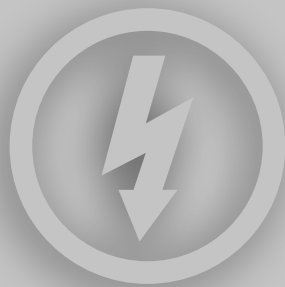




Electrostatic solutions for better efficiency

GENERAL OVERVIEW

**FOR ENGINEERS, PROFESSIONALS AND TECHNICIANS
IN DEVELOPMENT, PRODUCTION AND INSTALLATION.**



WWW.KERSTEN.DE/EN

KERSTEN is a family business in its third generation. For more than 40 years, it has been our aim to generate the highest level of quality in all process levels. Thus, we ensure that research and development, production and support act together on location in Freiburg.

Kersten – Quality made in Germany.



Increase Efficiency With Intelligent Products

With Kersten, you get the product which is perfectly suited for your purposes. We guarantee this through needs-based consultation and individual customized solutions. Thanks to our flexible in-house production, you benefit from very short delivery times.

Through our claim and experience, we guarantee you products that are well-engineered and very easy to operate. We are the system supplier for renowned manufacturers in many industries.

YOUR BENEFITS IN DETAIL:

- Plug-in system
- Very small component sizes
- Flexible expansion options
- No EMC problems
- Zero to minimal maintenance
- Configurability according to your application
- Quality made in Germany
- Strict quality controls



www.tuev-sued.de/ps-zert



EXAMPLE OF AN INNOVATION:

The KERSTEN-developed, reverse polarity protected high-voltage connector for all discharging components



KERSTEN Process

CONSULTATION

- We work with you to clarify all aspects that might lead to disturbances in your process chain. Both your process goals and your machine-dependent factors such as air-humidity, temperature, etc. are taken into account.

The power supply and the need for air-support are a part of this data collection. The data and the results are the basis for further steps on the way to optimum design. By using our modular components, future expansions or changes in requirements are able to be made.



SUPPORT

- As a final step, we make the process as easy for you as possible. We support you with logistics as well as carry out world-wide installations and technical briefings with qualified service technicians. We are, of course, also there to offer you support and assistance after installation.



DOCUMENTATION

- You receive a comprehensive instruction manual for every configured system. This includes information for all the individual components and for the interaction of all the components as a system. You will also receive technical drawings, and the documents and schedules for testing, maintenance, measurement, switching and connection.



We have developed a process to give you the best support in eliminating electrostatic effects or for targeted use in specific production processes. Kersten Elektrostatik examines your entire process chain and creates the optimal system solution for your process: all the way from material testing via the Research & Development and Construction departments to product selection, configuration, installation and after-sales service.



..... RESEARCH & DEVELOPMENT

- Our own research & development department is involved in the next step. They check whether we can offer you a solution from our portfolio. Should this not be the case, our development department will create a proposal for a special solution. Through your new request, we can get to devise a new product.



..... CONFIGURATION

- We then create an individually configured system for you from the selected components. This configuration includes, among other things, a feasibility study and a graphical illustration of the solution via CAD drawing. Through our in-house production of components, it is possible for us to configure the system to your individual requirements. This means, for example, that the electrode lengths or even the cable lengths can be exactly adapted to your needs. So, you only pay for what you actually require.

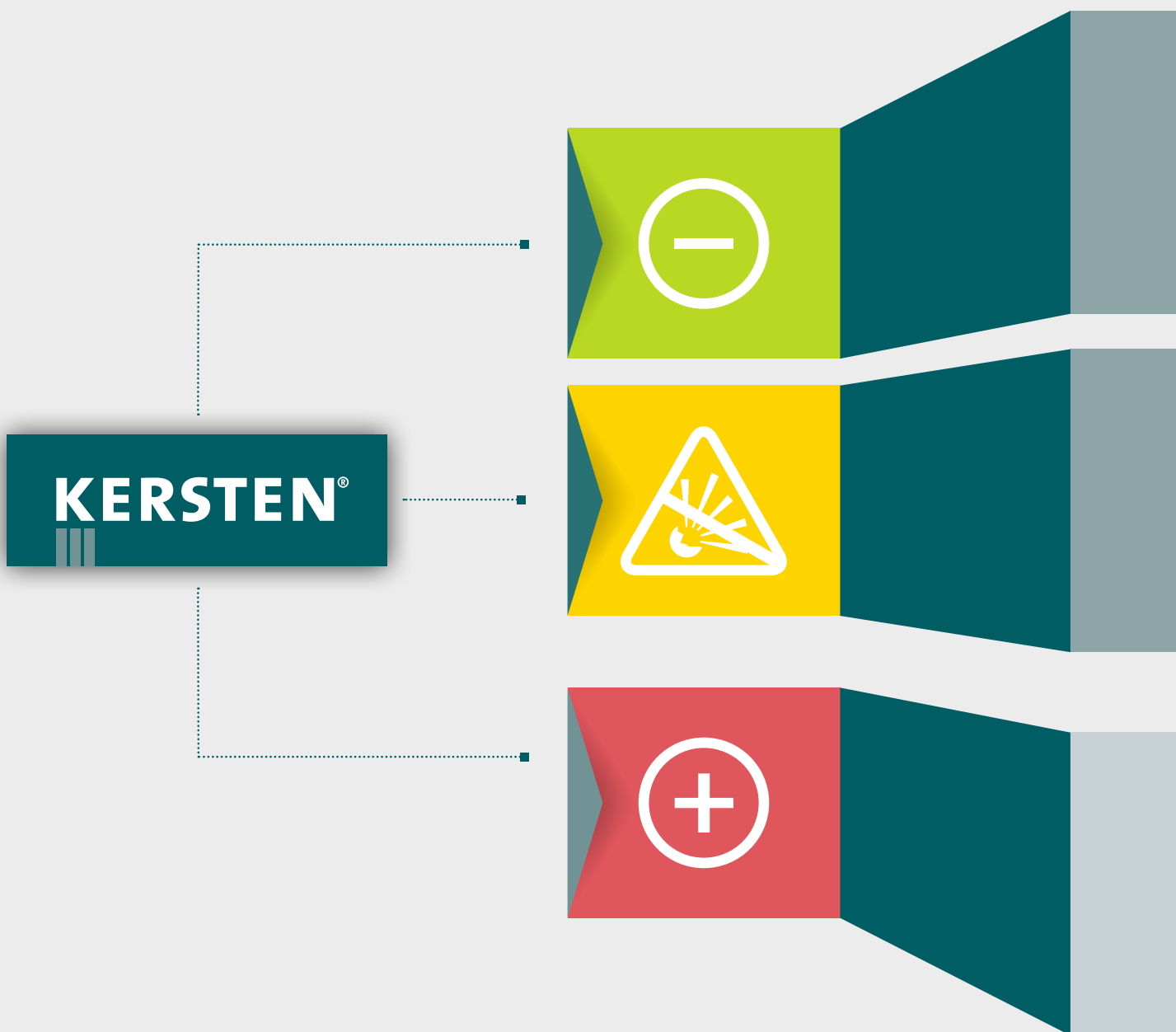


..... PRODUCTION

- After completing the configuration, almost all components are carefully made in-house for you by our qualified specialists. Any needed changes can be made quickly and efficiently at our own location. The benefit of this is extremely short delivery times and the guarantee that all of our products are "Made in Germany".

Everything at a Glance

Our Service Areas



With our product portfolio, we are able to offer you an optimal solution for process support in the areas of discharging, discharging in ATEX areas, and most recently, in the area of charging.

DISCHARGING

With over 40 years of experience in electrostatic discharge, we have the right system to eliminate disturbances in your production processes.

In almost all industrial production processes there are many different materials that rub against each other. Individual sheets of paper or foil are directed over guide rollers, plastic pellets are sent through pipelines, cardboard packaging is punched. The strength of the static charge depends on many factors.

ATEX

The discharge of materials in ATEX zones places special demands on discharge components.

We also have a suitable product portfolio in order to best support you in this zones.



CHARGING

The often undesirable effects of static electricity can also be used to benefit your process.

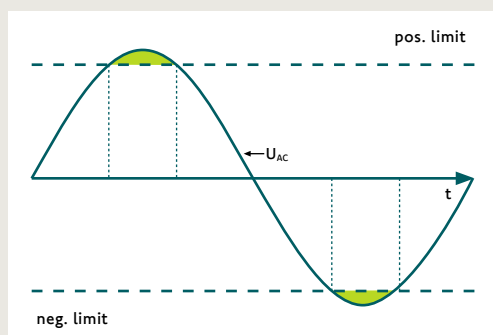
This is especially the case when non-conducting materials are to be fixated without contact via targeted charging. In order to achieve an optimal electrostatic fixation, a counter electrode must be placed opposite the material that is to be charged.

In the simplest of cases, this may be a grounded metal surface or an additionally arranged charging electrode with opposite potential.



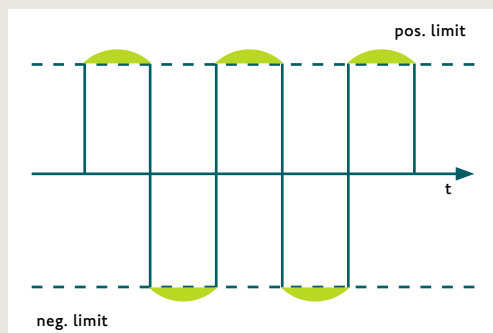
Comparison of Methods

Illustrating the Benefits of the Patented KERSTEN Procedure



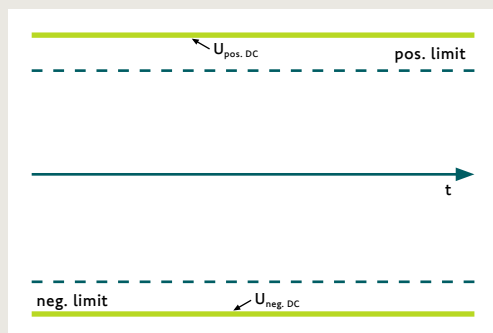
DISCHARGING AC

- Discharge gaps in which no discharging takes place at all.
- Only ions of one polarity are provided between the gaps.
- i. e. discharge only at the time when the material is oppositely charged.



DISCHARGING AC/DC PULSED

- Only ions of one polarity are provided between the gaps.
- No impact ionisation between the electrode needles.

