



"Relied on Worldwide in the Most Extreme Conditions"



TR-525-S

Siphon Rain Gauge

User's Manual

Model TR-525-S Siphon Rain Gauge



The siphon is available for all TR-525 model rain gauges.

DESCRIPTION

The Texas Electronics, Inc. TR-525-S Siphoning Rainfall Sensors are considered the gold standard since 1957. It is a remote tipping bucket style rain gauge that measures the amount of liquid precipitation with a unique siphoning technique that allows for a wide range of accuracy.

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). The precipitation is then siphoned into a tipping mechanism which regulates the flow. The tipping mechanism then 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.

Features

- Unique Siphoning technique allows a wide accuracy
- Stainless steel screen
- Easy to clean siphon mechanism
- Simple installation and maintenance
- Over 30 years in production
- All Aluminum powder coated exterior
- Integral Bubble Level

Installation & Maintenance

Installation consists of attaching the three sensor support legs to a firm platform (such as our MB-525 Pole Mounting Base). Pole mounting on the mast of a weather station is available by securing to the included side bracket.

SPECIFICATIONS

	<u>TR525-S-.01 in.</u>	<u>TR-525-S-2.0 mm</u>
Resolution:	0.01"	0.2 mm
Accuracy:	0-10 in (254 mm) per hour; +-2% 10-20 in (508 mm) per hour; +-3%	0-10 in (254 mm) per hour; +-2% 10-20 in (508 mm) per hour; +-3%
Range:	27" (700 mm) per hour	27" (700 mm) per hour
Operating Temp:	32 to 158°F (0 to 50° C)	32 to 158°F (0 to 50°C)
Storage Temp:	-40 to 185° F (-40 to 70° C)	-40 to 185°F (-40 to 70°C)
Humidity Limits:	0 to 100%	0 to 100%
Weight:	See Spec Sheet	See Spec Sheet
Cable:	10', 24 gauge 2 conductor	10', 24 gauge 2 conductor
Switch:	Momentary Potted reed switch	Momentary Potted reed switch
Switch Closure Time:	135 ms	135 ms
Bounce Settling Time:	0.75 ms	0.75 ms
Pivot:	Ground bronze pivots with hardened stainless steel shaft	Ground bronze pivots with stainless steel shaft
Bucket:	PP resin	PP resin
Level:	Integral Bubble Level	Integral Bubble Level
Warranty:	3 years	3 years

Optional Parts / Accessories

MB-525	Pole Mounting Base
FC-500	Field Calibration Kit
BB-525	Bird Repellant Apparatus
HT-525	Heater, 120 VAC
HOBO	Pendant Datalogger
Cable	Additional Cable

MODEL 525-S

TIPPING BUCKET RAIN GAUGE TRANSMITTER

INSTALLATION INSTRUCTIONS

Rain gauges should be installed on level ground, at a distance from any object of at least two and preferably four times the height of the object above the top of the gauge. All types of rain gauges must be exposed with the rim of the receiver in a horizontal plane and at a level well above the average level of snow surfaces. Roof-mounting of rain gauges should be avoided when possible. Air currents at heights above level have been observed to cause an apparent decrease in rainfall catch relative to the increase in mounting height.

Objects that individually, or in small groups, constitute a "windbreak" reduce prevailing wind speed in the vicinity of the gauge. This reduction of wind speed will, as a consequence, also reduce possible eddy currents and turbulence around the gauge. The presence of such objects is usually beneficial in providing a more accurate rainfall catch. Ideally, the "windbreak" objects (fences, bushes, etc.) should be generally uniform in height and distance from the gauge. Height above the gauge should not exceed about twice their distance from the gauge. The funnel and tipping bucket mechanism should be cleaned periodically. An accumulation of dirt, bugs, etc. on the tipping bucket will adversely affect the calibration.

Accessories:

