

FÖGE / MOS antistatic products

1) Alternative current types

Power supplies types:

| Technical Information | | | | |
|-----------------------|---|---|--|---|
| Product | SE-PAC-55-2-C | SE-PAC-55-4-C | SE-PAC-80-2-C | SE-PAC-80-4-C |
| Product Image |  |  |  |  |
| Output Voltage | 5.5kV | 5.5kV | 8kV | 8kV |
| Number of Outputs | 2 | 4 | 2 | 4 |
| Power Supply | 220VAC 50Hz | | | |
| Panel | On/off switch, power light, power connector | | | |
| Environment | 0-60 °C, %70rH max. | | | |
| Safety | Short circuit protection | | | |
| Standards | 2014/30/EU EMC Directive | | | |
| | 2014/35/EU Low Voltage Directive | | | |

Bar type SE-ACB-55



- Compact economical design OEM bar
- Up to 500m/min speeds ionisation
- Ionisation range up to 100mm
- Stainless steel pins for long lifetime
- Screened HFFR protected cable
- Shockless design
- Washable design
- Up to 4 ioniser bar connection to 1 power unit

| Technical Information | |
|---------------------------------|--|
| Product | SE-ACB-55-XXXX |
| Power Unit | SE-PAC-55-2-C, SE-PAC-55-4-C |
| Effective working distance (mm) | 25-100 |
| Output | 5.5kV shockless |
| Length for ordering(mm) | 100 - 4500 |
| Cable | C2: 2mt HFFR protected cable with HV connector |
| Environment | 0-60 °C, %70rH max. |
| Safety | Shockless, pin current <50µA |
| Standards | 2014/30/EU EMC Directive |
| | 2014/35/EU Low Voltage Directive |

Suitable power supply type: SE-PAC-55-2-C; SE-PAC-55-4-C

Bar type SE-ACB-80



- Up to 700m/min speeds ionisation
- Ionisation range up to 250 mm
- Stainless steel pins for long lifetime
- Screened HFFR protected cable
- Shockless design
- Washable design
- Up to 4 ioniser bar connection to 1 power unit

Technical Information

| | |
|---------------------------------|--|
| Product | SE-ACB-80-XXXX |
| Power Unit | SE-PAC-80-2-C, SE-PAC-80-4-C |
| Effective working distance (mm) | 25-250 |
| Output | 8kV shockless |
| Length for ordering(mm) | 100 - 4500 |
| Cable | C2: 2mt HFFR protected cable with HV connector |
| Environment | 0-60°C, %70rH max. |
| Safety | Shockless, pin current <100µA |
| Standards | 2014/30/EU EMC Directive 2014/35/EU Low Voltage Directive |

Suitable power supply type: SE-PAC-80-2-C; SE-PAC-80-4-C

Circular bar with RRH nozzle



- Wide area coverage by rotating the nozzle with high speed
- Tungsten pins for extreme high lifetime
- Cleaning areas by using multiple heads
- Can be used on robot for specific area cleaning
- Easy and flexible installation makes suitable for different dust cleaning or ionising tasks

Technical Information

| | | | |
|----------------------------------|---|-------|-------|
| Product | SE-ARN-80-112-C3-PA | | |
| Air Connection | 8mm hose | | |
| Air pressure - dry filtered air | 4 to 8 bar | | |
| Inlet pressure | 4 bar | 6 bar | 8 bar |
| Air Consumption (liter/min) | 215 | 290 | 375 |
| Power Supply | SE-PAC-80-2-C, SE-PAC-80-4-C | | |
| Cable | C3: 3m. HFFR protected with HV connector. (up to 25m optional) | | |
| Environment | Clean, dry and oil-free environment. 0 - 50° C, 70 % rH non-condensing max. | | |
| Noise level (Measured at 1000mm) | 73 to 83 dB | | |
| Safety | Shockless, pin current < 250µA, transformer current max 5mA(with fuse) | | |
| Standards | 2014/30/EU EMC Directive 2014/35/EU Low Voltage Directive | | |

Suitable power supply type: SE-PAC-80-2-C; SE-PAC-80-4-C

Inline ionizer with RRH nozzle or CT-R nozzle



- Dust removal, cleaning on a spot area with exchangeable nozzle
- Can be used with air gun for air ionisation
- Ionization range up to 300 mm
- Tungsten pins for extreme high lifetime
- Shockless design
- Up to 4 ioniser nozzle connection to 1 power unit
- Can be used on robot for specific area cleaning
- Easy and flexible installation makes suitable for different dust cleaning or ionising tasks

