Limited Warranty

The TE525, TE525WS, and TE525MM are warranted for thirty-six (36) months subject to this limited warranty:

“Products manufactured by CSI are warranted by CSI to be free from defects in materials and workmanship under normal use and service for twelve months from the date of shipment unless otherwise specified in the corresponding product manual. (Product manuals are available for review online at www.campbellsci.com.) Products not manufactured by CSI, but that are resold by CSI, are warranted only to the limits extended by the original manufacturer. Batteries, fine-wire thermocouples, desiccant, and other consumables have no warranty. CSI’s obligation under this warranty is limited to repairing or replacing (at CSI’s option) defective Products, which shall be the sole and exclusive remedy under this warranty. The Customer assumes all costs of removing, reinstalling, and shipping defective Products to CSI. CSI will return such Products by surface carrier prepaid within the continental United States of America. To all other locations, CSI will return such Products best way CIP (port of entry) per Incoterms ® 2010. This warranty shall not apply to any Products which have been subjected to modification, misuse, neglect, improper service, accidents of nature, or shipping damage. This warranty is in lieu of all other warranties, expressed or implied. The warranty for installation services performed by CSI such as programming to customer specifications, electrical connections to Products manufactured by CSI, and Product specific training, is part of CSI's product warranty. CSI EXPRESSLY DISCLAIMS AND EXCLUDES ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CSI hereby disclaims, to the fullest extent allowed by applicable law, any and all warranties and conditions with respect to the Products, whether express, implied or statutory, other than those expressly provided herein.”
Assistance

Products may not be returned without prior authorization. The following contact information is for US and international customers residing in countries served by Campbell Scientific, Inc. directly. Affiliate companies handle repairs for customers within their territories. Please visit www.campbellsci.com to determine which Campbell Scientific company serves your country.

To obtain a Returned Materials Authorization (RMA) number, contact CAMPBELL SCIENTIFIC, INC., phone (435) 227-9000. Please write the issued RMA number clearly on the outside of the shipping container. Campbell Scientific’s shipping address is:

CAMPBELL SCIENTIFIC, INC.
RMA#_____
815 West 1800 North
Logan, Utah 84321-1784

For all returns, the customer must fill out a “Statement of Product Cleanliness and Decontamination” form and comply with the requirements specified in it. The form is available from our website at www.campbellsci.com/repair. A completed form must be either emailed to repair@campbellsci.com or faxed to (435) 227-9106. Campbell Scientific is unable to process any returns until we receive this form. If the form is not received within three days of product receipt or is incomplete, the product will be returned to the customer at the customer’s expense. Campbell Scientific reserves the right to refuse service on products that were exposed to contaminants that may cause health or safety concerns for our employees.
DANGER — MANY HAZARDS ARE ASSOCIATED WITH INSTALLING, USING, MAINTAINING, AND WORKING ON OR AROUND TRIPODS, TOWERS, AND ANY ATTACHMENTS TO TRIPODS AND TOWERS SUCH AS SENSORS, CROSSARMS, ENCLOSURES, ANTENNAS, ETC. FAILURE TO PROPERLY AND COMPLETELY ASSEMBLE, INSTALL, OPERATE, USE, AND MAINTAIN TRIPODS, TOWERS, AND ATTACHMENTS, AND FAILURE TO HEED WARNINGS, INCREASES THE RISK OF DEATH, ACCIDENT, SERIOUS INJURY, PROPERTY DAMAGE, AND PRODUCT FAILURE. TAKE ALL REASONABLE PRECAUTIONS TO AVOID THESE HAZARDS. CHECK WITH YOUR ORGANIZATION'S SAFETY COORDINATOR (OR POLICY) FOR PROCEDURES AND REQUIRED PROTECTIVE EQUIPMENT PRIOR TO PERFORMING ANY WORK.

Use tripods, towers, and attachments to tripods and towers only for purposes for which they are designed. Do not exceed design limits. Be familiar and comply with all instructions provided in product manuals. Manuals are available at www.campbellsci.com or by telephoning (435) 227-9000 (USA). You are responsible for conformance with governing codes and regulations, including safety regulations, and the integrity and location of structures or land to which towers, tripods, and any attachments are attached. Installation sites should be evaluated and approved by a qualified engineer. If questions or concerns arise regarding installation, use, or maintenance of tripods, towers, attachments, or electrical connections, consult with a licensed and qualified engineer or electrician.

