U-Chassis



Size: 5.00 x 3.20 x 1.50 inches

U-Chassis with Vented Top Cover



Size: 5.00 x 3.20 x 1.66 inches

Enclosed with End-Side Built-in Fan



Size: 6.50 x 3.20 x 1.60 inches

Enclosed with Top-Side Built-in Fan



Size: 5.00 x 3.20 x 2.00 inches

FEATURES

- RoHS Compliant
- High Quality & Reliable Component Usage
- Variable Fan Speed & Low Acoustical Noise
- 90~264VAC Full Range Input
- Compact 300W with 1U Height Power Density: 12.5 Watts /cu in
- Single Outputs Ranging from 2VDC to 60VDC
- Active Power Factor Corrected to EN61000-3-2 Class D
- Built-in Remote On/Off, Power Good, and Fan Fail Alarm Functions
- Peak Power 600W within 500µs Duty Duration
- 150 Watts with Convection Cooling and 300 Watts with Forced Airflow
- Short Circuit, Over Power, Over Voltage, and Over Temperature Protection
- MTBF: 100,000 Hours (MIL-HDBK-217F)
- UL60950-1, EN60950-1, & IEC60950-1 Safety Approvals
- Four Mechanical Options Available

DESCRIPTION

The PSPRL0801 series of AC/DC switching power supplies offers up to 150 Watts of output power with convection cooling and up to 300 Watts with 25CFM forced airflow. This series consists of single output models ranging from 2VDC to 60VDC. These models have a 90~264VAC input voltage range, active PFC corrected to EN61000-3-2 Class D, and built-in remote on/off, power good, and fan fail alarm functions. These supplies are also protected against short circuit, over voltage, over power, and over temperature conditions. Models are available in U-chassis (Type U), U-chassis with vented top cover (Type C), enclosed with end-side built-in fan (Type E), and enclosed with top-side built-in fan (Type F) designs. This series is RoHS compliant and has UL60950-1, EN60950-1, and IEC60950-1 safety approvals.

MODEL SELECTION TABLE

Model Number [1]	Input Voltage	Output Voltage [2]		Output Current [3]		Output Power [3]		Ripple & Noise [5]
		Range	Preset	Type U (Convection)	Types U, C, E, & F (25CFM Forced Air)	Type U (Convection)	Types U, C, E, & F (25 CFM Forced Air)	
PSPRL0801x-05	90 - 264 VAC	2 ~ 5 VDC	5 VDC	20A	42A	100W	210W	1%
PSPRL0801x-09		7 ~ 11 VDC	9 VDC	13.64A	27.27A	122.8W	245.4W	1%
PSPRL0801x-12		12 ~ 13.8 VDC	12 VDC	12.5A	25A	150W	300W	1%
PSPRL0801x-15		14 ~ 16 VDC	15 VDC	10A	20A	150W	300W	1%
PSPRL0801x-18		17 ~ 22 VDC	18 VDC	8.333A	16.667	150W	300W	1%
PSPRL0801x-24		23 ~ 28 VDC	24 VDC	6.25A	12.5A	150W	300W	1%
PSPRL0801x-30		29 ~ 34 VDC	30 VDC	5A	10A	150W	300W	1%
PSPRL0801x-36		35 ~ 43 VDC	36 VDC	4.167A	8.333A	150W	300W	1%
PSPRL0801x-48		44 ~ 52 VDC	48 VDC	3.125A	6.25A	150W	300W	1%
PSPRL0801x-54		53 ~ 60 VDC	54 VDC	2.778A	5.556A	150W	300W	1%

NOTES

1. The "**x**" in the model number can be "**U**" for U-chassis type, "**C**" for U-chassis with vented top cover type, "**E**" for enclosed with end-side built-in fan, or "**F**" for enclosed with top-side built-in fan.
2. All output ranges are covered by agency certifications and the preset voltage will be set as standard models if nothing different is requested. If desired preset output does not appear, please contact factory.
3. **PSPRL0801U-XX Models** (U-chassis): 150W max. with convection cooling and 300W max. with 25CFM minimum forced airflow.
   PSPRL0801C-XX Models (U-chassis with vented top cover): 150W max. with convection cooling and 300W max. with 25CFM minimum forced airflow.
   PSPRL0801E-XX Models (Enclosed with end-side built-in fan): 300W max. with built-in fan airflow.
   PSPRL0801F-XX Models (Enclosed with top-side built-in fan): 300W max. with built-in fan airflow.
4. Provides peak power to 600W within 500µs for all models; for longer duty duration please contact manufacturer.
5. Ripple & noise is measured from 10kHz to 20MHz bandwidth and with a 0.1µF ceramic and a 22µF electrolytic capacitor in parallel across the output.
6. 1% minimum load is required to maintain the ripple and regulation specifications.
7. Output is fully isolated.

