

# ESP SERIES

## Electrostatic Precipitator HV Power Supply

The ESP Series of high-voltage regulated AC-DC converters addresses the need for a nominal-performance, stand alone HV module to power Electro-Static-Precipitators operating in air or oil in higher reliability 24/7 applications & environments such as medical, industrial, agriculture, food processing & food service.

The modules are AC line operated, fully protected from the harsh output characteristics of this application, with limited interface features and performance to control cost. The modules have dual, high-voltage outputs to power the Ionizer and Collector.

There are two chassis mount packages: A covered U frame unit with input & output connectors to facilitate speed of production and field service, and a flying lead unit connectorless installations. Designed and built utilizing state-of-the-art power-conversion topology these units feature design, manufacturing process, and encapsulation techniques that provide high reliability.

- Ionizer / collector outputs of 12kV/6kV or 8kV/4kV.
- HV can be a limited adjustment range or fixed.
- 10, 20, 30 or 50 watts of output power
- Indefinite output short-circuit protection & arc protection
- No minimum load required.



Typical applications for this series include the following:

**Electrostatic air cleaners** in medical products for patient room & surgical suite use, in industrial products for manufacturing process dust & pollution control, agriculture products for barn dust and pollution control, food processing products for reducing bacteria, and food service products to collect particles & oil from air filters.

**Electrostatic oil separators** in industrial products for manufacturing process to remove particles from cleaning & cooling fluids, in food service products to remove particles from cooking oil.

- Input of 115VAC or 230VAC
- Fault monitor
- Power indicator
- UL/cUL Recognized Component; CE Mark (LVD & RoHS)

PARAMETER	CONDITIONS	MODELS														UNITS
		ESP1							ESP2							
INPUT																
Voltage Range	Full Power	115 or 230							115 or 230							VAC
Voltage Range	Derated Power Range	100 to 130 or 200 to 260							100 to 130 or 200 to 260							VDC
Current	No Load, Max Eout	< TBD							< TBD							mA
Current	Max Load, Max Eout	< 500							< 400							mA
Inrush Current	Nominal Input, Full Load	< TBD							< TBD							A
OUTPUT		ESP1							ESP2							
Voltage	Nominal Input	8kV / 4kV				12kV / 6kV			8kV / 4kV				12kV / 6kV			VDC
Voltage Adjust		Adjustable $\pm 10\%$				Adjustable $\pm 10\%$			Adjustable 7.3kV to 9.3kV				Adjustable 10.8kV to 13.2kV			VDC
Power	Nominal Input, Max Eout	10	20	30	50	10	20	30	50	10	20	30	10	20	30	Watts
Ionizer Current	Iout Entire Output Voltage Range	1.25	2.5	3.75	6.25	0.83	1.67	2.5	4.17	1.25	2.5	3.75	0.83	1.67	2.5	mA
Ionizer Ripple	Full Load, Max Eout	< 0.45%							< 0.60%							%V p-p
Line Regulation	Nom. Input, Max Eout, Full Power	< 0.10%							< 0.10%							VDC
Static Load Regulation	No Load to Full Load, Max Eout	< 0.10%							< 0.10%							VDC
Stability	30 Min. warmup, per 8 hr/ per day	< 0.10%							< 0.10%							VDC
FAULT MONITOR		ALL TYPES														
ESP1	Isolated Relay	OK= Normally open & common connected, Fault= Normally closed & common connected														
ESP2	Indicator Bias Voltage	Any neon bulb (T1.1, T2, T3 100 to 250VAC)														
ENVIRONMENTAL		ALL TYPES														
Operating	Full Load, Max Eout, Case Temp.	0 to +40														°C
Coefficient	Over the Specified Temperature	400 (ESP1); 500 (ESP2)														PPM/°C
Storage	Non-Operating, Case Temp.	-40 to +85														°C
Humidity	All Conditions, Standard Package	0 to 90% non-condensing														-
Altitude	Standard Package, All Conditions	0 to 10k FT (3kM)														-

Specifications subject to change without notice.



