

## Features and Specifications

The Omega-G is a timestamp vehicle traffic Counter/Classifier recording unit that uses pneumatic road tube sensors to record vehicles and/or bicycles in mixed traffic. The unit is compact, lightweight, watertight, and in a crush proof ruggedized case that is less than half the size and weight of the Omega X3 counter. It is programmable via onboard keypad and LCD graphic display, or by a PC using a USB cable or Bluetooth wireless communication.

The unit contains replaceable internal Lithium batteries that have a life of 5+ years without recharging or maintenance. The Omega-G stores data in a high resolution timestamp format, but also performs processing of sensor inputs to provide real time data monitoring functions of vehicle traffic via the LCD display. The Omega-G is a mixed use traffic recorder that can count and classify Vehicles and Bicycles. After each study is completed, the unit also provides an "End of Study" summary to present field users the data validation in an easy and useful way before leaving the site to ensure proper data collection was performed. This eliminates the question of data quality and accuracy before leaving a site.

Diamond Traffic's Centurion Software can be used to program the counter, download data, and features advanced processing functions that provide easy exports to Excel and 25 different formats plus more than 20 different report formats.



## Features

- **Count / Classify**  
Count methods include directional, lane subtraction, and normal count on up to two lanes with one or two road tubes. Classification is done using two tubes which gives single lane or two lane directional traffic.
- **Bicycle Detection**  
The Omega-G has advanced sensor analysis routines to identify and process bicycle data specifically. It can filter out all bicycles, only keep bicycles, or collect mixed data with ease that is then processed by Centurion into specific bicycle and vehicle data classes.
- **Built in GPS**  
Counter can acquire its position fix at time of Start Recording, and this information is stored into the data file. GPS also provides time/date adjustments and can be automatically reacquired every 6 hours for truth-in-data requirements and to improve timestamp accuracy.
- **Firmware Upgradable**  
The Omega-G can utilize the USB or Bluetooth ports to upload and upgrade the firmware in the unit without a power cycle or loss of data.
- **Ultra Low Power Consumption with Smart Power Management**  
The Omega-G is designed to last a minimum of five years in the field under normal operating use. The battery and low power processor are optimized for maintenance free use. Power use and battery voltage are monitored to provide the user a gauge to track battery life.
- **Real Time Classification Monitoring**  
Unlike other timestamp units, the Omega-G has on board vehicle processor that gives real time feedback of unit operation and sensor activations for easy feedback of proper operation and data recording.
- **End Of Study Summaries**  
A highly useful and reassuring feature to users is the ability to view immediate summary data such as ADT, average speed, peak times and data quality percentage when closing the study. This gives immediate feedback of the data accuracy and allows the user to know if the data collected is useable before leaving a site.  
\* Collecting classification data with multiple lanes and only two tubes is not recommended for locations with 4500 ADT or more. Consider the 4 tube Omega X3 instead for these applications.
- **Ultra High Resolution Timestamp Accuracy**  
The Omega-G operates and records timestamp data at a resolution of 30.5 microseconds (0.0000305sec), providing the highest quality of data accuracy. Each timestamp is recorded and stored with no loss of resolution in memory.
- **On-board Sensor Diagnostics**  
Using advanced A/D converters the Omega-G provides the user with sensor diagnostics to show users the condition of the sensor and attached road tubes so troubleshooting on site is simple and quick eliminating the hassle of bad sensor installations.  
\*A/D – Analog to Digital
- **Large Memory Capacity**  
The Omega-G has a 512MB on board non-volatile flash memory capacity to store up to 120 million timestamp records or approximately 20 million vehicles.
- **Watertight, Compact, and Lightweight**  
The compact watertight (IP65) case weighs in at just 2 pounds and is designed for the harsh roadside environment. The Omega-G is ultra-portable, crush proof, pad lock compatible, and lightweight. The molded plastic hardened case is robust to provide protection and vandal resistant operation.
- **User Settable Values**  
The following values (plus many others) can be set by the user: Real Time Clock, Sensor Timeout (1-4096ms), Site ID (30 char), Info lines 1&2 (30 char each), User ID (30 char), Weather (30 char), Date Format (US/Metric).
- **High Speed Communication**  
The Omega-G uses a USB high speed communication port that allows for both Host and Peripheral modes to connect to a number of Auxiliary devices such as USB thumb drives and other devices.
- **Normal and Low Profile Tube Nozzles**  
The Omega-G road tube nozzles are designed for both normal and mini (or low profile) tube use without the need for adapters.
- **Open Formats and Protocol**  
The Omega-G uses an open proprietary communication and file format. This format can be developed to and used by third party applications and data interrogation upon request at no cost.
- **Replaceable Air switches**  
The Omega-G is designed to be rugged, but not a throw away unit if the air switches become damaged. New air switches can be installed by our repair department at a tremendous savings to you.

## Specifications

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- **Sensor Inputs:**
  - Two watertight piezo air switches (Road Tube)
  - 1-4096 millisecond programmable timeout value
  - On board sensor diagnostics
  - 5-120MPH normal operating range
  - Metal nozzles accept 1/4" Standard road tube and Mini Tube 3/16"
  - Two alternate Open Collector inputs onboard (optional)
- **Outputs:**
  - Two channel optically isolated outputs
  - I/O expansion port for integrated designs
- **Lane Sensor Configurations:**

Count:

  - Normal (one or two lanes)
  - Two lane short/long (Lane Subtract)
  - Two lane Directional

Class

  - 1 Lane Directional
  - 2 Lane Bi-Directional
  - 2 Lane Same Direction
- **Display**

128x64 LCD graphic display with backlight. Two LED channel detect indicators.
- **GPS**

Onboard GPS for location storage, clock calibrations, and data tampering security features.
- **Keypad**

19 button membrane keypad
- **Firmware:**

Flash upgradable firmware via USB or Bluetooth communication ports without loss of collected data.
- **Memory:**

512MB flash (up to 120 million timestamp records)
- **Files:**

Unit stores up to 65,000 files in flash memory
- **Communications:**
  - USB A Host
  - USB B Peripheral
  - Bluetooth Serial Port (SPP)
  - Bluetooth Low Energy
- **Timestamp Record Resolution**

Sensor resolution is performed and stored at 30.5 Microseconds (0.0000305 sec)
- **Data Storage Types:**
  - Sensor timestamps for 2 air switch channels.
  - Temperature and Battery Voltage.
  - Site Setup and Data Study.
  - GPS location (at beginning and optionally every 6 hours).
- **Power:**
  - Main Battery: Dual Lithium 3.6v Batteries
    - Expected Life: 5+ years
    - Easily replaceable.
- **Physical:**
  - Size – 6.5cm x 13cm x 18.8cm
  - Weight – 0.8kg
  - Case – Polypropylene molded case with lid and PowerClaw latching system. O-ring seal with sealed sensor inputs and carry handle. Crush and Impact resistant.
- **Environmental:**
  - Watertight IP65
  - Operating Range: -29°C to 60°C

- **Optional equipment:**
  - **RS232 Port** – External watertight serial port for connection of Omega-G to other equipment types.
  - **OC Input** – Two channel OC style input for connection to external sensors such as tape switches.
  - **External Iris Modem** – Use the RS232 port connector to hook up an external cellular data modem under complete control of the Omega-G unit.



### Ballinger Technology Pty Ltd

Unit 20, 23 Heyington Avenue Thomastown 3074 Vic

Ph: (03) 9386 8722

Email: [sales@ballingertech.com.au](mailto:sales@ballingertech.com.au)



# DIAMOND

TRAFFIC PRODUCTS