



# User Manual

PCE-THD 50 Temperature and Humidity Data Logger



User manuals in various languages (français, italiano, español, português, nederlands, türk, polski, русский, 中文) can be found by using our product search on: [www.pce-instruments.com](http://www.pce-instruments.com)

Last change: 22 December 2021  
v1.0



## Contents

<b>1</b>	<b>Safety notes</b> .....	<b>1</b>
<b>2</b>	<b>Delivery scope</b> .....	<b>2</b>
<b>3</b>	<b>Accessories</b> .....	<b>2</b>
3.1	Technical specifications .....	3
3.2	Front .....	4
3.3	Display .....	4
<b>4</b>	<b>Operating instructions</b> .....	<b>5</b>
4.1	Measurement .....	5
4.2	Dew point measurement .....	5
4.3	MAX/MIN mode .....	5
4.4	Hold function .....	5
4.5	Save and retrieve data .....	6
4.6	Thermocouple temperature measurement .....	6
4.7	Automatic power-off / backlight .....	6
4.8	Data recording .....	7
4.9	Charge battery .....	7
<b>5</b>	<b>Contact</b> .....	<b>7</b>
<b>6</b>	<b>Disposal</b> .....	<b>7</b>

## 1 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage to the meter.
- The instrument may only be used if the environmental conditions (temperature, relative humidity, ...) are within the ranges stated in the technical specifications. Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or moisture.
- Do not expose the device to shocks or strong vibrations.
- The case should only be opened by qualified PCE Instruments personnel.
- Never use the instrument when your hands are wet.
- You must not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth. Use only pH-neutral cleaner, no abrasives or solvents.
- The device must only be used with accessories from PCE Instruments or equivalent.
- Before each use, inspect the case for visible damage. If any damage is visible, do not use the device.
- Do not use the instrument in explosive atmospheres.
- The measurement range as stated in the specifications must not be exceeded under any circumstances.
- Non-observance of the safety notes can cause damage to the device and injuries to the user.

We do not assume liability for printing errors or any other mistakes in this manual.

We expressly point to our general guarantee terms which can be found in our general terms of business.

If you have any questions please contact PCE Instruments. The contact details can be found at the end of this manual.



## **2 Delivery scope**

- 1 x temperature and humidity data logger PCE-THD 50
- 1 x K-type thermocouple
- 1 x USB cable
- 1 x PC software
- 1 x user manual

## **3 Accessories**

- USB mains adaptor NET-USB

### 3.1 Technical specifications

<b>Air temperature</b>	
Measurement range	-20 ... 60 °C (-4 ... 140 °F)
Accuracy	±0.5 °C @ 0 ... 45 °C, ±1.0 °C in remaining ranges ±1.0 °F @ 32 ... 113 °F, ±2.0 °F in remaining ranges
Resolution	0.01 °C/°F
Measurement rate	3 Hz
<b>Relative humidity</b>	
Measurement range	0 ... 100 % RH
Accuracy	±2.2 % RH (10 ... 90 % RH) @ 23 °C (73.4 °F) ±3.2 % RH (<10, >90 % RH) @23 °C (73.4 °F).
Resolution	0.1 % RH
Response time	<10 s (90 % RH, 25 °C, no wind)
<b>Thermocouple</b>	
Sensor type	K-type thermocouple
Measurement range	-100 ... 1372 °C (-148 ... 2501 °F)
Accuracy	±(1 % ±1 °C)
Resolution	0.01 °C/°F 0.1 °C/°F 1 °C/°F
<b>Calculated quantities</b>	
Wet bulb temperature	-20 ... 60 °C (-4 ... 140 °F)
Dew point temperature	-50 ... 60 °C (-58 ... 140 °F)
<b>Further technical specifications</b>	
Internal memory	99 data groups
Power supply	3.7 V Li-ion battery
Operating conditions	0 ... 40 °C (32 ... 104 °F) <80 % RH, non-condensing
Storage conditions	-10 ... 60 °C (14 ... 140 °F) <80 % RH, non-condensing
Weight	248 g (0.55 lbs)
Dimensions	162 mm x 88 mm x 32 mm (6.38 x 3.46 x 1.26 ")



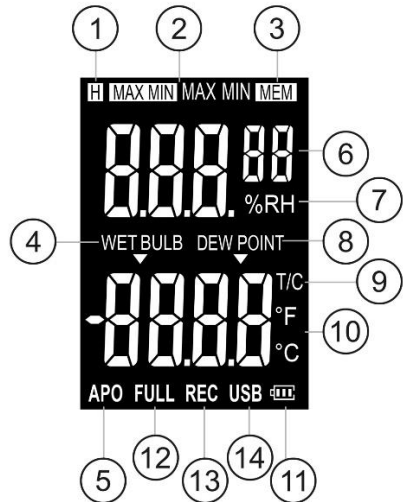
### 3.2 Front

1. Sensor and protective cap
2. LC display
3. Data retrieval key
4. SAVE key
5. On/off key + automatic power off
6. K-type thermocouple socket
7. UNIT key to switch the unit °C/°F
8. MODE key (dew point / wet Bulb / ambient temperature)
9. REC key
10. MIN/MAX key
11. HOLD key