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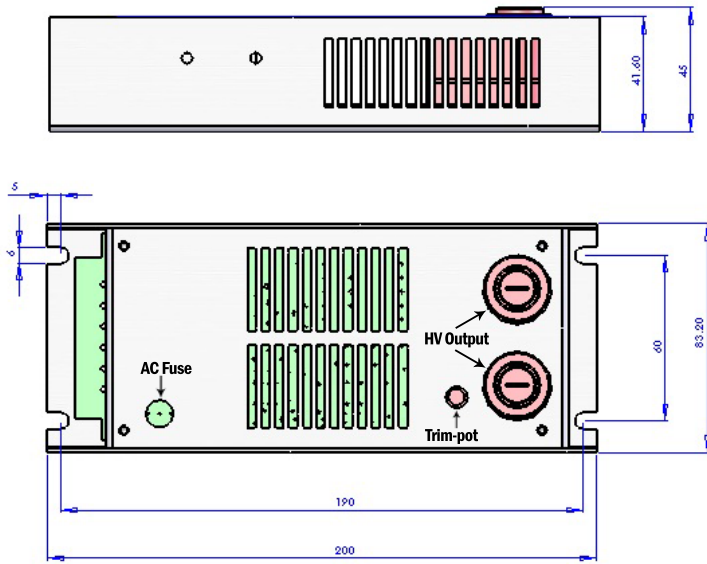
Higher Service, Higher Performance, Higher Reliability

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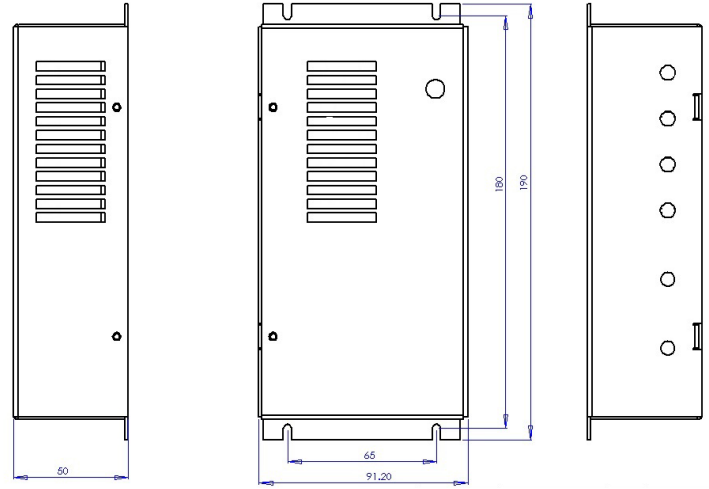
# ESP

## Electrostatic Precipitator HV Power Supply

ESP1



ESP2



### CONSTRUCTION

ESP1: Aluminum  
ESP2: Steel

### SIZE

ESP1  
200mm x 80mm x 40mm  
Weight: 1.21 lbs (0.55 kg)

ESP2  
90mm x 170mm x 50mm  
Weight: 1.72 lbs (0.78 kg)

### TOLERANCE

±1.0mm

### NOTES

Contact the factory for other preset fixed outputs.

ESP1

CONNECTIONS	
PIN	FUNCTION
1	AC Live
2	AC Neutral
3	Earth Ground
4	Fault - Common
5	Fault - N.C.
6	Fault - N.O.

ESP2

CONNECTIONS	
WIRE	FUNCTION
Blue	AC Live
White	AC Neutral
Green/Yellow	Earth Ground
Black	Neon Fault Indicator
Red	Neon Fault Indicator
HV White	Collector Output
HV Red	Ionizor Output



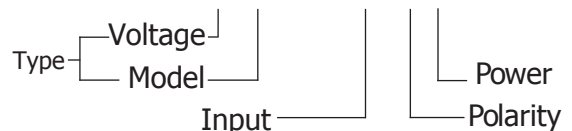
Non-RoHS compliant units are available. Please contact the factory for more information.

Rev.3 2/14

### ORDERING INFORMATION

Output	8kV / 4kV (ionizor/collector)	8
	12kV / 6kV (ionizor/collector)	12
Model	ESP1 Series	ESP1
	ESP2 Series	ESP2
Input	115 VAC	-115
	230 VAC	-230
Polarity	Positive	-P
	Negative	-N
Power	10	10
	20	20
	30	30
	50 (ESP1 Only)	50

Example: 12ESP1-115-P30



\*The ESP Series is not available in all territories. Please contact an UltraVolt Applications Engineer for details concerning sales in your area.



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