



CM300-Series

Mounting Poles



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.”**

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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.

Safety

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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CM300-Series Mounting Poles

1. Overview

The CM300-series mounting poles provide a stainless steel 1.5 IPS vertical pole for mounting sensors, enclosures, or other instrumentation. Pole length is 58 cm (23 in), 119 cm (47 in), or 142 cm (56 in) for the CM300, CM305, and CM310 models, respectively.

Mounting poles can be placed directly into a concrete foundation, attached to a concrete foundation with the Pedestal J-Bolt Kit option, or can be self-supporting with the Pedestal Leg options (FIGURES 1-1, 3-1, 3-2, 3-3). A vinyl cap prevents precipitation from entering through the top of the pole.

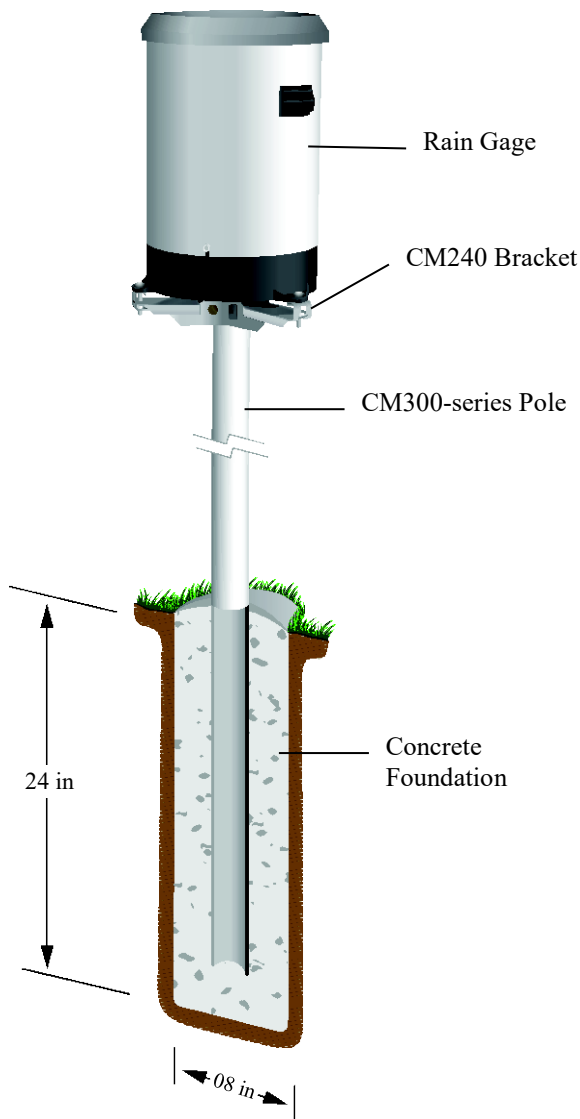


FIGURE 1-1. TB4 Rain Gage with CM240 Bracket and CM310 Mounting Pole

2. Specifications

Material:	Stainless Steel
Pipe Size:	3.81 cm (1.5 in) IPS
Outer Diameter:	4.8 cm (1.9 in)
Length	
CM300:	58 cm (23 in)
CM305:	119 cm (47 in)
CM310:	142 cm (56 in)
J-Bolts:	1/2 in x 12 in SS with triple-nuts and washers (Pedestal J-Bolt Kit option)

CM300 Series Options (FIGURES 1-1, 3-1, 3-2, 3-3):

- NP No Pedestal Base
- PJ Pedestal J-Bolt Kit
- PS Pedestal Short Legs
- PL Pedestal Long Legs

There is a series of holes in the Pedestal Leg Base that determine the leg angle and pedestal height as shown in the following table.

