

HKP 5.1 metal detector



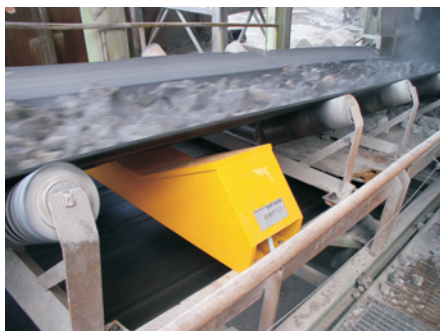
Description:

The HKP 5.1 metal detector is designed to signalize the presence of a metal object in non-metallic materials, usually on a conveyor belt.

The most frequently found metal objects are: iron and ferro-alloys, manganese alloy used for drilling rigs, aluminium and aluminium alloys, copper, brass, etc. These objects may not have magnetic properties and thus cannot be removed by a magnetic separator. HKP 5.1 is able to indicate all these object independently of their chemical composition, their size and their distance from the antenna.

If a metal object passes through, HKP 5.1 will switch a relay contact and the conveyor belt will stop. The metal presence signal can also be used to turn over the flap in the material flow and thus remove a part of the material following the metal object. When the material is removed, the flap will return and the flow will continue. Another possibility is to switch on the magnetic separator only if a metal object needs to be removed.

HKP 5.1 can also be used for spillways, pneumatic transportation in pipes, etc., as all sorts of antenna shapes (such as U-shaped, arch-shaped, V-shaped antennas) can be manufactured. If other shapes are used, they are based on the parameters in this manual and the construction part of the antenna will be designed individually.

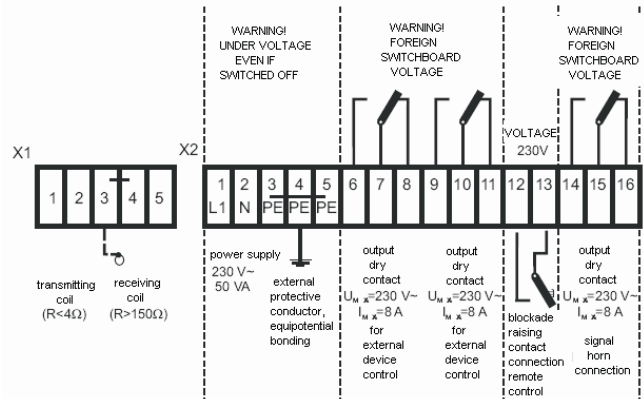
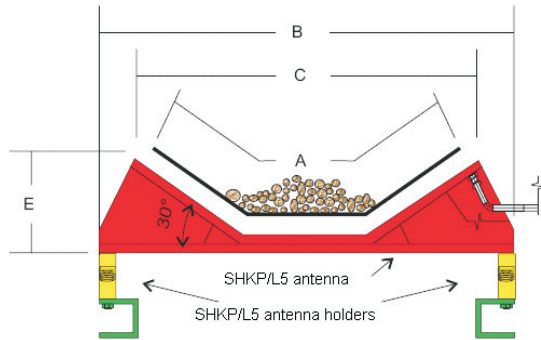


Technical parameters:

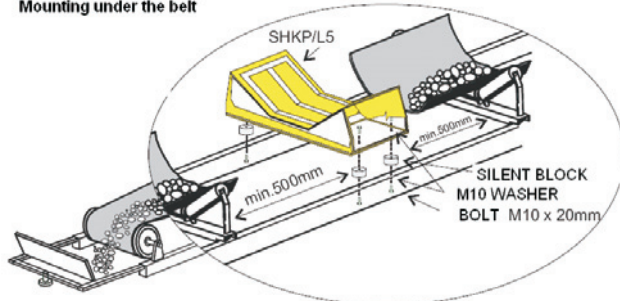
Power supply	230V/50Hz
Input power	50 VA
Relative humidity	up to 95%
Max. attainable sensitivity	see the picture
Max. distance between the sensor and the evaluation unit	15m
Ambient temperature	-30°C to +60°C heating available for lower temperatures
Ambient temperature for the antenna	-58°C to +60°C
Output	max. 50W, 230V AC, 8A
Protection	IP 54
Dimensions	Antenna-see tab.
	Casing VSHKP-5,1: 400x300x250 (h x w x d)

The catalogue sheet contains only some parameters important for your decision. For planning always require a corresponding user manual and eventually a technical consultation on the possibilities of use.

