BATTERY REPLACEMENT

Milwaukee **EC40** meter is supplied with three 1.5V AA batteries.
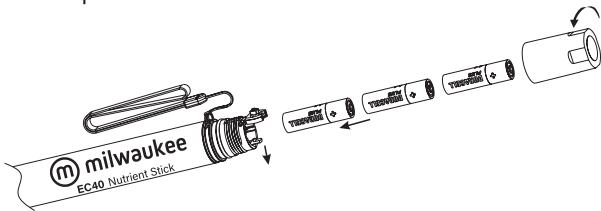
Do not mix different brands of batteries.

Do not mix old batteries with new ones.

Do not put them upside down.

Please follow these steps to replace the batteries:

1. Rotate the battery cap counter-clockwise and remove it. Short press the snap fit to release the safety gate. With the snap fit pulled back, take out the old batteries.

2. Insert the new batteries with negative (–) end down into the body.

3. Make sure the safety gate clicks back in place, paying attention not to damage the internal wires.

4. Replace the battery cap. There must be no space left between the cap and body to ensure the meter remains 100% waterproof.

CERTIFICATION

Milwaukee Instruments conform to the CE European Directives.

Disposal of Electrical & Electronic Equipment. Do not treat this product as household waste. Hand it over to the appropriate collection point for the recycling of electrical and electronic equipment.

CE

RoHS
compliant

Disposal of waste batteries. This product contains batteries. Do not dispose of them with other household waste. Hand them over to the appropriate collection point for recycling.

Please note: proper product and battery disposal prevents potential negative consequences for human health and the environment. For detailed information, contact your local household waste disposal service or go to **www.milwaukeeinstruments.com** (USA & CAN) or **www.milwaukeeinst.com**.

RECOMMENDATION

Before using this product, make sure it is entirely suitable for your specific application and for the environment in which it is used. Any modification introduced by the user to the supplied equipment may compromise the meter's performance. For your and the meter's safety do not use or store the meter in hazardous environment. To avoid damage or burn, do not perform any measurement in microwave ovens.
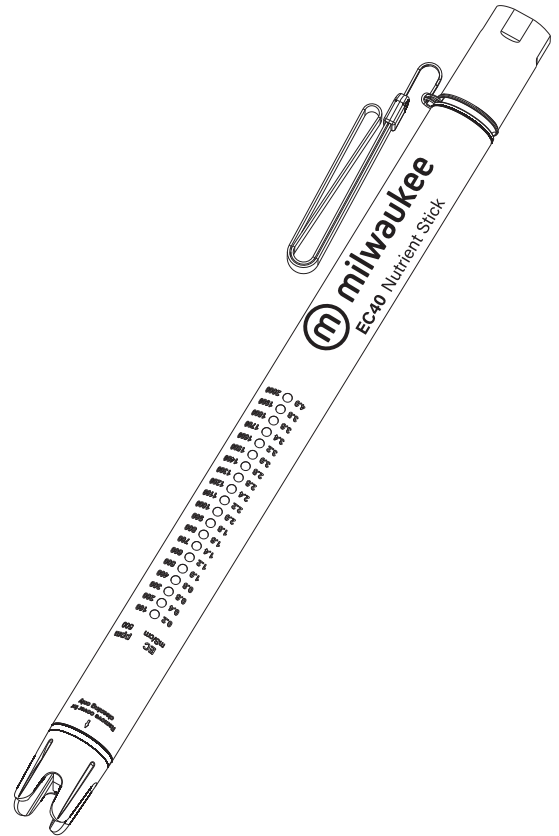
WARRANTY

This instrument is warranted against defects in materials and manufacturing for a period of 2 years from the date of purchase. This warranty is limited to repair or free of charge replacement if the instrument cannot be repaired. Damage due to accidents, misuse, tampering or lack of prescribed maintenance is not covered by warranty. If service is required, contact your local Milwaukee Instruments Technical Service. If the repair is not covered by the warranty, you will be notified of the charges incurred. When shipping any instrument, make sure it is properly packaged for complete protection.

ISTEC40   11/20

EC40
Low Range TDS/EC/CF Nutrient Stick Meter

milwaukee

PRELIMINARY EXAMINATION

Thank you for choosing Milwaukee Instruments!

While taking out the meter from the packaging, make sure that it was not damaged during shipping. Please notify your closest Milwaukee office if it was damaged.

