0.1 mV	0.1 mV
0.1 °C	0.1 °C
	•
	•
	•
1 to 9	1 to 9
•	•
•	•
•	•
•	•
•	•
•	•
•	•
1	1
•	•
•	•
•	•
•	•
•	•
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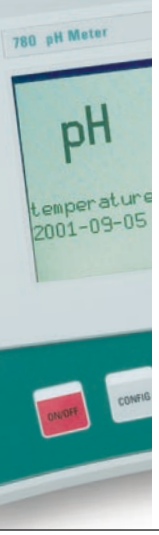
•	•
•	•
Option	Option
Option	Option
English, German, French, Spanish	English, German, French, Spanish
•	•



Ordering information, options

780 pH Meter
Top-level pH meter with graphics LCD screen for the user dialog in English, German, French or Spanish as well as for the display of results and calibration curves. pH calibration with up to 9 buffers, automatic buffer recognition, electrode test for different types of pH electrodes. Temperature measurement with Pt1000 or NTC. Memories for methods and measured values; automatic monitoring functions, plot function for pH, mV, °C versus time.

2.780.0010	pH Meter including 6.0258.600 Unitrode pH electrode and stand rod with base and electrode holder as well as line adapter 100...240 V, 50...60 Hz, 12 V DC

781 pH/Ion Meter
Instrument for measuring pH values and determining ion concentrations at the highest level of comfort; with graphics LCD screen for the user dialog in English, German, French or Spanish as well as for the display of results and calibration curves. pH calibration with up to 9 buffers, automatic buffer recognition, electrode test for different types of pH electrodes. Concentration mode, setting up of calibration curves and standard or sample additions automatable with Dosimat. Temperature measurement with Pt1000 or NTC. Memories for methods and measured values; automatic monitoring functions, plot function for pH, mV, °C, concentration versus time.

2.781.0010	pH/Ion Meter including 6.0258.600 Unitrode pH electrode and stand rod with base and electrode holder as well as line adapter 100...240 V, 50...60 Hz, 12 V DC

Options

2.801.0010	801 Magnetic stirrer
2.804.0010	804 Ti Stand
2.802.0040	802 Rod Stirrer
2.876.0010	876 Dosimat plus with 20 mL Exchange Unit
2.865.0010	865 Dosimat plus with 20 mL Exchange Unit
6.2148.010	Remote Box for attaching a 25-pin Remote connecting cable and an MSB connecting cable
6.2141.350	Cable 781 – Dosimat plus
2.140.0200	Custom DP40-S4N impact printer
6.2134.110	Connecting cable 780/781 – Custom printer
6.2307.230	pH buffer solutions pH 4, 7 and 9, 10 sachets each a 30 mL
6.2325.100	pHit kit

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Subject to modifications
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