HKP 5.1 metal detector



Mounting under the belt



Mounting above the belt

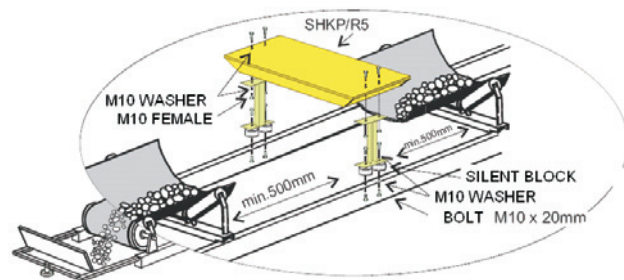


Table of sensitivity of the HKP 5.1 metal object guard

Distance from the antenna

Metal ball diameter - Fe material

Distance from the antenna	400	500	650	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
400	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350
300	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
250	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
200	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
150	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
120	25	25	25	25	25	50	50	50	50	50	50	50	50	50	50	50
100	12	12	12	12	12	25	25	25	25	25	25	25	25	25	25	25
70	10	10	10	10	10	12	12	12	12	12	12	12	12	12	12	12
50	8	8	8	8	8	10	10	10	10	10	10	10	10	10	10	10
40	8	8	8	8	8	10	10	10	10	10	10	10	10	10	10	10
30	5	5	5	5	5	10	10	10	10	10	10	10	10	10	10	10
20	5	5	5	5	5	10	10	10	10	10	10	10	10	10	10	10
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Band width	400	500	650	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200

All dimensions are in mm

The catalogue sheet contains only some parameters important for your decision. For planning always require a corresponding user manual and eventually a technical consultation on the possibilities of use.



Metal Detector HKP 6



Description:

After the passage of a metal object HKP 6 switches on a contact relay which most commonly stops a conveyor. The metal presence signal can also be used for turning over the flap in the trajectory of the material flow thus removing a part of the material containing the metal object. After its removal the flap returns to its original position and the material is resumed. Another possibility is to switch on an electromagnetic separator for the period necessary for removing the metal object only.

An evaluation unit is connected to the above-mentioned functions which can be controlled from the place by control elements or remotely, e.g. by a control system. The terminal board contains individual pushbuttons and LEDs for the determination of the HKP status.

The checked material can contain a trace amount of metals in its composition which can affect the level of sensitivity of HKP 6. These elements can be, to some extent, eliminated by decreasing the sensitivity or by a special modification of the unit which is only performed by the manufacturer. If in doubt or if there is a suspicion of the content of metal elements in the checked material, we recommend that a sample of 1-10 kg (1-10 l) is sent to the manufacture before ordering HKP 6. The manufacturer will perform tests and potential correction of the evaluation unit.

As standard, the aerial is manufactured according to the below-given drawing given. When using other diameters and shapes, the manufacturer follows from the basic parameters given in the manual and if needed, structural changes to the part of the aerial can be made.



Use:

The HKP 6 metal object sensor is intended for signalling the presence of metal objects in a non-metallic material, usually a pipeline. It certainly can also be used for other transport routes such as a specially modified belt conveyor. The sensor has an excellent sensitivity thanks to which it can sense a millimetre ball in the space with the diameter of 400 mm under certain conditions of the aerial location. The guaranteed sensitivity is a M5 nut in the whole internal aerial space.

