

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 ± 0.05 °C.

SPECIFICATIONS

Description	Switchback 6600 power supply with Yokogawa UT-55A digital temperature controller with up to 8 programmable recipes
Cable	15-foot DC power/thermostat cable with acid-proof Fischer connector
Operating Range	0-40 °C, no derating
Operating Humidity	0-80% relative humidity, non-condensing
Communications (option 1)	Remote 0-10 VDC input for set-point temperature
Communications (option 2)	RS-485 communication + remote input
Input Power	200-240 VAC (±5%), 3-phase 22 amps, 50 or 60 Hz, 3-wire plus ground
Line Filtering	Integral line filter meets CE conducted emissions requirement
Rated Capacity	6.9 kW
Output Current	0-30 amps
Output Voltage	0-230 VDC
Output Current Control Range	Maximum output current (I_{MAX}) is dipswitch adjustable from 6 to 30A
Output Voltage Limit	Maximum output voltage (V_{MAX}) is dipswitch adjustable from 14 to 230 VDC
Non-isolated Output	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.
Voltage Ripple	<2.5 Volts for 0-50 VDC; <5% for 50-220 VDC
Regulation	<5% of actual output current
Control Band Width	The current control loop bandwidth varies with the load resistance (R_{LOAD}) by the following relationship: Bandwidth = $5288/R_{LOAD}$ (Hz)
Transient Response	Output current will regulate within 10 milliseconds of a setpoint change or load transient of up to 50%

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

