

# GFR8000

## Metal separator for free-fall applications



- Metal separator for the inspection of powdery, fibrous and chunky bulk materials
- Detects magnetic and non-magnetic metal contaminations
- Separation by way of swivel hopper
- Dust-proof reject outlet design
- Hygienic design for easy cleaning
- Complies with IFS and HACCP
- Separation unit and product-contacting metal parts completely made of stainless steel 1.4301 (AISI 304)
- Low mounting height even with large nominal widths guarantees easy integration of the metal separator in existing pipe systems
- Quick and minimum-effort installation due to standard Jacob connection system
- Auto-learn function or manual product compensation (no fixed setting) for improved adaptation to the intrinsic conductivity of the product to be inspected
- Increased interference immunity to electromagnetic pollution and vibration
- Highest scanning sensitivity for all metals



### Function

The GFR8000 metal separator is used for the inspection of bulk materials in free-fall conveyor pipes starting from a nominal width of 200 mm. It detects all magnetic and non-magnetic metal contaminations (steel, stainless steel, aluminium, ...) - even if such contaminations are embedded in the product. Metal contaminations are rejected by means of a swivel hopper. The reject outlet is of dust-proof design during normal operation.

The GFR8000 metal separator primarily is used in the food industry in applications with high hygienic demands.

### Application

- Incoming inspection (product purity and machine protection) of coarse spices with a high dust content, bulk materials with coarse to fine-grained contents, ingredients, raw materials, etc. prior to the processing machine (e.g. mill).
- Quality inspection (product purity) of food powders, sugar, salt, chemical additives (e.g. ascorbic acid, surfactants), etc. directly before filling in big bags and silos.

