

# Model 668B

## Precision, High-Voltage Reference Supply



The Trek Model 668B is a precision, high-voltage, reference power supply with an adjustable output voltage range of 0 to 3 kV DC or 0 to -3 kV DC and an output current capability of up to  $\pm 5$  mA DC.

Front panel push-buttons are used to select the desired output voltage with 100 mV resolution. Each decade of the output voltage is independently controlled by its own set of up and down push buttons.

Current control is provided by front panel selection of either supply trip-off or limiting at the preset current value.

Nine programmable memory locations are provided for saving and recalling frequently used output voltage and current settings.

A voltage setting (including polarity) and a current limit or trip value can be stored in each memory location.

The memory locations can be accessed from the front panel or through an optional digital communications interface.

An easy-to-read, sixteen-character LED display indicates the output voltage, the current limit or current value, as well as the memory location currently selected.

The Digital Enable feature provides a connection for a TTL signal or a switching device to turn on and off the high voltage remotely. The optional digital communications interface is well suited for automated test equipment applications.

- Output Voltage Range  
0 to  $\pm 3$  kV DC
- Output Current Range  
0 to  $\pm 5$  mA DC
- Output Accuracy  
Better than 0.015%  
of Full Scale
- Nine Programmable  
Memory Locations
- Adjustable Current Limit  
or Current Trip Value
- Optional Digital  
Communications  
Interface
- Easy-to-Read  
16-Character  
LED Display
- Easy-to-Use  
Push-Button  
Controls



Measurement and Power Solutions™

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# Model 668B Specifications

All specifications are with no load unless otherwise noted.

## Output

### Output Voltage Range

Adjustable from 0 to +3 kV DC or 0 to -3 kV DC.

### Output Voltage Resolution

100 mV.

### Output Current Range

0 to  $\pm 5$  mA DC.

## Performance

### Output Voltage Accuracy

Better than 0.015% of full scale.

### Zero Offset Voltage

Less than 50 mV.

### Output Noise

Less than 15 mV rms (measured using the true rms feature of the Hewlett Packard Model 34401A digital multimeter).

### Regulation

#### Line

Better than 0.0025% for a line change from 90 V to 126 V AC or 180 V to 250 V AC.

#### Load

Better than 0.0025% for a load change from 0 to 5 mA.

### Stability

#### Drift with Time

Less than 2 ppm/month, noncumulative.

#### Drift with Temperature

Less than 25 ppm/ $^{\circ}$ C.

## General

### Line Supply

90 to 126 V AC or 180 to 250 V AC  $\pm 10\%$ , at 50-60 Hz (specify when ordering).

### Operating Conditions

#### Temperature

5  $^{\circ}$ C to 35  $^{\circ}$ C.

#### Relative Humidity

To 75%, noncondensing.

## Features

### Front Panel Display

A sixteen (16) character LED display that indicates the output voltage, the current limit/trip setting, and the memory location.

### Front Panel Voltage Control

#### High Voltage On/Off

Individual push buttons.

#### Voltage Selection

Up and down push buttons that independently control each of the 5 digits of the displayed voltage.

#### Polarity

Push-button selectable.

#### Zero

Push button that commands the output to zero volts.

### Current Limit/Trip

Current LIMIT or current TRIP is selected using a single push-button switch. The value is adjustable from 1 mA to 5 mA with push buttons. A LIMIT or TRIP indicator will flash when the instrument is in a current limit or trip condition.

#### Current Limit/Trip Resolution

1 mA.

#### Current Limit/Trip Accuracy

Better than 10% of setting.

### Digital Enable Feature

An open collector, TTL compatible input to turn on and off the high-voltage output. A TTL high will turn off the high voltage. A TTL low will turn on the high voltage.

## Features (cont.)

### Memory

Nine (9) programmable memory locations for frequently used output voltage and current settings. A voltage setting (including polarity) and a current value can be stored in each memory location.

## Mechanical

### Dimensions

104 mm H x 438 mm W x 394 mm D, (5.09" H x 17.25" W x 15.51" D).

### Weight

6.9 kg (15.2 lb).

### High-Voltage Output Connector

MHV connector.

### Digital Enable Connector

BNC connector.

### AC Line Receptacle

Standard three-prong AC line connector with integral fuse holder.

## Certification

TREK, INC. certifies that each Model 668B is tested and calibrated to specifications using measurement equipment traceable to the National Institute of Standards and Technology or traceable to consensus standards. A Certificate of Calibration accompanies each instrument when it is shipped from the factory.

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All specifications are subject to change.  
1122/DEC

## Model 668B Ordering Information

### Model 668B

### Accessories

Item	Part No.	Item	Part No.
HV Reference Supply (90 to 126 V AC)	668B-L	Operator's Manual	23070
HV Reference Supply (180 to 250 V AC)	668B-H	MHV Mating Plug	B3005
		Line Cord (90 to 126 V AC)	N5002
		Line Cord (180 to 250 V AC)	Contact factory
		Model 604RA Rack Adapter (optional)	C4102



TREK, INC. 11601 Maple Ridge Road • Medina, NY 14103 • USA • 800-FOR TREK  
585-798-3140 • 585-798-3106 (fax) • www.trekind.com • sales@trekind.com

