SD Card, real time data logger, Water quality, Patent

pH/ORP, DO, CD/TDS, Salt

Model : WA-2017SD *ISO-9001, CE, IEC1010*

ISO 9001:2008 SGS UKAS QUALITY MANAGEMENT 005

Lutron

LUTRON ELECTRONIC

The Art of Measurement

SD Card real time data logger

pH/ORP, DO, CD/TDS, SALT METER

Model : WA-2017SD

FEATURES

* One meter for multi purpose operation : PH/ORP, CD/TDS, Dissolved Oxygen, Salt measurement.
* pH : 0 to 14.00 pH, ORP : ± 1999 mV.
* Conductivity : 200 uS/2 mS/20 mS/200 mS.
* Dissolved oxygen : 0 to 20.0 mg/L.
* Salt : 0 to 12 % salt (% weight).
* Optional PH, ORP, CD/TDS/Salt, Dissolved Oxygen and ATC probe.
* DC 1.5V (UM-3, AA) x 6 PCs or DC 9V adapter in.
* PH meter function can select PH or ORP.
* PH measurement can select ATC or manual temperature adjustment.
* PH measurement can make the auto calibration for pH 7, pH 4 and pH 10 or other value.
* Conductivity measurement can select uS/mS or TDS
* Conductivity measurement can select Temp. Coefficient of measurement solution.
* ATC for the conductivity measurement.
* 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 use the automatic Temp. compensation.
* 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 conditioning.
* Real time SD memory card Datalogger, it Built-in Clock and Calendar, real time data recorder , sampling time set from 1 sec to 8 hour 59 min. 59 sec.
* Manual datalogger is available (set the sampling time to 0), during execute the manual datalogger function, it can set the different position (location) No. (position 1 to position 99).
* Innovation and easy operation, computer is not need to setup extra software, after execute datalogger, just take away the SD card from the meter and plug in the SD card into the computer, it can down load the all the measured value with the time information (year/month/date/ hour/minute/second) to the Excel directly, then user can make the further data or graphic analysis by themselves.
* SD card capacity : 1 GB to 16 GB.
* 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.
* Power by UM3/AA (1.5 V) x 6 batteries or DC 9V adapter.
* RS232/USB PC COMPUTER interface.

GENERAL SPECIFICATIONS

Circuit	Custom one-chip of microprocessor LSI circuit.	
Display	LCD size : 52 mm x 38 mm LCD with green backlight (ON/OFF).	
Measurement Function	PH/ORP Conductivity/TDS(Total Dissolved Solids) Dissolved Oxygen Salt	
Datalogger Sampling Time Setting range	Auto	1 sec to 8 hour 59 min. 59 sec. *@ Sampling time can set to 1 second, but memory data may loss.*
	Manual	Push the data logger button once will save data one time. *@ Set the sampling time to 0 second.* *@ Manual mode, can also select the 1 to 99 position (Location) no.*
Memory Card	SD memory card. 1 GB to 16 GB.	
Advanced setting	* SD memory card Format * Set clock time (Year/Month/Date, Hour/Minute/ Second) * Set sampling time * Auto power OFF management * Set beep Sound ON/OFF * Decimal point of SD card setting * 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	* .Alkaline or heavy duty DC 1.5 V battery (UM3, AA) x 6 PCs, or equivalent. * .DC 9V adapter input. (AC/DC power adapter is optional).	
Power Current	Normal operation (w/o SD card save data and LCD Backlight is OFF) : *Approx. DC 14 mA.* When SD card save the data and LCD Backlight is OFF) : *Approx. DC 37 mA.* ** .If LCD backlight on, the power consumption will increase approx. 12 mA.*	
Weight	489 g/1.08 LB.	
Dimension	177 x 68 x 45 mm (7.0 x 2.7x 1.9 inch)	
Accessories Included	* Instruction manual.....1 PC * Hard carrying case (CA-06).....1 PC * Conductivity/TDS probe,Salt probe CDPB-03.....1 PC	
Optional Accessories	* PH electrode.....PE-03, PE-11, PE-01, PE-06HD, PE-04HD, PE-05T, PE-03K7 * ATC (Automatic Temperature Probe).....TP-07 * pH 7 buffer solution.....PH-07 * pH 4 buffer solution.....PH-04 * Conductivity/TDS probe, Salt probe.....CDPB-03 * 1.413 mS Conductivity Standard Solution.....CD-14	

Optional Accessories	* Oxygen probe.....OXPB-11 * Spare Probe head with Diaphragm set .....OXHD-04 * Probe-filling Electrolyte..... OXEL-03 * ORP Electrode..... ORP-14
	SD memory card (1 GB) SD memory card (2 GB) AC to DC 9V adapter. USB cable, USB-01. RS232 cable, UPCB-02. Data Acquisition software,SW-U801-WIN.