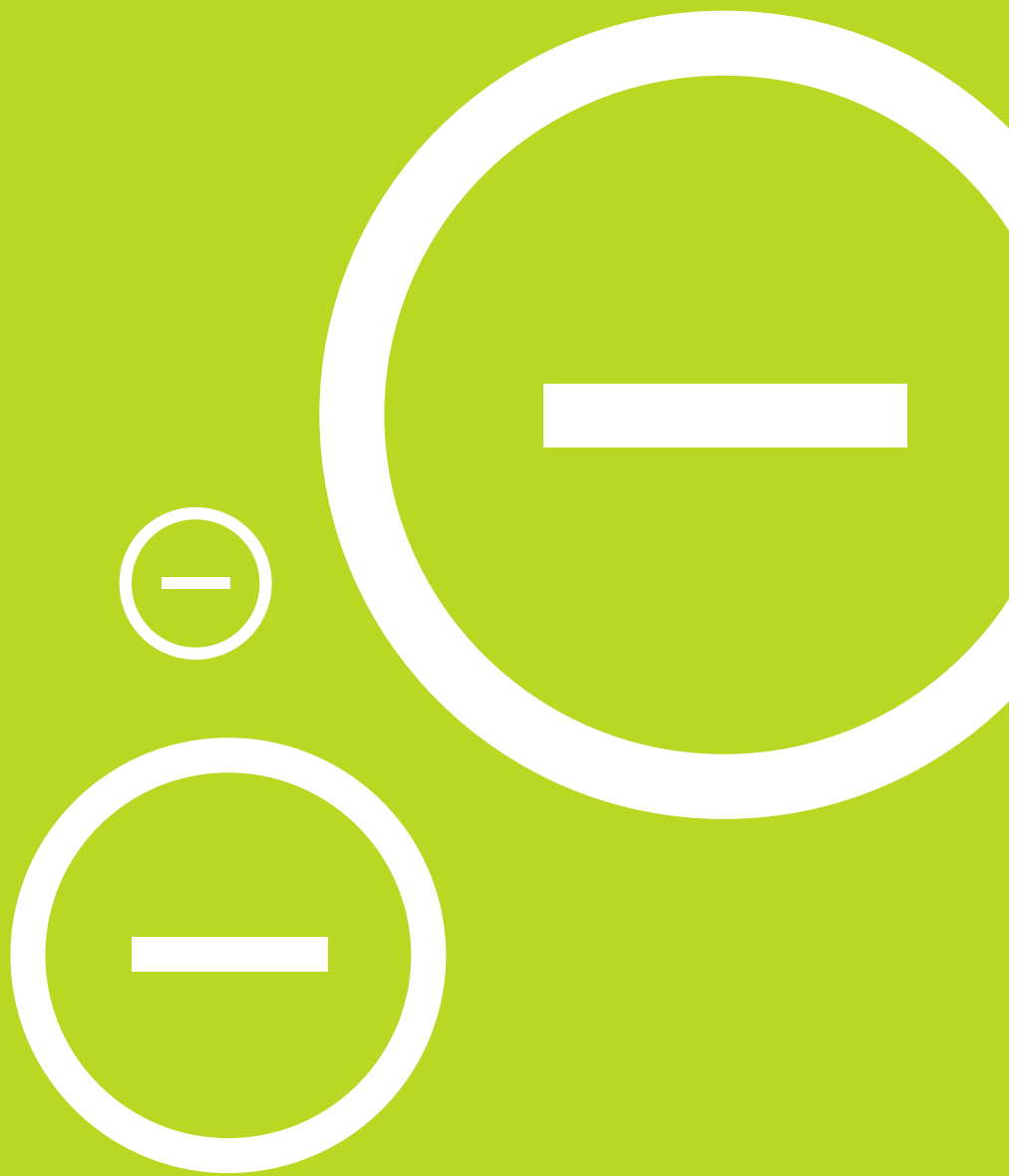


DC DISCHARGING BY KERSTEN ELEKTROSTATIK

- Constant supply of an ion reservoir of both polarities
- Maximum discharge power, regardless of the charge of the material
- Highest ion output amongst competitors

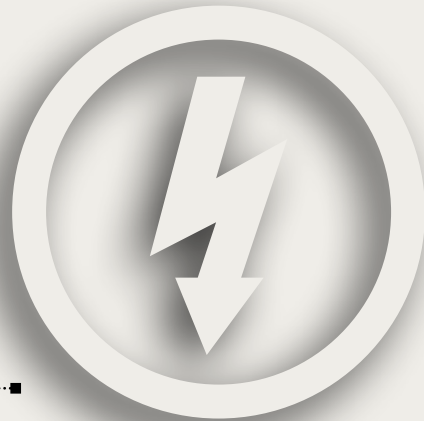
The discharging method optimally supports your processes compared to other commercially available methods. The process ensures a simultaneous and continuous ion supply of both polarities. This is independent of material properties or process speed. Thus, you are able to achieve the best possible results without the use of expensive measuring and control technology. This is because the required positive and negative ions are made available for discharging at all times without subsequent intervention on the material.

DISCHARGING



The driving force for your discharge.

Power Supply.....■



The high-voltage generators provide the electrical supply for all KERSTEN discharging components.

At Kersten, you will find the most compact and most efficient high-voltage generator for electrostatic discharge in its class.

If you need high-voltage generators for large installations, you will find the right solution at Kersten – compact and expansion possibility via the high-voltage distributor.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Plug-in system
- Easy assembly
- Installation in tight spaces
- Flexible expansion options
- Suitable for various application areas
- No EMC problems
- Minimal maintenance / Maintenance free

GENERAL NOTICE

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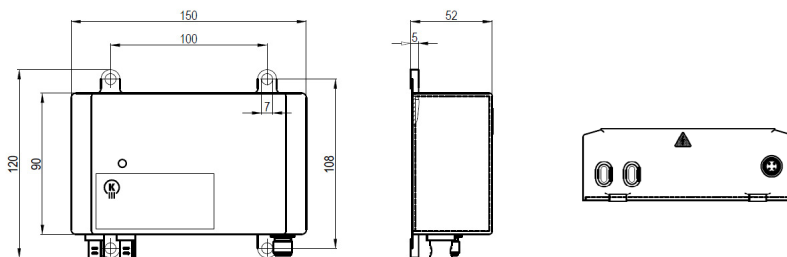


Find further information related to product category at
www.kersten.de/en

DG 209

The driving force for your discharge. The high voltage generators provide the electrical supply for all KERSTEN discharging components.
Error information for generator and components included.

- Bipolar DC High Voltage
- Compact Design
- Plug-in system
- Highest output of ions

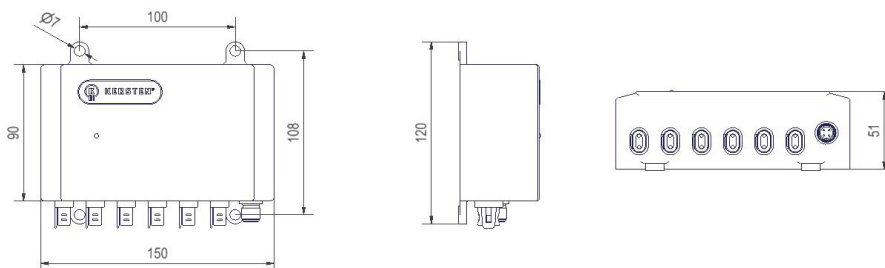


All dimensions in mm.

DG 309

The driving force for your discharge. The high-voltage generators provide the electrical supply for all KERSTEN discharging components.
Error information for generator and components is included.

- Bipolar DC High Voltage
- Compact Design
- Plug-in v
- Highest output of ions
- 6 high voltage slots

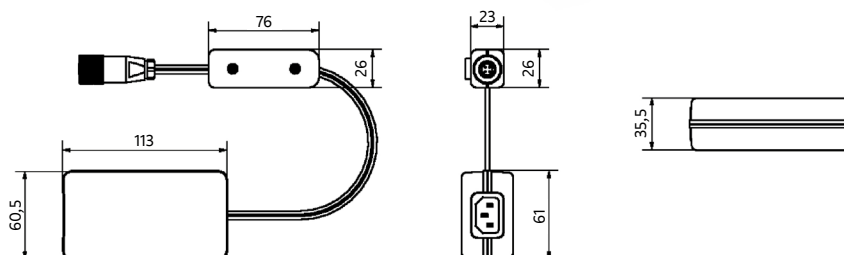


All dimensions in mm.

AN 112

The power supply unit AN 112 is used to supply the discharging generator. The power supply unit has a switch where the connected generator can be turned on or off.

- Use in the absence of 24 V DC
- Supply voltage 115/230 V AC 50/60 Hz

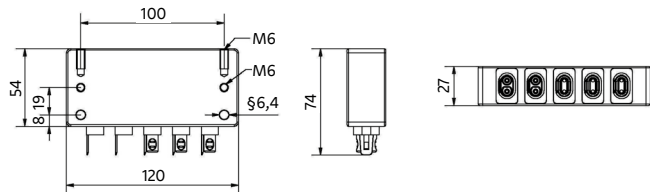
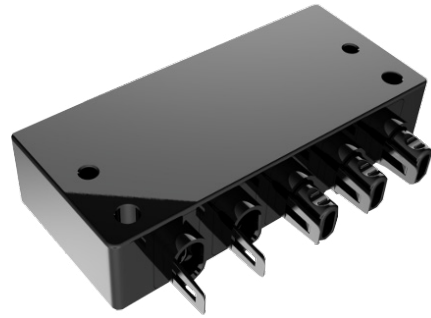


All dimensions in mm.

DV 109

DV 109 serves as a link between the generator and discharge components. The system can be expanded due to its additional slots.

- Additional sockets
- Compact design
- Plug-in system

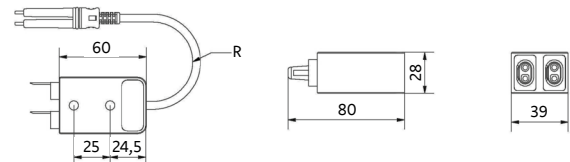
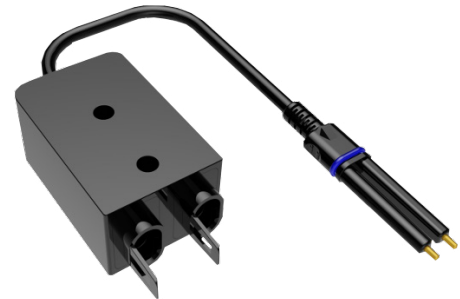


All dimensions in mm.

DV 209

System with flexibility: The DV 209 high voltage distributor is the little brother of the DV 109, offering you the option of extending your existing discharge system by a further member of the KERSTEN neXt® product family.

- Passive high voltage distributor
- Additional sockets
- Plug-in system



All dimensions in mm.



POWER SUPPLY

Electrostatic solutions | POWER SUPPLY

TECHNICAL DATA		DG 209	DG 309	DV 109	DV 209	HIGH VOLTAGE DISTRIBUTOR
Max. Output Voltage	kV DC	<+9,0/>-9,0	<+9,0/>-9,0	<+9,0/>-9,0	<+9,0/>-9,0	<+9,0/>-9,0
Supply Voltage	V DC	24 +- 10%	24 +- 10%			
Max. active Power	W	56	56			
Number of high voltage Slots	Stk.	2	6	5 1x Power Supply 4x Component Slots	2	1
Type of Protection		IP 54	IP 54	IP 54	IP 54	IP 54

GENERAL ACCESSORIES

■ Measuring Instruments:

Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application

- Electrostatic field meter
- Digital multimeter
- High voltage probe

■ Pneumatic Supply:

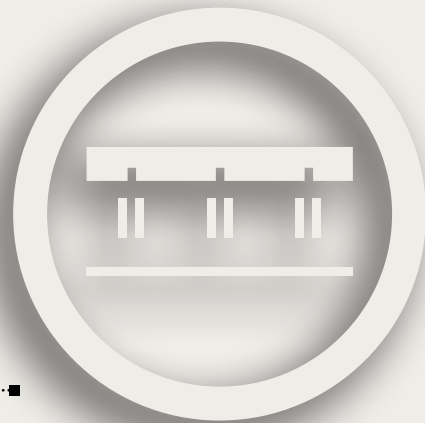
The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.

