

Model 605A

High-Voltage Reference Supply



The Trek Model 605A is a high-voltage reference supply designed to provide precise control of output voltages in the range of 0 to +1 kV DC or 0 to -1 kV DC with an output current range of 0 to ± 1 mA DC.

The Model 605A provides two modes of operation, a fixed mode providing a constant +1 kV or -1 kV output, and a variable mode providing variable control of the output voltage with a one (1) volt resolution over a range of 0 to ± 1 kV.

The Model 605A features an all-solid-state design for accurate, low-noise operation and is protected against over-current conditions that may be generated by output short circuits to ground.

A Digital Enable feature provides a connection for a remote device to turn on and off the high voltage of the instrument. This makes the 605A suitable for automated or computer-controlled systems.

The 605A is designed to be operated on a bench top.

Please contact TREK, INC. for further information about this product and its various applications.

We would like to talk with you about your particular needs and determine how this product or other Trek products can meet your specific requirements.

- **Output Voltage Range**
Fixed Mode

- +1 kV or -1 kV

- Variable Mode*

- 0 to +1 kV or

- 0 to -1 kV

- **Output Current Range**

- 0 to ± 1 mA

- **Output Accuracy**
Better than 0.1% of Full Scale

- **Line and Load Regulation Better than 0.002%**

- **Automatic current limit feature to protect the instrument from output short circuits or overloads**

- **Remote high voltage on/off feature ideal for use with automated or computer-controlled systems**



Measurement and Power Solutions™

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Model 605A Specifications

All specifications are with no load unless otherwise noted.

Output

Output Voltage Range

Fixed Mode

+1 kV or -1 kV.

Variable Mode

Adjustable from 0 to +1 kV DC or 0 to -1 kV DC.

Output Voltage Resolution (Variable Mode)

1 V.

Output Current Range

0 to ± 1 mA DC.

Performance

Output Voltage Accuracy

Fixed Mode

Better than 0.1% of full scale.

Variable Mode

Better than 0.1% of full scale.

Zero Offset Voltage

Less than 500 mV.

Regulation

Line

Better than 0.002% for a line change from 90 to 110 V AC, 104 to 126 V AC, or 207 to 250 V AC.

Load

Better than 0.002% for a load change from 0 to 1 mA.

Stability

Drift with Time

Less than 50 ppm/month, noncumulative.

Drift with Temperature

Less than 100 ppm/ $^{\circ}$ C.

Output Noise

Less than 10 mV rms (measured using the true rms feature of the Hewlett Packard Model 34401A digital multimeter).

Features

Front Panel Voltage Controls

Mode Selection

Toggle switch to select either fixed or variable output voltage.

Fixed Voltage Selection

Select either +1 kV or -1 kV using the polarity switch when the mode switch is in the fixed position.

Variable Voltage Selection

Calibrated 10-turn dial.

Polarity

Three-position toggle switch. In the center position the output terminals are disconnected from the high-voltage supply and a 10 k Ω , 2 W resistor is placed across the output terminals.

Digital Enable Feature

A rear panel BNC providing a connection for remotely turning on and off the high voltage output of the 605A.

Recommended Connection

A switch, a relay, or the output of a switching device, such as an open collector transistor, connected between the center conductor and shield of the BNC. The high voltage will be turned off when this connection is open. The high voltage will be turned on when this connection is closed.

Current Limit

1.2 mA. An indicator will illuminate when the instrument is in a current limit condition.

General

Line Supply

Factory set for one of two ranges: 90 to 127 V AC or 180 to 250 V AC, at 48 to 63 Hz (specify when ordering).

Operating Conditions

Temperature

0 $^{\circ}$ C to 40 $^{\circ}$ C.

Relative Humidity

To 85%, noncondensing.

Dimensions

84 mm H x 254 mm W x 280 mm D, (3.3" H x 10" W x 11" D).

Weight

2 kg (4.4 lb).

High-Voltage Output Connector

Two (2) binding posts.

Digital Enable Connector

BNC coaxial connector.

AC Line Connector

Standard three-prong AC line connector.

Certification

TREK, INC. certifies that each Model 605A is tested and calibrated to specifications using measurement equipment traceable to the National Institute of Standards and Technology. A Certificate of Calibration accompanies each instrument when it is shipped from the factory.

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All specifications are subject to change.
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Model 605A Ordering Information

Model 605A

Item	Part No.
HV Reference Supply (90 to 127 V AC).....	605A-L
HV Reference Supply (180 to 250 V AC).....	605A-H

Accessories Supplied

Item	Part No.
Operator's Manual.....	23064



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