

# pH Portable Analyzer/Calibrator MODEL PHA351

The Electro-Chemical Devices model PHA351 portable analyzer/calibrator is an invaluable tool for obtaining quick, accurate measurements, and for generation of millivolt signals for calibrations.

## AS AN ANALYZER....

the portable PHA351 can be used to measure a wide range of pH samples in the field by connecting an electrode via the BNC connector. The large 3-1/2 digit liquid crystal display provides a readout in pH units or millivolts.

If the analysis requires temperature compensation, a temperature sensor may be connected, or the temperature can be compensated with the manual TC control. The manual temperature compensator allows for the Nernst temperature deviation from 0 to 100 degrees Celsius. Additionally, the manual TC can be used as an efficiency control for the glass electrode.

A standardize control provides compensation for natural asymmetry shifts in pH or ORP electrodes. Providing a nominal 1 pH adjustment in either direction, the standardize control allows the user to increase the useful life of the hand held electrode by adjusting for offset.

## AS A SIMULATOR....

the portable PHA351 provides pH and millivolt outputs for calibration and troubleshooting of pH and ORP instrumentation. Simulator outputs are 0 to 14 pH and +1000 mV to -1000 mV.

A selector switch allows the user to simulate all outputs in either a low impedance mode or high impedance mode inherent in pH electrodes. This feature is extremely useful in determining the operability of pH and ORP signal conditioning amplifiers.

## NEMA 4X WEATHERPROOF ENCLOSURE

To enable viewing the display in extreme weather conditions, the NEMA 4X weatherproof enclosure incorporates a hinged, clear cover with a tongue and groove gasketed seal. A strap is provided with the PHA351 to secure the instrument to the wrist or enable unrestricted use of both hands by hanging the PHA351 on a convenient fixture (spigot, handle, valve, etc.).

## 3 KIT CONFIGURATIONS....

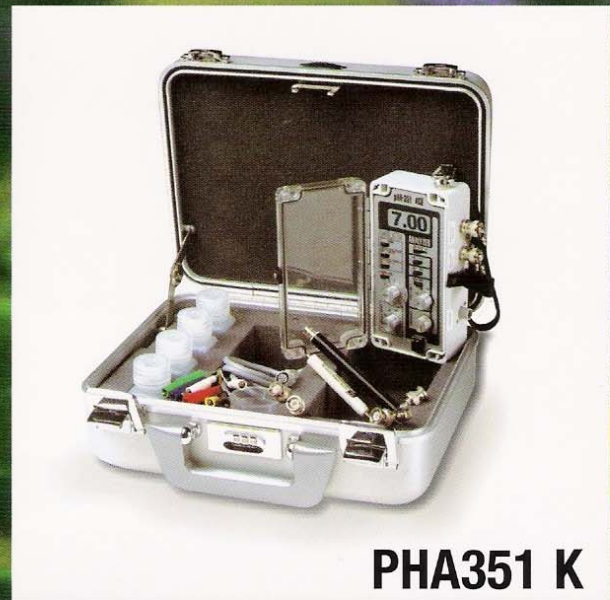
are available for the PHA351. The basic unit is supplied in a protective soft carrying case and includes an auxiliary cable and pH electrode with a 30" cable. A handy, soft carrying case is provided with the PHA351-SK and all the accessories required to use the instrument as an analyzer and a simulator. To accommodate demanding environments, the PHA351-K is available with a locking hard case and all the accessories required to use as an analyzer and simulator.



**PHA351**



**PHA351 SK**



**PHA351 K**



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# TECHNICAL DATA

## GENERAL SPECIFICATIONS

Weight, lbs (kg)	1.25 (.57)
Enclosure	NEMA 4X polycarbonate
Dimensions, in. (cm)	3.15 X 6.30 X 2.17 (8.0 X 16.0 X 5.5)
Connections	
Electrode	BNC
Auxiliary	7 pin locking connector with alligator clips
Electronics	All solid state electronics

## SIMULATOR SPECIFICATIONS

Accuracy	+/-1%
Output range	
pH	0 to 14 in 1 pH increments, and continuously adjustable in variable mode
mV	+1000 to -1000 in 100 mV increments and, continuously adjustable in variable mode
Output impedance	Switch selectable, 50 ohms or 100 megohms

## ANALYZER SPECIFICATIONS

Accuracy	+/- .01 pH
Stability	+/- .05 pH over the life of the battery
Sensitivity	
pH	.01 pH
mV	1.0 mV
Repeatability	+/- .01 pH
Range	
pH	0 to 14
mV	+1000 to -1000
Response time	Less than 50 ms

## ANALYZER SPECIFICATIONS CONTINUED

Temperature compensation	Switch selectable, manual or automatic, 0 to 100 degrees C
Battery life	9 volt transistor; 200 hours
Display	3-1/2 digit, liquid crystal, -20 to +70 degrees C
Input impedance	Greater than 10 <sup>12</sup> ohms
Bias current	Less than 15 pa
Standardize	+/-1.0 pH nominal

## OPTIONS & ACCESSORIES

1000010	Electrode test box
2000430	Adapter, S10/17 BNC-BNC
2000658	Temperature compensator
2008019	pH electrode, 36" cable
2008020	ORP electrode, 36" cable
2010070	Buffer, 4.00 pH, 250 ml
2010071	Buffer, 7.00 pH, 250 ml
2010073	Buffer, 10.00 pH, 250 ml
2200020	Cable, 30" BNC-BNC
2200020.T21	Cable 30" BNC-BNC with alligator clip
2200021	Cable, 7" BNC-BNC
2200070	Cable, accessory
3000050	Insert, die cut foam for locking case
9080202	Tee, BNC
9250013	Case, hard
9250023	Case, large, soft
9250024	Case, small, soft
9260002	Beaker, 30ml
9600030	Tissue wipes
9680044	Screwdriver

## USES FOR THE PHA351:

- Grab sample analysis
- Calibrate pH transmitters & analyzers
- Test electrodes
- Test preamplifiers
- Test sensors
- Identify ground loops
- Compliance monitor with recorder output

