



SCAN LINK CONVEYOR PERSONNEL DETECTION SYSTEM

FC Version 1.0
Date of Creation: 09 / 17 / 2026

INTEGRATED CONVEYOR SAFETY

Fluent Conveyors provides complete conveyor systems with safety technologies designed to protect workers and support reliable operation in demanding industrial environments. Our approach goes beyond supplying individual conveyor components. We integrate proven safety solutions into the overall conveyor system, helping create a more complete and coordinated protection strategy.

Through trusted technology partners, including passive RFID safety solutions, Fluent Conveyors can incorporate worker detection and conveyor safety systems into new and existing applications. These technologies can help identify workers entering designated safety zones and initiate protective actions when required.

Our team works with you to understand your application, operating environment, and safety requirements, then helps determine the right combination of conveyor equipment and safety technology for the project. From system design and component selection to integration and ongoing support, we keep the complete conveyor system in focus.

With Fluent Conveyors, safety is considered as part of the system, not an afterthought. By combining conveyor engineering with integrated safety solutions from established technology providers, we help deliver systems that are designed around your operation, your workers, and your long-term requirements.

HOW INTEGRATED CONVEYOR SAFETY WORKS

Fluent Conveyors integrates passive RFID safety technology with conveyor systems to help identify tagged workers entering designated safety zones and initiate protective actions when required. The system combines worker-worn RFID tags, strategically positioned antennas, and conveyor safety controls to create a coordinated safety solution around high-risk operating areas.

Process Overview

01

Workers Wear Passive RFID Tags

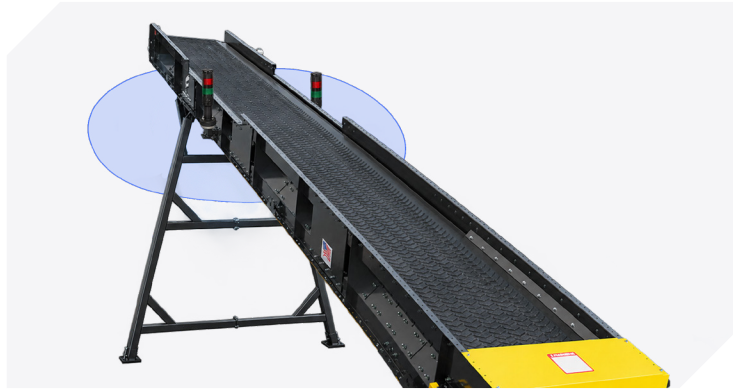


Workers wear passive RFID tags integrated into safety vests, hard hats, or other approved personal protective equipment. These tags allow the safety system to identify tagged personnel when they enter a designated detection zone around the conveyor.

Passive RFID tags operate without batteries, reducing the need for routine tag maintenance while providing a practical solution for industrial environments.

02

Antennas Establish Conveyor Detection Zones

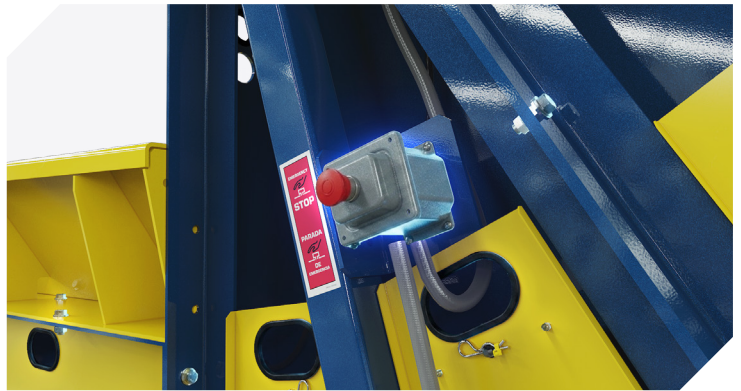


RFID antennas are positioned around the conveyor system to establish defined detection zones in areas where worker interaction may present a safety risk.

Detection zones can be configured around the conveyor layout and operating environment, allowing the safety system to monitor specific access points, work areas, and other designated zones.

03

Safety Controls Trigger Stops & Alerts

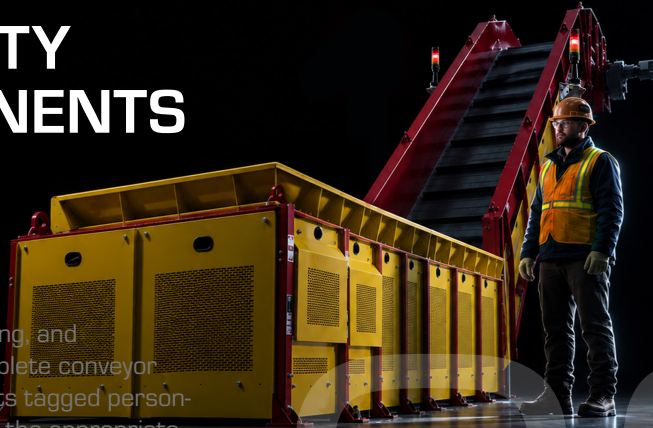


When a tagged worker enters a configured detection zone, the integrated safety system can communicate with the conveyor's safety controls to initiate a protective response.

