Meech

Operating Manual

Model 924S

Pulsed DC Ionising Bar

Contents

Introduction

The 924S ionising bar is designed to provide highly effective short-range ionisation using Pulsed DC Technology. It is particularly suited for use on wide-format digital printers. At 32mm high by 22mm wide, it's compact and lightweight size provides easy installation on the print head, offering reliable static control between every print pass.

The 924S pulsed DC bar provides ionisation through alternating positive and negative emitter pins. The emitter pins are resistively coupled to the high voltage pulsed DC source, rendering the emitters shockless to touch and will give many years of service.

The 924S is powered by the Hyperion 233v4 Pulsed DC Controller. They are designed to work together as a system, the output voltage, frequency and balance can all be adjusted to suit particularly difficult applications. The adjustable output voltage is particularly useful in very sensitive materials.

Unpacking and Inspection

The Model 924S DC Bar was carefully packed at the factory in a container designed to protect it from accidental damage. Nevertheless, we recommend careful examination of the carton and contents for any damage.

If damage is evident, do not destroy the carton or packing material and immediately notify the carrier of a possible damage claim. Shipping claims must be made by the consignee to the delivering carrier

Package Contents

Standard

924S Bar

Mounting Kit

Options

BarMaster remote programmer. Allows for optimisation of the 924S via the 233v4 Controller.

Hyperion 233v4 Pulsed DC Controller

Features and Benefits of the 924S

Overall look

The profile of the 924S DC Bar provides ionisation through alternating positive and negative emitter pins mounted in a FR ABS extrusion. The emitter pins are resistively coupled to the high voltage pulsed DC source, rendering the emitters shockless to touch and will give many years of service.

Compact Size and Full Length Ionisation

The small cross sectional size of the 924S means that it will fit into tight installation positions. The bar has been designed to give full performance over its entire length.

Sealed Construction

IP68 construction allows the bar to be mounted in areas subject to occasional wash down or spillage. If the bar does become wet it must be thoroughly dried before being powered-up.

Shockless Titanium Emitters

As with our Meech range bars, the 924S uses Titanium emitter pins. Almost indestructible, these pins will give many years service. For the comfort and safety of the operator the pins are resistively coupled and shockless to touch.

Divider

The 924S needs to be able to operate in dirty, factory environments. To minimise the impact of contamination and maximise the interval between cleaning, the bar features a divider between the positive and negative emitters. This divider, first introduced by Meech on the 976 bar, over 12 years ago, is an essential feature of the bar.

T-Slot

Mounting of the bar is made easy using the T-Slot at the rear of the bar. The M4 T-Bolts used are the same as used on other Meech Pulsed DC Bars (976 and 971)

Installation

The 924S should be located in the most convenient position so that the pins of the bar are directed towards the target area. The bar should be positioned to give an unrestricted path for the ions to travel to the target area. It should typically be between 20mm and 200mm away from the target area.

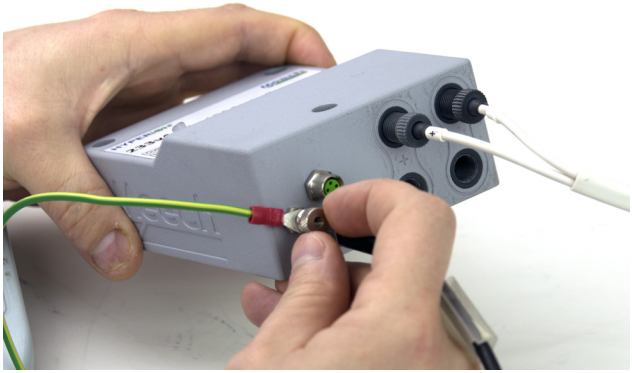
The Meech 924S can be connected to a Pulsed DC Controller.

The 924S connects to the Pulsed DC Controller by plugging the male plugs, found at the end of the bar cabling, directly into the high voltage sockets of the controller. The plugs and sockets are marked with “+” positive and “-” negative indicators for correct connection to the power supply.

Connect ionising equipment using grey HT connections and then the mains supply to the Pulsed DC Controller and switch ON. The 924S head will now produce Pulsed DC ionisation from the emitters of the bar.

WARNING

Meech Pulsed DC Controllers require a grounded 24V DC supply. The 0V line **must** be connected to ground. Failure to do so, will result in damage to the ioniser or the 24V supply and will void the warranty.