- Compressor
- Air fittings



Small product,
big effect.

Electrodes



The discharge electrodes by KERSTEN are the core component in order to control and neutralise electrostatic charges.

Kersten offers, for example, an extremely compact discharging electrode with the world's smallest electrode cross-section.

Furthermore, you will find products for universal use or for specialized applications, such as: an adjustable air duct, a flush mounted structure or longer unsupported lengths.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Durable and robust due to GFRP
- Minimal maintenance / Maintenance free
- Safe to touch
- Continuous flow of ions

LEGEND

H = Heat resistant

L = with air support (fixed / adjustable)

GENERAL NOTICE

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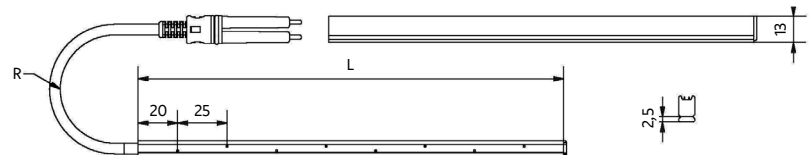


Find further information related to product category at
www.kersten.de/en

DE 109

The smallest from the house of KERSTEN. Through the electrode's extremely slim design and because it has the smallest cross section on the market, the DE 109 is suited for the smallest of application spaces.

- Safe to touch
- Smallest electrode cross-section on the market
- Vacuum casted
- Customizable to the centimetre
- Installation in the smallest spaces
- Long lasting and durable through the use of GRP and HV needles made of tungsten
- Minimal maintenance effort

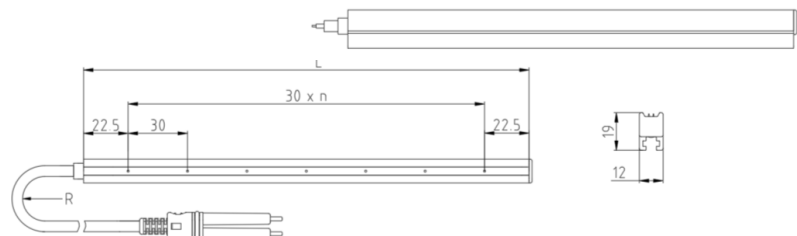
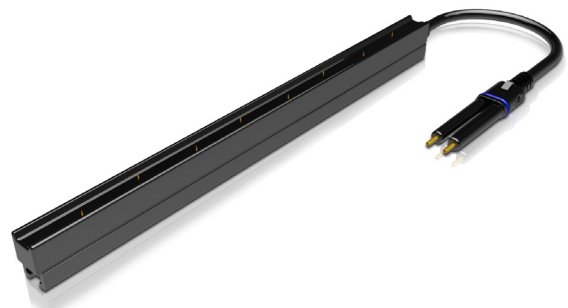


All dimensions in mm.

DE 209 (L) (H)

Our most popular discharging electrode. DE 209 ensures the effective elimination of existing static charge on different materials and optimizes your process.

- Safe to touch
- Small electrode cross-section
- Vacuum casted
- Customizable to the centimetre
- Long lasting and durable through the use of GRP and HV needles made of tungsten
- Minimal maintenance effort
- Plug-in system

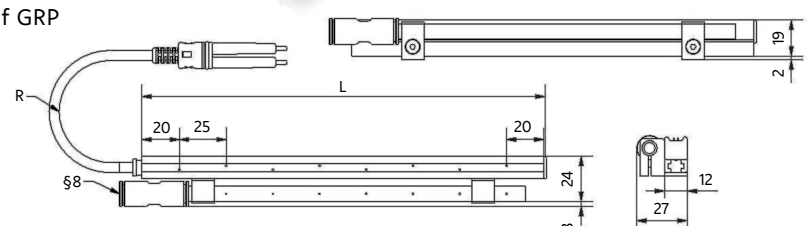


All dimensions in mm.

DE 219 L

The DE 219 L with adjustable exit angle of the air support ensures the effective elimination of existing static charge over longer ranges and is able to achieve an additional cleaning effect.

- Safe to touch
- Small electrode cross-section
- Adjustable exit angle of the air support
- Customizable to the centimetre
- Long lasting and durable through the use of GRP and HV needles made of tungsten
- Minimal maintenance effort
- Plug-in system



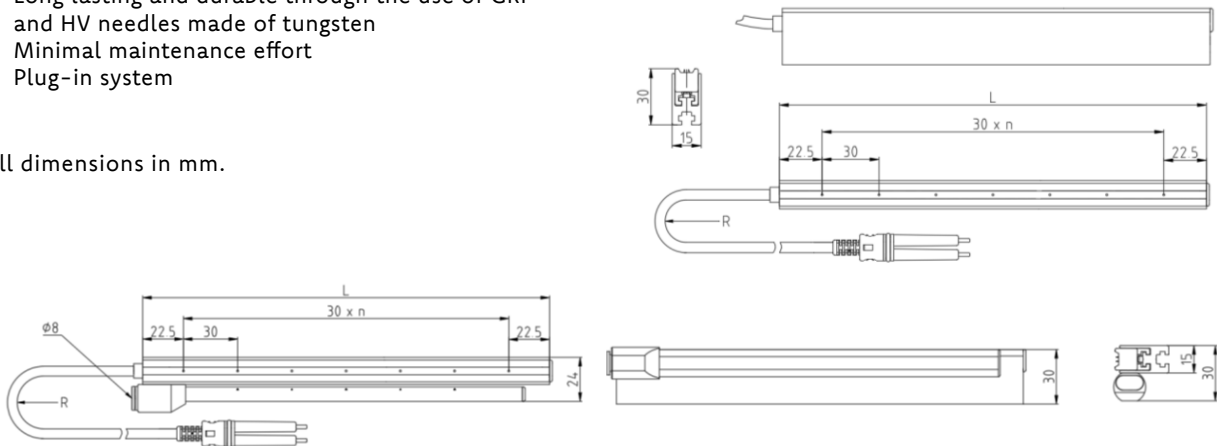
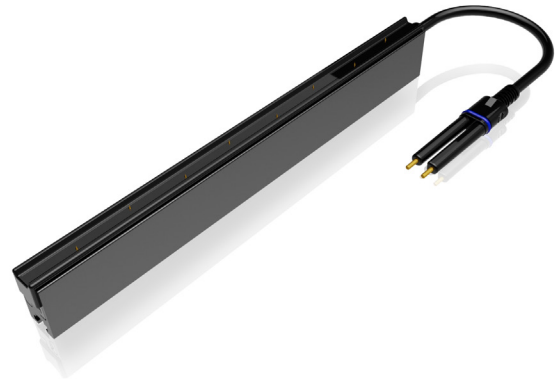
All dimensions in mm.

DE 409 (L)

The DE 409 (L) discharge electrode is a highly stable universal electrode for a variety of applications. It is used for surface discharging a variety of materials. The mechanically stable aluminium profile design renders it suitable for longer self-supporting distances.

- Safe to touch
- Longlife product
- Vacuum casted
- Customizable to individual lengths
- Long lasting and durable through the use of GRP and HV needles made of tungsten
- Minimal maintenance effort
- Plug-in system

All dimensions in mm.



TECHNICAL DATA		DE 109	DE 209	DE 209 H	DE 209 L	DE 219 L	DE 409	DE 409 L
Available total lengths	mm	80-860*	80-3050*	80-3050*	80-3050*	80-3050*	1010-4010*	1010-4010*
Supply Voltage	kV DC	<+9,0/>- 9,0	<+9,0/>- 9,0	<+9,0/>- 9,0	<+9,0/>- 9,0	<+9,0/>- 9,0	<+9,0/>- 9,0	<+9,0/>- 9,0
Max. effectivedistance at max. outputvoltage**	mm	380	380	380	1000	1000	380	1000
Gridwidth(tipdistance)	mm	30	30	30	30	30	30	30
Needle material		Tungsten	Tungsten	Tungsten	Tungsten	Tungsten	Tungsten	Tungsten
Air consumption (1m) at 0.2 to 1.0 bar	m3/h				4,2-20,5	4,2-20,5		4,2-20,5
Minimum distance (operating direction)	mm	30	30	30	30	30	30	30
Minimum distance (lateral)	mm	40	40	40	40	40	40	40
Exterior material		GFK	GFK	GFK	GFK	GFK	GFK	GFK

* Active length = Available total lengths -45mm

** slow process

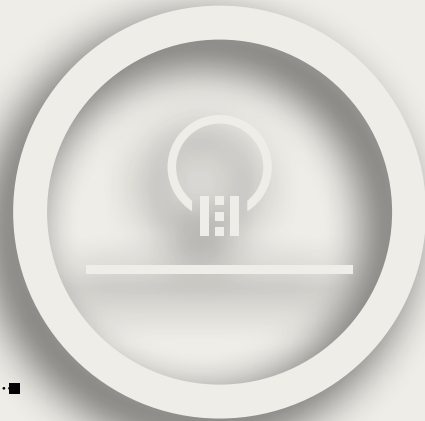
GENERAL ACCESSORIES

- Measuring Instruments:
Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application
 - Electrostatic field meter
 - Digital multimeter
 - High voltage probe
- Pneumatic Supply:
The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.
 - Compressor
 - Air fittings



Brings air
to the point.

Nozzles



*The discharge nozzles can be installed to pinpoint precision.
It can also be used to replace existing nozzles without ionisation.*

Nozzles from Kersten can, for example: connect with existing articulated hose systems, are suitable for use in confined spaces, can be integrated into existing systems. You can also increase the nozzle operation via additional compressed air.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Plug-in system
- Easy assembly
- Installation in tight spaces
- Suitable for various application areas
- No EMC problems
- Minimal maintenance / Maintenance free
- Suitable for your compressed air supply
- Continuous flow of ions

GENERAL NOTICE

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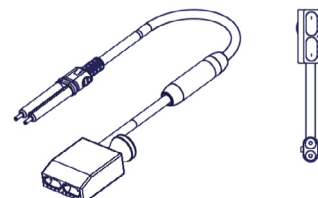
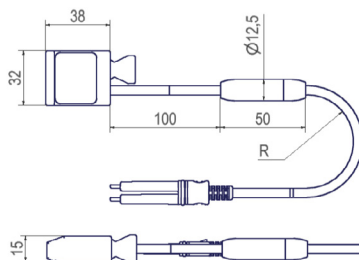


Find further information related to product category at
www.kersten.de/en

DD 109 (A)

The DD 109 discharge nozzles in the neXt® product family are designed to fit existing ball heads of 1/4" Ariana articulated hoses. This means that you may, for instance, extend your existing articulated hose system by adding deionising functionality.

- Compact design
- Improvement of processes
- Continuous flow of ions
- Easy to install
- Suitable for your compressed air supply
- Maintenance free

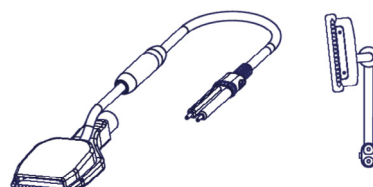
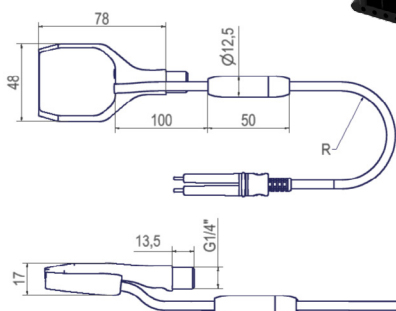


All dimensions in mm.

