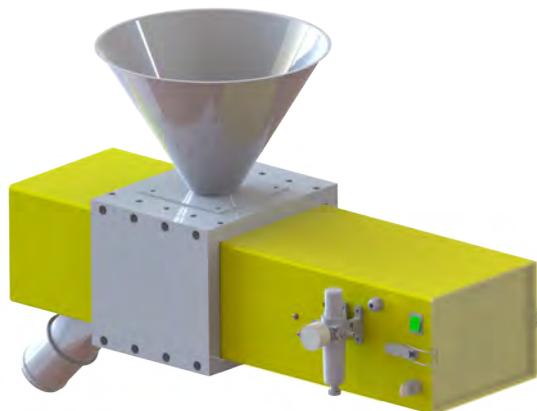


Viele reden vom Recycling -  
Wir entwickeln Lösungen!



Many talk about recycling -  
We develop solutions!



## Allmetall-Separatoren All-Metal Separators

**Die hamos GmbH ist der führende Anbieter von elektrostatischen Separatoren und Komplettanlagen. Einsatzgebiete unserer Geräte sind vor allem das Recycling von Altkabeln, komplexen Kunststoffgemischen (auch schwarze Kunststoffe), Elektronikschrott, PVC-Fensterprofilen und Verbundmaterialien. Die Abtrennung von Fremdstoffen aus Kunststoffen und anderen Materialien ist ebenfalls möglich.**

Hamos GmbH is the leading supplier of electrostatic separators and complete recycling systems for the separation of cable scrap, complex mixed plastics (also black plastics), electronic scrap, PVC window profiles and composite materials. The separation of impurities from plastics and other substances is also possible.

**hamos GmbH  
Recycling- und Separationstechnik  
Im Thal 17  
82377 Penzberg  
Germany**

Tel.: +49 8856 9261-0  
Fax: +49 8856 9261-99  
[hamos@hamos.com](mailto:hamos@hamos.com)

[www.hamos.com](http://www.hamos.com)



Hamos GmbH Recycling and Separation Technology provides machines and systems for metal detection and metal separation, as well as the automated sorting and recycling of plastics and other materials. Our many years of experience and cutting edge continuous development of separators and conveyors has made us a leading supplier of electrostatic separation and recycling technologies.

As a medium-sized enterprise, Hamos has successfully established itself as a world-class company in the competitive field of electrostatic separation. To date, hundreds of Hamos KWS (Metal/Plastic Separators) and Hamos EKS (Plastic/Plastic Separators) are operational worldwide.

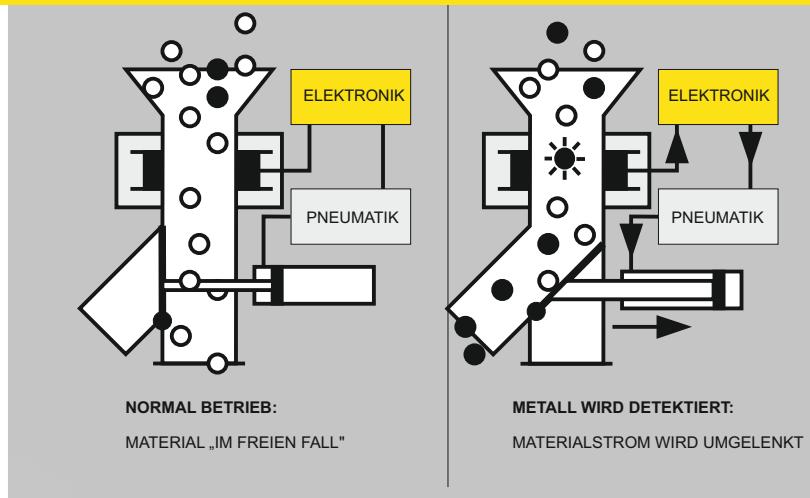
We offer a broad spectrum of machines and recycling systems for the optimal solution of your material separation needs. Together with our industrial partners in R&D we provide custom designs for your recycling requirements including the separation of materials that to date determined to be not separable.

Join our existing customer base already relying on the proven Hamos state-of-the-art electrostatic separators Made in Germany.

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# Allmetall-Separatoren HS



Elektronische Allmetall-Separatoren Typ **hamos HS** dienen zur vollautomatischen Entfernung von metallischen Verunreinigungen aus Schüttgütern.

## Funktion

Das Schüttgut fällt im freien Fall durch den Schacht des Metall-Ausscheiders. Eventuell enthaltene Metallteilchen werden ab einer bestimmten Größe elektronisch erkannt und durch Umlenken aus dem Materialstrom ausgeschieden und ausgeworfen.

## Anwendungsgebiete

- Kunststoffindustrie
- Recyclingindustrie
- PET-Recycling
- Und viele mehr

## Ihre Vorteile

- Schutz von Maschinen und Anlagen
- Geringer Materialverlust
- Metallfreie Rezyklate/Produkte
- Einfache Handhabung
- Wartungsarmer Betrieb

## Technische Daten

**Betriebsspannung:** 110-240 V, 50/60 Hz

**Leistungsaufnahme:** Ca. 0,2 VA

**Eigenüberwachungsfunktion:** Kontinuierliche Kontrolle von Sensor, Luftdruck, Spannungsversorgung und Mechanik. Störungsanzeige über potentialfreien Kontakt 5A/220 VAC.

