HYPERION™
A Meech Innovation

v1.17

Operating Manual
Hyperion 959IPS
Mid-Range DC Air Curtain

Contents

Introduction

The Hyperion 959IPS is a compact, pulsed DC ionising air curtain. It provides high speed ionised airflow that can be used to clean objects or provide extra long range static control.

The assembly combines a highly efficient air curtain with a Hyperion 924IPS pulsed DC ionising bar.

The air curtain uses a compressed air input to drive a high speed blade of ambient air ; moving over 15 litres of ambient air for every litre of compressed air consumed.

The Hyperion 924IPS is a very compact pulsed dc bar. Its integrated +/-7kV power supply requires only a 24V DC input, removing the traditional need to route high voltage cabling.

Unpacking And Inspection

Your Hyperion 959IPS 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.

Contents:

Standard

959IPS Bar

Options

Power Cable - 4 Pin M8 (straight or 90° elbow) Available in 2,3,5 and 10M lengths.

24V DC Supply & IEC cable

BarMaster remote programmer. Allows optimisation of the output of the 959IPS

Features and Benefits of Hyperion 959IPS
Low voltage wiring and Integrated Power Supply

The 959IPS is powered by 24V DC via a 4-pin M8 Connector.

Shockless Emitters

The Titanium emitter pins on the 959IPS are resistively coupled to the high voltage supply. This avoids sparking and operator shocks.

Sealed Construction

IP66 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.

Clean Pin Alert LED

The local LED illuminates constant green to indicate that the bar is on and working correctly. Red flashing LED shows that bar is dirty and needs cleaning. Solid red illumination indicates a fault with the high voltage output.

- ■ Green constant – OK
- ■ Green flashing – BarMaster remote programmer connected
- ■ Red flashing - Cleaning required
- ■ Red constant - Fault

Clean Pin Alert and Fault Output

An output signal indicates when the bar needs cleaning or when a fault has been detected. The signal is 0V/24V output on pin 2. By default: Bar OK = 24V, Bar needs cleaning (or fault detected) = 0V. If required the signal can be inverted to give OK = 0V, Cleaning Required = 24V using a Barmaster Remote Programmer

Divider
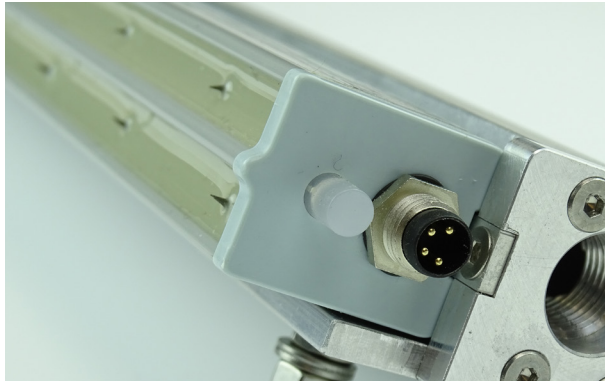
The 959IPS is designed to operate in dirty, factory environments. To maximise the interval between cleaning the bar features a divider to increase the surface tracking distance between the two rows of high voltage pins. It is important to clean this area during cleaning operations.

Air Inlet
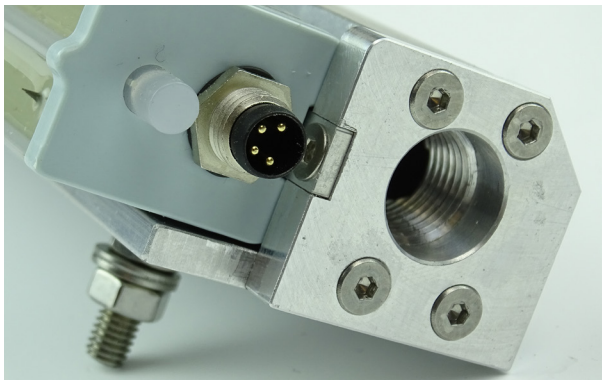
The ¼" BSPT inlet is a global standard for air fittings. This allows the 959IPS to be integrated into any line with ease.

Installation

Mechanical Installation

The 959 IPS can be used in many different applications. Your Meech distributor will be able to give you advice on the correct distance and position for your 959IPS, depending on the application .

As a rough guide, for cleaning applications, try to get the 959IPS within 100mm of the target surface. Although it is still effective at greater distances, the efficiency will not be as great.

Taking note of the direction of the ionised airflow, The 959IPS should be mounted securely, using all the M5 studs provided.