DD 209 (A)

The DD 209 and DD 209 (A) discharging nozzles are flow-optimised. A greater electrostatic discharge reach and cleaning effect on the material to be discharged may be achieved with the additional support of compressed air. Air connection is provided via a G1/4" female thread.

- Compact design
- Improvement of processes
- Continuous flow of ions
- Easy to install
- Suitable for your compressed air supply
- Maintenance free

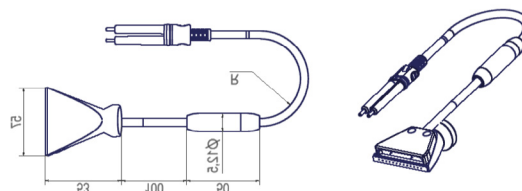
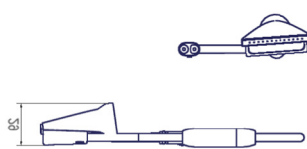


All dimensions in mm.

DD 229

The DD 209 and DD 209 (A) discharging nozzles are flow-optimised. A greater electrostatic discharge reach and cleaning effect on the material to be discharged may be achieved with the additional support of compressed air. Air connection is provided via a G1/4" female thread.

- Compact design
- Improvement of processes
- Continuous flow of ions
- Easy to install
- Suitable for your compressed air supply
- Maintenance free



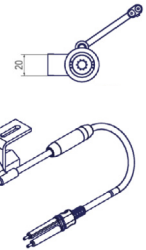
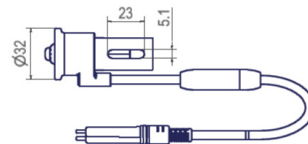
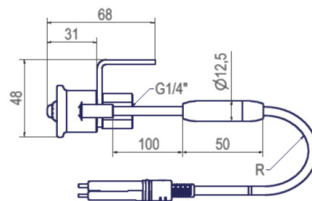
All dimensions in mm.

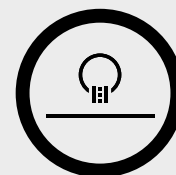
DD 409 (A)

The discharging nozzle DD 409 has a compact design as well as an air outlet that is focused to a point. It has optimized flow as well as having low-noise. The DD 409 optimally discharges all materials with high efficiency, even with low pressure. Air connection is provided by an existing internal thread of G1/4".

- Flow-optimised
- Compact design
- Improvement of processes
- Continuous flow of ions
- Low noise
- Easy to install
- Suitable for your compressed air supply
- Maintenance free

All dimensions in mm.





NOZZLES

TECHNICAL DATA		DD 109	DD 119	DD 129	DD 209	DD229
Supply Voltage	kV DC	<+9,0/>-9,0	<+9,0/>-9,0	<+9,0/>-9,0	<+9,0/>-9,0	<+9,0/>-9,0
Max. effective distance at max. output voltage*	mm	1000	1000	1000	1000	1000
Needle material		Tungsten	Tungsten	Tungsten	Tungsten	Tungsten
Air supply (oil, water and dust free)	bar	0,5-2,5	0,5-2,5	0,5-2,5	0,5-2,5	0,5-2,5
Minimum distance (operating direction)	mm	30	30	30	30	30
Minimum distance (lateral)	mm	40	40	40	40	40

TECHNICAL DATA		DD309	DD 419	DD 509	DD 606
Supply Voltage	kV DC	<+9,0/>-9,0	<+9,0/>-9,0	<+9,0/>-9,0	<+5,0/>-4,0
Max. effective distance at max. output voltage*	mm	1000	1000	1000	1000
Needle material		Tungsten	Tungsten	Tungsten	Tungsten
Air supply (oil, water and dust free)	bar	0,5-2,5	0,5-2,5	0,5-2,5	0,5-2,5
Minimum distance (operating direction)	mm	30	30	30	30
Minimum distance (lateral)	mm	40	40	40	40

GENERAL ACCESSORIES

■ Measuring Instruments:

Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application

- Electrostatic field meter
- Digital multimeter
- High voltage probe

■ Pneumatic Supply:

The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.

- Compressor
- Air fittings



Point-precise and clever.

Heads



The discharging heads can be installed to pinpoint precision and can also be combined with existing nozzles without ionisation.

The heads can be used for the discharge of various materials. Due to their compact design, they can also be used in small spaces and can also be affixed onto articulated hoses or flat nozzles using a variety of mounts.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Plug-in system
- Easy assembly
- Installation in tight spaces
- Suitable for various application areas
- No EMC problems
- Minimal maintenance / Maintenance free
- Suitable for your compressed air supply
- Continuous flow of ions

GENERAL NOTICE

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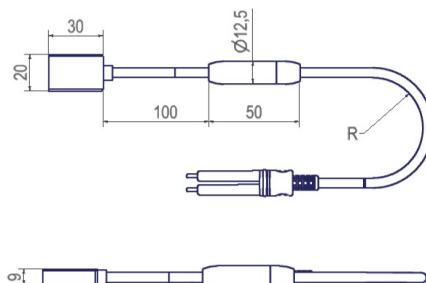


Find further information related to product category at
www.kersten.de/en

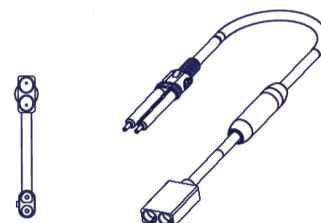
DK 109

The discharging head DK 109 ensures the elimination of electrostatic charges on a wide variety of materials. DK 109 distinguishes itself through its high discharge capacity, variable positioning, and slim construction depth.

- Compact design
- Bipolar DC High Voltage
- Continuous flow of ions
- Excellent cleaning results
- Improvement of processes



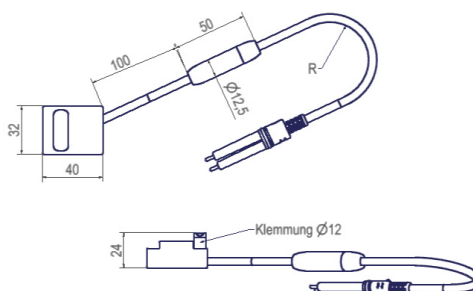
All dimensions in mm.



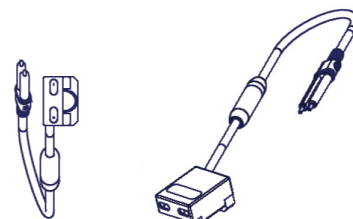
DK 209

Discharging head DK 209 of the KERSTEN neXt® product family eliminates electrostatic charges on a wide variety of materials. Through the clamp mounting, the DK 209 can be affixed onto a tube with a diameter of up to 12mm.

- Compact design
- Bipolar DC High Voltage
- Continuous flow of ions
- Excellent cleaning results



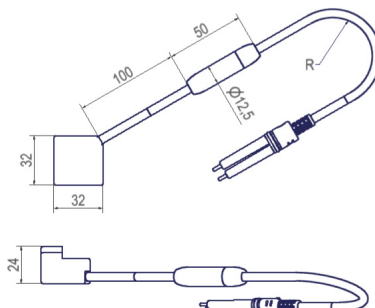
All dimensions in mm.



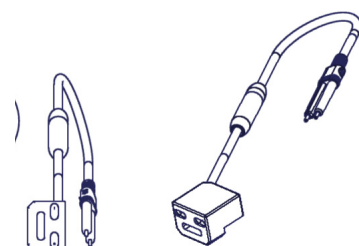
DK 219

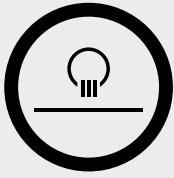
Discharging head DK 219 eliminates electrostatic charges on a wide variety of materials. Through the clamp mounting, the DK 209 can be affixed onto a tube with a diameter of up to 12mm.

- Compact design
- Bipolar DC High Voltage
- Continuous flow of ions
- Excellent cleaning results



All dimensions in mm.





HEADS

TECHNICAL DATA		DK 109	DK 209	DK 219	DK 409
Supply Voltage	kV DC	<+9,0/>-9,0	<+9,0/>-9,0	<+9,0/>-9,0	<+9,0/>-9,0
Max. effective distance at max. output voltage*	mm	380	380	380	380
Combined with Nozzle (Client)			1000	1000	1000
Needle material		Tungsten	Tungsten	Tungsten	Tungsten
Minimum distance (operating direction)	mm	30	30	30	30
Minimum distance (lateral)	mm	40	40	40	40

* slow process

GENERAL ACCESSORIES

■ Measuring Instruments:

Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application

- Electrostatic field meter
- Digital multimeter
- High voltage probe

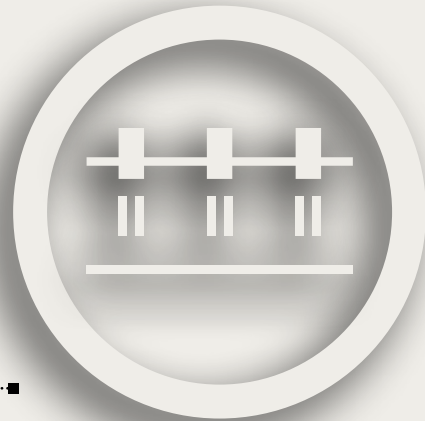
■ Pneumatic Supply:

The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.

- Compressor
- Air fittings



Individuality in the ranks.



Rows

The Kersten discharge lines offer a variety of combinations.

The Kersten neXt® discharging rows offer you many benefits through their flexible adjustment options. They can be used, for example, in air-assisted separation of materials and can be used flexibly.

Furthermore, you will also find a Kersten discharging row for discharging and cleaning hollow parts such as PET bottle blanks.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Minimal maintenance / Maintenance free
- Suitable for your compressed air supply
- Continuous flow of ions
- Individual configurations possible

GENERAL NOTICE

Custom-made products and customer-specific adaptations are possible at any time if necessary.

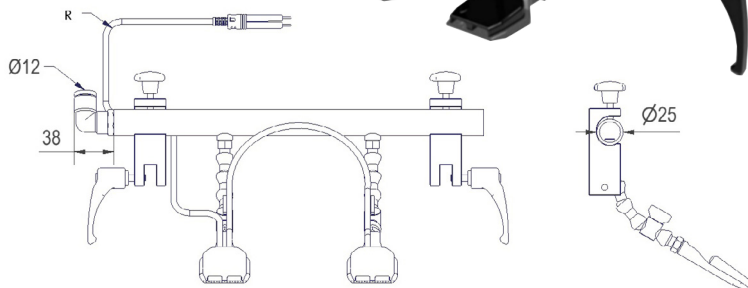
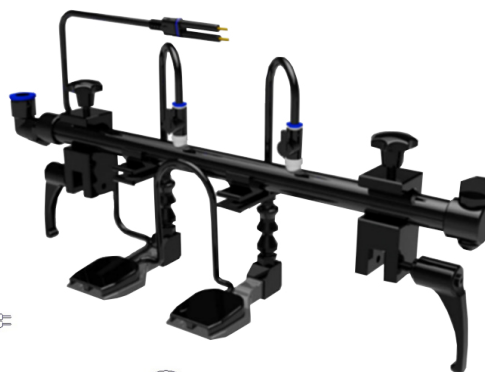


Find further information related to product category at
www.kersten.de/en

DR 209

The DR 209 discharge row offers air supported separation of materials, such as sheets in offset printing. The discharge row comprises several discharge nozzles mounted to slide on a carrier pipe. The air supply is centrally adjustable by the operator and each nozzle is also individually adjustable.