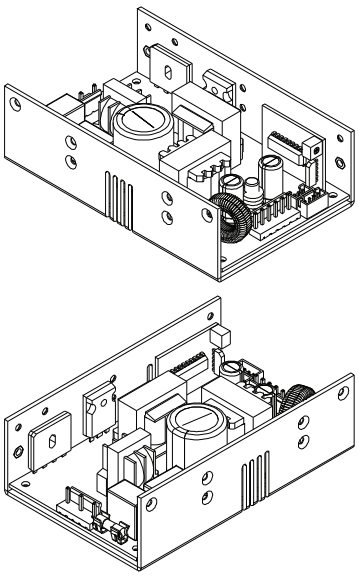
SPECIFICATIONS: PSPRL0801 SERIES

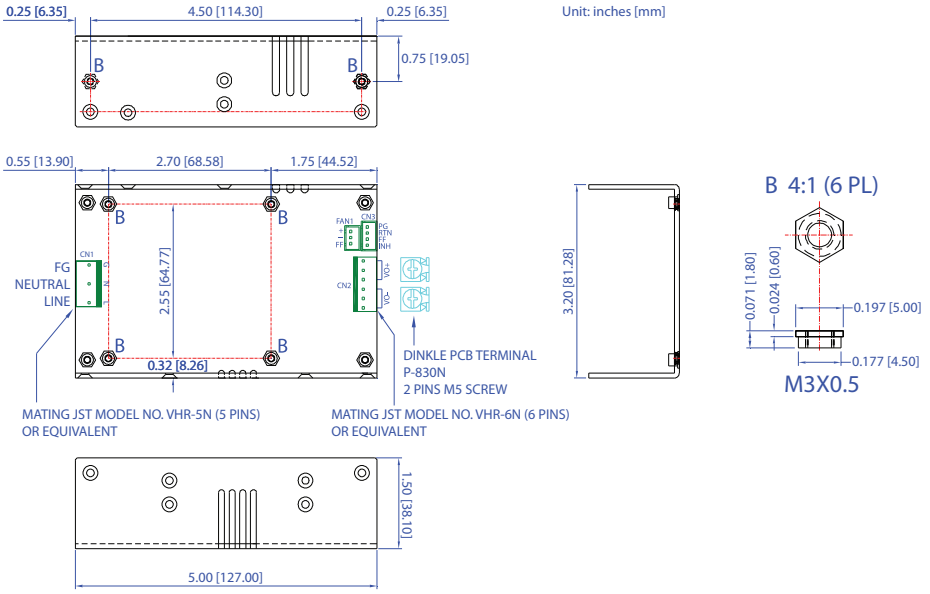
All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION		TEST CONDITIONS	Min	Typ	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage Range			90		264	VAC
Input Frequency		AC input	47		63	Hz
Input Current		90VAC		5		A
Inrush Current		115VAC and cold start			35	A
		230VAC and cold start			70	
Power Factor Correction		230VAC and full load		0.95		
Input Fusing Protection		Internal fuse in line and neutral	One F5A/350V fuse inserted in primary			
OUTPUT SPECIFICATIONS						
Output Voltage			See Table			
Output Adjustability			-5		+5	%
Regulation			-1		+1	%
Output Power			See Table			
Output Current			See Table			
Ripple & Noise		Measured from 10kHz to 20MHz bandwidth and with 0.1µF ceramic and 22µF electrolytic capacitors in parallel across the output.		1		%
DYNAMIC RESPONSE						
Peak Transient		50% load step change			5	%
Recovery Time		Recovery to within 1% Nominal Vo			2.5	ms
Overshoot	Turn On				5	%
	Turn Off				5	
Turn On Delay		230VAC			1	s
Hold Up Time		120VAC and 80% of full load	16			ms
PROTECTION						
Over Voltage Protection		Latch mode; recycle AC input to reset			130	% Vout
Over Power Protection		Automatic recovery	110		140	% Iout
Short Circuit Protection			Trip without damage and automatic recovery			
Over Temperature Protection		Automatic recovery	105	110	115	°C
GENERAL SPECIFICATIONS						
Efficiency		230VAC and full load	75		89	%
Switching Frequency	PFC		40		66	kHz
	PWM		55		75	
Withstand Voltage	Input Line to Chassis	10mA AC cut-off current; for 3 seconds	1500			VAC
	Primary to Secondary	For 3 seconds	3000			
	Primary to Core	For 3 seconds	1500			
Leakage Current		At 264VAC			1	mA
Grounding Test		Apply 25A from ground pin of the three prong plug to the far most earth. Max allowable resistance is 0.1Ω				
ENVIRONMENTAL SPECIFICATIONS						
Operating Ambient Temperature		Derating at 2.5% per degree from 50°C to 70°C	0		+70	°C
Storage Temperature Range			-20		+85	°C
Operating Humidity		Non-condensing	5		90	% RH
Storage Humidity		Non-condensing	5		95	% RH
Vibration			5~50Hz; acceleration ±7.35 m/s*s on X, Y, & Z axes			
Cooling		U & C Type Models	Free air convection			
		E & F Type Models	Internal fan is provided			
Burn-in			45°C ±5°C for 1 hour at 230VAC and full load			
MTBF		MIL-HDBK-217F, Ta=30°C	100,000			hours
PHYSICAL SPECIFICATIONS						
Weight		U-Chassis Models (Suffix "U")	1.10 lbs (500g)			
		U-Chassis with Vented Top Cover Models (Suffix "C")	1.21 lbs (550g)			
		Enclosed with End-side Built-in Fan Models (Suffix "E")	1.43 lbs (650g)			
		Enclosed with Top-side Built-in Fan Models (Suffix "F")	1.32 lbs (600g)			
Dimensions (L x W x H)		U-Chassis Models (Suffix "U")	5.00 x 3.20 x 1.50 in (127.00 x 81.28 x 38.10 mm)			
		U-Chassis with Vented Top Cover Models (Suffix "C")	5.00 x 3.20 x 1.66 in (127.00 x 81.28 x 42.10 mm)			
		Enclosed with End-side Built-in Fan Models (Suffix "E")	6.50 x 3.20 x 1.60 in (165.10 x 81.28 x 40.64 mm)			
		Enclosed with Top-side Built-in Fan Models (Suffix "F")	5.00 x 3.20 x 2.00 in (127.00 x 81.28 x 50.80 mm)			