### Typical fields of application:

- Chemical industry
- Food industry
- Animal feed industry

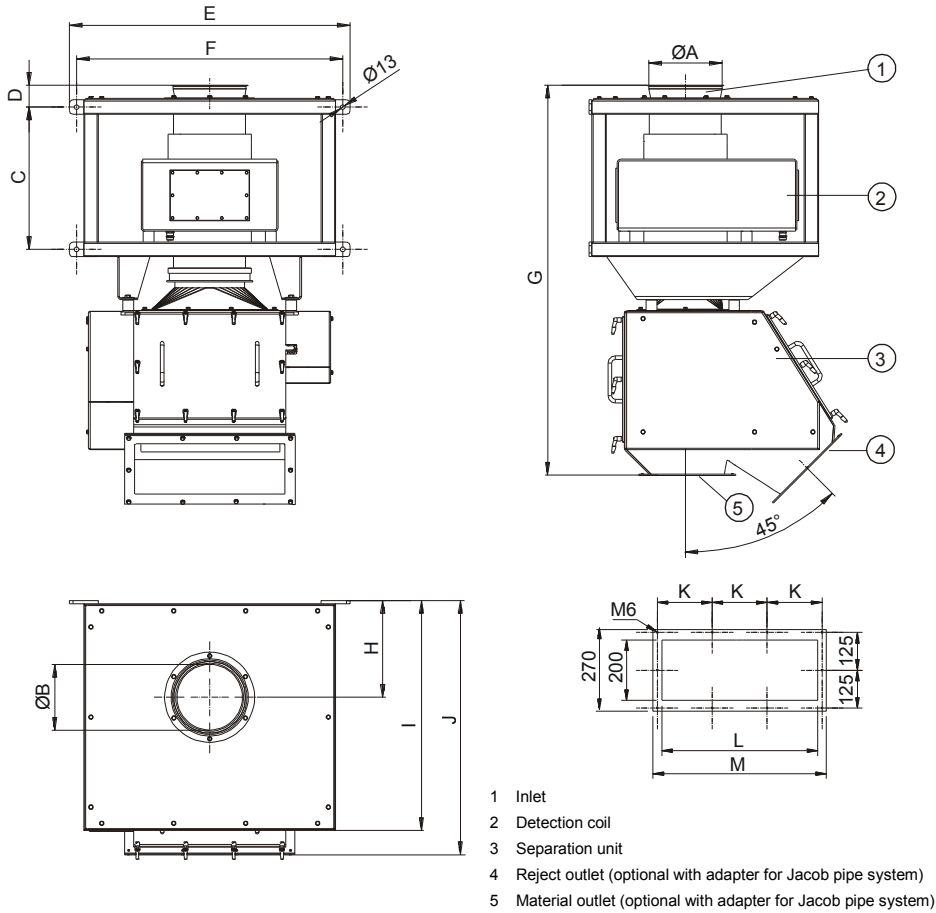
### Control units

Two control units (Interact+ and SENSITY) with graded performance features are available.

### Common features

- Highest sensitivity for all metals (2-channel technology)
- Digital signal processing and quartz-stable search frequency
- State-of-the-art microprocessor technology with self-monitoring, auto-balancing, and temperature compensation
- Product compensation with auto-learn function
- Multi-product memory
- Password protection / access protection
- Special EMC combi filter for suppressing external interference

# Dimensions GFR8000



	Maximum sensitivity <sup>1)</sup> Ø Ferrous ball	Maximum throughput <sup>2)</sup>	Nominal width System Jacob Ø A	Rectangular flange inside dimension	Inlet, effective ID of Inlet pipe Ø B	Weight (kg)
<b>GFR8000/200</b>	0.95	44000 l/h	200	416 x 200	182	app.220
<b>GFR8000/250</b>	1.20	69000 l/h	250	416 x 200	237	app.235
<b>GFR8000/300</b>	1.59	100000 l/h	300	516 x 200	297	app.260
<b>GFR8000/350</b>	2.91	136000 l/h	350	516 x 200	338	app.290

	C	D	E	F	G	H	I	J	K	L	M
<b>GFR8000/200</b>	465	61	780	740	1154	268	688	704	150	416	474
<b>GFR8000/250</b>	465	72	780	740	1165	268	688	704	150	416	474
<b>GFR8000/300</b>	600	79	880	840	1287	338	858	774	182	516	574
<b>GFR8000/350</b>	600	79	880	840	1287	338	858	774	182	516	574

All dimensions in mm unless stated

<sup>1)</sup> The stated detection sensitivity (ferrous ball Ø in mm) applies for non-conductive products at the standard operation frequency and refers to the centre of the detection aperture (most disadvantageous position). Products that show intrinsic conductivity due to moisture content, electrolytes or other conductive contents may reduce the sensitivity as well as variations of product temperature, environmental effects (mechanical shocks and vibrations, electromagnetic pollution) or the set product angle. The detectable size of metal particles depends on their nature, shape and position while passing the metal detector.

<sup>2)</sup> The stated throughput rate is based on well pourable granules. The shape of the particles and thus the flow characteristic of the bulk material determine the throughput rate which can vary. Upstream installed magnet separators may also reduce the throughput rate due to reduction of the cross section.

## Conditions of use

<b>Use:</b>	For inspection of free falling bulk materials in the food industry, i.e. spices, herbs, grain, flour, milk powder, etc. or in the chemical and pharmaceutical industry for similar applications with high hygienic requirements.
<b>Bulk material classification:</b>	
• <b>Grain shape:</b>	Powder, fine grained bulks, granules, fibres, flakes
• <b>Max. grain size:</b>	0-20mm, but also lumpy and fibres
• <b>Pourability:</b>	Good, medium, poor
• <b>Attributes:</b>	Dry, damp, not abrasive, product effects (material conductivity) can be compensated
• <b>Material flow:</b>	Free fall, falling height max 500mm above top edge <sup>1)</sup> (No back draft of material)
• <b>Bulk material temperature:</b>	Maximum +80° C
• <b>Ambient conditions:</b>	-10°C to +50°C, 25% to 85% rH, no condensation
• <b>Storage and shipping conditions:</b>	-10°C to +50°C, 25% to 85% rH, no condensation