- Variable adjustment options
- Multiple air flow customization options
- Suited for very fast processes
- Example: Assures smooth sheet run



All dimensions in mm.

GENERAL ACCESSORIES

■ Measuring Instruments:

Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application

- Electrostatic field meter
- Digital multimeter
- High voltage probe

■ Pneumatic Supply:

The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.

- Compressor
- Air fittings



Discharging
with accuracy.

Discharging Pistol



The discharging guns are ideally suited for the discharge of substrates and for blowing off dirt. They are distinguished by their high efficiency, even at low pressure.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Suitable for various application areas
- No EMC problems
- Minimal maintenance / Maintenance free
- Suitable for your compressed air supply
- Continuous flow of ions
- Plug-in system

GENERAL NOTICE

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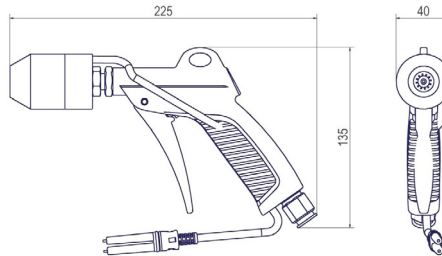
Find further information related to product category at
www.kersten.de/en

DP 106

The new discharging pistol from KERSTEN.
The DP 106 is best suited for mobile and flexible use on diverse material and surfaces at your site.

- Excellent cleaning results
- Safe to touch
- Easy to use
- Plug-in system
- Suitable for a wide range of applications
- Fits to your compressed air supply
- Easy to install
- Continuous flow of ions
- Requires individual power supply

All dimensions in mm.



TECHNICAL DATA

DP 106

Output Voltage *	kV DC	<+5,0/>-5,0
Max. effective distance at max. output voltage*	mm	1000
Needle material		Tungsten
Numbers of Needles	St.	8
Type of Protection	IP	54

*Power Supply: Product-specific generator

GENERAL ACCESSORIES

- **Measuring Instruments:**
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 - Electrostatic field meter
 - Digital multimeter
 - High voltage probe
- **Pneumatic Supply:**
The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.
 - Compressor
 - Air fittings





THE PRODUCT

The long range electrode enables optimum discharge performance from 300 mm to 1300 mm. Automatic control, integrated distancesensor, and external operability are standard features.

PRODUCT BENEFITS

- Automatic regulation and external control
- Tungsten needles
- Suitable for all long range applications

CUSTOMER BENEFITS

- Plug-in system
- Longlife product
- Minimal maintenance effort
- Easy to install

WHY KERSTEN?

- Made in Germany for over 40 years
- Needs-based consultation
- Tailor-made solutions
- Very short delivery times

TECHNICAL DATA

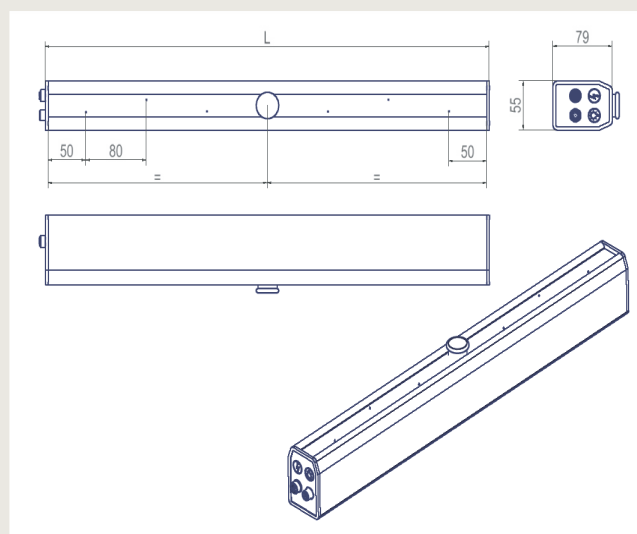
DE 1025

GENERALS			
Supply voltage	U_N	V DC	24 ± 20
Output voltage (pulsed)	U_a	kV DC	± 25
Internal protection	I	A	3.0
Maximum active power	P_W	W	48
Maximum operating current	I_B	A	2.0
Grid width (tip distance)		mm	80
Available lengths(grid width)	L	mm	500 - 1940* (160)
DETAILS			
Effective distance		mm	300 - 1300
Minimum distance to metal surfaces (lateral / operating direction)		mm	50 / 50
External release			potential-free contact
Pulse frequency	f	Hz	0.5 - 10
Modbus TCP/IP	DTR	Mbits/s	100
Ethernet 10/100 Base TX	DTR	Mbits/s	100
Type of protection	IP		65
CLIMATIC CONDITIONS			
Temperature during transport and storage	T	°C / °F	-25- +85 / -13- +185**
Temperature during operation	T	°C / °F	+5- +40 / +41- +104***
Relative humidity	RH		<80
DIMENSIONS			
	L/W/H	mm	L / 55 / 79

*active length = total length -100mm **acc. UL50 TypB / class 3K3

TECHNICAL DRAWING

All dimension
measurements in mm





THE PRODUCT

The function tester KERSTPEN can be used for contactless testing of all KERSTEN discharge components up to $\pm 25\text{KV}$.

The successful measurement is indicated by an optical signal.

PRODUCT BENEFITS

- contactless
- portable
- for all KERSTEN discharging components up to 25KV .

WHY KERSTEN?

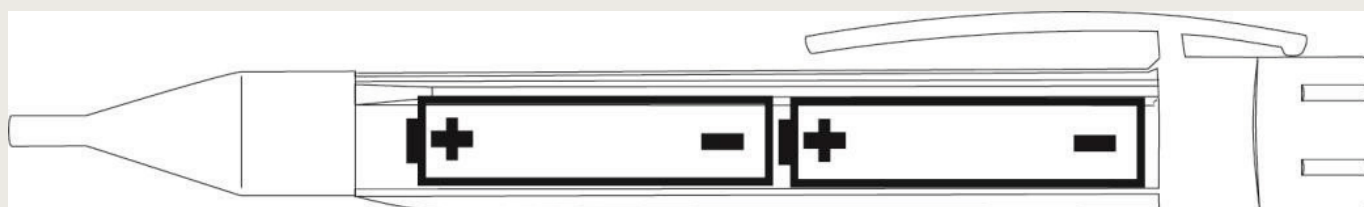
- Made in Germany for over 40 years
- Needs-based consultation
- Tailor-made solutions
- Fast delivery

TECHNICAL DATA

AM 601

GENERAL		
Voltage range	V AC	230-1000
Sensitivity		shines red by 4mm /230 V AC
Power	2x 1,5V	AAA Batteries
Altitude	M	<2000
DETAILS		
Over-Voltage		CAT III 1000V
Protection		IP 64
Weight		40g (ncluding batteries)
CLIMATIC CONDITIONS		
Conditions	°C	-20 - +50
Operating Temperature	°C	-20 - +50
DIMENSIONS		
	L / Ø	148mm / max. 17mm

TECHNICAL DRAWING



Did you know that the KERSTEN hotline is operated by qualified employees at the Freiburg site?



Did you know that for every
KERSTEN product that you order,
you will receive comprehensive
documentation?

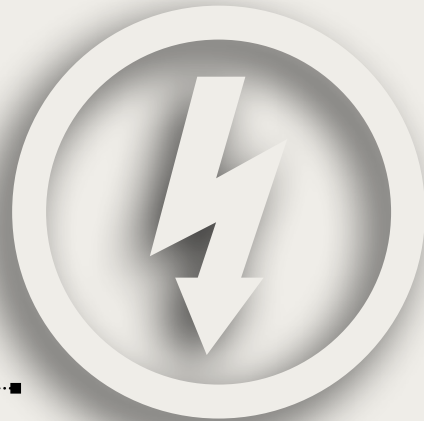


ATEX ZONES



The driving force for your discharge.

Power Supply.....■



The high-voltage generators and distributors provide the appropriate electrical supply for all Kersten discharging components.

At Kersten, you're able to find the most compact and most efficient high-voltage generator in its class for electrostatic discharge in ATEX (explosion protected) areas.

It can be used to supply all Kersten EX-discharging components. For large installations, the DG 306 (EX) with 6 high-voltage connections can be used in ATEX areas.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Plug-in system
- Easy assembly
- Installation in tight spaces
- Flexible expansion options
- Suitable for various application areas
- No EMC problems
- Minimal maintenance / Maintenance free

GENERAL NOTICE

Custom-made products and customer-specific adaptations are possible at any time if necessary.



Power supply components / generators must be installed outside the ATEX zones.

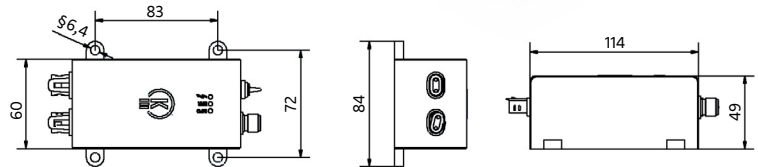


Find further information related to product category at
www.kersten.de/en

DG 106 (EX)

The DG 106 EX high voltage generator is one of the latest discharge generator in the KERSTEN neXt® product family and supplies all KERSTEN neXt® ATEX discharge assemblies. It is one of the most compact but also most powerful high voltage generator in its class for electrostatic discharging. Nevertheless, he provides a wide range of technical features.

- Bipolar DC High Voltage
- Compact Design
- Plug-in system
- Continuous flow of ions
- Error and cleaning indicator

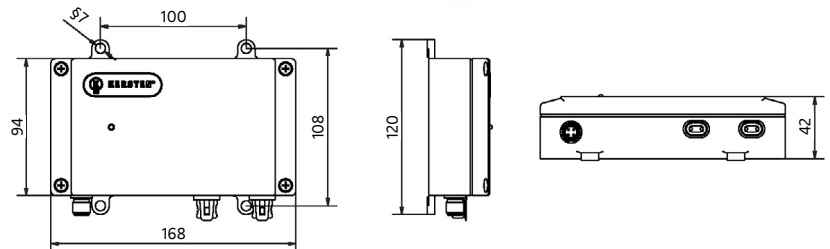


All dimensions in mm.

DG 206 (EX)

The driving force for your discharge. The high-voltage generators provide the electrical supply for all KERSTEN discharging components. With error display for generator and components.

- Bipolar DC High Voltage
- Compact Design
- Plug-in system
- Continuous flow of ions

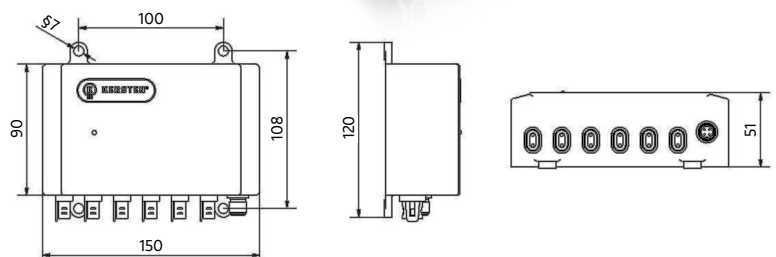


All dimensions in mm.

