



- ✓ Electrospinning, Electrospaying, Insulation Testing, Electrophoresis
- ✓ Models From 1kV to 35kV
- ✓ 30W,60W,100W Units
- ✓ Smart Control and Monitoring
- ✓ Small Footprint
- ✓ Positive or Negative Polarity Available

[See 7000SC Series on Website](#)

We recommend visiting our website for any updated model information

Specification Summary

The Smart Control 7000 range of high voltage power supplies is primarily designed for laboratory applications. Equipped with the Genvolt Smart Controller, this power supply features an LCD screen display and a navigation keypad for seamless control. Additionally, it offers RS485/USB and Bluetooth remote control and monitoring capabilities. The unit provides an adjustable voltage range, adjustable current range, configurable output waveform, highly stable output, and low ripple.

The power supply is available in both positive and negative polarity configurations, with one or two output connectors depending on customer requirements. It also comes in two versions: one with an AC main input voltage (IEC power connector) and another with a 24V DC input voltage (XLR connector).

Input Specifications

AC Input Voltage Range	85VAC-265VAC ,47 to 63Hz
DC Input Voltage Range	21.6VDC-26.4VDC
Efficiency at Full Load	More than 75%

Technical Specifications

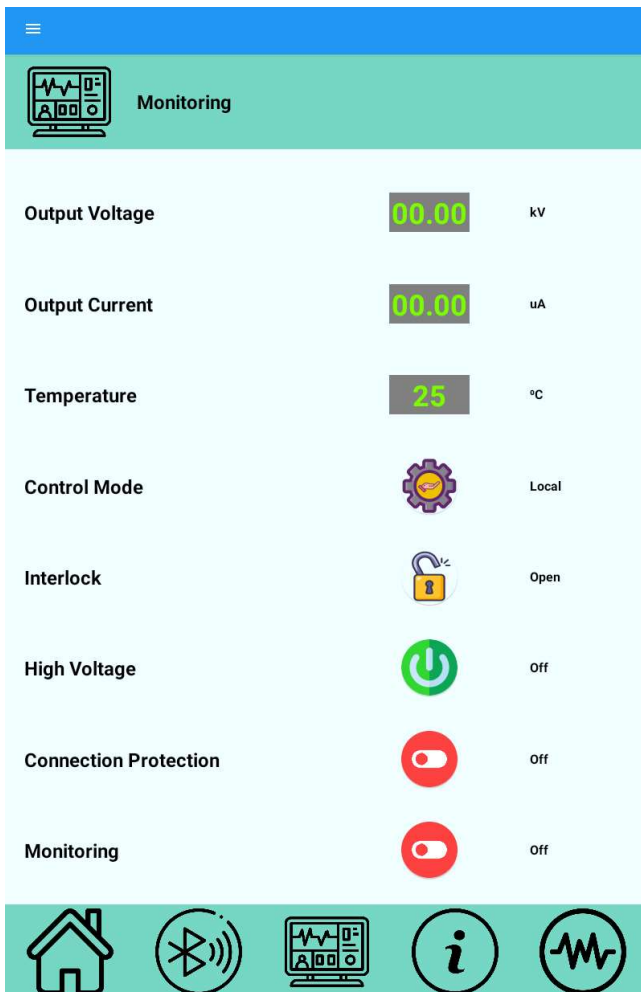
Voltage Line Regulation	Less than 0.3% for an input changing from maximum to minimum
Circuit Protection	Less than 0.1% (peak to peak) of maximum output voltage at maximum load & no load
Voltage Stability	Less than 0.05% for 8 hours per day after 30 minutes warmup
Temperature Drift	Less than 200ppm/°C over the specified temperature.

