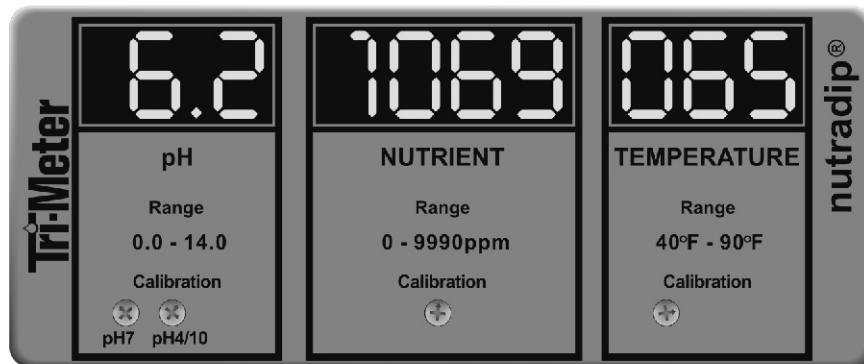


Tri-Meter

by **nutradip**[®]

Monitoring the Essentials



MODEL SHOWN 202°F

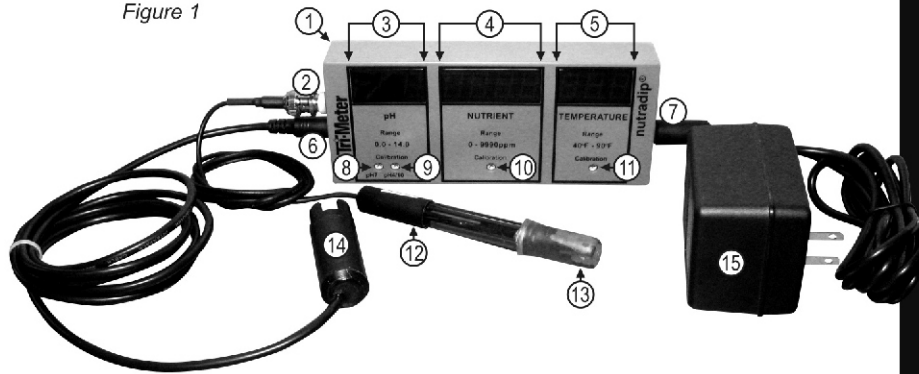
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Thank you and congratulations on your purchase of the nutradip® TRI-METER!

This innovative, continuous-monitoring meter will supply accurate, temperature-compensated (2° - 60°C or 35° - 140°F) pH, electrical conductivity (EC) / parts per million (ppm), and temperature measurements for a wide range of hobby and commercial applications.

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Figure 1



1. nutradip® TRI-METER
2. pH probe receptacle
3. pH component of the meter
4. EC/ppm component
5. Temperature Component
6. EC/temperature probe receptacle
7. Power adapter receptacle
8. pH 7.0 calibration inset
9. pH 4.0 / 10.0 calibration inset
10. EC/ppm calibration inset
11. Temperature calibration inset
12. pH probe and lead
13. Rubber protective cap, pH probe tip
14. EC/temperature probe and lead
15. 9V-DC power adapter

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BEFORE YOU BEGIN

Your nutradip® tri-metering instrument is engineered to provide years of dependable service.

For optimum meter longevity and performance, we strongly recommend that you thoroughly read this manual prior to using your new meter for the first time. Store the manual and the meter's packaging for future use.

Please contact us via any of the mediums listed on page 10 of this manual if you require additional support.

UNPACKING YOUR METER

Carefully unpack your meter and additional contents. Your carton should contain:

- 1 nutradip® TRI-METER
- 1 EC/ppm/temperature probe , 150 cm (5') lead
- 1 pH probe with a 90 cm (3') lead
- 1 9V-DC power adapter

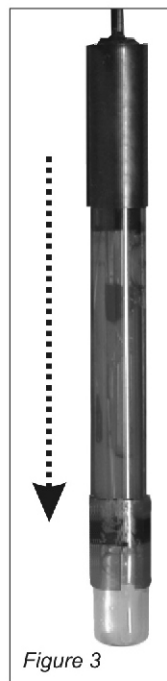
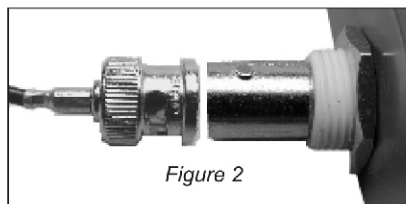
Contact your dealer immediately if there is obvious damage to the contents or if there is a missing component.