Metal objects most often found in the checked material: iron and iron alloys, manganese alloy used at drilling sets, aluminium and its alloys, copper, brass, etc. The object need not have magnetic properties, i.e. a magnetic separator would not remove them. HKP 6 is able to indicate all such objects depending on their chemical composition and size in whole aerial space.

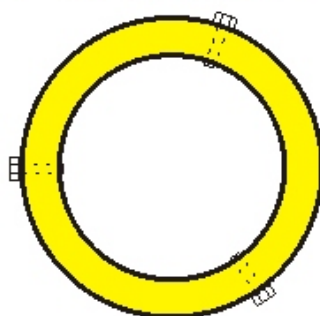
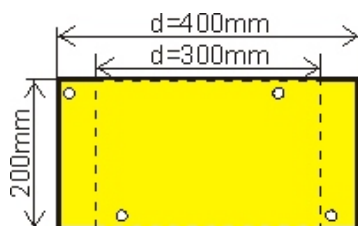
Technical parameters:

Supply voltage	230 V / 50 Hz
Input	50 VA
Relative humidity	up to 95%
Maximum achievable sensitivity	See the figure
Maximum distance between the sensor and the evaluation unit	15m
Ambient temperature	-30°C + 60°C, heating can be ordered for lower temperatures
Ambient temperature for the aerial	-58° - +60°C
Output	max. 50 W, 230 V AC, 8 A
Protection	IP 54
Dimensions	Aerial see the figure Cabinet VSHKP-5.1: 400x300x250 (h x w x d)

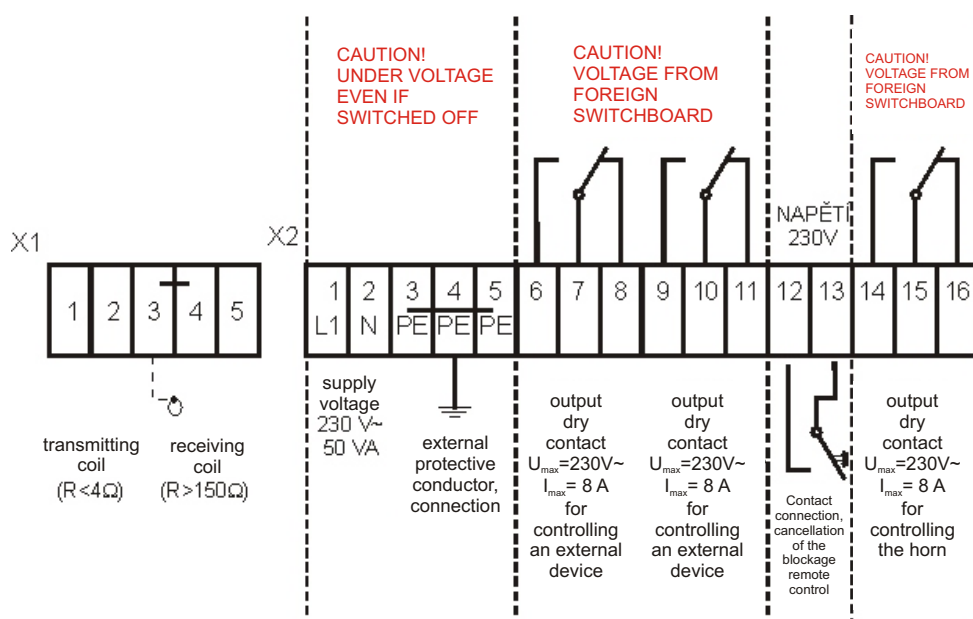
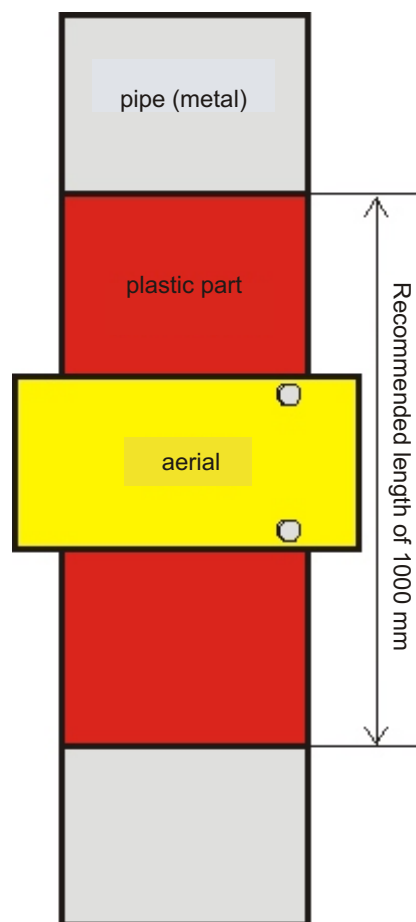
The catalogue has only those selected important parameters for your final decision. For project designs always ask for the user's guide for this product and any engineering consultation about possible uses.