General

- Prior to performing site or installation work, obtain required approvals and permits. Comply with all governing structure-height regulations, such as those of the FAA in the USA.
- Use only qualified personnel for installation, use, and maintenance of tripods and towers, and any attachments to tripods and towers. The use of licensed and qualified contractors is highly recommended.
- Read all applicable instructions carefully and understand procedures thoroughly before beginning work.
- Wear a hardhat and eye protection, and take other appropriate safety precautions while working on or around tripods and towers.
- Do not climb tripods or towers at any time, and prohibit climbing by other persons. Take reasonable precautions to secure tripod and tower sites from trespassers.
- Use only manufacturer recommended parts, materials, and tools.

Utility and Electrical

- You can be killed or sustain serious bodily injury if the tripod, tower, or attachments you are installing, constructing, using, or maintaining, or a tool, stake, or anchor, come in contact with overhead or underground utility lines.
- Maintain a distance of at least one-and-one-half times structure height, 20 feet, or the distance required by applicable law, whichever is greater, between overhead utility lines and the structure (tripod, tower, attachments, or tools).
- Prior to performing site or installation work, inform all utility companies and have all underground utilities marked.
- Comply with all electrical codes. Electrical equipment and related grounding devices should be installed by a licensed and qualified electrician.

Elevated Work and Weather

- Exercise extreme caution when performing elevated work.
- Use appropriate equipment and safety practices.
- During installation and maintenance, keep tower and tripod sites clear of un-trained or non-essential personnel. Take precautions to prevent elevated tools and objects from dropping.
- Do not perform any work in inclement weather, including wind, rain, snow, lightning, etc.

Maintenance

- Periodically (at least yearly) check for wear and damage, including corrosion, stress cracks, frayed cables, loose cable clamps, cable tightness, etc. and take necessary corrective actions.
- Periodically (at least yearly) check electrical ground connections.

WHILE EVERY ATTEMPT IS MADE TO EMBODY THE HIGHEST DEGREE OF SAFETY IN ALL CAMPBELL SCIENTIFIC PRODUCTS, THE CUSTOMER ASSUMES ALL RISK FROM ANY INJURY RESULTING FROM IMPROPER INSTALLATION, USE, OR MAINTENANCE OF TRIPODS, TOWERS, OR ATTACHMENTS TO TRIPODS AND TOWERS SUCH AS SENSORS, CROSSARMS, ENCLOSURES, ANTENNAS, ETC.
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TE525-Series
Tipping Bucket Rain Gages

1. Introduction

The TE525-series tipping bucket rain gages are adaptations of the standard National Weather Service tipping bucket rain gages. They funnel rain into a mechanism that tips when filled to the calibrated level. The TE525 and TE525WS measure in 0.01-inch increments and the TE525MM measures in 0.1-mm increments. The TE525WS conforms to the National Weather Service recommendation for an 8-inch funnel orifice. The TE525 and TE525MM have an orifice diameter of 6 inch and 24.5 cm, respectively.

NOTE
This manual provides information only for CRBasic dataloggers. It is also compatible with most of our retired Edlog dataloggers. For Edlog datalogger support, see an older manual at www.campbellsci.com/old-manuals.

2. Precautions

- READ AND UNDERSTAND the Safety section at the front of this manual.
- TE525-series tipping bucket rain gages are precision instruments that must be handled with care.
- Sensor is factory-calibrated and should not require field calibration. Refer to Section 9.2, Maintenance (p. 11), for field calibration check and factory calibration.
- During field installation, ensure that you have removed the small rubber band that secures the tipping mechanism during shipping.
- Debris filters, funnel, and bucket reservoirs should be kept clean.
- Santoprene® rubber, which composes the black outer jacket of the TE525 cable, will support combustion in air. It is used because of its resistance to temperature extremes, moisture, and UV degradation. It is rated as slow burning when tested according to U.L. 94 H.B. and passes FMVSS302. However, local fire codes may preclude its use inside buildings.