FIRST TIME USE

1. Attach both the probe lead and the 9V-DC power adapter to the meter (*Figure 2*). Connect EC/ppm probe to the meter.
2. Carefully remove the rubber protective cap from the tip of the pH probe. Keep cap for storage.
DO NOT TOUCH THE pH BULB!
DO NOT FLEX THE PROBE!
3. Gently shake the probe downward to remove any air bubbles which may be trapped within the glass bulb (*Figure 3*).
4. Connect the power adapter to a power supply outlet.
5. Confirm all 3 components are displaying a value. If not, repeat Steps 1 and 4.

**Your meter is factory-calibrated
and ready to go!**



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pH COMPONENT

Calibration

We recommend that you check calibration on all three meter components at least once a month or following the cleaning of either probe. Please keep in mind the meter is accurate to ± 0.1 pH when calibrating, or for determining calibration requirement.

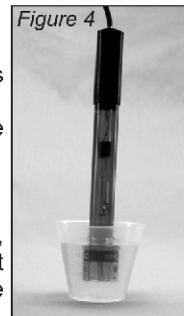
Described below are instructions to calibrate the pH component of your meter. The calibration instructions for the EC/ppm and temperature components are described under separate headings within this manual.

What you will need:

- Buffer solution 7.0
- Buffer solution 4.0 for acid solutions (i.e. hydroponics)
- Or
- Buffer solution 10.0 for alkaline solutions (i.e. saltwater aquariums)
- Three small plastic cups
- Small Phillips screwdriver (#00)

What to do:

1. Pour some pH 7.0 into one of the small cups (enough to cover pH bulb). (See figure 4).
 2. Pour some pH 4.0/pH 10.0 into one of the small cups (enough to cover pH bulb).
 3. One cup for rinsing probe tip.
 4. **Rinse probe with pH 7.0 solution.**
 5. Immerse probe tip into pH 7.0 solution, agitate for ten seconds, let soak for at least two minutes to allow temperature compensation to occur.
 6. Match meter display value to the buffer solution value. Insert a small Phillips screwdriver into the pH 7.0 calibration inset and gently turn screw until meter reads pH 7.0 (see figure 5).
- NOTE: Do not over tighten the calibration screw. Damage caused by over tightening is not covered under warranty and will be subject to repair charges.**
7. **Rinse probe with pH 4.0/pH 10.0 solution.**
 8. Repeat steps 5 and 6 using pH 4.0/pH 10.0 buffer solution.
 9. Repeat steps 4-8 if needed.



pH COMPONENT

Measuring pH

If you haven't already done so, remove the rubber protective cap from the probe tip and connect the meter to a power supply. Keep cap for storage.

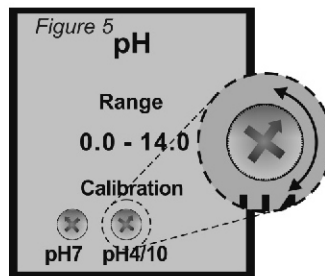
Immerse the probe (to a maximum 30 cm (1') of lead length) in the solution to be measured. The meter will display a temperature-compensated pH value after two minutes, and will continue to monitor solution pH until the meter is disconnected from the power source.

Cleaning the Probe

The pH bulb is constructed of porous glass and thus may become clogged over time. To clean it, immerse the probe tip in a cleaning solution (see your dealer for supply) for at least one hour, remove and allow to cool before rinsing. Rinse the probe with warm water (20° to 30°C or 68° to 86°F) and re-calibrate the meter.

Storing the Probe

The pH bulb must not be allowed to dry out! It must be immersed in solution at all times. If the probe is to be placed in storage, refill the rubber protective cap with pH 4.0 or pH 10.0 buffer solution and slip the cap onto the probe tip until the fit is snug and the pH bulb is submersed in the solution.



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EC/ppm COMPONENT Calibration

Described below are instructions for calibrating the EC/ppm component of your meter.