**Schutzart:** IP 53

**Einsatz-Temperatur:** Max 70° C, bei höheren Temperaturen Hochtemperaturversion erforderlich.

**Zulässige Partikelgeschwindigkeit:** Max. Fallhöhe ca. 600 mm.

**Ausscheidedauer:** Einstellbar von ca. 0,1 - 1,0 Sekunden.

**Druckluftanschluss:** 5 bar, Schnellkupplung, Schlauch NW 6 mm, wartungsfreier Betrieb durch integrierten Filter-Regler (mit automatischem Kondensatablass).

**Druckluftverbrauch:** Ca. 0,1 l je Ausscheidevorgang

**Produktberührte Teile:** PE im Sensorbereich, Aluminium eloxiert und PU im Ausscheidebereich.

**Gehäuse:** Stahlblech lackiert, RAL 1016 (schwefelgelb) andere RAL-Farben auf Anfrage.

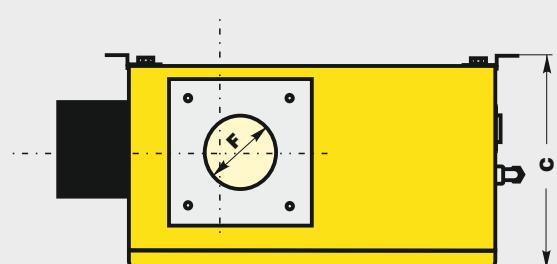
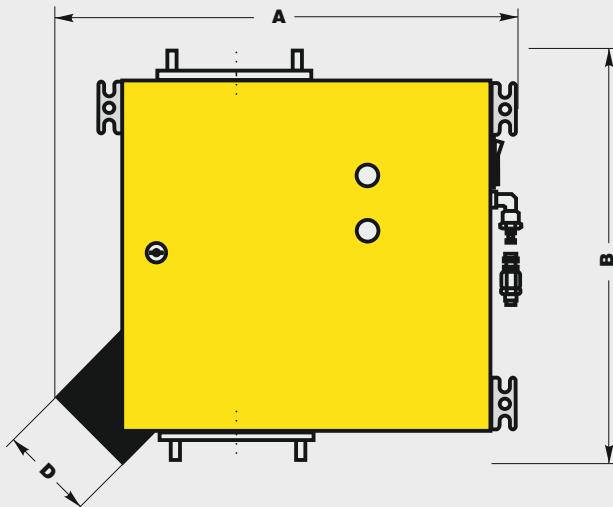
**Anschlusskabellänge:** 1,5 m

## Lieferbare Geräte und Technische Spezifikationen

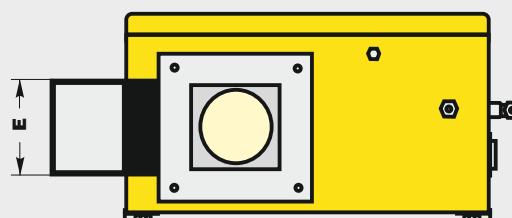
			Maximale Empfindlichkeit	Durchmesser mm	Masse kg
Max. Durchsatz *)	1900 kg/h	HS 9050	ca. 0,7 mm	50	15
Max. Durchsatz *)	5000 kg/h	HS 9070	ca. 1,0 mm	70	16,5
Max. Durchsatz *)	8000 kg/h	HS 9100	ca. 1,3 mm	100	16,5
Max. Durchsatz *)	16000 kg/h	HS 9150	ca. 2,0 mm	150	40
Max. Durchsatz *)	23000 kg/h	HS 9200	ca. 3,0 mm	200	40

\*) Abhängig von der Rieselfähigkeit des Granulats. Bei Mahlgut muss mit reduziertem Durchsatz gerechnet werden. In Zweifelsfällen führen wir Rieseltests durch.

# hamos HS



ANSICHT VON UNTEREN



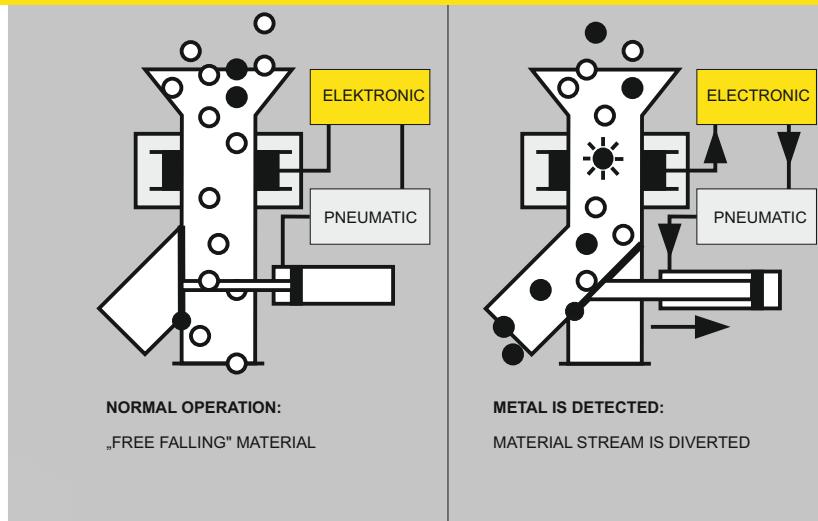
## Zubehör/Optionen

- Einlauftrichter, Werkstoff Edelstahl 1.4301
- Rohrverlängerungen für Gutauslauschacht und für Auswurfschacht "Metall"
- Rohradapter und Übergangsstücke
- Flansche
- Optische Metallerkennungsmelder und Störmelder
- Potentialfreie Relaisausgänge (Metallerkennung und Betriebs- bzw. Störanzeige)
- Edelstahl- und Hochtemperaturausführungen erhältlich
- Weitere Optionen und Zubehör auf Anfrage

## Geräteabmessungen (mm)

	HS050	HS070	HS100	HS150	HS200
A	465	485	485	500	500
B	360	440	440	680	680
C	165	220	220	365	365
D	60	100	100	160	160
E	60	100	100	200	200
F	50	70	100	150	200

# All-Metal Separators HS



hamos HS series electronic all-metal separators serve for fully automatic removal of metal contamination from bulk materials.