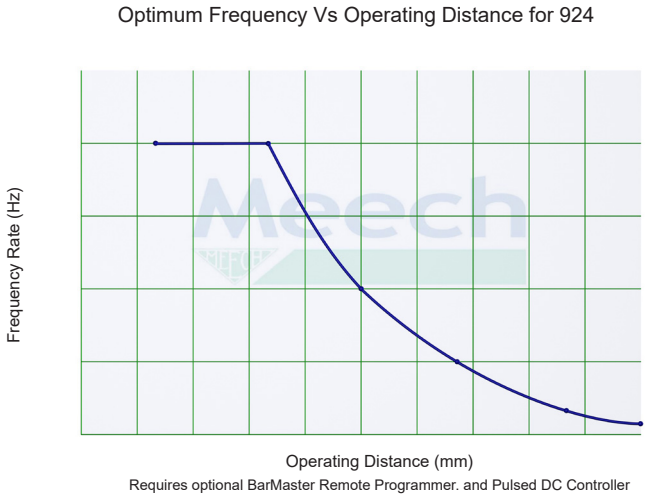
A grounding post on the controller is provided. Meech recommend that, for certainty, the controller is grounded using this post, in addition to using a grounded 24V DC supply.

The shockless emitter pins produce ions of positive and negative polarity. These, because of the product's unique design, propel themselves away from the emitter points towards the target area.

The maximum output voltage must not be set to >7.5kV to prevent damage to the 924S bar.

Optimum static elimination can be achieved by adjustment of the "Rate" (frequency of pulsing) and the "Balance" (proportion of positive to negative ions generated) on the Controller.

If the bar is positioned a long distance from the target area the “Rate” should be set to the lowest setting. If the bar is positioned close to the target area the “Rate” should be set towards its maximum.



If the polarity of the static charge to be removed is known, the balance can be adjusted to give a faster decay speed.

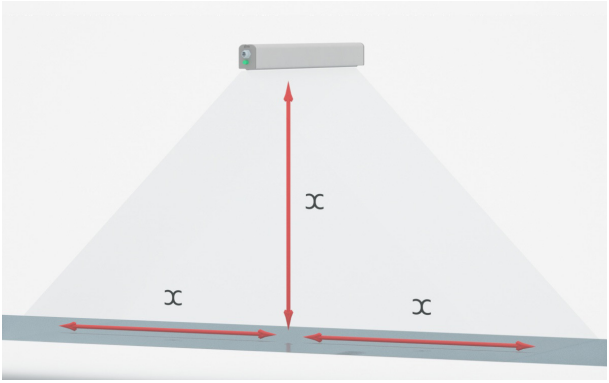
I.E. a) If the static charge is known to be positive the balance should be adjusted towards negative on the controller.

b) If the static charge is known to be negative the balance should be adjusted towards positive on the controller.

Mechanical Installation

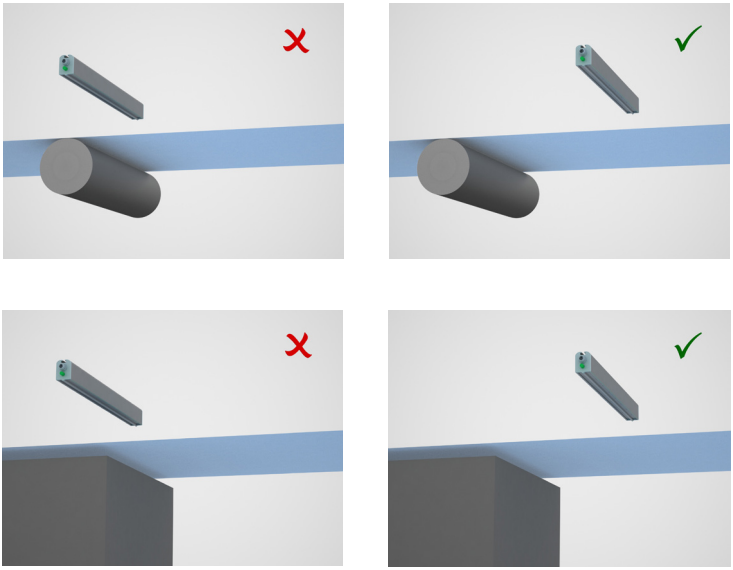
The 924S is a short to mid-range bar. Dependent on the application, the bar will be mounted between 20mm and 200mm from the target surface.
The bar should be mounted securely, using all the M4 T-bolts provided with the bar.