MECHANICAL DRAWINGS

U-Chassis Models (Suffix "U"): 5.00 x 3.20 x 1.50 Inches; Weight: 1.10 lbs





Input Connector (CN1):
Mating Molex Part No. VHR-5N or equivalent (5 pins, 3 used) or
Terminal block: Howder M3 screws 3 pin 6.35mm center Part No. HD-601-3P
PCB Labeling: L=Line; N-Neutral; G=Ground

Output Connector (CN2):
Mating Molex Part No. VHR-6N
Terminal block - Dinkle P830N, M5 screws

Mounting Inserts: 6 Places M3. Maximum penetration 3.8mm

CN2 PIN CONNECTIONS	
Dinkle	
Pin	Assignment
1	-V
2	+V

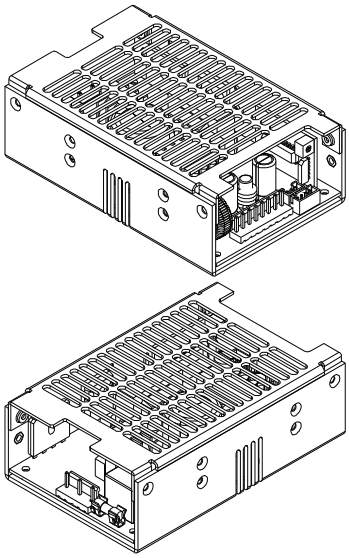
CN2 PIN CONNECTIONS	
Molex	
Pin	Assignment
1~3	-V
4~6	+V

