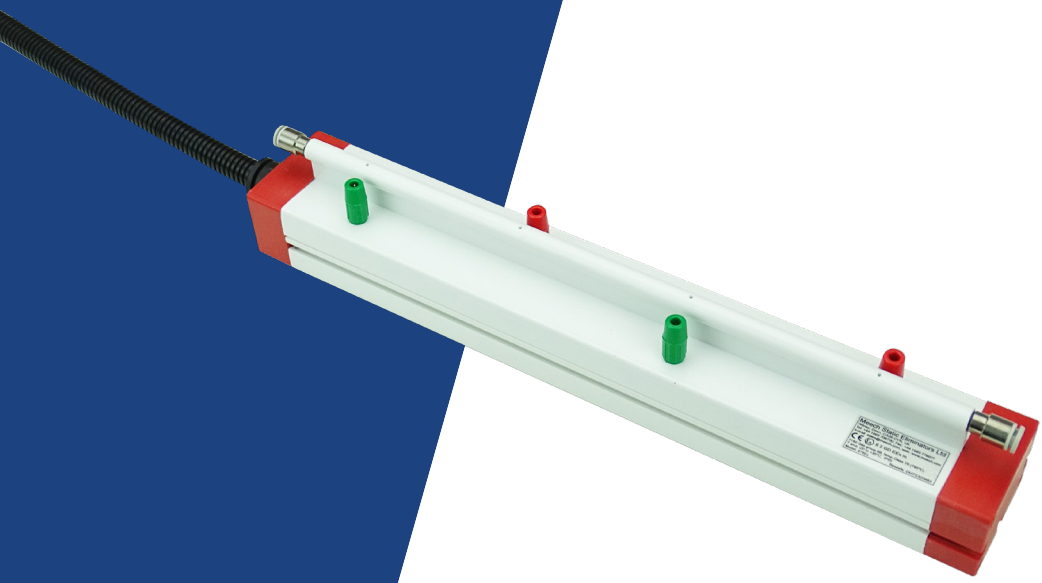
Operating Manual

Meech



Model 976EX

Long Range DC Bar

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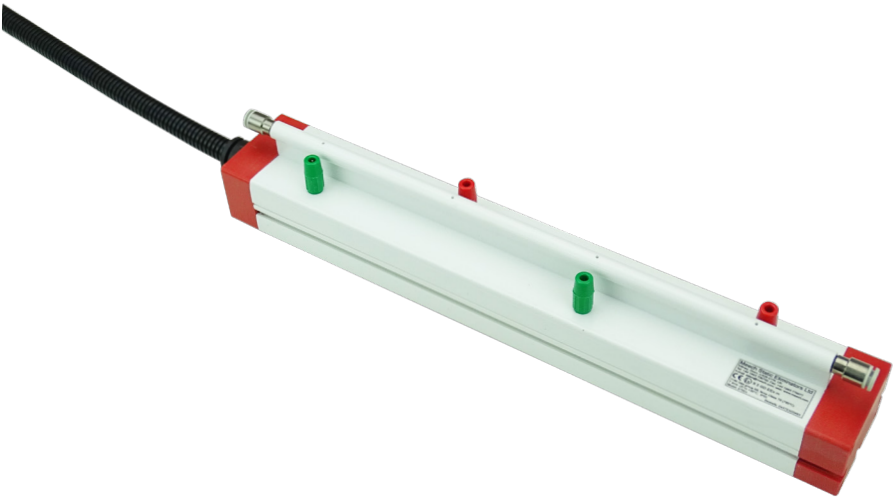
Introduction



The Meech Model 976EX has been designed to provide highly effective long range ionisation using Pulsed DC Technology.

The Model 976Ex Eliminator Bar is designed for the elimination of electrostatic problems associated with the processing of highly resistive web materials. It is rated at up to 9.6kV, from a Meech Hyperion PulseDrive pulsed D.C controller or Meech Type 977v.3 or type 233V4HL

The 976EX Bar provides ionisation through alternating positive and negative emitter pins mounted in a profiled extrusion. The emitter pins are resistively coupled to the high voltage pulsed DC source, rendering the emitters shockless to touch. The emitter pins are removable to enable cleaning or replacement.

The extruded profile has been designed to enhance emitter life and allow easy cleaning while giving linear strength. The profile incorporates “T” slots on three faces to provide universal mounting points. The Meech Model 976EX is powered by the Meech Pulsed DC Controller.

Certification

This Model 976EX has been certfied by Underwriters Laboratories Inc for

CLASS 1, DIVISION 2, GROUP D HAZARDOUS LOCATIONS

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CE Ex II 2 GD EEx m
1180 Gas group IIB, temp Class T6 (T85^{O}C)
T amb -20 to +35^{O}C. IP65
Model: 976Ex Baseefa: 04ATEX0348X

Unpacking And Inspection

Your Model 976EX 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.

Installation

The Model 976EX Bar 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 300mm and 600mm away from the target area.

