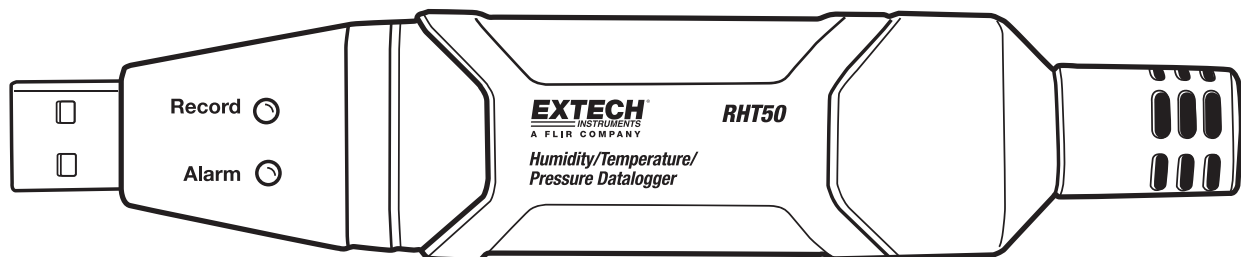# User's Guide

EXTECH® INSTRUMENTS

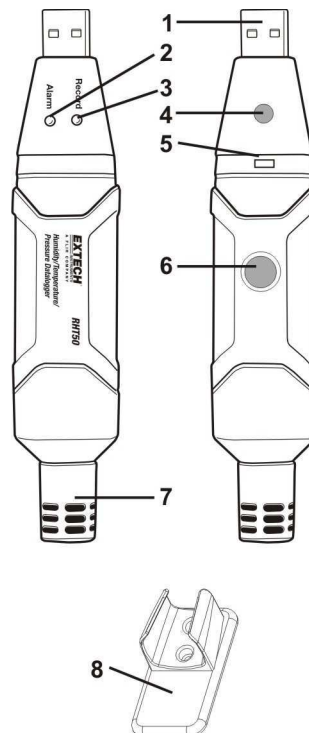# Humidity + Temperature + Pressure Datalogger

Model RHT50

Introduction

Congratulations on your purchase of the Relative Humidity / Temperature / Pressure Datalogger. This datalogger can measure and store up to 10,000 readings. The user can easily configure the logging rate, high/low alarm and start-mode, and download the stored data by plugging the module into a PC's USB port and running the supplied PC software. Data can then be graphed, printed and exported to other applications. The data logger is supplied with a long-life lithium battery, which can typically allow logging for one year. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

Features

- Memory 10,000 temperature, humidity and pressure readings
- Selectable data sampling rate: 1 minute to 18 hours
- Manual and automatic start
- Status Indication via Red/Yellow LED and Green LED
- USB Interface for Set-up and Data Download
- User-Programmable Alarm Thresholds
- Long battery life

Description

1. USB connector
2. Alarm LED (red/yellow)
3. Record LED (green)
4. Start button
5. Battery cover latch
6. Tripod mount
7. RH, Temperature, Pressure sensors
8. Mounting bracket

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INSTALLING THE GRAPHING SOFTWARE

Install the supplied Windows[TM] PC Datalogger Software by placing the supplied program disk in the PC's CD-ROM drive. If the installation program does not automatically open and provide on-screen prompts, open and browse the CD-ROM drive, then find and double-click on the SETUP.EXE file included on the program disk. Follow the on-screen prompts to complete the installation.

Before running the graphing software, please connect the RHT50 to the PC and install the USB Driver software as described in the next section.

INSTALLING THE USB DRIVER

Plug the RHT50 into an available USB port on the PC. If this is the first time that the RHT50 has been connected to the particular port on the PC, the following screen will appear:

Make sure the program disk is still in the PC CD-ROM drive. Select the 'recommended' installation and follow the on-screen prompts to complete the driver installation. If this is a repeat connection of the RHT50 to the USB port, the driver installation process will be automatically skipped.

Refer to the HELP utility in the software program for detailed instructions on using the software to download and process recorded data. The LED status guide provided below is offered for easy reference.