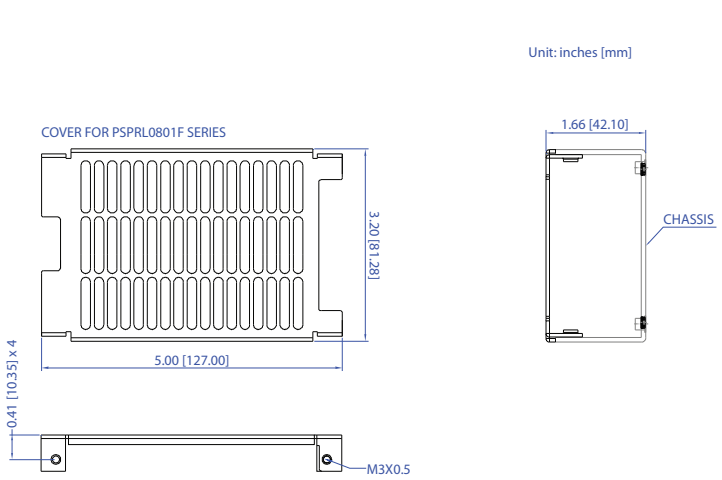
Logic Signal Connector (CN3):
Mating JST XHP-4 or equivalent (CHYAO SHIUNN JS-2001-04);
Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

Fan Driver Connector (FAN1):
12VDC/300mA is available to drive an external fan. Mating connector is
JST P/N XHP-3 (3 pins 0.98 pitch) or equivalent (CHYAO SHIUNN JS-2001-03)

CN3 PIN CONNECTIONS	
Pin	Assignment
1	PG
2	RTN
3	FF
4	INH

U-Chassis with Top Cover Models (Suffix "C"): 5.00 x 3.20 x 1.66 Inches; Weight: 1.21 lbs





Input Connector (CN1):
Mating Molex Part No. VHR-5N or equivalent (5 pins, 3 used) or
Terminal block: Howder M3 screws 3 pin 6.35mm center Part No. HD-601-3P
PCB Labeling: L=Line; N-Neutral; G=Ground

Output Connector (CN2):
Mating Molex Part No. VHR-6N
Terminal block - Dinkle P830N, M5 screws

Mounting Inserts: 6 Places M3. Maximum penetration 3.8mm

CN2 PIN CONNECTIONS	
Dinkle	
Pin	Assignment
1	-V
2	+V

CN2 PIN CONNECTIONS	
Molex	
Pin	Assignment
1~3	-V
4~6	+V

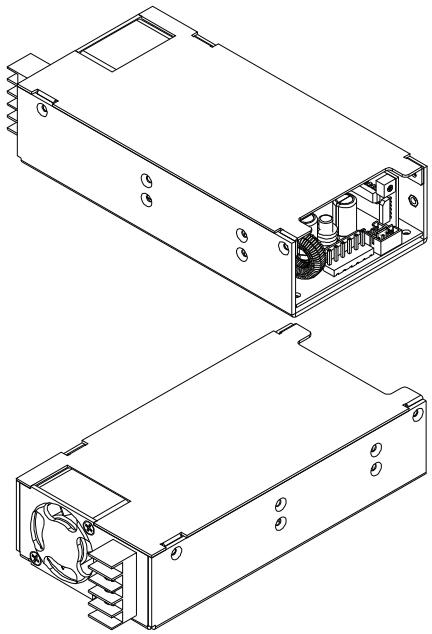
Logic Signal Connector (CN3):
Mating JST XHP-4 or equivalent (CHYAO SHIUNN JS-2001-04);
Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

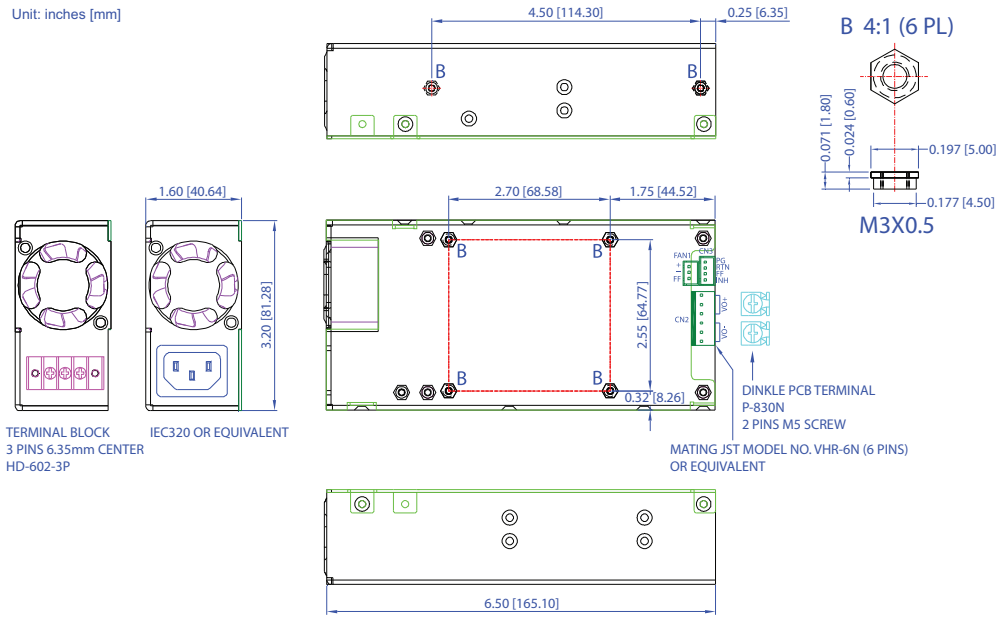
Fan Driver Connector (FAN1):
12VDC/300mA is available to drive an external fan. Mating connector is
JST P/N XHP-3 (3 pins 0.98 pitch) or equivalent (CHYAO SHIUNN JS-2001-03)