	Hole Position (See FIGURE 2-1)	Pedestal Height (inches)	Diameter of Base (inches)
CM350 Pedestal (23-inch Legs)	A	20.8	36.5
	B	19.1	39.8
	C	17.6	43.6
	D	15.5	46.1
	E	13.6	49.1
	F	8.9	52.4
CM355 Pedestal (39-inch Legs)	A	33.5	54.5
	B	30.7	60.7
	C	27.9	67
	D	24.3	71.9
	E	20.8	76.8
	F	12.5	82.8

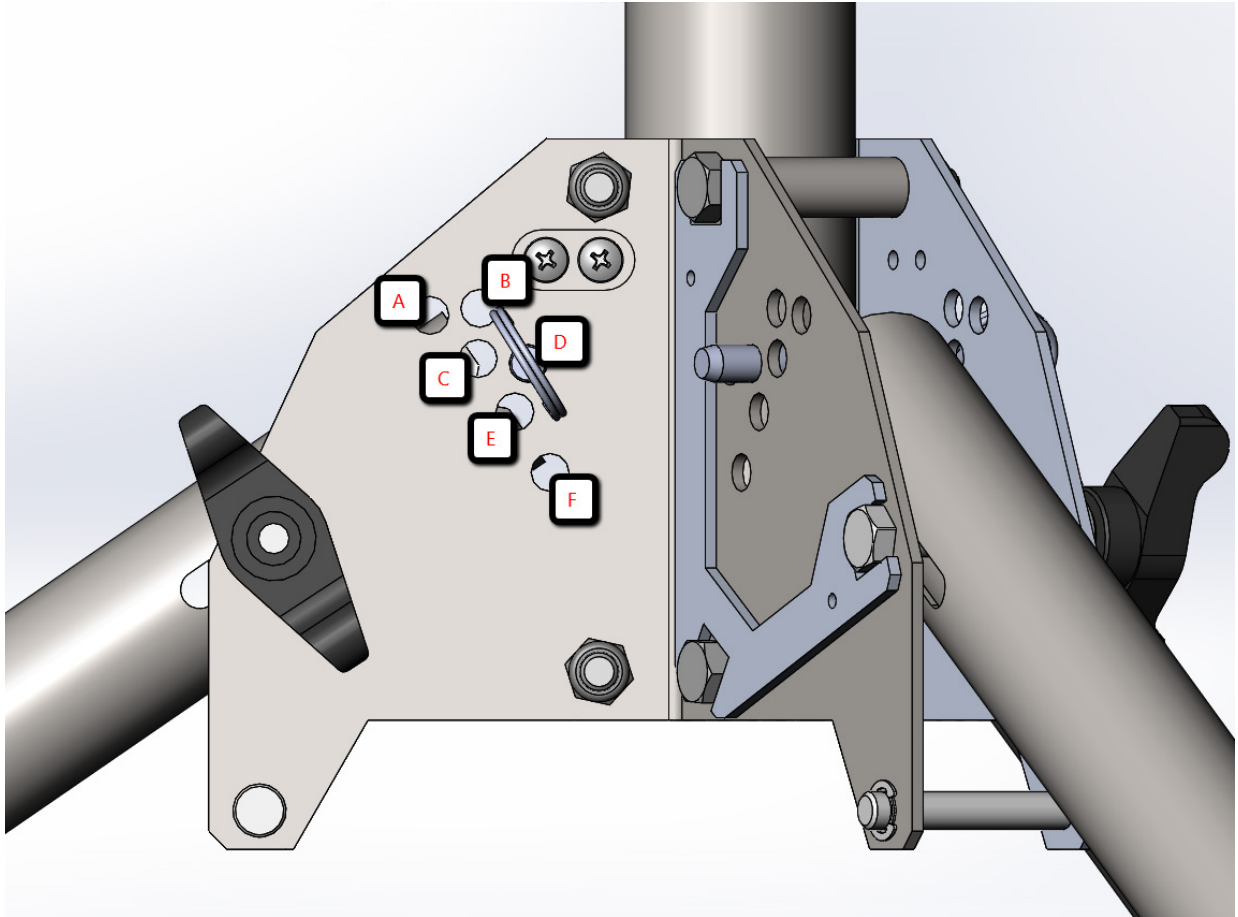


FIGURE 2-1. Pedestal Leg Base Showing Incline Holes

3. Installation

3.1 Tools List

(2) 1/2-inch combination wrench
 (2) 3/4-inch combination wrench
 Large Phillips screwdriver
 Torpedo level
 Small sledge hammer (for Pedestal Leg option, to drive optional Ground Spikes)
 Form materials (for Pedestal J-bolt Kit option, Section 3.3, *CM300-Series Mounting Pole with Pedestal J-Bolt Kit (p. 4)*)

