



# **Texas Electronics, Inc.**

*The Gold Standard in Weather Instrumentation Since 1957*

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## **TR-4 TIPPING BUCKET RAIN GAUGE USER'S MANUAL**

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**TEXAS ELECTRONICS, INC.**

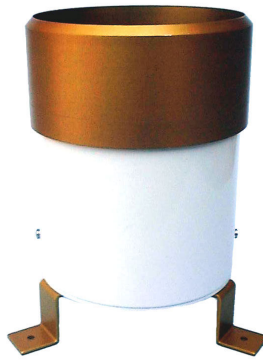
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## **MODEL TR-4 TIPPING BUCKET RAIN GAUGE**

### **DESCRIPTION**

The Texas Electronics, Inc. TR-4 low-cost Rainfall Sensor is a remote tipping bucket style rain gauge that measures the amount of liquid precipitation.

The Rain Gauge is a freestanding receptacle for measuring precipitation. It contains an open top, which allows rainfall to fall into the upper portion, which is called the collector. Collected water is funneled to a mechanical device (tipping bucket), which incrementally measures the rainfall accumulation and causes a momentary closure of a switch. As water is collected, the tipping bucket fills to the point where it tips over. This action empties the bucket in preparation for additional measurement. Water discharged by the tipping bucket passes out of the rain gauge with no need for emptying.

The TR-4 was designed to meet the need for a rugged and reliable rain gauge tipping bucket without the high accuracy of a research grade sensor, or the associated cost.

### **SPECIFICATIONS**

Resolution:	0.01" English
Accuracy:	3.0% up to 1"/hr (25 mm/hr)
Collector diameter:	3.9" (100 mm) with knife-edge
Funnel depth:	3" (76 mm)
Splash out protection:	>1.5" (38 mm)
Operating Temp:	32 to 125° F (0 to 50° C)
Storage Temp:	-40 to 160° F (-40 to 70° C)
Humidity Limits:	0 to 100%
Weight:	2 lbs. (0.9 kg) 4 lbs. (1.8 kg) shipping
Height:	6" (152 mm)
Cable:	25', 22 gauge 2 conductor
Switch:	Hermetically sealed reed switch
Switch rating:	50 VDC @ 2 A, 115 VAC @ 1 A
Switch Closure Time:	135 ms
Bounce Settling Time:	0.75 ms
Pivot:	Hardened SS Jewel & Pivot
Bucket:	Brass
Level:	Integral Bubble Level
Warranty:	3 years

## **FEATURES & BENEFITS**

- Interfaces to virtually all data acquisition systems
- Knife-edge collector optimizes rainfall catch
- Exceptional splash-out protection to compensate for wind errors
- Easy installation and maintenance
- Rugged Aluminum Exterior
- Anodized aluminum collector for superior weather resistance
- Integral Bubble Level

## **INSTALLATION & MAINTENANCE**

Installation consists of attaching the three sensor support legs to a firm platform such as a fencepost. Pole mounting on the mast of a weather station is available by securing to the optional bolt assembly.

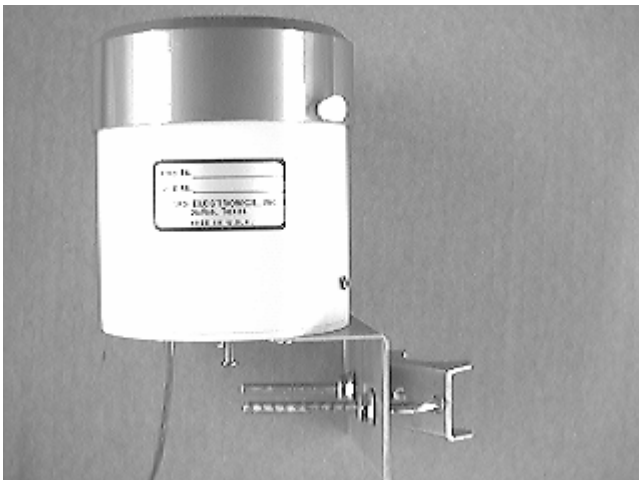
The sensor is dynamically calibrated at the factory and due to the nature of its operation should not require field calibration. Field maintenance should include occasional cleaning of the collector screen and inspection of the internal mechanism to make sure it is free from insects and debris.

## **ORDERING INFORMATION**

<u>Model #</u>	<u>Description</u>
TR-4	Rain Gauge, 3.90" collector, English (Please specify for pole mounting U-bolt accessory)

### *Optional Parts / Accessories*

HOBO	Event Datalogger and Software
BB-525	Bird Repellant Apparatus
Cable	Additional Cable available upon request



TR-4 with vertical mounting bracket



TR-4 with feet

## **Warranty**

Texas Electronics, Inc. (hereafter TEI) warrants the equipment manufactured by it to be free from defects in material and workmanship. Upon return, transportation charges prepaid to TEI, within three (3) years of original shipment of sensors and one (1) year of original shipment of electronics, recorders and indicators, TEI will repair or replace, at its option, any equipment which it determines to contain defective material or workmanship, and will return said equipment to purchaser, F.O.B., TEI. Texas Electronics shall not be obligated however to repair or replace equipment which has been repaired by others, abused, improperly installed, altered or otherwise misused or damaged in any way. TEI will not be responsible for any dismantling, re-assembly, or reinstallation charges.

This warranty is in lieu of all other warranties, expressed or implied. TEI shall not be liable for any special, indirect, incidental or consequential damages claimed in connection with any rescission of this agreement by purchaser.

For a list of specific items covered by the extended warranty, see the ***Three-Year Warranty Equipment List***.

# Three-Year Warranty Equipment List

Effective February 1, 1992 all of Texas Electronics, Inc. sensors will carry a Three-Year warranty instead of the previous One-Year. The remainder of terms and conditions of the warranty remains unchanged. A specific list of items follows.

## Sensors Covered by Three-Year Warranty

<b>Parameter</b>	<b>Model No.</b>
Wind Direction	TD-105 (Synchro) TD-104D (Potentiometer) TD-110-L2 (Photo-Chopper) TD-106 (Potentiometer)
Wind Speed	TV-110-L2 (Photo-Chopper) TV-110-L3 (Photo-Chopper)  TV-114 (A.C. Generator)
Barometric Pressure	TB-2012
Relative Humidity	TH-2013 TH-2013V
Rainfall	TR-525 TR-6118
Temperature	TT-101 (Outdoor) TT-103R (Surface Mount) TT-103R-W (Water Probe) TT-309I (Indoor)
Solar Radiation	TS-100

## Systems Covered by Three-Year Warranty

<b>Model No.</b>	<b>Description</b>
WSC-5-S	Wind Speed Controller Single Set Point
WSC-5-ST	Wind Speed Controller Single Set Point with Time Delay
WSC-5-D	Wind Speed Controller Dual Set Point
WSC-5-DT	Wind Speed Controller Dual Set Point with Time Delay
WDC-2	Wind Direction Controller