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POW 301

Power supply for IOC 301
RC 3600 OFF-LINE PRINTSYSTEM

Keywords: RC 3600, Power supply.

Abstract : Power supply specification.

POW 301 POWER UNIT

POW 301 forms the connection between 220 volts AC main and IOC 301 circuit cards.

In order to do so the following functions are performed:

- Filtering of AC mains.
- Transformation to give the correct output voltage level and galvanic and capacitive separation from the mains.
- Bridge rectification and a high value electrolytic capacitor to store energy.
- + 5 volts switch regulation (12 amp).
- + 250 volts switch regulation (25 mA).
- - 12 volts switch regulation (200 mA).
- Prevention against overvoltage at + 5 volts (6 volts).
- Protection against overload at + 5 volts (10 - 12 amp).
- By short circuit of -12 volts and + 250 volts the mains will be switched off after 10 msec (damage in the regulator circuit will occur).

OVERALL SPECIFICATIONS

Power Supply Requirements:

Supply Voltage	220 volts/50 Hz
Max. Power Consumption	150 watt

Ambient Air:

Temperature	0 to 45 degrees C
Relative Humidity	20 to 70 per cent

Dimensions:

Height	133 mm
Width	484 mm
Depth	177 mm

Weight: Approximately 6 kg

SPECIFICATION OF + 5 VOLTS SWITCH REGULATOR

Output Voltage:	+ 5 volts
Adjustment Range:	\pm 10 per cent
Output Current:	10 - 12 amp.
Regulation for \pm 10 per cent Mains Variation (4 amp):	\pm 20 mV
Output Ripple (12 amp):	\pm 50 mV
Spikes within:	\pm 300 mV > 0.5 usec.
Spikes within:	\pm 1 v < 0.5 usec.
Load Variation:	Delta I = 8 amp. Delta V = 100 mV
Efficiency (4amp):	73 per cent
Max. Input Voltage:	40 volts
Min. Input Voltage:	15 volts
Temperature Drift (4 amp):	1 mV/degrees C
Temperature Range:	0 to 45 degrees C
Relative Humidity:	30 to 70 per cent

SPECIFICATION OF + 250VOLTS SWITCH REGULATOR

Output Voltage:	250 volts
Adjustment Range:	\pm 5 per cent
Output Current:	25 mA
Regulation for \pm 10 per cent Mains Variation (25 mA):	\pm 0.5 volt
Output Ripple (25 mA):	2 Vpp
Load Variation:	Delta I = 25 mA Delta V = 5 volts
Efficiency (40 mA):	60 per cent
Max. Input Voltage:	40 volts
Min. Input Voltage:	25 volts
Temperature Drift:	30 mV/degrees C

Temperature Range: 0 to 45 degrees C

Relative Humidity: 30 to 70 per cent

Improvement of 10 times on regulation specification for this regulator is possible.

SPECIFICATION OF - 12 VOLTS SWITCH REGULATOR

Output Voltage: - 12 volts

Adjustment Range: $\begin{matrix} + \\ - \end{matrix}$ 10 per cent

Output Current: 0,2 amp

Regulation for $\begin{matrix} + \\ - \end{matrix}$ 10 per cent

Mains Variation (0,2 amp): $\begin{matrix} + \\ - \end{matrix}$ 60 mV

Output Ripple (0,2 amp): 80 mVpp

Load Variation: $\Delta I = 0,2$ amp $\Delta V = 100$ mV

Efficiency (0,5 amp): 70 per cent

Max. Input Voltage: 40 volts

Min. Input Voltage: 16 volts

Temperature Drift: 2 mV/degrees C

Temperature Range: 0 to 45 degrees C

Relative Humidity: 30 to 70 per cent