Metal Detector HKP 6



Sensitivity of a circular aerial
with the diameter of 300 mm



The catalogue has only those selected important parameters for your final decision. For project designs always ask for the user's guide for this product and any engineering consultation about possible uses.

HKP 7 metal detector



Description:

If a metal object passes through, HKP 7 will switch a relay contact and usually the conveyor belt will stop. The metal presence signal can also be used to turn over the flap in the material flow and thus remove a part of the material following the metal object. When the material is removed, the flap will return and the flow will continue. Another possibility is to switch on the magnetic separator only if a metal object needs to be removed.

An evaluation unit, which can be controlled on the spot by means of control elements or by remote control, e.g. through the control system, is connected to these functions. Individual buttons and status indicator lamps for HKP 7 can be found on the terminal panel.

The inspected material may also contain a trace amount of metal elements which may influence the sensitivity ratio of HKP 7. These elements can be eliminated to some extent by lowering the sensitivity or by a special adjustment made only by the manufacturer. When in doubt, or if there is any suspicion of metal elements in the inspected material, we recommend you to send a 1-10kg (1-10l) sample to the manufacturer prior to ordering HKP 7. The manufacturer will perform tests and eventually adjust the evaluation unit.

The standard antenna is made according to the drawing below. If other diameters and shapes are used, they are based on the parameters in this manual and a part of the antenna can be modified if necessary.



Use:

The HKP 7 metal detector is designed to signalize the presence of a metal object in non-metallic materials on the transport path, for example on a conveyor belt. The sensor has high sensitivity which can vary according to the size of the antenna. The rule is: the higher the opening, the lower the sensitivity. The length matters as well, but the sensitivity does not vary so much with length.

The most frequently found metal objects are: iron and ferro-alloys, manganese alloy used for drilling rigs, aluminium and aluminium alloys, copper, brass, etc. These objects may not have magnetic properties and thus cannot be removed by a magnetic separator. HKP 7 is able to indicate all these object independently of their chemical composition.

Technical parameters::

Power supply	230V/50Hz
Input power	50 VA
Relative humidity	up to 95%
Max. attainable sensitivity	see the picture
Max. distance between the sensor and the evaluation unit	15m
Ambient temperature	-30°C to +60°C heating available for lower temperatures
Ambient temperature for the antenna	-58°C to +60°C
Output	max.50W, 230Vst, 8A
Protection	IP 54
Dimensions	Antenna-see tab. Casing VSHKP-5,1: 400x300x250 (h x w x d)

