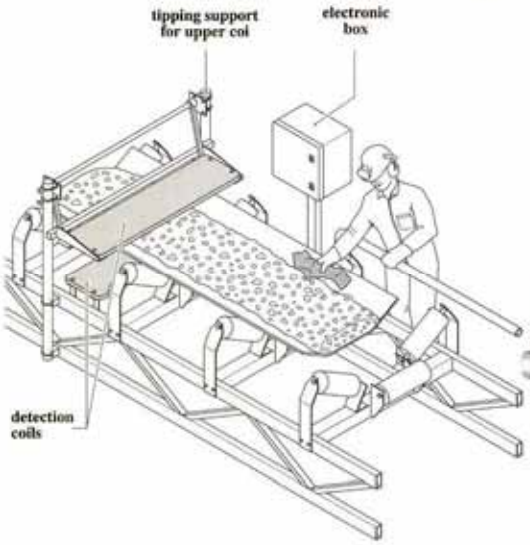
MAG Detect



- suitable for difficult detections.
- possibility of detection on steel wire reinforced belt.
- discrimination possible between metals and ores.
- selection of sensitivity programmes.
- operation possible on bands with metal fasteners.

OPTIMUM DETECTION

The MAG Detect 117C metal detector is designed to signal the presence of metallic parts, **magnetic or not**, on a conveyor belt.

Especially suitable for difficult detections, MAG Detect can detect the presence of **metals on a belt loaded with metallic ores, even magnetic**, it can also operate on a conveyor belt reinf **orced with steel wires.**

It is mainly used for protecting industrial material processing, grinding and crushing installations, etc... It can be used to purify products polluted by undesirable metallic waste.

Depending on type, MAG Detect can operate with spacings of up to 1200 mm between the transmitting coil and the receiving coil.

MAG Detect

OPERATION

A current generator sends time-calibrated pulses to the transmitting coil.

The magnetic field generated by these pulses induces eddy currents in the so-called dangerous metallic parts. These induced currents continue to circulate in the metallic part when the transmission pulse ceases and, in turn, induce a voltage in the receiving coil.

This voltage, which lasts several hundred microseconds, varies with the metallic properties and the size of the metallic part.

The receiving system is cut off during the transmission pulse, then powered briefly whilst the transmission pulse is off.

A sample is taken several times on this decreasing signal. The sample is then applied to a system which separates the time-variable component of the signal due to the moving part from the static component of the signal due to the immobile environment. The amplitude of the signal is then compared with a detection threshold. The sensitivity is determined by the signal amplification ratio.

The variation of the signal in a piece of ore is lower than in a piece of metal making discrimination between metals and ores possible; however, large pieces of very magnetic ores which are good conductors make discrimination difficult.

When the signal exceeds the detection threshold, the system actuates a relay which can then control different processes.

The two-channel system used in MAG Detect 117 C makes the detection of metal rods and bars possible: indeed, with a one-channel detector, it has been proved that long parts give various responses depending on their orientations; our coils are formed of two crossed windings thus, if one of the channels gives a low signal, the other will give an exploitable signal.

PROTECTIONS

- electronic box made of sheet metal, dimensions: 500 x 500 x 300 mm, beige epoxy paint RAL 7032, IP 55,
- glass fibre and PVC coils, IP 65,
- operating temperature: – 35°C to + 55°C,
- vibrations and shocks: as per CEI 68-2-6,
- humidity: up to 100%,
- the detector is delivered with a system which enables the upper coil to tip up when height of load on belt exceeds clearance height.

CONNECTIONS

- supply voltage: 230 V + 8% – 15%,
- mains frequency: 45 to 65 Hz,
- power: 60 VA maximum,
- detection relays: 2 no-voltage switches, breaking power: 3 A under 230 V 50 Hz.

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SENSITIVITY

The programme selector and the precise sensitivity adjustment potentiometer provide MAG Detect 117 C with a very high detection sensitivity and excellent discrimination for perfect operation.

