

1 Installation Equipment

- a. Required
 - i. Sensys Networks AP240-E Access Point with mounting hardware
 - ii. Sensys Networks VSN240 Wireless Sensors
 - iii. Pavement Adhesive and applicator (provided by Sensys Networks see attached MSDS)
 - iv. Coring bit – 4”, with a 1.25” female machine thread sleeve provided by Sensys Networks (for flush mount Sensors only)
NOTE: The flush mount Sensor dimensions are 1.93” high x 3.65” diameter.
 - v. Coring Drill and frame - Milwaukee 510067 or equivalent (for flush mount Sensors only)
 - vi. Vacuum for removing dust created during coring (for flush mount Sensors only)

2 Site Layout

- a. The Sensors should be installed approximately in the middle of the lane to be monitored. For speed measurements, install a pair of Sensors per lane at a maximum distance of 20 feet from each other.
- b. The Access Point should be mounted near or on the equipment cabinet that houses the traffic controller nearest the Sensors.
- c. The Access Point should be mounted per the following guidelines.

Access Point minimum height	Access Point to Sensor maximum distance
8 ft	50 ft
12 ft	75 ft
18 ft	105 ft
24 ft	150 ft

3 Installing the Sensors

- a. Flush mount installation
 - i. Use the coring bit and drill rig to make a 2” deep core at the desired Sensor locations. Dry coring is recommended with a vacuum to remove the dust.
 - ii. Clean the surface of each core with a brush. Make sure the surface is completely dry before applying the adhesive.
NOTE: The adhesive sets quickly (approx. 30sec depending on ambient temperature). One tube of adhesive should be enough for four Sensors. Prepare up to four Sensor locations (depending on the particular installation) before applying the adhesive.
 - iii. At each Sensor location, apply approximately 25% of a 300ml tube of adhesive in each core and place a Sensor in the core on top of the adhesive. Apply enough pressure so that the adhesive squeezes out around the edges of the Sensor.
 - iv. Make sure the Sensors are flush with or slightly below the pavement surface. The orientation indication on the top of the Sensors should point in the direction of traffic flow.
 - v. Record the distance between Sensor pairs for speed measurements
- b. Surface mount installation
 - i. Make sure each Sensor location is clean and dry.
NOTE: The adhesive sets quickly (approx. 30sec depending on ambient temperature). One tube of adhesive should be enough for four Sensors. Prepare up to four Sensor locations (depending on the particular installation) before applying the adhesive.
 - ii. At each Sensor location apply approximately 25% of a 300ml tube of adhesive in each core and place a Sensor in the core on top of the adhesive. Apply enough pressure so that the adhesive squeezes out around the edges of the Sensor.
 - iii. The orientation indication on the top of the Sensors should point in the direction of traffic flow.
 - iv. Record the distance between Sensor pairs for speed measurements

4 Installing the Access Point

- a. Mount the Access Point on the roadside per the site layout diagram with the mounting hardware provided.
- b. The Access Point can be backhauled through a serial port, an Ethernet port or with a GPRS connection.
- c. The Access Point can be powered via power over Ethernet or power over the serial port.
NOTE: For this trial the Access Point will be preprogrammed with each Sensor’s channel number, and operating mode. This trial will use a GPRS backhaul. The Access Point will be powered from the roadside cabinet using an Ethernet cable, power over Ethernet adaptor, and an AC to DC power supply (supplied by Sensys Networks).