

HD2178.1, HD2178.2



**HD2178.1 AND HD2178.2
Pt100 AND TC INPUT THERMOMETERS**

HD2178.1 and HD2178.2 are portable instruments with a large LCD display. These instruments measure temperature by means of immersion, penetration, contact or air probes with Pt100, Pt1000 or thermocouple probes.

You can connect a 3 or 4 wires Pt100 sensor or a 2 wires Pt1000 sensor to B input, a K, J, T, N, E type thermocouple to input A. Probes to B input, a 8-poles DIN45326 connector, are equipped with an automatic detection module, with the factory calibration settings already being memorized inside. A input is equipped with a miniature female polarized connector for thermocouple probes.

The instrument HD2178.2 is a data logger; it stores up to 80.000 samples that can be transferred to a PC when connected to the instrument through a RS232C serial port or a USB 2.0 port. It is possible to configure the storage interval, the printing and the baud rate or to a portable printer by the menu.

Functions Max, Min and Avg calculate maximum, minimum and average values. Further functions are: REL relative measure, HOLD and automatic switching-off system (excludable).

Instruments have IP66 protection degree.

Technical specifications	
Temperature measurement - RTD sensors	
Pt100 Measuring range	-200...+650°C
Pt1000 Measuring range	-200...+650°C
Accuracy	±0.05°C
Temperature measurement - Tc	
TC measuring range: K	-200...+1370°C
TC measuring range: J	-100...+750°C
TC measuring range: T	-200...+400°C
TC measuring range: N	-200...+1300°C
TC measuring range: E	-200...+750°C
Instrument accuracy	
Thermocouple K	±0.1°C up to 600°C ±0.2°C over 600°C
Thermocouple J	±0.1°C up to 400°C ±0.2°C over 400°C
Thermocouple T	±0.1°C
Thermocouple N	±0.1°C up to 600°C ±0.2°C over 600°C
Thermocouple E	±0.1°C up to 300°C ±0.2°C over 300°C
Accuracy is referred to the instrument only; error due to sensors is not included.	
Resolution	0.1°C
Temperature drift @20°C	0.02%/°C
Drift after 1 year	0.1°C/year
Unit of measurement	°C - °F
Measured values storage - model HD2178.2	
Type	2000 pages each one containing 40 samples
Quantity	80000 samples in total
Storage interval can be selected among	1,5,10,15,30 s; 1,2,5,10,15,20,30 min.; 1 hour
Security of stored data	Unlimited, independent of battery charge conditions
Power Supply	
Batteries	4 Batteries 1.5V type AA
Autonomy	200 hours with 1800mAh alkaline batteries
Current consumption with instrument off	20µA
Mains	12Vdc / 1000mA Output mains adapter
Serial interface RS232C	
Type	RS232C galvanically isolated
Baud rate	can be set up from 1200 to 38400 baud
Data bit	8
Parity	None
Stop bit	1
Flow control	Xon/Xoff
Serial cable length	Max 15m
Print interval	Immediate or selectable among: 1,5,10,15,30 s; 1,2,5,10,15,20,30 min.; 1 hour
USB interface - model HD2178.2	
Type	1.1 - 2.0 galvanically isolated
Connections	
Input for RTD probes	8 pole male DIN45326 connector
Input for TC probes	2-pole female polarized standard miniature connector
RS232C serial interface	8-pole MiniDin connector
USB interface	Type B MiniUSB connector
Mains adapter	2-pole connector (positive at centre)

Operating conditions	
Operating Temperature	-5...50°C
Storage temperature	-25 ... 65°C
Working relative humidity	0 ... 90% RH, no condensation
Protection degree	IP66
General characteristics	
Dimensions (Length x Width x Height)	185x90x40mm
Weight	470g (complete with batteries)
Materials	ABS, rubber
Display	2 rows 4½ digits plus symbols Visible area: 52x42mm
Time	
Date and time	In real time
Accuracy	1 min/month max drift

ORDERING CODES

HD2178.1: The kit consists of instrument HD2178.1, 4 per 1.5V alkaline batteries, instruction manual and case, software Deltalog9 downloadable from Delta OHM website. Probes and cables have to be ordered separately

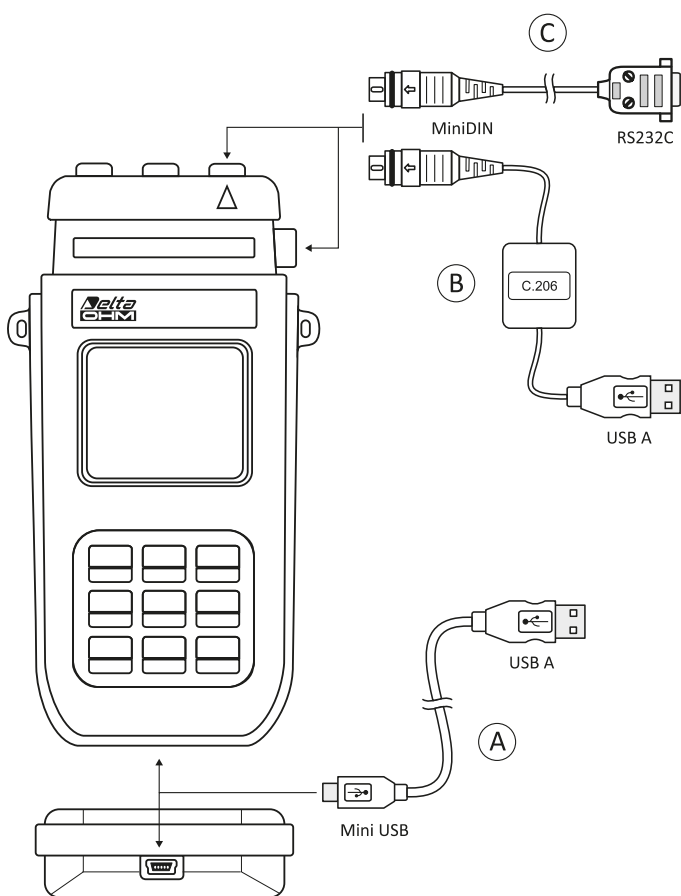
HD2178.2: The kit consists of instrument data logger HD2178.2, 4 per 1.5V alkaline batteries, instruction manual and case, CP23 USB cable, software Deltalog9 downloadable from Delta OHM website. Probes have to be ordered separately

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

C.206: Cable for instruments of the serie HD21...1 to connect directly to USB input of PC.

SWD10: Stabilized at 230Vac/12Vdc-1000mA mains .

HD40.1: Upon request, portable, serial input, 24 column thermal printer, 58mm paper width. Use cable HD 2110 CSNM (option).



HD2178



SWD10

A The portable data logger HD2178.2 is equipped with HID (Human Interface device) type USB port with mini USB connector.

For the connection to a PC with the CP23 cable it is not necessary to load any USB driver.

B For the connection of the model HD2178.1 to the USB port of a PC, is necessary the USB/serial converter C.206. The converter is supplied with its own drivers which must be installed before the connection of the converter to the PC.

C The port with the miniDin connector is a serial port type RS232C. The serial port RS232C of a PC or the printer HD40.1 can be connected by the cable HD2110CSNM.