Detection is possible even on magnetic ores and on rocks known to be difficult such as coke, bricks, tiles, etc…

Also note the excellent performances with belts reinforced with longitudinal steel cables.

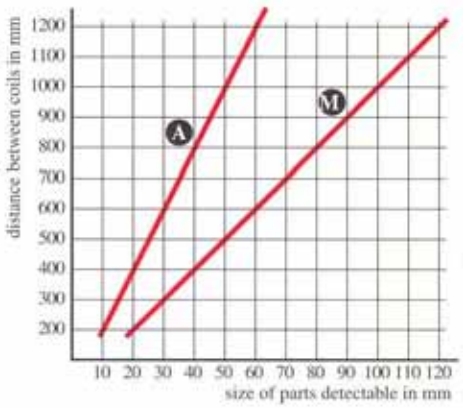
OPTIONS

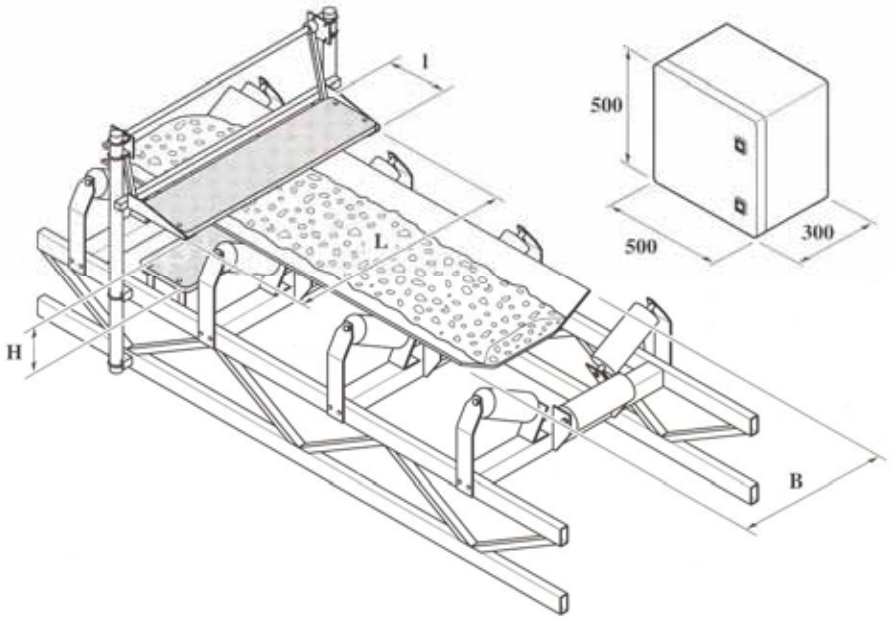
Many options are available:
- detection counters,
- electromagnetic coloured jet marker,
- belt fastener detector,
- sirens, flashing lights, rotating lights, buttons and various indicator lights,
- time-delayed, deferred, memorised and counted detections, etc…

The two curves correspond to different metal detector situations:

Curve A
This curve is valid for a normal rubber belt; the belt being loaded with rocks or other non-metallic and non-magnetic materials.

Curve M
Gives the mean sensitivity values for mineral or metallic materials, magnetic or not, such as rocks with metallic veins, ores, volcanic rocks containing magnetic components, blast furnace slag with magnetic cast iron nodule inclusions, etc…
Also, this curve is valid for detections on belts reinforced with longitudinal steel wires (transverse wires almost completely degrade the sensitivity of the apparatus).





Type	Belt trough width B (mm)	Coils (th.: 35 mm) Length L (mm)	Coils (th.: 35 mm) Width l (mm)	Unit weight (kg)	Distance between coils normal H (mm)	Distance between coils maximum H (mm)
117 C/08	650 800	945	280	3,5	270	500
117 C/12	1000 1200 1400	1345	380	6,5	400	800
117 C/16	1600 1800	1745	480	9,0	550	1050
117 C/20	2000 2200 2400	2145	480	10,5	750	1200

Dimensions and weights may vary depending on equipment chosen and configuration adopted.