Output Specifications

30W	70130SC	70230SC	71030SC	72030SC	73030SC	73530SC
Output Voltage Range	0-1kV	0-2kV	0-10kV	0-20kV	0-30kV	0-35kV
Maximum Output Current	30mA	15mA	3.0mA	1.5mA	1.0mA	0.85mA
Output Power	0 - 30W					
Output Polarity	Positive or Negative with Respective to Ground					
Voltage Load Regulation	Less than 0.01% for a load changing from no load tofull load					

60W	70160SC	70260SC	71060SC	72060SC	73060SC	73560SC
Output Voltage Range	0-1kV	0-2kV	0-10kV	0-20kV	0-30kV	0-35kV
Maximum Output Current	60mA	30mA	6.0mA	3.0mA	2.0mA	1.7mA
Output Power	0 - 60W					
Output Polarity	Positive or Negative with Respective to Ground					
Voltage Load Regulation	Less than 0.01% for a load changing from no load tofull load					

100W	701100SC	702100SC	710100SC	720100SC	730100SC	735100SC
Output Voltage Range	0-1kV	0-2kV	0-10kV	0-20kV	0-30kV	0-35kV
Maximum Output Current	100mA	50mA	10mA	5.0mA	3.3mA	2.85mA
Output Power	0 - 100W					
Output Polarity	Positive or Negative with Respective to Ground					
Voltage Load Regulation	Less than 0.01% for a load changing from no load tofull load					



Smart Control and Monitoring

The 7000SC series of high voltage power supplies is equipped with an integrated remote RS485/USB and Bluetooth communication interface, enabling seamless interaction with the Genvolt GUI computer software and Genvolt Mobile Phone Application. This integration allows for a fully automatic control and monitoring experience.

Wired Serial Interface

The 7000SC supports USB/RS485 communication interfaces, providing users with the capability to control the power supply using a computer.

Wireless Interface

The 7000SC also supports Bluetooth communication interfaces, enabling users to control and monitor the power supply using a phone or tablet.

Output Monitor

The 7000SC measures the output voltage, output current, and device temperature. These values are displayed in both the computer software and the LCD display.

Local/Remote Operation Mode

The 7000SC offers two operation modes: Local and Remote. Upon powering on the power supply, it defaults to the local operation mode. In this mode, all front panel keys are available for use. However, in the remote operation mode, users can send programming commands from a controller (computer) via RS485/USB or Bluetooth.

Interlock

The interlock serves as an additional safety mechanism within the 7000SC series of high voltage power supplies. The 7000SC continually monitors the interlock status and promptly turns off the power supply in the event of an open interlock. Furthermore, the system prevents users from turning on the power supply when the interlock is open, enhancing safety protocols and preventing potential hazards.

High Voltage Control

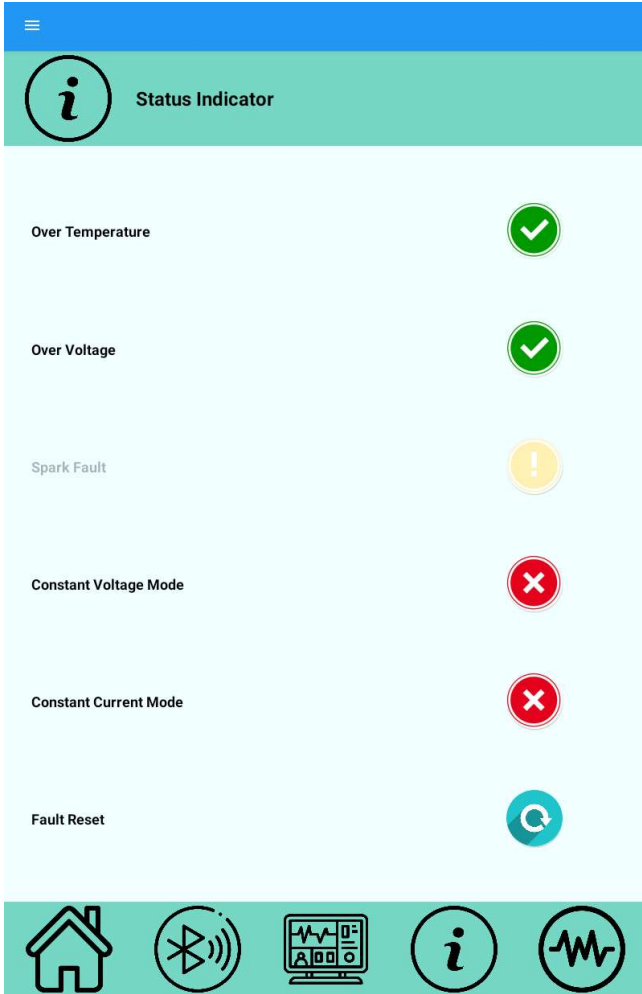
The 7000SC facilitates remote activation and deactivation of the power supply's high voltage using the front panel keypad, wired serial communication, or a wireless Bluetooth interface. This versatile control capability ensures flexibility and convenience in managing the power supply's high voltage functionality.