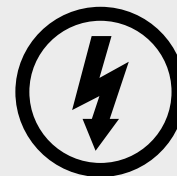
DG 306 (EX)

The discharging generator DG 306 (EX) is the power pack of the KERSTEN next product family and can be used to supply all the ATEX-discharging components. With its 6 High voltage connections he can easily manage every large installation, nevertheless it is very compact.

- 6 High-voltage Slots
- Error message and error display during short-circuit
- High-voltage is touch-safe
- Flexible expansion options
- DC Discharging for more power



All dimensions in mm.



POWER SUPPLY

TECHNICAL DATA			DG 106 EX	DG 206 EX	DG 306 EX
Supply Voltage	U_N	V DC	24+/-20%	24+/-20%	24+/-20%
Max. operating current	I_B	mA	630	630	630
Max. active power	P	W	15	15	15
Error output voltage	U_f	V DC	24+/-20%	24+/-20%	24+/-20%
Max. output voltage	U_A	kV DC	+3,8/-2,8	+3,8/-2,8	+3,8/-2,8
Max. output current	I_{max}	mA	0,9	0,9	0,9
Number of high-voltage slots			2	2	6
Weight	g		510	740	970

SUBJECTS TO TECHNICAL MODIFICATIONS.

GENERAL ACCESSORIES

■ Measuring Instruments:

Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application

- Electrostatic field meter
- Digital multimeter
- High voltage probe

■ Pneumatic Supply:

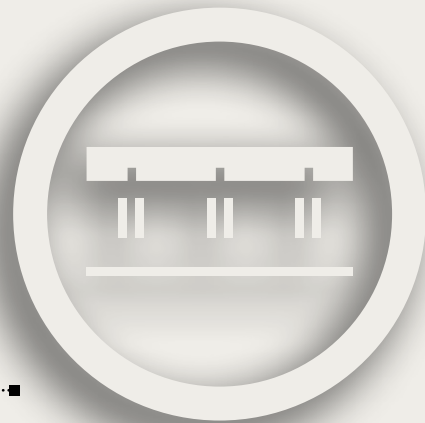
The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.

- Compressor
- Air fittings



Small product,
big effect.

Electrodes



Based on the proven discharging electrodes, you can also find electrodes for ATEX (explosion protected) areas which effectively eliminate existing charge on different materials. This will optimize your processes.

The electrodes for ATEX areas are also available with air-assistance, adjustable air canal and for longer unsupported lengths.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Durable and robust due to GFRP
- Minimal maintenance / Maintenance free
- Safe to touch
- Highest output of ions

LEGEND

H = Heat resistant
L = with air support (fixed / adjustable)

GENERAL NOTICE

Custom-made products and customer-specific adaptations are possible at any time if necessary.

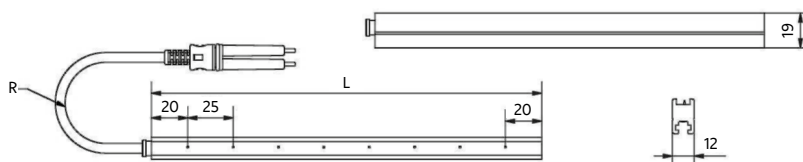
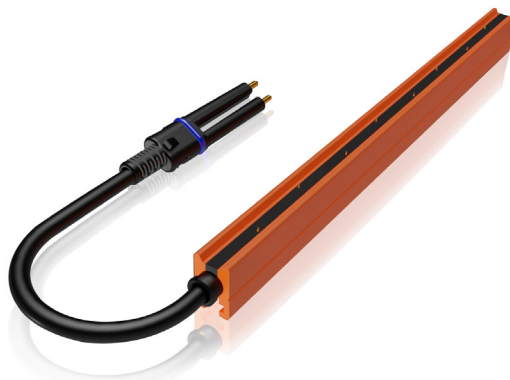


Find further information related to product category at
www.kersten.de/en

DE 206 (L) (H) Ex

Our discharging electrode for explosion-hazardous zones. Even in this environment, the DE 206 (EX) ensures the effective elimination of existing static charge on different materials and optimizes your processes.

- Safe to touch
- Smallest electrode cross-section on the market
- Vacuum casted
- Customizable to the centimetre
- ATEX approval acc. to Ex II (2) D 80°C and Ex II (2) G IIB T6
- Long lasting and durable through the use of GRP
- Minimal maintenance effort
- Plug-in system

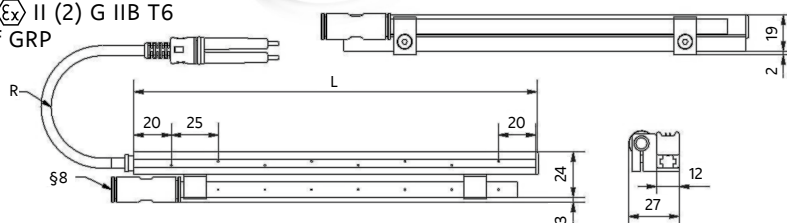


All dimensions in mm.

DE 216 L Ex

The DE 216 L KERSTEN neXt® discharge electrode is a universal electrode for ATEX zones and a variety of applications with supporting air. It is used for surface discharging a variety of materials.

- Safe to touch
- Small electrode cross-section
- Adjustable exit angle of the air support
- Customizable to the centimetre
- ATEX approval acc. to Ex II (2) D 80°C and Ex II (2) G IIB T6
- Long lasting and durable through the use of GRP
- Minimal maintenance effort
- Plug-in system

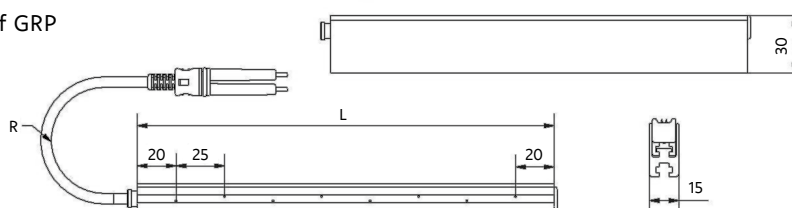


All dimensions in mm.

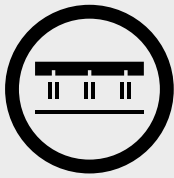
DE 406 (L) Ex

Our longest discharging electrode. The DE 406 ensures effective elimination of existing static charge at a length of up to 4 metres.

- Safe to touch
- Extremely stable due to aluminium profile
- Vacuum casted
- Customizable to the centimetre
- ATEX approval acc. to Ex II (2) D 80°C and Ex II (2) G IIB T6
- Customizable to individual lengths
- Long lasting and durable through the use of GRP
- Minimal maintenance effort
- Plug-in system



All dimensions in mm.



ELECTRODES

TECHNICAL DATA		DE 206 EX	DE 206 L EX	DE 216 L EX	DE 406 EX
Number of points		3-121	3-121	3-121	39-159
Total length	mm	90-3040	90-3040	90-1440	990-3990
Effective range					
- optimal	mm	40-60	40-100	40-100	40-60
- possible	mm	30-300	30-400	30-400	30-300
Air consumption per m length at 0,2 to 1,0bar	m ³ /h		4,2-13,5	4,2-13,5	
Outer material		GFK	GFK	GFK	ALU/ GFK

SUBJECTS TO TECHNICAL MODIFICATIONS.

GENERAL ACCESSORIES

■ Measuring Instruments:

Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application

- Electrostatic field meter
- Digital multimeter
- High voltage probe

■ Pneumatic Supply:

The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.

- Compressor
- Air fittings



Brings Air to the Point.

Nozzles



*The ATEX discharge nozzles can be installed to pinpoint precision.
Existing nozzles without ionization can be easily replaced with KERSTEN nozzles.*

Kersten nozzles for ATEX areas can be connected to existing articulated hose systems. In addition, you can also use them in confined spaces, increase nozzle operation with additional compressed air or integrate them into an existing system at a later time.

KERSTEN-PRODUKTE – IHR NUTZEN

- Plug-in system
- Easy assembly
- Installation in tight spaces
- Suitable for various application areas
- No EMC problems
- Minimal maintenance / Maintenance free
- Suitable for your compressed air supply
- Continuous flow of ions

GENERAL NOTICE

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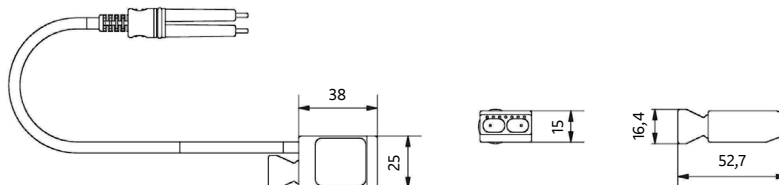


Find further information related to product category at
www.kersten.de/en

DD 106 (A) (EX)

The DD 106 (EX) discharge nozzles for ATEX zones in the neXt® product family are designed to fit existing ball heads of 1/4" Ariana articulated hoses. This means that you may, for instance, extend your existing articulated hose system by adding deionising functionality.

- Compact design
- Improvement of processes
- Continuous flow of ions
- Easy to install
- Suitable for your compressed air supply
- Maintenance free

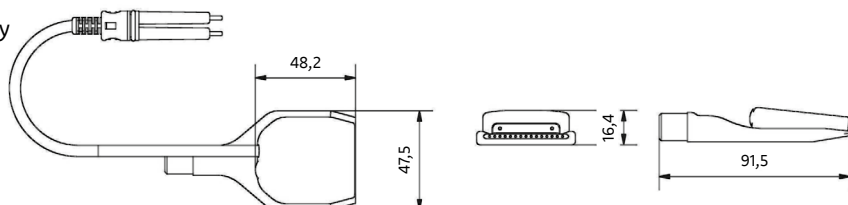


All dimensions in mm.

DD 206 (A) (EX)

The DD 206 (EX) and DD 206 (EX)(A) discharging nozzles for ATEX zones are flow-optimised. A greater electrostatic discharge reach and cleaning effect on the material to be discharged may be achieved with the additional support of compressed air. Air connection is provided via a G1/4" female thread.

- Compact design
- Improvement of processes
- Continuous flow of ions
- Easy to install
- Suitable for your compressed air supply
- Maintenance free

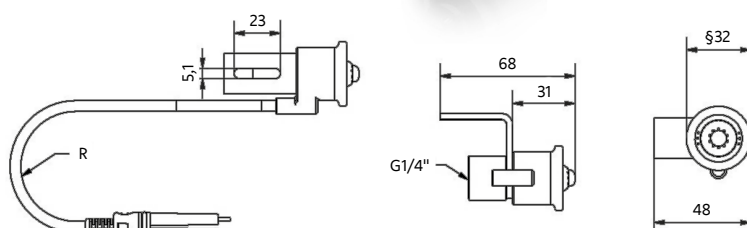


All dimensions in mm.

DD 406 (A) (EX)

The DD 406 (EX) and DD 406 (EX)(A) discharge nozzles for ATEX zones in the neXt® product family are characterised by their short design and a bundled circular air discharge. All materials are optimally discharged thanks to the flow-optimised and low-noise blow nozzle, even at low pressure.

