Clearview Intelligence
making journeys work

Precise, reliable & ergonomic with impressive download rates & rapid response times

Product Specification

M680

Vehicle Classifier

The M680 range of vehicle classifiers are part of the proven Clearview Intelligence ITS systems range. With a number of options available they can be configured by the systems integrator or the user for most traffic monitoring applications using inductive loops and piezo sensors.

The M680 range is available in a variety of configurations from the monitoring of a single lane of traffic for car park applications through to 8 lane motorways with both piezo sensors and inductive loops. Rapidly scanning each loop and piezo sensor, the M680 can report vehicle counts, class, direction, speed, lengths, axles, axle spacing and gap/headway in each lane.

In the past, applications have depended on binned data being collected weekly or monthly for historic purposes. With current demands for making the most out of the existing road infrastructure, the M680 can collect data on each vehicle for scheduled, manual or real-time delivery over packet-based communications. Traditional interval data can also be collected simultaneously for historical analysis. Both data types can be used with Insights comprehensive reporting and analytical tools.

Because the loop detectors are integrated and under the control of a single processor, advanced algorithms are available to spot straddling vehicles and minimise data inaccuracy due to congested conditions. In the past, 'N+1' configurations have been necessary to attain similar levels of performance. Whilst the M680 range can accommodate legacy 'N+1' sites, it will provide greater accuracy with just 'N' arrays, reducing installation and maintenance costs.

Like all products, the M680 range benefits from over 30 years of experience with roadside systems operating in harsh conditions. Our systems last for many years due to their rugged construction and the use of plastic and stainless steel throughout. Over 20,000 Clearview Intelligence traffic recorders are located around the world, operating to extremely high levels in all traffic conditions. Installation and maintenance is a breeze with easy accessible batteries, military grade connectors and SIM cards.

Most M680 ITS system components are installed with telemetry for control and data retrieval and our equipment design reflects this with a low-power integrated GSM/GPRS modem and an optional serial interface card for external modems where GPRS is unavailable.

Over 30 pre-defined axle and loop classification schemes including the 26-class UKNCC30 means the M680 can detect and classify a wide range of vehicle types from bicycles through to articulated lorries.

Key Benefits

- Superior vehicle data capture accuracy
- Rugged and reliable,flexible device that can be deployed in the harshest of environments
- Reduced installation and life time costs through the use of solar power
- Cost effective management through remote management and data collection
- Insight connectivity drives simple, robust decision-making

Key Features

- Latest generation inductive loop based count/classifier
- A comprehensive range of configuration, connectivity and additional interface options
- Simultaneous production of real time and historic information
- Extremely low power consumption
- Accurate vehicle algorithms to cater for vehicles straddling lanes
- User friendly configuration and management application
- GSM and GPRS communication options for remote data collection
- Can be battery, mains or solar powered

Machine Learning Loop Detector

The Machine Learning Loop Detector (MLLD) is the next generation of M680 loop card designed to improve the accuracy of individual class types within a class scheme. By utilising a combination of Machine Learning techniques and the latest designs in loop card hardware, the MLLD card can more accurately identify classes with similar characteristics. Machine Learning is used to create a specific class scheme algorithm for the MLLD. This is achieved by using hundreds of validated vehicle data samples to train the algorithm to recognise each individual vehicle type.

MLLD can provide a cost effective option to deploying Piezo sensors where the requirement is to classify similar vehicle types and axle counts are not required. Existing M680's can be upgraded with MLLD cards maximising infrastructure investment.

Switch I/O card

The M680 offers an optional Switch I/O card with 8 input/output ports providing a level of flexibility not found in similar solutions. The Switch I/O card can be used to control external devices such as variable messaging signs, ANPR cameras, barriers and gates or any device that accepts contact closure input.

The piezo and loop sensors both enable the Switch I/O card to generate outputs on speed, class and direction. The piezo card also provides outputs based on axle counts and separation. Loop sensors offer additional outputs including flow and speed threshold algorithms and detecting the presence of vehicles on a loop.

Conditions can be combined using logical operators to create more complex rules providing a high level of flexibility.

Piezo card

The 8 and 16 port piezo sensor card offers full axle detection using Mk1, Mk2 and Mk3 sensors providing accurate, robust, reliable detection and classification. The M680 includes 15 axle based classification schemes ensuring quick deployment and operation. The piezo card can operate in piezo – piezo only configurations but it is further enhanced when combined with the HPLD loop card for loop – piezo combinations.

Insight

Insight is an ITS management platform providing a suite of tools to manage devices, data collection, reporting and analysis all with a centralised browser based interface.
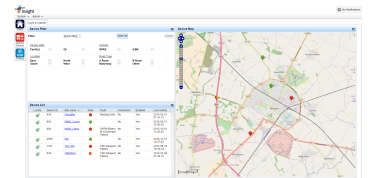
Insight offers a core set of functions that are available across integrated applications, Insight's count and classify application when combined with the M680 provides an end to end solution for the management and delivery of transport network data.

Options and Accessories

- 4, 8, 16 HPLD Loop card
- 8,16 Port MLLD card
- 8 Port Switch I/O card
- 8,16 Piezo Sensor Card
- Battery Charger
- Serial port option
- Bluetooth adaptor
- Central Insight instation software for data retrieval, device status, live diagnostics and reporting
- Windows based graphical configuration interface

Specifications

DIMENSIONS
315mm x 220mm x 140mm

WEIGHT
4400g

OPERATING TEMPERATURE RANGE
−15 to +70°C (5°F to +158°F)

ENVIRONMENTAL PROTECTION
IP67 (not including battery compartment)

ELECTROMAGNETIC COMPATIBILITY
Tested to - EN50293

BATTERY OPERATION
Depending upon application, over 30 days without additional battery support is possible

POWER
Solar, mains and/or battery

INPUTS
4, 8 or 16 loop sensors,
8 or 16 Piezo Sensors   Optional 8 Switch I/O ports

SENSOR CONFIGURATIONS
HPLD Loop
HPLD/MLLD Loop - HPLD/MLLD Loop
Piezo
Piezo - Piezo
HPLD Loop - Piezo - HPLD Loop - Piezo
HPLD Loop - Piezo - HPLD Loop
Piezo - HPLD Loop - Piezo

DATA OUTPUTS
Count, class, direction, gap, speed, length, axle count, axle separation and headway

DATA STYLES
Interval, Vehicle-By-Vehicle, Individual Vehicle Data and Traffic Data

MACHINE INTERFACE
RS232 up to 115,200 baud

SOFTWARE
Remotely upgradeable and reconfigurable