



Quick Installation Guide

Model	CTM-ONE M Solar
Revision	Rev 1.1

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Overview

The CTM-ONE M Solar is a standalone ruggedized system for remote telemetry monitoring. It has an integrated solar panel and battery, with advanced logic for monitoring charge level and battery level, to optimize reporting in the most adverse of conditions. It is designed to be field installed with minimal tools and setup. This Guide does not cover SIM installation or device configuration. The CTM-ONE will be pre-configured with sensors and/or interconnects to downstream sensors.

The CTM-ONE M can be mounted vertically or horizontally. The mounting bracket can be adapted for pipe or wall or platform mounting.



Installation

The CTM-ONE M Solar should be mounted facing true South (non-magnetic) in the Northern Hemisphere, or true North in the Southern Hemisphere. The solar panel can be tilted to various angles based on geographic location of installation (refer to Appendix A for information about setting Solar panel tilt angles).

To determine true South and to correct for magnetic declination based on a compass reading, visit:

<https://www.ngdc.noaa.gov/geomag-web/>

For areas prone to snow, adjusting the solar panel to be more vertically inclined will allow snow to shed from the face of the panel. Tilt angle should be adjusted based on the latitude of the installation location. In summer months, the panel can be aligned more horizontally to the ground, and in the winter months the panel should be aligned more vertically to the ground.

For general installations (angle from horizontal):

- Latitude +15 degrees for winter installation
- Latitude -15 degrees for summer installation

For year-round installation without panel adjustment adjust the tilt angle to be between the winter angle and summer angle.

For 50 degrees latitude, a 50-degree angle from horizontal will offer a good angle for optimizing winter sunlight, and will provide suitable tilt angle for shedding snow and will allow for adequate charging during summer months.

Device Activation

The CTM-ONE M Solar has two embedded magnets activated (reed) switches that are used to turn power on to wake up the device. Removal of the magnets held in place by adhesive tape will trigger the switch.

1.1 Initial Power UP

After installation remove the magnet held in place by the fiber tape. The removal of this battery turns the system on. No further action is required.

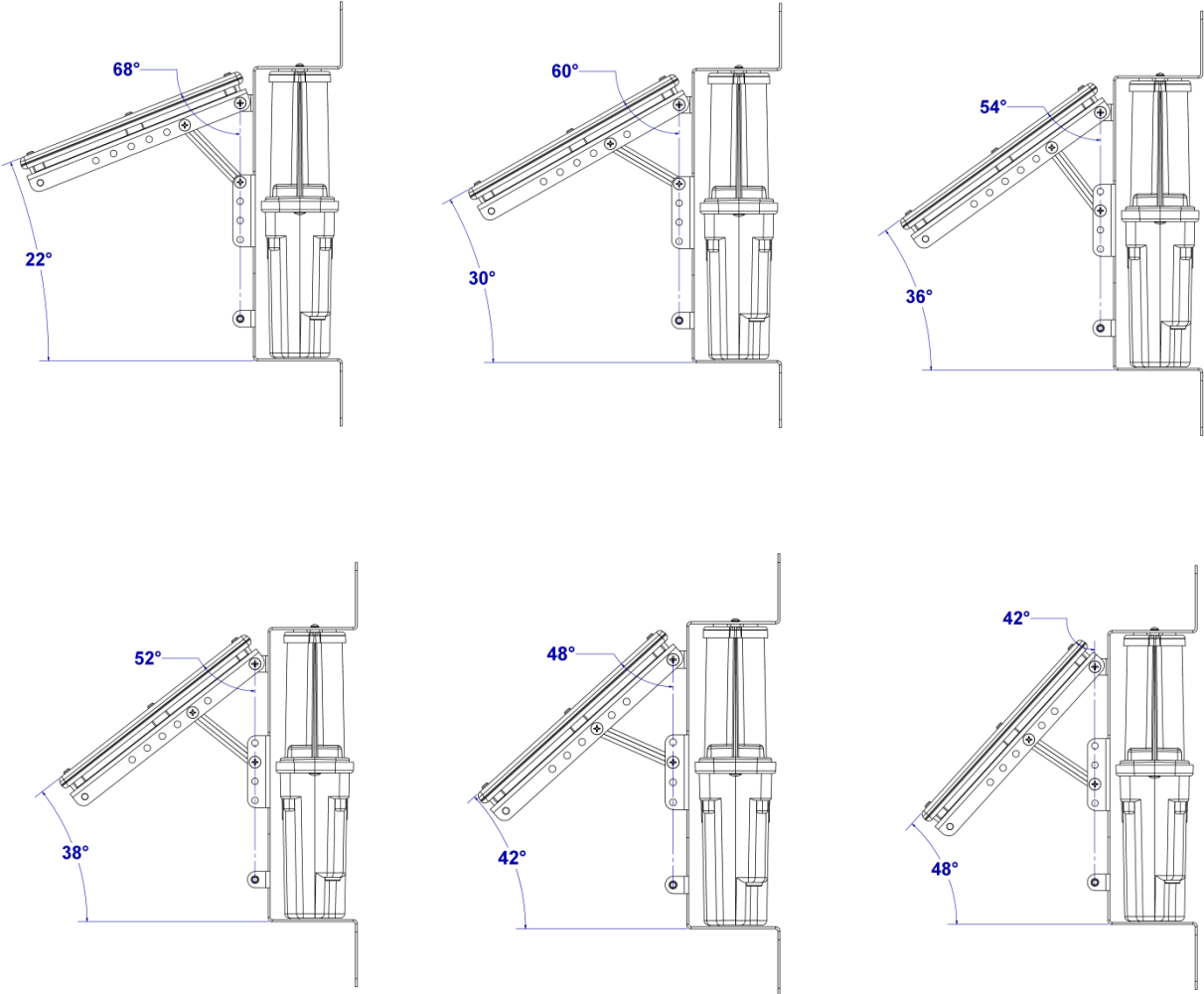
The magnet is located on the side opposite the Solar Panel, (see image, below).

