



TREK 615-10

High voltage AC/DC generator and amplifier system used in a broad range of research and development and production applications.



The Trek® 615-10 is a precision high voltage AC/DC generator and amplifier system used in a broad range of R&D and production applications. In the constant voltage mode, the Trek 615-10 generates constant amplitude waveforms with or without DC bias. In the constant current mode, it generates constant amplitude AC current waveforms, with or without DC bias and in amplifier mode, an analog voltage input connector is provided to apply external AC or DC signals. The Trek 615-10 provides many extra features, along with exclusive instrument control and an interface to be used in remote operation.

PRODUCT HIGHLIGHTS

- Three modes of operation with or without DC offset bias
- Monitor and control photoreceptor charging current with very high accuracy
- Four-quadrant output extends frequency response
- Operator-selectable sine, square or triangle wave output shape
- NIST-traceable Certificate of Calibration provided with each unit

TYPICAL APPLICATIONS

- Electrophotographic processes
- Electrophotographic corotron/scoratron device shielding
- Photoconductor industry

AT A GLANCE

AC Voltage Range

0 to 20 kVDC peak-to-peak

DC Bias

0 to ± 10 kVDC

AC Voltage + DC Bias

0 to ± 10 kV (combined AC and DC instantaneous voltage value)

AC Current (DC current is zero)

0 to ± 10 mA average where AC current average = $(2) I_{\text{peak}} / 3.14$

DC Current (AC current is zero)

0 to ± 10 mA DC

AC Current + DC Current

0 to ± 35 mA peak

Frequency

100 Hz to 10 kHz

TREK 615-10 HIGH VOLTAGE AC/DC GENERATOR AND AMPLIFIER

TECHNICAL DATA

Output Limits (Any Mode)	
AC Voltage (DC bias is zero)	0 to 20 kV peak-to-peak
DC Bias (AC voltage is zero)	0 to ± 10 kV DC
AC Voltage + DC Bias	0 to ± 10 kV (combined AC and DC instantaneous voltage value)
AC Current (DC current is zero)	0 to ± 10 mA average where AC current average = $(2) I_{\text{peak}} / 3.14$
DC Current (AC voltage is zero)	0 to ± 10 mA DC
AC Current + DC Current	0 to ± 35 mA peak
Frequency (internal generator)	100 Hz to 10 kHz
Performance Specifications	
Input Voltage Range	± 10 V DC or peak AC
Gain for Non-inverting Voltage	Factory set for 1000 V/V
DC Voltage Gain Accuracy	0.5% of full scale
Slew Rate	Greater than 500 V/ μ s
Large Signal Bandwidth	DC to greater than 7.5 kHz (typical) (2% distortion)
Small Signal Bandwidth	DC to greater than 20 kHz (-3 dB)
Voltage / Current Displays and Monitors Specifications	
AC Display	A 3.5 digit LED display indicates the peak-to-peak value of the AC voltage output or the average AC current waveform (switch selectable)
	Accuracy: Better than 0.5% of full scale ± 1 digit
DC Display	A 3.5 digit LED display indicates either the level of the DC bias or the level of the DC load current (switch selectable)
	Accuracy: Better than 0.2% of full scale ± 1 digit
Voltage Monitor	A buffered output provides a low-voltage replica of the high voltage output
	Scale Factor: 1/1000th if the high voltage output
Current Monitor	A buffered output provides a low-voltage replica of the load current
	Scale Factor: 0.25 V/mA
Mechanical Specifications	
Dimensions (H x W x D)	279 x 432 x 432 mm (9.3 x 17 x 17 in)
Weight	19.3 kg (42.5 lb)
HV Connector	Alden High Voltage Connector
BNC Connectors	Amplifier Input, Voltage Monitor, Current Monitor, Remote High Voltage ON/OFF, Out of Regulation Status, Fault/Trip Status
Electrical Specifications	
Line Voltage	90 to 127 VAC or 180 to 250 VAC, either at 48 to 63 Hz
AC Line Receptacle	Standard three-prong AC line connector
Power Consumption	600 VA, maximum

TREK 615-10 HIGH VOLTAGE AC/DC GENERATOR AND AMPLIFIER

TECHNICAL DATA

Environmental Specifications	
Temperature	15 to 35°C (15 to 35°F)
Relative Humidity	To 85%, noncondensing
Altitude	To 10,000 meters (32,808.4 ft)

Features	
Constant Voltage / Current Current	Two 10-turn potentiometers for precise settings
Amplifier Input	Front-panel BNC processes external signal
DC Bias	Adjustable from 0 to ± 10 kV DC
Internal AC Generator	An internal AC function generator is used to produce the AC output voltage (Constant AC voltage mode) or AC output current (Constant AC Current mode).
High Voltage AC Output Limit	Waveform Options: Square, sine or triangle
	Frequency: 100 Hz to 10 kHz
	Adjustable from 0 to 20 kV p-p for Constant Current mode and Constant Voltage mode
	Accuracy: 5% of full scale
High Voltage On-Off	Local On-Off switch; Remote TTL compatible
Load Compensation	Two potentiometers to adjust AC response
Master DC Switch	Turns On and Off the DC generator
Master AC Switch	Turns On and Off the AC generator
Voltage or Current Model Select	Local front panel switch; Remote TTL compatible switch applied to mode select input
Compliance Indicator	LED indicates over voltage or over current
Overload Indicator	LED indicates when current limit is exceeded

REFERENCE NUMBERS

Included Accessories	
PN	Description
23356	Operator's Manual
43406	HV Output Cable
N5002	Line Cord, Spare Fuses (selected per geographic region)

Optional Accessories	
PN	Description
43421	HV Output Cable
608RA	19 in rack mount kit (with EIA hole spacing)
608RAJ	19 in rack mount kit (with JIS hole spacing)



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.

PRECISION | POWER | PERFORMANCE



For international contact information,
visit advancedenergy.com.

sales.support@aei.com
+1.970.221.0108

Specifications are subject to change without notice. Not responsible for errors or omissions. ©2020 Advanced Energy Industries, Inc. All rights reserved. Advanced Energy® Trek®, and AE® are U.S. trademarks of Advanced Energy Industries, Inc.