

#### AN ISO 9001:2015 COMPANY



**EIK MODULATOR** 

*GROW CONTROL* EIK (Extended Interaction Klystron) Power Supplies are designed to provide precise, high-voltage, high-power performance required for powering Extended Interaction Klystrons (EIKs) used in high-frequency applications like radar, satellite communications, electronic warfare, and broadcasting. These power supplies ensure reliable and stable operation of EIKs, which are essential components in systems that demand high gain, wide bandwidth, and high-power outputs.

Built with indigenous technology, these power supplies are engineered to meet the demanding needs of defense and aerospace sectors, offering efficient and robust performance even in challenging environments.

# **Features**

POWER TECH PVT. LTD. We Provide Solutions....

- High Voltage Output: Capable of providing output voltages ranging from 10kV to 50kV, customizable to support different types of EIKs.
- Power Output Range: High-power output from 1kW to 50kW for driving EIKs used in high-frequency and high-power applications.
- Efficiency: Highly efficient design with up to 94% power conversion efficiency, ensuring low energy loss and minimal heat generation.
- Precision Control: Digital control over key parameters such as voltage, current, and pulse modulation for fine-tuned power delivery to the EIK.
- Low Ripple and Noise: Provides ultra-low ripple and noise for stable and consistent operation of EIKs in sensitive communication and radar systems.
- Rugged Construction: Built to meet MIL-STD-810 standards for durability in harsh environments, such as defense and aerospace applications.
- Compact & Modular: Modular design allows for easy integration into existing systems while saving space.
- EMI/EMC Compliance: Fully compliant with MIL-STD-461 and EN 55022 standards to ensure minimal interference with other electronics.
- Safety Features: Integrated protection features include over-voltage, overcurrent, over-temperature, and short-circuit protection, ensuring the safety of both the power supply and the connected EIK.



# Key Advantages

- **Indigenous Technology:** *GROW CONTROL* EIK Power Supplies are fully developed in India, ensuring reliable and accessible support for domestic defense and aerospace industries.
- **High Power & Voltage Flexibility:** The wide range of output voltage and power configurations make these supplies versatile for different EIK applications, including radar systems, electronic warfare, and satellite communications.
- Efficient Energy Utilization: With up to 94% efficiency, these power supplies deliver high-power outputs while minimizing energy loss, optimizing operational performance and reducing thermal management concerns.
- **Rugged & Reliable:** Designed to withstand extreme environmental conditions, the power supplies are built to ensure consistent performance even in challenging military and aerospace applications.
- Low Ripple & Noise: The design minimizes electrical noise and ripple, which is critical for maintaining the performance and signal integrity of EIKs in communication and radar systems.
- **Customizable Solutions**: *GROW CONTROL* provides custom configurations for voltage, power, and physical design to meet the specific requirements of diverse defense and aerospace applications.

# **Applications**

- **Radar Systems:** High-voltage power supplies for EIKs used in long-range radar systems, providing stable, high-power performance critical for defense and surveillance applications.
- **Satellite Communications:** Provides consistent and precise power for EIKs in satellite communication systems, supporting high-bandwidth and high-frequency communication channels.
- **Broadcasting:** Supports broadcasting systems that rely on high-power amplifiers, ensuring consistent power delivery to EIKs used in television and radio transmission.



- **Electronic Warfare:** Provides reliable power for EIKs in electronic warfare systems, enabling high-frequency signal jamming and detection capabilities crucial for defense applications.
- **Aerospace & Defense Research:**Used in research laboratories and field testing environments to power EIKs for high-frequency research, radar technology development, and defense communication testing.

#### **Customization Options**

*GROW CONTROL* offers full customization to suit specific project requirements. Customizable options include:

- Output Voltage & Power Configurations
- Size and Form Factor Adjustments for Space-Constrained Applications
- Advanced Cooling Options (Air or Liquid)
- Additional Protection Features
- Remote Control and Monitoring Options

Our engineering team works closely with defense, aerospace, and communication sectors to develop solutions tailored to their unique power supply needs.

#### Why Choose GROW CONTROL?

- **Indigenous Expertise:** Backed by over 30 years of experience in power electronics, *GROW CONTROL* delivers robust, reliable, and field-tested power supply solutions for critical defense and aerospace applications.
- **Precision Power Delivery:** Designed for high-voltage, high-power applications, these supplies ensure the smooth and reliable operation of EIKs in high-frequency systems.
- **Rugged & Durable Design:** Built to withstand the toughest environmental conditions, the power supplies comply with military-grade standards, ensuring longevity and reliability in field operations.



- **Energy Efficiency:** With up to 94% efficiency, the power supplies are optimized for cost-effective and energy-efficient operation, reducing thermal management overhead.
- **Customer Support:** *GROW CONTROL* provides end-to-end support, including customization, integration, and technical assistance, ensuring smooth operation and maintenance.

# **Certifications**

- MIL-STD-810 Environmental Testing Standards
- MIL-STD-461 Electromagnetic Compatibility Standards
- EN 55022 EMI Compliance
- ISO 9001:2015 Quality Management Systems

# **Technical Specification**

Model no.		GC183EIK
Input		415V AC±10%, 3ph, 50Hz
Input Current (A)		3
	Voltage (V)	-5.5 to -8.5
Filament	Current (A)	1.3
Supply w.r.t	Regulation (V)	±0.1
Cathode	Filament Delay (sec)	180
(Grid)	Voltage (V)	-60 to 10
Focusing	Ripple (V)	0.5
Voltage w.r.t Cathode	External PRF Delay (ns)	270
Focus	Bias Voltage (V)	-3000
Electrode (Grid) Bias Voltage w.r.t cathode	Current (µA)	100
	Duty Cycle (%)	0 to 6
Focus	PRF (KHz)	100Hz to 40KHz
Electrode (Grid) Pulse	Voltage Rise Time (ns)	100
Characteristics	Voltage Fall Time (ns)	150
	Settling Time (ns)	20
	Pulse width range (ns)	200ns to 13ųS
	External PRF interface (Hz)	100Hz to 40KHz
	Excessive PW (µs)& Over duty protector (%)	17ųS and 6&
Cathode	Voltage Range	-15 to -18



Voltage w.r.t	(kV)	
body	Current (mA)	1.5
	Pulse width	200ns to 17µs
	Intra-pulse Drop (V/µs)	20
	Energy Storage (J)	<1.6J
Collector Voltage with respect to Body	Manual control	Vernier dial type with lock step size 100V
	Voltage Range	0V to -6kV DC (settable)
	Current	24mA Average (max)
	Pulse width	200ns to 17µs
	Intra pulse Drop	50V/µs (max)
	Energy Storage	<1.6J at max. voltage
	Manual control	Vernier dial type with lock step size 60V



# **OUR CLIENTS**



P-5/1/A, Road No. 13, IDA Nacharam, Hyderabad - 500 076, Telangana, India. Ph : +91- 40 -27175591, Fax : +91-40-27175386