## Function

The bulk material drops in free-fall through the chute of the metal separators. Possible presence of metal particles are detected electronically as from a certain size, separated by diversion out of the material stream and ejected.

## Application areas

- Plastics industry
- Recycling industry
- PET recycling
- And many more

## Your advantages

- Protection of machines and lines
- Low material loss
- Metal-free recyclate/products
- Ease of operation
- Low maintenance operation

## Technical data

**Operating voltage:** 110-240 V, 50/60 Hz

**Power consumption:** approx. 0.2 VA

**Self-monitoring function:** continuous control of sensor, air pressure, voltage and mechanical operation. Malfunction indication via 5A/220 V AC volt-free contacts.

**Protection class:** IP 53

**Operating temperature:** max 70° C, high temperature version required for higher temperatures

**Permitted particle speed:** approx. 600 mm maximum drop height.

**Ejection time:** adjustable from approx. 0.1 - 1.0 seconds

**Compressed air connection:** 5 bar, quick coupling, 6 mm nominal width hose, maintenance-free operation due to integrated filter regulator (with automatic condensate drainage).

**Compressed air consumption:** approx. 0.1 L per separation process.

**Materials in contact with the product:** PE in the sensor area, anodised aluminium and PU in the separation area.

**Housing:** painted sheet steel, RAL 1016 (sulphur-yellow), other RAL colours on request.

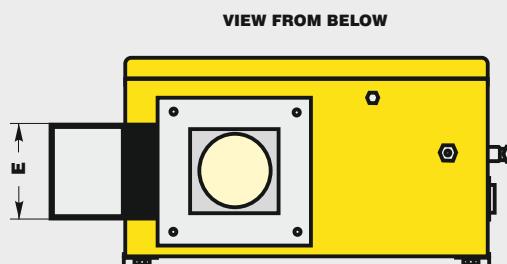
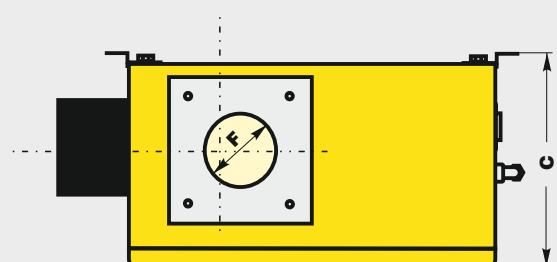
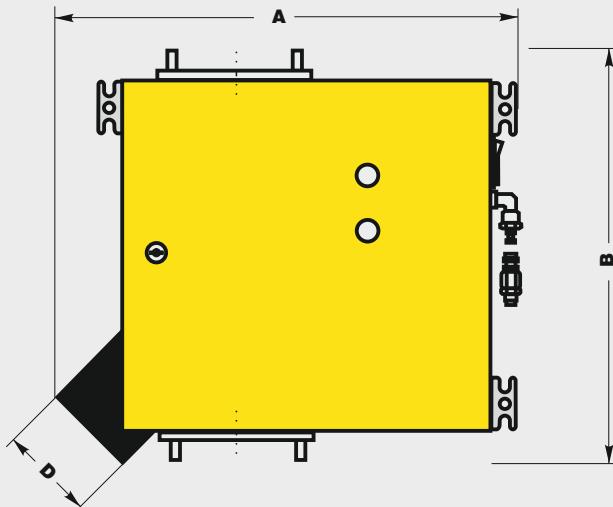
**Connection cable length:** 1.5 m

## Available equipment and technical specifications

		Maximum Sensitivity	Diameter mm	Weight kg
Max. Throughput *)	1900 kg/h	HS 9050	ca. 0,7 mm	50
Max. Throughput *)	5000 kg/h	HS 9070	ca. 1,0 mm	70
Max. Throughput *)	8000 kg/h	HS 9100	ca. 1,3 mm	100
Max. Throughput *)	16000 kg/h	HS 9150	ca. 2,0 mm	150
Max. Throughput *)	23000 kg/h	HS 9200	ca. 3,0 mm	200

\*) Depending on granulate flowability. Reduced throughput is to be expected with regrind. In case of doubt, we carry out flowability tests.

# hamos HS



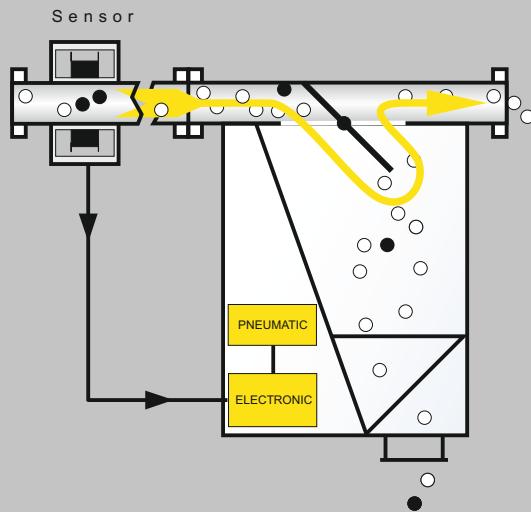
## Accessories/options

- Infeed hopper in AISI 304 stainless steel
- Tube extensions for good quality material discharge chute and "metal" discharge chute
- Tube adapters and transition parts
- Flanges
- Optical alarms for metal detection and disturbance
- Volt-free relay outputs (metal detection and operation and fault status display)
- Stainless steel and high temperature versions available
- Further options and accessories on request

