7-in-1 pH/EC/TDS METER/DATALOGGER

HD2156.1 & HD2156.2

This instruments measure pH, mV, redox potential (ORP), conductivity. liquid resistivity, total dissolved solids (TDS) and salinity using combined 4-ring and 2-ring conductivity temperature probes.

The **HD2156.2** instrument is a **Datalogger.** It memorizes up to 20,000 sets of three measurements composed of pH or mV, conductivity or resistivity or TDS or salinity and temperature. The **HD2156.1** and HD2156.2 models are fitted with an RS232C serial port and can transfer the acquired measurements to a PC or to a portable printer in real time.

Instrument Technical Characteristics

Display	2×4½ digits plus symbols Visible area: 52×42mm
Dimensions (Length × Width × Height)	185×90×40mm
Weight	470g (complete with batteries)
Materials	ABS, rubber

Measurement of pH

Measurement range	-2.000...+19.999pH
Resolution	0.01 or 0.001pH selectable from menu
Accuracy	±0.001pH ± 1 digit (excluding probe)
Input impedance	$>10^{12}\Omega$
Calibration error@ 25°C	|Offset| > 20mV Slope > 63mV/pH or Slope<50mV/pH Sensitivity > 106.5% or Sensitivity<85%

Measurement of mV

Measurement range	-1999.9...+1999.9mV
Resolution	0.1mV
Accuracy	± 0.1mV ± 1 digit (excluding probe)
Drift after 1 year	0.5mV / year

Measurement of conductivity

Resolution with K cell=0.1	0.01µS/cm in range 0.00...19.99µS/cm
Measurement range (K cell=1) Resolution	0.0...199.9µS/cm / 0.1µS/cm 200...1999µS/cm / 1µS/cm 20.00...19.99mS/cm / 0.01mS/cm 20.00...199.9mS/cm / 0.1mS/cm
Accuracy (conductivity)	±0.5% ± 1digit (excluding probe)

Measurement of resistivity

Measurement range / Resolution	4.0...199.9Ω / 0.1Ω 200...999Ω / 1Ω 1.00k...19.99kΩ / 0.01kΩ 20.0k...99.9kΩ / 0.1kΩ 100k...999kΩ / 1kΩ 1...10MΩ / 1MΩ
Accuracy (resistivity)	±0.5% ± 1 digit (excluding probe)

Measurement of total dissolved solids

Resolution with K cell=0.1	0.05 mg/1 in range 0.00...19.99mg/l
Measurement range (K cell=1) / Resolution	0.0...199.9 mg/l / 0.5 mg/l 200...1999 mg/l / 1mg/l 2.00...19.99 g/l 0.01 g/l 20.0...199.9 g/l / 0.1 g/l
Accuracy (total dissolved solids)	± 0.5% ± 1 digit (excluding probe)

Measurement of salinity

Measurement range/resolution	0.000...1.999g/l / 1mg/l 2.00...19.99g/l / 10mg/l
Accuracy (total dissolved solids)	± 0.5% ± 1 digit (excluding probe)
Temp. compensation	Automatic / Manual between 0.100°C with α, that can be selected from 0.00 to 4.00% °C
ϰ/TDS conversion factor	0.4...0.8
Cell constant K (cm^{-1})	0.1, 0.7, 1.0 and 10.0

Working temperature	-5...50°C
Storing temperature	-25...65°C
Working relative humidity	0...90%RH without condensation
Protection degree	**IP67**

Batteries	4 × 1.5V type AA batteries
Autonomy	200 hours with 1800mAh alkaline batteries
Power absorbed with instrument off	20µA
Mains	Output mains adapter 9Vdc/250mA
Security of memorized data	Unlimited, independent of battery charge conditions

Time

Date and time	Schedule in real time
Accuracy	1min/month max error

Serial interface FS232C

Type	RS232C electrically isolated
Baud rate	Can be set from 1200 to 38400 baud
Data bit	8
Parity	None
Stop bit	1
Flow Control	Xon / Xoff
Serial Cable length	Max 15m
Immediate print interval	1s...3600s (1hour)

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An ISO 9001: 2015 Certified Company & NABL Accredited Calibration Laboratory as per ISO/IEC 17025:2017
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USB interface - model HD2156.2

Type	1.1 -20 electrically isolated

Connections

pH/mV input	Female BNC connector
Conductivity input	8-pole male DIN45326 connector
Serial interface and USB	8-pole MiniDin connector
Mains adapter	2-pole connector (positive at centre)

ORDER CODES

HD2156.1K : The kit is composed of; instrument HD2156.1, 4 × 1.5V alkaline batteries, operating manual, case and DeltaLog9 software.

pH electrodes, conductivity, temperature probes and Interface cable must be ordered separately.

HD2156.2K : The kit is composed of: instrument HD2156.2 **Datalogger,** 4×1.5V alkaline batteries, operating manual, case and DeltaLog9 software. **pH electrodes, conductivity, temperature probes and Interface cable must be ordered separately.**

HD2110CSNM : 8-pole connection cable MiniDin - Sub D 9-pole female for RS232C.

HD2101/USB : Connection cable USB 2.0 connector type A - 8-pole MiniDin (not suitable for HD2156.1K).

DeltaLog9 : software for download and management of the data on PC using Windows 98 to XP operating systems.

AF209.60 : Stabilized power supply at 230Vac/9Vdc-300mA mains voltage.

S'print-BT : On request, portable, serial input, 24 column thermal printer, 58mm paper width.

KP20 : Combined pH electrode, gel-filled, with screw connector S7, body in Epoxy, Ag/AgCl sat. KCl.

KP90 : REDOX PLATINUM electrode, with screw connector S7, gel-filled, body in glass.

SP06T : Conductivity electrode of specification K = 0.7, 5µS....200mS/cm, 0...90°C 4-electrode cell in Pocan / Platinum.

SPT01G : Conductivity electrode of specification K = 0.1, 0.1µS....500µS/cm, 0...80°C 2-electrode cell in Glass/Platinum.

SPT1 : Conductivity electrode of specification K =1 10µS....10mS/cm 0...50°C, 2-electrode cell in Epoxy / Graphite.

SPT1G : Conductivity electrode of specification K =1 10µS....10mS/cm 0...80°C 2-electrode cell in Glass/Platinum.

SPT10G : Conductivity electrode of specification K =10, 500µS....200mS/cm,