Optional items (must be ordered separately):

Ground Kit
 Ground Spike

3.2 CM300-Series Mounting Pole in Concrete Foundation

For permanent installations, CM300-series poles are installed in a concrete foundation. Dig a hole 6 to 8 inches in diameter by 24 inches deep (or below frost level). Place the pole in the center of the hole. Fill the hole with concrete, and plumb the pole with a level.

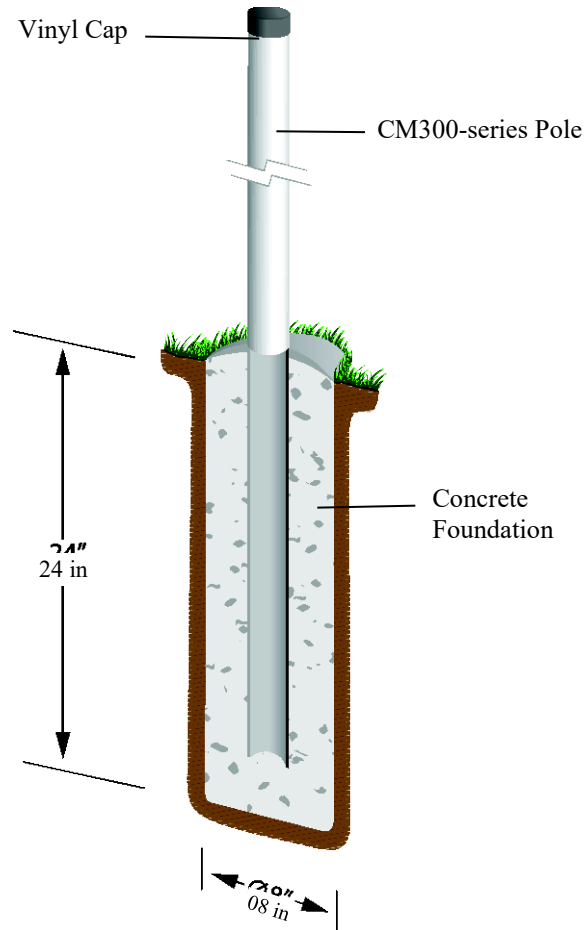


FIGURE 3-1. CM310 Mounting Pole in Concrete Foundation

3.3 CM300-Series Mounting Pole with Pedestal J-Bolt Kit

A CM300-series pole with the Pedestal J-Bolt Kit option is used for permanent installations where there is a need to periodically plumb the pole. J-bolts are installed in a concrete foundation by using the template provided with the kit.

Construct a form 14 inches square (inside dimensions) from 2 x 4-inch lumber. Cut two pieces of 2 x 4-inch lumber 18 inches long.

Dig a hole 14 x 14 x 24 inches deep (depth should exceed typical frost level). Center, and level the form over the hole.

Install the J-bolts to the template by using two nuts below the template, and one nut above. Fill the hole and form with concrete, and place the two 18-inch two-by-fours on top of the form. Insert the J-bolts into the concrete, with the bottom of the template resting on top of the spacers (template should be 2 inches above the concrete).

Remove the template after the concrete has cured. Insert the pole into the pedestal, and tighten the six bolts evenly.

Each J-bolt should have two nuts and one washer installed, with the bottom nuts about 1/4 inch above the bottom of the threads. Place the pedestal over the J-bolts and install a flat washer, split washer, and nut on each bolt — do not tighten the nuts at this time.

Adjust the lower nuts on each J-bolt to plumb the pole. “Lock” the lower nuts together by using two wrenches. Tighten the upper nuts to secure the pedestal to the J-bolts.

