

9. Warranty

OAKTON warrants this meter to be free from significant deviations in material and workmanship for a period of one year from date of purchase. OAKTON warrants this probe to be free from significant deviations in material and workmanship for a period of six months from date of purchase. If repair or adjustment is necessary and has not been the result of abuse or misuse within the warrantied time period, please return—freight prepaid—and correction will be made without charge. OAKTON alone will determine if the product problem is due to deviations or customer misuse.

Out-of-warranty products will be repaired on a charge basis.

10. Return of items

Authorization must be obtained from your OAKTON distributor before returning items for any reason. When applying for authorization, please include data regarding the reason the items are to be returned. For your protection, items must be carefully packed to prevent damage in shipment and insured against possible damage or loss. We will not be responsible for damage resulting from careless or insufficient packing. A restocking charge will be made on all unauthorized returns.

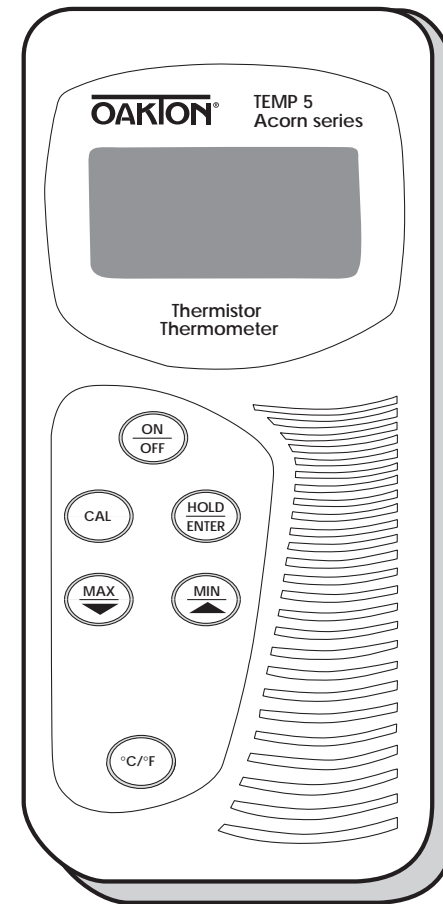
NOTE: We reserve the right to make improvements in design, construction, and appearance of products without notice.

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OPERATING INSTRUCTIONS

OAKTON WD-35626-00, -10, -20

TEMP 4, TEMP 5 and TEMP 6 Acorn Series Meters



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OAKTON®

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1. Introduction

Thank you for purchasing an OAKTON® TEMP Acorn Meter. These economical, microprocessor-based meters are available in three models:

- the Acorn TEMP 4 uses a series 400 thermistor temperature sensor
- the Acorn TEMP 5 uses a 100K thermistor temperature sensor
- the Acorn TEMP 6 uses a PT 100 RTD temperature sensor

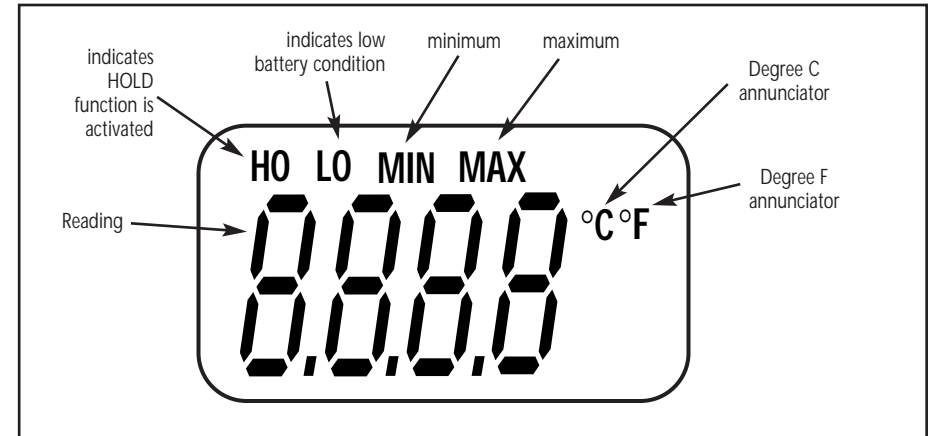
All Acorn TEMP meters feature:

