

BERTAN**PRECISION HIGH VOLTAGE
POWER SOLUTIONS**

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Series 603C

Compact Precision High Voltage Power Supply Modules



- **Compact Models up to 30kV**
- **Low Ripple and Noise**
- **0.001% Regulation**
- **50 PPM Temperature Coefficient**
- **Local & Remote Programming**
- **Voltage & Current Monitoring**
- **Arc & Short Circuit Protected**
- **Custom Models Available**
- **0.1% Control & Monitoring Accuracy**

General

The Series 603C is a family of regulated, fixed output polarity, modular high voltage power supplies. They provide exceptional performance and value in many applications including CRTs, spectrometers, detectors, imaging and electron beam applications.

The Series 603C require a standard line input of 115/230Vac (switch selectable), 50-60Hz. The units are fully enclosed and designed for system or bench top operation. A wide range of stable output voltages, up to 30kV, is available.

The output voltage is controlled locally by an internal multi-turn potentiometer. Remote analog voltage or resistance programming is included in all models. Analog monitor outputs are also included for remote monitoring of both the high voltage output and current outputs. Remote control capability includes a remote ON/OFF logic input.

Output

MODEL	VOLTAGE	CURRENT	RIPPLE (pk-pk)
603C-10P,N	0 to 1kV	0 to 30mA	15mV
603C-15P,N	0 to 1.5kV	0 to 20mA	15mV
603C-30P,N	0 to 3kV	0 to 10mA	30mV
603C-50P,N	0 to 5kV	0 to 5mA	50mV
603C-100P,N	0 to 10kV	0 to 2mA	200mV
603C-150P,N	0 to 15kV	0 to 1.5mA	450mV
603C-200P,N	0 to 20kV	0 to 1mA	800mV
603C-300P,N	0 to 30kV	0 to 400 μ A	6V

Polarity:

All models have fixed output polarity, either positive or negative (suffix P or N).

Input

Power:

115 Vac $\pm 10\%$ @ 1 Ampere, 50-60Hz.

230 Vac $\pm 10\%$ @ 0.5 Amperes, 50-60Hz.

A 115/230V line switch and 1 Ampere fuse are included.

Performance

Line Regulation:

$\pm 0.001\%$ of maximum for $\pm 10\%$ input line change.

Load Regulation:

$\pm 0.002\%$ of maximum for 0 to maximum-rated output current change.

Ripple:

See chart above.

Temperature Coefficient (0 to 50°C):

50ppm of maximum per °C.

Stability (after ½ hr . warm-up):

0.01% per hour; 0.02% per 8 hours.

Features

Local Control:

Internal multi-turn potentiometer for 0 to maximum output voltage ($\pm 0.2\%$).

Remote Programming:

0 to +5 Volt dc analog input signal proportional to 0 to maximum rated output. Accuracy is $\pm(0.1\%$ of setting + 0.1% of maximum). The programming input impedance is greater than 10 megohms. Provision is included to configure the unit (by means of an internal jumper) for 0 to -5 Volt analog programming.

Voltage Monitor:

0 to +5 Volts proportional to 0 to maximum output high voltage. Accuracy is $\pm(0.1\%$ of reading + 0.1% of maximum). The monitor output impedance is 10 kilohms.

Current Monitor:

0 to +5 Volts proportional to 0 to maximum output current. Accuracy is $\pm(2.0\%$ of reading + 1.0% of maximum). The monitor output impedance is 10 kilohms.

Interlock:

Remote interlock disables (low) and enables (high) the high voltage output. Signal is normally high and supply will default to an "enabled" condition.

Current Limit:

All units provide short circuit current limiting to less than 110% of the maximum rated output current. Supply is self restoring upon removal of cause of limit condition.

Protection:

Short circuit and arc protected; self-restoring. The input ac line is fused.

Mechanical

Size:

5" H x 5.5" W x 8.5" D (127 x 140 x 216mm)

Weight:

8 lbs (3.64 kg).

High Voltage Connector:

Models up to and including 5kV use Bertan P/N JAC. The required mating connector is a Bertan P/N PAE (SHV Type 1705-14) which is not included. The 10kV, 15kV and 20kV units use a Bertan P/N JGA output connector and a P/N PGQ mating connector (Alden 8101). The 30kV units have a Bertan P/N JGP output connector and a P/N PGQ mating connector (Alden 8111). All 10 through 20kV units are provided with mating connectors assembled to 1.5 meters of high voltage cable. 30KV units come with 2 meters of high voltage cable with mating connector attached. For units up to 5kV a preassembled HV cable must be purchased separately.

AC Power Input Connector:

3-position terminal strip.

Low Voltage I/O Connector:

9 pin Molex connector for remote programming, remote voltage monitoring, remote current monitoring, and remote turn ON/OFF functions. The mating connector and pins are provided.

Custom Models

The Series 603C can be economically and quickly modified to satisfy custom applications. Other output voltage and/or current ratings, custom control features, digital programming, or special mechanical constraints are some of the varied requirements which can be satisfied. Contact sales@bertan.com for a prompt review of your application.