<sup>1)</sup>The permissible drop height refers to standard overall heights. Larger drop heights also cause larger overall heights

## Scope of delivery / design

<b>Scope of delivery:</b>	Metal separator composed of detection and separation unit and separated control unit Interact+, inlet according to Jacob pipe system, outlets with rectangular flange
<b>Mechanical design:</b>	Detection unit and electronics housing: Stainless steel 1.4301 (AISI 304), bead blasted
	Separation unit complete: Stainless steel 1.4301 (AISI 304)
	Scanning pipe: PP (antistatic coating)
	Parts in contact with product: Stainless steel 1.4301 (AISI 304) PP, EPDM
	Compressed air connection: 5-8 bar 6/8 mm hose connection
	Compressed air consumption: Approx. 1.7 - 3.0 l/switching operation (depending on size)
<b>Electrical design:</b>	Operating voltage: 100-240 VAC (±10%), 50/60 Hz
	Current consumption: Approx. 250 mA/115 VAC, approx. 120 mA/230 VAC
	Mains cable: 1.8m with safety plug
	Ingress protection: IP 65, (rain shelter required if operated outdoor)
	Self-monitoring system: Detection coil and outputs
	Eject duration (metal impulse): Adjustable from 0.05 to 60 sec
	Scanning sensitivity: Detection coil outputs
	Operation: See technical data sheet for control unit Interact+

## Accessories

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Visual alarm                 | <input type="checkbox"/> Combination alarm (visual alarm and audible alarm)     | <input type="checkbox"/> Push button for functional test in a separate housing |
| <input type="checkbox"/> Failure indication           | <input type="checkbox"/> Failure indication                                     | <input type="checkbox"/> Test samples  |
| <input type="checkbox"/> Failure and metal indication | <input type="checkbox"/> Failure and metal indication                           | <input type="checkbox"/> UL/CSA certificate                                    |
| <input type="checkbox"/> Audible alarm                | <input type="checkbox"/> Filter control valve                                   |  |
| <input type="checkbox"/> Failure indication           | <input type="checkbox"/> Push button for manual rejection in a separate housing |  |
| <input type="checkbox"/> Failure and metal indication |   |  |

## Options

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Interact+ Touch with USB interface                 | <input type="checkbox"/> WLAN interface (802.11 b/g) with integrated aerial      | <input type="checkbox"/> Monitor system for separation unit          |
| <input type="checkbox"/> Multi frequency technology duo                     | <input type="checkbox"/> USB interface (only in combination with touch - screen) | <input type="checkbox"/> Cable set for remote control unit 6m or 10m |
| <input type="checkbox"/> Serial interface RS232 with plug (IP65, 4-pole)    | <input type="checkbox"/> Compressed air monitor                                  | <input type="checkbox"/> Manual test facility                        |
| <input type="checkbox"/> Serial interface RS485 with plug (IP65 4-pole)     | <input type="checkbox"/> Adapter for the outlets according to Jacob pipe system  | <input type="checkbox"/> US-power cable                              |
| <input type="checkbox"/> Ethernet interface (TCP/IP 100 Mbit/s, IP65, RJ45) |  |  |

## Special versions/supplementary systems

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Design for bulk material temperatures up to 140°C | <input type="checkbox"/> Explosion-proof version ATEX                | <input type="checkbox"/> Magnetic systems for pre-removal of ferrous metals |
| <input type="checkbox"/> Model with improved wear out protection           | <input type="checkbox"/> Pipe translation pieces, customized flanges | <input type="checkbox"/> Increased free fall height up to 1m                |

If you have any more questions, require technical assistance or would like a quotation, please contact us.

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While every effort has been made to ensure the accuracy of the information in this publication please note that specifications may change without notice.



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