



ESP Range

80kV, 32kW electrostatic precipitator PSU



Specification Summary

Designed for the Electrostatic Precipitator market the ESP range is a high voltage power supply with an operating frequency of around 25kHz. The example shown is 32kW 80kV and it utilises an IGBT full bridge circuit to convert the DC bus to a high frequency AC waveform. Near full load, the working frequency is close to resonant frequency and almost all of the energy in the resonant components will be delivered to the load. A high frequency transformer steps up the high frequency AC to the necessary high voltage level. The components of the high voltage section are mounted in an oil filled tank.

Electrical Specification

Input Requirements	415VAC 3-phase. Power supply voltage range from 370VAC to 450VAC
Output Voltage	0 to 80kVDC (Negative Output)
Output Current	0 to 400mADC
Power Factor	>0.9
Output Ripple (%)	<2% at nominal load
Power Conversion Efficiency	>90% at nominal load

Mechanical Specification

Weight (kg)	Approx. 300kg
Size (WXDXH)	700mm X 970mm X 1400mm

Interface Definition

Feedback Signals	<ol style="list-style-type: none">1. Output voltage 0 to 10V DC=0 to -80kV2. Output current 0 to 10V=0 to 400mA3. Spark detected4. Inverter disabled5. Current limit (440mA)6. kV limit (80kV)7. Fault detected (overheating, overcurrent, interlock etc.)
Control Signals	<ol style="list-style-type: none">1. kV output demand 0 to 10V= 0 to -80kV2. mA output demand 0 to 10V = 0 to 400mA3. HV on4. Inverter disable

Environmental Specification

Storage Temperature Range	- 40°C to + 50°C
Operating Temperature Range	- 20°C to + 40°C
IP class	55