

SPOLU	26	7	0	5	5	6
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Poznámka: Opakovač FR+A pracuje ako retranslačný bod v prípade veľkej vzdialenosti alebo prekážky v trase

OBLASŤ CENTRUM

BOD	Detektory	Opakovače	R	Opakovače s anténou FR+A	Prist. body AP	Sčítače	Monitorované miesta	Bod napojenia
D6.1	8	1		1	1	1	1	SSZ CB.18
D6.2	4	1		1	1	1	1	SSZ CB.34
D6.3	2	1		1	1	1	1	SSZ CB.02
D6.4	4	1		0	1	1	1	SSZ CB.22
D6.5	4	1		0	1	1	1	SSZ CB.65
SPOLU	22	5		3	5	5	5	

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POČET ZARIADENÍ CELKOM

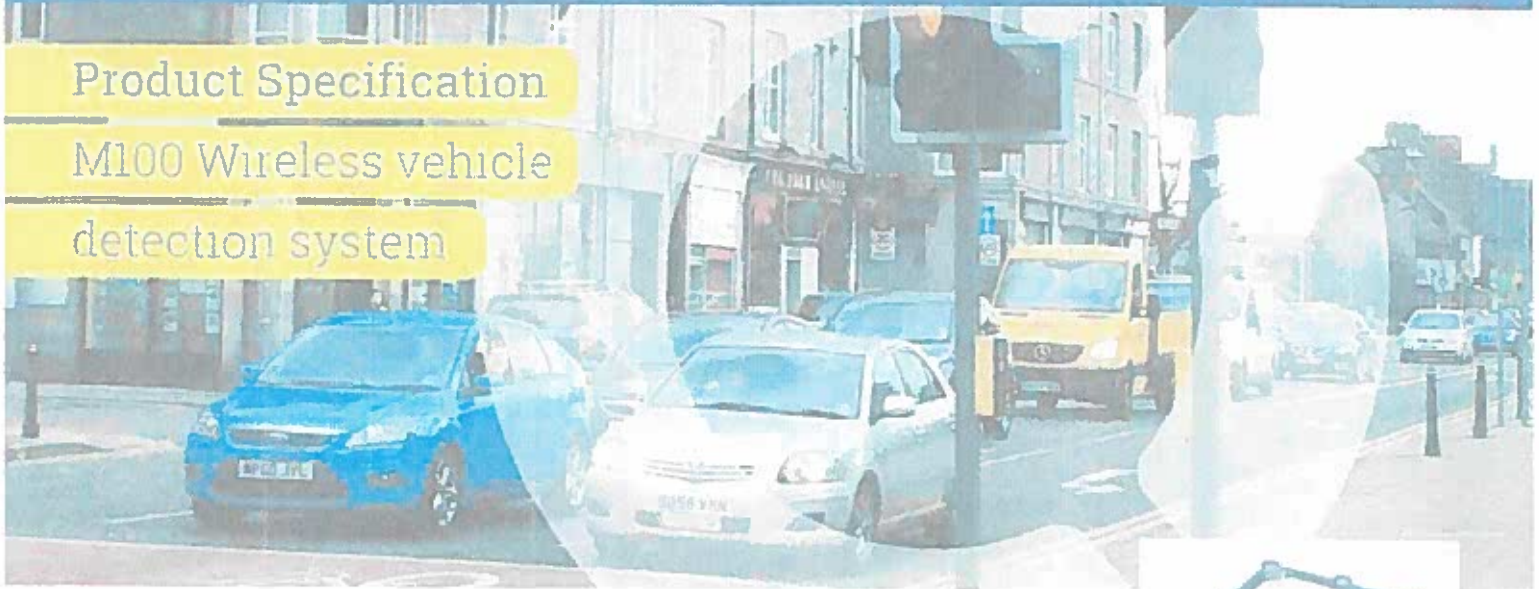
Detektory	Opakovače	R	Opakovače s anténou FR+A	Prist. body AP	Sčítače	Monitorované miesta	MODÉM GPRS RACOM	Dopravný server
162	38		15	30	30	34	31	1
SPOLU								

OZNAČENIE	POPIS	OBCHODNÝ NÁZOV
DET	Bezdrôtový vozidlový detektor s integrovanou batériou	Clearview Intelligence (Golden River) M100D
AP	Bezdrôtový prístupový bod na zber dát z detektorov, pripojený káblom do SC	Clearview Intelligence (GR) M110
R	Bezdr. opakovacia stanica (repeater) na predĺženie dosahu so zabud. batériou	Clearview Intelligence (GR) M115
FR+A	Bezdr. opakovacia stanica - retranslačný bod s externou anténou (zabud.bat.)	Clearview Intelligence (GR) M115+ANT
SC	Dopravný sčítač vozidiel osadený v rozvážači radiča CSS	Clearview Intelligence (Golden River)
MODEM	GPRS modem na prenos údajov medzi sčítačmi a dopravným serverom	RACOM MIDGE
DS	Dopravný server na spracovanie dát zo sčítačov a generovanie XML reportov	Dell Power Edge R430



Product Specification

M100 Wireless vehicle detection system



The wireless vehicle detection system uses embedded in-road sensors to detect the presence and movement of vehicles.

The system provides a more reliable, lower cost and easier to install alternative to traditional inductive loops. It is traffic controller manufacturer independent and suitable for all Urban Traffic Control systems including System D, MOVA, and SCOOT.



Cost effective vehicle detection system

The M100 magnetometer in-road sensors wirelessly transmit their detection data in real time via low power secure radio technology to a nearby M110 Access Point which is fed in to one or more local or remote traffic management controllers or systems using the M120 interface card. For larger more complex junctions or where greater distances are involved, the Access Point may be supplemented by a M115 Repeater Unit.

