



Instruction Manual

Portable USB Temperature/Humidity Probe



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SAFEGUARDS AND PRECAUTIONS



Read and follow all instructions in this manual carefully, and retain this manual for future reference.

Do not use this instrument in any manner inconsistent with these operating instructions or under any conditions that exceed the environmental specifications stated.

This instrument is not user serviceable. For technical assistance, contact the sales organization from which you purchased the product.



CAUTION: PROBE MAY BE HOT AFTER USE IN HIGH TEMPERATURE ENVIRONMENT. EXERCISE CAUTION.



In order to comply with EU Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE): This product may contain material which could be hazardous to human health and the environment. **DO NOT DISPOSE** of this product as unsorted municipal waste. This product needs to be **RECYCLED** in accordance with local regulations; contact your local authorities for more information. This product may be returnable to your distributor for recycling; contact the distributor for details.

Monarch Instrument's Limited Warranty applies.
See www.monarchinstrument.com for details.

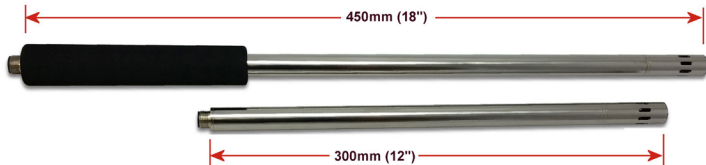
Warranty Registration and Extended Warranty Coverage information is available online at www.monarchinstrument.com.

TABLE OF CONTENTS:

1.0 DESCRIPTION.....	1
2.0 OPERATING PRINCIPLE	1
3.0 CONNECTION DETAIL	2
4.0 TH PROBE PC SOFTWARE	2
5.0 COMMUNICATION	3
6.0 COMMAND SET	4
7.0 SPECIFICATIONS	5
7.1 Compliance.....	7
8.0 ACCESSORIES.....	8

1.0 DESCRIPTION

The Portable USB Temperature/Humidity Probe combines high accuracy temperature and humidity sensors into a rugged 316 stainless steel probe. The probe is available in 12" [300 mm] or 18" [450 mm] lengths. Both lengths come standard with a free-flow stainless cap and the 18" [450 mm] length comes with a rubberized foam grip. Other tips are available depending on the application.



2.0 OPERATING PRINCIPLE

The sensor element is factory calibrated and all calibrations are stored on the sensor, which is field replaceable. This means the user can change the sensor and still maintain the calibrated accuracy of the probe.

Software is available for use with a PC or Android phone or tablet. The software allows the user to view the Temperature and Humidity and optionally Dew Point. Temperature and Humidity can be recorded to a file for later analysis and in case of the Android device can be emailed from the field. There is an option to save the file in a format compatible with the TH Probe Software so the data can be viewed in graphic format.

The probe is supplied with a custom M12 to USB cable and a USB On-The-Go (OTG) adapter for the Android device. In order to work with an Android phone, the phone requires a micro USB socket that supports the OTG function.

3.0 CONNECTION DETAIL

The probe output is a standard USB Type A plug connection (when using the supplied cable). The M12 connection on the probe is USB compatible and is as follows:

- Pin 1 +5V
- Pin 2 D- (Data)
- Pin 3 Common
- Pin 4 D+ (Data)
- Pin 5 No Connection



M12-5

4.0 TH PROBE PC SOFTWARE

The TH Probe PC Software is available for download from our website. It can be found on the [Portable USB Temperature/Humidity Probe](#) product page, under the **Downloads** tab.

The TH Probe PC Software will connect to the probe automatically and allow the user to see temperature, humidity and dew point. This data can be recorded.



The TH Probe Android™ software can be downloaded from the Google Play store or by scanning the QR Code on the right.



5.0 COMMUNICATION

The probe appears to a Windows™ PC as a virtual communication port (VCP) and requires an FTDI USB to VCP driver. For most computers this is built in to the operating system or will be found online by the system. This driver is also included with the software download. Once installed, the probe will be assigned a Comm Port, and will then communicate using simple ASCII commands with any terminal emulation program – you will need to know the Comm Port number which can be determined from the Device Manager (right click “My PC” or similar and select “Properties” then choose “Device Manager” then “Comm Ports” – this procedure may vary with different versions of Windows™).