CN3 PIN CONNECTIONS	
Pin	Assignment
1	PG
2	RTN
3	FF
4	INH

MECHANICAL DRAWINGS

Enclosed with End-Side Built-in Fan Models (Suffix "E"): 6.50 x 3.20 x 1.60 Inches; Weight: 1.43 lbs





Input Connector (CN1):
IEC320 snap-in mounting type or
Terminal block: Howder HD-602-3P

Output Connector (CN2):
Mating Molex Part No. VHR-6N
Terminal block - Dinkle P830N, M5 screws

Mounting Inserts: 6 Places M3. Maximum penetration 3.8mm

CN2 PIN CONNECTIONS	
Dinkle	
Pin	Assignment
1	-V
2	+V

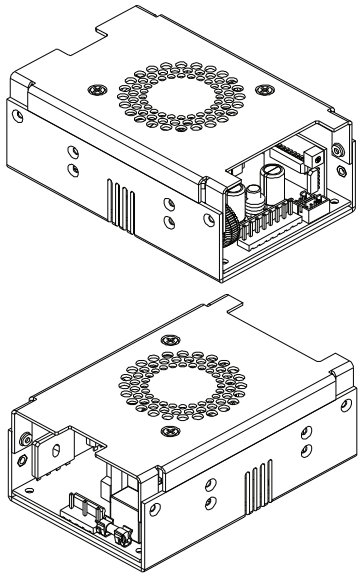
CN2 PIN CONNECTIONS	
Molex	
Pin	Assignment
1~3	-V
4~6	+V

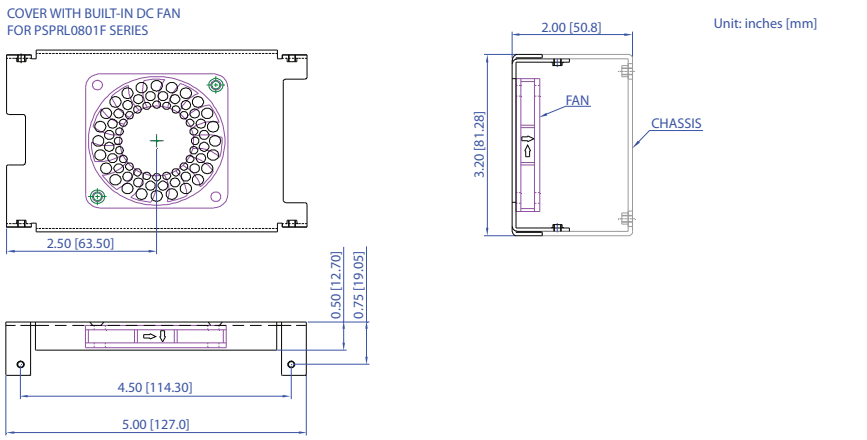
Logic Signal Connector (CN3):
Mating JST XHP-4 or equivalent (CHYAO SHIUNN JS-2001-04);
Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

Fan Driver Connector (FAN1):
12VDC/300mA is available to drive an external fan. Mating connector is
JST P/N XHP-3 (3 pins 0.98 pitch) or equivalent (CHYAO SHIUNN JS-2001-03)

CN3 PIN CONNECTIONS	
Pin	Assignment
1	PG
2	RTN
3	FF
4	INH

Enclosed with Top-Side Built-in Fan (Suffix "F"): 5.00 x 3.20 x 2.00 Inches; Weight: 1.32 lbs





