Columbia Weather Systems, Inc.
5285 N.E. Elam Young Parkway, C100
Hillsboro, Oregon 97124

Phone: (503) 629-0887
Fax: (503) 629-0898

www.columbiaweather.com

Visibility Sensor (CS120A)

CWS Part Number: 82620-10
Revision A, 9/25/2015

The Visibility Sensor utilizes the forward scatter technology for visibility measurements.

TECHNICAL SPECIFICATIONS

Visibility Measurement: 33 to 104,985ft (10 to 32,000m)
Accuracy up to 10,000m: ±10%
Accuracy over 10,000m: ±20%

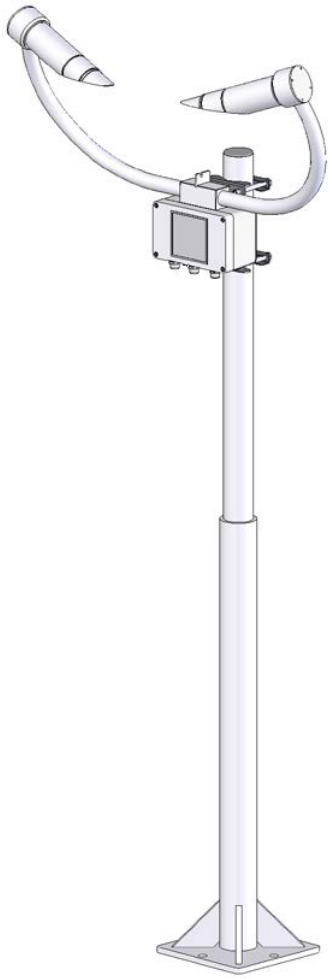
Operating Temperature: -25°C to +60°C

Power Supply: +12VDC

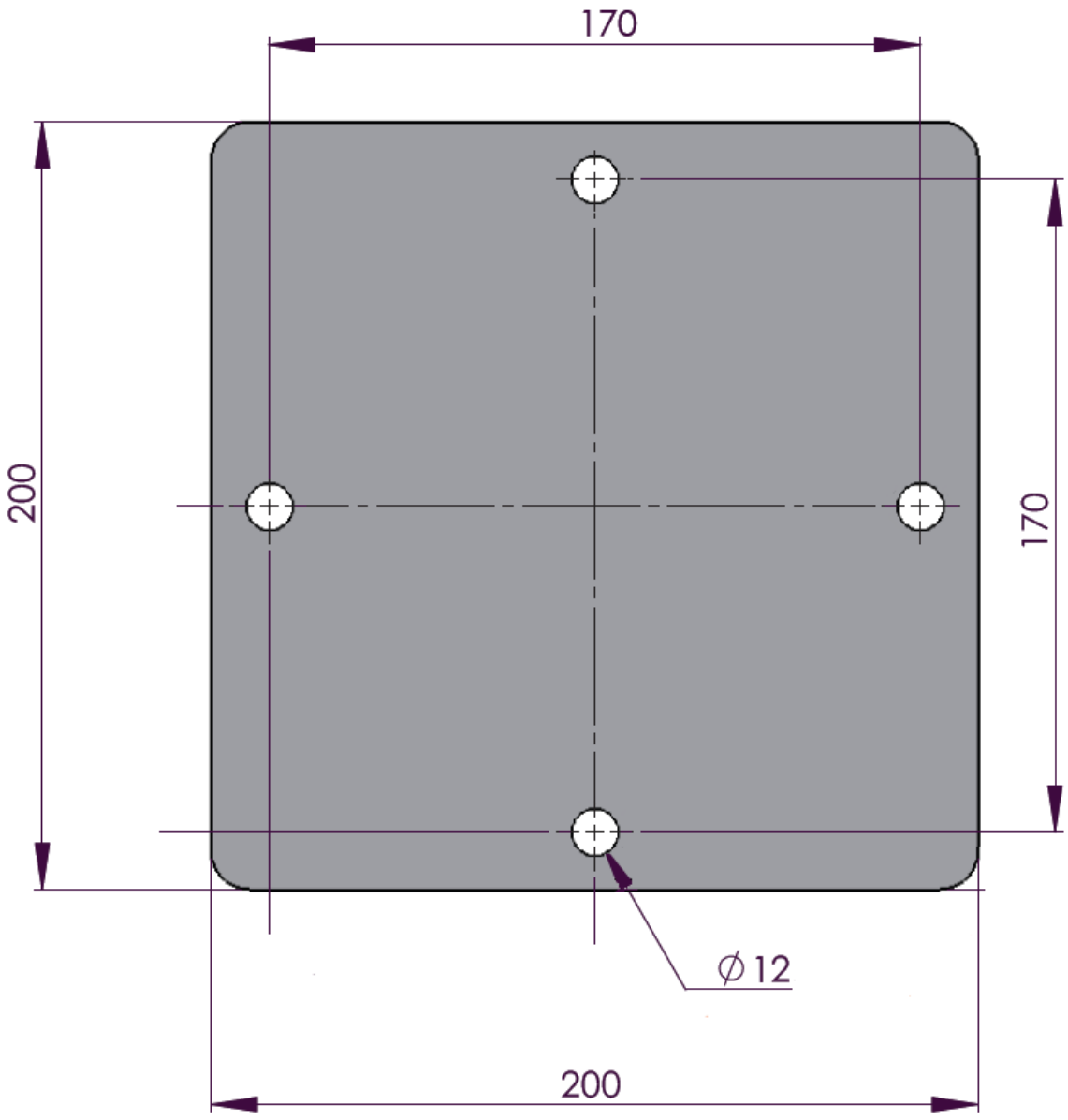