Correct positioning of the bar is vital for effective static control. There must be no metallic objects or obstruction between the bar and the material. The diagram shows the area that should be kept clear.



Where “x” lengths are equal.

To optimise the bars performance, when installed at short range over a web or sheet, the bars must be positioned away from surfaces and rollers, as shown in the following diagrams.



Your Meech distributor will be able to assist with questions regarding positioning of your equipment.

Operation

Having connected the male grey HT plugs to the power supply, power up the power supply and check the Pulsed DC Controller. The controller will indicate that the bar is running correctly with a good ion output.

CAUTION:
Always turn off the power supply before connecting or disconnecting the male grey HT plugs. Failure to do so could result in stored charges giving a small electric shock.

Maintenance

Ionising bars become contaminated with usage. Dirt build-up on the body of the ioniser and, particularly on the pins, will cause a drop in performance. To get the best from your bar, it should be cleaned as part of regular machine maintenance.

If regular cleaning is not carried out, the controller will detect the drop in performance and trigger the Clean Pin alert. See operating manual for the DC Controller.

Before cleaning, ensure that the equipment is switched off.

Emitter pins can be cleaned very effectively with a brush. A dry toothbrush is ideal.

Make sure the central divider is also cleaned and the pin surface of the bar.

Ionising bars will need periodic wiping to clean grey deposits from the surface of the bar. A cloth moistened with a small amount of IPA or methylated spirits is recommended.

Let dry for a minute and turn back on.

Fault Finding

Tests must be completed by a qualified electrical engineer.
If in doubt contact the Meech head office or your local distributor.

CAUTION:
Whilst no danger to personnel exists, it is essential that any high voltage ionising equipment, makes no contact with water or water based fluids.

Should such an event occur, disconnect immediately and return equipment to the manufacturer for water damage assessment.

The Model 924S ionising bar forms part of a system, comprising the bar itself and a Meech Pulsed DC Controller.

To verify where a fault may have occurred it is important to test each item of the system individually. Should more than one bar be connected to a power supply, each must be tested individually.

To check the Pulsed DC system follow the procedure detailed below:

Disconnect the electrical supply to the system.

Disconnect all bars from the controller.

Follow the test procedure for the Pulsed DC Controller (233v4 or 977CM). This can be found in the instruction manual of the products.

Having checked the controller, reconnect one 924S ionising bar.

Using a high voltage probe and meter measure the voltage on the pins of the ionising bar. This voltage should be approximately 2-7kV.

If the voltage is well below the output voltage of the DC Controller then the bar should be returned to Meech for service and/or repair.

If there is more than one bar to test, disconnect the first item and repeat the above steps.

If no meter and probe is available, then a fast and simple test is to simply short a pin of one of the ionising bars to earth using a length of insulated electrical cable bared back 3 mm at either end.

Connect one end of the cable to the earth post of the bar. Approach the pin of the bar with the other end of the cable. As the conductors of the cable approaches the pins of the bar a small faint spark should jump from the pin to the cable conductors. If the bar is under direct sunlight or bright lights it may be difficult to see this spark.

Technical Construction

Dimensions (cross section W x H x L) (mm)	22 x 32 x see length
Max length	40mm increments up to 4000mm
Pin dimensions	1 x 10mm
Construction	FR ABS
Maximum ambient temperature	60°C
Mounting	'T' Slot with M4 studs
HT Cable	Twinned TV20
Cable length	2000mm Longer on request
Connection	Grey HT male plugs
Power supply	DC Controller
Operating frequency	Default: 20Hz (Adjustable 1-20Hz)
Max Output voltage	7.5kV
Operating balance	Default: 54% Positive, 46% Negative (Adjustable)
Operating Range	20-200mm
Decay Performance (5,000V to 500V)	0.5 < 1sec @ 150mm
Environmental protection	IP68
Ozone level	less than 0.01ppm

Repairs And Warranty

The 924S Bar is warranted by Meech Static Eliminators Ltd to the original purchaser against defects in material and workmanship for one year after purchase. Should any malfunction occur, please return the bar directly to Meech Static Eliminators or your local distributor. All products returned to the factory MUST be accompanied by a return authorisation number and must be shipped prepaid.

For prompt service, ship the unit to the factory with the return authorisation number shown clearly on the label. Be sure it is well packed in a sturdy carton with shock absorbing material.

Include a note stating the nature of the problem as specifically as possible, and also include instructions for returning the bar to you. We will pay one-way return surface shipping costs on any repairs covered under the warranty.

