# TRACEABLE® DIGITAL THERMOMETER INSTRUCTIONS

**SPECIFICATIONS**

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|---|---|
| **Display:** | 1", 6-Digit LCD |
| **Ranges:** | –58.000 to 302.000°F / –50.000 to 150.000°C |
| **Resolution:** | 0.001° |
| **Accuracy:** | ± 0.05°C between 0 to 100°C |
| **Sampling Time:** | approximately 4 times per second |
| **Memories:** | 48 Memories are stored in the History Mode (min/max for the past 24 hours) 2 Memories are stored in the Min/Max Mode (min/max for the current hour) |
| **Power:** | One (1) 9-Volt alkaline battery |
| **Case:** | ABS plastic |
| **Size:** | 3½ x 5½ x 1¼ inches |
| **Accessories:** | probe (depends on model), battery, |
| **Supplied:** | Traceable® Certificate, instructions, and data acquisition software without cable. |

**Display warnings:** measurements above or below range and low battery indicator

**CONFIGURATIONS**

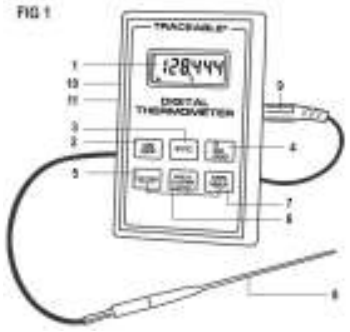
This Traceable® Digital Thermometer is supplied in three different configurations. The only difference between these configurations is the type of probe which is supplied or used with the thermometer.

**Cat. No. 4000** Supplied with a triple-purpose stainless-steel probe. Additional probes are available for this unit (see Accessories).

**Cat. No. 4006** Designed to work with any YSI-400 Series probe. Supplied with a YSI-401 General Purpose probe. The only visible difference from the 4000 is the ¼" probe receptacle.

**Cat. No. 4005** Designed to work with any YSI-400 Series probe. No probe is provided with this unit. The only visible difference from the 4000 is the ¼" probe receptacle.

**NOTE:** Probes are NOT interchangeable between the 4000 and the 4005/4006 because both the electrical characteristics and the probe receptacles sizes are different.




**DESCRIPTION**

**1. Display:** 6-Digits, LCD shows reading up to 0.001 resolution. ▲ Arrow indicates temperature is rising. ▼ Arrow indicates temperature is falling.

**2. ON/OFF:** Turns unit on and off.

**3. °F/°C:** Selects Fahrenheit/Celsius temperature display.

**4. .0/.00/000:** Selects decimal point on display for ease in reading.

**5. HISTORY:** Stores and displays a total of 48 memories (24 minimum and 24 maximum readings; displays the mm/max readings during the first hour, the second hour, etc for the last 24 hours).

**6. HOLD/CLEAR:** Press to hold reading. Use in conjunction with history or Min/Max keys to exit these modes or dear readings.

**7. MIN/MAX:** Displays the highest and lowest temperatures recorded for the current hour.

**8. Probe**

**9. Probe receptacle**

**10. AC Adaptor receptacle**

**11. Serial Data Cable Receptacle for Data Acquisition System**

**OPERATION**

1. Plug the probe into the receptacle located on the right side of the unit (9, fig. 1).
2. Press the ON/OFF key (2, fig. 1) to turn the unit on.
3. Press the °F/°C key (3, fig. 1) to change the display to Fahrenheit or Celsius.
4. Press the .0/.00/.000 key (4, fig. 1) to change the display to read the desired resolution.
5. Turn the ON/OFF key (2, fig. 1) to the "OFF" position when the thermometer is not in use to prolong battery life.
6. Use the probe to monitor temperatures in air/gas, liquids, and semi-solids. Place the stainless-steel portion of probe in contact with the material to be measured. In most instances the depth of the probe needs to be approximately ½ inch.

**HISTORY MODE**

History provides an effortless method to observe when a temperature change takes place. It continuously displays for the past 24 hours starting with 1 hour ago. If left on for more than 24 hours, it displays only the most recent 24 hours. History may be reviewed at any time.

1. After 1 hour, Press HISTORY (5, fig. 1) once to show the current or first hour reading. The display will show "1" on the far right to indicate this is the first reading. After approximately two seconds, the display will show the temperature and "min" which indicates this is the minimum reading for the first hour. After approximately two more seconds, the display will again show "1". The display continues to alternate between these two displays. While in the history mode, the °F/°C (3, fig. 1) or .0/.00/.000 (4, fig. 1) keys may be used to select the desired format.
2. The second press of the HISTORY key shows the maximum temperature for the current or first hour. After approximately two more seconds, the display will show "1".
3. With each press of the HISTORY key, the unit will scroll through all 48 minimum and maximum readings.
4. To exit the history mode, press the CLEAR key (7, fig. 1) or MIN/MAX key (8, fig. 1). As long as the unit is in the history mode, pressing the CLEAR key alone will not clear the history.
5. To clear history, first exit history mode (see 4 above) and then press HISTORY and CLEAR simultaneously. Turning the unit off does not clear history.

