HazardAvert®
Proximity Detection and Collision Avoidance
Surface and Hard-Rock Mining
What Is It

HazardAvert® proximity detection is designed to minimize crushing and pinning type accidents and vehicle to vehicle collisions by detecting when a person or vehicle enters the “marked zone” around a piece of operating machinery. When the zone is breached, the system emits an audible and visual alert to warn miners on foot and vehicle operators of imminent danger. HazardAvert can also be programmed to slow or stop machinery completely.

How It Works

• HazardAvert® establishes a magnetic marker field –or zone – around machinery using a device called a Proximity Module. This Proximity Module is installed onto machinery and with the use of electromagnetic fields, marks areas considered to be potentially dangerous. On some systems, these fields can be dynamic in that the zone sizes automatically adjust depending on speed and direction of travel of the vehicle.

• Workers and operators wear a Personal-Alarm Device (PAD) which detects and measures the magnetic marker field to determine their proximity from the machine and alert them of possible danger to their safety.

• Collision between machinery can be avoided with the use of vehicle alarm devices which are integrated with the proximity modules. The system detects electromagnetic fields of other machinery and vehicle operators are warned with audible and visual alarms. Where necessary, the system can be programmed to allow vehicles to interact without nuisance alarms.

Key Features Of HazardAvert®

• HazardAvert® can be installed on any and all types of machinery and vehicles.

• Easy-to-Install Super Magnetic installation of proximity modules is available.

• All equipped personnel and vehicles will interact on the system.

• Multiple machines and multiple miners can work closely without any conflict.

Fields

• Field sizes and shapes are configurable and customized to individual operations.

• Field sizes may be shaped around the machine to cover blind spots.

• Field size may be reduced on the sides of the machine when in motion.

• Optional speed control of fields.

• Fields are enabled/disabled with parking brake and/or retarder.

• Silent Zone in Operators Cabin.
Data Recording

- The system tracks all equipped miners and vehicles in the vicinity of the machine
- It monitors workers and vehicles entering and leaving the zones and the duration of time spent in the zone
- All data is recorded and logged on a Tracking Display POD (TDP) and can be downloaded
- The POD displays the status of the system and any warnings

Applications:

- Haulage
- Draglines and shovels
- Water trucks
- Skid steers
- Track hoes
- LHD
- Haul Trucks
- ANFO Chargers
- Man-trips
- Blast hole drills
- Bull dozers
- Wheel loaders
- Road graders
- Fuel and service trucks
- Drill Jumbos
- Fuel and service trucks
- Pick-up trucks
- Bulk powder truck

Marker Fields

Dragline

- Warning Zone: 22m to 24m / 72' to 80'
- Stop Zone: 14m to 15m / 47' to 50'

Haul Truck

- Warning Zone: 24m / 80' front and rear; 15m / 50' on the sides
- Stop Zone: 16m / 52' front and rear; 10m / 33' on the sides

*Zones adjustable upon customer and vehicle requirements.
HazardAvert®
Proximity Detection and Collision Avoidance
Surface and Hard-Rock Mining

System Specifications

• System operates off 24 volt DC.
• A visual and audible warning alert when a PAD enters hazard zone.
• A separate output warning alert on the POD when PADs enter hazard zones.
• Silent Zone Generator is integrated into the POD.
• Zones are disabled when the retarder is engaged.
• Zones are enabled when the retarder is disengaged.
• Zones may be reduced 25% when truck exceeds predetermined speed.
• The system resets when the person or vehicle leaves warning zone.

Proximity Module Specifications

• Dimensions: 330 x 102 x 147mm / 13 x 4 x 6 inches
• Weight: 2.7kg / 6lbs

• Contains:
  · Microprocessor based circuit
  · Warning module
  · UHF data radio receiver - 916 MHz
  · Electromagnetic Ferrite
• Can project an ellipse shaped marker up to 25 meters from its center.
• Size can be adjusted to the requirements of the application.
• Size can be dynamically adjusted if accurate vehicle speed information is available.

PAD Specifications:

• Device that detects the electromagnetic fields
• Dimensions: 51mm x 76mm x 19mm / 2 x 3 x ¾ inches
• Weight: 45g / .6 oz

Warning Module:

• Device that emits visual and audible warning alerts
• Dimensions: 57mm x 40mm x 25mm / 2.25 x 1.6 x 1 inches (large - vehicle cabin warning device)
• 35mm x 44mm x 25 mm / 1.4 x 1.75 x 1 inches (small - miner worn device)
• Weights: 62 grams (large) · 45 grams (small)

Tracking Display POD Specifications:

• Displays status of the system and warnings using LED lights. Records all activities.
• Dimensions: 76mm x 228mm x 76mm / 3 x 9 x 3 inches
• Weight : 1.13 kg / 2.5 lbs.