Depending on the system configuration, this may include stopping the conveyor through the safety circuit and activating audible or visual alerts to notify personnel in the surrounding area.

CONVEYOR SAFETY SYSTEM COMPONENTS

Fluent Conveyors integrates detection, warning, and worker-identification technologies into a complete conveyor safety system. The integrated solution detects tagged personnel in hazardous conveyor zones and initiates the appropriate safety response.



Component Overview

01

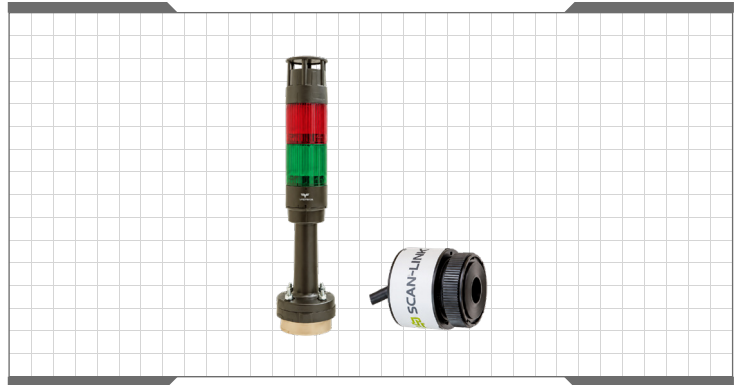
Compact Detection Antenna



Provides precise detection coverage around designated conveyor hazard zones. When a tagged worker enters the monitored area, the system communicates with the conveyor safety controls to initiate the configured response.

02

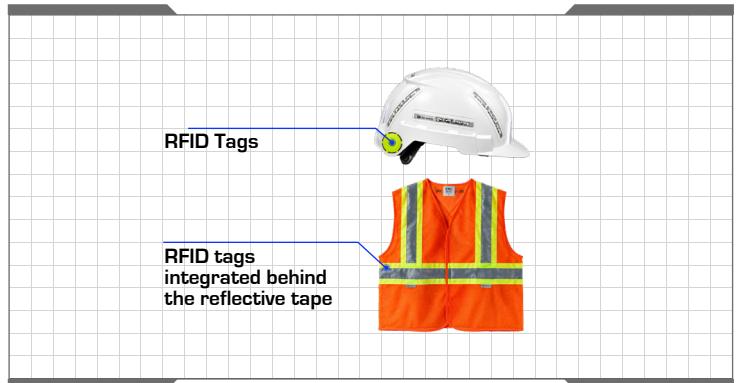
Light Tower & External Alarm



Provides immediate visual and audible alerts when personnel are detected within a protected zone, increasing awareness around operating conveyor equipment.

02

Light Tower & External Alarm



Passive RFID tags can be discreetly integrated into safety vests and existing hard hats, allowing the detection system to identify personnel as they approach or enter designated conveyor hazard zones.

This approach provides worker identification without requiring intrusive equipment or changes to normal PPE usage. Multiple RFID tags can be positioned within existing PPE to support reliable detection from different orientations and help provide consistent personnel recognition around conveyor equipment.

CONVEYOR DETECTION SYSTEM

System Use & Safety Role

Fluent Conveyors integrates RFID detection technology with existing conveyor safeguarding systems to provide an additional layer of protection around designated access and worker interaction zones.

RFID detection is designed to supplement, not replace, the safety functions of the overall conveyor system. For applications requiring formal functional safety validation, Fluent Conveyors recommends consultation with a qualified Functional Safety Engineer to evaluate the complete safeguarding system.

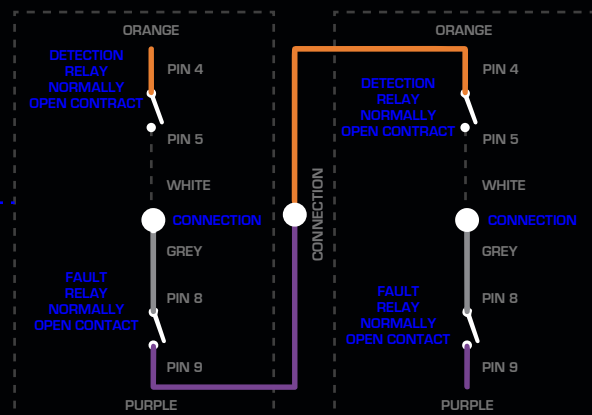
Hardware & Performance Specifications

Operating Voltage	12VDC - 28VDC nominal Power
Power Consumption	7.5-36W
Power Source	PLC or power supply
Temperature Range	-20°C to +80°C
RFID Frequency	902.3MHz - 927.7MHz
Wireless Link	2.4GHZ
Typical Range	Adjustable from 0.5 to 6
RoHS Compliant	Yes

