

GF Gravity Free Fall Metal Detector

Free-fall applications, pneumatic conveyor pipes or pump lines



- Detects magnetic and non-magnetic metal contamination, even when enclosed in the product
- Reduces expensive machinery failure and minimises production downtime
- Ensures product quality
- Prevents customer complaints
- Break even within a very short period of time
- Optimal detection and highest precision of metal detection by increased operation frequency in all areas of the detection head
- Universal suitable with multi-frequency technology (optional)
- Password-protected system log and menu controlled validation system for HACCP, IFS, BRC conform quality monitoring
- Offers perfect adaptability to customer-specific requirements (34 different coil sizes for all current pipeline systems)
- Can be installed in vertical, horizontal or diagonal pipelines
- Compact design through highly reduced size of metal-free zone (RZ-technology) and dimensions identical to previous product
- High mechanical stability and noise immunity: Largely insensitive to vibrations, hits and temperature change
- Made in stainless steel with protection grade IP 65 (higher protection grade on request)

Function

The metal detector GF with round opening is mainly used to analyse bulk materials, fibres, or liquid/pasty products in pipelines (free-fall, pressure or pump). It detects all magnetic and non-magnetic metal contamination (steel, stainless steel, aluminium, etc.) even when enclosed in the product. On detection of metal, a signal device and a separation system can be activated or a signal can be sent to process controlling.

GF metal detectors are mainly used for highly precise detection tasks (e.g. in the food industry).

Scope of delivery

- Two-channel, stainless steel metal detection coil with round opening
- Control unit Interact+

Typical Application Areas

- Food industry
- Pharmaceutical industry
- Chemical industry
- Plastics industry
- Feed stuff industry
- Textile industry

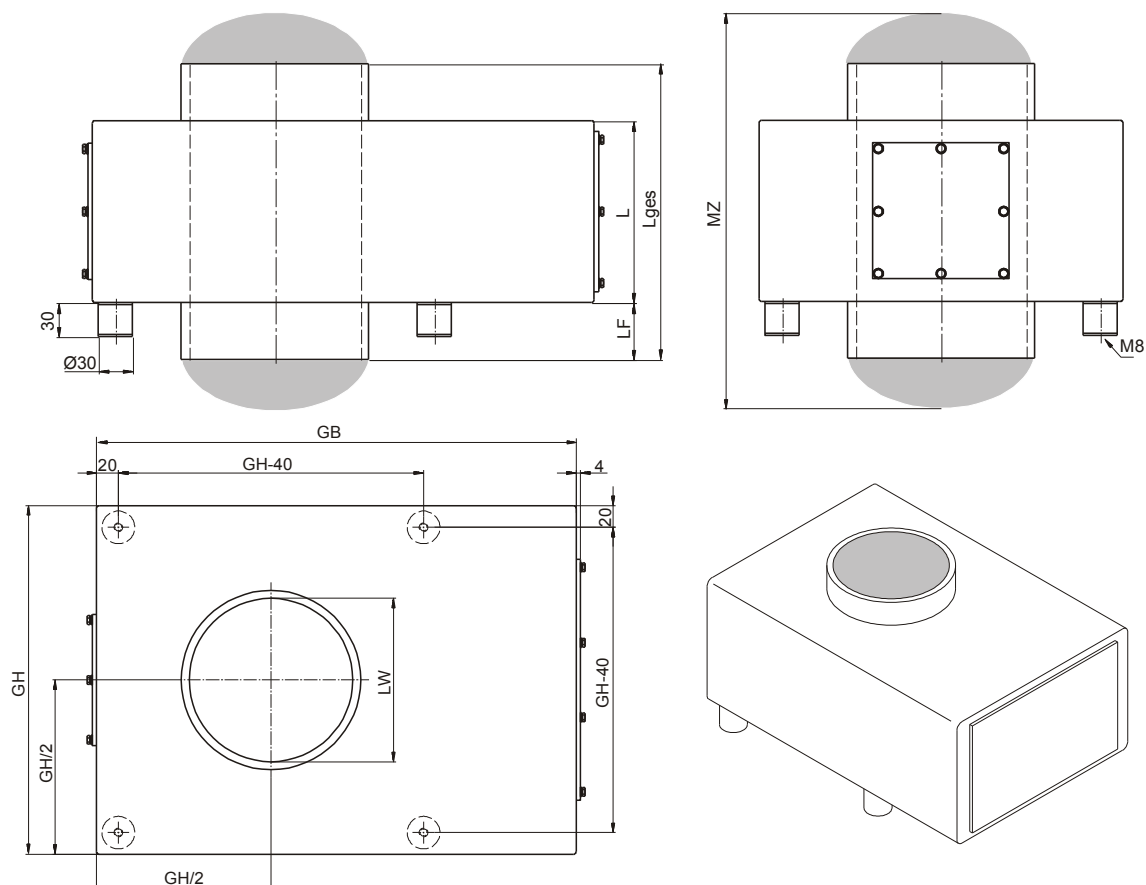
Complete Systems

The GF metal detector is a component of the following metal separators:

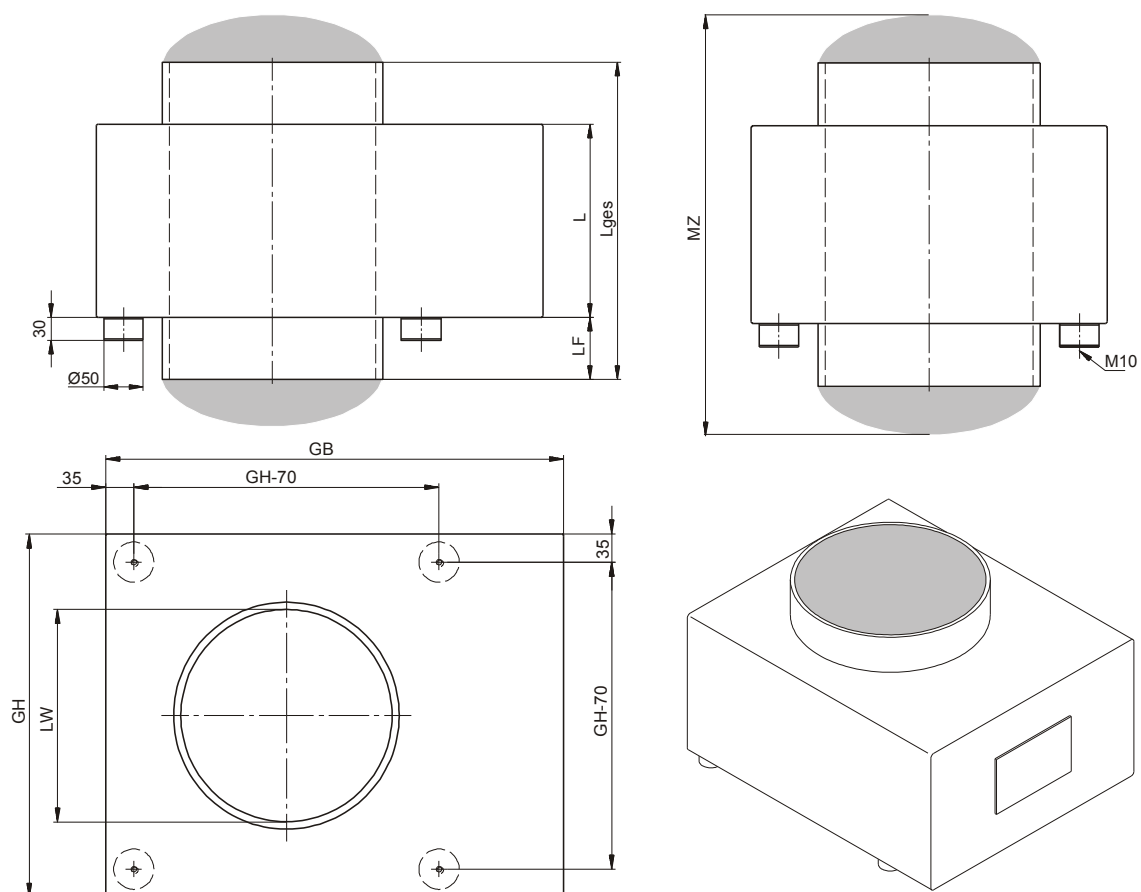
- GFR4000, GFR5000, GFR6000 and GFR8000 for free-fall applications without backlog
- PC4000 for vacuum and pressure pipelines

Applications

- Quality control in the food industry according to IFS, BRC, HACCP, ISO 22000 etc.
- Control of outgoing goods in the food industry, e.g. to analyse milk powder in free-fall or in pneumatic pipelines to fill big bags, trucks or silos.
- Machinery protection in the plastics industry, e.g. to analyse granulate in pipelines to protect injection moulders or extruders
- Machinery protection in the ceramics industry, e.g. to analyse a clay string before the extruder



GF300-600, vertical mounting





Dimensions GF030-265, vertical mounting

Article number	GF030	GF055	GF080	GF100	GF125	GF133
IDØLW ¹⁾	28.2	54.7	80.0	100.0	125.0	133.0
Coil length L	160	160	160	160	160	160
Collar LF	0	0	20	20	30	30
Total length Lges	160	160	200	200	220	220
Coil height GH	260	260	260	260	260	260
Coil width GB	380	380	380	380	380	380
Metal free zone (static metal)	180	210	260	270	310	320
Metal free zone (moving metals)	210	250	310	320	380	400
Maximum scanning sensitivity ²⁾ .						
Ø Fe-ball	0.12	0.24	0.35	0.40	0.50	0.57
Ø Stainless steel ball	0.20	0.38	0.56	0.70	0.82	0.87
Ø Non-ferrous ball	0.12	0.24	0.35	0.43	0.54	0.58
Weight (kg)	23	23	24	23	23	23

