



**Ramps**

# Optimizing Freeway and Arterial Traffic

## Module Overview

Econolite's Centracs® Ramp Metering module is an efficient, intuitive, and easy-to-use method for optimizing freeway and arterial traffic flow. The module encompasses both system level controls from within the Centracs ATMS platform, as well as our Cobalt® Rackmount Traffic Controllers. The module also covers the full spectrum of ramp meter functionality to control mainline traffic flow, and aid in bottleneck prevention. Centracs ATMS receives and processes the detection data, alongside other ATMS functions, to ensure cross-coordination between arterial and ramp control strategies.

## Benefits to Transportation Agencies and the Traveling Public

The Centracs Ramp Metering module provides new levels of freeway ramp and interchange metering control to optimize traffic flows and improve overall mobility. The module supports freeway mainline detection and multiple ramp lanes, including stop bar, passage, and queue detection.

## Key Features

- **Single or dual-lane with variable vehicles per green configurations**
- **Managed on/off cycles**
- **Local traffic responsive algorithms based on volume, occupancy, and speed aspect of mainline flow**
- **Queue management for ramp meter overflow flushing**
- **Firmware integrates with most central ATMS software, including Econolite's Centracs**
- **Speed and vehicle length category counts**
- **Provides compliance with NTCIP and ATC standards, ensuring agencies are not locked into proprietary devices and interfaces**
- **Firmware supports real-time status view of all components of ramp metering operations**

## Description

The capabilities within the Centrac's Ramp Metering module provide transportation agencies with comprehensive real-time control and flexibility of ramp metering and arterial signal operations, ensuring that the freeway and arterial systems work together. Additionally, the Centrac's Ramp Metering module intelligently manages traffic

flow for freeways to reduce travel times, wait times, and congestion, allowing agencies to manage the challenges that can arise between freeway and arterial congestion. This helps to ensure that commuters reach their destinations quickly and efficiently, while reducing traffic incidents and collisions.

	Specifications
Standard	NTCIP, 1201, 1207, 1209, ATC 5401
Modes	Manual, Central, Integrated, and Traffic Responsive
Queue Management Operations	Queue overflow flushes based on state of any one of up to three queue loops per lane. Based on: <ul style="list-style-type: none"> <li>• Count (difference between counts of the queue and passage loop)</li> <li>• Occupancy (the percentage occupied over a number of cycles)</li> <li>• Quick Occupancy (the percentage occupied over a period of time)</li> </ul>
Mainline Collection	Volume, Occupancy, Speed, Detector Status based on NTCIP 1209-configured zones, up to 28
Configuration Traffic Responsive Operative	Flow, Occupancy, and Speed Levels determine which rate is applied to the Ramp Meter
Collection Intervals	Fully configurable
Real-Time View	Local and available through central software
Full Multi-Lane Depend Group Operations	Yes
Accuracy	1 ms Sampling
Metered Lanes	2
Metering Rate Plans and Levels for Traffic Reponse	10
Metering Action Plans	32
Day Plans	10
Schedule Table	32



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Centrac's capabilities



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