

TECHNICAL SPECIFICATION OF
Pulsed Power Supply for Plasma Electrolytic Oxidation

Supply of pulsed power supply as per specifications given below.

1. Pulsed Plasma Power supply – (1 No.)

The power supply should be capable of operating in DC with variable duty cycle and variable frequency. It should be capable of operating in constant current (+ or – 0.1 Amp accuracy) and constant voltage (CV) modes.

Provision must be given in the equipment for connecting to a suitable oscilloscope with current and voltage probes for recording and displaying the voltage and current Vs time. (suitable oscilloscope, current and voltage probes - optional)

i) Input Voltage: 415 V \pm 10 %, AC 3 PHASE, 50 Hz (\pm 5%), 4 wire with separate earth connection

ii) Output Voltage: Crocodile clips output connection consisting of:

Pulsed DC output (pulsed between zero and peak) wherein the peak voltage output, pulsing frequency and duty cycle are programmable as follows.

a) Peak Voltage: Constant Voltage continuously variable from 0 Volts DC to 1000 Volts DC by:

- a. Ten turn Potentiometer and
 - b. External control voltage 0-10 V DC [selectable].
- Accuracy: 1 %
Ripple: 0.5%

b) Current: Constant current continuously variable from 0 Amp to 20 Amp DC by:

- a. Ten turn Potentiometer and
 - b. External control voltage 0-10 V DC [selectable].
- Accuracy: \pm 0.1 Amp accuracy
Ripple: 0.5%

c) Pulse Frequency: Continuously variable from 50 Hz to 2 kHz by:

- a. External continuous control voltage 1 - 10 V DC [selectable].

d) Duty Cycle: Continuously variable from 0% to 100% by:

- a. External Thumbwheel switch in steps of 1 % [Keypad]
- b. External control voltage 0-10 VDC [selectable]

e) Power output: 10 kW or better.

iii) Output Current: 10 Amperes or better. (with current limit protection)

iv) Arc Suppression: Active arc suppression

v) Duty: Continuous duty. [24 Hrs. continuous operation]

vi) Modes of Operation: Constant Voltage (CV) / Constant Current (CC)

vii) Required additional features:

1. **Interlocks:** Emergency Stop
DC ON / Over Voltage or Current in CV or CC mode respectively
Short Circuit (Overload)
Over Temperature

2. **Ambient:** 20°C to 45 °C (Forced Cooling Arrangement)

3. **VOLTAGE CONTROLLED / CURRENT** (Current controlled mode preferred):

Output voltage controlled through 0 to 10V DC from Remote Input / PLC or Front Panel Potentiometer

Output voltage feedback and output current feedback 0 to 10V DC to PLC.

Both Input and output feedback are linearly optically isolated.

Output voltage inhibited if input voltage is less than 330V AC or greater than 470 V AC phase to phase.

Output current limit is settable with feedback protection.

Output soft start available to prevent sudden voltage or current surge.

Power supply can be modified to work in constant voltage or constant current mode.

Power supply can be modified to adjust output voltage (constant voltage mode) or adjust output current (constant current mode through external potentiometer).

viii) Protection: Input over current, input over voltage, output overload, over temperature, short circuit etc.

ix) Protection against corrosive environment: The unit should have corrosion proof coating to protect from corrosive environment.

x) Other Features:

The unit should be provided with forced cooling.

The unit should be rack mounted and provided with wheels for easy movement.

Electrical and electronic schematic and line diagrams must be supplied.

xi) **Safety:** Should conform to the standard safety norms

xii) **Warranty:** At least a year or more on-site comprehensive warranty from the date of installation.

Conditions:

1. Quotes are requested **by two-bid system Technical bid separate cover & Financial bid separate cover combined in single big cover.**
2. A separate compliance **certificate/sheet should be attached** indicating whether or not proposed system meets above said specifications. Do not use ambiguous terms like "yes", "complied" or "available". Specifically mention the matching specification of the product offered by you.
3. This system or system with similar specification should have been supplied to at least customers in India and supported by service at least for 5 years.
4. Submit the list of places (in India) to which the system is supplied.