3. Initial Inspection

- Check the packaging and contents of the shipment. If damage occurred during transport, immediately file a claim with the carrier. Contact Campbell Scientific to facilitate repair or replacement.
- Check model information against the shipping documents to ensure the expected products and the correct lengths of cable are received (see Section 3.1, Ships With (p. 2)). Model numbers are found on each product. On cables and cabled items, the model number is usually found at the connection end of the cable. Report any shortages immediately to Campbell Scientific.
3.1 Ships With

The TE525 ships with:

(1) Calibration sheet
(3) Screws from original manufacturer
(2) Hose clamps from original manufacturer

4. QuickStart

A video that describes datalogger programming using Short Cut is available at: www.campbellsci.com/videos/cr1000x-datalogger-getting-started-program-part-3. Short Cut is an easy way to program your datalogger to measure the TE525 and assign datalogger wiring terminals. Short Cut is available as a download on www.campbellsci.com. It is included in installations of LoggerNet, PC200W, PC400, or RTDAQ. The following procedure also describes programming with Short Cut.

1. Open Short Cut and select to create a new program.

2. Double-click the datalogger model.

3. In the Available Sensors and Devices box, type TE525 or locate the sensor in the Sensors | Meteorological | Precipitation folder. Double-click TE525/TE525WS Rain Gauge or TE525MM/TE525M Rain Gauge, depending on which model you have. Data defaults to millimeters. This can be changed by clicking the mm box and selecting inch. Click the Wiring tab to see how the sensor is to be wired to the datalogger.
4. Repeat step three for other sensors being measured.

5. In **Output Setup**, enter the scan rate, **Data Output Storage Intervals**, and meaningful table names.
6. Select the measurement and its associated output options.

7. Click **Finish** and save the program. Send the program to the datalogger if the datalogger is connected to the computer.

8. If the sensor is connected to the datalogger, check the output of the sensor in the data display in **LoggerNet**, **PC400**, **RTDAQ**, or **PC200W** to make sure it is making reasonable measurements.

5. **Overview**

TE525-series Tipping Bucket Rain Gages funnel precipitation into a bucket mechanism that tips when filled to a calibrated level. A magnet attached to the tipping mechanism actuates a switch as the bucket tips. The momentary switch closure is counted by the pulse-counting circuitry of Campbell Scientific dataloggers.

The TE525-series Tipping Bucket Rain Gages are manufactured by Texas Electronics and cabled by Campbell Scientific.

5.1 **Wind Screen**

Campbell Scientific offers the 260-953 Wind Screen to help minimize the effect of wind on rain measurements. This wind screen consists of 32 freely hanging leaves that swing as wind moves past them. Refer to the 260-953 manual for siting information and the installation procedure.

5.2 **Snowfall Adapter**

Campbell Scientific’s CS705 Snowfall Conversion Adapter uses antifreeze to melt snow, allowing the TE525WS to measure the water content of snow. The CS705 cannot be used with either the TE525 or TE525MM. However, both the TE525 and TE525MM can be converted to a TE525WS by returning them to Campbell Scientific (see Assistance page at the beginning of this document). Refer to the CS705 manual for siting information and the installation procedure.
6. Specifications

Features:
- High precision
- Compatible with all Campbell Scientific dataloggers
- TE525WS conforms to the National Weather Service recommendation for an 8-inch funnel orifice.
- TE525WS is directly compatible with the CS705 Snowfall Adapter, allowing it to measure the water content of snow.