Model: MB-525 Pole Mounting Base

Model: FC-500 Field Calibration Kit

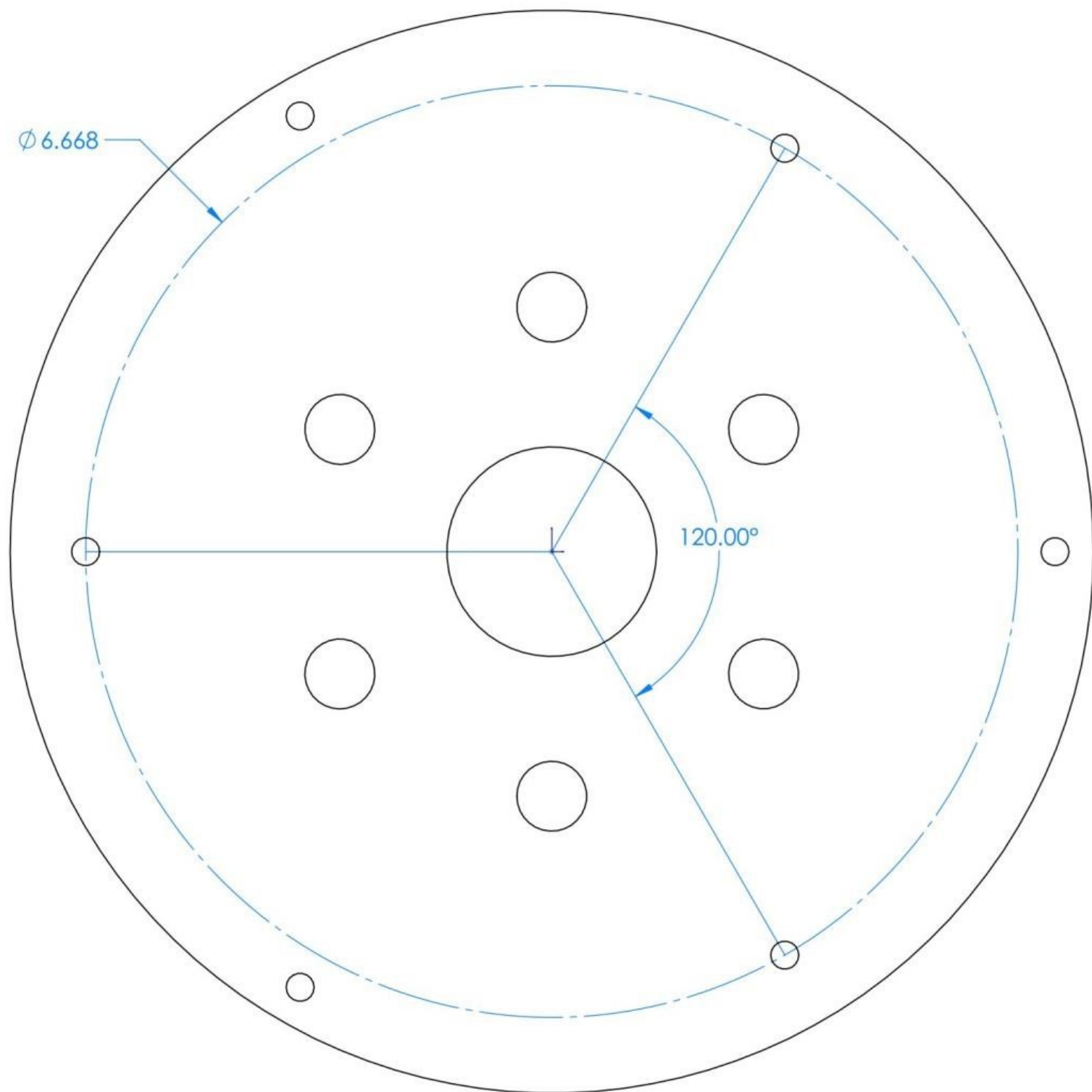
Model: HOBO Pendant Datalogger

FIELD CALIBRATION

Absolutely accurate calibration can be obtained only with laboratory equipment, but an approximate field check can easily be made. The tipping bucket mechanism is a simple and highly reliable device. The transmitter must be located in a clear area, away from trees, buildings, etc. To obtain accurate readings, the unit must be mounted level and free of foreign material, dust, or other debris. The transmitter must be calibrated with the rate of flow of water through the tipping bucket mechanism under control.

REMOVE AND USE THIS TEMPLATE TO BASE MOUNT THE RAINFALL SENSOR

MOUNTING TEMPLATE



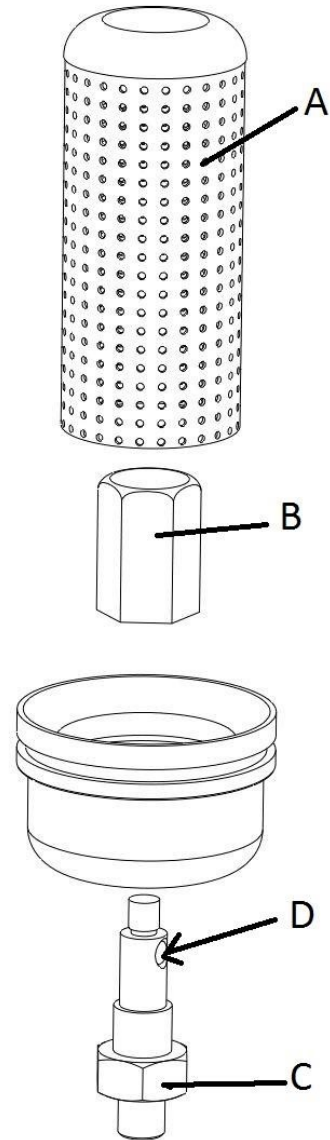
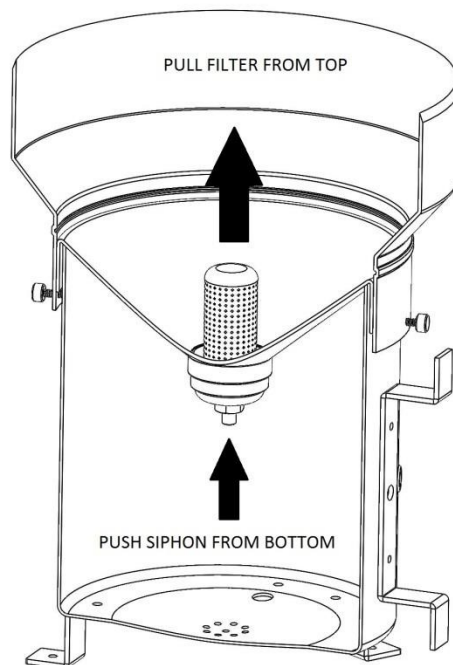
Instructions for Cleaning Siphon Assembly

