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ANALYTICAL EXCELLENCE...

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**Portable pH / Ion Meter**

**FEATURES:**

**pH:**

- 1 – 5 points calibration with automatic recognition for USA, NIST and DIN buffers
- Automatic electrode diagnosis indicates pH slope and offset

**ORP:**

- 1 point offset calibration allows adjustment of displayed value to a known standard
- Relative and absolute millivolt modes ensure reliable ORP measurements

**Ion Concentration:**

- 2 – 5 point calibration, including the 8 concentration points, can be selected
- Direct ion concentration readout simplifies the measurement process
- Automatic electrode diagnosis shows calibration points and slopes
- Selectable concentration units (ppm, mg/L, mol/L, mmol/L) and ionic valency

**GENERAL FEATURES**

- Automatic temperature compensation ensures accurate readings
- Auto-read function senses and locks the measurement endpoint
- Calibration reminder
- Auto-power off conserves battery life



MA-pH320



MA-pH321

- Setup menu allows setting the number of calibration points, resolution, stability criteria, temperature unit, date and time etc
- Reset function available to default instrument to factory settings
- Expanded memory up to 500 readings
- USB communication interface to transfer data

**Optional Ion Selective Electrodes:**

Ammonium (NH<sub>4</sub><sup>+</sup>), Bromide (Br<sup>-</sup>), Cadmium (Cd<sup>2+</sup>), Calcium (Ca<sup>2+</sup>), Chloride (Cl<sup>-</sup>), Cupric (Cu<sup>2+</sup>), Cyanide (Cn<sup>-</sup>), Fluoride (F<sup>-</sup>), Iodide (I<sup>-</sup>), Lead (Pb<sup>2+</sup>), Nitrate (NO<sub>3</sub><sup>-</sup>), Potassium (K<sup>+</sup>), Silver (Ag<sup>+</sup>), Sodium (Na<sup>+</sup>), Sulphide (S<sup>2-</sup>) and Ammonia (NH<sub>3</sub>).

**Measurement Parameters:**

MA-pH320: pH, mV, relative mV, ion concentration, temperature;

MA-pH321: Ion concentration, mV, temperature.

**Accessories:**

pH Electrode, temperature probe, pH buffer solutions (pH4.01/7.00/10.01), and carrying case.

**MODEL SPECIFICATIONS:**

Model	MA-pH320	MA-pH321
pH Range	-2.000~20.000pH	/
pH Accuracy	±0.002pH	/
pH Resolution	0.1, 0.01, 0.001pH, selectable	/
pH Calibration Points	1~5 points	/
pH Buffer Options	USA (pH 1.68/4.01/7.00/10.01/12.45), NIST (pH 1.68/4.01/6.86/9.18/12.45), DIN (pH 1.09/4.65/6.79/9.23/12.75), Or 2 custom buffers	/
ORP mV Range	-1999.9~1999.9mV	
ORP Relative mV Range	-1999.9~1999.9mV	/
ORP mV Accuracy	±0.2mV	
ORP Resolution	0.1, 1mV, selectable	

ORP Calibration Points	1 point (only for Relative mV mode)	/
Ion Concentration Range	0.001~19999ppm, mg/L, mol/L (Refer to the range of ISE)	
Ion Concentration Accuracy	±0.5% F.S. (Monovalent), ±1% F.S. (Divalent)	
Ion Calibration Points	2~5 points	
Ion Calibration Solutions	0.001, 0.01, 0.1, 1, 10, 100, 1000, 10000 (ppm, mg/L, mol/L)	
Temp. Range	0~105°C/32~221°F	
Temp. Accuracy	±0.5°C/±0.9°F	
Temp. Resolution	0.1°C/0.1°F	
Temp. Offset Calibration	1 point, reading ±10°C	
Temp. Compensation	0~100°C, manual or automatic	
Stability Criteria	Low or High	
Calibration Due Alarm	1 to 31 days or Off	
Slope/Offset Display	Yes	
Hold Function	Manual or auto-endpoint	
Auto Off	10, 20 or 30 minutes after last key pressed	
Memory	500 data sets	
Communication Interface	USB	
Connector	BNC, 3.5mm jack socket	
Display	Custom LCD (80*60mm)	
Power Requirements	3 x 1.5V "AA" batteries or DC5V power adapter	
Battery Life	Approximately 150 hours (backlight turned off)	
Dimensions (W*D*H) mm	170*85*30	
Package Size (W*D*H) mm	475*155*350	
Net Weight (g)	300	
Gross Weight (kg)	2	