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HKP 7 metal detector

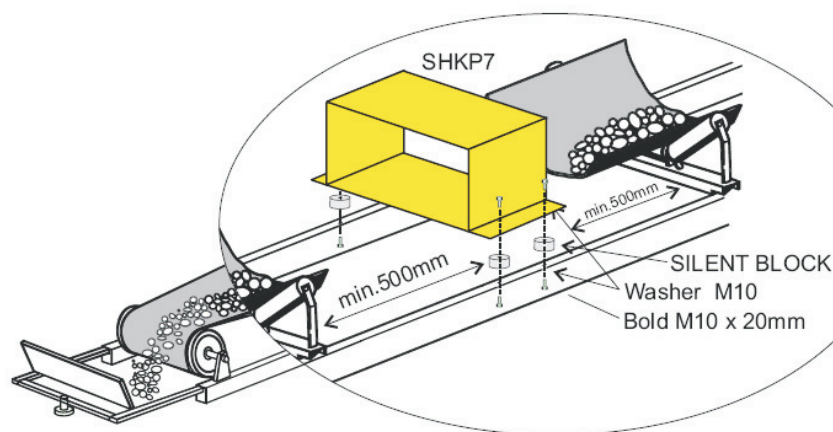
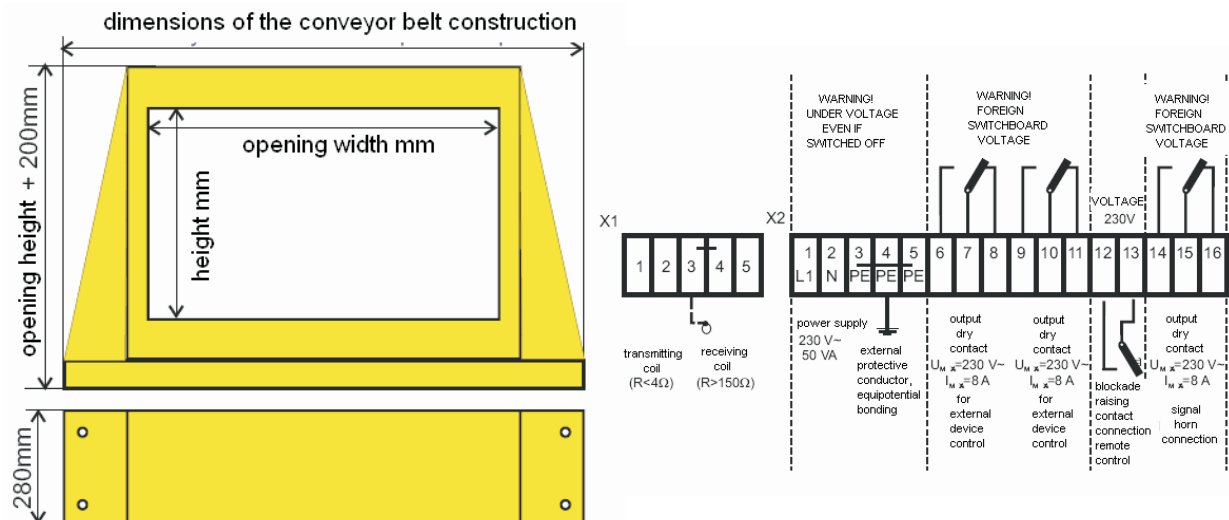


Table of sensitivity of the HKP-7 metal object guard

Opening height	Metal ball diameter - Fe material																	
1000	4	5	6	8	10	20	30	50	100	150	200	200	200	200	200	200	200	200
900	4	5	6	8	10	20	30	50	100	120	120	120	120	120	120	120	120	120
800	4	4	6	6	10	20	30	50	100	100	100	100	100	100	100	100	100	100
700	3	4	5	6	10	15	25	50	80	80	80	80	80	80	80	80	80	80
600	3	4	5	6	8	10	20	50	50	50	50	50	50	50	50	50	50	50
500	3	4	5	6	8	10	20	25	50	50	50	50	50	50	50	50	50	50
450	3	4	5	6	8	10	20	25	30	30	30	30	30	30	30	30	30	30
400	3	4	5	6	8	10	20	20	30	30	30	30	30	30	30	30	30	30
350	3	4	5	6	8	10	15	15	20	20	20	25	25	25	25	25	25	25
300	3	3	4	6	8	10	10	10	20	20	20	20	20	20	20	20	20	20
200	2	3	4	6	6	6	6	6	6	6	8	10	10	10	10	10	10	10
150	2	3	4	4	4	5	5	5	5	5	6	6	6	6	6	6	6	6
100	2	3	3	3	4	4	4	4	4	4	5	5	5	5	5	5	5	5
50	2	2	2	2	3	3	3	3	3	4	4	4	4	4	4	4	4	4
Opening width	50	100	150	200	250	300	400	600	800	1000	1200	1400	1600	1800	2000	2200		