- Large LCD for clear and easy reading
- Readings in °C and °F (switchable)
- Minimum and maximum temperature display
- Minimum and maximum hold mode
- Low battery indicator
- Hold function, freezes measured reading
- User calibration, offset adjustment
- Built-in memory backup; calibration and other information remain if battery is disconnected
- TEMP 5 thermistor sensor allows selection of most suitable temperature curve

This instruction manual is organized for easy reference. For basic functions of this meter, read sections 2 through 5. These sections include basic instructions that will get you up and running quickly. The remaining sections of this manual (6 through 11) deal with error messages and troubleshooting. This part of the manual also includes the Specifications, Accessories, Warranty and Return of Items section.

2. Display and Keypad Functions

The Acorn has a large custom LCD with the following indicators:



The OAKTON Acorn meter has six keys on its splashproof keypad. These keys are ON/OFF, CAL, HOLD/ENTER, MAX/▼ (DOWN), MIN/▲ (UP) and °C/°F.

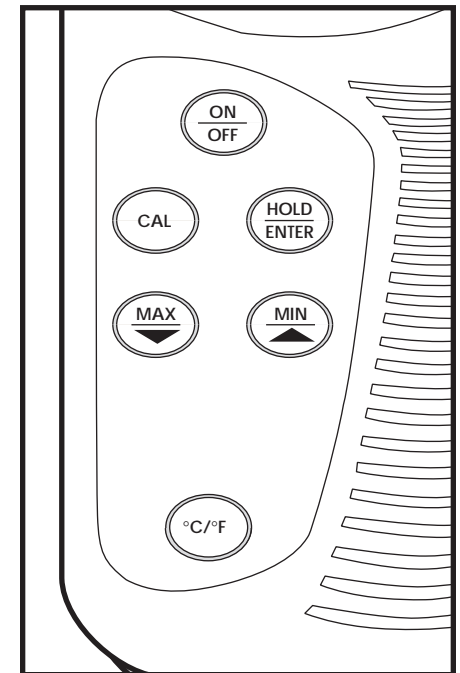
ON/OFF: Powers meter on and shuts unit off. Meter directly enters measurement mode when you turn it on.

CAL: Allows temperature calibration of the meter.

HOLD/ENTER: Freezes the measured reading; confirms calibration value.

MAX/▲ (UP) and MIN/▼ (DOWN): momentarily displays maximum or minimum temperature; enter maximum or minimum hold mode; scroll up and down in calibration mode.

°C/°F: Switches between °C and °F in measurement mode.



3. Preparation

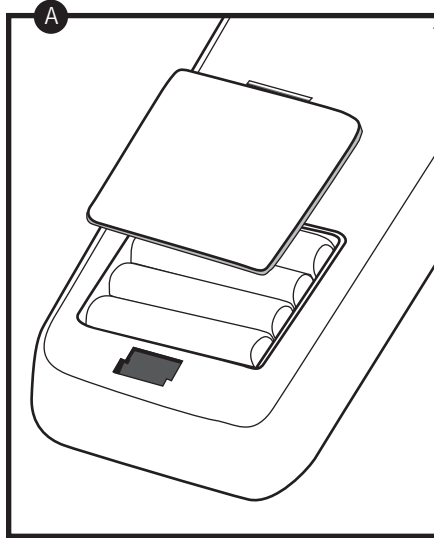
3.1 Inserting the batteries

The battery compartment is found at the back of the instrument. To open the battery compartment, push the lid up.