Technical Information

| | | |
|--|---|------------------|
| Product | SE-ACIN-55-NN-C3 | SE-ACIN-55-SN-C3 |
| Air Connection | 8mm hose | |
| Air pressure - dry filtered air | 6 bar | |
| Inlet pressure | 6 bar | |
| Compressed air consumption [L/min] | can be changed depending on the nozzle attached | 320 |
| Power Unit | SE-PAC-55-2-C, SE-PAC-55-4-C | |
| Air flow speed (m/s) (Measured at 300mm) | can be changed depending on the nozzle attached | 14 |
| Cable | C3: 3m. HFFR protected with HV connector. (up to 12 m optional) | |
| Environment | Clean, dry and oil-free environment. 0 - 50° C, 70 % rH non-condensing max. | |
| Noise level (Measured at 1000mm) | can be changed depending on the nozzle attached | 83dB |
| Safety | Shockless, pin current < 250µA, transformer current max 5mA(with fuse) | |
| Standart | 2014/30/EU EMC Directive 2014/35/EU Low Voltage Directive | |
| Product Body Weight | 315 gr | 364 gr |

Suitable power supply type: SE-PAC-55-2-C; SE-PAC-55-4-C

Ionizing air gun AG-08



- World's first Integrated Ioniser Rotary Nozzle Airgun
- Most effective dust cleaning thanks to rotating nozzle with 7
- Tungsten ionising pins
- Compact, lightweight, ergonomic integrated ioniser
- Shockless design

| Nozzle | Rotating Nozzle | | | Standard Nozzle | |
|----------------------------------|--|---------|------------|-------------------|------------|
| Air Connection | 8 mm hose | | | | |
| Air pressure - dry filtered air | 3 bar (4.5 bar max) | | | 5 bar (7 bar max) | |
| Air Consumption (liter/min) | 3 bar | 4.5 bar | 3bar | 5bar | 7bar |
| | 170 | 230 | on request | on request | on request |
| Air flow speed (m/s) | - | | | 10 | |
| Power Unit | SE-PAC-55-2-C, SE-PAC-55-4-C | | | | |
| Cable | 3m. HFFR protected with HV connector. (up to 12m optional) | | | | |
| Environment | 0-60 °C, %70rH max. | | | | |
| Noise level (Measured at 1000mm) | <80dBA | <85dBA | on request | | |
| Safety | Shockless, pin current <250µA, transformer current max 5mA (with fuse) | | | | |
| Standards | 2014/30/EU EMC Directive | | | | |
| | 2014/35/EU Low Voltage Directive | | | | |

Suitable power supply type: SE-PAC-55-2-C; SE-PAC-55-4-C

2) Direct current types

Bar type SE-DCF and SE-DCL



- 24 VDC supply, no high voltage transformer needed.
- Excellence ionisation performance thanks to pulsedDC design
- High power for long range applications - up to 600 mm
- Shockless design
- Tungsten pins for long lifetime
- Standard M8 4 Pin connection
- LED for status display compact design, ideal for most ionisation applications

| Technical Information | | |
|---------------------------------|----------------------------------|-----------------|
| Product | SE-DCF-110-XXXX | SE-DCL-110-XXXX |
| Power | 24VDC1A Power Supply | |
| Effective working distance (mm) | 25-100 | 100-600 |
| Output | 11kV Shockless | |
| Length for ordering(mm) | 300 - 4500 | |
| Power Supply | SE-PSU-220-24-C | |
| Power Connector | M8 4 pin (device side male) | |
| Environment | 0-60°C, %70rH max. | |
| Safety | Shockless, pin current <250µA | |
| Standards | 2014/30/EU EMC Directive | |
| | 2014/35/EU Low Voltage Directive | |

No additional power supply needed

Compact air blower SE-BLC



- pulsedDC Ionisation
- Adjustable double ball bearing long lifetime lightweight fans
- Fan, ionisation fault LEDs
- Flexible mounting thanks to compact design

| Technical Information | |
|----------------------------------|--|
| Product | SE-BLC-F-75-C |
| Power Supply | 24V DC supply via M12 connector, 0.4A, Max 9W |
| Ionisation Performance | 1kV to 100V in less than 7secs distance 1000mm |
| Fan Speed Adjustment | Via Pot on the panel |
| Environment | 0-60°C, %70rH max. |
| Noise level (Measured at 1000mm) | <60 dBA |
| Safety | Shockless, pin current <250µA |
| Standards | 2014/30/EU EMC Directive |
| | 2014/35/EU Low Voltage Directive |