Dimensions GF300-600, vertical mounting

Article number	GF150	GF170	GF210	GF250	GF265	GF300
IDØLW ¹⁾	150.0	170.0	210.9	250.0	263.0	300.0
Coil length L	160	180	200	250	250	300
Collar LF	50	50	70	70	80	8
Total length L ges	260	280	340	390	410	460
Coil height GH	320	320	380	450	450	550
Coil width GB	440	440	500	570	570	670
Metal free zone (static metal)	370	380	440	490	520	570
Metal free zone (moving metals)	460	480	560	630	670	740
Maximum scanning sensitivity ²⁾ .						
Ø Fe-ball	0.60	0.69	0.76	0.90	0.95	1.30
Ø Stainless steel ball	0.92	1.04	1.06	1.17	1.23	1.51
Ø Non-ferrous ball	0.61	0.69	0.75	0.89	0.94	1.30
Weight (kg)	32	33	46	63	71	114

Article number	GF350	GF400	GF450	GF500	GF600
IDØLW ¹⁾	350.0	400.0	450.0	500.0	600.0
Coil length L	300	350	400	500	500
Collar LF	90	90	110	125	150
Total length L ges	530	530	620	750	800
Coil height GH	550	600	750	850	950
Coil width GB	670	720	750	850	950
Metal free zone (static metal)	610	660	750	910	1060
Metal free zone (moving metals)	800	870	1020	1260	1450
Maximum scanning sensitivity ²⁾ .					
Ø Fe-ball	1.51	1.84	2.07	2.30	2.76
Ø Stainless steel ball	1.76	2.14	2.41	2.68	3.21
Ø Non-ferrous ball	1.52	1.85	2.08	2.32	2.78
Weight (kg)	122	136	238	367	441

All dimensions in mm unless stated

¹⁾ Maximum outside diameter of the scanning pipe: Ø LW -10 mm

²⁾ The stated detection sensitivities (ball Ø in mm) apply to 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 interferences) or the set product angle. The detectable size of metal particles depends on their nature, shape and position while passing the metal detector.



Conditions of use

Use:	Metal detector for installation in a pipe system, i. e. in free fall lines, pneumatic conveying lines, slow moving material columns or pipes with pumped liquids in the food industry or in the chemical, pharmaceutical or textile industry for similar applications.
Product characteristics:	Product effects (material conductivity) can be compensated
Material flow or material speed:	The detection sensitivities depend on the conveying speed of the inspected product. The stated values apply to a range of speed from 0.1 m/sec to 8.0 m/sec. Conveying speeds outside this range will affect the detection sensitivities and are available on request.
Product temperature:	-10 °C to +80 °C
Ambient conditions:	-10 °C to +50 °C, 25% to 85% rH, no condensation
Storage and shipping conditions:	-10 °C to +50 °C, 25% to 85% rH, no condensation

Scope of delivery / design

Scope of delivery	Metal detector composed of detection coil and control unit Interact+, length of connection cable 3 m		
Mechanical design:	Detection coil:	1 Stainless steel 1.4301 (AISI 304), bead blasted, finish passage opening epoxy fibre glass reinforced pipe	
	Electronics housing::	Stainless steel 1.4301 (AISI 304), bead blasted	
Electrical design:	Operation:	See technical data sheet for control unit Interact+	
	Ingress protection:	IP 65	

Accessories

<input type="checkbox"/> Visual alarm	<input type="checkbox"/> Combination alarm (visual alarm and audible alarm)	<input type="checkbox"/> Test samples
<input type="checkbox"/> Failure indication	<input type="checkbox"/> Failure indication	<input type="checkbox"/> UL/CSA certificate
<input type="checkbox"/> Failure and metal indication	<input type="checkbox"/> Failure and metal indication	
<input type="checkbox"/> Audible alarm		
<input type="checkbox"/> Failure indication		
<input type="checkbox"/> Failure and metal indication		

Options

<input type="checkbox"/> Interact+ Touch with USB interface	<input type="checkbox"/> Ethernet interface (TCP/IP 100 Mbit/s, IP65, RJ45)	<input type="checkbox"/> Cable set for remote control unit 6 m or 10 m
<input type="checkbox"/> Multi frequency technology duo	<input type="checkbox"/> WLAN interface (802.11 b/g) with integrated aerial	<input type="checkbox"/> US power cable
<input type="checkbox"/> Serial interface RS232 with plug (IP65, 4-pole)	<input type="checkbox"/> Profi Bus	
<input type="checkbox"/> Serial interface RS485 with plug (IP65, 4-pole)	<input type="checkbox"/> Mounting frame with scanning pipe	

Special versions

<input type="checkbox"/> IP 66/69K ingress protection	<input type="checkbox"/> Scanning pipe , pipe transition pieces, customized flanges
<input type="checkbox"/> Design for bulk material temperatures up to 140 °C	<input type="checkbox"/> Explosion-proof version ATEX
<input type="checkbox"/> Control unit more then 10 m separated	<input type="checkbox"/> Connection cables pluggable
<input type="checkbox"/> Special supply voltages	<input type="checkbox"/> Pharmaceutical design