

# SWITCHBACK 6600 PSTC

Reliable, Ripple-free DC Power Combined with Precision Temperature Control



## For Cleanstream and Terraview Thermoelectric Heat Exchangers

The Switchback 6600 PS/TC is a bipolar current-controlled power supply with digital temperature control that is optimized for use with our heat exchangers. It's variable power results in maximum efficiency, while the 16 bit PID + fuzzy logic temperature control results in precision temperature to  $\pm 0.05$  °C.

# SPECIFICATIONS

<b>Description</b>	Switchback 6600 power supply with Yokogawa UT-55A digital temperature controller with up to 8 programmable recipes
<b>Cable</b>	15-foot DC power/thermostat cable with acid-proof Fischer connector
<b>Operating Range</b>	0-40 °C, no derating
<b>Operating Humidity</b>	0-80% relative humidity, non-condensing
<b>Communications (option 1)</b>	Remote 0-10 VDC input for set-point temperature
<b>Communications (option 2)</b>	RS-485 communication + remote input
<b>Input Power</b>	200-240 VAC (±5%), 3-phase 22 amps, 50 or 60 Hz, 3-wire plus ground
<b>Line Filtering</b>	Integral line filter meets CE conducted emissions requirement
<b>Rated Capacity</b>	6.9 kW
<b>Output Current</b>	0-30 amps
<b>Output Voltage</b>	0-230 VDC
<b>Output Current Control Range</b>	Maximum output current ( $I_{MAX}$ ) is dipswitch adjustable from 6 to 30A
<b>Output Voltage Limit</b>	Maximum output voltage ( $V_{MAX}$ ) is dipswitch adjustable from 14 to 230 VDC
<b>Non-isolated Output</b>	The power supply output is not isolated from the AC input. The output must not be connected to secondary referenced circuitry. Input voltage must be disconnected to prevent hazardous potentials from appearing at the output. DC control and logic circuits are isolated from the AC line and DC output.
<b>Voltage Ripple</b>	<2.5 Volts for 0-50 VDC; <5% for 50-220 VDC
<b>Regulation</b>	<5% of actual output current
<b>Control Band Width</b>	The current control loop bandwidth varies with the load resistance ( $R_{LOAD}$ ) by the following relationship: Bandwidth = $5288/R_{LOAD}$ (Hz)
<b>Transient Response</b>	Output current will regulate within 10 milliseconds of a setpoint change or load transient of up to 50%

<b>Cooling</b>	External 4.69" fan (provided). Leave >1.5" clearance around air intake and exhaust
<b>Fault Signal</b>	A TTL high signal indicates normal operation. If a thermal shutdown or output stage overload occurs, a TTL signal low is produced.
<b>Remote Sensing</b>	A 0-5 VDC signal proportional to the output current at $I_{MAX}/5$ amps per volt, where $I_{MAX}$ is the maximum output current setting
<b>Over-current Protection</b>	Automatic electronic current limiting is provided
<b>Thermal Protection</b>	Automatic shutdown when heat sink reaches 70 °C; automatic restart at 53 °C
<b>Isolation</b>	Can withstand a 3000 VDC Hipot with input and output terminals tied together
<b>Digital Inputs</b>	Three digital inputs for selecting pre-programmed temperature setpoints
<b>Courtesy Outputs</b>	12 VDC, 150 milliamps; 5 VDC, 20 milliamps
<b>Analog Outputs</b>	4-20 mA retransmission of present temperature value standard
<b>Interlocks</b>	Three interlocks for automatic shut down of output current: RTD fault, Power supply fault, Thermostat fault
<b>Temperature Sensor</b>	3-wire 100 Ω Pt RTD, $\alpha = .0385$
<b>Size (L x W x H)</b>	19" x 5.25" x 17" (48.3 x 13.3 x 43.2 cm)
<b>Weight</b>	24 lbs (10.9 kg)
<b>Power Required</b>	3-phase 208 VAC, 22 amps
<b>Output Power</b>	Bi-polar, 0-230 VDC, 0-30 amps, user adjustable maximum output ranges from 14-230 VDC and 6-30 amps.
<b>Alarms</b>	Four programmable temperature alarms
<b>Warranty</b>	2 Years

## SOLID STATE COOLING SYSTEMS