



HD2124.1 AND HD2124.2

MANOMETER-THERMOMETER

HD2124.1 and **HD2124.2** are **two inputs** portable instruments with a large LCD display. They perform measure of absolute, relative, differential pressure and temperature. In order to measure the pressure you use the electronic module PP471 that works as an interface between the instrument and Delta Ohm probes series TP704 and TP705. Temperature is measured by means of Pt100 with SICRAM module or direct 4 wires Pt100 probes for immersion, penetration, contact or air. Temperature probes are equipped with SICRAM module and factory calibration data are stored inside so that when the instrument is on it soon recognizes them. The HD2124.2 is a data logger. It stores up to 32.000 samples which can be transferred into a PC connected to the instrument through a multi-standard RS232C serial port and a USB 2.0. It is possible to configure the storage interval, the printing and the baud rate by the menu. The models HD2124.1 and HD2124.2 are equipped with RS232C serial port and they can transfer the acquired measures, in real time, into a PC or a portable printer. 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 IP67 protection degree.

INSTRUMENT TECHNICAL CHARACTERISTICS

Instrument

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

Operating conditions

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

Power supply

Batteries	4 1.5V type AA batteries
Autonomy	200 hours with 1800mAh alkaline batteries

Current absorbed with instrument off Mains	20µA Output mains adapter 12Vdc / 1000mA
Measuring unit	°C - °F - Pa - hPa - mbar - bar - atm mmHg - mmH ₂ O - kgf/cm ² - PSI - inchHg
Security of data stored	Unlimited, independently of battery charge conditions
Time	
Date and time	Schedule in real time
Precision	1min/month max departure
Measured values storage - model HD2124.2	
Type	2000 pages of 16 samples each
Quantity	32,000 pairs of samples
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 HD2124.2	
Type	1.1 - 2.0 electrically isolated
Connections	
Input module for the probes	2 8-pole male DIN45326 connectors
Serial interface	8-pole MiniDin connector
USB interface - model HD2124.2	8-pole MiniDin connector
Mains adapter	2-pole connector (positive at centre)
Measurement of temperature by Instrument	
Pt100 measurement range	-200...+650°C
Resolution	0.1°C
Instrument accuracy	±0.1°C
Drift after 1 year	0.1°C/year

TECHNICAL DATA FOR INSTRUMENT EQUIPPED WITH PROBES AND MODULES

Measurement of pressure by module PP471

All TP704 and TP705 series Delta Ohm probes can be connected to the PP471 module. For the technical characteristics of the single probes, see the table below.

Technical characteristics

Accuracy	±0.05% of bottom scale
Peak duration	≥ 5ms
Peak accuracy	±0.5% of bottom scale
Peak dead band	≤ 2% of bottom scale

Pt100 sensor temperature probes with SICRAM module

Model	Type	Application field	Accuracy
TP472I	Immersion	-196°C...+500°C	±0.25°C (-196°C...+350°C) ±0.4°C (+350°C...+500°C)
TP472I.0	Immersion	-50°C...+400°C	±0.25°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP473P	Penetration	-50°C...+400°C	±0.25°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP473P.0	Penetration	-50°C...+400°C	±0.25°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP474C	Contact	-50°C...+400°C	±0.3°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP474C.0	Contact	-50°C...+400°C	±0.3°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP475A.0	Air	-50°C...+250°C	±0.3°C (-50°C...+250°C)
TP472I.5	Immersion	-50°C...+400°C	±0.3°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP472I.10	Immersion	-50°C...+400°C	±0.30°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP49A	Immersion	-70°C...+400°C	±0.25°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP49AC	Contact	-70°C...+400°C	±0.25°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP49AP	Penetration	-70°C...+400°C	±0.25°C (-50°C...+350°C) ±0.4°C (+350°C...+400°C)
TP875	Globe-thermometer Ø150mm	-30°C...+120°C	±0.25°C
TP876	Globe-thermometer Ø 50mm	-30°C...+120°C	±0.25°C
TP87	Immersion	-50°C...+200°C	±0.25°C
TP878	Solar panel	+5°C...+80°C	±0.25°C
TP878.1			
TP879	For compost	-20°C...+120°C	±0.25°C