Air Supply

a. The air supply must be clean and dry. A 5 micron coalescing filter is recommended. The Meech guarantee does not cover damage due to water or oil in the air supply.
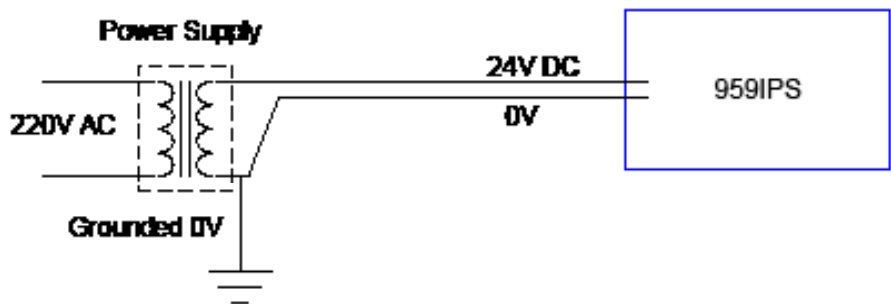
b. Reduce the air supply to the lowest pressure which achieves the required results. Excessive air is wasteful and also dilutes the ionisation unnecessarily.

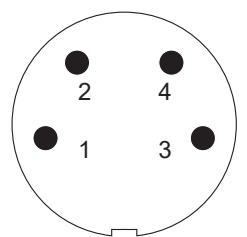c. The female thread for the air fitting is 1/4 BSP (G1/4).
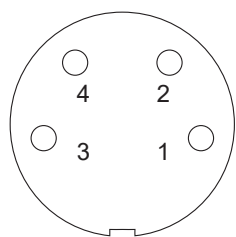
Electrical Installation

Connection to the 959IPS is via an industrial M8 4 Pin connector. With the following pin-outs:

Male connector on Bar   Female connector on Cable

Pin	Colour	Function Specification
1	Brown	24V (21-27V)
2	White	Clean Pin Output 0V/24V
3	Blue	0V/ Ground
4	Black	No connection

Connection using Meech 24V DC power supply

Meech 24VDC supplies are grounded internally. It is important that the mains connection offers a ground connection. Two-pin outlets without a ground connection must not be used.

Connection using customer's own power supply:

It is the customer's responsibility to check that either the 24V power supply they will be using is grounded.

The 24V supply should be protected with a 1 Amp fuse.

Clean Pin Alert - Remote Monitoring

Remote monitoring of the need to clean the bar is provided by the output signal on pin 2. The signal is 0V-24V suitable for direct connection to a PLC input. The output impedance of the signal is 10kΩ. The output can also be configured to power an external relay to provide volt-free contacts for other monitoring systems.
Using a BarMaster remote programmer the output can be set to Normally Open (factory default) or Normally Closed.
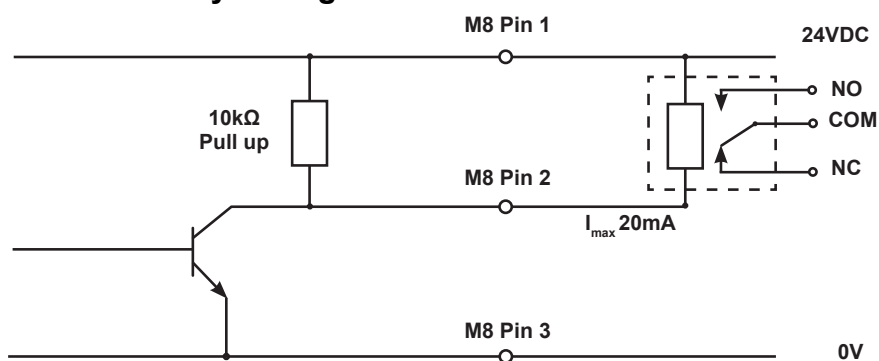
PLC Wiring
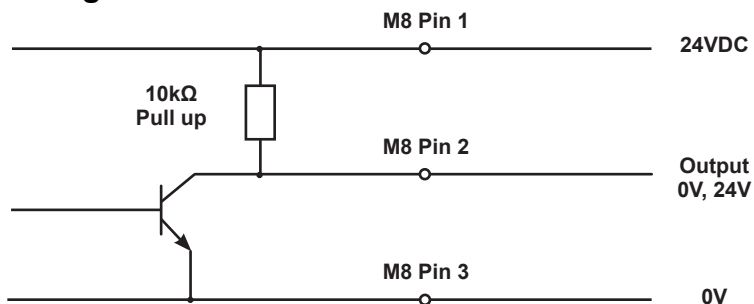
Output Signal Voltage

Normally Open Output Matrix	24V Supply Power ON	24V Supply Power OFF
OK (Green LED)	24V	0V
Dirty/Faulty (Red LED)	0V	0V

Normally Closed Output Matrix	24V Supply Power ON	24V Supply Power OFF
OK (Green LED)	0V	0V
Dirty/Faulty (Red LED)	24V	0V

External Relay Wiring

Relay Power

Normally Open Output Matrix	24V Supply Power ON	24V Supply Power OFF
OK (Green LED)	OFF	OFF
Dirty/Faulty (Red LED)	ON	OFF

| Normally Closed Output Matrix	24V Supply Power ON	24V Supply Power OFF
OK (Green LED)	ON	OFF
Dirty/Faulty (Red LED)	OFF	OFF

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Operation

Having connected the M8 connector to the bar, power up the 24V supply and check for a green constant LED on the bar. This indicates that the bar is running correctly with a good ion output.