## Equipment dimensions (mm)

	HS050	HS070	HS100	HS150	HS200
A	465	485	485	500	500
B	360	440	440	680	680
C	165	220	220	365	365
D	60	100	100	160	160
E	60	100	100	200	200
F	50	70	100	150	200

# All-Metal Separators FFS



FFS series electronic all-metal separators remove metal parts from bulk materials in pneumatic conveying lines (vacuum or pressure conveying). Metal detection and separation takes place here "on the fly" at high conveying speeds.

## Function

The material from which metal is to be removed is conveyed pneumatically through the metal detection coil. Should then a metal particle be detected, the diverter in the metal separator opens and the metal part falls together with a small amount of product into the ejection container.

## Application areas

- Plastics/recycling industry
- Extruder protection
- Food industry
- And many more

## Your advantages

- Metal-free recyclate/products
- For continuous or intermittently working systems
- Use in horizontal or vertical pipelines
- Versatile use through customer-specific flanges

## Technical Data

**Operating voltage:** 110-240 V, 50/60 Hz

**Power consumption:** approx. 0.2 VA

**Self-monitoring function:** continuous control of sensor, air pressure, voltage and mechanical operation. Malfunction indication via 5A/220 V AC volt-free contacts.

**Protection class:** IP 53

**Operating temperature:** max 70° C, high temperature version required at higher temperatures

**Permitted particle speed:** max. 30 m/s.

**Ejection time:** adjustable from approx. 0.1 - 1.0 seconds

**Compressed air connection:** 5 bar, quick coupling, 6 mm nominal width hose, maintenance-free operation due to integrated filter regulator (with automatic condensation drainage).

**Compressed air consumption:** approx. 0.1 L per separation process.

**Materials in contact with the product:** PE in the sensor area, anodised aluminium and PU in the separation area.

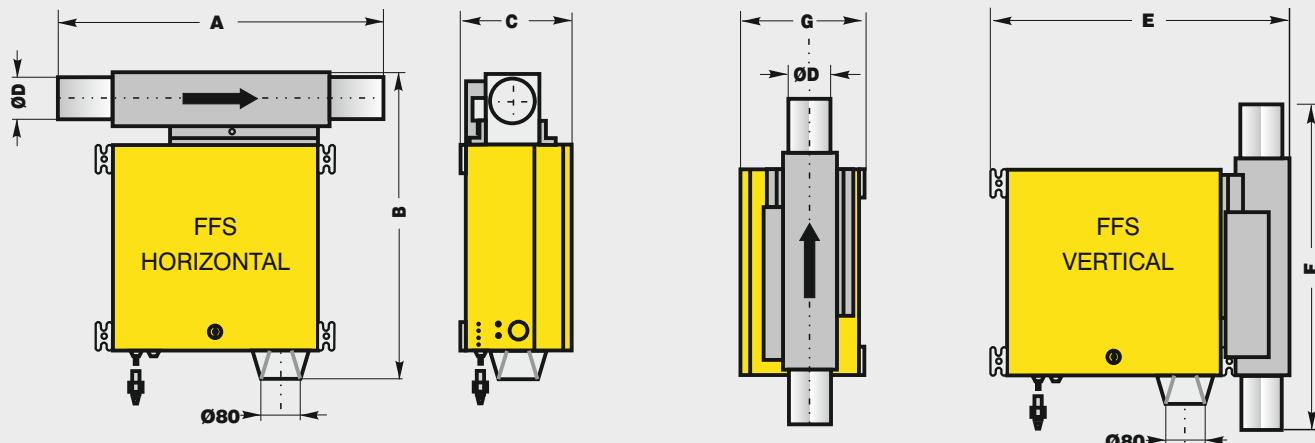
**Housing:** painted sheet steel, RAL 1016 (sulphur-yellow), other RAL colours on request.

**Connection cable length:** 1.5 m

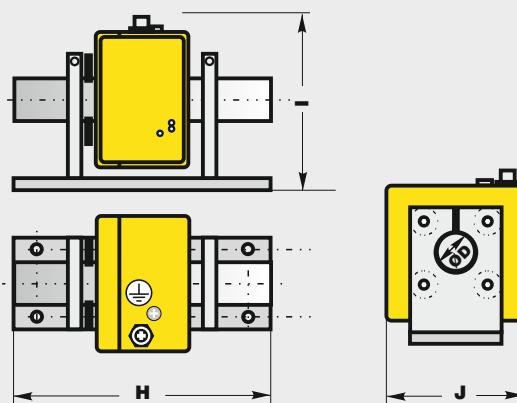
## Available equipment and technical specifications

	Maximum Sensitivity	Diameter mm	Weight kg
FFS 041	ca. 0,7 mm	40	20
FFS 051	ca. 0,7 mm	50	20
FFS 071	ca. 0,8 mm	70	26
FFS 081	ca. 1,0 mm	80	26
FFS 101	ca. 1,2 mm	100	28

# hamos FFS



MAIN DIMENSIONS OF THE SENSOR:



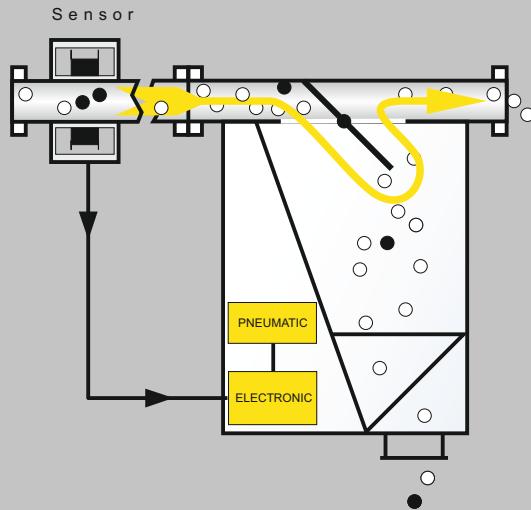
## Accessories/options

- Tube adapters and transition parts
- Flanges
- Volt-free relay outputs (metal detection, operation and malfunction indication)
- Stainless steel and high temperature versions available
- Further options and accessories on request

## Equipment dimensions (mm)

	FFS040	FFS050	FFS060	FFS070	FFS080	FFS100
A	460	460	610	610	610	610
B	525	525	570	570	570	570
C	200	200	220	220	220	220
D	40	50	60	70	80	100
E	420	420	540	540	540	540
F	460	460	610	610	610	610
G	200	200	220	220	220	220
H	260	260	340	340	340	340
I	140	140	190	190	190	190
J	120	120	160	160	160	160

# All-Metal Separators FFS



FFS series electronic all-metal separators remove metal parts from bulk materials in pneumatic conveying lines (vacuum or pressure conveying). Metal detection and separation takes place here "on the fly" at high conveying speeds.

## Function

The material from which metal is to be removed is conveyed pneumatically through the metal detection coil. Should then a metal particle be detected, the diverter in the metal separator opens and the metal part falls together with a small amount of product into the ejection container.

## Application areas

- Plastics/recycling industry
- Extruder protection
- Food industry
- And many more

## Your advantages

- Metal-free recyclate/products
- For continuous or intermittently working systems
- Use in horizontal or vertical pipelines
- Versatile use through customer-specific flanges

## Technical Data

**Operating voltage:** 110-240 V, 50/60 Hz

**Power consumption:** approx. 0.2 VA

**Self-monitoring function:** continuous control of sensor, air pressure, voltage and mechanical operation. Malfunction indication via 5A/220 V AC volt-free contacts.

**Protection class:** IP 53

**Operating temperature:** max 70° C, high temperature version required at higher temperatures

**Permitted particle speed:** max. 30 m/s.

**Ejection time:** adjustable from approx. 0.1 - 1.0 seconds

**Compressed air connection:** 5 bar, quick coupling, 6 mm nominal width hose, maintenance-free operation due to integrated filter regulator (with automatic condensation drainage).

**Compressed air consumption:** approx. 0.1 L per separation process.

**Materials in contact with the product:** PE in the sensor area, anodised aluminium and PU in the separation area.

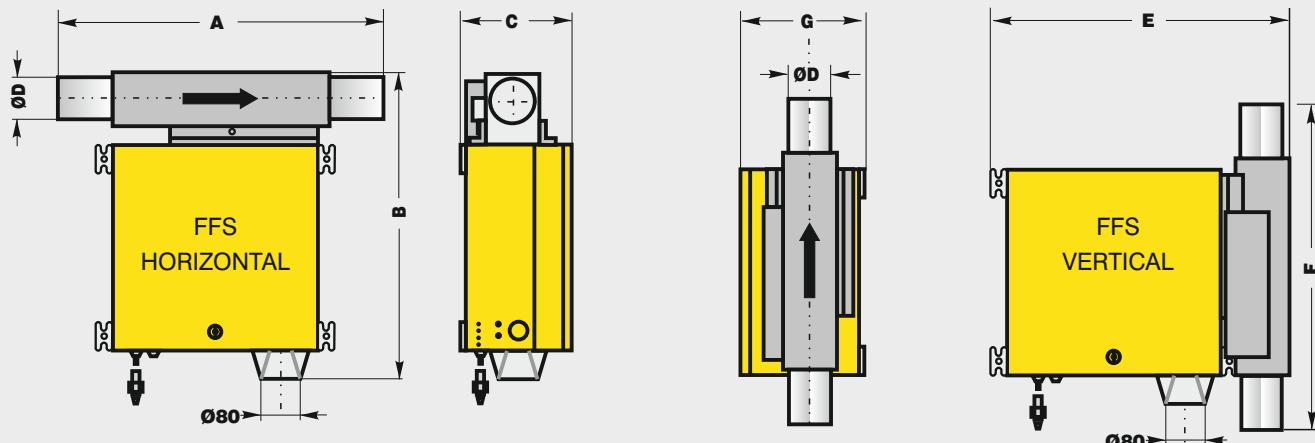
**Housing:** painted sheet steel, RAL 1016 (sulphur-yellow), other RAL colours on request.