The **EC40** is delivered in a plastic tube and is supplied complete with:

- 3 x 1.5V AA batteries
- Instrument quality certificate
- Instruction manual

Note: Keep all packing material until you have verified that the instrument works correctly. Defective or damaged items must be returned in their original packing material.

GENERAL DESCRIPTION

The **EC40** Nutrient stick is designed to measure the EC (conductivity) of the nutrient solutions used in agriculture and hydroponic applications. It features a visual alarm that blinks if the measured value is above the set point. The **EC40** is built in a compact, waterproof and floating casing.

FEATURES

- Readings are displayed on an easy to read graph bar with 20 LEDs.
- The readings are displayed in four measuring scales: CF, EC, PPM500 and PPM700.
- When the reading is out of range, the top or bottom LED blinks.
- The alarm set point can be easily adjusted.
- The meter is factory calibrated and does not require any calibration.
- The meter switches on and off automatically.
- Battery level indicator activates when you insert the batteries into the instrument.
- Its compact, waterproof and floating design makes the meter water resistant and ideal to mix the nutrient solution in the tank.
- The probe is protected by a crown-shaped ring which is detachable so it is easy to clean.
- The meter is supplied with a wrist strap.
- Essential operational instructions are printed on the meter.
- The meter has a graphite EC probe with a built-in temperature sensor, housed in a stainless-steel casing, which compensates temperature in seconds.

SPECIFICATIONS

Range	0.2 to 4 mS/cm
	2 to 40 CF
	140 to 2800 ppm 0.7
	100 to 2000 ppm 0.5
Resolution	0.1 mS/cm
	1 CF
	70 ppm (factor: 700 ppm = 1 mS)
	50 ppm (factor: 500 ppm = 1 mS)
Accuracy	± 4% of reading ± 1 resolution point
Calibration	Factory calibrated
Probe	Graphite electrode in ABC + PC body
Temperature compensation	Automatic from 5.0 to 50.0 ºC (41.0 to 122.0 ºF)
Battery type	3 x 1.5V AA alkaline
Battery life	about 3 years (at 10 measurements per day)
Measurement display	20 blue LEDs bar
Environment	0 to 50 ºC (32.0 to 122.0 ºF); max. RH 95%
Dimensions	420 mm (17") length, 30 mm (1.2") diameter
Weight with batteries	255 g. (9 oz.)
Casing protection	IP67, floating

OPERATIONAL GUIDE

When immersed, the meter starts measuring automatically and displays current Electrical Conductivity level. Auto shut-off time is set at 20 seconds after the measurement has stabilized.

Switching the Meter On

The meter switches on when the batteries are placed inside. It performs a self-test to identify possible LED issues. The LEDs turn on one by one from the bottom to the top and then reverse top to bottom. Then, the LED bar shows the voltage level of the batteries for a few seconds. If the top LED is on it means that batteries are fully charged. If the bottom LED is on, it indicates low charge. In this case, please change the batteries.

Measurement

1. Place the head of the probe in the nutrient solution. The meter switches on automatically and starts measuring.

2. An LED light turns on once the reading has stabilized. The readings are displayed in four measuring scales: CF, EC, PPM500 and PPM700. If 2 LEDs are on, the measured value is between those two values.

3. Continuously blinking LED/LEDs indicate that the measured value is over the alarm set point.

4. The meter remains on for approximately 20 seconds. If the EC value changes, auto shut-off time is automatically reset. The meter stops measuring if the read value drops below minimum value.

5. The top/bottom LED is blinking when the measurement is over/under range.

Alarm Set Up

1. Rotate the battery cap counter-clockwise and remove it.

2. Push the SETUP button once.

3. The LED turns on and displays the last set alarm value.

4. To change the alarm value, push and hold the SETUP button. The LED bar increases gradually. Release the button to save the new alarm value.

5. To disable the alarm, release the SETUP button when the top and bottom LEDs are on.

6. Put back the battery cap.

Calibration

The meter is factory calibrated and does not require user calibration.

CLEANING & MAINTENANCE

Frequent cleanings are recommended to ensure accurate measurements.

1. Twist the crown-shaped ring 30 degrees counter-clockwise then remove it.

2. Clean the head of the probe under running tap water.

3. If required, clean the graphite sensors with a couple drops of dish liquid detergent, and scrub off any residue with a toothbrush.

4. Rinse the probe under running tap water.

STORAGE

Make sure that the probe is clean and dry before storing it in its protective packaging.