HD2106.1
HD2106.2

CONDUCTIVITY METERS - THERMOMETERS HD2106.1 AND HD2106.2

The **HD2106.1** and **HD2106.2** are portable instruments with a large LCD display. They measure conductivity, liquid resistivity, total dissolved solids (TDS), and salinity using combined 4-ring and 2-ring conductivity/temperature probes. Temperature only is measured by Pt100 or Pt1000 immersion, penetration or contact probes.
The probe calibration can be performed automatically in one or more than one of the 147μS, 1413μS, 12880μS or 111800μS/cm conductivity calibration solutions.
The temperature probes are fitted with an automatic detection module, with the factory calibration settings already being memorized inside.
The HD2106.2 is a **datalogger**. It memorizes up to 36,000 conductivity and temperature samples which can be transferred from the instrument connected to a PC via the multi-standard RS232C serial port and USB 2.0. The storing interval, printing, and baud rate can be configured using the menu.
The HD2106.1 and HD2106.2 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.
The *Max, Min* and *Avg* function calculates the maximum, minimum or average values.
Other functions include: the relative measurement REL, the Auto-HOLD function, and the automatic turning off which can also be disabled.
The instruments have IP67 protection degree.

INSTRUMENT TECHNICAL CHARACTERISTICS

Instrument

Dimensions (Length x Width x Height)	185x90x40mm
Weight	470g (complete with batteries)
Materials	ABS, rubber
Display	2x4½ digits plus symbols Visible area: 52x42mm

Operating conditions

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

Power

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

*Measured values storage - model **HD2106.2***

Type	2000 pages containing 18 samples each
Quantity	36000 pairs of measurements [χ-°C], [Ω-°C], [TDS-°C] or [Sal-°C]
Storage interval	1s…3600s (1hour)

Serial interface RS232C

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)

*USB interface - model **HD2106.2***

Type	1.1 - 2.0 electrically isolated

Connections

Conductivity input	8-pole male DIN45326 connector
Input module for the temperature probes	8-pole male DIN45326 connector
Serial interface and USB	8-pole MiniDin connector
Mains adapter	2-pole connector (positive at centre)

Measurement of conductivity by Instrument

Measurement range (K cell=0.1)	
Resolution	0.00…19.99μS7cm / 0.01μS/cm (with K cell=0.1) 0.0…199.9μS /cm / 0.1μS/cm 200…1999μS /cm / 1μS/cm 2.00…19.99mS /cm / 0.01mS/cm 20.0…199.9mS /cm / 0.1mS/cm
Accuracy (conductivity)	±0.5% ±1digit

Measurement of resistivity by Instrument

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% ±1digit

Measurement of total dissolved solids (with coefficient χ/TDS=0.5)

Measurement range (K cell=1)	0.00…19.99mg/l / 0.05mg/l
Resolution	0.0...199.9 mg/l / 0.5 mg/l (with K cell=0.1) 200…1999 mg/l / 1 mg/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% ±1digit

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% ±1digit

Measurement of temperature by Instrument

Pt100 measurement range	-50…+200°C
Pt1000 measurement range	-50…+200°C
Resolution	0.1°C
Accuracy	±0.25°C
Drift after 1 year	0.1°C/year

Automatic/manual temperature

compensation	0…100°C with α_T=0.00…4.00%/°C
Reference temperature	20°C or 25°C
χ/TDS conversion factor	0.4…0.8
Cell constant K (cm^{-1})	0.1, 0.7, 1.0 and 10.0

