



HBD5w series Multi-sensors

Portable Water Analyzer

for lab and field smart test of
pH, conductivity /salinity, DO, Turbidity and other electro-chemical parameters
Ref: HBD5WMSIntE
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- **Easy-to-use and Smart Test**
- **high and low alarm limits and display hold**
- **2x16 LCD Display,5x4 Keypad**
- **Known Addition, TKA Methods for electrochemical sensors**
- **8 Standards Calibration Table for Turbidity and SCT**
- **Automatic Blank Correction**
- **Datalog, Readout and Print out support**
- **Communication to PC Acquisition System, by STIMcom/Modbus in accordance with IEEE 1451.2 STIM protocol**

Advanced instrumental features include calibration edit, and temperature -compensated ISE measurement. Use calibration edit to review, delete or re-measure calibration standards.

HBD5WMS Handheld instruments can be used to test multi-parameters with replacement of single probe. Temperature compensation sensor must be used for each set of instrument.

Ease of operation, data display and retrieval, and advanced analytical techniques for performing sophisticated analyses make the HBD5w the best choice for the multi-user lab and research chemist, as well to field patrol.

HBD5WMS

Versatile Single Channel, Multi Parameter System

- Rugged, reliable, versatile
- Field-replaceable ISE, Galvanic, conductivity and turbidity
- User setup unit, mV, pH, mg/L etc.
- RS-232 and Compatible with IEEE 1451.2 STIM data analysis software
- Easy-to-use, screw-on sensor replacement
- IAP user-upgradeable software via internet or peer to peer support
- 5 year warranty on the instrument; 1-year on the probe module and cables
- Available with 1.3m cable default (user order specification acceptable)
- Stores over 3,000 frame datalog, time and date stamped



Replace independently of ISE/pH/mV/ORP/Temperature /Conductivity and Turbidity Sensors:

including $\text{Ag}^+/\text{S}^{2-}$, BF_4^- , Br^- , Ca^{+2} , $\text{Ca}^{+2}/\text{Mg}^{+2}$, Cd^{+2} , $\text{CO}_2/\text{CO}_3^{2-}$, Cl^-/Cl_2 , ClO_4^- , CN^- , Cu^{+2} , F^- , K^+ , I^- , Li^+ , Na^+ , $(\text{NH}_3/\text{NH}_4^+)$, NO_3^- , $(\text{NO}_x)/\text{NO}_2^-$, ORP , Pb^{+2} , pH , SCN^- , and turbidity, Conductivity, Dissolved oxygen

Specifications:

Analog Test Resolution:

Auto range: -1.25 to +1.25V scale
Environ Temperature
Environ Humidity
Supply

Size(Analyzer only)

Weight (net)

Support H-series conductivity and turbidity sensors, and any other ISE sensors. Even from other manufacturers worldwide, just need to connect according the instructions

16-24 bits, equal to better than ppm to 100%

No any operation to switch range

-10 to 50 °C

10 to 90%RH

Lithium Rechargeable Cell or DC6-24V Source

98W × 180H × 35D (mm)