All dimensions are in mm

The catalogue sheet contains only some parameters important for your decision. For planning always require a corresponding user manual and eventually a technical consultation on the possibilities of use.

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ELECTRONIC METAL DETECTORS



Wagner metal detectors: Experience and know-how show results

Since the market introduction of the current 652 series, WAGNER metal detectors have been used successfully all over the world to protect mills, crushers, cutters and other valuable system parts. They work around the clock and under many extreme climate conditions, for example in cement, gravel and wood cutting factories, in glass and paper recycling plants and also in coal power stations. In general, the user-friendliness, reliability and disturbance-resistant, robust housing are given positive reviews by our customers. The transmitter and receiver coils are sealed with special filler material together with the shielding steel sheet metal housing. For this reason, our devices are very resistant to mechanical and thermal loads. If none of our standard devices can be installed because of especially difficult installation conditions, we can manufacture custom designs. The control electronics can be mounted up to 50 m from the sensor at a location that can be easily accessed. No special knowledge is required for commissioning. Our operating instructions provide a detailed explanation of what needs to be done. The display sensitivity setting for all devices is continually variable over a wide range. As soon as a magnetic or non-magnetic metal item with sufficient size passes through the search area, it is detected and a potential-free relay contact is switched. This signal can be output as a pulse with an adjustable length or as a continuous signal. The continuous signal can be acknowledged by the operator using the control electronics after removing the metal item.

Tandem sensor type 652/2

Our most often sold sensor type is available for belt widths from 200 mm to 3000 mm. It consists of a sensor lower section, which is mounted below the belt, a distance frame and a sensor upper section, which is placed above it. Subsequent installation in existing conveyor systems is normally possible without problems because the sensor can be split into sections. The search sensitivity is evenly distributed over the entire working area.



Tandem sensor type 652/2L (light design)

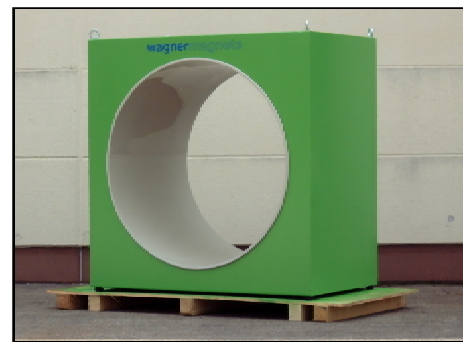
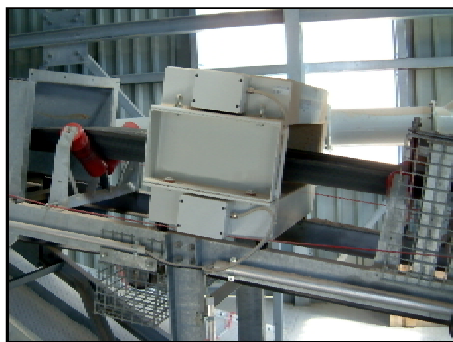
We have developed this very light and compact but robust and disturbance-resistant sensor type especially for the stone and earth industry. It can be used for conveyor belt widths from 300 mm to 1000 mm. The low weight and compact dimensions make subsequent installation easier especially in difficult installation conditions. This special sensor type is perfectly suited for protecting crushers or mills in gravel pits and quarries.