Common specifications

Temperature drift @20°C	0.003%/°C
-------------------------	-----------

4 wires Pt100 and 2 wires Pt1000 Probes

Model	Type	Application field	Accuracy
TP47.100	4 wires Pt100	-50...+400°C	Class A
TP47.1000	2 wires Pt1000	-50...+400°C	Class A

Common specifications

Temperature drift @20°C

Pt100	0.003%/°C
Pt1000	0.005%/°C

ORDER CODES

HD2124.1: The kit consists of instrument HD2124.1, 4 per 1.5V alkaline batteries, instruction manual, case and DeltaLog9 software. **Probes, PP471 module and cables have to be ordered separately.**

HD2124.2: The kit consists of instrument HD2124.2 data logger, 4 per 1.5V alkaline batteries, instruction manual, case and DeltaLog9 software. **Probes, PP471 module and cables 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 series HD21...1 and .2 to connect directly to USB input of PC.

HD2101/USB: Connection cable USB 2.0 connector type A - 8-pole MiniDin.

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

SWD10: Stabilized power supply at 230Vac/12Vdc-300mA-1000mA mains voltage.

HD40.1: Upon request, portable, serial input, 24 column thermal printer, 58mm paper width.

PROBES FOR MASURING PRESSURE

Probes equipped with SICRAM module

PP471: Interfacing SICRAM module between instrument and Delta Ohm probes of the series TP704 and TP705. Cable 2 meters long.

The list of pressure probes is outlined in the technical data table.

PROBES FOR MEASURING TEMPERATURE

Probes equipped with SICRAM module

TP472I: Immersion probe, Pt100sensor. Stem Ø 3 mm, length 300 mm. Cable 2 meters long.

TP472I.0: Immersion probe, Pt100sensor. Stem Ø 3 mm, length 230 mm. Cable 2 meters long.

TP473P: Penetration probe, Pt100sensor. Stem Ø 4mm, length 150 mm. Cable 2 meters long.

TP473P.0: Penetration probe, Pt100sensor. Stem Ø 4mm, length 150 mm. Cable 2 meters long.

TP474C: Contact probe, Pt100sensor. Stem Ø 4mm, length 230mm, contact surface Ø 5mm. Cable 2 meters long.

TP474C.0: Contact probe, Pt100sensor. Stem Ø 4mm, length 230mm, contact surface Ø 5mm. Cable 2 meters long.

TP475A.0: Air probe, Pt100sensor. Stem Ø 4mm, length 230mm. Cable 2 meters long.

TP472I.5: Immersion probe, Pt100sensor. Stem Ø 6mm, length 500 mm. Cable 2 meters long.

TP472I.10: Immersion probe, Pt100sensor. Stem Ø 6mm, length 1,000mm. Cable 2 meters long.

TP49A: Immersion probe, Pt100sensor. Stem Ø 2.7mm, length 150mm. Cable 2 meters long. Aluminium handle.

TP49AC: Contact probe, Pt100sensor. Stem Ø 4 mm, length 150mm. Cable 2 meters long. Aluminium handle.

TP49AP: Penetration probe, Pt100sensor. Stem Ø 2.7mm, length 150mm. Cable 2 meters long. Aluminium handle.

TP875: Globe thermometer Ø 150 mm with handle. Cable 2 meters long.

TP876: Globe thermometer Ø 50 mm with handle. Cable 2 meters long.

TP87: Immersion probe, Pt100sensor. Stem Ø 3 mm, length 70 mm. Cable 2 meters long.

TP878: Contact probe for solar panels. Cable 2 meters long.

TP878.1: Contact probe for solar panels. Cable 5 meters long

TP879: Penetration probe for compost. Stem Ø 8 mm, length 1 meter. Cable 2 meters long.

Temperature probes without SICRAM

TP47.100: Direct 4 wires Pt100 sensor immersion probe. Stem Ø 3 mm, length 230mm. 4 wires connection cable with connector, 2 meters long.

TP47.1000: Pt1000 sensor immersion probe. Stem Ø 3 mm, length 230mm. 2 wires connection cable with connector, 2 meters long.

TP47: Only connector for probe connection: direct 3 and 4 wires Pt100, 2 wires Pt1000.



