
Omnisight
FusionBLADE
Backward Looking Advanced Detection Engine
Omnisight

Omnisight

1. Introduction

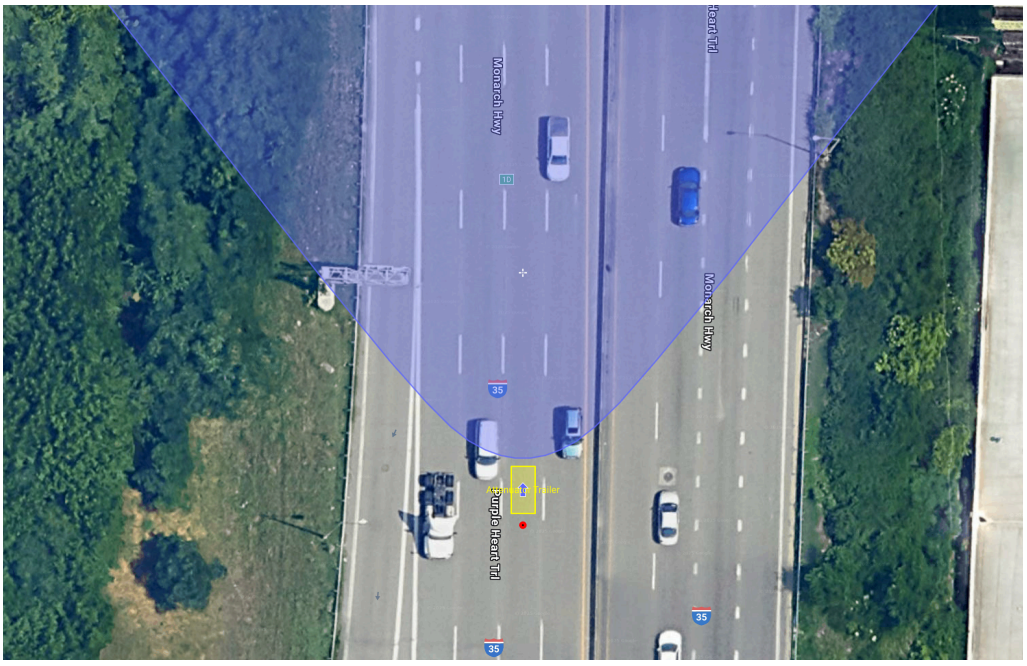
The **FusionBLADE** system is designed to improve work zone safety by detecting distracted or inattentive drivers approaching an attenuator truck. When a potential collision is detected, the system activates warning lights and horns to alert the driver and nearby workers to reduce the risk of impact.

Key Benefits:

- Fusion of radar and video for accurate vehicle detection
- Early warning system for distracted drivers and nearby road workers
- Fully configurable alert system with horns and lights
- Integrated connectivity with the Omnisight Connect dashboard
- Rugged design suitable for roadside environments

Important Notice

The FusionBLADE is an **aid to safety**, not a substitute for proper work zone safety procedures or compliance with state and federal guidelines.



FOV of sensor looking backwards

2. System Overview

The FusionBLADE consists of:

- A Fusion Sensor for traffic detection, event reporting, cellular communication, and edge processing
- A power distribution and relay system housed in a protective enclosure
- Horns and lights for driver and road-side worker alerts

How it works:

1. The FusionSensor monitors approaching traffic.
2. If a collision is likely (within the configured time to collision), the relay system activates:
    - Collision within 3 seconds - Strobe lights flash
    - Collision within 2 seconds and the driver does not change course - The horn sounds for 5 seconds
3. Events, alerts, and system health are reported to the **Omnisight Connect dashboard** via the onboard cellular modem.

3. Safety Precautions

- **Disconnect vehicle power before installation.**
- Only qualified technicians should install the system.
- Do not mount the system to the attenuator or crash pad.
- Ensure all connections are secure and protected from weather and vibration.
- Follow applicable DOT, OSHA, and FCC safety guidelines.

4. Components and Specifications

- **System Enclosure**: Polycarbonate box with weatherproof seals
- **Operating Voltage**: 12 VDC (connect to a fused vehicle system)
- **Connectors**:
    - RJ45 for CAT6 PoE networking
    - Weatherproof crimp connectors for wiring
- What's Included
    - FusionSensor LTE
    - 6qty Lights kits (strobe light, harness, mount, grommet)
    - BLADE Relay Box
    - Horn System
- **Outputs**: Relay-controlled outputs for optional horns and lights
- **Certifications**: Fusion Sensor complies with FCC requirements and is NEMA TS2 certified

5. Installation Instructions

Tools Required

- Standard automotive tools (wrenches, drill, screwdrivers)
- Wire crimping and stripping tools
- Mounting hardware (bolts, brackets, or plates as needed)

Mounting the FusionBLADE Box

1. Identify a secure location on the **frame of the trailer**, safe from minor collisions.
2. Do **not** mount on the attenuator or crash pad.
3. Secure the enclosure using bolts or equivalent fasteners.

