PHM220 Lab pH Meter

- ✓ 2 pH calibration modes
- ✓ 3 measurement modes:
  - AUTOREAD
  - At intervals
  - Stability indicator
- ✓ Comprehensive GLP function
- ✓ Large alphanumeric LCD for clear-text messages
- ✓ RS232C port for printer/PC

PHM220

The PHM220 Lab pH Meter meets the requirements of any modern analytical lab for routine pH, mV and temperature measurements. With its storage and documentation facilities, it fulfils stringent demands as regards **G**ood **L**aboratory **P**ractice - GLP.

The PHM220 is part of MeterLab®, Radiometer Analytical's complete range of measuring equipment for accurate and reliable pH, ion and conductivity measurements. In addition to instruments, it provides a full range of electrodes, buffer solutions and accessories.

Made to measure

Your PHM220 comes preset with the most common calibration and measuring procedures. However, if you require a stricter acceptance criterion for results or specific alarm limits for sample pH, mV and temperature for example, you just enter the value. The 2 x 16-character alphanumeric display guides you when editing procedures to fit your specific needs.

AUTOCAL

One, two or three-point calibrations are made simple and reliable with **AUTO**matic recognition of one of three buffer types: IUPAC standards, Technical or 4-7-10 Series buffers. Alternatively, one or two buffers can be **FIXED** from a list of 15 common buffers.

In both cases, clear-text messages guide the user through the calibration procedure and the PHM220 automatically finds and uses the buffer's pH value at the current temperature.

AUTOREAD

Using **AUTOREAD**, the pH or mV result is locked on the display as soon as your stability criterion is reached ensuring excellent reproducibility. Sample pH or mV can also be measured continuously and printed out **at intervals** defined by the user.

In addition, you can perform measurements by reading the result directly from the live display using the convenient sliding **stability indicator**.

GLP functions

The PHM220 delivers printouts containing all the information you need to comply with GLP.

During the calibration procedure a full report is automatically printed out. To allow you to keep track of your electrode's condition, the GLP memory includes the results of your last 9 calibrations. You can inspect them via the display or print the table.

The PHM220 indicates when a new calibration is required. You can use the recommended time interval between calibrations (24 hours) or enter your own figure.

The pH or mV result is printed with the temperature, measuring time and, if desired, a summary of the calibration used. Date, time and instrument ID appear in the headline.

Whenever a sample measurement is accepted, the result is stored in the GLP memory which contains the results of both your last 25 pH and mV measurements. For an overview, an easy-to-read table can be obtained at the touch of the Print key.

Specifications

Measurement procedures

pH and mV reading with sliding **stability indicator**

AUTOREAD of pH and mV: result is locked on display when stability criterion and/or maximum accept time are reached

pH and mV reading and printing **at intervals**

Min. and max. alarms can be set for pH, mV and temperature.

Calibration modes

One, two or three-point calibration

AUTO recognition of buffers:

IUPAC standards (DIN 19266): pH 1.679, 4.005, 7.000, 10.012 and 12.45 *or*

Technical buffers (DIN 19267): pH 1.09, 4.65 and 9.23 *or*

4-7-10 Series: pH 4.00, 7.00 and 10.00

Calibration with **FIXED** buffers selected from the above buffers and IUPAC 6.865, 7.413 and 9.180

The actual pH value of the buffer is automatically computed according to the temperature measured or manually entered.

Electrode requirements (Autocal)

Sensitivity: 95 to 102%
Zero pH: 5.80 to 7.50 pH

GLP functions

Complete printouts with date, time, instrument ID and, if selected, calibration data used

Last 9 calibration results

Last 25 sample results from both pH and mV measurements

The user-defined pH calibration procedure and the pH/mV sample measuring procedures are stored

Measuring ranges

pH: -9.00 to +23.00
mV: -1999.9 to +1999.9
°C: -9.9 to +99.9

Resolution

pH: select between 0.01 and 0.1
mV: select between 0.1 and 1
°C: 0.1

Input accuracy

pH: ±0.01 pH
mV: max. (±0.15%, ± 1 LSD)
°C: ±0.5°C

Electrode inputs

Combined/glass electrode (BNC plug)
Reference electrode (banana plug)
Temperature sensor (CINCH plug)

Electrode input resistance

> 2×10^{12} Ω

Terminal current

< 1 pA at 25°C ambient

Input/Outputs

RS232C insulated port for connection of printer or PC 9-pin D-connector

Analogue recorder output

Display

2 x 16-character, alphanumeric LCD display

Languages

English, German and French

Finish

Chemical resistant, splash-proof cabinet

Power requirements

115/230 Vac -18/+15%
47.5 to 63 Hz, 8 VA

Electromagnetic compatibility

EMC qualified

Ambient temperature

5 to 40°C

Relative humidity

20 to 80%

Dimensions (H x W x D)

8 x 28.5 x 20 cm

Weight

1.4 kg

Order Information

PHM220 Lab pH Meter **R21M131**

Approved Quality System

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