Field repairs should not be undertaken during the warranty period. Repair attempts by unqualified personnel will invalidate the warranty.

CE Approval

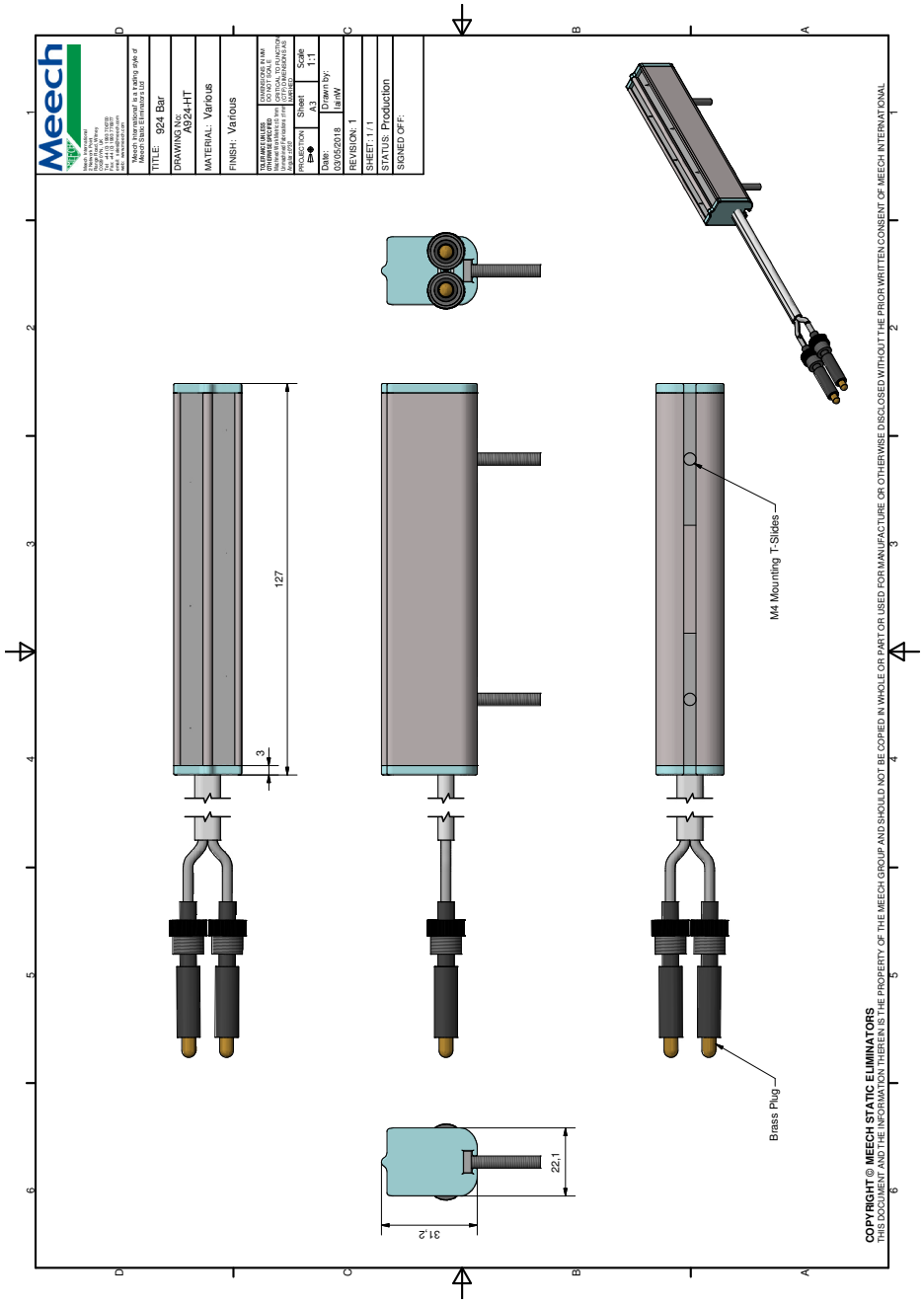
A CE Declaration of Conformity for this product exists in respect of the Low Voltage Directive: 72/23/EEC (“LVD”) & Electromagnetic Compatibility Directive: 89/336/EEC (“EMCD”)

CE

Health and Safety

Emission of Ozone: Considerably below international standard of 0.1ppm.

Technical Drawing



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