INSTALLATION and OPERATING INSTRUCTION MANUAL

MODELS

375N/375P/375X
377N/377P/377X
380N/380P/380X

WARNING

THIS UNIT PRODUCES HAZARDOUS VOLTAGES. DO NOT APPLY INPUT POWER UNLESS ADEQUATE GROUNDING IS PROVIDED TO THE POWER SUPPLY AND THE HIGH VOLTAGE OUTPUT HAS BEEN PROPERLY CONNECTED.

WARRANTY

BERTAN Associates, Inc. warrants this instrument to be free from defects in material and workmanship for a period of one year from the date of shipment. This warranty does not apply to equipment that has been subjected to misuse or which has been repaired or altered in any way by the user. BERTAN Associates, Inc. is responsible only for the cost of materials and labor to repair or replace, FOB our factory, products proved to be defective during the warranty period. We are not liable for consequential damages incurred due to failure of this equipment. No other warranty is expressed or implied. All products returned under warranty must be shipped prepaid to the factory with documentation describing the malfunction noted. It is recommended that the factory be notified and a Return Authorization Number obtained prior to shipment. The equipment will be evaluated, then repaired or replaced and promptly returned if the warranty claims are found to be substantiated. A nominal service charge will be made for any unsubstantiated claims. Include the BERTAN Associates Model and Serial number in all correspondence with the factory.

THE DATA CONTAINED IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE. WRITTEN PERMISSION FROM BERTAN ASSOCIATES, INC IS REQUIRED PRIOR TO THE REPRODUCTION OF ANY TECHNICAL DATA CONTAINED IN THIS MANUAL.

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SECTION I GENERAL DESCRIPTION

1.1 PURPOSE OF EQUIPMENT

The BERTAN MWPC Modules are precision high voltage power supplies, designed for use in multi-wire, proportional chambers. The power supply is housed in a standard AEC NIM dual width module, powered by insertion into a standard AEC NIM bin.

1.2 DESCRIPTION

Each model is available with two identical polarity high voltage modules, or with one positive and one negative module. A suffix is added to the part number to define the polarity of the two independent outputs (see 1.3 below). The polarity of the outputs is indicated by the color of the front panel; red for two positive outputs, orange for two negative outputs, and grey for one output of each polarity.

The Model 375 is adjustable from 0 to 5kV, the Model 377 from 0 to 7.5 kV, and the Model 380 from 0 to 10kV. The models feature accurate, independent local and remote voltage control for each of the two outputs, fast and slow overcurrent detectors, proportional voltage and current monitors, low ripple and drift, and precise load regulation.

1.3 ELECTRICAL SPECIFICATIONS

Input Power:	+/-12V @ 800mA dc maximum from NIM BIN power supply.
Output Power:	(For each of two high voltage outputs) Model 375P - 0 to +5kV @ 500uA max. Model 375N - 0 to -5kV @ 500uA max. Model 377P - 0 to +7.5kV @ 500uA max. Model 377N - 0 to -7.5kV @ 500uA max. Model 380P - 0 to +10kV @ 300uA max. Model 380N - 0 to -10kV @ 300uA max. (An X at the end of the Model Number instead of a P or N indicates one output of each polarity.)
Control:	Multi-turn precision potentiometer and indicator dial for each output.
Programming:	+1V per 1kV of output voltage, applied at the Remote Program Connector.
Load Regulation:	0.002% for Models 375 and 377. 0.001% for Model 380.
Line Regulation:	±0.001%
Ripple:	≤50mV peak-to-peak
Temp Coeff:	50ppm/°C over the range of 0 to 50°C
Stability:	.01%/hour, .02%/8hours after initial warm-up.
Protection:	Overvoltage limit, overcurrent shutdown

1.4 MECHANICAL SPECIFICATIONS

Size:	Double width standard NIM module. 2.7"W X 8.7"H X 9.7"D (69 x 221 x 246mm).
Weight:	7 pounds (2.8kg)
HV Connector:	Model 375: Kings SHV 1707-1 (Mating connector 1705-1) Models 377 and 380: Kings SHV 1064-1 (Mating connector 1065-1)
LV Connectors:	Remote Program - Burndy GOB 12-88 PNE Power Input - Winchester 111-20853 Monitor Outputs - Kings K-LOC 1074-1 Bin Gate - Kings K-LOC 1074-1

Mating connectors are not supplied, and must be ordered if required.

SECTION II INSTALLATION

2.1 INSTALLATION

The MWPC Series is a family of regulated, dual output, high voltage power supplies that conform to AEC Standards for insertion into a NIM bin. Each unit is a double width module, secured into the NIM by means of captive front panel screws. Input power is obtained from the bin dc power via the rear panel Winchester 111-20853 connector.

Set the LOCAL/REMOTE switches on the rear panel to LOCAL if front panel control is desired. If remote control operation is required, set the switches to REMOTE, and connect the programming signal input at the rear panel to the remote program connector. The high voltage output connectors must be properly terminated before the power supply is turned on.

SECTION III OPERATION

3.1 OPERATION

The operation of the power supplies is controlled and monitored by the meter, switches, indicators and connectors located on the front and rear panels. Remote and local control operation can be selected and the operation fully monitored for each of the two independent outputs.

3.2 FRONT PANEL CONTROLS, METER, INDICATORS AND CONNECTORS

3.2.1 CURRENT METER

The front panel current meter reads the current output from either of the two high voltage power supplies. The METER SELECT switch determines which supply output current is displayed on this meter. The sensitivity of the meter is selected by the METER RANGE switches. The full scale sensitivity can be varies from 0.1uA to 1mA.