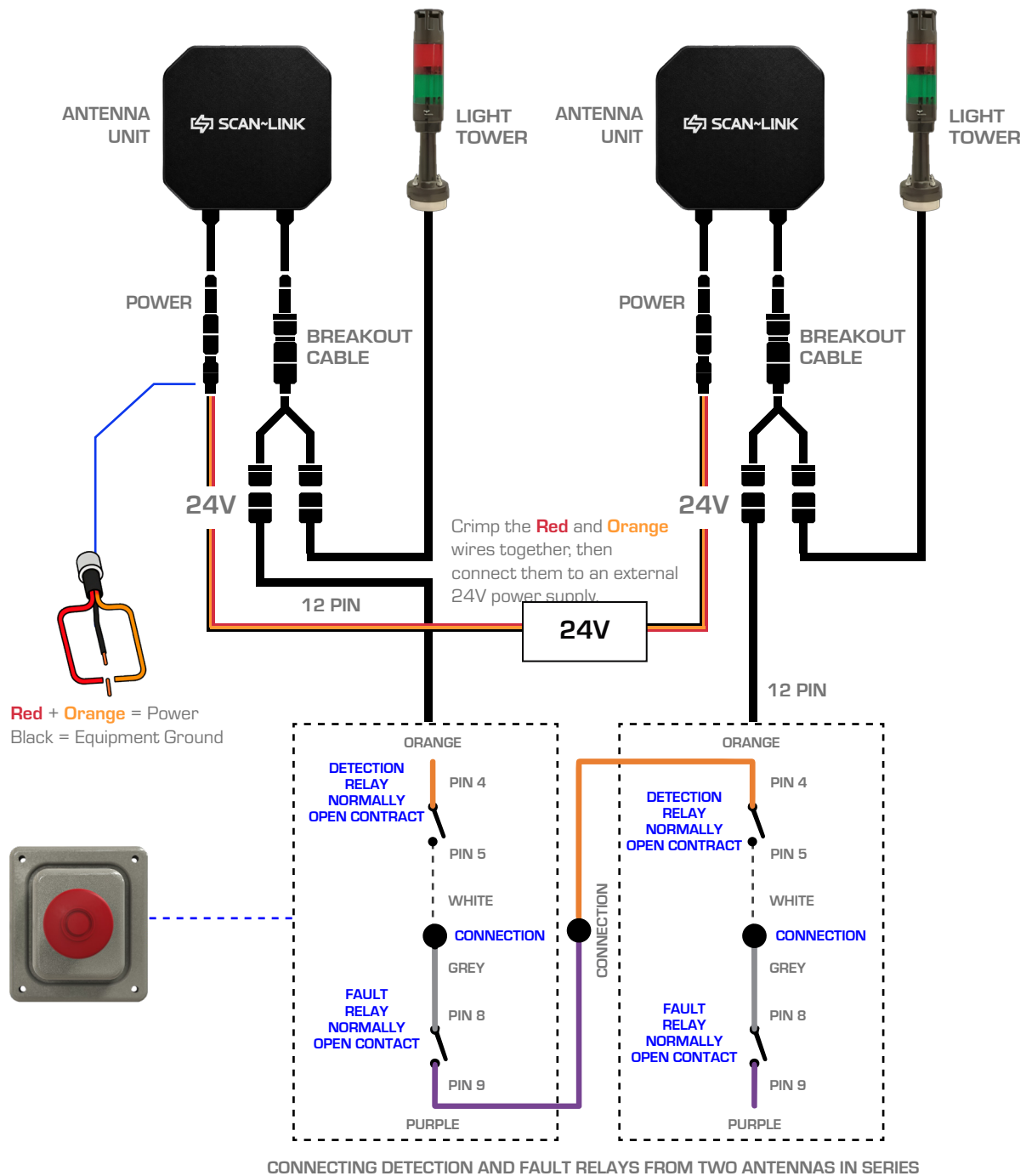
*The total load for two Antennas and two Light Towers is 12 Watts at 24V



CONNECTING DETECTION AND FAULT RELAYS FROM TWO ANTENNAS IN SERIES



Connection Diagram



WARNING: The Antenna's internal Detection and Fault relays are rated at 2A at 15VDC and 1A at 30VDC. These telecom relays are intended for PLC interfacing and should not be used for switching power circuits. For higher current or voltage applications, they can be used to drive an external power relay.