No additional power supply needed

BONATO / MOS antistatic products

1) Alternative current types

Power supplies types:

- AF2 and AF4 type



AF2

| | |
|-----------------------|-----------------|
| Weight | 4,1 Kg |
| Ambient temperature | 0-60°C |
| Primary tension | 230 V, 50/60 Hz |
| Secondary tension | 6500 V |
| Consumption | 40 W |
| Short circuit current | 3 mA |

AF4

| | |
|-----------------------|-----------------|
| Weight | 4,1 Kg |
| Ambient temperature | 0-60°C |
| Primary tension | 230 V, 50/60 Hz |
| Secondary tension | 6500 V |
| Consumption | 60 W |
| Short circuit current | 3 mA |

- AF2WR and AF4WR type



AF2WR

| | |
|-----------------------|----------------------|
| Weight | 4,1 Kg |
| Ambient temperature | 0-60°C |
| Primary tension | 230 V, 50/60 Hz |
| Secondary tension | 6500 V |
| Consumption | 40 W |
| Short circuit current | 3 mA |
| Maximum load | 14 m (cabels + bars) |
| Certification | CE |
| IP protection | IP 54 |

AF4WR

| | |
|-----------------------|----------------------|
| Weight | 4,1 Kg |
| Ambient temperature | 0-60°C |
| Primary tension | 230 V, 50/60 Hz |
| Secondary tension | 6500 V |
| Consumption | 40 W |
| Short circuit current | 3 mA |
| Maximum load | 20 m (cabels + bars) |
| Certification | CE |
| IP protection | IP 54 |

- APS2 and APS4 type



APS2

| | |
|-----------------------|-----------------|
| Weight | 4,1 Kg |
| Room temperature | 0-60°C |
| Primary voltage | 230 V, 50/60 Hz |
| Secondary voltage | 7000 V |
| Consumption | 40 W |
| Short-circuit current | 3 mA |

APS4

| | |
|-----------------------|-----------------|
| Weight | 4,1 Kg |
| Room temperature | 0-60°C |
| Primary voltage | 230 V, 50/60 Hz |
| Secondary voltage | 7000 V |
| Consumption | 40 W |
| Short-circuit current | 3 mA |

- Power supply controlled using signal from PLC and with OK function feedback

- APS2WR and APS4WR type



| APS2/4WR | |
|--------------------|----------------------|
| Hmotnost | 4,1 Kg |
| Okolní teplota | 0-60°C |
| Primární napětí | 230 V, 50/60 Hz |
| Sekundární napětí | 7000 V |
| Spotřeba | 40 W |
| Zkratový proud | 6 mA |
| Maximální zatížení | 30 m (cabels + bars) |
| Certifikace | CE |
| Těsnost | IP 54 |

- Power supply controled using signal from PLC and with OK function feedback

- AFX2 and AFX4 type



| AFX2 | |
|-----------------------|-----------------|
| Weight | 4,1 Kg |
| Ambient temperature | 0-60°C |
| Primary tension | 230 V, 50/60 Hz |
| Secondary tension | 6500 V |
| Consumption | 30 W |
| Short circuit current | 6 mA |

| AFX4 | |
|-----------------------|-----------------|
| Weight | 4,1 Kg |
| Ambient temperature | 0-60°C |
| Primary tension | 230 V, 50/60 Hz |
| Secondary tension | 6500 V |
| Consumption | 30 W |
| Short circuit current | 6 mA |

- Special type for EX environment bars

Bar type ABSL (red)



| ABSL | |
|---------------------|------------------------|
| Working distance | 20 - 70 mm |
| Operating voltage | 6500 V |
| Power supply | AF2 / BEQ |
| Weight | 0,98 kg / m |
| Ambient temperature | 0° C - 70° C |
| Lengths | from 100 mm to 6000 mm |

Suitable power supply type: AF2, AF4, APS2, APS4

Bar type ABSL-RC (blue)



| ABSL-RC | |
|---------------------|------------------------|
| Working distance | 20 - 200 mm |
| Operating voltage | 7000 VAC |
| Power supply | AF2-W4R |
| Weight | 1,1 kg / m |
| Ambient temperature | 0° C - 70° C |
| Lengths | from 100 mm to 6000 mm |