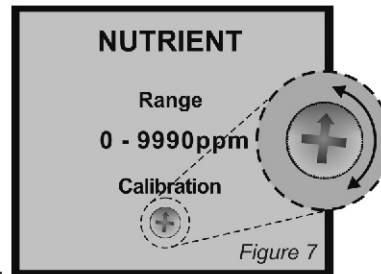
What you will need

- EC/ppm calibration solution
- a small, plastic or glass container
- a small Phillips screwdriver (#00)



What to do

1. Pour some calibration solution into the container. Use enough solution to completely cover the EC/ppm/temperature probe tip, approximately 5 cm (2") (Figure 6).
2. Connect power supply and EC/ppm/temperature probe to meter.
3. Dip the probe tip into the calibration solution and lightly agitate for 10 seconds. Allow the probe tip to soak at least 10 minutes to allow for temperature compensation.
4. Match the meter displayed value to the calibration solution value. Insert a small Phillips screwdriver into the calibration inset and gently turn the screw until the meter reads the value of the solution. (Figure 7)



NOTE: Do not over tighten the calibration screw. Damage caused by over tightening is not covered under warranty and is subject to repair charges.

Measuring EC/ppm

If you haven't already done so, connect the meter to a power supply and EC/ppm/temperature probe. Immerse the EC/ppm/temperature probe (to a maximum 30 cm (1') of lead length) in the solution to be measured. The meter will display a temperature-compensated EC/ppm value after 10 minutes, and will continue to monitor solution EC/ppm until the meter is disconnected from the power source.

Cleaning the Probe

Carefully remove scale from the metal leads with a moistened cotton swab. Immerse probe in an EC/ppm probe-cleaning solution and re-calibrate the meter.

TEMPERATURE COMPONENT

Calibration

Described below are instructions for calibrating the temperature component of your meter.

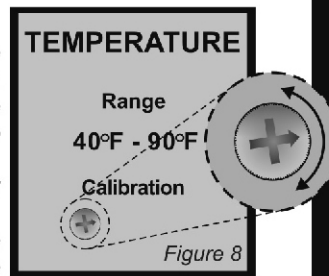
What you will need

- a thermometer, with a range of 10° - 33°C (50° - 90°F)
- a small Phillips screwdriver (#00)

What to do

1. Immerse the EC/temperature probe (to a maximum of 30 cm (1') of lead length) and the thermometer in the solution to be measured.
2. Connect the meter to a power supply.
3. Allow both the probe and the thermometer to soak in the solution at least 10 minutes before adjusting the calibration.
4. Match the meter displayed value to the thermometer value. Insert a small Phillips screwdriver into the calibration inset and gently turn the screw until the meter reads the value of the thermometer (*Figure 8*).

NOTE: Do not over tighten the calibration screw. Damage caused by over tightening is not covered under warranty and is subject to repair charges.



Measuring Temperature

















If you haven't already done so, connect the meter to a power supply and EC/ppm/temperature probe.

Immerse the EC/ppm/temperature probe (to a maximum 30 cm (1') of lead length) in the solution to be measured. The meter will display a temperature-compensated temperature value after 10 minutes, and will continue to monitor solution temperature until the meter is disconnected from the power source.

Cleaning the Probe

Carefully remove scale from the metal leads with a moistened cotton swab. Immerse the probe in an EC or ppm probe-cleaning solution and re-calibrate the meter.

TROUBLESHOOTING GUIDE

PROBLEM	CODE	POSSIBLE CAUSE	REMEDY
No Display	ALL 	faulty connection, meter to power supply	connect power adapter to power supply and/or meter (page 4)
Erratic Display	ALL 	poor calibration	recalibrate the necessary component of the meter (pages 5,7,8)
	ALL 	electrical interference egs. electronic ballast	move tri-meter away from other electronic devices
	pH 	faulty connection, meter to probe	connect probe to meter (page 4)
	pH 	expired pH probe	replace the probe (*) below
Incorrect Reading	ALL 	poor calibration	recalibrate the necessary component of the meter (pages 5,7,8)
	ALL 	calibration solution contamination	validate calibration solution integrity
	pH 	dirty pH probe	clean the probe (page 6)
	pH 	expired pH probe	replace the probe (*) below
	EC 	dirty EC probe	clean the probe (page 7)
	TEMP 	dirty temperature probe	clean the probe (page 8)
Won't Calibrate	ALL 	calibration solution contamination	confirm and validate calibration solution integrity and value
	ALL 	incorrect calibration procedure	reconfirm calibration procedure
	pH 	dirty pH probe or expired pH probe	clean the probe or replace the probe (*) below
	EC 	dirty EC probe	clean the probe (page 7)
	TEMP 	dirty temperature probe	clean the probe (page 8)