0.5 kg

Sensors Specifications

Parameters	Descriptions
DO3230 Dissolved Oxygen Sensor	Galvanic Cell
Range:	0 to 500% air saturation; 0 to 50 mg/L
Accuracy:	0 to 200% air saturation, $\pm 2\%$ of the reading or 2% air saturation; whichever is greater
Resolution:	0.1% air saturation; 0.01 mg/L
Sensor Size:	$\phi 20 \times 110$ mm
TMP36 Temperature Sensor	Thermistor IC
Range:	-40 to 120°C
Accuracy:	$\pm 0.1^\circ\text{C}$
Resolution:	0.1°C
Sensor Size:	$\phi 10 \times 110$ mm
SCT1121 Conductivity Sensor	Pulse-electrode cell K=0.1,1.0/cm
Range:	0 to 500 $\mu\text{S/cm}$
Accuracy:	$\pm 1.5\%$ of reading
Resolution:	0.04 $\mu\text{S/cm}$
Methods:	USEPA 120.1 Standard Method 2510-B for wastewater
Sensor Size:	$\phi 11 \times 110$ mm
SCT1122 Conductivity Sensor	2-electrode cell with auto-ranging
Range:	0 to 100, up to 1000 mS/cm
Accuracy:	$\pm 0.5\%$ of reading, or 0.1% of step whichever is greater
Resolution:	0.04 $\mu\text{S/cm}$ to 0.1 mS/cm (range-dependent)
Salinity Sensor Type;	Calculated from conductivity and temperature
Range:	0 to 70 ppt
Accuracy:	$\pm 1.0\%$ of reading or 0.1 ppt, whichever is greater
Resolution:	0.01 ppt
Methods:	USEPA 120.1 Standard Method 2510-B for wastewater
Sensor Size:	$\phi 50 \times 300$ mm
SCT1130 Conductivity Sensor	2-electrode high frequency attenuation
Range:	0 to 30% TDS
Accuracy:	$\pm 0.1\%$ FS
Resolution:	0.1%
Sensor Size:	$\phi 24 \times 300$ mm
Mud1204 Concentration Sensor	high frequency attenuation
Range:	0 to 60% TDS
Accuracy:	$\pm 0.1\%$ FS
Resolution:	0.1%
Sensor Size:	$\phi 24 \times 300$ mm
Turb4210D Turbidity Sensor	90° dispersion
Range:	0-2000 NTU
Accuracy:	$\pm 0.5\%$ of reading, $\pm 0.1\%$ FS whichever is greater
Resolution:	1 NTU
Methods:	Turb.90d 4210_640 meets USEPA 180.1 Turb.90d 4210_880 meets ISO 7027 / EN 27027
Sensor Size:	$\phi 50 \times 300$ mm
Turb4210DU Turbidity Sensor	90° dispersion
Range:	0-2000 NTU
Accuracy:	$\pm 0.5\%$ of reading, $\pm 0.1\%$ FS whichever is greater
Resolution:	0.01 NTU
Methods:	Turb.90d 4210_640 meets USEPA 180.1 Turb.90d 4210_880 meets ISO 7027 / EN 27027
Sensor Size:	$\phi 50 \times 300$ mm
Turb4210DTU Turbidity Sensor	90° dispersion

Range:	0-200 NTU
Accuracy:	± 0.5% of reading, ± 0.1% FS whichever is greater
Resolution:	0.001 NTU
Methods:	Turb.90d 4210_640 meets USEPA 180.1 Turb.90d 4210_880 meets ISO 7027 / EN 27027
Sensor Size:	φ50x300 mm
MLSS4210D Turbidity Sensor	90° dispersion
Range:	0-10, Max to 100g/L
Accuracy:	± 0.5% of reading, ± 0.1% FS whichever is greater
Resolution:	0.1mg/L(HBD5) 0.05%FS(HBD4)
Methods:	Adapted from <Sewage and Industrial Wastes,31,1159(1959)
Sensor Size:	φ50x300 mm
pH Sensor Type:	Glass combination electrode
Range:	0 to 14 pH
Accuracy:	±0.2 pH
Resolution:	0.01 pH
Sensor Size:	φ10x110 mm
ORP Sensor Type:	Platinum button
Range:	-999 to +999 mV
Accuracy:	± 10 mV
Resolution:	0.1 mV
Sensor Size:	φ10x110 mm
ISE Sensor Type:	Electrochem
Range:	Refer to sensor details
Accuracy:	± 2.5% of reading
Resolution:	
Sensor Size:	φ10x110 mm
Gas Sensor Type:	Electrochem
Range:	Refer to sensor details
Accuracy:	± 2.5% of reading
Resolution:	
Sensor Size:	φ10x110 mm

Packed with Features!

Basic Meter and Included Accessories

Analyzer	H-BD5w	1
Sensors	By order	
Battery	9V	1
Charger	220V	1
Package Box		1

Carrying Case: Special traveling box

Cable lengths- Specify cable length when ordering, 1.3m defaulted.