HD2124.2



HD2101/USB

Pressure

PRESSURE PROBE TABLE

Bottom scale pressure	Maximum overpressure	Resolution	ORDER CODES			Accuracy From 20 to 25°C	Working temperature	Connection
			Differential pressure	Relative pressure (compared to atmosphere)	Absolute pressure			
			NON insulated membrane	Insulated membrane	Insulated membrane			
10.0 mbar	20.0 mbar	0.01 mbar	• TP705-10MBD			0.5 % FSO	0..60 °C	Tube Ø 5 mm
20.0 mbar	40.0 mbar	0.01 mbar	• TP705-20MBD			0.5 % FSO	0..60 °C	Tube Ø 5 mm
50.0 mbar	100 mbar	0.01 mbar	TP705-50MBD			0.5 % FSO	0..60 °C	Tube Ø 5 mm
100 mbar	200 mbar	0.1 mbar	TP705-100MBD			0.25 % FSO	0..60 °C	Tube Ø 5 mm
				TP704-100MBGI		0.25 % FSO	-10..+80 °C	¼ BSP
200 mbar	400 mbar	0.1 mbar	TP705-200MBD			0.25 % FSO	0..60 °C	Tube Ø 5 mm
				TP704-200MBGI		0.25 % FSO	-10..+80 °C	¼ BSP
400 mbar	1000 mbar	0.1 mbar		TP704-400MBGI		0.25 % FSO	-10..+80 °C	¼ BSP
500 mbar	1000 mbar	0.1 mbar	TP705-500MBD			0.25 % FSO	0..60 °C	Tube Ø 5 mm
600 mbar	1000 mbar	0.1 mbar		TP704-600MBGI		0.25 % FSO	-40..125 °C	¼ BSP
			TP705-1BD			0.25 % FSO	0..60 °C	Tube Ø 5 mm
1.00 bar	2.00 bar	1 mbar			TP705BARO	0.25 % FSO	0..60 °C	Tube Ø 5 mm
						0.25 % FSO	-40..125 °C	¼ BSP
					TP704-1BA	0.25 % FSO	-40..120 °C	¼ BSP
			TP705-2BD			0.25 % FSO	0..60 °C	Tube Ø 5 mm
2.00 bar	4.00 bar	1 mbar		TP704-2BGI		0.25 % FSO	-40..+125 °C	¼ BSP
					TP704-2BAI *	0.25 % FSO	-25..+85 °C	¼ BSP
5.00 bar	10.00 bar	1 mbar		TP704-5BGI		0.25 % FSO	-40..+125 °C	¼ BSP
					TP704-5BAI *	0.25 % FSO	-25..+85 °C	¼ BSP
10.00 bar	20.0 bar	0.01 bar		TP704-10BGI		0.25 % FSO	-40..+125 °C	¼ BSP
					TP704-10BAI *	0.25 % FSO	-25..+85 °C	¼ BSP
20.0 bar	40.0 bar	0.01 bar		TP704-20BGI		0.25 % FSO	-40..+125 °C	¼ BSP
					TP704-20BAI *	0.25 % FSO	-25..+85 °C	¼ BSP
50.0 bar	100.0 bar	0.01 bar		TP704-50BGI		0.25 % FSO	-40..+125 °C	¼ BSP
					TP704-50BAI *	0.25 % FSO	-25..+85 °C	¼ BSP
100 bar	200 bar	0.1 mbar		TP704-100BGI		0.25 % FSO	-40..+125 °C	¼ BSP
					TP704-100BAI *	0.25 % FSO	-25..+85 °C	¼ BSP
200 bar	400 bar	0.1 mbar		TP704-200BGI		0.25 % FSO	-40..+125 °C	¼ BSP
					TP704-200BAI *	0.25 % FSO	-25..+85 °C	¼ BSP
500 bar	1000 bar	0.1 mbar		TP704-500BGI		0.25 % FSO	-40..+125 °C	¼ BSP
	700 bar	0.1 mbar			TP704-500BAI *	0.25 % FSO	-25..+85 °C	¼ BSP

* Ceramic diaphragm

• Only report of calibration, no SIT certificate