LEGEND



All Meter Components



pH Specific Component



EC/PPM Specific Component



Temperature Specific Component

(*) The pH probe is warranted for six months after date of purchase.

CUSTOMER SERVICE

nutradip® Meters are proudly manufactured in Canada by Future Harvest Development. Our intent is to produce and supply superior products with quality customer service. Please contact us via any of the mediums listed below.

Canada / USA Toll Free: 1-866-491-0255
Toll Free Fax: 1-866-491-0252
Other areas: 1-250-491-0255
Fax: 1-250-491-0252
e-mail: info@extremegrowing.com
website: <http://www.extremegrowing.com>

WARRANTY

LIMITED 2 YEAR WARRANTY

Future Harvest Development (FHD) warrants its' nutradip® Tri-Meter to be free from defects in materials and workmanship. The warranty term is 2 years beginning on date of invoice. Misuse, abuse, failure to follow instructions, and damage from naturally occurring disasters are not covered. FHD will, at our sole discretion, repair or replace the product covered under this limited warranty.

FIRST YEAR - POINT OF SALE WARRANTY

In the first year you may return your nutradip® Tri-Meter directly to the store where you purchased our product. The retail store and/or distributor will, at their discretion and under advisement from Future Harvest Development, issue you a replacement Tri-Meter. Purchase date and warranty period is based on the original sales receipt date. PLEASE SAVE YOUR RECEIPT AS A COPY IS REQUIRED FOR ALL WARRANTY SERVICES.

SECOND YEAR - LIMITED MANUFACTURER WARRANTY

To request warranty service in the second year you must call FHD Warranty Service at (250) 491-0255 within the warranty period. If warranty service is required FHD will issue a Return Authorization Number. You must ship the product back to FHD in the original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipping. FHD will ship the repaired or replaced product(s) to you. Freight will be prepaid if you use an address in Canada or the United States of America. Shipments to other locations will be made freight collect. Purchase date and warranty period is based on the original sales receipt date. PLEASE SAVE YOUR RECEIPT AS A COPY IS REQUIRED FOR ALL WARRANTY SERVICES.

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SPECIFICATIONS

COMPONENT	EC/TDS	EC/TDS	TEMPERATURE
Range	0.0-14.0 pH	0-9990 μ S/cm (204) 0-9990 ppm (202, 203) 0-9990 ppm (201)	5-32°C / 40-90°F
Accuracy	\pm 0.1 pH	\pm 2%	\pm 1°C / \pm 1°F
Resolution	0.1 pH	1 μ S/cm, 1 ppm	1°C / 1°F
Calibration	2 point, manual	1 point, manual	1 point, manual
Operating Environment: *20 to 80°C / *4 to 176°F Dimensions: 15.5 x 7 x 2.8 cm / 6 x 2 3/4 x 1 inch			

MODEL	MEASUREMENT	CONVERSION
202	ppm	NaCl conversion 1000 μ S/cm EC = 500ppm
203	ppm	442 conversion 1000 μ S/cm EC = 700ppm
204	EC	1000 μ S/cm = 1 mS

OTHER PRODUCTS by nutradip®

- Light Meter
- pH Meter
- EC/ppm Meter (all nutrient meters are available in a variety of measurement units and values)
- Quick Dip pH hand held Pen
- Quick Dip ppm hand held Pen
- 1 hp Solid State Timer
- 120v Driver with low voltage (5V-24V) input connector
- Aeroponic / Hydroponic Timer
- CO₂ Monitor & Controller
- CO₂ Timer
- Water Alarm
- pH 4 / 7 / 1000ppm Calibration Solutions



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1-866-491-0255