See figure **A**

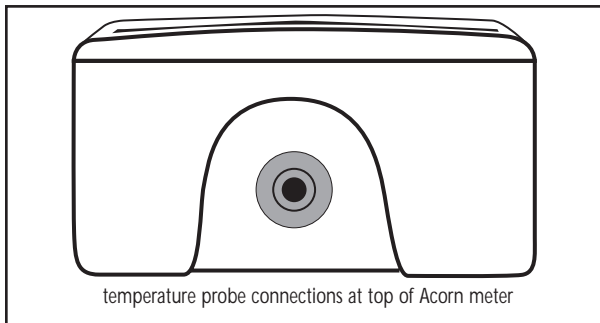
Note the polarity of battery before inserting the batteries into position. After replacement, place the cover back into its position and press down until it locks tight.

A "LO" annunciator in the LCD alerts you when battery power is running low. Replace batteries with a fresh set as soon as possible.



3.2 Connecting your Temperature sensor

Insert the phono jack of the temperature sensor into the socket on the meter. Unplug the phono jack when not in use.



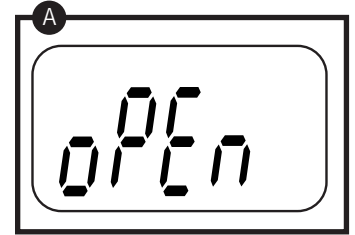
3.3 Switching the meter on

Press the ON/OFF key to power up your meter. All the LCD segments display for a few seconds as the meter goes through a self-diagnostic test. The LCD then switches into measurement mode.

If the LCD then displays "oPEn", the temperature sensor is faulty, or there is an open circuit.

See figure **A**

See page 12 for more troubleshooting information.

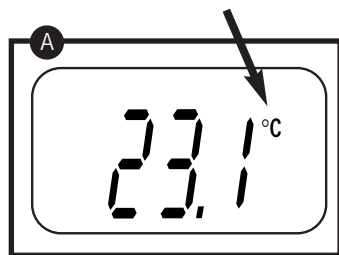


4. Measurement

4.1 Measuring Temperature

1. Switch on meter. The Acorn TEMP meter will automatically enter the temperature measurement mode. The °C or °F annunciator will display in your LCD to indicate which mode you are taking measurements in.

See figure **A**



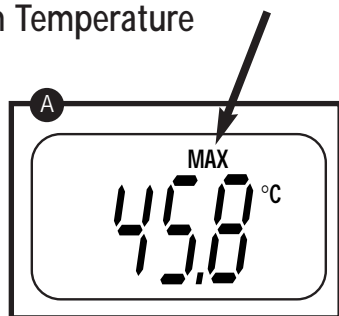
2. Press the °C/°F key to switch between measurement modes.

4.2 Displaying Minimum and Maximum Temperature

The Acorn TEMP meters can momentarily display the minimum and maximum temperature measured since you switched the meter on. Simply press **MAX/▲** or **MIN/▼** key. The MIN or MAX annunciator will display in the LCD, and the minimum or maximum temperature will temporarily display.

See figure **A**

Meter will then return to measurement mode.

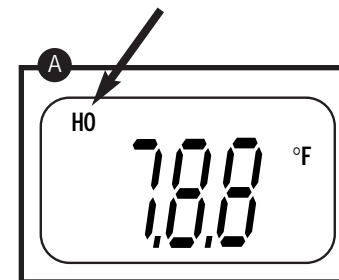


4.3 Hold function

To freeze your reading, press the **HOLD** key once. The LCD show "HO" to indicate the HOLD function is activated

See figure **A**

Press **HOLD** key again to deactivate the HOLD function and return to measurement mode.



4.4 Minimum and Maximum Hold Mode

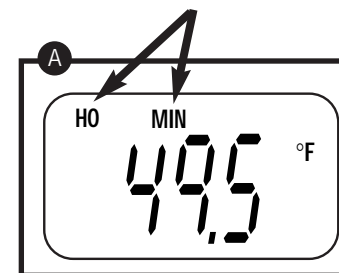
With Minimum and Maximum Hold Mode, the Acorn TEMP meter can be used as a maximum registering (or minimum registering) thermometer. The meter will display the lowest or highest temperature measured since entering the Maximum or Minimum Hold mode.