**RECALL MINIMUM/MAXIMUM**

1. Press MIN/MAX (8, fig. 1) to view the minimum and maximum temperatures recorded since turning the unit on or since clearing min/max.
2. Press the MIN/MAX key once to display the minimum temperature. The lower portion of the display shows "MIN" indicating that this is the minimum reading. While in the MIN/MAX mode, select the desired format with the °F/°C (3, fig. 1) or .0/.00/.000 (4, fig. 1) keys.
3. Press the MIN/MAX key again to display the Maximum temperature. The lower portion of the display shows "MAX" indicating that this is the maximum reading. A third press will return the display to the current reading.
4. MIN/MAX may be reviewed at any time.
5. To clear the MIN/MAX, place the unit in normal mode (not reviewing the MIN/MAX) and press MIN/MAX and CLEAR simultaneously. You may also clear MIN/MAX by turning the unit off.

**HOLD FUNCTION**

1. Press the HOLD key (6, fig 1) once to "freeze" the display at the current temperature reading. "HOLD" appears on the lower portion of the display indicating that the unit is in hold mode.
2. While in the HOLD mode, select the desired format with the °F/°C (3, fig. 1) or .0/.00/.000 (4, fig. 1) keys.
3. Press the HOLD key a second time to return to the current temperature reading. "HOLD" will no longer appear on the display.

**POWER**

Do not turn the unit on and off rapidly. It may lock the display. When turning the unit on/off the microprocessor may become locked, inoperable, or the display may read "888888." If this occurs, reset the thermometer by removing the battery, waiting 15 seconds, and replacing the battery.

**DISPLAY WARNINGS**

**"LLL"** Displayed when the temperature being measured is below the range of the unit or when there is an open probe or no probe.

**"HHH"** Displayed when the temperature being measured is above the range of the unit or when there is a shorted probe.

**"BAT"** Displayed when the battery is low and needs to be replaced. See Battery section for battery replacement instructions.

**RECEPTACLES**

The receptacle on the right side of the unit (9, fig. 1) is for the probe. The upper left side receptacle (10, fig.) is for an AC Adaptor. The lower left side receptacle is for the serial data cable for the Data Acquisition System (11, fig. 1).

**DATA ACQUISITION SOFTWARE**

The enclosed disk is the software program for data acquisition. On the disk is the data acquisition program and a demo program. The program can be installed and the demo. For instructions on use, print out the READ ME file on the disk. Windows® is required. In order to use the actual data acquisition program the **Accessory Data Cable Cat No. 4235** is required. See Accessories section for ordering information.

**BATTERY**

If the letters "BAT" appear on the display, it indicates the batteries are low and need to be replaced. To replace the battery, slide the battery cover located on the back of the unit away from the unit. Remove the old battery and replace it with a new 9-Volt alkaline battery. Use an alkaline battery, NOT a regular or heavy duty battery. Properly connect the battery. Replace the battery cover. Incorrectly installed batteries may damage electronics.

Turn the ON/OFF key (2, fig. 1) to the "OFF" position when the thermometer is not in use to prolong battery life.

**ALL OPERATIONAL DIFFICULTIES**

If this thermometer does not function property for any reason please replace the battery with a new 9-Volt alkaline battery Battery section, above). Low battery power can occasionally cause any number of "apparent" operational difficulties. Replacing the battery with a new fresh battery will solve most difficulties.

**ACCESSORIES**

**Cat. No. 4021 Accessory Micro Probe for Cat. No. 4000**
Stainless steel, 0.04" diameter, 5½" overall length, 5¾" cable length.

**Cat. No. 4022 Accessory Surface Probe**
Measures surface temperatures. 5¾" overall length, 6' cable length.

**Cat. No. 4023 Accessory Air Probe**
Measures air temperatures only. 6¼" overall length, 6' cable length.

**Cat. No. 4001 Replacement probe for Cat. No. 4000**
Stainless steel, ⅛" diameter, 8¼" overall length, 5½" cable length.

**Cat. No. 4005 Traceable® Digital Thermometer for YSI Series 400 probes**
Identical to Cat. No. 4000 thermometer but accepts only YSI series 400 probes. Supplied without probe.

**Cat. No. 4006 Traceable® Digital Thermometer for YSI Series 400 probes**
Identical to Cat. No. 4000 thermometer but accepts only YS1 series 400 probes/ Supplied with YSI-401 General Purpose probe.

**Cat. No. 4002 Padded Nylon Carrying Case**
For use with 4000, 4005, and 4006.

**Cat. No. 4236 AC Adaptor**
Accessory for use with 4000, 4005, and 4006; allows for continuous AC operation.

**Cat. No. 4235 Data Acquisition System**
Accessory Complete Data Acquisition System captures, displays, and stores readings in Windows®. Data can be read as or imported into databases, spreadsheets, word processors, and statistical programs. Includes the latest version of the program on disk and 36" serial cable that plugs into instrument and computer serial port.

**Cat. No.**

**4000 Traceable® Digital Thermometer**

**4005 Traceable® Digital Thermometer for YSI Series 400 probes** (Supplied without probe)

**4006 Traceable® Digital Thermometer for YSI Series 400 probes** (Supplied with YSI general purpose probe)

**WARRANTY, SERVICE, OR RECALIBRATION**

For warranty, service, or recalibration, contact: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Control Company is ISO 9001 Quality-Certified by DNV and ISO 17025 accredited as a Calibration Laboratory by A2LA.