Package: Alloy Box general size: 112*370*465 (mm)

Delivery Weight: 2-3kg

Table 1: Specifications of Electrodes

Ion-Selective Electrode	Single-Junction Electrodes	Double-Junction Electrodes	Type	Concentration Range	Temperature pH Range	Interferences
Ammonia (NH ₃)	H-27502-00	-	Gas sensing	5 x 10 ⁻⁷ to 1.0 M (0.01 to 17,000 ppm)	0 to 50°C/ above 11	Volatile amines
Ammonium (NH ₄ ⁺)	H-27502-02	H-27502-03	PVC membrane	5x10 ⁻⁶ to 1.0M (0.1 to 18,000 ppm)	0 to 50°C/ 4 to 10	K ⁺
Bromide (Br ⁻)	H-27502-04	H-27502-05	Solid-state	5 x 10 ⁻⁶ to 1.0 M (0.4 to 79,900 ppm)	0 to 80°C/ 2 to 14	S ²⁻ , CN ⁻ ; high levels of Cl ⁻ and NH ₃
Cadmium (Cd ²⁺)	H-27502-06	H-27502-07	Solid-state	10 ⁻⁷ to 10 ⁻¹ M (0.01 to 11,200 ppm)	0 to 80°C/ 2 to 12	Ag ⁺ , Hg ²⁺ , Cu ²⁺ ; high levels of Pb ²⁺ and Fe ²⁺
Calcium (Ca ²⁺)	H-27502-08	H-27502-09	PVC membrane	5 x 10 ⁻⁶ to 1.0 M (0.2 to 40,000 ppm)	0 to 50°C/ 3 to 10	Pb ²⁺ , Hg ²⁺ , Cu ²⁺ , Ni ²⁺
Carbon dioxide (CO ₂)	H-27502-10	-	Gas sensing	10 ⁻⁴ to 10 ⁻² M (4.4 to 440 ppm)	0 to 50°C/ 3 to 10	Volatile weak acids

