The Trek Model 603 is a high-voltage DC power amplifier/piezo driver designed to provide precise control of output voltages in bipolar or unipolar ranges that are customer specified within a range of available settings. The instrument achieves the accurate output responses and high slew rates demanded by reactive loads by utilizing a four-quadrant active output stage that sinks or sources current into reactive or resistive loads.

The Model 603 is configured as a non-inverting amplifier and is available in single or dual channel packaging. They are operable on a bench top or in a 19-in rack.

Key Specifications

- Available Voltage Ranges: 0 to ±125 V DC or peak AC or 0 to -250 V DC or peak AC or 0 to +250 V DC or peak AC
- Output Current Range: 0 to ±40 mA DC or ±80 mA peak AC for less than 1 ms
- Slew Rate: Greater than 100 V/µs
- Large Signal Bandwidth (5% distortion): DC to greater than 150 kHz
- DC Voltage Gain: 50 V/V or 25 V/V

Typical Applications Include

- Driving piezoelectric actuators
- Modulating electrooptics
- Electrostatically controlling ion beams
- Providing remote ON/OFF capabilities for automated or computer controlled systems

Features and Benefits

- Four-quadrant output for driving capacitive loads
- Up to two independent amplifier channels in one enclosure
- Short-circuit protected for equipment protection
- Reprogrammable factory-set output configurations
- All solid-state design for maintenance free operation
- Low output noise for ultra-accurate outputs
- NIST-traceable Certificate of Calibration provided with each unit
### Features (cont.)

- **Digital Enable**: An input providing a connection for a TTL compatible signal to turn on/off the HV output.
- **Load Range Switch**: Slide switch to select high or low capacitive loads (more than 150 pF or less than 150 pF).
- **Dynamic Adjustment**: Graduated 1-turn panel potentiometer is used to optimize the AC response for various load parameters.

### Mechanical

- **Dimensions**
  - **Single Channel Instrument**: 222.3 mm H x 108 mm W 381 mm D (8.75" H x 4.25" W x 15" D)
  - **Double Channel Instrument**: 433.8 mm H x 108 mm W 381 mm D (17" H x 4.25" W x 15" D)
- **Weight**
  - **Single Channel Instrument**: 4.3 kg (9.4 lb)
  - **Double Channel Instrument**: 8.6 (18.8 lb)
- **HV Connector**: SHV High Voltage Connector
- **BNC Connectors**: Power Switch, Amplifier Input, Voltage Monitor, Current Monitor, High Voltage ON/OFF, Digital Enable

### Operating Conditions

- **Temperature**: 0°C to 40°C (32°F to 104°F)
- **Relative Humidity**: To 85%, noncondensing
- **Altitude**: To 2000 meters (6561.68 ft.)

### Electrical

- **Line Voltage**: Factory Set for one of two ranges: 90 to 127 V AC or 180 to 250 V AC, either at 48 to 63 Hz
- **AC Line Receptacle**: Standard 3-prong with integral fuse holder
- **Power Consumption**: 125 VA, maximum
- **HV Cable**: 2 m, 66 pF per foot

### Supplied Accessories

- **Operators’ Manual**: PN: 23166
- **HV Output Cable**: PN: 43874
- **Line Cord**: N5002
- **Spare Fuses**: Selected per geographic destination

### Optional Accessories

- **19” Rack Mount Kit**: Model 603RA
- **Half-Rack Mount Kit**: Model 604RA (3 ½” Buckeye)
- **Dual Instrument Rack Mount Kit**: Model 603RA-2

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*Measured using the true rms feature of the Hewlett Packard 34401A digital multimeter*