

Specifications (continued)

Output (continued)					
Parameter	Min	Typ	Max	Units	Notes
Turn-On Delay Rise Time ¹ Overshoot		5 500		s ms %	Monotonic Turn_On after detection of valid DC input voltage. Measured from 30% to 100% of Vnom.
Restart Shutdown Delay		20		S	Shutdown is delayed during a re-start in order to guarantee restart of multiple paralleled modules.
Load Step Response ΔI ΔV Response Time		2.0 2	50	%FL Vdc ms	$\Delta I/\Delta t$ slew rate 1A/ μ s. Settling time to within regulation requirements.
Overload ² Current Limit Shutdown System Start-up	38.9		43 39	Adc Vdc	Fold-down. Default state – hiccup mode A 20 second shutdown delay is implemented to allow modules to be plugged in one at a time. During this time fold-down occurs but the module will not shut down below 39Vdc.
Over-voltage Delayed Instantaneous Latchoff			60 65	Vdc Vdc	200msec delayed shutdown implemented. Latched shutdown without hiccup. Three restart attempts are implemented within a one minute window prior to a latched shutdown when Vout < 65Vdc. Beyond 1 minute the counter restarts
Over-temperature Warning Shutdown Auto-recoverable		5 20		°C °C	Implemented prior to commencement of an OT shutdown Below the maximum rating of the device being protected Temperature hysteresis of approximately 10°C provided between shutdown and restart.

Auxiliary Output					
Parameter	Min	Typ	Max	Units	Notes
ON when the input voltage is	-26		-72	Vdc	
Output Voltage Setpoint		5.2		Vdc	Isolated from the main output to meet POE requirements. 50mA dedicated for powering adjacent PEMs during a fault. 700mA available for external use.
Output Current	0.005		0.75	A	
Overall Regulation	-5		+5	%	
Ripple and Noise		50	100 25	mVpk-pk mVrms	20MHz bandwidth. Measured across a 1 μ F tantalum and a 0.1 μ F ceramic capacitor
Over-voltage Clamp			7	Vdc	
Over-current Limit	110		175	%FL	

¹ Below -5°C the rise time is approximately 5 minutes to protect bulk capacitors in the unit

² Hiccup performance attempts automatic recovery from an overload shutdown with approximately a 90% off-time duty cycle. The duty cycle varies periodically in order to guarantee multi-module recovery synchronization. Latchoff can be chosen via software instead of the default hiccup. Recovery from a latchoff requires ENABLING, or software commanding OFF followed by an ON after a 2 second delay.

Specifications (continued)

Physical	
Length (in./mm)	13.85 / 351.8
Width (in./mm)	4.00 / 101.6
Height (in./mm)	1.66 / 42.2
Weight (lb/kg)	4.6 / 2.1

Environmental					
Parameter	Min	Typ	Max	Units	Notes
Ambient Temperature Operating Ambient Derating Power Derating ²	-5 ²	1	45 1	°C °C %/°C	Air inlet from sea level to 5,000 feet. Per 1,000 feet above 5,000 feet. Up to 55°C
Storage Temperature	-40		85	°C	
Humidity	5		95	%	Relative humidity, non-condensing
Shock and Vibration Operational Test Test Levels Drop and Tip Over					IEC 68-2 IEC 721-3-2 IEC 68-2-31
Earthquake Rating	4			Zone	Per Telcordia GR-63-CORE, all floors, when installed in CP Shelf.
Acoustic Noise		55		dBA	Noise is proportional to fan speed, load and ambient temperature.
Radiated Emissions ³	FCC and CISPR22 (EN55022) - Class A ³				
Conducted Emissions - dc	Telcordia GR-1089-CORE and CISPR22 (EN55022) - Class A				
ESD	Error free per EN/IEC 61000-4-2 Level 4 (8 kV contact discharge, 15 kV air discharge).				
Radiated Immunity	Error free per EN/IEC 61000-4-3 Level 3 (10 V/m).				
Differential mode surge			100	Vdc	ANSI T1.315, No errors
Differential mode surge transient			1000	Vdc	No errors. IEEE C62.41 defined pulse transient
Common mode surge (1.2/50µs pulse)			1000	Vdc	
Conducted Immunity	Error free per EN/IEC 61000-4-6 Level 3 (10Vrms).				
Reliability (calculated)		400,000		Hours	At ambient of 25°C at full load per Telcordia SR-332, Reliability Prediction for Electronic Equipment, Method I Case III.
Isolation Input-Chassis/Signals Input-Output/Signals Output-Chassis/Signals Main-Aux Outputs	1700 2250 2250 2250			Vdc	Per EN60950. Per IEEE802.3af.
Service Life		10		Years	25°C ambient, full load excluding fans.

2. Designed to start at an ambient as low as -40°C, but may not meet operational limits until above -5°C.

3. Radiated emissions compliance was met using a Lineage Power shelf. This shelf includes output common and differential mode capacitors that assist in meeting compliance.