INSTALLATION

Attach the Visibility Sensor to the provided mounting pole.

Follow the directions below to install the mounting pole.



Drill four 12 mm diameter holes using the mount base as a template or following the drawing below to a depth of 77 mm.



Clean the holes of all debris.

Place washers and nuts on the ends of the wedge anchors supplied (to protect the threads during installation).

Hammer the wedge anchors into the holes until the start of the threads are below the surface.

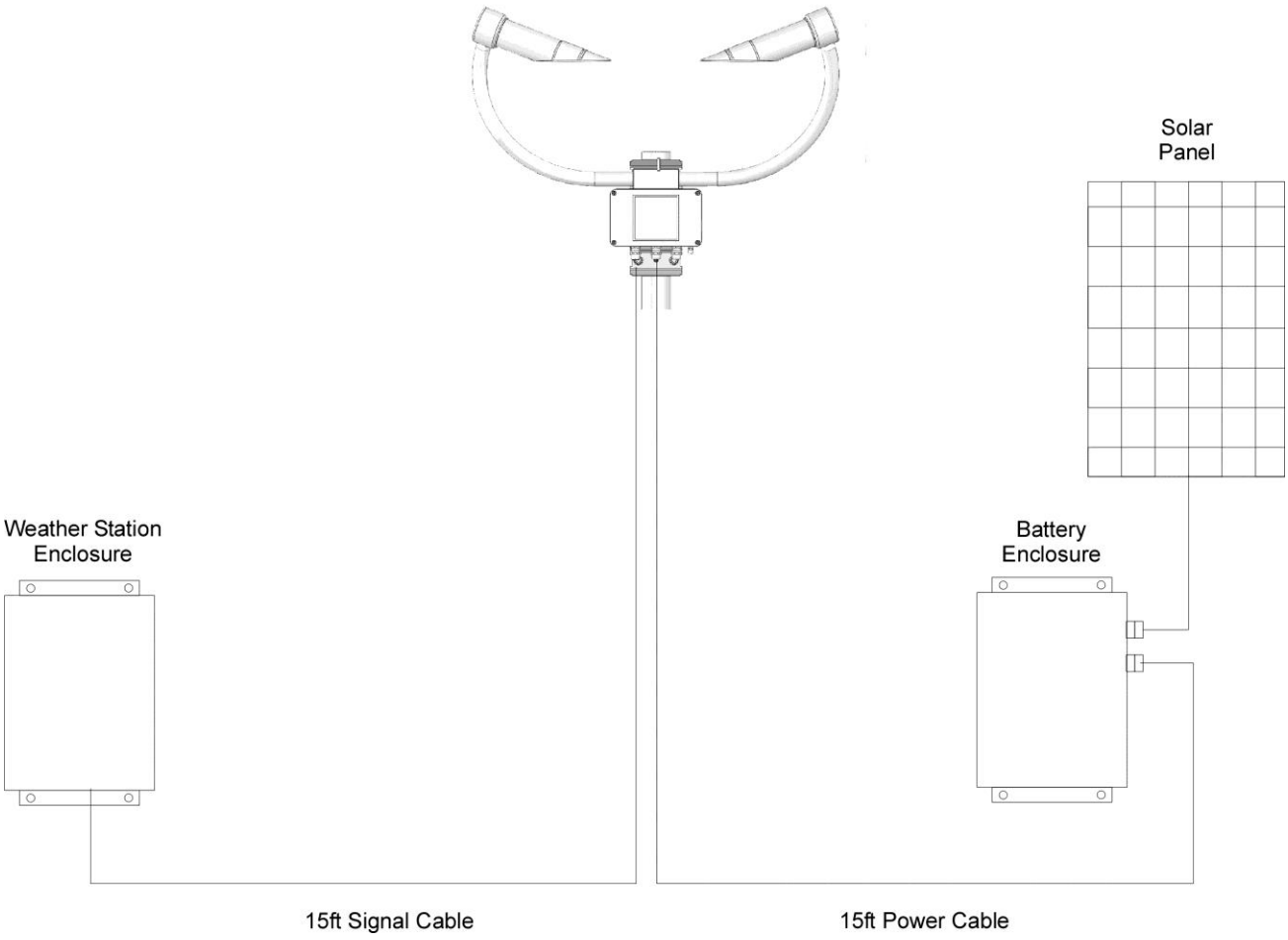
Tighten the nuts until about 25 mm of thread protrudes above the surface.

