ICA INJECTOR CONTROL ASSEMBLY POWER SUPPLY

- ***Multi-Output E-Gun Supply***
- ***Fast Rise Time Pulsed Cathode Current***
- ***Remote Programming via Ethernet***
- ***Customizable for OEM Applications***

Spellman's Injector Control Assembly (ICA) multi-output high voltage power supplies are used to supply the appropriate electrode voltages to a triode electron gun in order to inject electrons into a Linear Accelerator (LINAC). The resulting high-energy electron pulses are used to create high-energy X-Rays for applications such as cargo screening and cancer therapy.

This multi-output, rack mount power supply provides the Cathode, Heater and Grid voltages required by the e-gun. The Cathode current can be pulsed up to 500Hz. The Heater and Grid supplies float at the Cathode voltage potential, typically up to -15kV. Injector current is regulated by programming the Grid Pulse Voltage. Remote control and monitoring is via standard Ethernet protocols. LED indicators on the front panel provide basic output and fault status, including Cathode Current and Arc faults.

The ICA series can be customized for specific system requirements.

TYPICAL APPLICATIONS

Cargo screening, cancer therapy

SPECIFICATIONS

Input Voltage:
100-240Vac, 50-60Hz

Cathode:

Output Voltage:
0 to -15kV

Pulsed Cathode Current:
200mA to 1500mA

Mean Cathode Current:
5.5mA (max)

Current Pulse Width:
Up to 6µs (90% to 90%)

Current Pulse Frequency:
Up to 500Hz

Current Risetime:
200ns (typical)

Heater:

Output Voltage:
0 to -6.5Vdc (wrt Cathode)

Current:
3A

Resistance:
0.7ohm

Grid (fixed):

Voltage:
-60 to -135Vdc (wrt Cathode)

Current:
250mA

Pulse Voltage:
0 to 340Vdc (wrt Cathode)
Injector current is regulated by programming the Grid Pulse Voltage

Connections:

Front Panel:
Ethernet (RJ45 jack)
Interlock (24V nominal, 9 pin D-sub male pin plug)
Pulse Input (BNC)

Rear Panel:
AC Power In (IEC320 C14 male pin receptacle)
HV Out (3 pin terminal block)

Interlock:
24V must be present to enable output high voltage cathode. It is intended to connect to the system to disable the ICA in case any system interlocks have not been satisfied.

Operating Temperature:
10°C to +40°C

Storage Temperature:
-40°C to +70°C

Humidity:
30% to 60% relative humidity, non-condensing

Weight:
15lbs. (6.8kg)

Regulatory Approvals:
The ICA is designed to meet 60601-1, and is RoHS compliant.

FRONT PANEL LED INDICATORS

INDICATOR	COLOR	CONDITION Illuminated When...
Trigger Present	Green	Input trigger is present
AC Power	Green	AC supply voltage is present
Interlock In	Green	Interlock in signal is present
Arc Fault	Red	Arc fault signal is active
Cathode Current Fault	Red	Cathode current fault signal is active
Cathode Voltage ON	Amber	Cathode high voltage is present

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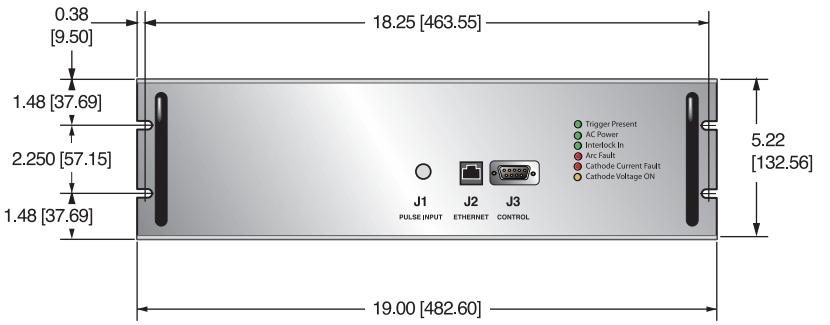
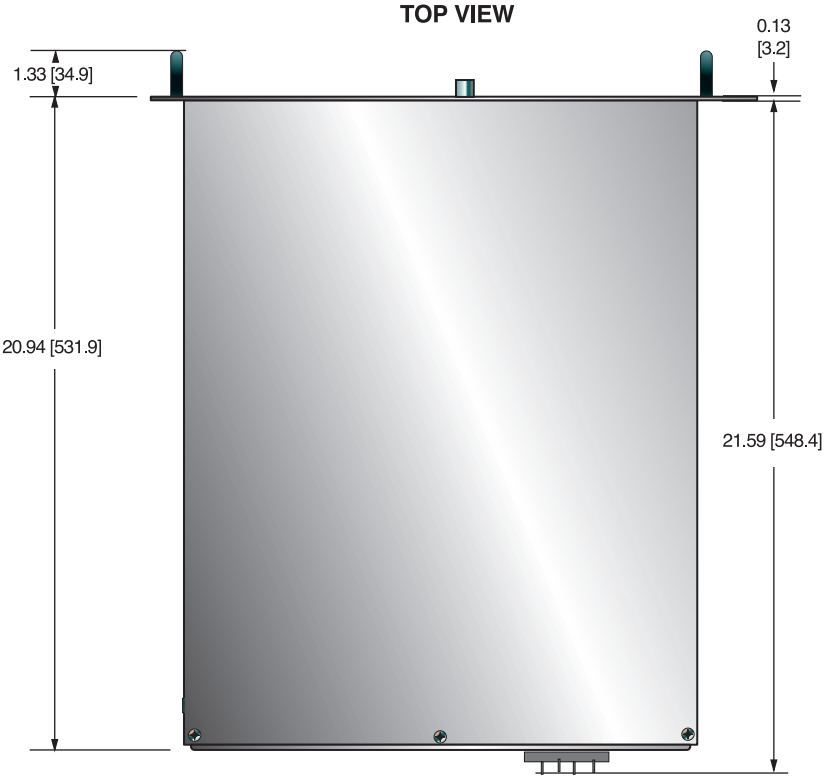
128129-001 REV. C

DIMENSIONS: in.[mm]

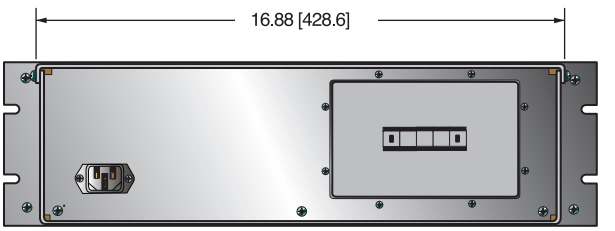
FRONT VIEW



TOP VIEW



BACK VIEW



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