- Flow-optimised
- Compact design
- Improvement of processes
- Continuous flow of ions
- Low noise
- Easy to install
- Suitable for your compressed air supply
- Maintenance free

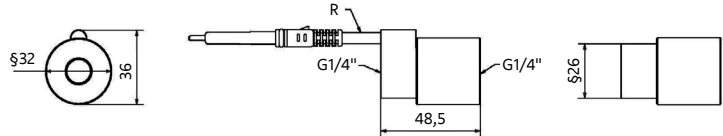


All dimensions in mm.

DD 606 (EX)

The DD 606 (EX) is used for plug-in integration.
The air connection may be customised using various adapters.
The air connection is provided via plug-in connectors.

- Compact design
- Improvement of processes
- Continuous flow of ions
- Variable connection options
- Easy to install
- Suitable for your compressed air supply
- Maintenance free



All dimensions in mm.

TECHNICAL DATA		DD 106 EX (A)	DD 206 EX (A)	DD 406 EX (A)	DD 606 EX
Number of needles		2	2	6	8
Articulated hose interior-Ø	mm	6,5	12,5	12,5	G 1/4
Effective range					
- optimal	mm	10-60	10-80	10-100	10-100
- possible	mm	10-100	10-150	10-300	10-1000
Air consumption per m length at 0,2 to 1,0bar	m ³ /h	2,3-5,7	3,5-8,4	3,0-7,3	3,7-9,5
Air supply (oil-, water-, dust-free)	bar	0,5-2,5	0,5-2,5	0,5-2,5	0,5-2,5

SUBJECTS TO TECHNICAL MODIFICATIONS.

GENERAL ACCESSORIES

- Measuring Instruments:
Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application
 - Electrostatic field meter
 - Digital multimeter
 - High voltage probe

- Pneumatic Supply:
The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.
 - Compressor
 - Air fittings



Point-precise and clever.

Heads



The ATEX discharging heads can be installed to pinpoint precision.

The heads can be used in ATEX areas for the discharging of various materials. In addition, they are also optimal for small spaces due to their compact profile, and can be affixed to articulated hoses or flat nozzles using various mounts.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Plug-in system
- Easy assembly
- Installation in tight spaces
- Suitable for various application areas
- No EMC problems
- Minimal maintenance / Maintenance free
- Suitable for your compressed air supply
- Continuous flow of ions

GENERAL NOTICE

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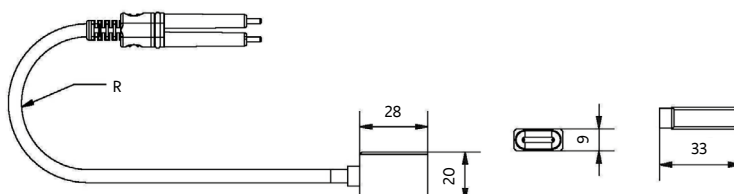


Find further information related to product category at
www.kersten.de/en

DK 106 (EX)

The DK 106 (EX) discharge head in the KERSTEN neXt® product family serves to eliminate electrostatic charge on a variety of materials in ATEX zones. It is generally used where a variable position is necessary in addition to high discharge performance. Its small design allows installation in confined spaces.

- ATEX approval acc. to Ex II (2) D 80°C and Ex II (2) G IIB T6
- Full power in the smallest space
- Flexible installation options

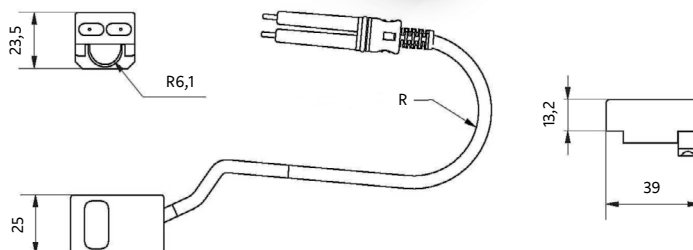


All dimensions in mm.

DK 206 (EX)

The discharging head DK 206 (EX) of the KERSTEN neXt® product family eliminates electrostatic charges on a wide variety of materials. Through the clamp mounting, the DK 206 (EX) can be affixed onto a tube with a diameter of up to 12mm.

- ATEX approval acc. to Ex II (2) D 80°C and Ex II (2) G IIB T6
- Full power in the smallest space
- Flexible installation options



All dimensions in mm.

GENERAL ACCESSORIES

■ Measuring Instruments:

Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application

- Electrostatic field meter
- Digital multimeter
- High voltage probe

■ Pneumatic Supply:

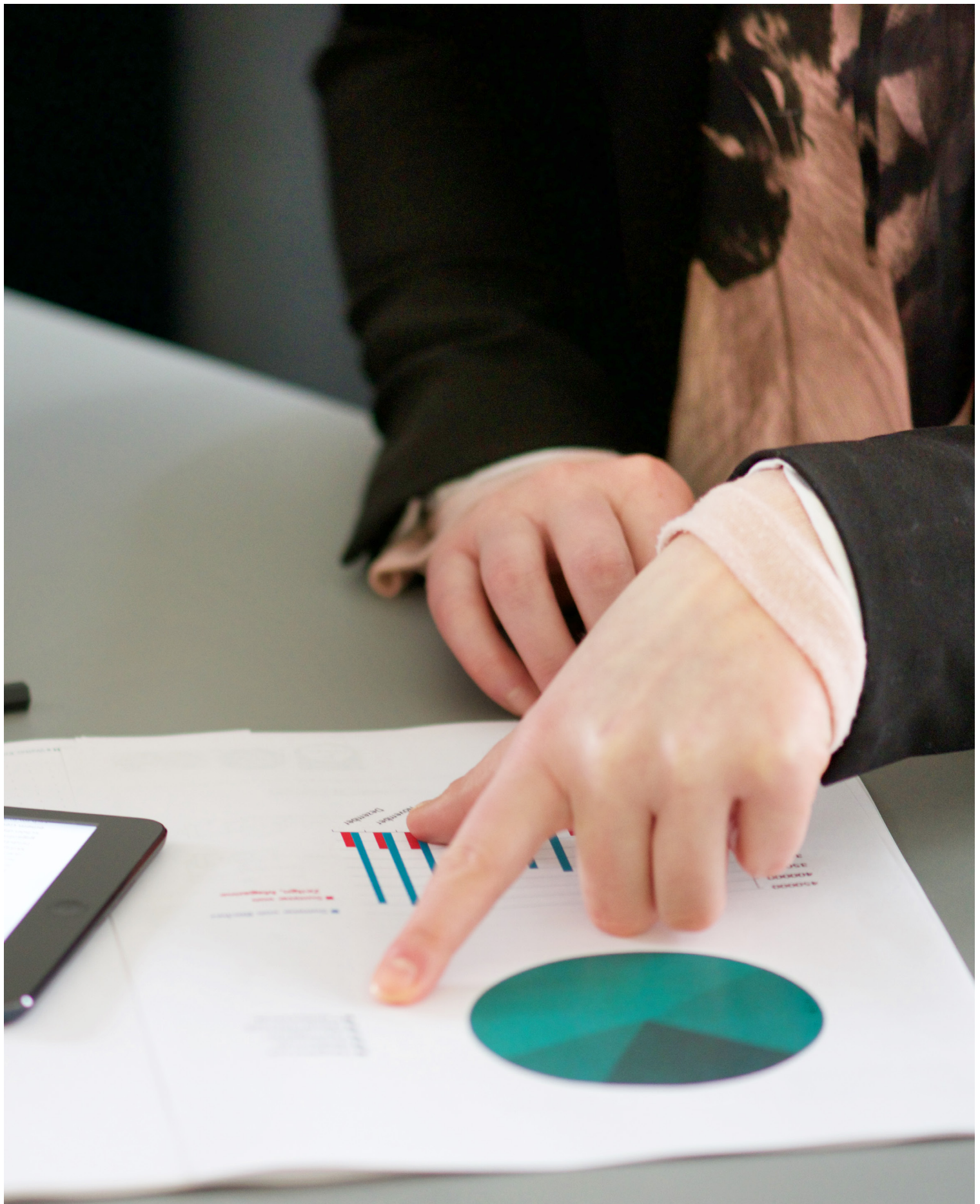
The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.

- Compressor
- Air fittings



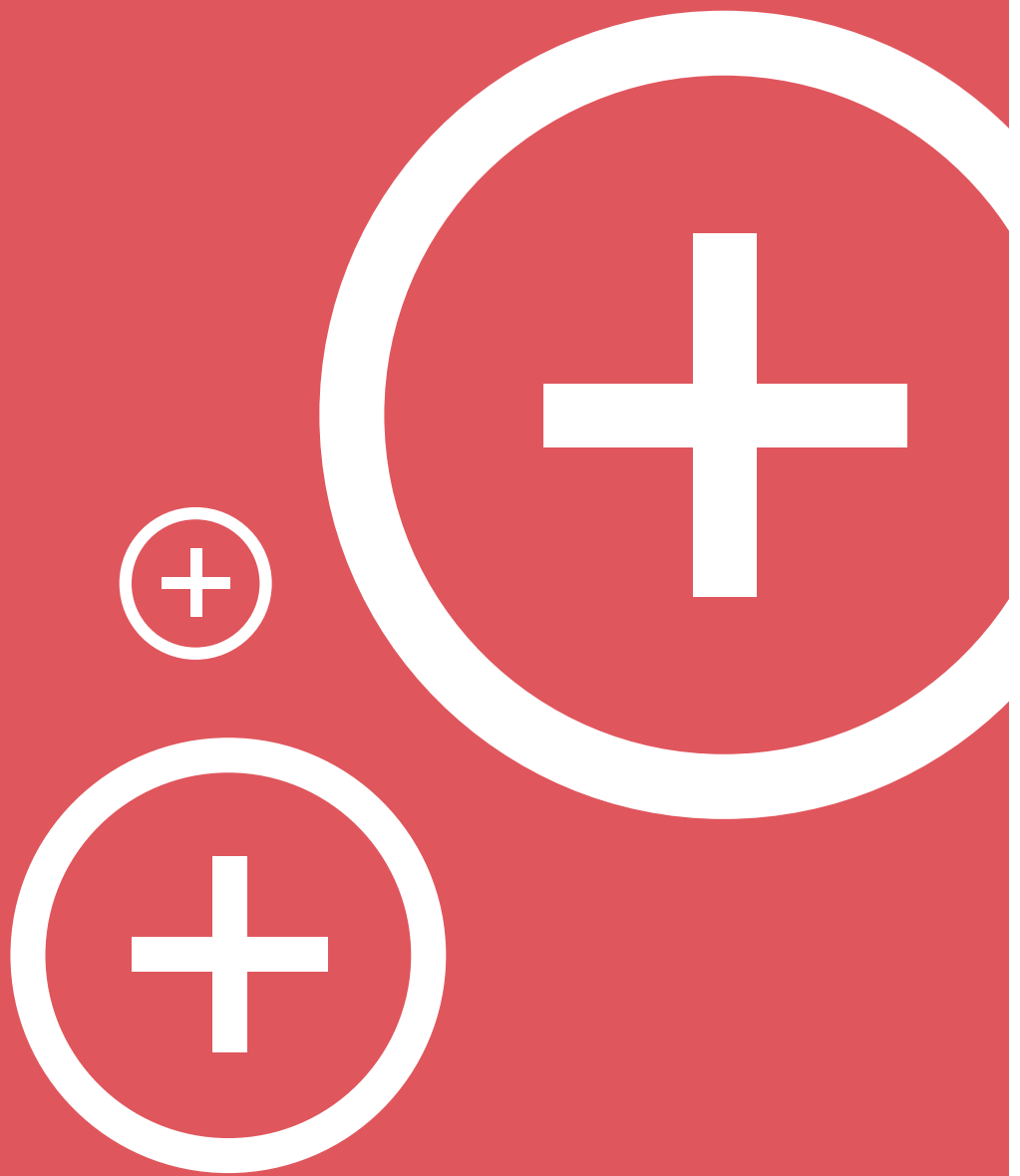
Did you know that a detailed, needs-based consultation is an important part of the Kersten Process?





