



Operating Manual

Model 977v3

**Pulsed DC
Controller**

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Introduction



The Meech Model 977v3 controller has been designed to power any of the Meech 900 Series range of DC products.

Unpacking and Inspection

The Model 977v3 controller 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.

How to Use Your 977v3 Controller

Model 977v3

1. Locate the 977v3 Controller in a convenient position near to the ionising product to be powered from it.
2. Following the polarity indicators connect the grey HV plugs of the ionising product into the grey HV output sockets of the 977v3 Controller.
3. Connect the mains input supply to the Controller and switch ON.
THIS APPLIANCE MUST BE GROUNDED/EARTHED THROUGH THE MAINS ELECTRICAL SUPPLY.
4. The attached ioniser will now produce Pulsed DC ionisation from its emitter pins.

For Best Results

1. Keep target area clear and free from obstructions to ion flow.
2. Keep work area clear of all static generative materials.
3. Only use approved static control grounding methods and material handling equipment.

Control Adjustments

There are three adjustments that can be made on the Power Supply; BALANCE, RATE and POWER.

The BALANCE of positive and negative ion output can be adjusted to increase polarity bias by simply turning the balance control towards either positive (right) or negative (left).

When set to maximum +VE or -VE the split is 20/80 - ie at maximum positive 80% of the ions are positive and 20% of the ions are negative (or vice versa).

The RATE of pulse frequency can be adjusted from 0.5 Hz to 20Hz. The lower the frequency (RATE) the greater the range (ie distance over which the ionisation will travel). A setting of 5 to 10Hz is recommended for most applications.



The POWER or output voltage of the unit may also be adjusted by turning the power control knob. The output voltage may vary from a minimum of 4kV to a maximum of 8kV.

The purpose of these adjustments is to give total versatility to the positioning of the ionising product attached to it.

Remember it is important to verify calibration after any adjustments and before using your ioniser around sensitive electronics.

Alarm

The alarm feature detects faults in the operation of the ionising system, e.g. problems caused by lack of product cleanliness. When a fault has been detected the alarm LED will illuminate and the high voltage to the emitters will be automatically switched off. If a single occurrence of a fault occurs, the controller will switch off the HV for 1 second and then automatically reset. However, if the unit detects 5 faults in 5 seconds the HV will be permanently switched off. The fault must be removed (e.g. by cleaning of the ionising product) and the controller reset by switching the mains supply to it OFF and ON.

An 8 way DIN socket is provided to mirror the alarm function to a central control panel
- see specification for connection detail.

LED Displays

The 977v3 has four indicator lights

- | | | |
|------------------------------------|---|---|
| 1. Power light (Red) | - | Illuminated when mains supply is provided to the unit. |
| 2. Alarm light (Yellow) | - | Illuminated when unit has detected a fault and has shut down. |
| 3. Positive balance light (Red) | - | indicates positive voltage and pulse rate |
| 4. Negative balance light (green) | - | indicates negative voltage and pulse rate |

Meech Pulsed DC Applications

Distance From Object

Originally Pulsed DC technology was developed for the electronics industry. Bars were placed in laminar flow cabinets or above test benches. The distance from the object was typically 1m.

For industrial applications the distance from the object is less - typically 150mm to 300mm. The rule for setting the frequency is that the closer the bar is to the object, the faster the frequency setting.

Polarity

The polarity adjustment allows the output of the unit to be custom tuned to attack the actual problem. If the charge is always strongly negative it makes sense to bias the output towards a positive polarity, thus achieving faster neutralisation.

This requires a more sophisticated approach from the user. A Meech Model 983 Static Locator becomes indispensable.

If the charge varies the output should be balanced in polarity.

Cleaning Instructions

Your Meech Pulsed DC Controller was designed to be virtually maintenance free.

1. Be sure the unit is switched off and disconnected from the mains supply.
2. The outside case may be wiped down with a soft damp cloth.
3. Let dry for a minute and turn back on.



Fault Finding

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, (exception Meech Model 910 Water Resistant Ionising Bars), 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. High voltage electrical equipment should not make contact with water.

The Model 977v3 Power Supply and Ionising Bar form part of a system.

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

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

1. Switch off the electrical supply to the system.



2. Disconnect all ionising appliances from the controller.



3. Reconnect the supply and switch ON the unit.
4. 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 at Max power 8 kV



5. If the controller is found to be functional, test each of the attached products independently following the instructions detailed in the appropriate Operation and Maintenance manual.

If the 977v3 controller is found to be faulty please contact your local distributor or Meech Static Eliminators Ltd.

Repairs and Warranty

The ioniser 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 Ioniser directly to us. 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 Ioniser 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.

Technical Specification

Model 977v3 Power supply

Input voltage	:	65 to 250V
Input frequency	:	45 to 65Hz.
Output voltage	:	adjustable between 4kV D.C. and 8kV D.C.
Output current	:	120 Micro amps.
Output balance	:	Adjustable between a ratio of positive and negative of 20/80 to 80/20.
Output frequency	:	Adjustable between 0.5 Hz and 20Hz.
Max temperature	:	60 °C
Weight	:	0.5Kg
Remote On / Off	:	3.5mm Jack
Alarm relay	:	8 pin DIN connector (U style)

Pin 1 relay normally closed contact

Pin 2 ground

Pin 3 +24V

Pin 4 normally open relay contact

Pin 5 not used

Pin 6 relay common contact

Pin 7 Feedback signal

Pin 8 not used

Note RL1 is only rated for 24V d.c 5 amp

Operating temp. : -10 Deg C to +65 Deg C

Short circuit

backup protection : Controller must be supplied from a switched outlet incorporating a 1 amp fuse

Fuse rating : 0.250 Amp slow blow (5 x 20mm)

CE Approval

An EC declaration of conformity for this product exists in respect of Low Voltage Directive:72/23/EEC ("LVD") & Electromagnetic Compatibility Directive : 89/336/EEC ("EMCD").



Health and Safety

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

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