6.0 COMMAND SET

The following commands are implemented in the probe. Communication is serial ASCII:

Commands	Command Description	Reply (in ASCII)
@PI<CR>	Send Product ID (Default ID is THPROBE)	@PI OK THPROBE
@ME 1<CR>	Measurement enable (Default condition)	@ME 1 OK
@D0<CR>	Send one set of data (Sends data as XXX.X °C, XX.X %RH)	@D0 OK degC, %RH
@D1<CR>	Start data stream (sends updated data at DSPLR rate, Sends data as XXX.X °C, XX.X %RH)	@D1 OK degC, %RH>
@D2<CR>	Stop data stream out	@D2 OK
@DSPLR=nn<CR> (nn in seconds)	Change update rate in seconds (default 2sec) for @D1 command	@DSPLR OK
@BD n<CR> n = 0,1,2,3,4,5,6	Change baud rate 0=250K, 1=115K, 2=56K, 3=38K, 4=19K, 5=9600,6=4800 (default is XXXX)	@BD OK
@SERNO<CR>	Send serial number	@SERNO <value>

7.0 SPECIFICATIONS

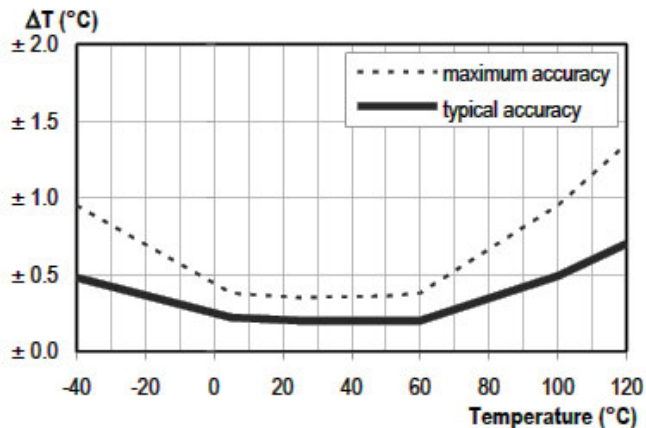
Specifications*	Portable USB Temp/Humidity Probe	
Temperature:		
Max Range**	Probe tip only	-40 °F to 257 °F / -40 °C to 125 °C
Recommended Operating Range		32 °F to 185 °F / 0 °C to 85 °C
Accuracy	32 to 212	±0.4 °F typical
	0 to 100	±0.2 °C typical
Repeatability		0.2 °F / 0.1 °C
Relative Humidity:		
Range		0 - 100% RH
Accuracy (@25 °C)	10 to 90	±1.8% RH typical
Repeatability		±0.1% RH
Response	T ₆₃ ***	10 sec.

***Specifications are subject to change without notice.**

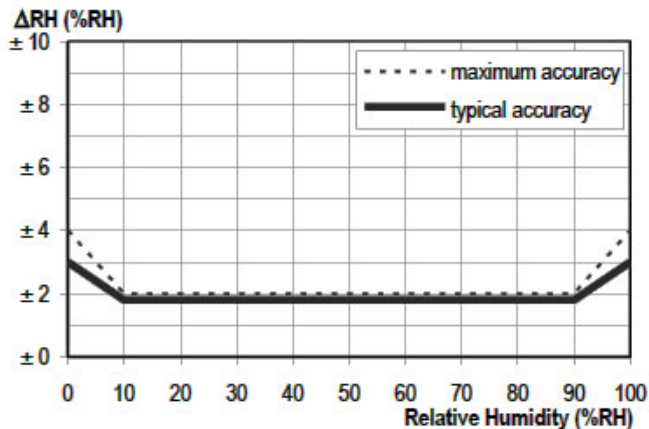
****Note:** This specification applies to the probe sensor. The bottom 6 in. [15 cm] of the probe should not be exposed to temperatures above 85 °C (185 °F) or below 0°C (32 °F).

*****Tau 63%** — To achieve 63% of a step function at 25 °C with 1 m/sec airflow using the slotted cap (note change in spec and footnote text)

Note: Immediately after prolonged exposure to high temperatures (> 80 °C or 176 °F), the sensor may temporarily read a negative humidity offset (typical -1 to -2 %RH) which will slowly disappear when the sensor is exposed to ambient conditions. (Up to 48 hours)



Typical and maximal tolerance for temperature in °C.



Typical and maximal tolerance at 25 °C for relative humidity.

7.1 Compliance

CE compliant.

RoHS Compliant.

Meets the safety requirements of IEC61010-1.

Manufactured in an ISO9001 facility

8.0 ACCESSORIES

[See webpage for details.](#)

Sintered Stainless Steel Filter Cap (30-45 microns) PN: 6184-901



Sintered Stainless Steel Filter Cap (60-90 microns) PN: 6184-902



Carry Case for Portable USB Temp/Humidity Probe PN: 6184-910



USB Temp/Humidity Probe Software on CD PN: 6184-999



USB On-The-Go Cable PN: 5396-9913



Replacement M12 to USB Cable 1 m PN: 6184-911



Replacement Pre-Calibrated T/H Sensor PN: 6184-012



Replacement NIST Traceable Calibrated T/H Sensor with Certificate PN: 6184-012-CAL



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Monarch Instrument is committed to excellence and quality in manufacturing, sales, and service.



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