

The electrostatic toolbox for professionals – made in Germany

Eltex-Elektrostatik GmbH (Weil am Rhein, Germany) offers a wide range of state-of-the-art equipment for discharge applications in the converting industry

The objective that you want to attain by reducing or eliminating static electricity is not always the same. Sometimes you want to protect machine operators from electric shocks; sometimes your goal is to increase the output of the press, to prevent material from defects or being completely destroyed, or to prevent a spark that would trigger an explosion and thus present a hazard to employees and infrastructure.

Residual charges of 2000V after discharge are completely sufficient for some applications; for others, this value corresponds to the value before the discharge, and residual charges of just a few hundred volts are the goal. When discharging electronic components, residual charges are particularly tricky. An attempt is made to discharge down to as close to 0 volts as possible. The smaller the components become,



Installed flexION air discharging bar on the winder

the less space there is for insulating protective layers. As a result, the parts can sustain less

charging. In addition to the different purposes of the electrostatic discharge, the objects to be discharged are also different from each other. They differ in form, dimension, processing speed and environment. The gamut runs from the thin plastic film processed at maximum speed and the aforementioned small, sensitive electronic component being transported slowly on a belt to the machining of a plastic block, where only the milling machine is moving and not the plastic. Just as professionals in the workshop do not handle with a Swiss Army knife, but work with a suitable, reliable tool, Eltex recommends using the most suitable when using electrostatic products.

The best solution for each case (application)

When putting the “tools” together, Eltex does not blindly follow the trend of using discharging bars with integrated power supply. As tempting as it may be to supply an electrode using only a 24V connection without a high-voltage cable, and to install it in the press, this is not always the best solution. In addition to these kinds of integrated solutions, which are suitable for certain applications, Eltex increasingly offers solutions consisting of a separate power supply unit and individual electrodes. This AC technology, which some regard as antiquated, has a few critical advantages that Eltex relies on. For example, a homogeneous, dense ion cloud or low voltage is generated, which achieves an enormous range thanks to the new electrode technology of the Eltex flexION. Optional airflow through the ionisation tips can

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THE ELTEX TOOLBOX FOR THE CONVERTING INDUSTRY

In addition to the above-mentioned application for discharging at the winder, there are a lot more problems related to electrostatics in the converting industry. The high-end solution described above is not always required. Some applications require the smallest possible electrodes. Sometimes, even passive discharge will do. In many cases, one discharge point is enough. Sometimes it takes several on both sides. Occasionally, the existing 24V machine-side power supply is to be used for connections. Elsewhere, the 230V connection is required. The high-voltage cable is an obstacle in some cases. In others, it is not. In order to comply with the wide variety of requirements for an efficient and sustainable discharging product, Eltex offers multiple

components that, when put together in a modular fashion, provide the best solution. By means of targeted training and by sharing application expertise and technological know-how, Eltex ensures that customers can communicate with the so-called "eltEXPERTs" on equal footing to solve their discharge problems.

Discharging bar

Eltex flexION air – the air-supported discharging bar for larger distances. The patented AC discharging bar attains a very high passive discharge effect, even when the AC high voltage is low, thanks to its free-standing, air-supported spring tip. A small amount of air can be blown through the hollow spring tip to increase the range.

This is also used to continuously clean the emission tips/pins. The bar can be operated with and without air support.

Power supply unit

High-end discharge for maximum discharge performance: The POWER IONIZER high-performance discharge power supply unit stands out for its versatility. It boasts easy operation, an LED display for the visualisation of the current values and its integrated function and malfunction monitoring. The POWER IONIZER can be operated with the Eltex AC discharging bars, ion blower nozzles and ion blower pistols. Parameters with variable settings allow for minimum residual charges. Operation is possible as a standalone device or in a network.



Eltex toolbox (all electrodes)

Eltex flexION R60

POWER IONIZER power supply unit

further increase the range significantly. A minimal air flow as low as 1 bar is sufficient to allow the ions to reach the object being discharged, even in the proximity of grounded machine parts. This is particularly helpful for applications with varying distances, such as in the discharge on the winder.

One single POWER IONIZER (this is the name of the new Eltex power supply unit) can supply electrodes up to 5m long and up to 25m of cable (divided into any number of electrodes). The individual electrodes can be replaced without a problem in this arrangement. Compared to DC electrodes, they are significantly smaller, easy to install and even function at ambient temperatures up to 80°C. They have a passive discharge effect, which is by no means

negligible and ensures that high charging is dissipated even when the power supply unit is switched off. Due to the lack of a passive discharge effect, electrodes with an integrated power supply unit are much more sensitive to high charges and can be damaged if the distance from a web is too small, for example. Unlike electrodes operating with an integrated power supply, which also must be "disposed of" each time the electrode is replaced, the POWER IONIZER remains intact when electrodes are replaced. Offering a four-year warranty and a ten-year repair option, Eltex has selected a secure and sustainable solution for its POWER IONIZER. This applies to both the power supply unit and the electrodes, which, if cleaned appropriately, will work reliably for years thanks to low tip erosion. With the

introduction of the new POWER IONIZER, Eltex is bringing the benefits of AC technology into the world of Industry 4.0. The high-tech power supply unit is network-capable and can be integrated into various bus systems. A further highlight of the POWER IONIZER is its capability of approaching 0 volts as closely as possible and maintaining the +/- balance by modifying the parameters of voltage, frequency or ion balance. Which parameter will lead to success depends on the application. Paired with the flexION bar, this combination makes it possible, even at large distances, to reliably achieve residual charge targets that were previously not achieved in AC technology. ■

Image sources: Eltex