				4.8 to 5.2		
Carbonate (CO ₃ ²⁻)						
Chloride (Cl ⁻)	H-27502-12	H-27502-13	Solid-state	5 x 10 ⁻⁵ to 1.0 M (1.8 to 35,500 ppm)	0 to 80°C/ 2 to 12	S ²⁻ , I ⁻ , CN ⁻ , Br ⁻ , OH ⁻ , NH ₃ , S ₂ O ₃ ²⁻
Chlorine (Cl ₂)	H-3221	H-3221-C	Solid-state	5 x 10 ⁻⁵ to 1.0 M (3.6 to 71,000 ppm)	0 to 60°C/ 2 to 12	S ²⁻ , I ⁻ , CN ⁻ , Br ⁻ , OH ⁻ , NH ₃ , S ₂ O ₃ ²⁻
Chlorine (Cl ₂)	H-3221-L	H-3221-LC	Solid-state	3 x 10 ⁻⁶ to 0.1 M (0.04 to 7,100 ppm)	0 to 60°C/ 2 to 12	S ²⁻ , I ⁻ , CN ⁻ , Br ⁻ , OH ⁻ , NH ₃ , S ₂ O ₃ ²⁻
Copper (Cu ²⁺)	H-27502-14	H-27502-15	Solid-state	10 ⁻⁶ to 10 ⁻¹ M (0.0006 to 6350 ppm)	0 to 80°C/ 2 to 12	Ag ⁺ , Hg ²⁺ , high levels of Cl ⁻ , Br ⁻ , Fe ²⁺ , Cd ²⁺
Cyanide (CN ⁻)	H-27502-16	H-27502-17	Solid-state	5 x 10 ⁻⁶ to 10 ⁻² M (0.1 to 260 ppm)	0 to 80°C/ 11 to 13	S ²⁻ , I ⁻ , Br ⁻ , Cl ⁻
Fluoride (F ⁻)	H-27502-18	H-27502-19	Solid-state	10 ⁻⁶ to saturated (0.02 to saturated)	0 to 80°C/ 5 to 8	OH ⁻
Fluoroborate (BF ₄ ⁻)	H-27502-20	H-27502-21	PVC membrane	7 x 10 ⁻⁶ to 1.0 M (0.1 to 10,800 ppm as B)	0 to 50°C/ 2.5 to 11	ClO ₄ ⁻ , I ⁻ , CN ⁻
Iodide (I ⁻)	H-27502-22	H-27502-23	Solid-state	5x10 ⁻⁶ to 1.0M (0.006 to 127,000 ppm)	0 to 80°C/ 0 to 14	S ²⁻ , CN ⁻ , Br ⁻ , Cl ⁻ , NH ₃ , S ₂ O ₃ ²⁻
Lead (Pb ²⁺)	H-27502-24	H-27502-25	Solid-state	10 ⁻⁶ to 10 ⁻¹ M (0.2 to 20,700 ppm)	0 to 80°C/ 3 to 8	Ag ²⁺ , Hg ²⁺ , Cu ²⁺ , high levels of Cd ²⁺ and Fe ²⁺
Lithium (Li ⁺)	H-27502-28	H-27502-29	PVC membrane	10 ⁻⁶ to 1.0M (0.7 to 6900 ppm)	0 to 50°C/ 5 to 10	Na ⁺ , K ⁺ , Ca ²⁺
Nitrate (NO ₃ ⁻)	H-27502-30	H-27502-31	PVC membrane	7 x 10 ⁻⁶ to 1.0 M (0.5 to 62,000 ppm)	0 to 50°C/ 2.5 to 11	ClO ₄ ⁻ , I ⁻ , CN ⁻ , BF ₄ ⁻
Nitrogen oxide (NO _x)	H-27502-32	-	Gas sensing	5x10 ⁻⁶ to 5x10 ⁻³ M (0.2 to 220 ppm)	0 to 50°C/ 1.1 to 1.7	CO ₂ , SO ₂ HF, acetic acid
Perchlorate (ClO ₄ ⁻)	H-27502-34	H-27502-35	PVC membrane	7 x 10 ⁻⁶ to 1.0 M (0.7 to 98,000 ppm)	0 to 50°C/ 2.5 to 11	No significant interferences
pH (H ⁺)	H-27502-36		PVC membrane	10 ⁻⁷ to 10 ⁻¹ M (1 to 7 pH)	0 to 50°C/ 1 to 7	No significant pH interferences
Potassium (K ⁺)	H-27502-38	H-27502-39	PVC membrane	10 ⁻⁶ to 1.0 M (0.04 to 39,000 ppm)	0 to 50°C/ 2 to 12	Cs ⁺ , NH ₄ ⁺
Silver/sulfide (Ag ⁺ /S ²⁻)	H-27502-40	H-27502-41	Solid-state	10 ⁻⁷ to 1.0 M (Ag ⁺ , S ²⁻) (0.01 to 107,900 ppm Ag ⁺ ; 0.003 to 32,100 ppm S ²⁻)	0 to 80°C/ 2 to 12	Hg ²⁺
Sodium (Na ⁺)	H-27502-42	H-27502-43	Glass membrane	10 ⁻⁶ M to saturated (0.02 ppm to saturated)	0 to 80°C/ 5 to 12	H ⁺ , K ⁺ , Li ⁺ , Ag ⁺ , Cs ⁺ , Tl ⁺
Surfactant (X ⁻ /X ⁻)	H-27502-44	H-27502-45	PVC membrane	10 ⁻⁵ to 5 x 10 ⁻² M (1.0 to 12,000 ppm)	0 to 50°C/ 2 to 12	Similar types of surfactants
Thiocyanate (SCN ⁻)	H-27502-46	H-27502-47	Solid-state	5 x 10 ⁻⁶ to 1.0 M (0.3 to 58,000 ppm)	0 to 80°C/ 2 to 10	S ²⁻ , CN ⁻ , I ⁻ , Br ⁻ , NH ₃ , S ₂ O ₃ ²⁻
Water hardness (Ca ²⁺ /Mg ²⁺)	H-27502-48	H-27502-49	PVC membrane	10 ⁻⁶ to 1.0 M (0.4 to 40,000 ppm as Ca ²⁺)	0 to 50°C/ 5 to 10	Cu ²⁺ , Zn ²⁺ , Ni ²⁺ , Fe ²⁺

Optimal pH range for direct measurement. ★ These ions are listed in order of decreasing concentrations of interference.

Consumables

Items	Cat.No.		
Chemicals Kit	1	Selective	Open ingredients Chemicals
Maintenance Kit	1	Selective	Maintenance spares and tools for 2 year

Consuming Materials

Standard Sample		2 suits	
Ion Adjustors		100 ml	
Filling Solutions		20 ml	
Battery	Lithium	1	1000 times
Clearer	CP,AR	20ml	
Paper	General		1 packet, for printer using 3-5years

Instrument Accessories

ITEMS	TYPE	INCLUDED
Micro Printer	Tu24p	
PC software	AquaWin V m10.1.0	
Cable		1.5m
Charger	DC12V	1
Cable Reel		