Remove the washers and nuts from the protruding length screw. Then lower the mount into place.

Finally secure the mount with the washers and nuts.

If the surface is not level and flat it may be necessary to add washers under the base on one or more of the foundation screws.

Visibility Sensor System Diagram



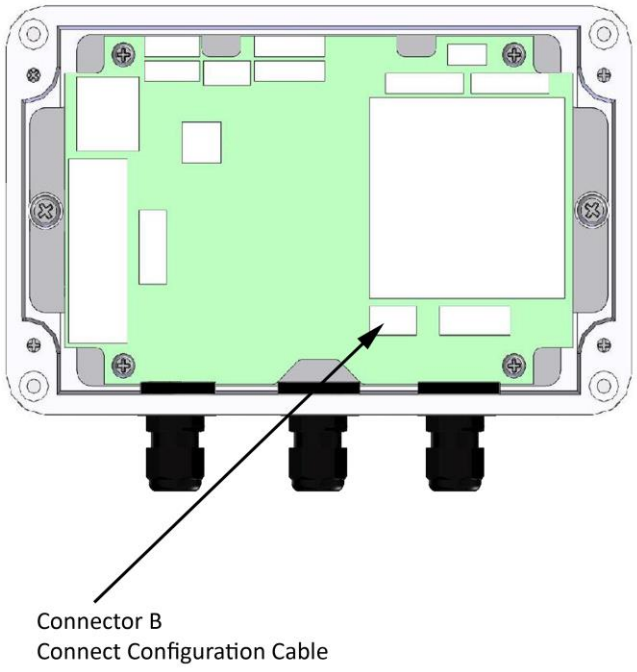
CALIBRATION

The Visibility Sensor is self-regulating. However, it is recommended that the CS120A is calibrated every two years.

The calibration procedure can be performed using the provided Calibration Kit including two foam bungs, calibration disk and RS-232 Configuration cable.

Part 1 – Establishing communication with the Visibility Sensor

1. Disconnect power from the Visibility Sensor
2. Open the enclosure by removing the four screws
3. Disconnect the communication cable from connector B in the enclosure as shown below



4. Connect the provided Configuration Cable to connector B in the enclosure
5. Connect the DB-9 connector to an open serial port on a computer
6. Open a Terminal Program such as PuTTY with the following communication settings:

   Baud Rate: 38400
   Data bits: 8
   Parity: none
   Stop bits: 1
   Flow control: none

Part 2 – Calibrate the Visibility Sensor

1. Connect the power supply to the Visibility Sensor
2. Enter the following command to open the configuration menu: open 0
3. Enter 3 for the Calibration Menu
4. Follow the on the screen instructions to complete the calibration
5. The serial number can be found on the calibration disk. When prompted for the calibration disk serial number omit the leading letter. For example: Serial Number – E165, Enter: 165.
6. When prompted to press any key, the Enter key is not an option

Every ten seconds a dot should appear on screen to show that the procedure is progressing normally.

When the procedure is complete the new calibration constants will be saved automatically.

To begin normal operation power can be cycled on the Visibility Sensor.

The data outputs once every minute from the sensor.

DESICCANT
Two bags of desiccant are supplied. One is inside the enclosure, the other is separate and sealed in a plastic bag.

Desiccant use depends on your application but for use in typical temperature conditions one bag insufficient for a twelve month period.

The desiccant should be placed inside the enclosure taking care that it is not trapped between the lid and the enclosure when the lid is replaced.

The second bag of desiccant should be kept in the plastic shipping bag as a replacement for when the initial bag needs to be dried out. The bags can be rotated in this way many times. Desiccant bags can also be dried out, consult the CS120A User Manual for more information.