Sensor Type:  Tipping bucket/potted magnetic momentary-contact reed switch

Operating Temperature Range:  0 to 50 °C

Storage Temperature Range:  –40 to 70 °C

Switch Ratings:
- 30 Vdc at 2 A
- 115 Vac at 1 A

Closure Time:
- 135 ms

Bounce Settling Time:
- 0.75 ms

Resolution:  1 tip

Accuracy:  1.0% up to 2 in/hour (50 mm/hr)

Materials

Bucket:  white powder-coated spun aluminum
Funnel Collector:  gold anodized spun aluminum
Screen:  gold anodized spun aluminum
Locking Snap Ring:  stainless steel
Tipping Mechanism:  UV protected black ABS plastic with hardened stainless steel jewel bearings and pivot

Cable:  2-conductor shielded cable (length must be specified for all –L options at time of order)

Cable Weight:  0.1 kg (0.2 lb) per 10 ft

Mounting:  Gold anodized aluminum side bracket with adjustable pipe clamps for pole or mast mounting
### TABLE 6-1. Specification Comparisons

<table>
<thead>
<tr>
<th></th>
<th>TE525</th>
<th>TE525WS</th>
<th>TE525MM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volume per Tip</strong></td>
<td>4.73 ml</td>
<td>8.24 ml</td>
<td>4.73 ml</td>
</tr>
<tr>
<td></td>
<td>(0.16 fl. oz)</td>
<td>(0.28 fl. oz)</td>
<td>(0.16 fl. oz)</td>
</tr>
<tr>
<td><strong>Rainfall per Tip</strong></td>
<td>0.01 in</td>
<td>0.01 in</td>
<td>0.1 mm</td>
</tr>
<tr>
<td></td>
<td>(0.254 mm)</td>
<td>(0.254 mm)</td>
<td>(0.004 in)</td>
</tr>
<tr>
<td><strong>Funnel Collector Diameter</strong></td>
<td>15.4 cm</td>
<td>20.3 cm</td>
<td>24.5 cm</td>
</tr>
<tr>
<td></td>
<td>(6.060 in)</td>
<td>(8 in)</td>
<td>(9.7 in)</td>
</tr>
<tr>
<td><strong>Height</strong></td>
<td>24.1 cm</td>
<td>26.7 cm</td>
<td>29.2 cm</td>
</tr>
<tr>
<td></td>
<td>(9.5 in)</td>
<td>(10.5 in)</td>
<td>(11.5 in)</td>
</tr>
<tr>
<td><strong>Tipping Bucket Weight</strong></td>
<td>0.9 kg</td>
<td>1 kg</td>
<td>1.1 kg</td>
</tr>
<tr>
<td></td>
<td>(2 lb)</td>
<td>(2.2 lb)</td>
<td>(2.4 lb)</td>
</tr>
</tbody>
</table>

1 The volume of water required to cause a tip in the TE525 and the TE525MM is the same. The difference in calibration is strictly due to funnel size.

2 If the CS705 Snowfall Adapter or other eight-inch funnel is installed on these gages, refer to TABLE 7-2 for the multiplier. See Appendix C, Changing Funnels with a Different Size (p. C-1), before replacing funnels on any TE525 tipping bucket rain gage with a different size funnel.

### 7. Installation

If you are programming your datalogger with Short Cut, skip Section 7.1, Wiring to Datalogger (p. 6), and Section 7.2, Datalogger Programming (p. 7). Short Cut does this work for you. See Section 4, QuickStart (p. 2), for a Short Cut tutorial.

#### 7.1 Wiring to Datalogger

<table>
<thead>
<tr>
<th>Wire Color</th>
<th>Wire Function</th>
<th>Datalogger Connection Using Pulse Terminals</th>
<th>Datalogger Connection Using Control Terminals(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Rain Signal</td>
<td>P, P_SW, or U(^2) (pulse channel)</td>
<td>C (control port)</td>
</tr>
<tr>
<td>White</td>
<td>Rain Signal Reference</td>
<td>✇ (analog ground)</td>
<td>5 V (on datalogger)</td>
</tr>
<tr>
<td>Clear</td>
<td>Shield</td>
<td>✇ (analog ground)</td>
<td>✇ (analog ground)</td>
</tr>
</tbody>
</table>

\(^1\) The CR200(X)-series and CR300-series dataloggers are not compatible with the control terminal method.

\(^2\) U terminals are automatically configured by the measurement instruction.
7.2 Datalogger Programming

_Short Cut_ is the best source for up-to-date datalogger programming code.

If your data acquisition requirements are simple, you can probably create and maintain a datalogger program exclusively with _Short Cut_. If your data acquisition needs are more complex, the files that _Short Cut_ creates are a great source for programming code to start a new program or add to an existing custom program.

