

## PC4000

Metal separation system for pneumatic conveying lines

**Artemis**



- Detection and separation of magnetic and non-magnetic metal impurities
- For inspecting bulk materials (granulate, powder etc)
- Easy to integrate in existing pipeline systems
- Designed for high flow rates
- Available in versions up to ATEX Zone 20
- Outstanding ease of operation with product auto-learn function and latest microprocessor technology

The PC4000 metal separation systems are primarily used for quality control in the food, chemical and pharmaceutical industries. All system components have been designed to meet stringent hygiene standards in these industries.

Integrated in pipeline systems the separators remove magnetic and non-magnetic metal particles from pneumatically conveyed bulk materials such as granulate, flour, spices, tea etc...

PC 4000 metal separation systems can be integrated in horizontal, vertical and inclined vacuum and pressure pipes. Retrospective installation in existing pipeline systems (with standard nominal widths up to 150 mm) is straight-forward and simple to achieve by using quick-connectors or air-tight flanges. A clear advantage of the PC 4000 series' modular design is its ability to adapt to different conveying methods.

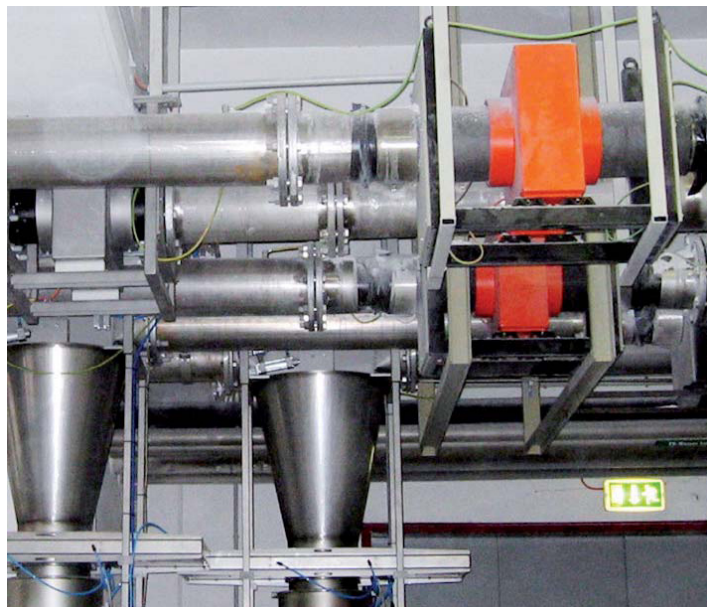
The system offers excellent metal detection, maximum resistance to interference and is highly reliable both mechanically and operationally. The rapid-reacting "Quick Flap System" removes metal contaminants without any interruption to the production process, even at high flow rates.



Contaminated material is rejected into a container without any interruption to the production process. The reject container is emptied automatically.

### Typical applications

- Inline inspection between silo and filling system (eg in mill plants)
- Incoming goods inspection prior to filling silos