Mounting the FusionSensor

1. Mount centered on the trailer with a clear, unobstructed view of approaching traffic.
2. Attach securely to a vertical surface (sign, metal plate, or approved bar mount).
3. Ensure the mounting is rigid to prevent vibration misalignment.

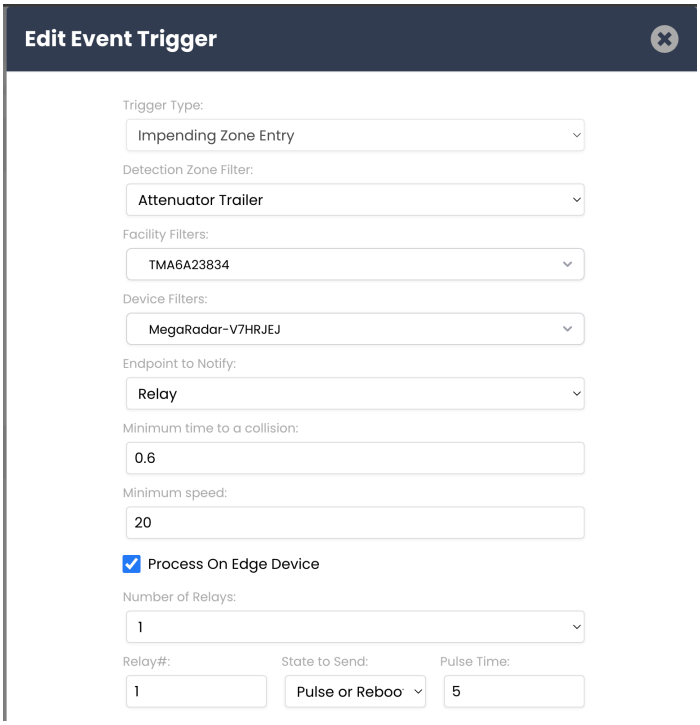
Wiring Connections

1. Connect the system to the truck's **12 V fused system**.
2. Connect the FusionSensor to the relay system via **CAT6 cable** using RJ45 connectors.
3. Connect horns and lights (if purchased) to the relay output wires:
    - Relay 1 → Horns (recommended, so they can be disabled with the box button)
    - Relay 2 → Lights
4. Double-check connections before applying power.

Finished Installation

6. Configuration and Setup

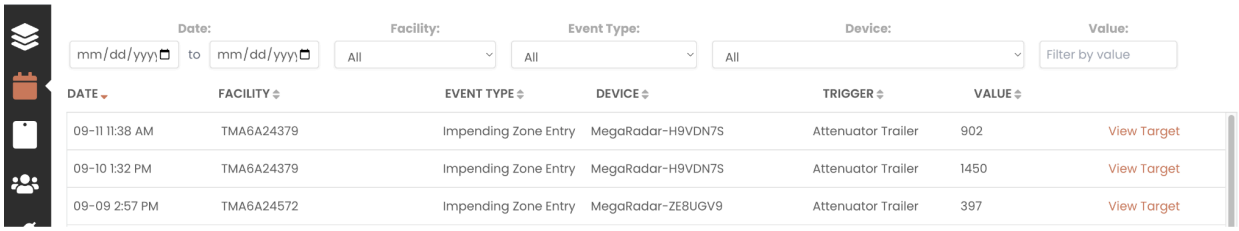
1. Power on the system.
2. Locate the **device key** on the FusionSensor label.
3. Go to the **Omnisight Connect Dashboard** (omnisightusa.com) and create or log into your account.
4. Enter the device key to register and configure the system.
5. Configure alert behavior and verify connectivity.



Relay Trigger Configuration

7. Operation

- **Normal Operation**:
    - Lights flash for 5 seconds when an approaching vehicle is detected.
    - If the vehicle continues toward a collision path, the horn sounds for 5 seconds.
- **Manual Controls**:
    - A button on the FusionBLADE box allows Relay 1 (horns) to be disabled temporarily while leaving Relay 2 (lights) active.
- **Event Reporting**:
    - All events, images, and health status are sent via the onboard cellular modem to the Omnisight Connect dashboard.



