

BERTAN**PRECISION HIGH VOLTAGE
POWER SOLUTIONS**

A Del Power Conversion Group Company * 800-966-2776 * info@bertan.com

Series MWPC

Multiwire Proportional Chamber DC Output High Voltage Power Supplies

- Independent Dual Outputs to 10kV
- Short Circuit & Arc Protected
- Low Ripple & Noise
- Front Panel & Remote Control
- Front Panel & Remote Monitoring
- Fast & Slow Overload Detectors
- Hold & Auto Reset Trip Modes
- CE Certified

General

The Bertan MWPC Series are precision high voltage power supplies designed for use with multiwire proportional chambers. They utilize Bertan's proprietary linear circuitry for the generation of highly stable, regulated, low noise output voltages. Each double width NIM MWPC power supply contains two identically rated high voltage power supplies.

The two high voltage outputs are fixed polarity, both positive, both negative or one of each. Each output is completely independent of the other, allowing greater local and remote programming flexibility.

Fast and slow automatic overcurrent detectors insure protection of sensitive MWPC loads. Trip mode control and monitoring is provided for each output. Precision output current sensing eliminates the need for zero offset adjustment and provides front panel current monitoring for each output, with sensitivities of 100nA, 1 μ A, 10 μ A, 100 μ A and 1mA full scale.

Front panel, precision, 10-turn potentiometers and counter dials provide an accurate setting of each of the high voltage outputs. Independent remote programming of the outputs can also be selected.

	OUTPUT A		OUTPUT B	
MODEL	VOLTAGE	CURRENT	VOLTAGE	CURRENT
375P	0 to +5,000V	0 to 500 μ A	0 to +5,000V	0 to 500 μ A
375N	0 to -5,000V	0 to 500 μ A	0 to -5,000V	0 to 500 μ A
375X	0 to +5,000V	0 to 500 μ A	0 to -5,000V	0 to 500 μ A
377P	0 to +7,500V	0 to 500 μ A	0 to +7,500V	0 to 500 μ A

377N	0 to -7,500V	0 to 500 μ A	0 to -7,500V	0 to 500 μ A
377X	0 to +7,500V	0 to 500 μ A	0 to -7,500V	0 to 500 μ A
380P	0 to +10,000V	0 to 300 μ A	0 to +10,000V	0 to 300 μ A
380N	0 to -10,000V	0 to 300 μ A	0 to -10,000V	0 to 300 μ A
380X	0 to +10,000V	0 to 300 μ A	0 to -10,000V	0 to 300 μ A

All models have two, independent, fixed polarity, high voltage outputs, OUTPUT A and OUTPUT B. The polarity of each output is specified by the model suffix; P (Positive), N (Negative), or X (one of each polarity).

Ripple is measured peak to peak at maximum output power.

Output

Voltage and Current:

See chart above

Input

Power:

± 12 Vdc at 900mA maximum from NIM bin power supply

Performance

Line Regulation:

$\pm 0.001\%$ for $\pm 1\%$ change in input bin dc voltage

Load Regulation:

$\pm 0.002\%$ for \pm full output current change

Ripple:

50 mV peak to peak maximum at maximum power output

Stability (after 1/2 hour warm-up):

0.01%/hr, 0.02%/8 hrs

Temperature Coefficient (0 to 50°C):

50ppm per °C:

Features

High Voltage ON-OFF Switches:

Independent high voltage power supply ON-OFF power switches and power on indicators for control of each output

Precision High Voltage Control:

Two independent multi-turn potentiometers and precision indicator dials control the output high voltages for each power supply when operating in the local mode

Remote High Voltage Programming:

Rear REMOTE-LOCAL switches (one for each power supply) select front panel control or remote programming of

the high voltage outputs. A programming voltage of +1V per 1kV output is applied at the rear panel REMOTE INPUT connector. Separate connector pins allow independent programming of each output. Accuracy is \pm (0.25% of setting + 0.25% of maximum)

High Voltage Monitors:

Two miniature coaxial connectors are provided on the front panel for monitoring each high voltage output. The monitor output is 1V per kV. Monitor accuracy is \pm (0.1% of reading + 0.02% of maximum). The output impedance is 10 kohms

Output Current Monitors:

Two miniature coaxial connectors are provided on the front panel for monitoring each power supply output current. The current monitor output is 1V per 100 μ A. Monitor accuracy is \pm (1.5% of reading + 1.5% of maximum). The output impedance is 10 kilohms

Meter Range Switches:

Two 5 position front panel rotary switches select the desired current meter range for each power supply (1mA, 100 μ A, 10 μ A, 1 μ A and 0.1 μ A current full scale can be selected)

BinGate:

Application of 0 volts to the "Gate Input" allows decrease of preprogrammed output voltage by 10%

Output Current Meters:

Two front panel meters read the true output current with a full scale sensitivity of from 100nA to 1mA. The meter range switches (see above) select the full scale sensitivity

Current Trip:

Current trip and automatic high voltage shutdown will occur when the output current of a supply exceeds 80% of the range selected by the meter range switch

Trip Hold/Auto Reset Switches:

Independent front panel toggle switches select the TRIP HOLD or AUTO RESET mode for each power supply. In TRIP HOLD mode, the high voltage will stay off after an overload. In the AUTO RESET mode the high voltage will cycle off and then on again until the overload is removed

Trip Monitors:

Front panel, parallel, miniature coaxial connectors provide trip monitoring for each power supply. When either or both supplies trip, the monitor is grounded. The two connectors permit daisy-chaining multiple units to a single remote trip indicator

Protection:

Short circuit and arc protected, overvoltage limited, fast and slow overcurrent sensing

Mechanical

Size:

2.7" W x 8.7" H x 9.7" D (69 x 221 x 246mm)

Weight:

6.3 lbs (2.9kg)

High Voltage Connectors:

Model 375 uses SHV panel receptacle, Kings type 1707-1. The mating SHV connectors, Kings type 1705-14 (BERTAN part number PAE), are not supplied and must be ordered separately (two per unit)

Models 377 and 380 use 10kV panel receptacles, Kings type 1064-1. The mating 10kV connectors, Kings type 1065-1 (BERTAN part number PBA), are not supplied and must be ordered separately (two per unit)

Power Input Connector:

Standard NIM bin power connector

Rear Panel Remote Program Connector:

GOB12-88PNE. Mating connector kit (P/N 413290) must be ordered separately if required

Monitor Output Connectors:

Front panel connectors, Kings K-LOC 1074-1, are provided for high voltage monitoring, current monitoring, and for trip monitoring of each output. The six mating connectors, Kings 1075-2, must be ordered separately if required

Rear Panel Bin Gate Connector:

Kings K-LOC 1074-1. The mating connector, Kings 1075-2 must be ordered separately if required

Custom Models

The NIM MWPC modules can be modified to meet custom requirements. Other output voltage and/or current ratings, custom control and programming or special connectors are some of the varied requirements which can be satisfied. Contact sales@bertan.com for a prompt review of your application
