Clearview Intelligence

making journeys work

Accurate, resilient and reliable with advanced fault detection and Ethernet communications

Product Specification

M720 Vehicle Count and Classifier

Clearview Intelligence's technology is at the heart of many Intelligent Transportation Systems (ITS) for urban motorways or roads where accurate, reliable and economical detection systems are required.

ITS Detection systems

The Clearview Intelligence M720 is a fully integrated vehicle count and classification device optimised for 'fit and forget' detection, providing highly reliable and accurate data processing, incorporating fast and reliable Ethernet communications. Housed in an industry standard 19" rack mount enclosure, the unit is just 2U high (just over 90mm) enabling the unit to perform well in dense configurations at the roadside. When integrated with the Insight instation it provides a highly reliable and automated solution to today's sophisticated ITS projects.

Secure and reliable

Data security and reliability is a key demand from operators collecting data from sophisticated ITS projects.

The M720 includes facilities to provide a high level of user and system authentication and security checks to ensure that data cannot be tampered with nor corrupted, as the data is being processed in the outstation or transmitted back to base at the instation. The protocol is machine to machine and allows advanced automatic error correcting to be performed if communication links prove unstable.

NTP time server support ensures that the data is time stamped to a very high degree of accuracy and more importantly that the time synchronisation integrity between outstations on the same network can be easily and accurately maintained.

Key Benefits

- Superior vehicle data capture accuracy and reliability
- Ethernet communications guarantees real-time connectivity for business critical applications
- Savings on time and costs of installation as slots into standard rack mount roadside cabinets
- Cost effective management through remote management and data collection
- Insight connectivity drives simple, robust decision making
- Internal battery ensures data collection continues up to 5 days in the event of power failure.

Key Features

- Inductive loop based count/classifier designed to fit in a standard 19" rack
- A comprehensive range of configuration, connectivity and additional interface options
- Simultaneous production of real time and historic information
- Accurate vehicle algorithms to cater for vehicles straddling lanes
- User friendly configuration and management application
- Ethernet port for high speed communications, with GSM and GPRS communication options for remote data collection
- Mains powered
- Seamless integration with Insight data intelligence platform
- Wide range of report formats through the Insight software including Binned and VBV surveys

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Communications
The M720 provides Ethernet based TCP/IP communications as standard allowing robust, reliable and fast communication of data and configuration to and from the unit. An internal GPRS/GSM modem and serial card are also available as options.

Machine Learning Loop Detector
The Machine Learning Loop Detector (MLLD) is the next generation of M720 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 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.

The MLLD card 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 M720's can be upgraded with MLLD cards maximising infrastructure investment.

Piezo Sensor
A 16 port piezo sensor option is also available offering full axle detection using Mk1, Mk2 and Mk3 sensors providing accurate, robust, reliable detection and classification. The M720 includes 15 axle based classification schemes ensuring quick deployment and operation. Combined with the HPLD loop detector the M720 can provide up to 8 lanes of loop and piezo configurations.

Switch I/O Card
The M720 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.

Insight

The M720 series includes advanced health monitoring features that allow the operation and performance of the equipment to be monitored in real time. The Insight instation is automatically alerted to sensor and power faults. When connected to the instation the M720 provides data on the health and performance of the sensors and the equipment. This data can be used to determine emerging failures or anomalies in operation and assist operators with planned maintenance visits.

Specifications

DIMENSIONS
19 inch rack mounted 2U height
260mm x 480mm x 90mm

OPERATING TEMPERATURE RANGE
-15°C to +70°C (5ºF to +158ºF)

POWER
Mains 110V - 230V AC 50Hz

ELECTROMAGNETIC COMPATIBILITY
Tested to EN50293

BATTERY OPERATION
Depending upon application, up to 5 days battery operation via integral lead acid battery

INPUTS
16 HPLD or MLLD loop sensors (optional)
16 Piezo Sensor (optional), 8 Port Switch I/O (optional)

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

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

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

MACHINE INTERFACE
Ethernet
RS232 up to 115,200 baud

SOFTWARE
Remotely upgradeable and reconfigurable

STANDARD FEATURES
HPLD loop sensor for enhanced accuracy

OPTIONS and ACCESSORIES

- Windows based graphical configuration interface
- Central instation software for data retrieval and control
- 8 Port Switch I/O
- GPRS/GSM Modem
- Serial Card
- 16 Port Piezo card
- 16 Port MLLD card

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