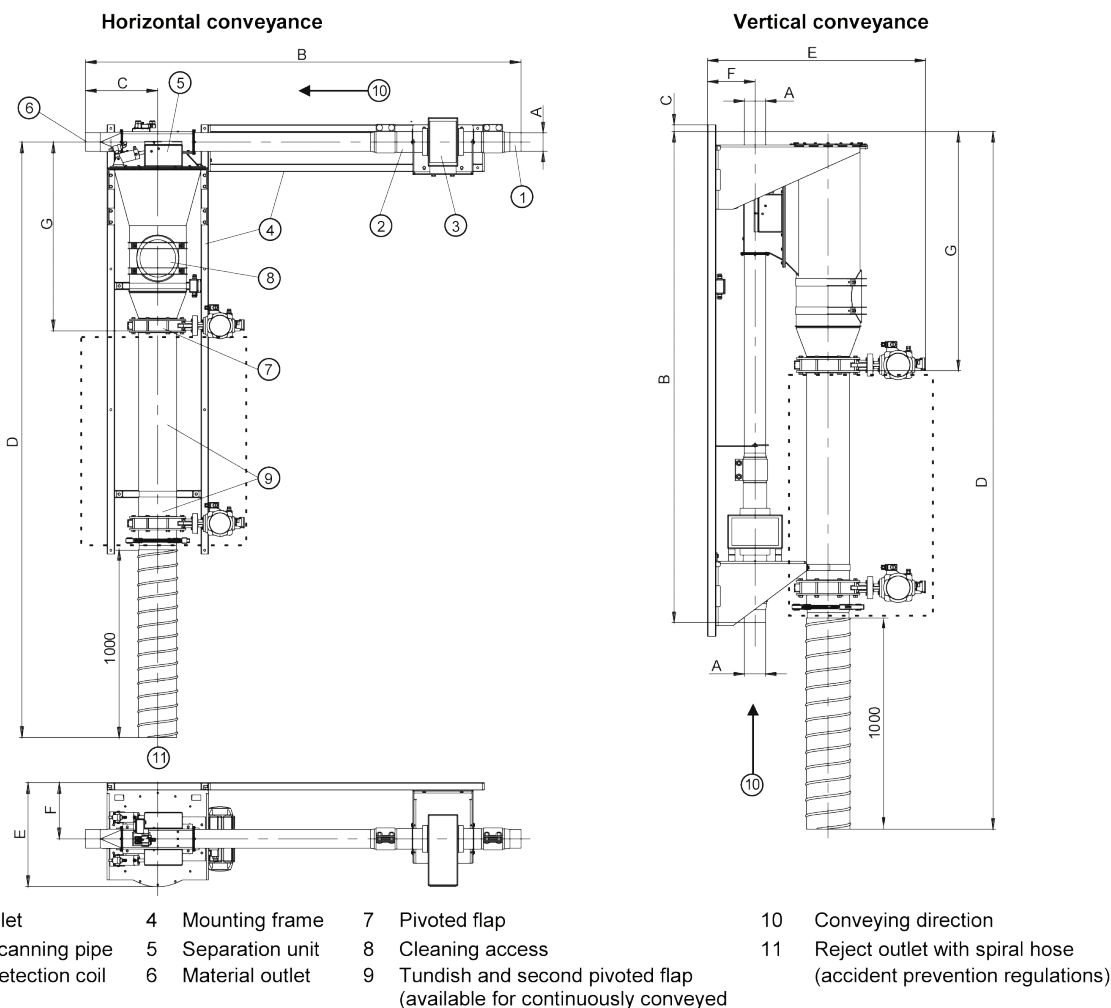


PC 4000 metal separators are supplied with the Interact+ control unit as standard (for electronic evaluation and control).

State-of-the-art microprocessor technology provides reliable digital signal processing with maximum resistance to interference (in accordance with strict EU guidelines).

The Interact+ control unit is especially designed for automated processes and to meet the requirements of quality control systems.

# Technical Data



Type	PC4000/50/H	PC4000/50/V	PC4000/80/H	PC4000/80/V	PC4000/100/H	PC4000/100/V	PC4000/120/H	PC4000/120/V	PC4000/150/H	PC4000/150/V
<b>Pipe diameter (inlet/ material outlet) A</b>	50x2	50x2	80x2	80x2	100x2	100x2	120x2	120x2	150x2	150x2
<b>Effective inner diameter</b>	44	44	76	76	96	96	116	116	146	146
<b>Reject outlet pipe diameter</b>	200	200	200	200	200	200	200	200	200	200
<b>B</b>	2052	2052	2256	2256	2322	2322	2342	2342	2620	2620
<b>C</b>	271	141	300	96	386	32.5	386	32.5	438	29
<b>D</b>	3133	3341	3143	3247	3176	3300	3176	3300	3182	3455
<b>E</b>	555	1031	555	1031	555	1031	555	1031	670	1031
<b>F</b>	300	264	300	260	300	225	00	225	360	209
<b>G</b>	964	1031	974	1178	1007	1131	1007	1131	1023	1305
<b>Maximum scanning sensitivity <sup>1)</sup> Ø Fe-ball:</b>										
<b>at V = 10 m/sec</b>	0.28mm		0.50mm		0.63mm		0.75mm		0.81mm	
<b>at V = 20 m/sec</b>	0.38mm		0.68mm		0.86mm		1.02mm		1.09mm	
<b>Weight (kg)</b>	150		160		185		210		245	

All dimensions mm unless stated.