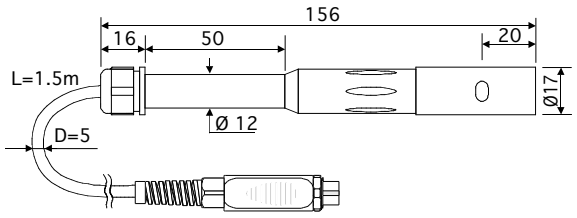
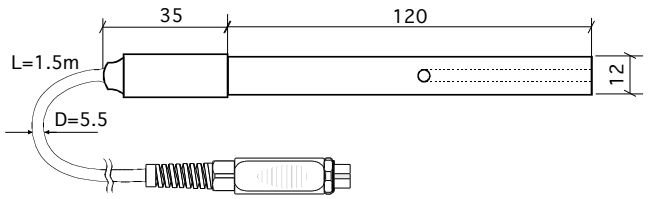
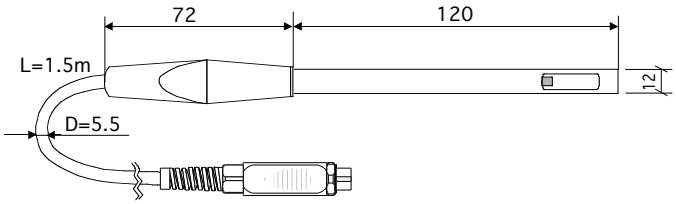
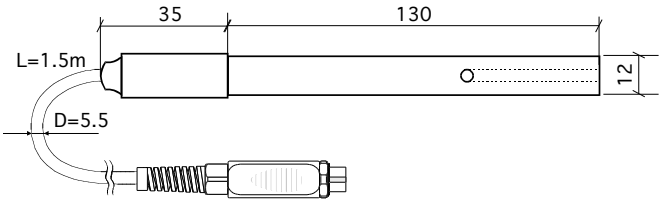
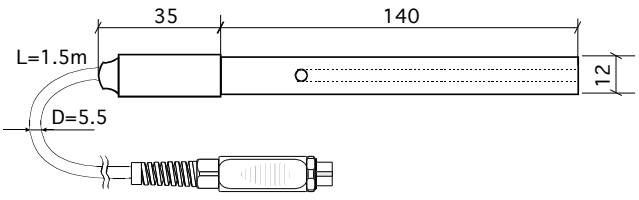
Standard solutions automatically detected (@25°C)

147 µS/cm
1413 µS/cm
12880 µS/cm
111800 µS/cm


S'print-BT

TECHNICAL DATA OF PROBES AND MODULES EQUIPPED WITH INSTRUMENT

2 and 4 electrode conductivity probes

ORDER CODES	MEASUREMENT RANGE	DIMENSIONS
SP06T	K=0.7 5µS…200mS/cm 0…90°C 4-electrode cell in Pocan/Platinum	
SPT01G	K=0.1 0.1µS…500µS/cm 0…80°C 2-electrode cell in Glass/Platinum	
SPT1	K=1 10µS…10mS/cm 0…50°C 2-electrode cell in Epoxy/Graphite	
SPT1G	K=1 10µS…10mS/cm 0…80°C 2-electrode cell in Glass/Platinum	
SPT10G	K=10 500µS…200mS/cm 0…80°C 2-electrode cell in Glass/Platinum	

4 wire Pt100 and 2 wire Pt1000 Temperature probes

Model	Type	Working range	Accuracy
TP47.100	Pt100 4 wires	-50…+200°C	Class A
TP47.1000	Pt1000 2 wires	-50…+200°C	Class A
TP87.100	Pt100 4 wires	-50…+200°C	Class A
TP87.1000	Pt1000 2 wires	-50…+200°C	Class A

Common characteristics

Resolution	0.1°C
Temperature drift @20°C	0.005%/°C

ORDER CODES

HD2106.1K: The kit is composed of: instrument HD2106.1, **conductivity/ temperature combined probe SP06T**, connection cable for serial output **HD2110CSNM**, standard calibration solution HD8712 (12880µS/cm), 4 1.5V alkaline batteries, operating manual, case and DeltaLog9 software. Other conductivity probes must be ordered separately.

HD2106.2K: The kit is composed of: instrument HD2106.2 **datalogger**, **conductivity/temperature combined probe SP06T**, connection cable for serial output **HD2101/USB**, 4 1.5V alkaline batteries, standard calibration solution HD8712 (12880µS/cm), operating manual, case and DeltaLog9 software. Other conductivity probes 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 HD2106.1K).

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.

Conductivity probes

Please see the order codes reported in the probes' technical specifications.

Standard conductivity calibration solutions

HD8747: Standard calibration solution 0.001mol/l equal to 147µS/cm @25°C, 200cc.

HD8714: Standard calibration solution 0.01mol/l equal to 1413µS/cm @25°C, 200cc.

HD8712: Standard calibration solution 0.1mol/l equal to 12880µS/cm @25°C, 200cc.

HD87111: Standard calibration solution 1mol/l equal to 111800µS/cm @25°C, 200cc.

Temperature probes

TP47.100: Direct 4 wire Pt100 sensor immersion probe. Probe's stem Ø 3mm, length 230mm. 4 wire connection cable with connector, length 2 metres.

TP47.1000: Pt1000 sensor immersion probe. Probe's stem Ø 3mm, length 230mm. 2 wire connection cable with connector, length 2 metres.

TP87.100: Pt100 sensor immersion probe. Probe's stem Ø 3mm, length 70mm. Connection cable 4 wires with connector, length 1 metre.

TP87.1000: Pt1000 sensor immersion probe. Probe's stem Ø 3mm, length 70mm. Connection cable 2 wires with connector, length 1 metre.

TP47: Only connector for probe connection: direct 4 wire Pt100, 2 wire Pt1000.