---

**NOTE**

Programs cannot be edited in _Short Cut_ after they are imported in _CRBasic Editor_.

---

A _Short Cut_ tutorial is available in Section 4, _QuickStart_ (p. 2). If you wish to import _Short Cut_ code into _CRBasic Editor_ to create or add to a customized program, follow the procedure in Appendix A, _Importing Short Cut Code Into CRBasic Editor_ (p. A-1). Programming basics for CRBasic dataloggers are provided in the following sections. Complete program examples for select dataloggers can be found in Appendix B, _Example Programs_ (p. B-1). Programming basics and programming examples for Edlog dataloggers are provided at [www.campbellsci.com/old-manuals](http://www.campbellsci.com/old-manuals).

The _PulseCount()_ instruction programs CRBasic dataloggers to measure the TE525 rain gage.

```plaintext
PulseCount(Dest, Reps, PChan, PConfig, POption, Mult, Offset)
```

- Choose Switch Closure for the _PConfig_ parameter. For the CR6 and CR1000X, choose Switch Closure with pull up.
- The _Multiplier_ parameter determines the units in which rainfall is reported (TABLE 7-2).

<table>
<thead>
<tr>
<th>TABLE 7-2. Multipliers for Rain Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Gage</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>TE525</td>
</tr>
<tr>
<td>TE525WS</td>
</tr>
<tr>
<td>TE525MM</td>
</tr>
<tr>
<td>TE525 or TE525MM w/8 in funnel</td>
</tr>
</tbody>
</table>

7.3 Siting

Mount the rain gage in a relatively level spot representative of the surrounding area. Ensure that the lip of the funnel is horizontal, at least 30 cm above the ground, and higher than the average snow depth.

Place the rain gage away from objects that obstruct the wind. The distance should be two to four times the height of the obstruction.
7.4 Mounting

The TE525 includes hose clamps to mount the gage to a 1-inch to 2-inch IPS vertical pole. For additional stability and better leveling capabilities, the CM270 leveling base can be used instead (FIGURE 7-1). This leveling base is included with the CM705 Snowfall Adapter, but can be purchased separately. The CM270 is compatible with a pole with an outer diameter of 2 inches or less. For more information, see CM270 Installation Guide at https://s.campbellsci.com/documents/us/technical-papers/cm270.pdf.

FIGURE 7-1. CM270 Rain Gage Mount attaches to the base of a TE525-series rain gage to give added stability

Both the hose clamps and the CM270 leveling base can mount to the CM300-series mounting poles. The models are stainless steel 1.5 IPS vertical poles of different lengths (TABLE 7-3).

<table>
<thead>
<tr>
<th>Model</th>
<th>Pole Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM300</td>
<td>58 cm (23 in)</td>
</tr>
<tr>
<td>CM305</td>
<td>119 cm (47 in)</td>
</tr>
<tr>
<td>CM310</td>
<td>142 cm (56 in)</td>
</tr>
</tbody>
</table>

The pole or pipe can be attached to a concrete foundation using J-bolts or self-supporting legs (FIGURE 7-2) or placed directly into a concrete foundation (FIGURE 7-3). A concrete pad is recommended, but it should not be installed over a large paved or concrete surface.
FIGURE 7-2. Mounting pole base options

FIGURE 7-3. TE525 Tipping Bucket Rain Gage
Mount the gage with its lip at least 5 cm (2 in) above the post or pole (FIGURE 7-3). The mounting pole must be vertical. Use a torpedo level to get the pole as vertical as possible.

The rain gage has a bubble level to ensure it is level. To access the bubble level, loosen the thumbscrews holding the funnel on the bucket and then take the funnel off the top of the bucket. The bubble level is inside the bucket toward the bottom. Center the bubble level while mounting the bucket to the pole.

While the funnel is off the bucket, remove the small rubber band securing the tipping bucket, which protects it during shipping. Seat the funnel back on to the rain gage, and push the funnel all the way down until it is fully seated on the main body. Hand tighten the thumb screws (if present) to secure the funnel to the body.