1. To remove top collector loosen thumb screws.
2. Remove siphon – push straight up from underside of funnel.
3. Remove filter, pull filter straight up. (Fig. A)
4. Using a 1/2" hex nut driver, remove stem cap. (Fig. B)
5. Using 1/2" hex nut driver remove stem cap. (Fig. C)
6. Clean main drip hole and the cross hole until all dirt debris is removed. Blow out with air hose, if possible. (Fig D)

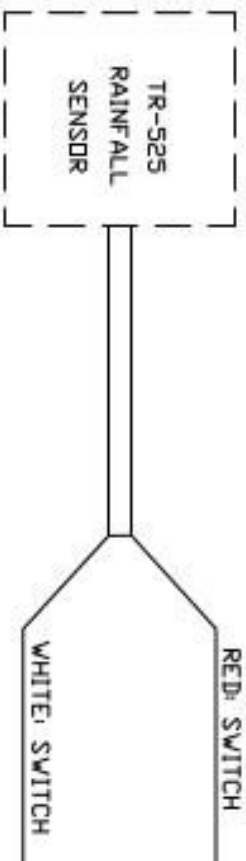
NOTE:

Both holes are 1/8" dia. So you may use a 1/8" drill bit as a cleaning rod. (**careful to not remove any metal**)

7. Re-assemble, stem first and then the cap last, making sure both parts are seated all the way down and not crossed threaded.
8. Re-install screen. Blow out with air hose, if possible.



WIRING DIAGRAM




TYPICAL OUTPUT:

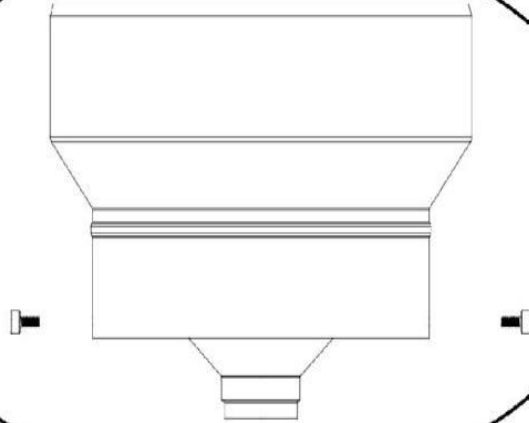
- TR-525I 0.01" tip (4.73mL)
- TR-525M 0.10mm per tip (4.73mL)
- TR-525USW 0.01" per tip (8.23mL)
- TR-525S 0.01" per tip (8.23mL)
- TR-4 0.01" per tip (1.95mL)

OPTIONAL OUTPUT

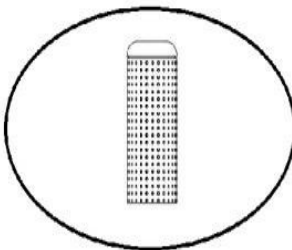
- TR-525I(metric) 0.2mm per tip (3.72mL)

Texas Electronics, Inc. <small>The Gold Standard in Weather Instrumentation Since 1957</small>				
TITLE TR-525 RAINFALL SENSOR WIRING DIAGRAM				
SIZE	FSCM NO.	DMG NO.	REV	
A		3001	A	
SCALE		SHEET	1-1	

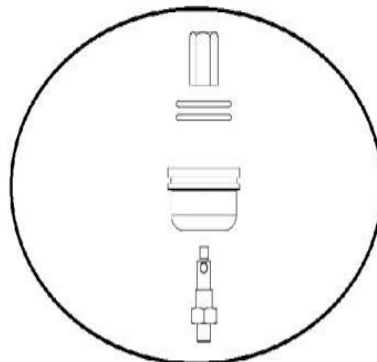
Siphon Ordering Part Numbers



600-00602



600-00603



600-00601

600-00600

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.