**Connection cable length:** 1.5 m

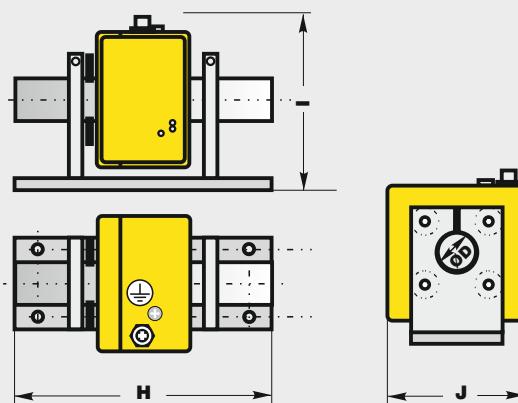
## Available equipment and technical specifications

	Maximum Sensitivity	Diameter mm	Weight kg
FFS 041	ca. 0,7 mm	40	20
FFS 051	ca. 0,7 mm	50	20
FFS 071	ca. 0,8 mm	70	26
FFS 081	ca. 1,0 mm	80	26
FFS 101	ca. 1,2 mm	100	28

# hamos FFS



MAIN DIMENSIONS OF THE SENSOR:



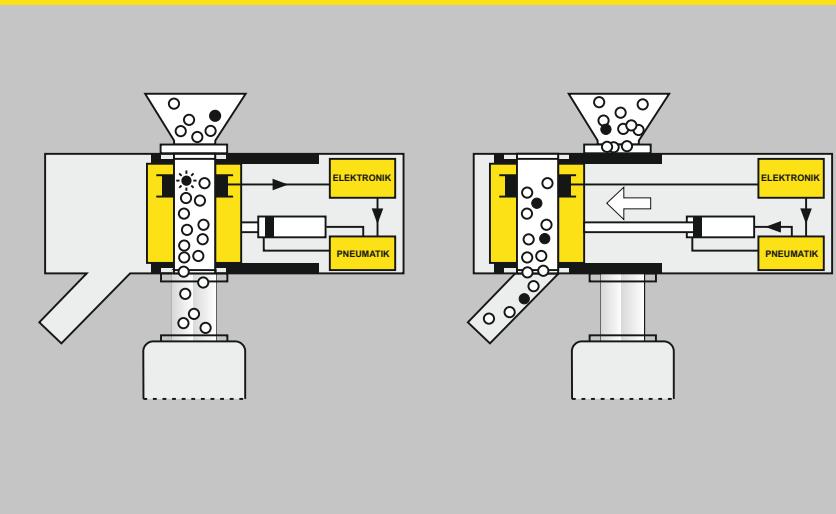
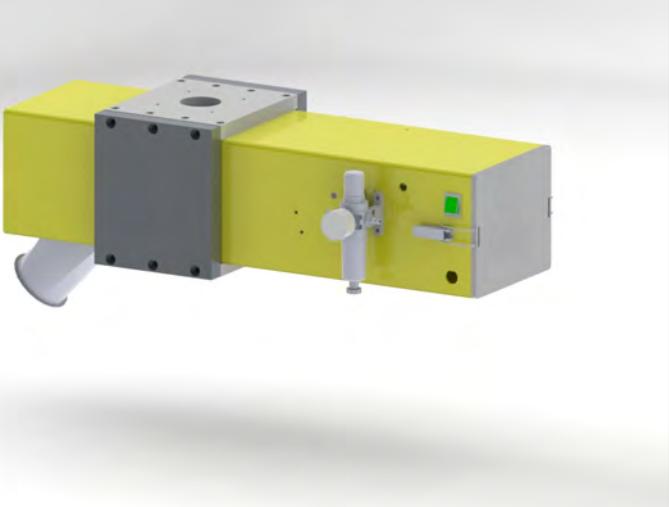
## Accessories/options

- Tube adapters and transition parts
- Flanges
- Volt-free relay outputs (metal detection, operation and malfunction indication)
- Stainless steel and high temperature versions available
- Further options and accessories on request

## Equipment dimensions (mm)

	FFS040	FFS050	FFS060	FFS070	FFS080	FFS100
A	460	460	610	610	610	610
B	525	525	570	570	570	570
C	200	200	220	220	220	220
D	40	50	60	70	80	100
E	420	420	540	540	540	540
F	460	460	610	610	610	610
G	200	200	220	220	220	220
H	260	260	340	340	340	340
I	140	140	190	190	190	190
J	120	120	160	160	160	160

# Allmetall-Separatoren LCS



Elektronische Allmetall-Separatoren der Serie LCS kommen speziell in der Kunststoffverarbeitung zum Einsatz. Zur Metallerkennung bzw. Entmetallisierung von Granulaten, Mischgranulaten und Recycling-Materialien werden sie unmittelbar am Einlauf z.B. einer Spritzmaschine oder eines Extruders montiert.

## Funktion

Sollen Metallteile aus sich langsam bewegenden Materialsäulen vollautomatisch separiert werden, verwendet man Geräte der Serie LCS. Bei diesen Metallseparatoren wird die Suchspule mit den Metallteilen durch einen Pneumatikzylinder in die Auswerfstellung geschoben.

## Anwendungsgebiete

- Kunststoff-/Recyclingindustrie
- Extruder-Schutz
- Und viele mehr

## Ihre Vorteile

- Zur Entmetallisierung von sich langsam bewegenden Materialsäulen
- Hochbelastbares Gehäuse
- Tausendfach bewährte Technologie
- Einfache Montage und Bedienung

## Technische Daten

**Betriebsspannung:** 110-240 V, 50/60 Hz

**Leistungsaufnahme:** Ca. 0,2 VA

**Eigenüberwachungsfunktion:** Kontinuierliche Kontrolle von Sensor, Luftdruck, Spannungsversorgung und Mechanik. Störungsanzeige über potentialfreie Kontakt 5A/220 Vac.