A wireless alternative to traditional inductive loops

Low life-cycle costs, reduced installation costs, with increased accuracy, durability and reliability makes the M100 wireless vehicle detection system a versatile and beneficial alternative to traditional inductive loop based systems for traffic signal control. Like inductive loops, the M100 wireless sensors can be located exactly where measurements are required, whether it is at a specific through lane, turn lanes or entrance and exit ramps.

Each small sized M100 sensor is typically installed in the middle of a traffic lane where it will detect the presence and passage of vehicles in that lane.

Two or more sensors can be used and configured to replicate extended loops if required. The M100 sensors eliminate the need for expensive and time consuming slot cutting, trenching / ducting.

The M100 system can also reduce costs for other applications such as vehicle cordons, car park counting - entrance / exit, ramp metering, MIDAS and queue detection.

The M100D version of the sensor allows for installation up to a maximum depth of 175mm beneath the road surface and is therefore unaffected by any future resurfacing of the wearing course.

Key Benefits

- Reduced installation costs versus traditional loop technology
- Rapid installation and deployment reduces road closures, worker exposure and traffic disruption
- More reliable and cost effective than traditional inductive loops
- Reduces junction maintenance costs
- Centre lane installation maintains the integrity of the road surface
- Depth of installation eliminates need to remove during resurfacing (M100D version)
- Superior reliability and longer operational life than your average loop



CONSTITUENTS OF THE CLEARVIEW INTELLIGENCE WIRELESS DETECTION SYSTEM

M100 and M100D in-road wireless sensors

The M100 and M100D sensors are sensitive magnetometers equipped with a low power secure radio transmitter packaged in a small hardened plastic case suitable for either flush (M100) or up to 175mm depth (M100D) in-road mounting. The low power transmission technology combined with its integral high quality battery ensures an average operational life of ten years.



- Quick and easy installation of the rugged compact sensor in the middle of a traffic lane
- Measures x-y- and z-axis components of the earth's magnetic field at a 128Hz sampling rate
- Changes in x, y or z axis are measured as vehicles come into range
- Installation location options and operating modes allow for a range of vehicle types to be detected from motorcycles to light rail trams

M100BR in-road wireless radar sensor for bicycle detection

The M100BR Bicycle Radar Detector has been designed to uniquely detect the presence of a bicycle within a defined zone and differentiate it from other forms of traffic. The M100BR works in conjunction with the M100 wireless vehicle detection system.



The M100BR sensor incorporates an extremely low power wide-band radar with secure radio technology. The compact in-ground sensor works using the same principle as any other radar: high frequency RF pulses are transmitted, bounced off a target object and the return pulses are measured by a time-gated RF mixer. RF reflections are analysed to produce presence, distance, and motion measurements.

M100BR sensors are installed very close to the roadway surface and are capable of detecting trains, cars, trucks, bicycles and pedestrians. M100BR sensors are also capable of detecting and distinguishing

objects in motion from objects that are stationary and large objects from small objects.

M110 access point

The M110 Access Point maintains two way communications with the M100 sensors and M115 Repeater Units. It establishes overall time synchronisation, transmits configuration commands and message acknowledgements, and receives and processes data from the sensors. The Access Point then uses a wired connection to relay the sensor detection data via the M120 interface card to a roadside traffic signal controller.



The Access Point can be mounted on any roadside column or signal head that provides adequate signal coverage to sensors or repeaters.

M115 repeater unit

In cases where one or more installed M100 sensors are out of the range of the nearest Access Point, one or more Repeater Units can be used to provide a two way relay extending the range and coverage between the sensors and the Access Point. Two Repeater Units operating in tandem can be installed between a sensor and Access Point if required.



- Repeater Units are battery powered and therefore require no external power supply or cabling.
- Repeater Units must be mounted on a convenient pole or other structure so that both sensors and the Access Point are within view and range.
- The Access Point and Repeater Units each provide a 120° field of view, providing installation flexibility.
- The Repeater Unit can also be mounted on the same pole or mast as the access point but pointed in the opposite direction to communicate with any sensors located in front of it.
- 2 year or 7 year battery life versions are available.

M120 magnetometer interface card

The M120 interface card provides four detection channels; each comprising of an optically isolated contact closure relay for maximum reliability in both normally closed (n/c) and normally open (n/o) configurations. An additional master fault relay (n/c and n/o) is also provided. If the sensors require more than the four channels up to 16 interface cards can be daisy-chained together via the front panel connectors. Multiple cards may also be used if the traffic controller detector rack has pre-defined functions or phases for each slot.



Each M100 sensor can be mapped to its own individual channel or up to 15 sensors can be mapped to a single channel to effectively "OR" the sensor signals together, if any sensor detects a vehicle, the contact closure relay will close. In this way the system can be easily configured to replicate the way traditional inductive loops interface with a traffic controller.

M150 magnetometer midas outstation interface card

The M150 MIDAS Interface Card provides four detection channels suitable for two lanes - each comprising of an optically isolated contact closure relay for maximum reliability in both normally closed (n/c) and normally open (n/o) configuration and is switchable between different manufacturers of MIDAS outstation to give compatibility via a single interface card. Up to 16 interface cards can be daisy-chained together via the front panel connectors to support more sensors across multiple lanes.



M100 sensors are installed two per lane at 4.5m spacing and mapped to their own individual channel so that on vehicle detection the contact closure relay will close. The Clearview Intelligence wireless vehicle detection system can therefore be easily configured to replicate the way traditional inductive loops interface with a MIDAS outstation.