

Roadway Sensors

Vantage® Input/Output & Extension Modules

[Extension Modules that expand the Vantage video detection system]

Standard loop amplifier modules communicate with traffic signal controllers using open collector output channels or contact closure circuits as they are sometimes called. The Vantage Edge®2 video detection system communicates with traffic signal controllers in exactly the same way by using Extension Modules (EM) and Input/Output (IO) modules.

The Vantage video detection system offers a range of EM and IO modules to simplify the installation and connection of the Edge2 video processor module to the traffic signal controller using the cabinet's existing detector rack and wiring harness.

The Edge2 video detection processor has 4 open collector outputs per module card. By adding one or more EM or IO modules – up to a maximum of 24 outputs per video input – you can expand the size and complexity of the video detection system to match the needs of the intersection's requirements.

Vantage EM and IO modules are available in 2-channel, 4-channel and 32-channel models that fit into Caltrans 170 /2070 input files and NEMA TS-1 and TS-2 Type 1 detector racks. All modules are NEMA compliant and conform to the same electrical output characteristics of standard loop amplifier modules. Vantage EM and IO Modules are all hot-swappable and designed for "Plug and Play" operation.

The IO module differs from the 2 and 4 Extension Modules by offering eight isolated input channels. These input channels may be connected to the traffic signal controller to provide phase information to the video detection processor to allow for greater control over virtual zone operation and function.



Features

- Up to 32 optically isolated outputs
- 8 Optically isolated inputs – IO module only
- 4 Optically isolated input – 2 and 4 channel EM
- Operates in 12 or 24 VDC detector racks
- NEMA TS-1, TS-2 and Caltrans 170/2070 compatible
- Status indicators for ease of system monitoring
- Interfaces with Edge2 video detection processors
- Can be inter-mixed with existing Edge2 extension modules and Vantage Access and Vantage eAccess communications modules

Installation and Configuration

All modules are easily inserted into NEMA TS-1, TS2, and Caltrans 170/2070 systems. The modules can drive external logic systems or use inputs from other external systems to expand the capability of Edge2 video detection processor applications. Logic inputs can now be used in Caltrans 170/2070 applications. The IO Module offers logic inputs similar to the "Delay/Extension Enable" in NEMA cabinets can now be used for those detector racks that do not have the "Delay/Extension Enable" signal present.

The modules are capable of being installed in either 12 VDC or 24 VDC input files/detector racks. Both inputs and outputs are isolated for maximum system protection. Status indicators are provided for ease of system monitoring.



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Benefits

- Plug and play operation enables use of existing detector rack thereby extending the life of the controller and cabinet equipment
- Simple to use interface reduces training time and improves productivity levels
- Expandable and modular system allows for optimal configuration that helps to reduce cost while preserving room for incremental growth

Typical Applications

- Intersection flow control
- Ramp metering
- Traffic data collection
- Bicycle detection
- Traveler information system input
- Temporary and construction zone vehicle detection replacement
- Moving or wrong way motion detection
- Automatic Incident Detection (AID) in tunnels and on bridges

Vantage Family Products

- Machine Vision Processor modules
- Input and Output Extension modules
- Communications modules
- Flexible and expandable rack systems
- Cameras optimized for traffic applications

EM and IO modules can be inter-mixed with other EM and IO modules, Edge2 processor modules and the Access and eAccess communications modules.

Output detectors are essentially true logic ground contact closure circuits of +24VDC nominal at 50mA. The receiving device (traffic controller or data analyzer) normally outputs +24VDC on its sensors and the video processor module instructs the IO module to provide true logic ground for that circuit when a detection is made.

Technical Specifications

	2-channel	4-Channel	32-Channel
Power			
Source	12 or 24VDC	12 or 24VDC	12 or 24VDC
Output Collector	50mA @ 30VDC	50mA @ 30VDC	50mA @ 30VDC
Input Collector	-	-	0.9mA @ 12VDC
Connections			
Output	Via detector rack	Via detector rack	DB37 – front
Input	Via detector rack	Via detector rack	DB15 - front
Inter-module	2 x RJ45 - front	2 x RJ45 - front	2 x RJ45 - front
Mechanical			
Size – inch	7" x 4.5" x 1.25"	7" x 4.5" x 2.3"	7" x 4.5" x 2.3"
Size – cm	17.8 x 11.4 x 3.2	17.8 x 11.4 x 5.8	17.8 x 11.4 x 5.8
Weight	0.30lbs (0.13Kg)	0.41lbs (0.19Kg)	0.52lbs (0.23Kg)
Status Indicators			
Module Address	7-segment LED	7-segment LED	7-segment LED
Channel Status	2 x LEDs	4 x LEDs	8 x LEDs
Environmental			
Temperature	-35°F to 165°F (-37°C to +74°C)		
Humidity	0% – 95% non-condensing		
Vibration	0.5G, 3 axes, 5-30Hz		
Shock	10G in all axis		
Warranty	3 years		
Regulatory	NEMA TS-1, TS-2, Caltrans 170/2070 systems		



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