

***Bench type, SD Card real time data recorder
pH/ORP, DO, CD/TDS/Hardness, Salt METER***

WATER QUALITY METER

Model : BWA-2018SD

ISO-9001, CE, IEC1010



Probe,
CDPB-04
is included.



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LUTRON ELECTRONIC

The Art of Measurement

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WATER QUALITY METER

Model : BWA-2018SD

FEATURES

* Bench type Water quality METER
* Multi-function : pH/ORP, Salt Conductivity/TDS/Hardness/ Resistivity, Dissolved oxygen.
* pH : 0 to 14.00 pH.
* ORP (mV) : 1,999 mV.
* Conductivity : 20 uS/200 uS/2 mS/20 mS/200 mS.
* TDS : 13.20/132/1,320/13,200/132,000 ppm.
* Hardness : 10/100/1,000/10,000/100,000 ppm.
* Resistivity : 5 ohm-cm to 99.99 M ohm-cm.
* Salt : 0 to 12.0% salt (% weight).
* Dissolved oxygen : 0 to 20.0 mg/L.
* pH measurement can make the auto calibration for pH 7, pH 4 and pH 10 or other value.
* Conductivity measurement can select Temp. Coefficient of measurement solution.
* Dissolved oxygen meter use the polar graphic type oxygen probe with temperature sensor, high precision measurement for Dissolved Oxygen (DO) and temperature measurement.
* Heavy duty dissolved oxygen probe, probe head can connect with BOD bottle.
* DO meter build in " % SALT " & " Mountain Height " compensation value adjustment.
* Separate probe, easy for operation of different measurement environment.
* Wide applications: water conditioning, aquariums, beverage, fish hatcheries, food processing, photography, laboratory, paper industry, plating industry, quality control, school & college, water
* RS232/USB PC computer interface.
* LCD with green light backlight, easy reading.
* Can default auto power off or manual power off.
* Data hold, record max. and min. reading.
* Microcomputer circuit, high accuracy.
* RS232/USB PC COMPUTER interface.
* ATC (automatic temperature compensation).
* Data hold, Record (Max., Min.).
* RS232/USB computer interface.
* SD card capacity : 1 GB to 16 GB.
* Pt glass electrode, CDPB-04 is included, available for Conductivity/TDS/Hardness/ Resistivity/Salt, high performance for pure water low conductivity measurement.
* Power by DC 1.5 V (AA/UM-3 alkaline type) battery x 6 PCs or DC 9V adapter in.
* Optional electrodes : pH electrode, ORP electrode, Dissolved oxygen probe, pH ATC probe (TP-07).

GENERAL SPECIFICATIONS

Circuit	Custom one-chip of microprocessor LSI circuit.
Display	LCD size : 56 mm x 97 mm LCD with green backlight (ON/OFF).
Measurement Function	pH/ORP Conductivity/TDS(Total Dissolved Solids) Resistivity : Dissolved Oxygen Salt
Advanced setting	* Auto power OFF management * Set beep Sound ON/OFF * Set temperature unit to ℃ or ℉ * Set DO salt% compensation value * Set DO height (meter) compensation value * Set DO height (feet) compensation value * Set CD temperature compensation factor * Set CD to TDS or TDS to CD, CD only * Set pH manual Temp. compensation value
Data Hold	Freeze the display reading.
Memory Recall	Maximum & Minimum value.
Sampling Time of Display	Approx. 1 second.
Data Output	RS 232/USB PC computer interface. * Connect the optional RS232 cable UPCB-02 will get the RS232 plug. * Connect the optional USB cable USB-01 will get the USB plug.
Operating Temperature	0 to 50 ℃.

Operating Humidity	Less than 85% R.H.
Power Supply	Power by DC 1.5 V (AA/UM-3 alkaline type) battery x 6 PCs or DC 9V adapter in.
Power Current	* w/o SD card and LCD Backlight is off : Approx. DC 14 mA. * When SD card save the data and LCD backlight is off. Approx. DC 34 mA. * If LCD backlight on, the power consumption will increase approx. 5 mA.
Weight	1400 g/3.08 LB.
Dimension	290 x 220 x 90 mm (11.5 x 8.7x 3.6 inch) * Meter only
Accessories Included	* Instruction manual..... 1 PC * Pt glass electrode, CDPB-04..... 1 PC It is available for Conductivity/TDS/Hardness/ Resistivity/Salt, high performance for pure water low conductivity measurement.
Optional Accessories	* pH electrodes : PE-03, PE-11, PE-01, PE-06HD, PE-06HDA PE-04HD, PE-03K7, PE-02, PE-08, PE-21. * ATC probe for pH (Automatic Temperature Probe).....PH-07 * pH 7 buffer solution.....PH-04 * pH 4 buffer solution..... * 1.413 mS Conductivity Standard Solution.....CD-14 * Oxygen probe..... OXPB-11 * Spare Probe head with Diaphragm setOXHD-04 * Probe-filling Electrolyte..... OXEL-03 * ORP Electrode.....ORP-14, ORP-15 * AC to DC 9V adapter. * USB cable, USB-01. * RS232 cable, UPCB-02. * Data Acquisition software, SW-U801-WIN. * SD memory card (4G).