### 3.3 Display

1. Hold function starts, value is frozen
2. MAX/MIN recording mode starts, MAX/MIN value is displayed
3. Display of the measured value from the internal memory
4. Wet bulb temperature
5. Automatic power off
6. Memory location no. of the measured value from internal memory
7. Relative humidity unit
8. Dew point temperature
9. K-type thermocouple temperature
10. Temperature unit
11. Battery level indicator
12. Icon for full memory
13. Icon for recording
14. Icon for connection with the computer via USB



## 4 Operating instructions

### 4.1 Measurement

1. Press the  key to turn on the meter.
2. Keep the meter in the environment under test and allow sufficient time for the readings to stabilize.
3. Press the UNIT key to select the unit °C or °F for the temperature measurement.

### 4.2 Dew point measurement

The meter displays the ambient temperature value while it is on. Press the MODE key once to display the dew point temperature (DP). Press the MODE key once more to display the wet bulb temperature (WBT). Press the MODE key one more time to return to the ambient temperature. The DP or WBT icon will be displayed when you select the dew point or wet bulb temperature.

### 4.3 MAX/MIN mode

1. You must select the dew point, wet bulb or ambient temperature before checking the MIN/MAX readings.
2. Press the MIN/MAX key once. The "MAX" icon will appear on the LCD and the maximum value will be displayed until a higher value is measured.
3. Press the MIN/MAX key again. The "MIN" icon will appear on the LCD and the minimum value will be displayed until a lower value is measured.
4. Press the MIN/MAX key again. The "MAX/MIN" icon flashes on the LCD and the real-time value is displayed. The MAX and MIN values are recorded at the same time.
5. Pressing the MIN/MAX key one more time will take you back to step 1.
6. To exit MAX/MIN mode, press and hold the MIN/MAX key for approximately 2 seconds until the "MAX MIN" icon disappears from the LCD.

#### Note:




When MAX/MIN mode starts, all of the following keys and functions are disabled: SAVE and HOLD.

### 4.4 Hold function

When you press the HOLD key, the readings are frozen, the "H" symbol appears on the LCD and the measurement is stopped. Press the HOLD key again to return to normal operation.



#### 4.5 Save and retrieve data

1. The meter can save up to 99 groups of readings for later recall. Each memory location saves relative humidity and ambient temperature as well as either thermocouple temperature, dew point temperature or wet bulb temperature.
2. Press the SAVE key to save the current data to a memory location. The LCD will automatically return to the real-time display within 2 seconds. After 99 memory locations are used up, the subsequently saved data will overwrite the previously saved data of the first memory location.
3. Press the  key to recall the saved data from the memory. Press the ▲ or ▼ key to select the memory location you need. Press the  key for 2 seconds to return to normal mode.
4. When a memory location is recalled, the relative humidity and ambient temperature or thermocouple temperature values saved in that memory location are displayed by default. Press the MODE key to toggle between the wet bulb or dew point temperature values saved in the displayed memory location.
5. To clear all 99 data saved in the memory, press and hold both SAVE and  keys for 3 seconds.

#### 4.6 Thermocouple temperature measurement


If contact temperature measurement on objects is required, use the thermocouple probe. Any K-type thermocouple can be connected to this instrument. When the thermocouple is plugged into the socket on the meter, a "T/C" icon appears on the LCD. Now the thermocouple makes a temperature measurement.


#### 4.7 Automatic power-off / backlight

If no key is pressed within 60 seconds in APO (auto power off) mode or recording mode, the backlight will automatically dim to save power. Press any key to return to high brightness.

In non-APO mode, the backlight is always very bright.

To prolong the battery life, the device switches off automatically after approx. 10 minutes without operation.

Press the  key lightly to enable or disable the APO function. When the APO icon disappears, it means that auto power off is disabled.

Press the  key for about 3 seconds to turn off the meter.

#### Note:

In recording mode, the APO function is automatically disabled.



#### 4.8 Data recording

1. The hygrometer has a memory for 32000 data records.
2. Before using the data logging function, you must set up the parameters via the Smart Logger PC software. For detailed operation, please refer to the help file of the Smart Logger software.
3. When the logging start mode is set to "by key", pressing the REC key on the meter will start the data logging function. The "REC" icon will now appear on the LCD.
4. When the data recordings reach the pre-set quantity, the "FULL" icon will appear on the LCD and the meter will automatically turn off.
5. In data logging mode, when the power key is pressed to turn off, the "REC" icon will flash. Release the power key immediately to cancel power off or press and hold the power key for 3 seconds to turn the meter off and data logging will stop.

#### 4.9 Charge battery

When the battery level is insufficient, the battery icon will flash on the LCD screen. Use the DC 5V mains adaptor to connect to the micro USB charging port at the bottom of the meter. The battery icon on the LCD screen indicates the charge level. Use a power adaptor that meets the safety specifications.

### 5 Contact

If you have any questions, suggestions or technical problems, please do not hesitate to contact us. You will find the relevant contact information at the end of this user manual.

### 6 Disposal

For the disposal of batteries in the EU, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.





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