Caution
Always turn off the 24V supply before connecting or disconnecting the M8 connector. Failure to do so could result in stored charges giving a small electric shock.

Setting the Rate

The 959IPS features a variable output frequency. The frequency that should be set depends on the ionising product and the distance to the target object. We recommend leaving the unit set to the default frequency, 20Hz.
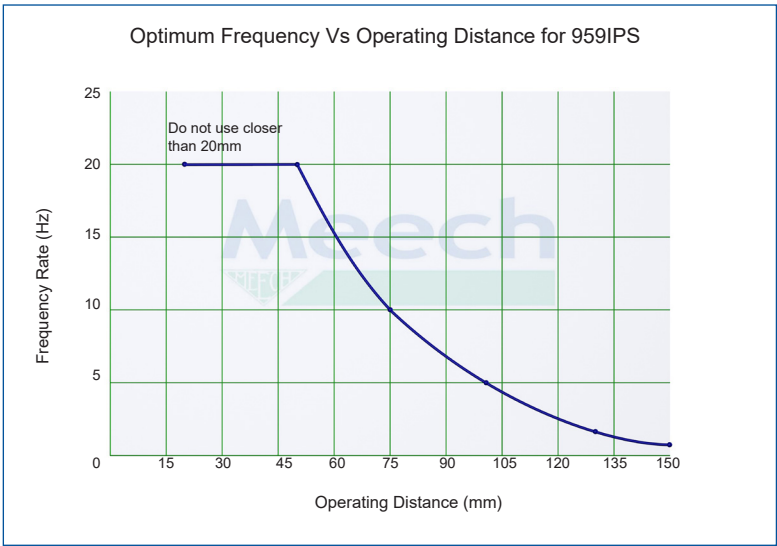
Requires optional BarMaster Remote Programmer.

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 bar will detect the drop in performance and trigger the Clean Pin alert. The LED will flash red and the output signal will be activated.

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.

Troubleshooting

Solid Green LED	In normal operation the LED on the bar will illuminate Green. This indicates that the bar is operating correctly with good ionisation performance.	
No LED	Meaning	No power to bar
	Action	Check 24V Power Supply over pins 1 and 3. (Brown and Blue wires)
Flashing Green LED	Meaning	BarMaster remote programmer is connected.
	Action	After programming, reconnect directly to the power supply to resume normal operation.
Flashing Red LED	Likely cause	Contamination causing a drop in performance.
	Action	Switch off power supply and clean as described in Maintenance section. Turn power on and Check for Green solid LED
Solid Red LED	Likely Cause	Abnormal output current detected
	Action	Check installation for metallic objects on the emitter pins Should the solid red LED persist, contact your Meech distributor.

Technical and Construction

Dimensions (W x H)	28mm x 57.5mm
Maximum Length	3960mm
Operating Range	Typically 50mm – 300mm
Weight	1.5kg/metre
Construction	FR ABS / Aluminium
Mounting	Fixed M5 studs
Emitters	Sharp titanium pins
Input Current	Max 500mA
Input Voltage	24V DC (21-27VDC)
Output Voltage	Adjustable from +/- 3kV to +/- 7.5kV Pulsed DC
Electrical Connection	4 Pole M8
Clean Pin Output Signal	24V Output resistance 10kΩ
Output Frequency	Default Setting: 20Hz Adjustable with BarMaster from 1Hz to 20Hz;
Output Balance	Default Setting: 54%:46% Pos:Neg Adjustable with BarMaster from 80:20 to 20:80 Pos:Neg
Environmental Protection	IP66
Max Ambient Temperature	60 °C

UL Approval

Static elimination bar Hyperion 959IPS has been investigated by UL in accordance with the following standard(s): UL 60950-1 & CAN/CSA C22.2 No. 60950-1-07.