**Schutzart:** IP 53

**Einsatz-Temperatur:** Max 70° C, bei höheren Temperaturen Hochtemperaturversion erforderlich.

**Ausscheidedauer:** Einstellbar

**Druckluftanschluss:** 5 bar, Schnellkupplung, Schlauch NW 6 mm, wartungsfreier Betrieb durch integrierten Filter-Regler (mit automatischem Kondensatablass).

**Druckluftverbrauch:** Ca. 0,1 l je Ausscheidevorgang

**Produktberührte Teile:** PE im Sensorbereich, Aluminium eloxiert und PU im Ausscheidebereich.

**Gehäuse:** Stahlblech lackiert, RAL 1016 (schwefelgelb) andere RAL-Farben auf Anfrage.

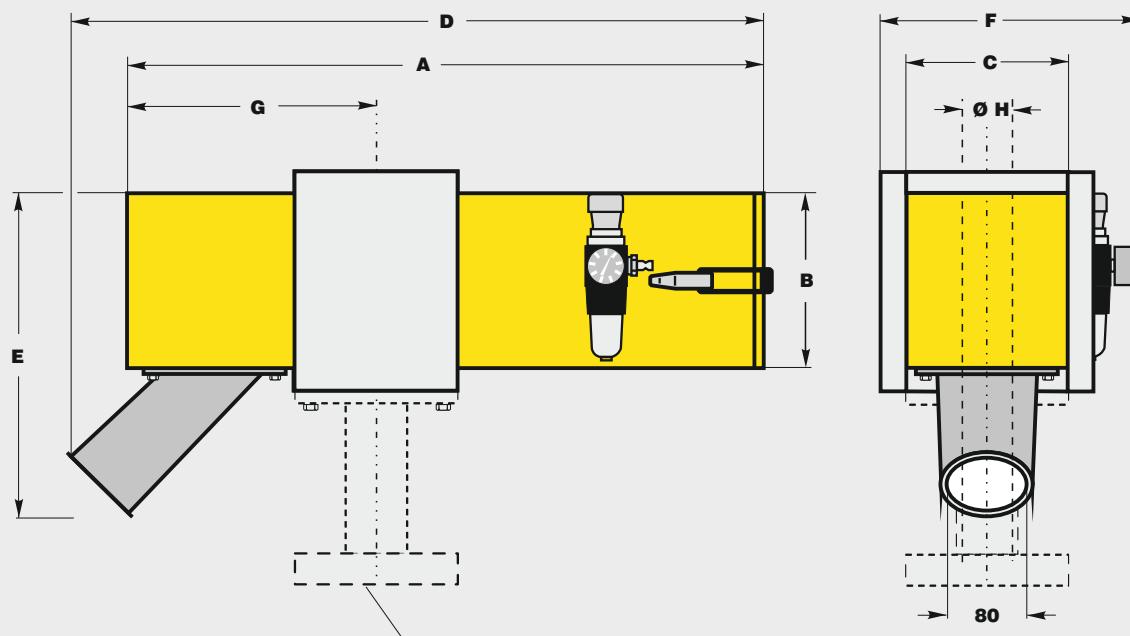
**Anschlusskabellänge:** 1,5 m

## Lieferbare Geräte und Technische Spezifikationen

	Maximale Empfindlichkeit	Durchmesser mm	Masse kg
Max. Durchsatz *)	ca. 1,0 mm	50	32
Max. Durchsatz *)	ca. 1,5 mm	70	51
Max. Durchsatz *)	ca. 1,5 mm	100	51

\*) Abhängig von der Rieselfähigkeit des Granulats. Bei Mahlgut muss mit reduziertem Durchsatz gerechnet werden. In Zweifelsfällen führen wir Rieseltests durch.

# hamos LCS



Option: Verbindungsflansch mit Lochbild gemäß Kundenanforderung.

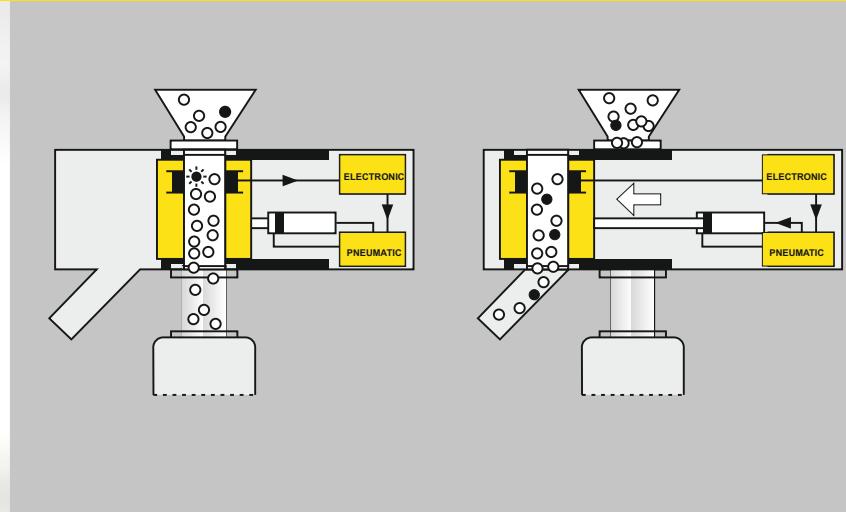
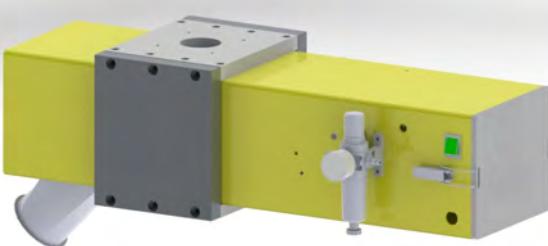
## Zubehör/Optionen

