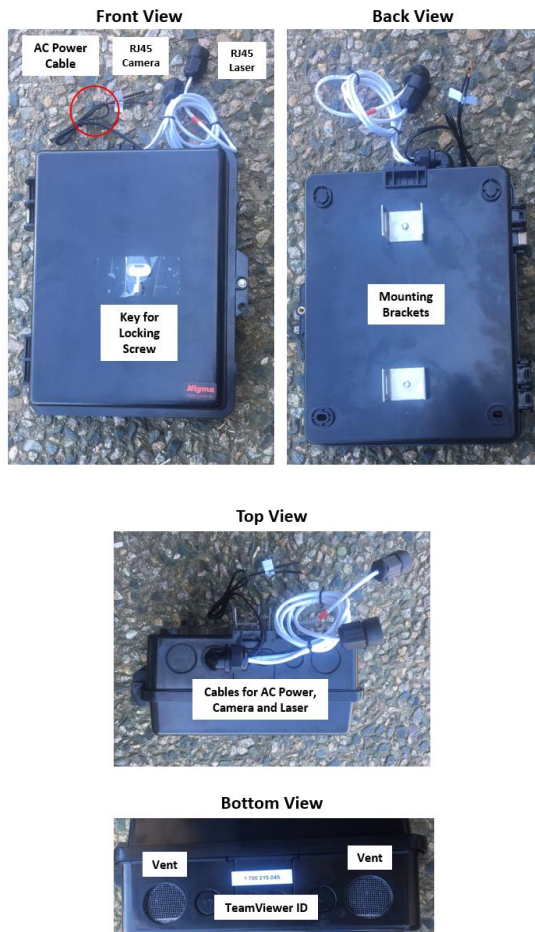# MigmaCount™

for counting pedestrians and cyclists

Installation Guide

General Description

One MigmaCount™ unit comprises of one sensor (stereo camera and LiDAR) and one base station. The base station can be mounted to any poles through the brackets on the back. The sensor is mounted to the pole using the bracket attached. The recommended height for the sensor is 8 – 10 ft above the ground.

Front View

Back View

AC Power Cable

RJ45 Camera

RJ45 Laser

Key for Locking Screw

Mounting Brackets

Top View

Cables for AC Power, Camera and Laser

Bottom View

Vent

Vent

TeamViewer ID

Sensor and Base Station Mounting

The sensor is made of stereo camera and LiDAR, and each has its own RJ45 connector (i.e., two RJ45 connectors). The sensor power comes from the camera cable (PoE).

First, mount the base station to the signal pole using two brackets on its back. Then mount the sensor to the same

signal pole using the bracket attached. The sensor height should be 8 – 10 ft above the ground, aiming at the counting area. The sensor orientation adjustment will be described shortly.
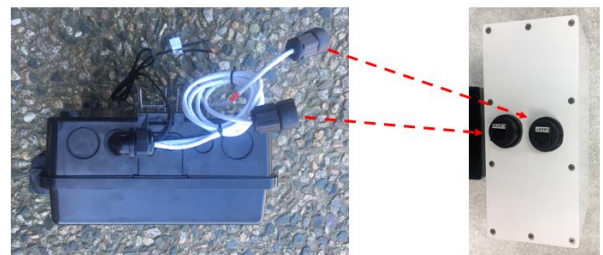
Sensor Connection with Base Station

The sensor front and back views are shown below. The LiDAR is located between two lenses of stereo camera. Two RJ45 connectors for camera and LiDAR can be found at the back of sensor.

Front View

Power Indicator

LiDAR

Camera

Camera

Back View

RJ45 LiDAR

RJ45 Camera

To connect LiDAR to the base station, simply take the cable *with red strip* and screw its RJ45 connector to the "laser" connector at the back of sensor.

To connect stereo camera to the base station, simply take the cable without red strip and screw its RJ45 connector to the "camera" connector at the back of sensor.
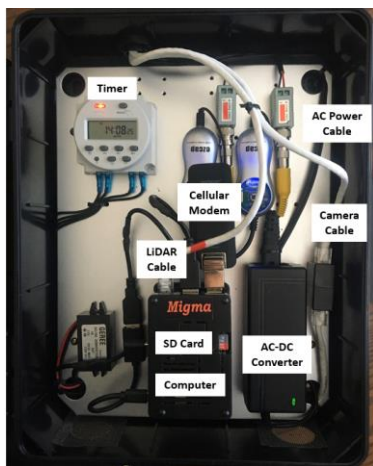
Please tighten both connectors to avoid water leaks.

AC Power Connection

Finally, connect the power cable on the base station to the AC power source, 100 – 240 VAC. Follow the labels of hot (H) and neutral (N).

Base Station Interior

Turn on the AC power. Open the base station using the locking screw key provided. One will see the interior of base station which is shown below.

There is an extra USB port available for mouse connection. The computer is running in Linux and the operating system and data are all stored in SD Card which can be, but not recommended, replaced.

Each base station has a pre-activated and service-subscribed cellular modem which can bring the entire system online with access to Internet. Removing the cellular modem will result in re-configuring LiDAR. *Do not remove or replace the modem.*

TeamViewer Host (https://www.teamviewer.com/en-us/) is pre-installed and configured in each base station and its ID can be found at the bottom of base station.

It is required to download TeamViewer which is free for use by government agencies (DOT and DPW personnel). You can use TeamViewer for remote configuration, monitoring and counting data downloading.

Sensor Orientation Adjustment

To adjust the sensor orientation, one needs to display the camera view through a software configurator in the computer. There are two ways to start the configurator:

Method 1 – Portable Monitor

    Base station supports an HDMI monitor which must be powered by 12V battery. Once monitor is plugged in HDMI port, the configurator can be started manually.

Method 2 – Remote Access

    Use office desktop to access the base station via TeamViewer. For example, the field engineer can call someone in the office to remotely log into base station and start the configurator.

It is recommended to use remote access method to start the configurator. Once logged in, the person in the office can tell the field engineer how to adjust the sensor orientation.

To adjust the sensor orientation, please ensure the following two conditions are satisfied:

1. The counting area (e.g., crosswalk, bike path or sidewalk) is in the middle of the camera view.
2. The distance shown is 35 ft or 36 ft.
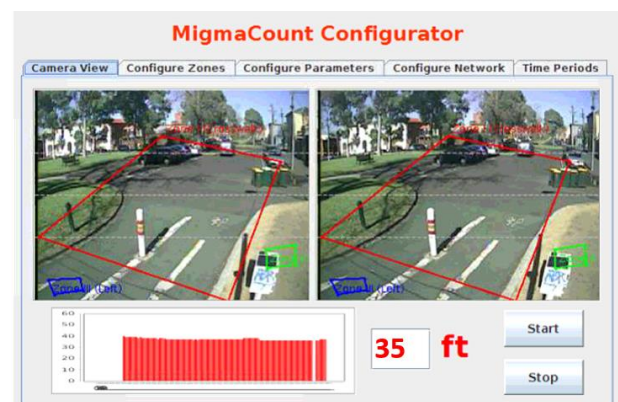
Once these two conditions are met, sensor orientation is done, and system installation is completed. Next step is to configure the system, which can be done remotely.