



TREK 605A

High voltage reference supply designed to provide precise control of output voltages featuring an all-solid-state design for accurate, low-noise operation.



The Trek® 605A is a high voltage reference supply designed to provide precise control of output voltages in the range of 0 to +1 kVDC or 0 to -1 kVDC with an output current range of 0 to ± 1 mADC. The Trek 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 Trek 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 instrument suitable for automated or computer-controlled systems. The Trek 605A is designed to be operated on a bench top.

AT A GLANCE

Output Voltage Ranges

Fixed Mode

+1 kV or -1 kV

Variable Mode

0 to +1 kV or 0 to -1 kV

Output Current Range

0 to ± 1 mADC

PRODUCT HIGHLIGHTS

- 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

TREK 605A HIGH VOLTAGE REFERENCE SUPPLY

TECHNICAL DATA

Output Specifications

Output Voltage Range	Fixed Mode: +1 kV or -1 kV.
	Variable Mode: Adjustable from 0 to +1 kVDC or 0 to -1 kVDC.
Output Voltage Resolution	1 V (Variable Mode)
Output Current Range	0 to ± 1 mADC

Performance Specifications

Output Voltage Accuracy	Fixed or 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 VAC, 04 to 126 VAC, or 207 to 250 VAC	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/°C
Output Noise	Less than 10 mV rms ¹	

Mechanical Specifications

Dimensions (H x W x D)	84 x 254 x 280 mm (3.3 x 10 x 11 in)
Weight	2 kg (4.4 lb)
High Voltage Output Connector	Two binding posts
Digital Enable Connector	BNC coaxial connector
AC Line Connector	Standard three-prong AC line connector

Electrical Specifications

Line Supply	Factory set for one of two ranges: 90 to 127 VAC or 180 to 250 VAC, at 48 to 63 Hz (specify when ordering)
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Environmental Specifications

Temperature	0 to 40°C (32 to 104°F)
Relative Humidity	To 85%, noncondensing

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 Trek 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.

¹ Measured using the true rms feature of the HP Model 34401A digital multimeter

REFERENCE NUMBERS

Trek 605A	
PN	Description
605A-L	Trek 605A HV Reference Supply (90 to 127 VAC)
605A-H	Trek 605A HV Reference Supply (180 to 250 VAC)

Included Accessories	
PN	Description
23064	Operator's Manual



ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

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