ELECTRICAL SPECIFICATIONS (23± 5 ℃)

A. PH/mV

PH Electrode	Optional, Any PH electrode with BNC connector.	
Measurement	PH	0 to 14 PH
	mV	-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	PH7, PH4, and PH10, 3 points calibration ensure the best linearity and accuracy.	
Optional probe and accessories	* PH electrode.....PE-03, PE-11, PE-01, PE06HD PE-04HD, PE-05T, PE-03K7 * ATC (automatic temperature probe).....TP-07 * pH 7 buffer solution.....PH-07 * pH 4 buffer solution.....PH-04 * ORP electrode.....ORP-14	

Measurement	Range	Resolution	Accuracy
PH	0 to 14 PH	0.01 PH	± (0.02 PH + 2 d)
mV	0 to 1999 mV	1 mV	± (0.5% + 2 d)

** PH accuracy is based on calibrated meter only.*

B. Conductivity

Conductivity probe	Optional, Carbon rod electrode for long life.
Function	* Conductivity (uS, mS) * TDS (Total Dissolved Solids, PPM) * Temperature (℃, ℉)
Temperature Compensation	Automatic from 0 to 60 ℃ (32 - 140 ℉), with temperature compensation factor variable between 0 to 5.0% per C.
Probe Operating Temp.	0 to 60 ℃.
Probe Dimension	Round, 22 mm Dia. x 120 mm length.
Optional probe and accessories	* Conductivity probe.....CDPB-03 * 1.413 mS Conductivity Standard Solution..... CD-14

1. Conductivity (uS, mS)

Range	Measurement	Resolution	Accuracy
200 uS	0 to 200.0 uS	0.1 uS	
2 mS	0.2 to 2.000 mS	0.001 mS	± (2% F.S.+1d)
20 mS	2 to 20.00 mS	0.01 mS	* F.S. -
200 mS	20 to 200.0 mS	0.1 mS	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 ≦ 100 mS.*
** mS - milli Simens * @ 23± 5℃*

2. TDS (Total Dissolved Solids)

Range	Measurement	Resolution	Accuracy
200 PPM	0 to 132 PPM	0.1 PPM	
2,000 PPM	132 to 1,320 PPM	1 PPM	± (2% F.S.+1d)
20,000 PPM	1,320 to 13,200 PPM	10 PPM	* F.S. -
200,000 PPM	13,200 to 132,000 PPM	100 PPM	full scale

** Temperature Compensation :*
Automatic from 0 to 60 ℃ (32 - 140 ℉), with temperature compensation factor variable between 0 to 5.0% per ℃.
** The accuracy is specified under measurement value ≦ 66,000 PPM.*
** PPM - parts per million * @ 23± 5℃*

3. Temperature

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

** @ 23± 5℃*

C. Salt

Conductivity probe	Optional, Carbon rod electrode for long life.
Measurement Range	0 to 12 % salt (% weight).
Resolution	0.01 % salt.
Accuracy	0.5 % salt value ** 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.
Probe Operating Temperature	0 to 60 ℃.
Probe Dimension	Round, 22 mm Dia. x 120 mm length.
Optional probe and accessories	* Salt probe (Conductivity probe).....CDPB-03

D. Dissolved oxygen

Oxygen Probe	Optional, The polarographic type oxygen probe with	
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	335 g/0.74 LB (batteries & probe included)	
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 set .....OXHD-04 * Probe-filling Electrolyte.....OXEL-03	

PATENT	CHINA : ZL 2008 2 0189918.5 ZL 2008 2 0189917.0 TAIWAN : M 358970 M 359043 Germany : Nr. 20 2008 016 337.4 JAPAN : 3151214 U.S.A. : Pending

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