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LED STATUS GUIDE

LEDs Record Alarm	Meaning	
⚪ ⚪	No LED	Logging not started
	No LED	Logging stopped *
	No LED	Battery discharged **
🟢 ⚪ Green	Green flash (single):	Logging indication *****
	Green flashes (five)	Reset
	Green flashes (six)	Start Logging
⚪ 🔴 Red	Red double flash every 30 sec.	Low battery ***
	Red single flash	Logging, alarm event ****
	Red flashes (six)	Stop logging *
⚪ 🟡 Yellow	Yellow flash every 20 seconds	Memory full *

- * Connect the datalogger to the PC and download data
- ** Replace the battery, data will not be lost
- *** Logging will stop, data will remain in memory
- **** Occurs if an alarm is exceeded
- ***** Flash cycle time is set from the software

Specifications

	Range	Accuracy
Relative Humidity	0 to 20 and 80 to 100%	±5.0%
	20 to 80%	±3.5%
Temperature	-40 to 32°F and 104°F to 158°F -40 to 0°C and +40 to +70°C	±3.6^{o}F/±2°C
	32°F to104^{o}F/0°C to +40°C	±1.8^{o}F/±1°C
Pressure	950 to 1050hPa (kPa, Bar, PSI)	Accuracy: ±0.25%FSO @ (25°C) Repeatability: ±0.25%Max+±0.3%FSO) Linearity/Hysteresis: ±0.24%FSO Temperature coefficient: ±0.1%FSO
	Notes: FSO: Full Scale Output 1psi = 68.947 mbar = 0.068947 bar 1 psi = 6894.7 Pa = 68.947 hPa = 6.8947 kPa	
Resolution	0.1%RH, 0.1^{o}C/F, 0.1hPa	
Data storage	10,000 measurements	
Logging rate	Selectable sampling interval: From 1 minute up to 18 hours	
Operating temperature	-35 to 80°C (-31 to 176°F)	
Battery type	3.6V Lithium (1/2 AA) (SAFT LS14250, Xeno XL050F or equivalent)	
Battery life	1 year (typ.) depending on logging rate, ambient temperature, & use of Alarm LEDs	
Dimensions/Weight	101x25x23mm (4x1x.9") / 172g (6oz)	

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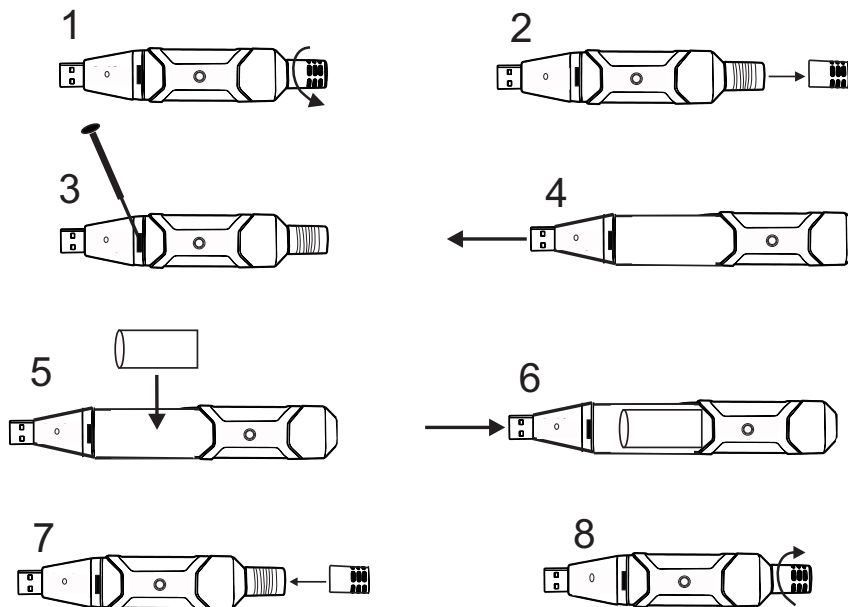
Battery Replacement

It is highly recommended that the battery be replaced every 12 months, or prior to logging critical data.

The RHT50 does not lose its stored readings when the battery weakens or when the battery is replaced; the data logging process will however be stopped and cannot be re-started until the battery has been replaced and the logged data has been downloaded to PC.

Use only 3.6V lithium batteries. Before replacing the battery, remove the datalogger from the PC. Follow diagrammatic steps below.

NOTE: Leaving the RHT50 plugged into the PC USB port longer than necessary will cause some of the battery capacity to be lost.

1. Unscrew the protective sensor cap counter-clockwise.
2. Remove the protective cap and safely set it aside.
3. While inserting a small flat blade screwdriver into the slot and applying moderate pressure to the locking tab, pull the front (USB side) of the RHT50 outward.
4. Completely disassemble the meter to access the battery compartment.
5. Insert battery.
6. Re-assemble the meter.
7. Replace the cap.
8. Hand-tighten the cap in a clockwise motion. Do not over tighten.

WARNING: Handle lithium batteries carefully, observe warnings on battery casing. Dispose of in accordance with local regulations.

You, as the end user, are legally bound (**EU Battery ordinance**) to return all used batteries, **disposal in the household garbage is prohibited!** You can hand over your used batteries / accumulators at collection points in your community or wherever batteries / accumulators are sold!

Disposal: Follow the valid legal stipulations in respect of the disposal of the device at the end of its lifecycle

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