Machines with different throughputs are available on request.

<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.

## Conditions of use

<b>Use:</b>	For the inspection of bulk materials (as an option also with specially sealed separation unit for the inspection of powder materials) in vacuum and pressure conveying pipes in the food, chemical, and pharmaceutical industry, and also in other industry sectors with similar applications and corresponding hygienic requirements.
<b>Bulk material classification:</b>	
<b>Grain shape:</b>	Fine-grained bulks or granules (as an option also for powder)
<b>Max. grain size:</b>	Ball shape $\varnothing < 8\text{mm}$
<b>Pourability:</b>	Good
<b>Attributes:</b>	Dry, not abrasive, product effects (material conductivity) can be compensated
<b>Material flow:</b>	Vacuum or pressure conveying (plug feeding is not permissible)
<b>Bulk material temperature:</b>	Maximum +60 °C
<b>Ambient conditions:</b>	-10 °C to +45 °C, 25% to 85% rH, no condensation
<b>Storage and shipping conditions:</b>	-10 °C to +50 °C, 25% to 85% rH, no condensation
<b>Permissible overpressure in the conveying pipe:</b>	Max. 1 bar
<b>Permissible underpressure in the conveying pipe for vacuum conveying:</b>	Max. 0.5 bar
<b>Material conveying speed:</b>	Max. 20 m/sec

## Scope of delivery / Design / Connections

<b>Scope of delivery:</b>	Compact unit with integrated metal detector, separator unit with reject container, one pivoted flap for stop and go conveying systems, spiral hose and separated control unit Interact+; inlet and material outlet with smooth pipe connection pieces	
<b>Mechanical design:</b>	Frame, detection coil and electronics housing	Stainless steel 1.4301 (AISI 304), bead blasted
	Separation unit:	Stainless steel 1.4301 (AISI 304)
	Scanning pipe:	PE-EL
	Parts in contact with product:	Stainless steel 1.4301 (AISI 304), PE-EL, PTFE, NBR
	Connecting cable (pneumatic / control unit):	Standard length 3 m, pluggable
	Connecting cable (coil / control unit):	Standard length 3 m
	Compressed air connection:	5-8 bar; 6/8 mm hose connection
	Compressed air consumption:	Approx. 0.5 – 3.0 l / switching operation (depending on size)
<b>Electrical design</b>	Operating voltage:	100-240 VAC ( $\pm 10\%$ ), 50/60 Hz
	Mains cable:	1.8 m with safety plug
	Current consumption:	Max. 800 mA
	Ingress protection:	IP 65
	Eject duration (metal impulse):	Adjustable from 0.05 to 30 sec
	Self-monitoring system:	Detection coil and outputs

## 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"/> 5.7" colour touch-screen incl. USB interface       | <input type="checkbox"/> Compressed-air monitor  | <input type="checkbox"/> Monitor system for separation unit |
| <input type="checkbox"/> Multi-frequency technology Duo                     | <input type="checkbox"/> Automatic emptying via two pivoted flaps and an additional reject container for continuous vacuum or pressure conveying | <input type="checkbox"/> Cable set for remote control unit  |
| <input type="checkbox"/> Serial interface RS232 with plug (IP65, 4-pole)    | <input type="checkbox"/> Separation unit for powder materials (dust-proof)   | <input type="checkbox"/> Length 6m                          |
| <input type="checkbox"/> Serial interface RS485 with plug (IP65, 4-pole)    | <input type="checkbox"/> Level indicator   | <input type="checkbox"/> US-power cable                     |
| <input type="checkbox"/> Ethernet interface (TCP/IP 100 Mbit/s, IP65, RJ45) |  |   |
| <input type="checkbox"/> WLAN interface (802.11 b/g) with integrated aerial |  |   |

## Special versions / Supplementary systems

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Design for bulk material temperatures up to 140 °C | <input type="checkbox"/> Model with improved wear out protection    | <input type="checkbox"/> Pharma design on request                         |
| <input type="checkbox"/> Explosion-proof version ATEX                       | <input type="checkbox"/> Pipe transition pieces, customized flanges | <input type="checkbox"/> Magnet systems for pre-removal of ferrous metals |

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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