The bar must be mounted using the brackets provided. The bracket should be positioned on a maximum 500mm pitch. The M6 bolts must be used to secure the 976EX bar to the machine frame.

The Meech Model 976EX must be connected to the Meech Model 233v4 HL 9.0kV Controller which must be located outside of any EX zoned area.

The Model 976EX connects to the 233v4 HL 9.0kV C ontroller 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 controller.

POWER, INPUT AND OUTPUT (I/O) WIRING MUST BE IN ACCORDANCE WITH CLASS 1, DIVISION 2 WIRING METHODS ARTICLE 501.10(b) OF THE NATIONAL ELECTRICAL CODE , NFPA 70.

A) THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS 1, DIVISION 2,

GROUP D OR NON HAZARDOUS LOCATIONS ONLY

B) WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY

IMPAIR SUITABILITY FOR CLASS 1, DIVISION 2

C) WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT

UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

Connect the 24DC power supply to the Pulsed DC Controller. The 976EX Bar will now produce Pulsed DC ionisation from the emitters of the Bar.

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.

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.

The 233v4 HL 9.0kV controller used with the 976EX is supplied with optimal default settings for the for the majority of applications. If adjustment to required you will need to use either a Meech BarMaster or SmartControl Touch. Refer to Meech.com for details.

If the bar is positioned a long distance from the target area (600mm-750mm) the Rate should be set to the lowest setting. If the bar is positioned close to the target area (150mm -300mm) the rate should be set towards its maximum.

Whilst the 233v4 HL 9.0kV default settings are optimised for the majority of applications, 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 233v4 HL 9.0kV controller.

b) If the static charge is known to be negative the balance should be a adjusted towards positive on the 233v4 HL 9.0kV controller.

Special Conditions for Safe Use

1. **The 976Ex eliminator bar shall only be used in conjunction with only Meech Type 977v.3 or type 233V4HL or Meech Hyperion PulseDrive Pulsed DC Controller set to a 9.6kV peak maximum.**

2. **The power supply must be protected by a fuse capable of withstanding a prospective short circuit current of 4000A**

3. The bar shall be installed according to the manufacturer's installation instructions for model 976EX.

4. The bar is suitable for installation only in areas where there is a low risk of impact damage.

5. The plastic conduit must be securely clamped within 100mm of the bar.

6. The user must determine, in consultation with Meech, the suitability of the apparatus for use with particular solvents.

7. When used in dust environments, the equipment may not be used in association with dusts having an electrical resistance equal to or less than 10^3 Ω.m.

8. When used in dust environments, the equipment may be used only with dusts requiring an ignition energy of greater than 0.06mJ.

Maintenance

Cleaning your Meech Ioniser

Ionisers require periodic cleaning. During normal operation, dirt will build-up on the emitter pins and upon the body of the ioniser. This will cause a reduction in performance.

Typically, weekly cleaning is sufficient. However, equipment used in some heavy contamination areas, such as gravure printing or where plastic fumes are present, may require daily cleaning. Equally, in a Class 100 area, cleaning may only be required on a monthly basis. The 233v4 HL 9.0kV pulsed DC controller used with the 976EX features performance monitoring that will alert the operator to the need to clean the equipment before performance drops to an unacceptable level. The alert is via the LED indicator on the controller and also a 0/24V output signal on the controller for remote monitoring. For details refer to the 233v4 HL 9.0kV manual at meech.com.

Before cleaning, ensure that the equipment is switched off.

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

Ionisers 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.

Fault Finding

Must only be carried out when the product is in a safe (non-hazardous) area.

Tests must be completed by a qualified electrical engineer.

If in doubt contact 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.

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:

9. Switch off the electrical supply to the system.

10. Disconnect all bars from the controller.

11. Reconnect the supply and switch on the unit.

12. Using a high voltage probe (RS type 610 281) and meter (RS type 610 950) measure the voltage on each of the output sockets. The reading should be at minimum power 4kV and at maximum power 8 kV

13. Having checked the power supply, reconnect one Model 976EX Bar.

14. Using a high voltage probe (RS 610 281) and meter (RS 610 590) measure the voltage on the pins of the bar. This voltage should be between 3 and 6kV.

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

Technical and Construction

Output voltage	:	Up to 8kV D.C.
Operating current	:	Less than 0.25 micro amps.
Max temperature	:	35°C.
Min temperature	:	-20°C.
Weight	:	50g per 300 mm
Cable	:	5 metres as standard
Dimensions	:	50mm x 50mm x length required.(Max 4000mm)
Construction	:	FR ABS extrusion
Emitters	:	Titanium (replaceable)
Mounting	:	Universal via “T” slots fitted with 2 x M4 x 20mm studs as standard. “T” slots are located on three sides of the bar to allow mounting flexibility.

Repairs And Warranty

The Meech 976EX 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 Meech 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 that 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 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

Low Voltage Directive: 2014/35/EU (Technical File)

Electromagnetic Compatibility Directive: 2014/30/EC (Technical File)

Health and Safety Emission of Ozone: Considerably below international standard of 0.1 ppm.

CE

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