Press either end of the bucket down against its stop to make sure the bucket is NOT hung up in the center before hand tightening the thumb screws.

8. Operation

8.1 Sensor Schematic

Campbell Scientific installs a 100 Ω resistor, connected in series, at the switch to prevent arcing by limiting current (FIGURE 8-1).

![TE525-series Rain Gage schematic](image)

8.2 Measurement

Campbell Scientific dataloggers measure TE525 rain gages by counting switch closures and converting the total to rainfall. The PulseCount() instruction employs dedicated pulse count accumulators, which continuously monitor the input signal, even when the datalogger is between program scans. To create a pulse, an internal 100 kΩ pull-up resistor pulls the pulse input to 5 Vdc when the switch is open, and a switch closure to ground pulls the input to 0 Vdc.

9. Troubleshooting and Maintenance

All factory repairs and recalibrations require a returned material authorization (RMA) and completion of the “Declaration of Hazardous Material and Decontamination” form. Refer to the Assistance page at the beginning of this manual for more information.
9.1 Troubleshooting

Symptom: No Precipitation

1. Check that the sensor is wired to the pulse channel specified by the \textbf{PulseCount()} instruction.

2. Verify that the \textit{Configuration Code} (switch closure) and \textit{Multiplier} parameters for the \textbf{PulseCount()} instruction are correct.

3. Disconnect the sensor from the datalogger and use an ohmmeter to do a continuity check of the switch. The resistance measured at the terminal block on the inside of the bucket between the black and white wires should vary from infinite (switch open) when the bucket is tipped, to less than an ohm (switch closed) when the bucket is balanced.

9.2 Maintenance

The funnel and bucket mechanism must be kept clean. Routinely check for and remove debris such as leaves, dust, or insects.

9.3 Calibration

A field calibration check is advised every 12 months.

\textbf{Field Calibration Check:}

1. Secure a can or bottle that will hold at least 16 oz of water.

2. Punch a very small hole in the bottom of the can or bottle. If it takes less than 45 minutes for 16 oz of water to run out, the hole in the can is too large.

3. Place the can in the top funnel of the rain gage and pour 16 fluid ounces of water into the can. (A 16 oz soft drink bottle filled to within 2.5 inches of the top may be used for a rough field calibration. An exact volume will allow for a more precise calibration.)

4. The following number of tips should occur:
   - TE525, TE525MM: 100 ± 3
   - TE525WS: 57 ± 2

5. Adjusting screws are located on the bottom adjacent to the large center drain hole. Adjust both screws the same number of turns. Rotation clockwise increases the number of tips per 16 oz. of water; counter clockwise rotation decreases the number of tips per 16 oz. of water. One half turn of both screws causes a 2% to 3% change.

6. Check and re-level the rain gage.

\textbf{Factory Calibration:}

If factory calibration is required, contact Campbell Scientific to obtain an RMA (see \textit{Assistance} at front of manual).
10. Attributions and References

Santoprene® is a registered trademark of Exxon Mobile Corporation.
Appendix A. Importing Short Cut Code Into CRBasic Editor

This tutorial shows:

- Importing a Short Cut program into a program editor for additional refinement
- Importing a wiring diagram from Short Cut into the comments of a custom program

Short Cut creates files, which can be imported into CRBasic Editor. Assuming defaults were used when Short Cut was installed, these files reside in the C:\campbellsci\SCWin folder:

- .DEF (wiring and memory usage information)
- .CR2 (CR200(X)-series datalogger code)
- .CR300 (CR300-series datalogger code)
- .CR6 (CR6-series datalogger code)
- .CR8 (CR800-series datalogger code)
- .CR1 (CR1000 datalogger code)
- .CR1X (CR1000X-series datalogger code)
- .CR3 (CR3000 datalogger code)
- .CR5 (CR5000 datalogger code)
- .CR9 (CR9000(X) datalogger code)

Import Short Cut code and wiring diagram into CRBasic Editor:

1. Create the Short Cut program following the procedure in Section 4, QuickStart (p. 2). Finish the program. On the Advanced tab, click the CRBasic Editor button. The program opens in CRBasic with the name noname.CR_. Provide a name and save the program.