1. Switch on meter. The Acorn TEMP meter will automatically enter the temperature measurement mode. Use °C/°F to switch between Celsius and Fahrenheit readings if desired.
2. Press the **HOLD** key. The reading will freeze and the annunciator "HO" will display in the LCD.
3. Press the **MAX/▲** or **MIN/▼** key. Meter enters the Maximum or Minimum Hold mode. "HO" and "MAX" or "MIN" annunciators display in the LCD.

See figure **A**

Meter will now continuously display the lowest or highest temperature measured since you entered this mode. It will update the display when new highs or lows are reached.

Press **HOLD** key again to leave MIN/MAX Hold mode and return to standard measurement mode.

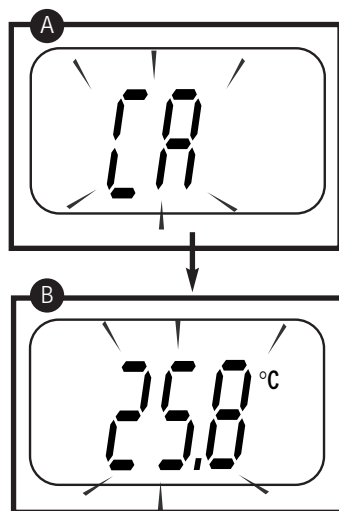


5. Calibration

5.1 Temperature calibration using offset adjustment

The temperature sensor included with your meter is factory calibrated. Over time, the temperature calibration may drift and require recalibration. If you replace the probe you should recalibrate.

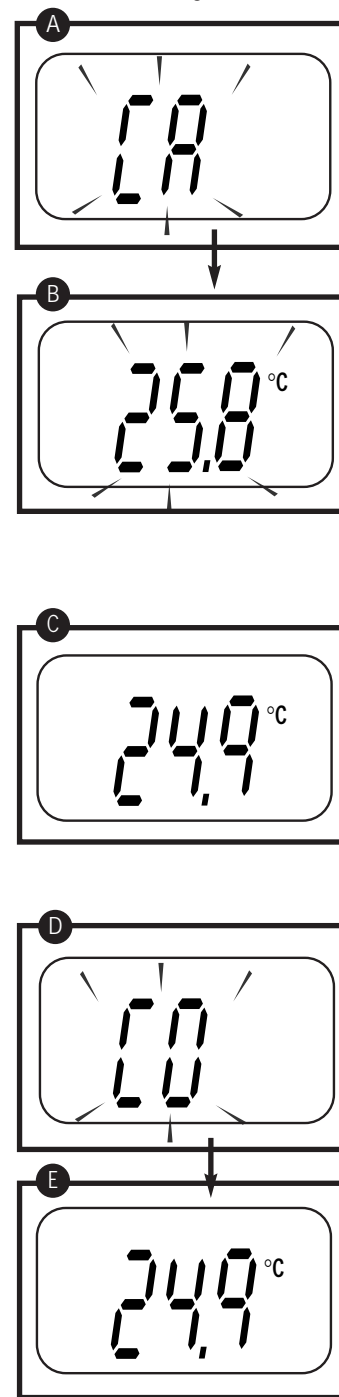
1. Connect your temperature probe to the meter. Turn meter on. Meter enters measurement mode.
2. Compare displayed value to a NIST certified thermometer or other thermometer known to be accurate. For best accuracy, place probe and thermometer in a constant temperature bath.
3. Press the **CAL** key to enter calibration mode. The LCD shows "CA" and the reading flashes. See figures **A** **B**
5. Use the **▲** and **▼** keys to adjust the temperature shown to match the accurate temperature (maximum adjustment is $\pm 5^{\circ}\text{C}$ from factory default).
6. Press **ENTER** key to confirm calibration. The LCD displays "CO", and the meter then reverts to measurement mode.



