

Omega X3A

Mixed Use Timestamp
Automatic Traffic Recorder



Features and Specifications

The Omega X3A is a timestamp data recording unit that uses pneumatic road tube sensors to record vehicles and bicycles in mixed traffic. The unit is compact and includes a lightweight case that is watertight (rated IP67) and ruggedized. It is programmable by the onboard keypad and graphic display, or by a PC using a standard USB cable.

The unit contains internal Lithium batteries that have an expected life of 2 years without recharging or maintenance. The Omega X3A stores data in a high-resolution timestamp format, but also performs on the fly processing of sensor inputs to provide real time data monitoring functions of vehicle traffic via the LCD. The Omega X3A is a mixed-use traffic recorder that can count and classify Vehicles, Bicycles *in one unit*. 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 C/C Software programs the counter, downloads data and features advanced processing of data, providing easy exports to Excel and over 25 different export formats with over 20 different reports formats. Centurion software is used to convert timestamp data into either volume or per-vehicle style classification.



Features

- **Count**
Count methods include directional, lane subtraction, and normal for up to four lanes using four tubes.
- **Classify**
Using two sensors the unit can classify single lane directional traffic, two lane bi-directional traffic and two-lane same direction traffic.
* Using four sensors the unit can class up to four lanes with a median.
- **Temperature and Battery Data Storage**
When in collection mode the Omega X3A stores unit temperature data and battery voltage changes along with the sensor timestamp data in the counter files for later processing.
- **Watertight Design**
With most recorders having to endure harsh weather, the Omega X3A is designed around a polypropylene case that is watertight (IP67) to allow for operation in harsh roadside environments.
- **Firmware Upgradable**
The Omega X3A can utilize the communication port 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 X3A is designed to last for two 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 X3A has an on-board classification and vehicle processor that allows real time observation of the unit's operation and sensor activations for easy user verification of proper operation and data recording.
- **End Of Study Summaries**
A highly useful and reassuring feature to users is the new ability to view immediate summary data such as ADT, average speed, peak times and data quality percentage when closing the study. This gives the user immediate feedback of the data accuracy and allows the user to determine if the data collected is useable before leaving a site.
- **Ultra High Resolution Timestamp Accuracy**
The Omega X3A operates and records timestamp data at a resolution of 30.5 microseconds (0.0000305 sec), 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 to D converters the Omega X3A provides the user with 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.
- **Large Memory Capacity**
The Omega X3A has a 512MB on board non-volatile flash memory capacity to store up to 120 million timestamp records or approximately 20 million vehicles.
- **Compact Size and Lightweight**
Weighing in at just 3 pounds (minus batteries) and in a compact case the Omega X3A is ultra-portable and lightweight. Using a molded plastic hardened case the unit is robust providing great protection and vandal resistant operation.
- **User Settable Values**
The following values can be set by the user: Real Time Clock, Sensor Timeout (1-255ms), Site ID (30 Char), Info lines 1&2 (30char each), User (30 char), Weather (30 Char), Date Format (US/Metric).
- **High Speed Communication**
The Omega 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.
- **Normal and Low Profile Tube Nozzles**
The Omega X3A road tube nozzles are designed for both the use of normal and mini or low profile tube use without the need for adapters.
- **Open Formats and Protocol**
The Omega X3A uses an open proprietary communication and file format. This format can be developed to and used for third party application and data interrogation upon request at no cost or license fee.
- **Replaceable Air switches**
The Omega X3A 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.

***Collecting classification in more than one lane using two tubes is recommended for locations with 4500 ADT or less**

Specifications

- **Sensor Inputs:**
 - Four 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"
 - Four Open Collector inputs onboard
- **Outputs:**

Four channel optically isolated outputs
I/O expansion port for integrated designs
- **Lane Sensor Configurations:**

Count:

 - Normal
 - Median (2 or 4 tube Normal)
 - Short/Long
 - Directional

Class

 - 1 Lane Directional
 - 2 Lane Bi-Directional
 - 2 Lane Same Direction
 - 4 Lane Bi-Directional with Median
- **Display**

128x64 graphic liquid crystal display with backlight. LED four 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 communication port
- **Memory:**

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

Unit stores up to 65,000 files in flash memory
- **Communications:**
 - USB A Host (IP67)
 - USB B Peripheral (IP67)
- **Timestamp Record Resolution**

Sensor resolution is performed and stored at 30.5 Microseconds (0.0000305 sec)
- **Power:**
 - Main Battery: Lithium 3.6v
 - Battery Life: 2 years
- **Physical:**
 - Size – 4.29"H x 7.8"W x 9.44"L (10.9cm x 19.8cm x 24cm)
 - Weight - 3lbs (1.36 kg)
 - Case – Polypropylene molded case with lid and thumb latches. O-ring seal with sealed sensor inputs and carry handle. Crush and Impact resistant.
- **Environmental:**

Watertight IP67
Operating Range:

 - -40°F (-40°C) to 165°F (72°C)

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