



GROW CONTROL is a research-driven power electronics organization that integrates technology, innovation, and engineering to transform concepts into world-class products and solutions.

The **Toroidal Field Power Supply** from **GROW CONTROL** offers high-performance solutions designed to provide reliable, precise, and stable high-frequency AC power across a range of industrial, defense, and research applications. These power supplies are engineered for continuous high-current operations with minimal ripple and noise, making them ideal for processes such as electroplating, battery testing, and high-demand power systems.

The Toroidal Field Power Supply delivers robust, energy-efficient, and stable power, making it perfect for critical applications, including electroplating, battery testing, and laser systems. Developed with indigenous technology and built to the highest industry standards, these power supplies are designed to meet the rigorous demands of the industrial, defense, and aerospace sectors, ensuring reliable performance even in the most challenging environments.

With over 20 years of expertise and a commitment to indigenous technology, **GROW CONTROL** provides rugged, reliable, and customizable power supply solutions tailored to meet the stringent requirements of Indian industries, defense, and research sectors.

Features

- **High Current Output:** Supports output currents up to 13,000A, with voltage levels from 5V to 150V, catering to a wide range of power requirements.
- **Stable Output with Low Ripple:** Provides clean, ripple-free DC power, ensuring the stability and precision required for sensitive applications.
- **High Efficiency:** With efficiency rates of over 90%, these supplies reduce energy wastage and optimize operational costs.
- **Advanced Protection Mechanisms:** Integrated protection against over-voltage, over-current, short-circuit, and overheating, ensuring safe and reliable operation.
- **Rugged and Durable Design:** Designed to meet Industrial Standards for durability, making it suitable for industrial applications in harsh conditions.



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- **Modular and Scalable:** Modular configuration allows for easy system expansion and integration to meet evolving power requirements.
- **Remote Monitoring and Control:** Equipped with digital interfaces for real-time monitoring and adjustments, providing flexibility and ease of use in operational environments.
- **EMI/EMC Compliance:** Designed to comply with EN 55022 standards, ensuring minimal electromagnetic interference.

Key Advantages

1. **Indigenous Technology:**

Completely designed and manufactured in India, **GROW CONTROL** Toroidal Field Power Supply deliver solutions optimized for domestic industrial, research, and defense needs.

2. **Precision and Stability:**

The power supplies deliver precise voltage and current with low ripple and noise, essential for high-accuracy applications like battery testing, electroplating, and electrochemical processing.

3. **Energy Efficient:**

With high efficiency, these power supplies reduce operational costs by minimizing energy losses and heat output, leading to longer-lasting components and fewer cooling requirements.

4. **Advanced Protection:**

Built-in safety mechanisms, including over-voltage, over-current, and thermal protection, ensure reliable performance in demanding applications.

5. **Customizable Configurations:**

GROW CONTROL offers flexible options in terms of voltage, current range, and form factor, ensuring that each unit meets the unique requirements of its intended application.



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Applications

1. **Electroplating:**

Provides stable, Toroidal Field Power Supply for electroplating applications, ensuring even coating and improved process efficiency.

2. **Battery Testing and Charging:**

Ideal for battery testing and formation, supporting high current requirements with precise control over voltage and current for accurate results.

3. **Laser Systems:**

Supplies clean, stable DC power for high-power laser systems used in defense, research, and industrial applications.

4. **Electrochemical Processing:**

Supports applications like electrolysis and anodizing, delivering stable and continuous high-current power with low ripple for consistent results.

5. **Aerospace and Defense:**

Provides reliable power for defense and aerospace applications, including testing and powering high-current systems used in critical operations.

Customization Options

GROW CONTROL offers a range of customization options to meet the unique power requirements of diverse industrial and defense applications:

- **Output Voltage & Current Range Adjustments**
- **Cooling System Customization (Air or Liquid)**
- **Advanced Monitoring and Control Interfaces**
- **Extended Protection Features**

Our engineering team collaborates with clients to deliver tailored solutions suited to their operational, environmental, and performance needs.

Why Choose GROW CONTROL?

- **Indigenous Design:** Backed by over three decades of power electronics expertise, **GROW CONTROL** Toroidal Field Power Supply meet high standards of reliability and performance.
- **Efficiency & Stability:** High efficiency and low ripple output ensure stable power delivery, critical for sensitive and precision applications in industrial, defense, and research sectors.



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- **Safety and Reliability:** Designed with comprehensive protection mechanisms, these power supplies offer safe and dependable performance under demanding conditions.
- **Ruggedized for Harsh Environments:** Compliant with military standards, **GROW CONTROL** Toroidal Field power supplies are built to operate reliably in extreme environmental conditions.
- **Customer Support:** From customization and installation to support and maintenance, **GROW CONTROL** ensures seamless integration and optimal performance for all clients.

Certifications

- **EN 55022** – EMI Compliance
- **ISO 9001:2015** – Quality Management Systems



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Technical Specification

Model no.	GCPT-13KA-TFPS
TFPS overall requirements	
Rated output pulse current	1000A to 13000A
Duty cycle	(100-500) mSec ON & 900s OFF(Continuous)
Polarity	Positive
Size	2m x 1.5m x 2m (L x W x H)
Measurement	a. TFPS output voltage b. TFPS output current
Capacitor charging power supply (CCPS)	
Peak capacitor charging power	6kJ/s
Output voltage range	10V to 120V DC
Output current range	10A to 100A DC
Input voltage	415V,50Hz 3ph AC supply
Polarity	Positive
Cooling	Forced air
Regulation	< 1%
Protection	a. Over voltage b. Over current c. Over temperature d. Short circuit e. IGBT over current
Control	a. Mains on & off b. CCPS on & off c. Set voltage d. Set current e. Fault reset f. Local & remote
Measurement & display	a. Output voltage b. Output current c. Mains on & off status d. CCPS on & off status e. Fault status f. CC & CV mode display g. Capacitor bank charging indication



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Capacitor bank			
Type of capacitor			Super capacitor
Capacitance value			608 F
Capacitance tolerance			0-20%
Peak rated current			15kA
Operating temperature			-40 to 65 C
Switching & control circuit			
Switch			Thyristor
Maximum current	average	on-state	15kA
Repetitive voltage	peak	reverse	>1.5kV



OUR CLIENTS



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