   NOTE
   Once the file is edited with CRBasic Editor, Short Cut can no longer be used to edit the datalogger program.

2. The program can now be edited, saved, and sent to the datalogger.

3. Import wiring information to the program by opening the associated .DEF file. By default, it is saved in the c:\campbellsci\SCWin folder. Copy and paste the section beginning with heading “–Wiring for CRXXX–” into the CRBasic program, usually at the head of the file. After pasting, edit the information such that an apostrophe (') begins each line. This character instructs the datalogger compiler to ignore the line when compiling. You can highlight several lines of CRBasic code then right-click and select Comment Block. (This feature is demonstrated at about 5:10 in the CRBasic | Features video.)
Appendix B. Example Programs

CRBasic Example B-1. CR1000X Program Measuring the TE525 or TE525WS Using a Pulse Channel

'Program records precipitation from one TE525 or TE525WS Rain Gage once a second and stores the total every 60 minutes

'Wiring Diagram
'==============
'TE525 or TE525WS

' Wire
' Color Function CR1000X
' ----- -------- -------
' Black Pulse Output P1
' White Ground ↓
' Clear Shield ↓

'Declare the variables and units for the rain measurement
Public Rain_mm
Units Rain_mm=mm
DataTable(Rain,True,-1)
DataInterval(0,60,Min,0)
Totalize(1,Rain_mm,FP2,0)
EndTable

BeginProg
Scan(1,Sec,1,0)
PulseCount(Rain_mm,1,P1,1,0,0.254,0)
'For TE525MM Rain Gage, use multiplier of 0.1 in PulseCount instruction
'Call Data Table
CallTable(Rain)
NextScan
EndProg

CRBasic Example B-2. CR200(X) Series Program Measuring a TE525 or TE525WS

'Program records precipitation from one TE525 or TE525WS Rain Gage once a second and stores the total every 60 minutes

'Wiring Diagram
'==============
'TE525 or TE525WS
' Wire
' Color Function CR200X
' ----- -------- -------
' Black Pulse Output P_SW
' White Ground ↓
' Clear Shield ↓

'Declare the variables and units for the rain measurement
Public Rain_mm
Units Rain_mm=mm

'Define Data Tables
DataTable(Rain,True,-1)
DataInterval(0,60,Min)
Totalize(1,Rain_mm,0)
EndTable
Appendix B. Example Programs

CRBasic Example B-3. CR1000X Program Measuring the TE525 or TE525WS Using a Control Port

'Program records precipitation from one TE525 or TE525WS Rain Gage once a second and stores the total every 60 minutes

'Wiring Diagram
'==============
'TE525 or TE525WS
'  Wire
'  Color     Function            CR1000X
'  ------     --------            -------
'  Black     Pulse output        C1
'  White     Pull-up voltage     5V
'  Clear     Shield              

'Declare Public Variables and Units
Public Rain_mm
Units Rain_mm=mm
DataTable (Rain,True,-1)
DataInterval (0,60,Min,0)
Totalize (1,Rain_mm,FP2,0)
EndTable

'Main Program
BeginProg
  Scan (1,Sec,1,0)
  PulseCount (Rain_mm,1,C1,2,0,.254,0)
  'For TE525MM Rain Gage use multiplier of 0.1 in PulseCount Instruction.
  CallTable (Rain)
  NextScan
EndProg
Appendix C. Changing Funnels with a Different Size

C.1 TE525 and TE525MM

The TE525 and TE525MM rain gages use the same tipping mechanism that is calibrated to tip with the same amount of water. Changing the funnel does not necessitate changing the tipping mechanism, but it does require changing the multiplier in the datalogger program to match the funnel size. See TABLE 7-2, Multipliers for Rain Measurement (p. 7), for the correct multiplier.

C.2 TE525WS

The TE525WS rain gage uses a different tipping mechanism that is calibrated differently than the TE525 or TE525MM. The tipping mechanism must be replaced to work with a TE525 or TE525MM funnel. Send the rain bucket into the Campbell Scientific repair department for modifications. Contact Campbell Scientific to obtain an RMA (see Assistance at front of manual).
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