Connection Protection

If activated, the connection protection feature automatically turns off the power supply in case of a lost connection between the power supply and the controller.

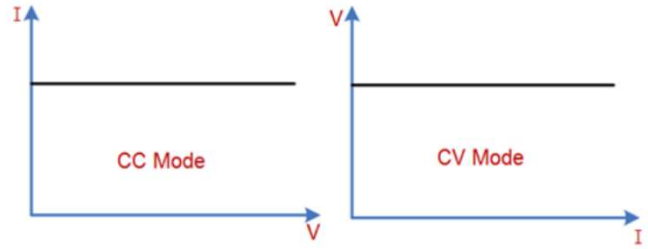
Fault Indicator

The 7000SC provides a comprehensive fault indication system, displaying the status of power supply faults. Over Voltage, Over Temperature, and, where applicable, Spark Fault indications are presented in the computer software, mobile application and on the front panel LCD display.



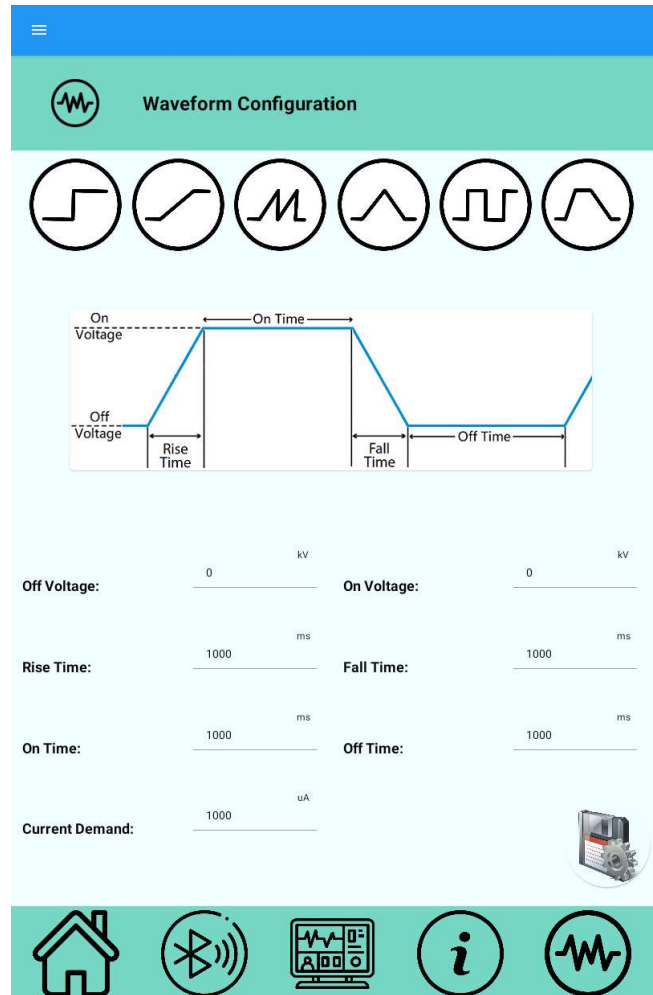
Operation Mode Indicator

The 7000SC series feature two static operation modes: Constant Current (CC) Mode and Constant Voltage (CV) Mode. In CV mode, the power supply maintains a fixed output voltage corresponding to the programmed value, regardless of the output current (as long as the current is below the setpoint). In CC mode, the power supply regulates the output current at the setpoint current, as per the programmed value, irrespective of the output voltage (as long as the voltage is below the setpoint). Users can conveniently select the constant current value and constant voltage value using the front panel, computer software, and mobile application interfaces. The status of the control mode is consistently monitored and displayed in both the computer software and mobile application for real-time awareness and control.



Data Recording

The 7000SC is equipped with data recording capabilities, allowing for the storage of power supply output voltage, output current, and temperature data. This recorded information proves valuable for subsequent analyses. Additionally, the 7000SC records faults and status logs of the power supply, storing the data in a .txt format for future analysis and reference.