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")

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Health and Safety

Emission of Ozone: Considerably below international standard of 0.1ppm.
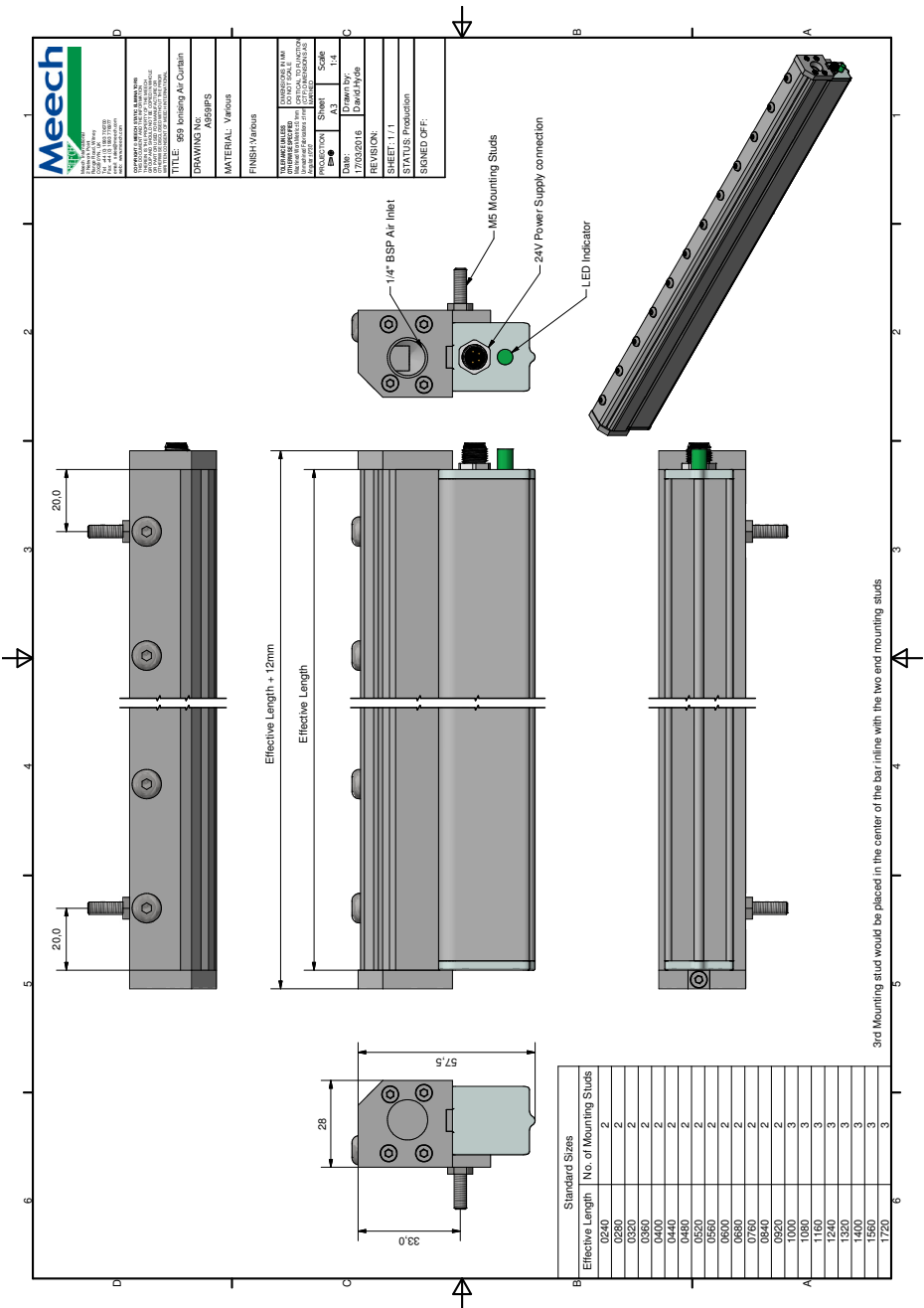
Repairs And Warranty

The Meech 959IPS Bar is warranted by Meech Static Eliminators Ltd. to the original purchaser against defects in material and workmanship for two years after shipment. The 959IPS requires a grounded 24V DC supply. The 0V line **must** be connected to ground. Failure to do so, will result in damage to the bar or the 24V supply and will void the warranty.

Should any malfunction occur, please return the bar directly to Meech Static Eliminators Ltd. 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.

Technical Drawing

1/4" BSP Air Inlet

M5 Mounting Studs

24V Power Supply connection

LED Indicator

20,0

20,0

Effective Length + 12mm

Effective Length

57,5

28

33,0

3rd Mounting stud would be placed in the center of the bar inline with the two end mounting studs

Standard Sizes

Effective Length	No. of Mounting Studs
0240	2
0280	2
0320	2
0360	2
0400	2
0440	2
0480	2
0520	2
0560	2
0600	2
0680	2
0760	2
0840	2
0920	2
1000	3
1080	3
1160	3
1240	3
1320	3
1400	3
1560	3
1720	3