



# ELECTRONIC SECONDARY PROTECTION

for All Roadway Workers

[MillerIngenuity.com](http://MillerIngenuity.com)

1155 East 8th Street, Winona, MN 55987  
P: 507.452.2461 • F: 507.452.2463

## ZONEGUARD COMPONENTS



Train Detection  
Module (TDM)



Portable Train  
Detection  
Module (PTDM)



Train Alert  
Module (TAM)



Portable Train Alert  
Module (PTAM)



Onboard Alert  
Unit



Wearable Alert  
Devices

Miller Ingenuity's comprehensive understanding of railway worker protection requirements and practices have contributed to the development of ZoneGuard - an electronic safety overlay system that augments your current worker safety rules.

ZoneGuard is designed to provide secondary protection to lone workers as well as large track crews. Our product alerts the train operator of the presence of the track crew and alerts every equipped track worker of an approaching train.

Railroad managers constantly focus on keeping track workers safe, trains on schedule, and balancing maintenance activities against available track time. We address these oftentimes competing objectives by deploying a wayside network of intelligent train detection modules. The modules utilize multiple and diverse sensors to provide train/track vehicle detection in the unforgiving railroad operating environment. Upon a train detection, ZoneGuard calculates the necessary warning time to the track crew, allowing the crew to work as long as possible, and still be safe in the clear within the required clear time prior to the train's arrival.

## HOW DOES IT WORK?

ZoneGuard is an incredibly flexible train detection and alerting platform that can be customized to work efficiently in most railroad operating environments. There are four basic components used in most ZoneGuard deployments:

- Train Detection Modules (TDM) – detects the presence of trains from a wayside location, with absolutely no connection to the track.
- Train Alert Module (TAM) – receives a “train detected” signal generated by the TDM and sounds an alert through a high volume siren.
- Wearable Alert Devices – this is a small device worn by track workers that provides a direct alert to the worker when it receives a “train detected” signal from the TDM. The worker will be alerted to the train's approach by flashing lights, a loud siren, and a vigorous vibration from the device. We offer three versions of our wearable devices: one designed for the Roadway Worker in Charge, one for the Watchman/Lookout and one for general track workers.
- Cloud-based Web Dashboard - provides customers with real-time worker/work zone information, as well as, many key efficiency and safety performance reports to ensure that workers are working in compliance with federal and customer specific safety rules. The dashboard also lets Miller Ingenuity support staff monitor real-time diagnostics and system performance, collect train detection information logs, and provide remote updates to the system for continual system enhancement and quick and seamless system updates.

\*Feature applications dependent on type of system purchased/installed.

## ZONEGUARD PORTABLE SYSTEM

The ZoneGuard portable eRWP kit is used as a standalone system and does not rely on any outside on-board or signaling systems in order to operate. Portable TDMs define the outermost limits of the detection and alerting zone and are temporarily placed at the limits of a work zone, typically defined by a customer's sight-distance rules for watchman, or are placed alongside approach and stop boards. TDMs placed at the outermost limits of the temporary work zone will detect approaching on-track vehicles as they reach TDM location(s), and will generate alerts to all worker wearables and TAMs that are in use. The portable modules are lightweight and easy to transport, weighing under 5lbs, and measuring about a foot in length.



Portable Detection

## ZONEGUARD FIXED SYSTEM

The ZoneGuard fixed system is comprised of permanently installed TDMs that make up a fixed communication and train tracking network. Each TDM is configured based on the location it is installed, neighboring ZoneGuard devices, and customer specific track profiles. The ZoneGuard fixed system provides 24/7 train tracking capability and is online ready to be used by any number of roadway workers, at any time, with no configuration or setup required. Roadway workers simply need to enter within radio range of the outfitted track alignment, connect to the ZoneGuard TDM network, and will begin receiving alerts for all approaching on-track vehicles that are within a specific time of arrival to roadway workers, based on customer specific On-Track Protection rules.

While not requiring on-board installation to operate, the system's on-board component can provide real-time on track vehicle location information to provide precise warnings to train operators and workers when approaching an active work crew, and can allow for PTC integration through future updates.



Permanent Installation

For more information on ZoneGuard,  
or to schedule a demonstration, please contact:



**877-843-0767**



**sales@milleringenuity.com**