5.2 Temperature curve selection (TEMP 5 meter only)

Using the offset temperature calibration procedure you can achieve the $\pm 0.2^{\circ}\text{C} / \pm 0.4^{\circ}\text{F}$ accuracy specified for this meter. In the event the probe is replaced, or due to drastic changes in the thermistor characteristics, you may want to select the most suitable curve for that probe, and therefore do an offset adjustment for the selected curve.

1. Connect your temperature probe to the meter. Turn meter on. Meter enters measurement mode.
2. Compare displayed value to a NIST certified thermometer or other thermometer known to be accurate. For best accuracy, place probe and thermometer in a constant temperature bath, in this example: 25°C .
3. Press the **CAL** key to enter calibration mode. The LCD shows "CA" and the reading flashes. See figures **A** **B**
4. Press **°C/°F** key to enter curve selection mode. Press the **°C/°F** key again to scroll through the three temperature curves (low, mid, high). Find the temperature reading closest to your actual temperature, in this example: 24.9°C . See figure **C**
6. Press **ENTER** key to confirm calibration. The LCD flashes "CO", the meter then reverts to temperature calibration mode and the display continues to flash. See figures **D** **E**
7. Use the **▲** and **▼** keys to fine tune the temperature reading to your actual temperature, in this example: 25°C .
8. Press **ENTER** key to confirm calibration. The LCD displays "CO", and the meter then reverts to measurement mode.



6. Troubleshooting

Problem	Cause	Solution
“Ur” or “Or” on LCD	Measurement over (Or) or Under (Ur) range.	—
	Bad temperature probe	Change temperature probe
oPEn annunciator on LCD	Probe not connected	Make sure probe is firmly connected
LO annunciator on LCD	Low battery	Replace batteries with fresh set
Power on but no display	Batteries not in place	Insert batteries
	Batteries not in correct polarity (+ and -)	Re-insert batteries with correct polarity
	Weak batteries	Replace batteries
Unstable reading	Probe not deep enough in sample	Place probe deeper in sample
	Broken probe	Replace probe
	External “noises” or induction caused by by nearby electric motor	Remove or switch off interfering motor
	Dirty probe	Clean probe
Slow response	Dirty probe	Clean probe

7. Specifications

Model	TEMP 4 and 5 (Thermistor)	TEMP 6 (RTD)
Range	-40.0 to 125.0°C -40.0 to 257°F	-50.0 to 150.0°C -58.0 to 302°F
Resolution	0.1°C/0.1°F	0.1°C/0.1°F
Accuracy	±0.2°C/0.4°F	±0.2°C /0.4°F

Input connector: Temp 4 and Temp 5: 6.3 mm phono jack
Temp 6: 3 pin mini connector

Display: Single line LCD

Auto shutoff: after 17 minutes

Hold Function indicator: HO

Error Message display: Err

Low battery indication: LO

Operating temperature: 0 to 50°C

Power: 4 x AAA Alkaline batteries (>200 hours)

Dimensions: Meter only: 5.5" x 2.7" x 1.3" (14 x 7 x 3.5 cm);
Boxed: 9.25" x 6.5" x 3" (23.5 x 16.5 x 7.6 cm)

Weight: Meter only: 0.5 lb (210 g); Boxed: 1 lb (420 g)

8. Accessories

WD-35626-00 Acorn TEMP 4 Thermistor Thermometer for use with Series 400 probes. Probe not included. Shpg wt. 1 lb (460 g).

WD-35626-10 Acorn TEMP 5 Thermistor Thermometer with temperature probe. Shpg wt. 1 lb (460 g).

WD-35626-20 Acorn TEMP 6 RTD Thermometer with temperature probe. Shpg wt. 1 lb (460 g).

WD-35626-50 Replacement probe for TEMP 5 meter

WD-35626-60 Replacement probe for TEMP 6 meter

WD-35606-80 Protective Rubber Boot, encases meter in sturdy rubber to protect it from drops and dings. Also features meter stand for convenient tabletop use. Shpg wt 0.5 lb (230 g).