Suitable power supply type: AF2WR, AF4WR, APS2WR, APS4WR

Antistatic tube type AT-01



| AT-01 | |
|----------------------|--------------------|
| Diameter: | 50-500 mm |
| Lengths: | 500-2000 mm |
| Ambient temperature: | 0-60°C |
| Materials: | Iron or inox steel |
| Operating voltage: | 6,5 kV |

- Stainless steel tube with ABSL-RC type bars. Mainly for pneumatic conveying

Suitable power supply type: AF2WR, APS2WR

Ionising head type IH-4



| IH-4 | |
|---------------------------|-------------------------------------|
| Working distance | 50-150 mm |
| Working tension | 7000 V |
| Power supply | AF2WR – PS1WR |
| Ambient temperature | 0° C - 70° C |
| Protection grade | IP 67 |
| High tension cable length | 3/5/10 m, others lengths on request |

This type can be combined with different type of nozzles:



Type AN-RC-02



AR-RC-01

or can be used on pneumatic gun:



Type AG-RC-04-DJPN

Suitable power supply type: AF2WR, AF4WR, APS2WR, APS4WR

Ionising PIN type IP-01



| IP-01 | |
|---------------------|-----------------|
| Working distance | Up to 150 mm |
| Working tension | 6,5 kV |
| Power supply | PS1WR, AF2-4WR |
| Emitters | Stainless steel |
| Ambient temperature | 0° C - 70° C |

This type can be combined with different type of nozzles:



AN-RC-01



AN-RC-03



AN-RC-04

or can be used on pneumatic gun:



AG-01



AG-02-VOSP

Suitable power supply type: **AF2WR, AF4WR, APS2WR, APS4WR**

ATEX bar type IP-01



| EX-ABSL-RC | |
|---------------------|--|
| Certification | ATEX issued by TUV II 2G Ex mb IIB T6 Gb II 2D Ex mb IIIB T85°C Db |
| Working distance | 20 - 200 mm |
| Operating voltage | 7000 VAC max |
| Weight | 1,1 kg / m |
| Ambient temperature | 0° C - 70° C |
| Lengths | from 100 mm to 6000 mm |

- Also EX bar can be combined with air knife or mounted on the gun

Suitable power supply type: **APSX2, APSX4**



Compact robust air fan IF-01



| IF-01 | |
|---------------------|-----------------------|
| Working distance | 1200mm max |
| Power source | 230 Volt 50/60Hz |
| Consumption | 30 W |
| Air flow control | Manual, 0-150 m³/hour |
| Working temperature | 0-60 °C |
| Power supply | Integrated |
| Weight | 3,3 kilos |
| Certifications | CE |

The IF-01 ionizing fan has been designed to break down antistatic charges very quickly and bring the balance to +/- 3V. Its emitters are connected via high voltage resistors and encapsulated with epoxy resin to have the maximum ionizing effect as well as making the emitters safe to the touch. Thanks to its design, cleaning the emitters is also very simple. The IF-01 ionizing fan has one LED indicating the presence of voltage while the other indicates the correct functioning of the ionization. The ionized air flow is adjustable and can reach 1.2 meters away, which is why it is suitable for various applications, especially for the electronics, plastic, medical and RFID industries.

No additional power supply needed

Compact robust double air fan IF-02



| IF-02 | |
|---------------------|-----------------------|
| Working distance | 1200mm max |
| Power source | 230 Volt 50/60Hz |
| Consumption | 40 W |
| Air flow control | Manual, 0-300 m³/hour |
| Working temperature | 0-60 °C |
| Power supply | Integrated |
| Weight | 5,5 kilos |
| Certifications | CE |

The IF-02 ionizing fan has been designed to break down antistatic charges very quickly and bring the balance to +/- 3V. Its emitters are connected via high voltage resistors and encapsulated with epoxy resin to have the maximum ionizing effect as well as making the emitters safe to the touch. Thanks to its design, cleaning the emitters is also very simple. The IF-02 ionizing fan has one LED indicating the presence of voltage while the other indicates the correct functioning of the ionization. The ionized air flow is adjustable and can reach 1.2 meters away, which is why it is suitable for various applications, especially for the electronics, plastic, medical and RFID industries

