HIOKI
1995

8005

HUMIDITY HiPLAY

INSTRUCTION MANUAL

1. Introduction

Monitoring temperature and humidity is a vital first step toward quality control in factories and warehouses. The 8005 Humidity HiPlay has been developed to provide continuous monitoring of temperature and humidity with a graphical display of changes over the last 24 hours. The liquid crystal display panel eliminates troublesome recording paper, and battery operation means that the unit can be installed with the minimum of fuss.

2. Preparations for Use

(1) The temperature/humidity sensor has a plug and it is attached to the connector on the main unit, as shown in Figure 1.

(2) Use a suitable coin to open the lid of the battery compartment, and insert six R6/AA batteries as shown in Figure 3. Be careful to ensure that the battery polarity is correct. After inserting the batteries, press the temperature or humidity button to begin measurement.

(3) To mount the unit on the wall, fix the supplied wood screw in the wall, and hang the unit by the wall-mounting hole shown in Figure 2. Additionally applying the double-sided adhesive tape at the two positions provides a more stable mounting.

(4) For tabletop use, fixing the supplied stand in the wall-mounting hole allows the unit to be used at a 45-degree angle.

3. Starting Measurement

(1) The temperature and humidity readings appear on the liquid crystal display panel. The range of the temperature display, from −20 to +40 ℃, or the humidity range, from 0 to 100%, appears at both sides of the display. The time is shown along the bottom of the display, covering a 24-hour interval from midnight to midnight.

(2) Measurement starts when you press the temperature or humidity button after inserting the batteries. If you first press the temperature button shown in Figure 1, the current temperature reading appears as a vertical bar on the gragh. The measurement process is then repeated every six minutes, and successive readings are stored in internal memory. The room temperature is indicated by the display of the width corresponding to the time from starting measurement to the current time. Thus the example shown in Figure 4 shows the display after about one hour of operation. If the graph display does not appear, or is indistinct, by pressing the temperature key, adjust the contrast by gently turning the control on the right hand side of the unit (see Figure 1) until the display is clear.

(3) If the position of the display as shown in Figure 4 does not correspond with the current time, press the temperature button, and then the clock button. This displays the time, both numerically and with a vertical cursor (see Figure 5). Pressing the clock advance button (see Figure 1) moves the graph slowly to the right, and pressing the clock retard button moves the graph slowly to the left. When the time is set correctly, press the clock button again, to change to the display shown in Figure 6. The example shown in Figures 4 and 6 has the graph moved from an incorrect time of 1 pm to 4 pm.

(4) Next press the humidity button to display the humidity graph aligned correctly with the current time.

(5) When you release the temperature or humidity button, the display remains for about ten seconds before disappearing.

(6) The unit has a quartz clock, so the timekeeping is accurate.

(7) As shown in Figure 7, the temperature graph continuously shows the readings for the previous 24 hours which are retained in memory, and the readings before the previous 24 hours are erased from the internal memory automatically. There is a white gap corresponding to 30 minutes before the current time to indicate clearly the break for the previous day's recording.

(8) Accurate values of the current readings of temperature and humidity also appear at the top of the display in numerical form.

(9) The measurement ranges for temperature and humidity are from −20 to +40 ℃, and from 0 to 90% humidity, but the operating ranges for the unit are from 0 to 40 ℃, and from 0 to 80% humidity. So, for measurements outside this operating range, use the optional extension cable to install the temperature/humidity sensor remotely from the unit.

4. Battery Replacement

When the batteries are almost exhausted, if you press the temperature or humidity button, the message "CHANGE BATTERY" appears in the center of the display. The batteries will last for about one week after the message first appears, but should be changed as soon as is practicable.

(1) Use six alkali R6/AA cells. Remove the used batteries, and follow the procedure under item (2) in Section 2. "Preparations for Use" to insert the new ones.

(2) After replacing the batteries, if the time displayed on the graph is not correct, follow the procedure under item (3) in Section 3. "Starting Measurement" to set the clock to the current time.

(3) Dispose of the used batteries in the prescribed manner and in the proper location according to their type. Never attempt to disassemble used batteries or throw them in a fire.

5. Principles of Temperature and Humidity Measurement

The temperature sensor uses the principle that the resistance of a metal changes with temperature. The element used has a thin film of pure platinum with a resistance at 0 ℃ of 1000 ohms, and a variation of 4 ohms per degree Celsius. The temperature is thus determined by measuring the variation in resistance. Pure platinum is very stable, and will provide reliable measurements for many years, with an accuracy of ±1 ℃.

The humidity sensor uses a humidity-sensitive polymer, whose impedance changes with humidity. With the associated measurement circuit, this provides high accuracy: ±5% at 25 ℃.

6. Liquid Crystal Display Panel

At temperatures below 0 ℃ the response of the display may become sluggish or the display may not appear at all. Again, at temperature over 60 ℃ the display may blacken, but since the unit is installed at normal room temperatures not subject to such extreme variation there is no danger of display faults.

7. Temperature/Humidity Sensor (Model 9189)

If damaged as a result of years of use, the sensor is available separately. Since the sensor is standardized, the unit can be used immediately after replacement.