Input Connector (CN1):
Mating JST XHP-4 or equivalent (CHYAO SHIUNN JS-2001-04);
Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.
PCB Labeling: L=Line; N-Neutral; G=Ground

Output Connector (CN2):
Mating Molex Part No. VHR-6N
Terminal block - Dinkle P830N, M5 screws

Mounting Inserts: 6 Places M3. Maximum penetration 3.8mm

CN2 PIN CONNECTIONS	
Dinkle	
Pin	Assignment
1	-V
2	+V

CN2 PIN CONNECTIONS	
Molex	
Pin	Assignment
1~3	-V
4~6	+V

Logic Signal Connector (CN3):
Mating JST XHP-4 or equivalent (CHYAO SHIUNN JS-2001-04);
Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

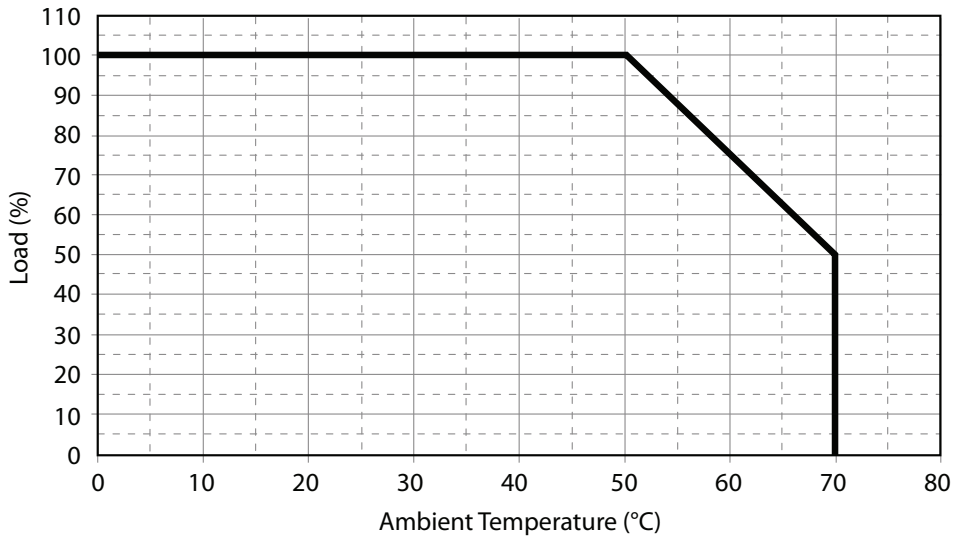
Fan Driver Connector (FAN1):
12VDC/300mA is available to drive an external fan. Mating connector is
JST P/N XHP-3 (3 pins 0.98 pitch) or equivalent (CHYAO SHIUNN JS-2001-03)

CN3 PIN CONNECTIONS	
Pin	Assignment
1	PG
2	RTN
3	FF
4	INH

SAFETY & EMC		
Safety Approvals		UL60950-1, EN60950-1, IEC60950-1
EMI (Conducted & Radiated)	EN55022	Class B
Harmonic Currents	EN55022	EN61000-3-2
Voltage Flicker	EN55022	EN61000-3-3
ESD	EN55024	EN61000-4-2
Radiated Immunity	EN55024	EN61000-4-3
Fast Transient	EN55024	EN61000-4-4
Surge	EN55024	EN61000-4-5
Conducted Immunity	EN55024	EN61000-4-6
Dip and Interruptions	EN55024	EN61000-4-11

FUNCTIONS		
DESIGNATION	FUNCTION	DESCRIPTION
-	Fan Drive	12VDC/300mA is available to drive an external fan
FF	Fan Fail Alarm	Pin 3 of CN3. Two types of logic signals provided. Please call factory for more details.
INH	Remote ON/OFF	Pin 4 of CN3. Requires a low signal to inhibit output
LED1	Power Supply ON	Green LED on the PCB
PG	Power Good	Pin 1 on CN3. Goes high 100-500ms after DC regulation and low at least 1ms before loss of regulation (open collector)

DERATING CURVE



COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

Phone: ☎(603)778-2300
Toll Free: ☎(888)597-9255
Fax: ☎(603)778-9797
E-mail: sales@wallindustries.com
Web: www.wallindustries.com
Address: 37 Industrial Drive
Exeter, NH 03833