No additional power supply needed

Compact robust double air fan IF-AC



| IF-AC | |
|---------------------|--|
| Working distance | 1200mm max |
| Supply voltage | 230 Volt 50/60Hz |
| Consumption | 500 mm: 60 W; 1000 mm: 110W; 2000 mm: 190W |
| Air flow control | Manual, 0-150 m³/hour per fan |
| Working temperature | 0-60 °C |
| Power supply | Integrated |
| Certificate | CE |

The ionizing blower IF-AC was developed to be effective at long range and to eliminate antistatic charges considerably. The ionizing blower IF-AC is made up of axial fans (one every 250 mm) and 2 antistatic bars ABSLRC, which are fed by a high-voltage power supply, integrated in the blower itself. The ionized air flow can be adjusted and reach a 1,2-meter distance, thus being suitable to several applications. It is available in size from 500 mm to 2000 mm with a 250-mm pitch.

No additional power supply needed

Ionizing blower IB-600



| IB-600 | |
|-----------------------|------------------|
| Working distance | 2000mm max |
| Electric motor supply | 230 Volt 50/60Hz |
| Consumption | 550 Watt |
| Weight | 18 kg |
| Working temperature | 0-60 °C |
| Power supply | PS/AF serie |
| Certification | CE |

The ionizing blower IB-600 is suitable for applications where it is necessary to have a strong air flow or where ionizing point is hard to reach. The ionizing blower IB-600 is composed of an electric motor with fan and 3 antistatic bars which are fed by a high tension power supply. The ionizing air flow can reach 2 meters distance and 1 meter width.

No additional power supply needed

2) Direct current types

Bar type IDB-7



| IDB-7 | |
|------------------------|--------------------------------|
| Working distance | 20 - 200 mm |
| Operating voltage | 7500 V pulsed |
| Frequency | Adjustable 0-20Hz |
| Integrate power supply | 12-24 Vdc input |
| Weight | 1,2 kg / m |
| Ambient temperature | 0° C - 70° C, Max humidity 65% |
| Lengths | from 250 mm to 5000 mm |

The anti-static bar IDB-7 is designed to be installed in machines working at high speed, his design is very compact 40x25 mm and the profile is in FR-ABS filled with epoxy resin. This anti-static bar has an integrate power supply, so no high tension cable is needed, only 12-24 V supply, the frequency is adjustable (0-20 Hz) and is provided with clean pin alert by a led and remote signal PNP and NPN. Green/blu flashing= ok, Violet= needs cleaning, Red=fault. The emitters (option tungsten) are connected resistively to high voltage, so there are no risks for the operator in the event of accidental contact.

No additional power supply needed

Bar type IDB-11



| IDB-11 | |
|------------------------|--|
| Working distance | IDB-11-S: 20 - 300 mm; IDB-11-L: 100-500mm |
| Operating voltage | 11 KV pulsed |
| Frequency | Adjustable 0,5-20Hz or continuous |
| Integrate power supply | 12-24 Vdc input |
| Weight | 1,2 kg / m |
| Ambient temperature | 0° C - 70° C, Max humidity 65% |
| Lengths | from 300 mm to 5000 mm |

The anti-static bar IDB-11 is available in two versions: IDB-11-S for high speed up to 2000 m/min., for distance from 30 to 300mm and IDB-11-L for long distance from 100 up to 500 mm. His design is very compact 40x25 mm and the profile is in FR-ABS filled with epoxy resin. This anti-static bar has an integrate power supply, so no high tension cable is needed, only 12-24 V supply, the frequency is adjustable (0,5-20 Hz) or in continuous and is provided with clean pin alert by a led and remote signal PNP and NPN. White/blu flashing= ok, Violet= needs cleaning, Red=fault. The titanium emitters are connected resistively to high voltage, so there are no risks for the operator in the event of accidental contact.

No additional power supply needed

Bar type IDB-35



IDB-35

| | |
|-------------------------|---------------------------------|
| Working distance | 200-1200mm |
| Operating voltage | 35 KV pulsed |
| Frequency | Adjustable 0.5-5Hz |
| Integrated power supply | 24 Vdc input, max. current 1,0A |
| Weight | 1,1 kg + 2,0 kg/m. |
| Ambient temperature | 0° C - 70° C, Max humidity 65% |
| Lengths | from 500 mm to 4000 mm |

The Intelligent Discharging Bar IDB-35 (shockless) we produce can be used in many sectors, such as textile manufacturing, paper, plastics, printing, in converting, packaging etc. The anti-static bar IDB-35 is designed to discharge surface at long distance from 200 up to 1200 mm. The PVC profile has dimensions 95.5x49 mm. This anti-static bar has an integrate power supply, so no high tension cable is needed, only 24 V supply, the frequency is adjustable (0.5-5 Hz) by button and is provided with clean pin alert and overload alert by a led and by remote alarm signal NPN. The replaceable stainless steel emitters are connected resistively to high voltage, so there are no risks for the operator in the event of accidental contact.

