

METAL DETECTORS

Solid State Model 1200™



Detect Both Ferrous and Non-Ferrous Tramp Metal



Metal Detectors - Model 1200

Detect both ferrous and non-ferrous tramp metal in magnetic ores, highly mineralized products and food products even when conveyed on steel cable belts.

The detection system operates by measuring the change in received electromagnetic signal of material being conveyed through the sensor area. Since the magnetic properties of a material are completely independent of conductivity, both magnetic and non-magnetic tramp metals are consistently detected.

FEATURES & BENEFITS

- **All solid state integrated circuits**
- **Designed for outdoor use**
- **No balancing or tuning required**
- **Built-in Coast Alarm circuitry**
- **Swing-away coil protection**
- **Field-replaceable circuit modules**
- **No periodic maintenance required**
- **Fail-safe control circuit**

Typical Applications

Typical materials with which the Model 1200 Metal Detector can be used are:

- Iron, copper, nickel, aluminum, gold, uranium and molybdenum ores
- Coal
- Wood chips
- Aggregates
- Limestone
- Iron pellets
- Cement
- Sinter
- Glass
- Asbestos
- Tar sands
- Logs
- Fertilizer
- Rubber
- Plastics
- Food



Specifications

ADDITIONAL FEATURES

- Immune to effects of ambient temperature and humidity
- Sensitivity threshold to detect tramp metal even on metallic splices
- Accessible programming for: alarm delay, alarm duration, sensitivity scale factor, splice detector threshold
- LED Diagnostic Monitor to indicate operational status of circuits
- Accommodates conveyor speeds from 10 fpm to 1200 fpm (3 to 366 mpm)
- Easily installed without cutting the belt
- Self-analysis circuits monitor logic of detection circuit
- Solid state relays for arc-free switching

Electrical

Line Power	Dual primary power transformer for 115/220V $\pm 10\%$; 50/60 Hz; 1200/2400 watts maximum, 1 phase.
Fuse Protection	Fuses: 1 amp. and 10 amp.
Solid State Relay Contacts	Two sets of solid state relay outputs, one direct, one timed, each rated 5 amp., 120/220 VAC single phase.
Timed Output	Timed normally on or off live solid state relay.
Direct Output	One direct live normally on or off solid state relay.
Indicators	On/Off switch, alarm and ready indicator lamps and push button reset located on front panel of controller.

Mechanical

Controller	NEMA 4 enclosure. Dimensions: 16" x 14" x 6" (406 x 356 x 152 mm) Lockable front panel is available. NEMA 4X, 7 and 9 enclosures are also available.
Coils	Sensor coils embedded or encased in impact resistant molded fiberglass.
Coils Support Structure	Fabricated from Extren 500 fiberglass reinforced pultrusions. Fire retardant Extren 525 available.
Weight	Controller: 33 lb (15 kg). Coils set (30" [770 mm] size): 50 lb (23 kg), including support structure.

Accessories

Splice Detector	High-performance proximity device to allow belt splice or repair areas to pass the sensor without alarm.
Control Relay	Can be used to control a quantity of functions when required or desired.
Liquid Metal Marker	Liquid dye accurately and repeatedly marks the location of tramp metal with a built-in Coast Alarm where multiple marks are required.
Remote Reset	Alarm and ready indicator lamps, as well as alarm counter, may be installed within a remote station enclosure.
Flag Drop Marker	Non-metallic flag marking system used to assist an operator in locating tramp metal on a conveyor belt includes a resettable counter visible through front panel of NEMA 4X enclosure and three non-metallic flags.

Contact Eriez Headquarters to discuss other available options.

Note: Some of the safety warning labels may have been removed before photographing this equipment.

Model 1220

The Model 1220 Metal Detector is an economical design for applications requiring detection of bucket teeth and other large damaging pieces of ferrous and nonferrous metals. It is pre-fabricated to fit CEMA standard conveyors with belt widths up to 48", and the coil spacing can be field adjusted up to 23.5" to handle most standard application requirements.

SENSITIVITY:

Capable of detecting a ferrous cube equal to 10% of the coil spacing, depending on product being conveyed.



Model 1230

The Model 1230 Metal Detector is engineered for installation on conveyor belts carrying coal, minerals, aggregates and other bulk materials. It can be tuned to ignore conductive or magnetic ores such as magnetite and pyrite, even if they are carried by high tension, steel corded belts with rip detection loops, while still detecting small pieces of tramp metal. The Model 1230 is available in nearly any belt width and can be field adjusted to fit most standard conveyor configurations.

SENSITIVITY:

Capable of detecting a ferrous cube equal to 5–8% of the coil spacing, depending on product being conveyed.



Model 1235

The Model 1235 Metal Detector has the unique ability to detect and discriminate between magnetic and non-magnetic tramp metals. Installing the Model 1235 Metal Detector with the magnet activation circuit before a Suspended Electromagnet allows the 1235 to control the magnet power based on the presence of magnetic tramp metal, which will enable the customer to conserve energy and save money. When non-magnetic metal is detected, a separate relay activates which can be used to stop the belt for manual removal. The 1235 can also be adjusted to stop the belt when oversized magnetic metal is detected, which may be too large for the magnet to remove. The Model 1235 Metal Detector can be designed to fit on a variety of conveyors and to accommodate numerous belt widths.

SENSITIVITY:

Capable of detecting a ferrous cube equal to 5–8% of the coil spacing, depending on product being conveyed.



Model 1241

The Model 1241 Metal Detector is designed primarily for scanning whole logs on conveyors or chutes for all types of tramp metal, magnetic and non-magnetic, to protect hogs and de-barkers. It is also ideal for applications requiring large openings and high metal sensitivities. It is constructed of high strength compression molded fiberglass, resulting in a structurally sound lightweight metal detector that is vibration, dust and water resistant.

SENSITIVITY:

Capable of detecting a ferrous cube as small as 2-1/2% of the coil spacing, depending on product being conveyed.



Model 1250

The Model 1250 Metal Detector is the most sensitive metal detector of all the Model 1200 Series. It is suited for installation on conveyor belts carrying coal, minerals, aggregates and other bulk materials. The Model 1250 is available with two controls, E-1 and E-6.

The modular design of the Model 1250 MD makes it easy to install without having to cut the belt or utilize special tools. The field replaceable electronics are also easy to operate and maintain.

E-1 CONTROL SENSITIVITY:

- Can be tuned to ignore conductive ores such as gold, copper or zinc, while still detecting small pieces of tramp metal
- Available in nearly any belt width and is factory customized to fit a customer's conveyor
- Capable of detecting a ferrous cube as small as 2% of the coil spacing



E-6 CONTROL SENSITIVITY:

- Typically used in food, glass and plastic recycling, wood chips and paper pulp applications, which demand the highest possible sensitivities, while remaining immune to moisture, salt and other product effects
- Can be built to fit nearly all belt widths and conveyor configurations
- Capable of detecting a ferrous cube as small as 1.5% of the coil spacing



Model 1260

Designed to prevent conveyor belt damage due to long rods piercing the belt at transfer points or jamming the transfer point, the Model 1260 Metal Detector selectively detects long metal objects of a given diameter and length, as well as normal tramp metals greater than the rod diameter.

As is the case with the other 1200 Series Metal Detectors, the Model 1260 is also compatible with fabric or steel corded conveyor belts, and belts with metal splices.

Contact Eriez Headquarters for the sensitivities.





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