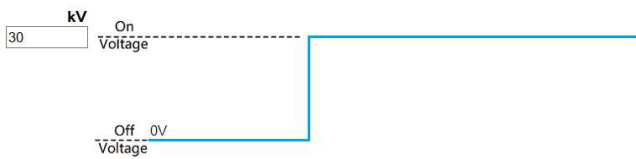


Output Voltage Waveform Selection

A distinctive and exclusive capability of the 7000SC is the ability to control the output voltage of the high voltage power supply based on user-selected waveforms. The 7000SC computer software offers a wide array of waveform options, all fully configurable to produce the desired output.

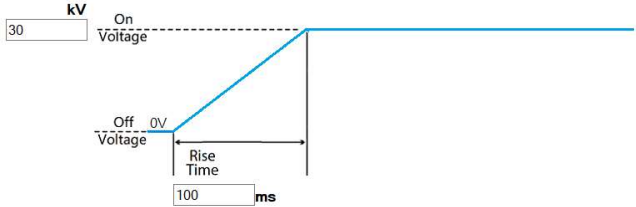
Step Voltage

The most common waveform, providing a step-up in voltage.



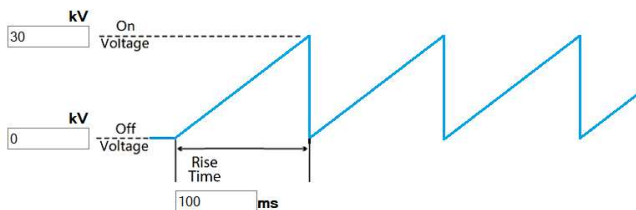
Ramp-Up

The output voltage increases smoothly, reducing high voltage pulse tension over the load and power supply. The rise time of the ramp is configurable.



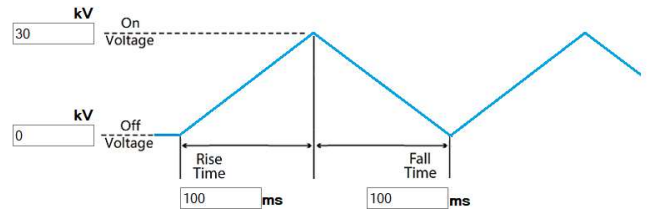
Sawtooth

Repeats the ramp-up waveform continuously, with configurable on voltage, off voltage, and rise-time.



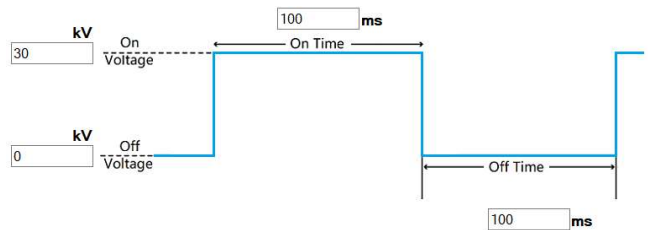
Triangle

Provides a soft increase and soft decrease of the output voltage. Configurable parameters include on voltage, off voltage, rise-time, and fall time.



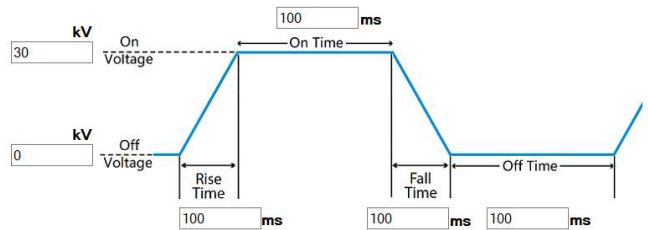
Rectangular (Pulse)

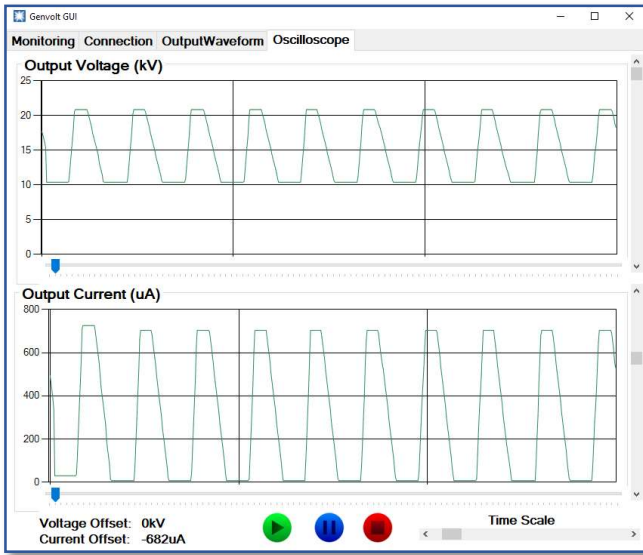
Repeats the step-up waveform continuously, with configurable on voltage, off voltage, on-time, and off-time.