- Rohradapter und Übergangsstücke
- Flansche
- Potentialfreie Relaisausgänge (Metallerkennung und Betriebs- bzw. Störanzeige)
- Weitere Optionen und Zubehör auf Anfrage

## Geräteabmessungen (mm)

	LCS 050	LCS 070	LCS 100
A	725	850	850
B	170	185	185
C	200	240	240
D	785	935	935
E	320	375	375
F	320	375	375
G	245	305	305
H	50	70	100

# All-Metal Separators LCS



LCS series electronic all-metal separators are used especially in plastics processing. They are mounted directly at the intake of e.g. an injection moulding machine or an extruder for metal detection and metal removal.

## Function

LCS series equipment is needed to separate metal parts from slowly moving columns of materials. In these metal separators, the search coil is pushed together with the metal parts by a pneumatic cylinder into a position ready for ejection.

## Application areas

- Plastics/recycling industry
- Extruder protection
- And many more

## Your advantages

- Metal removal from slow-moving material columns
- High load-bearing housing
- Technology proven thousands of times
- Easy installation and operation

## Technical Data

**Operating voltage:** 110-240 V, 50/60 Hz

**Power consumption:** approx. 0.2 VA

**Self-monitoring function:** continuous control of sensor, air pressure, voltage and mechanical operation. Malfunction indication via 5A/220 V AC volt-free contacts.

**Protection class:** IP 53

**Operating temperature:** max 70° C, high temperature version required at higher temperatures

**Ejection time:** adjustable

**Compressed air connection:** 5 bar, quick coupling, 6 mm nominal width hose, maintenance-free operation due to integrated filter regulator (with automatic condensate drainage).

**Compressed air consumption:** approx. 0.1 L per separation process.

Part materials in contact with the product: PE in the sensor area, anodised aluminium and PU in the separation area.

**Housing:** painted sheet steel, RAL 1016 (sulphur-yellow), other RAL colours on request.

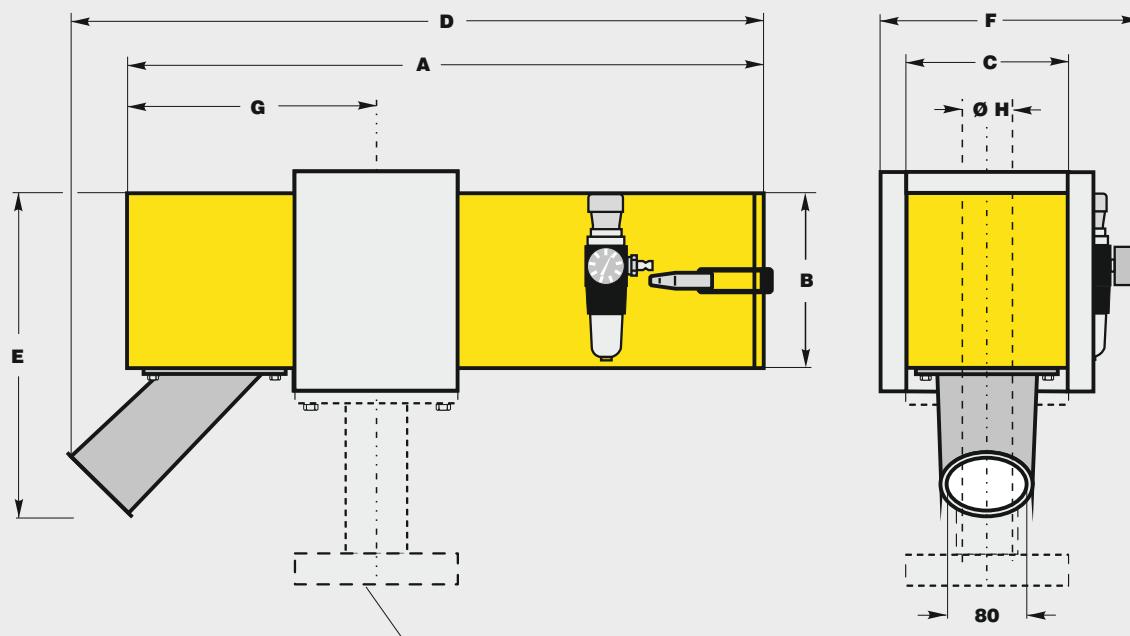
**Connection cable length:** 1.5 m

## Available equipment and technical specifications

		Maximum Sensitivity	Diameter mm	Weight kg
Max. Throughput *)	500 kg/h	LCS 050	ca. 1,0 mm	50
Max. Throughput *)	1200 kg/h	LCS 070	ca. 1,5 mm	70
Max. Throughput *)	3100 kg/h	LCS 100	ca. 1,5 mm	100

\*) Depending on granulate flowability. Reduced throughput is to be expected with regrind. In case of doubt, we carry out flowability tests.

# hamos LCS



Option: If requested, customised mounting supports can be arranged.

## Accessories/options

- Tube adapters and transition parts
- Flanges
- Zero-voltage relay outputs (metal detection, operation and malfunction indication)
- Further options and accessories on request

## Equipment dimensions (mm)

	LCS 050	LCS 070	LCS 100
A	725	850	850
B	170	185	185
C	200	240	240
D	785	935	935
E	320	375	375
F	320	375	375
G	245	305	305
H	50	70	100