Near Miss Events on the dashboard

8. Maintenance and Troubleshooting

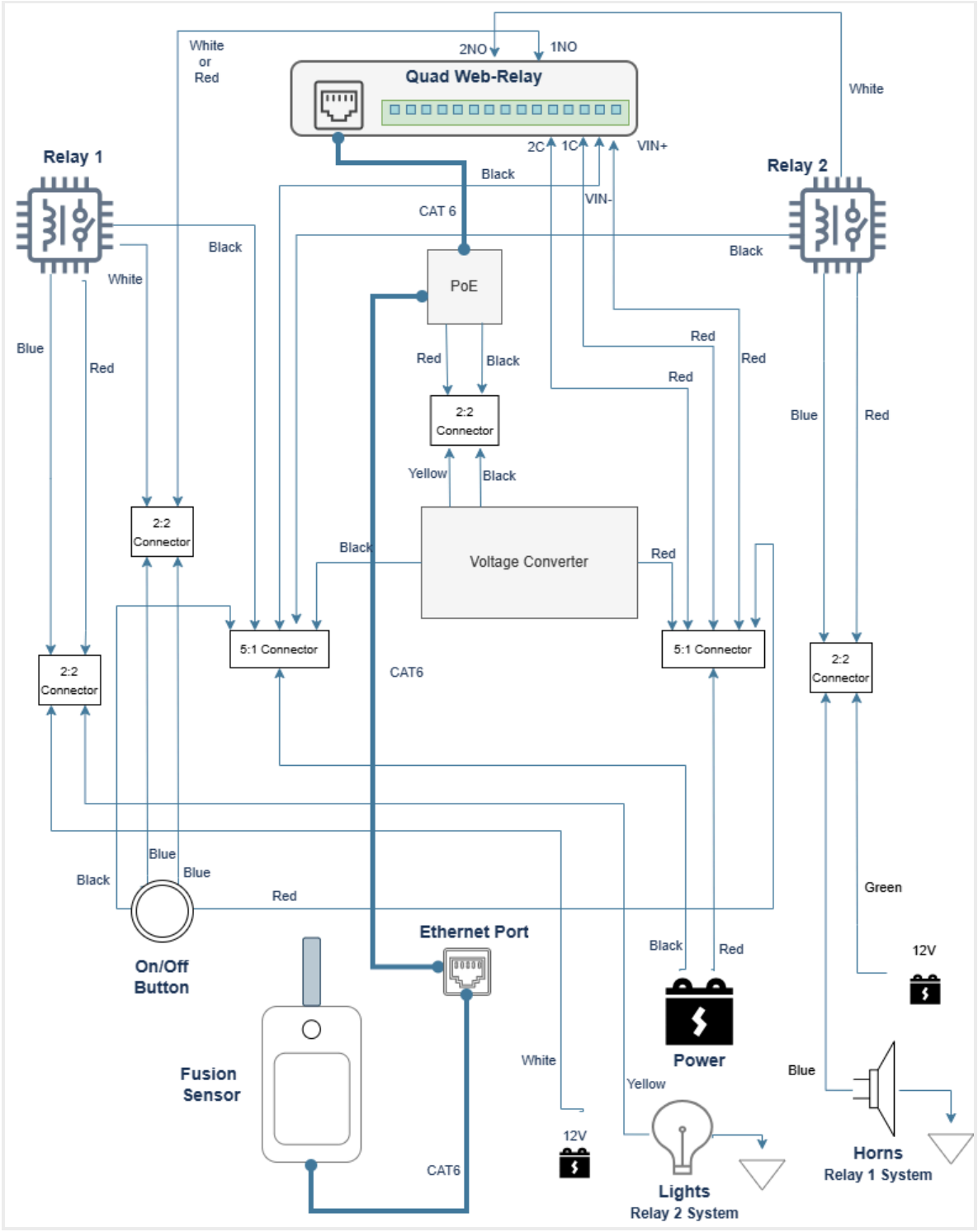
Routine Checks

- Verify the FusionSensor is free of dirt, obstruction, or physical damage.
- Confirm lights and horns activate during test events.
- Review system health in the dashboard regularly.

Troubleshooting Table

Symptom	Possible Cause	Solution
Horn not sounding	Relay disabled, wiring loose, blown fuse	Check horn disable button, wiring, and vehicle fuse
Lights not flashing	Wiring loose, blown fuse	Inspect wiring and fuse
No power to system	Incorrect or missing power connection	Verify 12 V fused connection
Dashboard not showing events	Cellular connection issue	Check antenna placement and retry connection

9. System Diagrams



Wiring Diagram

10. Warranty and Support

- Limited warranty covers manufacturing defects.
- For assistance, contact:
    - **Website**: omnisightusa.com
    - **Phone**: 843-800-0986
    - **Email**: info@omnisightusa.com

11. Photo Gallery