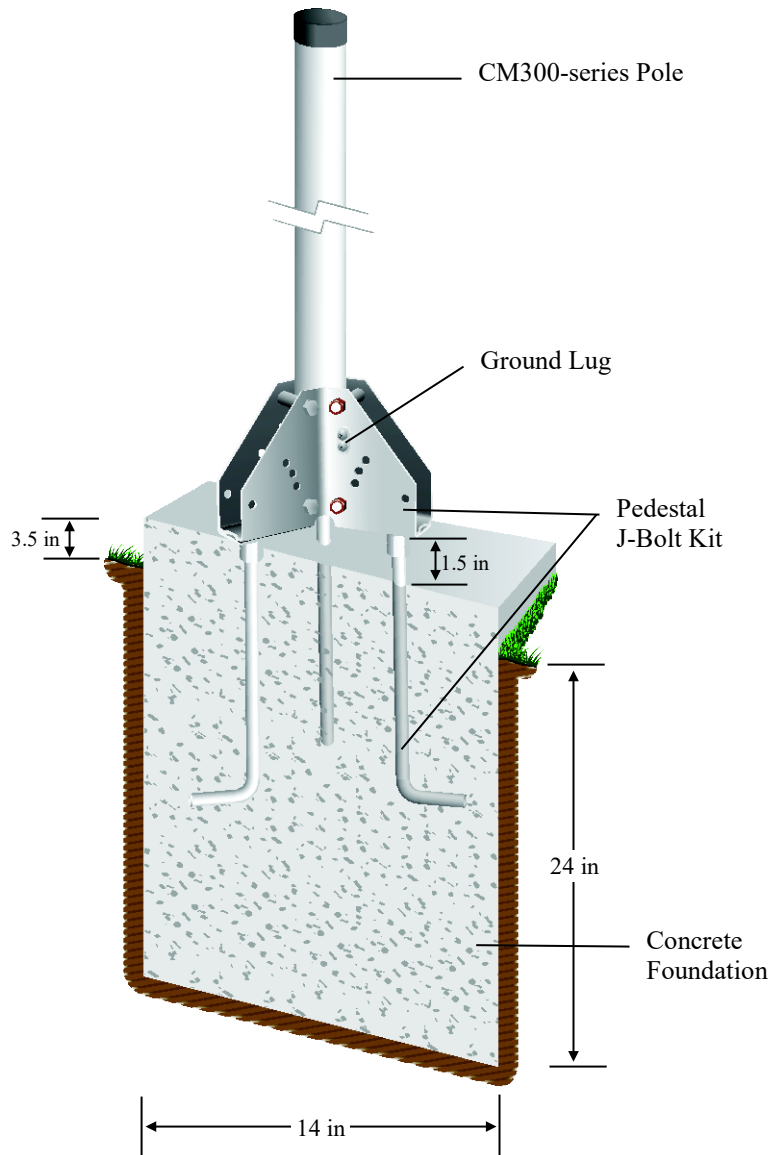


FIGURE 3-2. CM305 Mounting Pole with Pedestal J-Bolt Kit

3.4 CM300-Series Mounting Pole with Pedestal Legs

A CM300-series pole with a Pedestal Leg option is used for temporary installations or for applications where a concrete foundation is not an option. The 23-inch Pedestal Legs are adequate for most applications. The 39-inch

Pedestal Legs provide additional stability for applications where the feet cannot be secured (for example, to the surface of a roof), for extended poles, or for locations with high winds.

Each leg attaches to the pedestal base with two bolts. The pedestal base has a set of six holes for each leg. The angle of the legs, and resultant pedestal height, is determined by which hole the end bolt is placed through (see table in Section 2, *Specifications* (p. 2)).

Attach the legs to the pedestal base, and tighten the bolts (do not over tighten). Place the pole into the base and tighten the six bolts evenly. For additional stability, the feet can be spiked to the ground by using (3) ground spikes, or secured with user-supplied anchors through the holes in the feet.



FIGURE 3-3. CM300 Mounting Pole with Pedestal Legs

3.5 Grounding

The grounding kit may be used to provide an earth ground for the pedestal and associated instrumentation. Attach the earth and enclosure ground wires to the lug on the pedestal base as shown in [FIGURE 3-3](#).

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