METEOROLOGICAL INSTRUMENTS

INSTRUCTIONS

# 4" TIPPING BUCKET
# MODEL TR-4

CE

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# Model TR-4 Tipping Rain Gauge



## DESCRIPTION

The Texas Electronics, Inc. TR-4 low-cost rainfall sensor is a remote tipping bucket style rain gauge that measures liquid precipitation.

The Rain Gauge is a freestanding receptacle for measuring precipitation. Through an opening at the top of the device, rain is collected and then funneled to a mechanical device, called a tipping bucket. As water is collected, the tipping bucket fills to the point that it tips over, causing a momentary closure of a switch to incrementally measure rainfall accumulation. 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: | 0-1 in. (25 mm) per hour; +/-2% |
| 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: | 10’, 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: | Ground bronze pivots with hardened stainless steel shaft |
| Bucket: | Black ABS injection molded |
| Warranty: | 3 years |

## FEATURES & BENEFITS

- Interfaces with 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
- Integrated 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

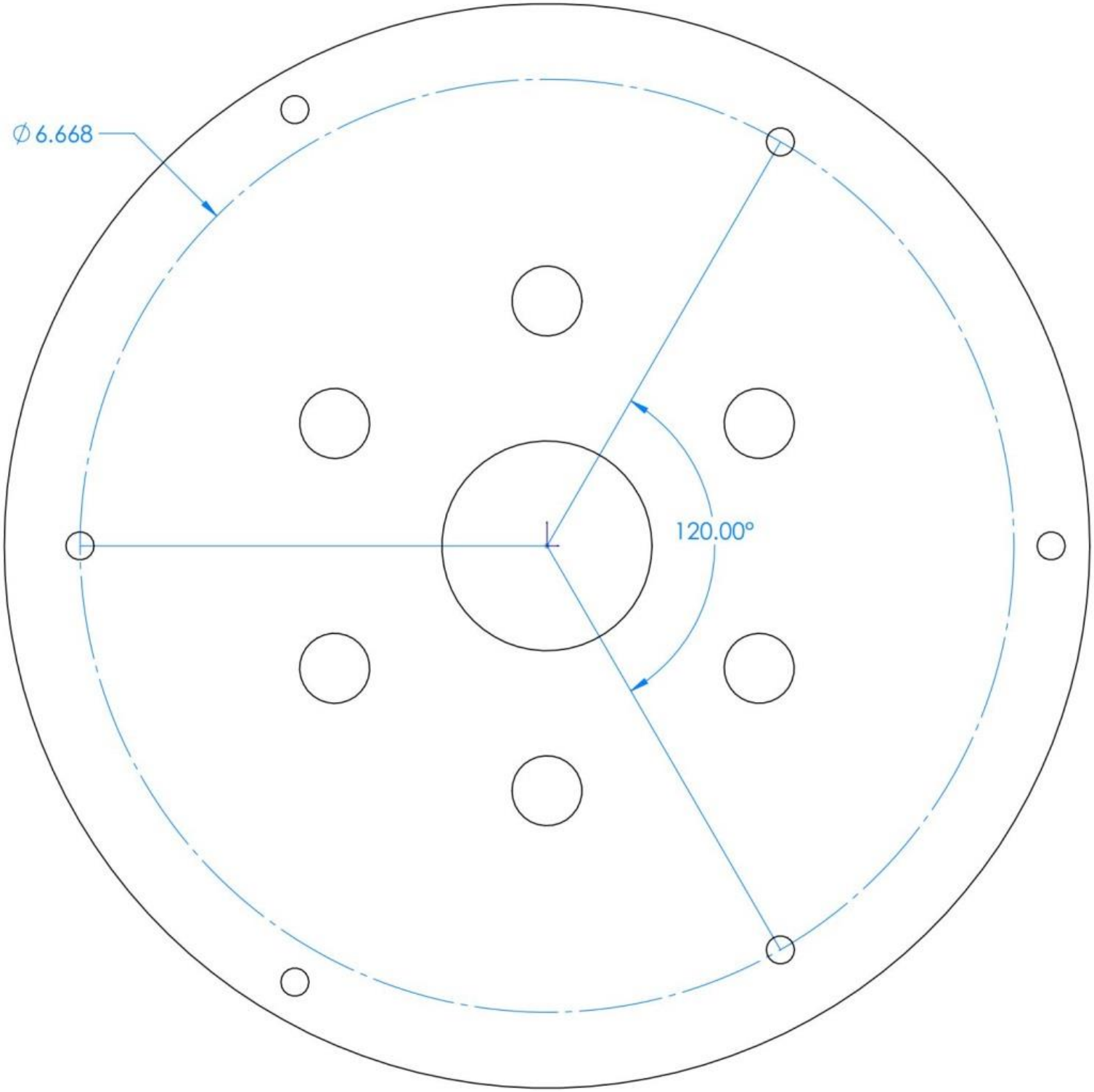
| Model # | Description |
|---|---|
| TR-4 | Rain Gauge, 3.90” collector, English<br>(Please specify for pole mounting U-bolt accessory) |

Optional Parts / Accessories

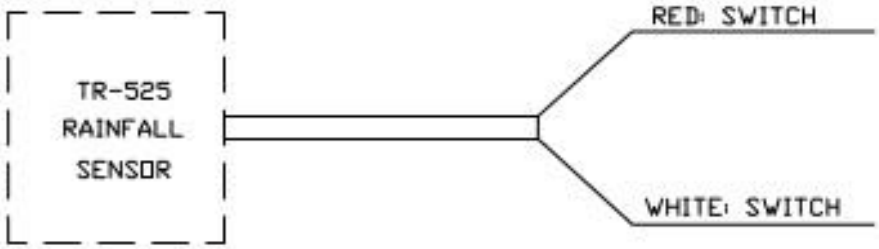
| | |
|---|---|
| HOBO | Pendant Datalogger |
| MB-525 | Pole Mounting Base |
| FC-500 | Field Calibration Kit |
| BB-525 | Bird Repellant |

REMOVE AND USE THIS TEMPLATE TO BASE MOUNT THE RAINFALL SENSOR

# MOUNTING TEMPLATE



# WIRING DIAGRAM




TYPICAL OUTPUT:

| | |
|---|---|
| TR-525i | 0.01" tip (4.73mL) |
| TR-525M | 0.10mm per tip (4.73mL) |
| TR-525USW | 0.01" per tip (8.23mL) |
| TR-525S | 0.01" per tip (8.23mL) |
| TR-4 | 0.01" per tip (1.95mL) |

OPTIONAL OUTPUT

| | |
|---|---|
| TR-525i(metric) | 0.2mm per tip (3.72mL) |

Texas Electronics, Inc.
*The Gold Standard in Weather Instrumentation Since 1957*

| | | | |
|---|---|---|---|
| TITLE | TR-525 RAINFALL SENSOR WIRING DIAGRAM | | |
| SIZE A | FSCM NO. | DWG NO. 3001 | REV A |
| SCALE | | SHEET 1-1 | |

# 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.