The Model 20/20C-HS is a DC-stable, high-speed, high-voltage power amplifier used in industrial and research applications. It features an all-solid-state design for high slew rate, wide bandwidth and low-noise operation. The four-quadrant, active output stage sinks or sources current into reactive or resistive loads throughout the output voltage range. This type of output is essential to achieve an accurate output response and high slew rate demanded by a variety of loads such as highly capacitive or reactive loads. It is configured as a non-inverting amplifier.

Key Specifications

- Output Voltage Range: 0 to ±20 kV DC or peak AC
- Output Current Range: 0 to ±20 mA DC or 60 mA peak AC for 1 ms (must not exceed 20 mA rms)
- Slew Rate: Greater than 800 V/µs
- Large Signal Bandwidth (1% Distortion): DC to greater than 5.2 kHz
- DC Voltage Gain: Fixed at 2000 V/V

Typical Applications Include

- Electrostatic deflection
- Electrophoresis
- Electrorheological fluids
- Electro-optic modulation
- Material poling
- AC or DC biasing
- Ion beam steering
- Particle accelerators
- Mass spectrometers
- Material characterization
- Ferroelectrics
- Atmospheric plasma
- Dielectric barrier discharge

Features and Benefits

- Four-quadrant output for driving capacitive loads
- Closed loop system for high accuracy
- Short-circuit protected for equipment protection
- All solid-state design for maintenance free operation
- DC-stable for programmable supply applications
- Low output noise for ultra-accurate outputs
### Features (cont.)

**Dynamic Adjustment**
Graduated 1-turn potentiometer is used to optimize the AC response for various load parameters.

**Limit/Trip Mode**
Switch selectable for either limit or trip. Graduated 1-turn potentiometer is used to adjust limit or trip level from 0 to 100% peak current. There is one LED indicator and one BNC connector.

**Trip Status Indicator and Connector**
An indicator will illuminate and a BNC will provide a TTL low when the high-voltage is disabled due to the output current exceeding the current trip level, the detection of a high-voltage power supply fault, removal of one of the panels, or if the 20/20C-HS is out of regulation for greater than 500 ms.

**Out of Regulation Status**
Illuminates and a TTL low is provided when unit fails to produce required HV output such as during a current limit.

### Mechanical

**Dimensions**
279 mm H x 482 mm W x 654 mm D (11" H x 19" W x 25.75" D)

**Weight**
24.9 kg (55 lb)

**HV Connector**
Caton High Voltage Connector

**BNC Connectors**
Amplifier Input, Voltage Monitor, Current Monitor, Remote High Voltage ON/OFF, Out of Regulation Status, Fault/Trip Status

### 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: 104 to 127 V AC or 180 to 250 V AC, either at 48 to 63 Hz

**AC Line Receptacle**
Standard IEC 320 three-prong AC line connector

**Power Consumption**
1000 VA, maximum

### Supplied Accessories

**Operators’ Manual**
PN: 23461

**HV Output Cable**
PN: 43466

**Line Cord, Spare Fuses**
PN: N5011. Selected per geographic destination

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