ELECTRICAL SPECIFICATIONS (23± 5 ℃)

pH/ORP			
pH Electrode	Optional, Any pH electrode with BNC connector.		
Measurement	pH 0 to 14 pH mV (ORP) -1999 mV to 1999 mV		
Input Impedance	10 ¹² ohm		
Temperature Compensation for pH measurement	Manual 0 to 100 ℃, be adjusted by push button on front panel. Automatic (ATC) With the optional temperature probe (TP-07) 0 to 65 ℃.		
pH Calibration	pH 7, pH 4, and pH 10, 3 points calibration ensure the best linearity and accuracy.		
Optional probe and accessories	pH electrodes PE-03, PE-11, PE-01, PE-02, PE-08, PE-21 PE-06HD, PE-06HDA, PE-04HD, PE-03K7 * ATC (automatic temperature probe).....TP-07 * pH 7 buffer solution.....PH-07 * pH 4 buffer solution.....PH-04 * ORP electrode.....ORP-14 ORP-15		
Measurement	Range Resolution Accuracy		
pH	0 to 14 pH 0.01 pH ± (0.02 pH + 2 d)		
mV (ORP)	-1999 to 1999 mV 1 mV ± (0.5% + 2 d)		
* pH accuracy is based on calibrated meter only.			

Conductivity (uS, mS)

Range	Measurement	Resolution	Accuracy
200 uS	0 to 200.0 uS	0.1 uS	± (2 % F.S.+1d)
2 mS	0.2 to 2.000 mS	0.001 mS	
20 mS	2 to 20.00 mS	0.01 mS	
200 mS	20 to 200.0 mS	0.1 mS	* F.S.: full scale
* Temperature Compensation : Automatic from 0 to 60 ℃ (32 - 140 ℉), with temperature compensation factor variable between 0 to 5.0% per C.			

Conductivity (uS, mS)

* The accuracy is specified under measurement value ≤ 100 mS.
* mS - milli Simens * @ 23± 5℃
* Probe, CDPB-04 is included as the standard accessory

TDS (Total Dissolved Solids)

Range	Measurement	Resolution	Accuracy
200 PPM	0 to 132 PPM	0.1 PPM	± (2 % F.S.+1d)
2,000 PPM	132 to 1,320 PPM	1 PPM	
20,000 PPM	1,320 to 13,200 PPM	10 PPM	
200,000 PPM	13,200 to 132,000 PPM	100 PPM	* F.S.: full scale
* Temperature Compensation : Automatic from 0 to 60 ℃ (32 - 140 ℉), with temperature compensation factor variable between 0 to 5.0% per C.			
* The accuracy is specified under measurement value ≤ 66,000 PPM.			
* PPM - parts per million * @ 23± 5℃			
* Probe, CDPB-04 is included as the standard accessory			

Temperature

Function	Measuring Range	Resolution	Accuracy
℃	0 ℃ to 60 ℃	0.1 ℃	± 0.8 ℃
℉	32 ℉ to 140 ℉	0.1 ℉	± 1.5 ℉
* @ 23± 5℃			

Salt

Probe	Pt glass electrode, CDPB-04 is included.
Measurement Range	0 to 12 % salt (% weight).
Resolution	0.01 % salt.
Accuracy	± 0.5 % salt value @ 23± 5℃
Temperature Compensation	Automatic from 0 to 60 ℃ (32 - 140 ℉),
Probe Operating Temperature	0 to 60 ℃.

Hardness

Range	Measurement	Resolution	Accuracy
10 PPM	0 to 10.00 PPM	0.01 PPM	± (2 % F.S.+1d)
100 PPM	0 to 100 PPM	0.1 PPM	
1,000 PPM	100 to 1,000 PPM	1 PPM	
10,000 PPM	1,000 to 10,000 PPM	10 PPM	* F.S.: full scale
100,000 PPM	10,000 to 100,000 PPM	100 PPM	

* Probe, CDPB-04 is included as the standard accessory

Resistivity

Range	Measurement	Resolution	Accuracy
auto range	5 ohm-cm to 99.99 M ohm-cm	1 ohm-cm to 0.01 M ohm-cm	± (2 % F.S.+1d)
* F.S.: full scale			
* Probe, CDPB-04 is included as the standard accessory			

Dissolved oxygen

Oxygen Probe	Optional, OXPB-11 The polarographic type oxygen probe with temperature sensor.
Measurement & Range	Dissolved Oxygen 0 to 20.0 mg/L (liter). Oxygen in Air 0 to 100.0 %. Temperature 0 to 50 ℃.
Resolution	Dissolved Oxygen 0.1 mg/L. Oxygen in Air 0.1 % O2 . Temperature 0.1 ℃.
Accuracy (23± 5 ℃)	Dissolved Oxygen ± 0.4 mg/L. Oxygen in Air ± 0.7% O2. Temperature ± 0.8 ℃/1.5 ℉.
Probe Compensation & Adj.	Temperature 0 to 50 ℃, Automatic Salt 0 to 50 % Salt Height (M. T.) 0 to 8900 meter
Probe Weight	230 g/0.51 LB .
Probe Size	190 mm x 28 mm Dia. (7.5" x 1.1" Dia.)
Optional Accessories	* Oxygen probe..... OXPB-11 * Spare Probe head with Diaphragm setOXHD-04 * Probe-filling Electrolyte..... OXEL-03

* Appearance and specifications listed in this brochure are subject to change without notice.

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