No additional power supply needed

Bar type IDB-IP69



IDB-IP69

| | |
|-------------------------|---------------------------------|
| Working distance | 20 – 200 mm |
| Operating voltage | 7500 V pulsed |
| Consumption | 0,5A max. |
| Integrated power supply | 12–24 Vdc input, max. 0,5 A |
| Weight | 1.3 kg / m |
| Operating temperature | 0° C – 70° C, max. humidity 65% |
| Lengths | from 250 mm to 5000 mm |

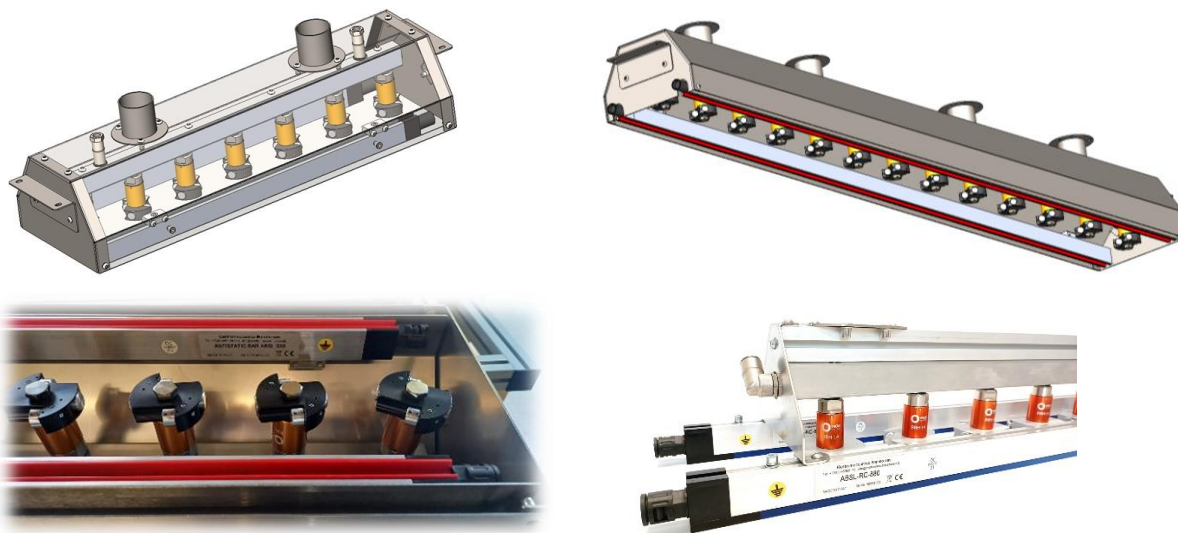
The antistatic bar IDB-IP69 (shockless) Discharging Bar has been designed to be installed in pharma and food industry where sanitizing is required. This bar has an IP69 protection and it's therefore completely washable with water, detergents, and solvents. The antistatic bar IDB-IP69 is suitable for being installed in machines working at high speeds, his design is very compact 40x25 mm and the profile is in FR-ABS filled with epoxy resin. This antistatic bar has an integrate power supply, it works at 12-24 V supply and is provided with clean pin alert by a led and remote signal PNP and NPN. Green= ok, Violet= needs cleaning, Red=fault. The titanium emitters are connected resistively to high voltage, so there are no risks for the operator in the event of accidental contact.

No additional power supply needed

Antistatic units with rotary nozzles and extraction

For more and more applications we do produce units with stainless steel metal sheet cover, RRH rotating nozzles, antistatic bars (different types) and connection for extraction.

Different lengths, different number of nozzles and different antistatic bars are suitable...



MOS Airbox

- For our universal cleaning boxes we do use DC antistatic bars (IDB-7 or SE-DCF type) so there is no need to use additional power supply
- Boxes create inlet hole air curtain, cleaning nozzles are inside the box (RRH or CT-R types mostly), DC antistatic bar fills the inside space with ionized air. The box is possible to connect to extraction