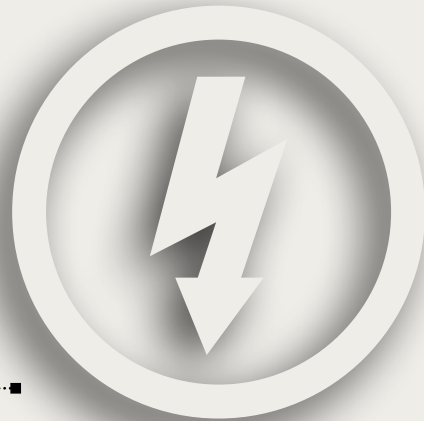
Did you know that at KERSTEN
we have our own in-house
Research & Development
department?

CHARGING



The driving force
for charging processes.

Power Supply.....■



The high-voltage generators provide the appropriate electrical supply with the necessary polarity for all Kersten charging components.

This holds true regardless of the world's varying mains voltage standards. Connect up to 4 charging components with the generators and get the benefits of charging without compromises.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Plug-in system
- Easy assembly
- Suitable for various application areas
- No EMC problems
- Minimal maintenance / Maintenance free
- Additional connectable discharging generator

GENERAL NOTICE

Custom-made products and customer-specific adaptations are possible at any time if necessary.

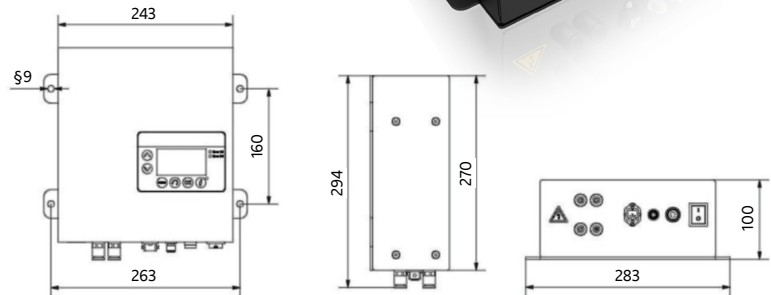
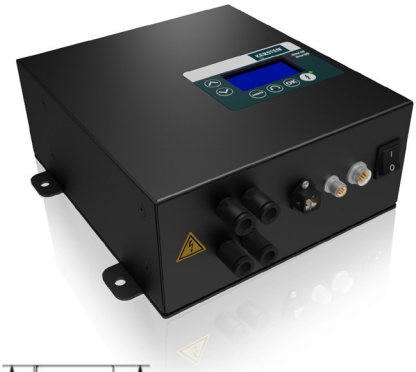


Find further information related to product category at
www.kersten.de/en

CG 102

The charging generator CG 102 optimally supplies every charging component of KERSTEN Electrostatik. It delivers a regulated (digital PID control) output voltage of maximum +25kV.

- Interface function
- Simple operation via keypad
- Additional supply of discharging generator
- Settings storable
- Connectable to control stand

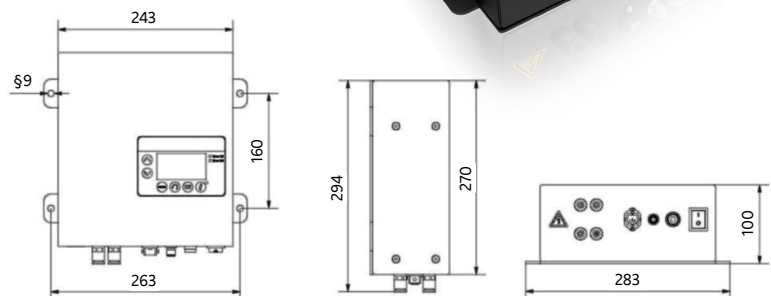


All dimensions in mm.

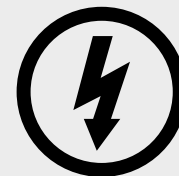
CG 202

The charging generator CG 202 optimally supplies every charging component of KERSTEN Electrostatik. It delivers a regulated (digital PID control) output voltage of maximum -25kV.

- Interface function
- Simple operation via keypad
- Additional supply of discharging generator
- Settings storable
- Connectable to control stand



All dimensions in mm.



POWER SUPPLY

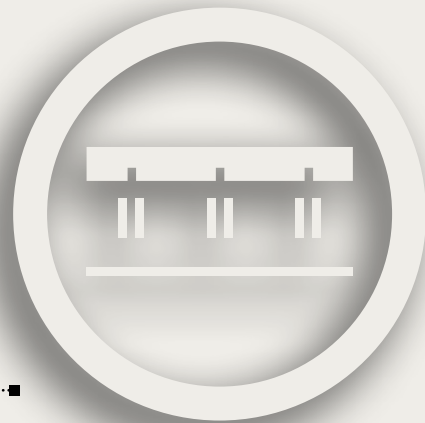
TECHNICAL DATA			CG 102	CG 202
Supply voltage	U_N	V DC	24 +- 10%	24 +- 10%
Internal protection	I	A	5.0	5.0
Max. operating current	I_B	A	4	4
Max. active power	P	W	65	65
INTERFACES				
External control	U_S / I_s	V DC	0-10 / 4-20	0-10 / 4-20
Return value output voltage	I_{Ua}	mA	4-20	4-20
- Max. load resistance	R_B	Ω	600	600
Return value output current	I_{Ia}	mA	4-20	4-20
- Max. load resistance	R_B	Ω	600	600
Output voltage CG 102 active	U_{ON}	V DC	24 +- 10%	24 +- 10%
- Max. supply current		A	0.5	0.5
Power supply discharging generator DG X06	U_B	V DC	24 +- 10%	24 +- 10%
- Max. supply current		A	0.5	0.5
INTERFACE ERRORS				
Voltage error output CG 102	U_F	V DC	24 +- 10%	24 +- 10%
- Max. supply current	I_V	A	0,5	0.5
Error output DG X06	U_F	V DC	24 +- 10%	24 +- 10%
- Max. supply current	I_V	A	0.5	0.5
Output voltage	U_A	KV DC	+2 - +25	-2 - -25
Max. output current	I_{max}	mA	2	2
Type of protection			IP 65	IP 65
Number of high-voltage slots			4	4
External release			potential-free contact	potential-free contact

SUBJECTS TO TECHNICAL MODIFICATIONS.



Small product,
big effect.

Electrodes



The KERSTEN charging electrodes are the key element in creating and applying targeted electrostatic charge. The required size and additional functions, like air support, are able to be adapted to your requirements.

The electrodes can be attached to any point and, therefore, can be used very precisely. The longevity of the electrodes makes them particularly suitable for long-term use.

KERSTEN-PRODUCTS – YOUR BENEFITS

- Durable and robust due to GFRP
- Minimal maintenance / Maintenance free
- Continuous flow of ions
- Customizable to the centimetre

LEGEND

L = with adjustable air support

GENERAL NOTICE

Custom-made products and customer-specific adaptations are possible at any time if necessary.

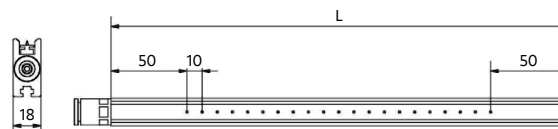
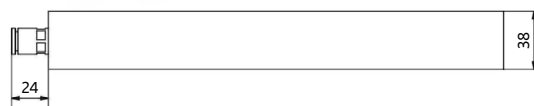
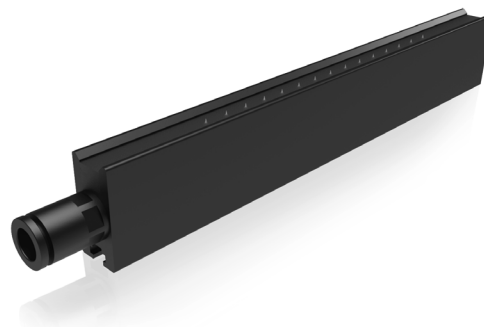


Find further information related to product category at
www.kersten.de/en

CE 103

Our new charging electrode. The charging electrode CE 103 consists of glass fibre reinforced plastic and is used for surface charging of a wide variety of materials.

- Minimal maintenance effort
- Plug-in system
- Continuous flow of ions

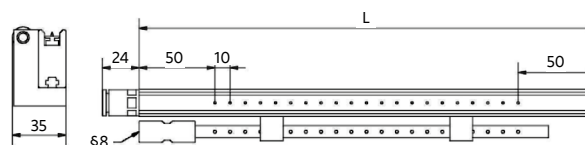


All dimensions in mm.

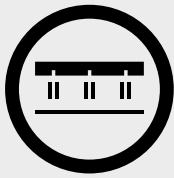
CE 103 L

Our new charging electrode. The charging electrode CE 103L (with air support) consists of glass fibre reinforced plastic and is used for surface charging of a wide variety of materials.

- Minimal maintenance effort
- Plug-in system
- Continuous flow of ions
- Suitable for your compressed air supply



All dimensions in mm.



ELECTRODES

GENERAL			CE 103	CE 103 L
Output Voltage	U_{\max}	kV DC	+ -30kV	+ -30kV
Grid with (tip distance)		mm	10	10
Minimum distance (lateral/ operating direction)				
- Lateral (max. voltage)	A_{\min}	mm	50	50
- In operating direction (max. voltage)	A_{\min}	mm	50	50
Minimum bend radius of cable (fixed installation)	R	mm	64	64
Air connection		mm		Ø 8
CLIMATIC CONDITIONS				
Temperature for transport and storage	T	°C	-25 - +85*	-25 - +85*
		°F	-13 - +185*	-13 - +185*
Temperature in operation	T	°C	+5 - +80**	+5 - +80**
		°F	+41 - +176**	+41 - +176**
Relative humidity (non-condensing)	RH	%	< 80	< 80
DIMENSIONS		L / B / H mm	L / 18 / 38	L / 35 / 52

*acc. UL50 TypB / class 3K3 max. +70 OC (+158 OF) **acc. UL50 TypB / class 3K3 max. +70 OC (+158 OF)

SUBJECTS TO TECHNICAL MODIFICATIONS.

GENERAL ACCESSORIES

- **Measuring Instruments:**
Securing process quality through checks is an important topic. With the measurement devices offered by KERSTEN, you're able to have your entire process under control. We will gladly create an offer for you with the right measurement devices for your application
 - Electrostatic field meter
 - Digital multimeter
 - High voltage probe

- **Pneumatic Supply:**
The pneumatic supply and distribution systems offered by KERSTEN allow you to enjoy the benefits of air-assisted electrostatic discharging even without your own house air supply.
 - Compressor
 - Air fittings



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