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BENCH TOP INSTRUMENTS DELTA OHM

HD 25.2 DIGITAL TURBIDITY METER

Introduction

The **HD25.2** is a digital turbidity meter for laboratory and mobile use, suitable for measurements in drinking water, beverages, waste water and process liquids.

The working principle is based on the nephelometric (90° scattered light sensor) and ratiometric method. It is equipped with three light detectors and two LED light sources (white and infrared) which are permanently kept under control in order to guarantee long-term stability.

The instrument performs measurements according to the standards EPA 180.1, ISO-NEPH (ISO 7027), EBC and ASBC. It is also able to carry out measures of transmission factor percentage of white and infrared light. The initial factory calibration is based on Forazin primary standard. Calibration before use is not required. For routine calibration a set of stabilized secondary standard solutions is available: STCAL (Turbidity standards for calibration):

- **STCAL 1** equal to 0 NTU
- **STCAL 2** equal to 1 NTU
- **STCAL 3** equal to 10 NTU
- **STCAL 4** equal to 100 NTU
- **STCAL 5** equal to 1000 NTU

User Calibration is automatic on one, four or five points, depending on the measuring variable.

Stabilized power supply and advanced electronics guarantee optimal performances over time.

The HD25.2 is a **data logger** that stores up to 999 samples. The data can be transferred from the instrument connected to a PC via the multi-standard RS232C serial port and USB 2.0. The RS232C serial port can be used to transfer the acquired measurements to a 24 column printer. The Print function allows to print labels with progressive numeration and automatic incrementation, with all data related to the sample being examined.

The dedicated software **DeltaLog11** allows instrument management and data processing on PC. The use of the HD25.2 by more customers is facilitated by the "User Management" function, which allows, according to the case, to enable or disable some advanced functions of the instrument through password.

The protection degree is IP66.



Ordering codes

HD25.2K: The kit is composed of: instrument HD25.2, 4 empty cells, 5 calibration standards STCAL, 3 1.5Vdc alkaline batteries, lubricant rag, 25cc Silicon oil, instructions manual, carrying case and software DeltaLog11 for PCs running Windows 98 to Xp.

Accessories

9CPRS232: Connection cable SubD female 9- pole for serial output RS232C

CP22: Connection cable USB 2.0 connector type A - type B

SWD10: Stabilized power supply at 230Vac/9Vdc-300mA mains voltage.

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

PL: Lubricant rag

OS1: Silicon oil - 25cc.

KCV: 4 empty sample cells 24x68mm

Turbidity calibration standards

STCAL 1: Calibration standard with low turbidity formazin reference (0 NTU) - 20cc.

STCAL 2: Calibration standard with reference formazin 1 NTU - 20cc.

STCAL 3: Calibration standard with reference formazin 10 NTU - 20cc.

STCAL 4: Calibration standard with reference formazin 100 NTU - 20cc.

STCAL 5: Calibration standard with reference formazin 1000 NTU - 20cc.

KS: Kit 5 calibration standard with reference formazin STCAL 1, STCAL 2, STCAL 3, STCAL 4, STCAL 5.

TECHNICAL CHARACTERISTICS

Instrument

Dimensions (Length x Width x Height)	220x120x55mm
Weight (batteries included)	400g
Materials	ABS
Display	LCD 4½ characters plus symbols
Visible area:	52x42mm

Operating conditions

Instrument working temperature	0 ... 50°C
Storing temperature instrument	-25 ... 65°C
Working relative humidity	0 ... 90% R.H. without condensation
Storing of Calibration standards	5...25°C (temperature should not exceed, protect from light)

Protection degree IP66

Power supply

Batteries	3 1,5 V AA type batteries
Autonomy	100 hours with 1800mAh alkaline
Supply(cod. SWD10)	Mains adapter 100 240Vac/12Vdc-1A

Measuring methods

Standard	EPA180.1, ISO-NEPH (ISO 7027), EBC, ASBC, WHITE %T e IR %T
Light source	LED IR (850nm) and white LED (470nm)
Receiver	Silicium photodiode
Sample cell	24mm - height 68mm, 20cc

Measurement of turbidity

Method / Measuring range	EPA180.1 (0...2100 NTU) ISO-NEPH (0...150 FNU) EBC (0...37.5 EBC) ASBC (0...9999 ASBC) WHITE %T (0...100 %T) IR %T (0...100 %T)
Resolution	0.01 NTU (0...9.99 NTU) 0.1 NTU (10.0...99.9 NTU) 1 NTU (100...2000 NTU)
Accuracy	±2% reading + 0.01 NTU (0...500 NTU) ±3% reading (500...1000 NTU) ±5% reading (1000...2000 NTU)
Repeatability	±2% reading or 0.01 NTU (the major one)

Security of memorized data

Unlimited

Time

Date and hour	real time schedule
Accuracy	1min/month max error

Measured values storing

Quantity	999 samples
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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

USB interface

Type	1.1 - 2.0 electrically isolated
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Connections

Serial interface	DB9 connector (9- pole male)
USB interface	USB connector type B
Mains adapter	2- pole connector (Ø5.5mm-2.1mm).Positive at centre.

EMC standard regulations

Security	EN61000-4-2, EN61010-1 level 3
Electrostatic discharge	EN61000-4-2 level 3
Electric fast transients	EN61000-4-4 level 3, EN61000-4-5 level 3
Voltage variations	EN61000-4-11
Electromagnetic interference susceptibility	IEC1000-4-3
Electromagnetic interference emission	EN55020 class B