Special designs

Often, existing building and construction parts make the installation of standard devices more difficult. We design and manufacture custom devices for these especially difficult areas of use. We can also deliver metal detectors that correspond to ATEX regulations for hazardous location use. Our sales representatives will be happy to check your application on-site and provide detailed advice.





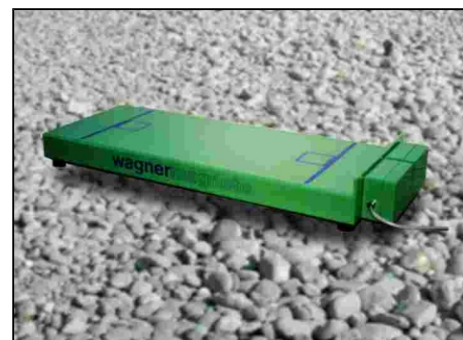
Single plate sensor type 652/1

Single plate sensors are very good for monitoring shallow material depths because of the especially high sensitivity near the sensor surface. Transmitter and receiver are integrated in one sensor housing that is mounted directly under the conveyor belt on the conveyor frame. The metal housing provides very good shielding against disturbances around the device. The standard device can be used for material depths up to a maximum of 150 mm



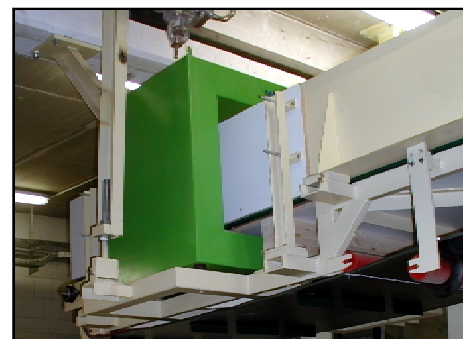
Single plate sensor type 652/1L (light design)

This special type has greatly reduced housing dimensions as compared to the standard devices so that it can also be mounted in tight spaces. Here, a metal housing also provides protection from outside influences and makes the device secure and robust. Because of the compact design, the search area is so concentrated that even metal construction parts short distances away do not disturb the device. For layer depths under 75 mm, this device is the perfect solution.



Vertikal sensor type 652/4

Vertical sensors are manufactured with round or square openings depending on the purpose. The inseparable measurement system encloses the conveyor belt completely and therefore provides the highest search sensitivity with evenly distributed sensitivity. The area of use of vertical sensors ranges from monitoring pneumatic conveyor systems and checking packages to inspecting tree trunks. Openings up to 1600 mm are possible.



Signal lights and special accessories

We offer various combinations of blinking and signal lights as well as acoustic signal devices as accessories to optically display operational readiness and metal detection. Sandbag marking devices are used if the conveyor belt runs for different distances after metal is detected. They are mounted over the conveyor system after the metal detector and drop a sandbag on the conveyor material when the control unit reports that metal has been detected.



Control unit type 650/1

The extremely user-friendly designed control electronics can be used to control all shielded sensor types made by WAGNER. The desired display sensitivity adjustment is continuously variable over a wide range, and bar graphs make it easier to find the optimal setting. The distance between the control electronics and sensor can be up to 50 meters. Disturbances are cancelled out using the most modern signal preparation techniques.



Magnets - Our Strength



Magnetic clamping devices

Clampingsystems for machining, removing and shaping machine tools as well as fastening devices for laser welding

Control electronics

Magnetic control systems with pole reversal equipment together with drive and monitoring units

Demagnetising units

For demagnetising steel components that may not have any residual magnetism

Lifting magnets

For the handling and transport of steel products. For the handling technology of magnetic gripping- and robot systems

Holding magnets

For handling technologies, the construction of jigs and fixtures and magnetic gripper systems for robot systems

Magnetic separators

For separating ferrous parts from bulk- and transporting goods in the processing and recycling industries

Non-ferrous separators

For the separation and recuperation of high-grade non-ferrous metals such as aluminium and copper

Metal detectors

For controlling delivery flows, detecting metallic foreign matters and for the protection of valuable plant components

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