

## Vaisala Permanent Traffic Analyzer TCP500



The Vaisala Permanent Traffic Analyzer TCP500 is a wireless permanent traffic analyzer that collects data without any external sensors, loops, or tubes. It is a self-contained, in-pavement sensor that utilizes Vehicle Magnetic Imaging (VMI) technology to detect vehicle count, speed and classification. The TCP500 also can measure pavement wet/dry, chemical percent factor, and surface temperature from additional sensors in the lid. The TCP500 adds even more weather capability by adding an external pavement temperature and subsurface temperature readings.

The analyzer reports wirelessly to a site controller alongside the roadway, or it can report to a road weather station (RWIS). The sensor

features an easily removable lid, which allows for quick extraction of sensor components during road maintenance or sensor maintenance.

The sensor provides accurate and essential data necessary for effective traffic analysis, control and management. When used with Wireless Data Management (WDM) software, historical data can easily be presented in the form of reports, charts, and graphs.

The TCP500 adds a unique, cost effective approach by measuring both weather and traffic through a single sensor. This allows the user to gain either weather or traffic data they might not have previously had access too.

### Benefits

- Permanent solution provides data 24/7/365
- Easy install and maintenance means less cost over the lifetime of the product
- Provides useful data for planning expansion/growth of roadways
- Provides accurate count data to reference other systems (toll booths, parking attendants, etc.)
- Using multiple wireless sensors on a single base unit reduces overall cost

### Applications

- Highways and city streets with free-flow conditions
- Parking lots, garages, and shopping centers with free-flow conditions
- Toll booths
- Construction areas
- Airports, stadiums, and casinos
- Military bases and border crossings

### Features

- Provides accurate vehicle counts, speed, and classification
- Monitors traffic at specific locations
- Wireless data transfer to base unit on side of roadway
- Easy to use software for viewing data
- Compatible with road weather stations
- Optional road weather data for roadway condition monitoring

# Technical data

## General (Applies to all TCP500 models)

Canister Dimensions	152.4 mm (diameter) x 82.6 mm (height) (6 inches x 3.25 inches)
Operating Temperature	-40 °C to +85 °C (-40 °F to +185 °F)
Electrical Operating Voltage	3 volts
Battery Type	Lithium thionyl chloride
Battery Life	Up to 3 years (typically 1 to 3 years, varying with AADT* and polling interval)
Distance from sensor to Local Base Unit (LBU)	91.4 to 121.9 meters (300 to 400 feet) recommended, depending on frequency used
Vehicle Count	Binned; speed, length, daily and AADT*
Vehicle Speed	Binned; custom up to 12 bins
Vehicle Length	Binned; custom up to 6 bins
Polling Intervals	5 to 120 minutes

### CE COMPLIANCE

CE Conformity: Electromagnetic Compatibility  
 Directive EN-61326-1:2006  
 Section 6 - Immunity Requirements, Table 2  
 Section 7 - Emissions Requirements, Class A limit

\*AADT denotes Average Annual Daily Total

## Vaisala Model TCP500-B2A (additional capabilities)

Pavement Condition Metal pins detecting conductivity of surface material

## Vaisala Model TCP500-B3A (additional capabilities)

Pavement Condition Metal pins detecting conductivity of surface material  
 External Temperature Probes (2) probes at .43.18cm/20 inches  
 Probe Accuracy +/- 0.5 °C from -10 °C to +85°C  
 (-22 °F to +176 °F)

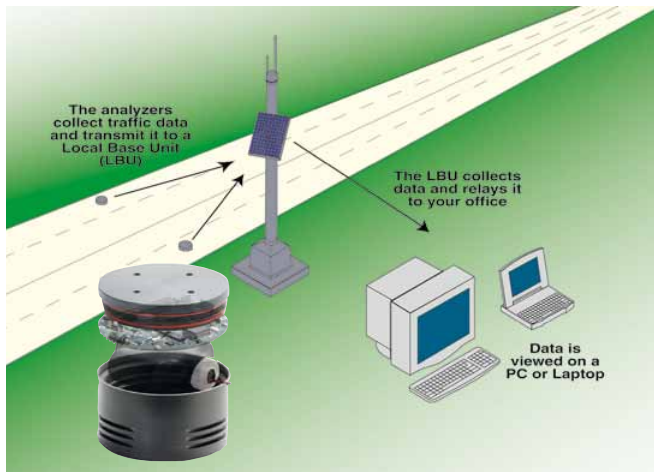
## Radio RF Transceivers U.S. Domestic (915 MHz)

Frequency 900 MHz (Spread Spectrum)  
 Frequency Hopping Transmitter  
 Transfer Rate 10,000 bps (@ 9600 bps throughput Data rate)  
 Data Frequency 5 to 60 minutes  
 Transmit Power Output 100mW  
 Operating Temperature -40 °C to +85 °C (-40 °F to 185 °F)  
 Distance from Receiver Maximum 600 Feet (183M).  
 Recommended 400 Feet (121M)  
 International (2.45 GHz)

Frequency 2.45 GHz (Spread Spectrum) Frequency  
 Hopping Transmitter  
 Transfer Rate 10,000 bps (@ 9600 bps throughput Data rate)  
 Data Frequency 5 to 60 minutes  
 Transmit Power Output 50mW  
 Operating Temperature -40 °C to +85 °C (-40 °F to 185 °F)  
 Distance from Receiver Maximum 400 Feet (121M).  
 Recommended 300 Feet (91M)  
 (line of site required)

## Performance Specifications (All Models)

Detects moving vehicles above 8 mph  
 Factory default maximum measured speed is 95 MPH.  
 The unit has volume count accuracy of 97 % or greater.  
 The percentage of vehicle traffic classified by speed is 90 % or greater ±5MPH  
 The percentage of vehicle traffic classified by length is 90 % or greater ±5FT  
 Classifies vehicle speed up to 12 bins  
 Classifies vehicle length up to 6 bins



For more information, visit [www.vaisala.com](http://www.vaisala.com) or contact us at [sales@vaisala.com](mailto:sales@vaisala.com)

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