8. Extension Cables (Model 9258: 5 m, Model 9259: 10 m)

To monitor a remote location, simply use one of the optional extension cables. Disconnect the sensor from the main unit, and connect it to the extension cable, then plug in the other end of the extension cable in the connector of the main unit.

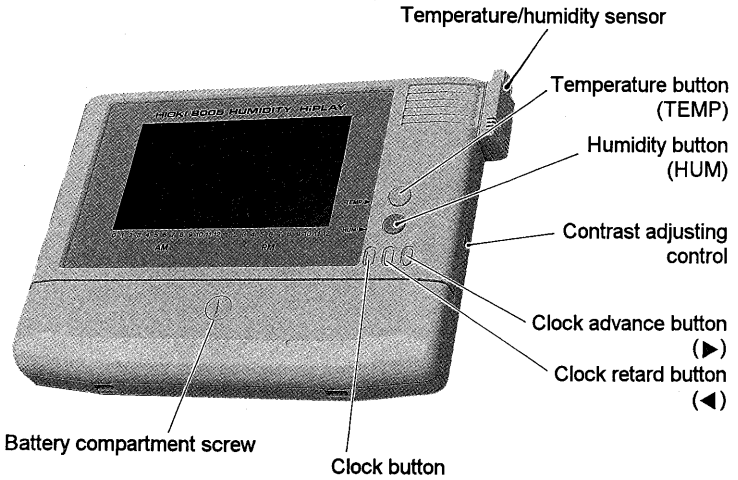

Fig 1

External dimensions: Approx. 150 (H) × 200 (W) × 27 (D)
Weight: Approx. 600 g (including batteries)

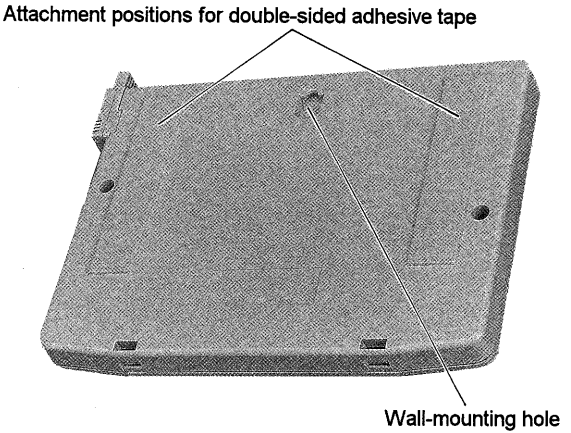

Fig 2

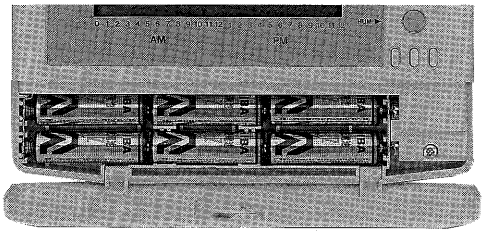

Fig 3

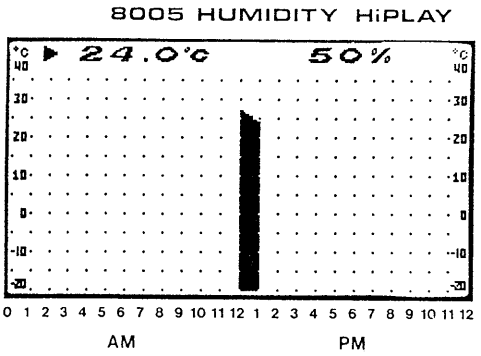

Fig 4

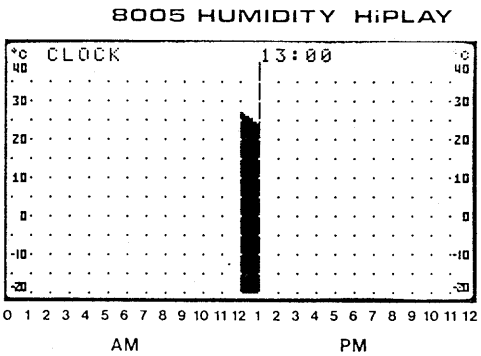

Fig 5

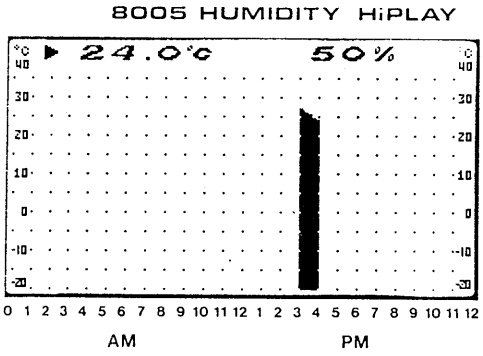

Fig 6

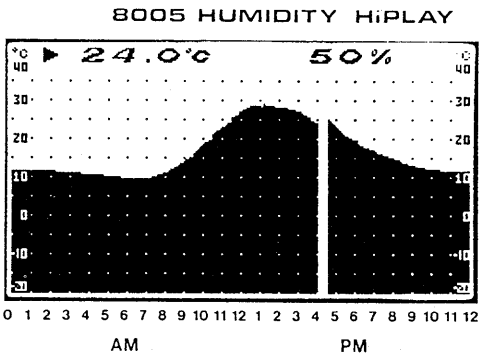

Fig 7

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