Arbitrary

Allows user-customized waveform configurations with configurable on voltage, off voltage, rise-time, fall-time, on-time, and off-time.





Virtual Oscilloscope

To address the critical concern of understanding the exact waveform of the output voltage and current, the 7000SC features a virtual oscilloscope within its computer software.

Auto Amplitude Scale

Automatically adjusts the amplitude axis scale of the output voltage and current based on their values.

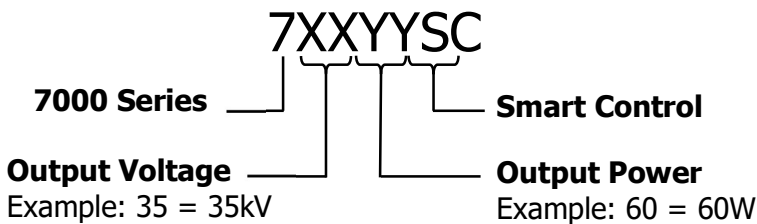
Time Scale Adjustment

Allows adjustment of the display window of the output waveforms.

Voltage and Current Offset Adjustment

Provides the option to adjust the offset on output waveforms, enabling the observation of small changes over large DC values of the output (e.g., small overshoots or undershoots, output instability, and output ripple).

Model Number Coding



Options

- Remote interlock option available
- Dual HV output sockets
- Mounting bars
- Please specify when ordering. For further information please contact us.
- Parallel PSU capability that should be done by Genvolt

Safety

- This power supply contains hazardous voltages and stored energy.
- Contact with the output may result in fatal injury. It should only be opened and maintained by trained personnel.
- The area where the power supply is to be used should be kept clean and dry.
- Before switching the power supply on please confirm that the 10-turn potentiometer is turned fully in a counterclockwise direction.
- Keep a safe distance from the output connector and any items connected to it.
- Ensure that a secure connection is made between the Earth side of the load and the green and yellow Earth lead.

Environmental Details

Operating Temperature	-10°C to 40°C
Storage Temperature	-20°C to 60°C
Humidity	0 to 90% non-condensing

Mechanical Details

Weight	AC Input: 3.92kg (8.64lbs) DC Input: 2.8kg (8.28lbs)
Dimensions	Width 220mm, Height 120mm, Depth 275mm (excluding connectors)
Power Input Connector	AC Input: Standard IEC Connector DC Input: 24V 5Way XLR Connector
HV Output Connector	Genvolt HV Connector



1. **Power Main Switch:** Controls the input of the entire power supply. Ensure equipment is turned off during maintenance.
2. **LCD Display:** Displays output voltage, current, demand voltage and current, faults, and other status information of the power supply.
3. **Navigation Keypad:** A 5-key switch that provides users with full control over the setting menu.
4. **High Voltage Output Connector:** Connects to the high voltage output of the power supply.
5. **M6 for Earth Bonding:** Provides a connection point for earth bonding.
6. **Interlock Remote HV Enable/Disable:** Controls the remote enable/disable of the high voltage interlock.
7. **RS485 Serial Communication Connector:** Provides a connection point for RS485 serial communication. Enables remote control and monitoring of the power supply using computer.
8. **Input Connector:** Available in both DC 5-Way Connector for DC input and AC Standard IEC Connector for AC input with mating cable.



Remote Interlock & Switch

The remote interlock uses a 3-pole TiniQ connector:

- **Pin 1 = Enable**
- **Pin 2 = Ground**
- **Pin 3 = Not Used**

To activate high voltage output remotely, short Pin 1 to Pin 2. Ensure the remote enable is voltage-free for safety. This setup provides a secure and reliable means of remote HV activation while maintaining safety measures.

Worldwide Location



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