The AURA Collision Avoidance and Productivity System

A Safety and efficiency tool for all forms of maintenance of way equipment

METROM RAIL

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The Metrom Rail Advantage

Metrom Rail is a supplier of advanced sensor solutions. We offer a complete turn-key process in designing, manufacturing, servicing, and supporting products that provide unique functionality and return on investment based on individual customer needs.

AURA CAS Core Technologies

Ultrawide Band Ranging System (UWB)

- UWB technology allows the AURA system to provide accurate and reliable range measurements between two machines / vehicles, without being affected by the same multi-path distortion effects that limit 900 Mhz or 2.4 Ghz systems.
- The AURA UWB system ensures accuracy by broadcasting over a wide range of frequencies and filtering only the most optimal returns.
- UWB technology is enhanced in tunnels or urban environments thanks to a natural amplification of the system in these environments.
- Metrom Rail is the exclusive supplier of UWB technology to the railway industry.

WAAS-enhanced GPS

- Utilized for speed acquisition for mode-based alerts and alarms.
- Provides UTC time and location of machine for reference in real time or on logs.

MAXIMIZING ON-TRACK SAFETY AND EFFICIENCY

The Metrom Rail AURA Collision Avoidance and Productivity System (CAS) is designed to safeguard maintenance of way equipment & hi-rail vehicles and their operators by providing advanced warning of violations in spacing regulations. CAS offers a speed-based detection system that caters to the specific operating rules of each customer.

CAS utilizes advanced Ultra-Wide Band radio technology to provide a system accurate to +/- 1cm of ranging accuracy in any environment on the planet - even underground around curves.

In addition to collision avoidance functionality, CAS provides customers with web-based productivity monitoring relative to key machine / vehicle functions in real time. These functions include engine hours, machine & vehicle location, production time or cycle counts, and all other vital data points.

CAS can be installed on new machines & vehicles or retrofitted to assets already in the field.

AURA CAS SYSTEM SUMMARY

- Designed to operate in extreme environments, with an effective range of over 3,000 ft. between equipment.
- Introduces adaptive spacing limits governed by equipment speed in three modes - Travel, Work, and Crawl - specific to the operating rules of each railway.
- Utilizes an integrated data recorder with an internal accelerometer that automatically records data when a high g-force event is detected. Stored information includes machine / vehicle speed, direction, location, and behavior before & after the event.
- CAS is available for permanent installation (Standard System), contractor temporary use (Contractor System), and hi-rail temporary use (Mobile System).
- A simple to understand interface provides ease of use to operators and maximizes the use of cab space.
- All modules are designed and tested to applicable railway and Mil-Std specifications.

1125 Mitchell Court, Crystal Lake, Illinois 60014 855.953.8726 www.metrom-rail.com

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AURA CAS - STANDARD SYSTEM

Intended for permanent installation on maintenance of way equipment or vehicles.

Transmitter / Sensor Module (TSM)

Located on a machine roof, this module contains the Ultra-wide Band (UWB) RF and GPS systems. The TSM assembly is constructed of durable, lightweight aluminum with proprietary radome material. A bracket allows for the TSM to be folded for shipment / transportation of machines.

User Interface Module (UIM)

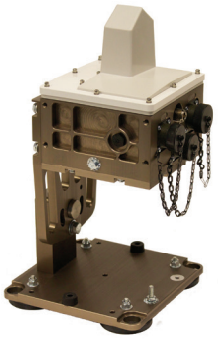
Features a 2x16 alpha-numeric display for messages and programming, numeric distance displays, indicator lights for alarm conditions, and tactile feedback control panel, all contained within a sealed polymer housing.

Control / Electronics Module (CEM)

Serves as the interface and control point for UIM and TSM, as well as location of expansion ports for additional modules. The CEM is installed either inside of an electronics cabinet, or within a NEMA enclosure installed on a machine's exterior.

AURA CAS - CONTRACTOR

Intended for use on contractor machines or vehicles.



Transmitter / Control Module (TCM)

The CAS Contractor System is a variation of the Standard System that caters specifically to industry contractors. The Contractor System combines the TSM and CEM into one single unit, which can be magnetically or permanently mounted by the user to maximize transferability between machines. The smaller mast and low-profile TSM/-CEM provides a portable solution that can be quickly deployed and easily maintained.

Each CAS Contractor System is pre-loaded with software settings for all railways that use the CAS. This allows contractors to conduct work on any railway and ensure that the CAS will identify any other installed systems in the vicinity.

AURA CAS - MOBILE

Intended for temporary hi-rail use

Transmitter / Control Module (TCM)

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REIMAGINE YOUR RAILWAY