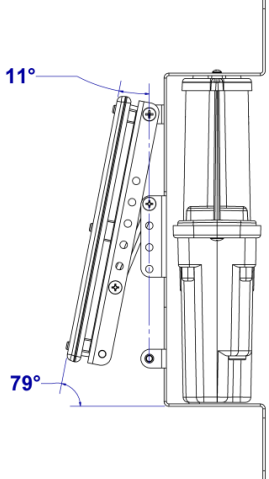
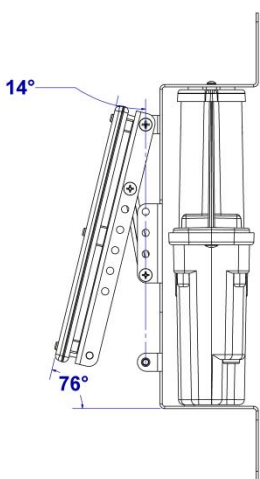
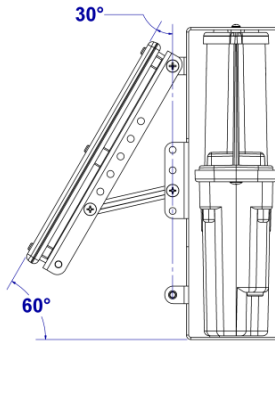
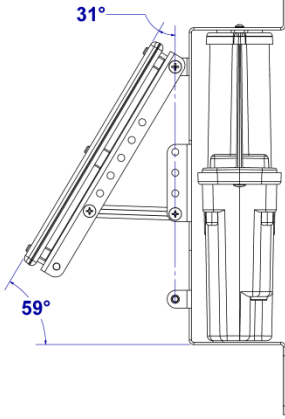
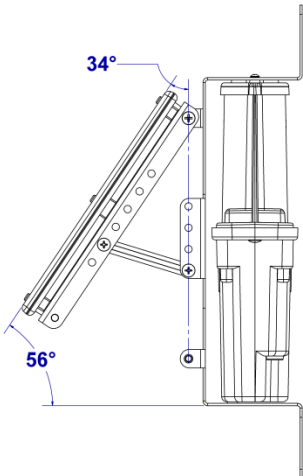
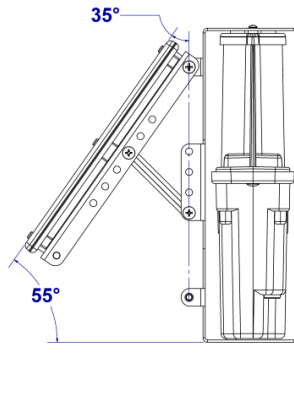
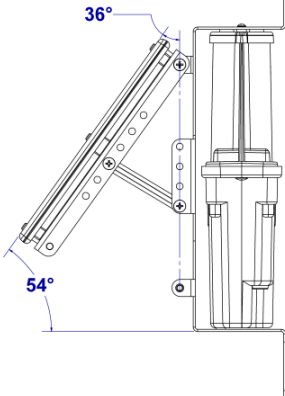
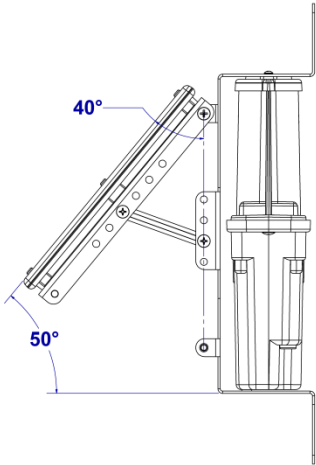
To turn the system off permanently, place the magnet in the same location and hold in place using adhesive tape.



Appendix A: Solar Panel Tilt Angles

Note: The diagrams below show two angles, one measured from horizontal and one measured from vertical. For Solar panel tilt angles this document refers to Tilt angles measured from horizontal. The tilt angle can be adjusted by moving the two small braces to different hole positions on the mounting bracket and solar panel L-brackets.





Appendix B: Device Wake up

Device Wake Up is only required for troubleshooting and configuring the device to be in an always on state.

There is a second switch which controls the ability to wake up the system and provides network connectivity for local and remote management. The intention of this wake-up switch is to provide an easy means of turning the system on for configuration and trouble shooting. Normally, these systems will be powered off more than on, and this switch forces the unit to remain powered on when the magnet is installed. The switch is activated by holding the magnet over the location shown in the image. The magnet needs to be held in place to turn on the system. If using tape, make sure to use strong adhesive tape as the metal frame will attract the magnet. Once the magnet is removed, the system returns to previous operating modes. When the magnet is held in place the power, sim, cell LED will be solid, the Wi-Fi and GPS may be blinking depending on the state.

Note: The magnet should not be left in place for long periods as this will cause the battery drain due to the device being in an always on/connected state.

The magnet can be attached to the black metal frame when not being used to reset the device. If revisiting the site at a later date, make sure to bring strong adhesive tape to hold the magnet in place.



Technical Support

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