

Open Frame ("O" Suffix)



Size: 5 x 3 x 1.18in (127 x 76.2 x 30mm)

Enclosed Frame ("E" Suffix)



Size: 5 x 3.28 x 1.56in (127 x 83.2 x 39.5mm)

U-Chassis Frame ("U" Suffix)



Size: 5 x 3.28 x 1.5in (127 x 83.2 x 38mm)

OPTIONS

- Package Type
 - Open Frame
 - Enclosed Case
 - U-Chassis

FEATURES

- Both ITE and Medical Approvals
- High Power Density, 280W in 5" x 3" Footprint
- Medical Applications Protection: Means of Patient Protection (MOPP)
- Altitude During Operation: ITE up to 5000m, Medical below 3000M
- Short Circuit, Over Load, and Over Voltage Protection
- Main Output and Standby Output Power ON LED Indicators
- Remote Control (Inhibit) Function
- RoHS Compliant
- Wide Input Range of 90-264VAC
- UL60601-1 3.1 Edition, UL/c-UL UL60950-1, and UL/c-UL UL62368-1, EN60601-1 3.1 edition, TUV EN60950-1, TUV EN62368-1, IEC EN60601-1 3.1 Edition, CB IEC 60950-1, and CB IEC 62368-1 Safety Approvals

DESCRIPTION

The PSIM280B series of medical power supplies offers 280 watts of output power in a highly reliable open frame, enclosed, or u-chassis package. This series consists of single outputs, an input voltage range of 90-264VAC, and a frequency of 47-63Hz. All models are RoHS compliant, have high efficiency above 91%, and are equipped with remote control (inhibit) function. This series has UL60601-1 3.1 Edition, UL/c-UL UL60950-1, and UL/c-UL UL62368-1, EN60601-1 3.1 edition, TUV EN60950-1, TUV EN62368-1, IEC EN60601-1 3.1 Edition, CB IEC 60950-1, and CB IEC 62368-1 safety approvals.

MODEL SELECTION TABLE

Open Frame Models

Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Maximum Load (V1)		Ripple & Noise (V1) ⁽⁵⁾	Output Regulation (V1)	Standby Supply (V2)	Fan Output (V3) ⁽²⁾	Convection Total Power	18CFM Forced Air Total Power ⁽³⁾	Efficiency
			Convection	18 CFM Forced Air							
PSIM280B-1Y120ZO	90-264VAC	12V	17.5A	23.33A	150mV	±3%	5V/0.5A	12V/0.3A	210W	280W	>91%
PSIM280B-1Y240ZO		24V	8.75A	11.66A	240mV	±3%	5V/0.5A	12V/0.3A	210W	280W	
PSIM280B-1Y280ZO		28V	7.5A	10A	280mV	±2%	5V/0.5A	12V/0.3A	210W	280W	
PSIM280B-1Y360ZO		36V	5.83A	7.77A	300mV	±2%	5V/0.5A	12V/0.3A	210W	280W	
PSIM280B-1Y480ZO		48V	4.375A	5.83A	300mV	±2%	5V/0.5A	12V/0.3A	210W	280W	
PSIM280B-1Y540ZO		54V	3.88A	5.18A	400mV	±2%	5V/0.5A	12V/0.3A	210W	280W	

MODEL SELECTION TABLE

Enclosed & U-Chassis Frame Models

Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Maximum Load (V1)		Ripple & Noise (V1) ⁽⁵⁾	Output Regulation (V1)	Standby Supply (V2)	Fan Output (V3) ⁽²⁾	Convection Total Power	18CFM Forced Air Total Power ⁽⁴⁾	Efficiency
			Convection	18 CFM Forced Air							
PSIM280B-1Y120Zx	90-264VAC	12V	16.66A	23.33A	150mV	±3%	5V/0.5A	12V/0.3A	200W	280W	>91%
PSIM280B-1Y240Zx		24V	8.33A	11.66A	240mV	±3%	5V/0.5A	12V/0.3A	200W	280W	
PSIM280B-1Y280Zx		28V	7.14A	10A	280mV	±2%	5V/0.5A	12V/0.3A	200W	280W	
PSIM280B-1Y360Zx		36V	5.55A	7.77A	300mV	±2%	5V/0.5A	12V/0.3A	200W	280W	
PSIM280B-1Y480Zx		48V	4.16A	5.83A	300mV	±2%	5V/0.5A	12V/0.3A	200W	280W	
PSIM280B-1Y540Zx		54V	3.7A	5.18A	400mV	±2%	5V/0.5A	12V/0.3A	200W	280W	

SPECIFICATIONS					
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	See Derating Curve	90		264	VAC
Input Frequency		47		63	Hz
Power Factor	@115VAC @Full Load	0.95			
	@230VAC @Full Load	0.90			
Inrush Current (peak)	@115VAC cold start @25°C			<30	A
	@230VAC cold start @25°C			<60	
Input Current (rms)	@115VAC			3.5	A
	@230VAC			2	
Leakage Current	@264VAC		<100		uA
OUTPUT SPECIFICATIONS					
Output Voltage		See Table			
Hold Up Time	@Full Load, 115VAC		>10		ms
Remote Control	Inhibit Function				
Output Power		See Table			
Ripple & Noise (20MHz bandwidth)		See Table			
PROTECTION					
Short Circuit Protection		Auto Recovery			
Over Load Protection	Auto Recovery	105		150	% Max. Rating
Over Voltage Protection	Latching type	AC Recycle			
ENVIRONMENTAL SPECIFICATIONS					
Operating Temperature	Refer to Derating curve	-20		+70	°C
Storage Temperature		-20		+85	°C
Humidity	Non-Condensing	0		90	%
MTBF	@Full Load and 25°C ambient temperature per Telcordia (Bellcore)	250,000			hours
GENERAL SPECIFICATIONS					
Efficiency	@Full Load, 230VAC		>91		%
PHYSICAL SPECIFICATIONS					
Weight	Open Frame ("O" Suffix)	12.35oz (350g)			
	Enclosed Frame ("E" Suffix)	17.64oz (500g)			
	U-Chassis Frame ("U" Suffix)	16.76oz (475g)			
Dimensions (L x W x H)	Open Frame ("O" Suffix)	5in x 3in x 1.18in (127mm x 76.2mm x 30mm)			
	Enclosed Frame ("E" Suffix)	5in x 3.28in x 1.56in (127mm x 83.2mm x 39.5mm)			
	U-Chassis Frame ("U" Suffix)	5in x 3.28in x 1.5in (127mm x 83.2mm x 38mm)			
SAFETY & EMC CHARACTERISTICS					
Safety Approvals	UL60601-1 3.1 Edition ⁽⁶⁾				
	UL/c-UL UL60950-1 ⁽⁶⁾				
	UL/c-UL UL62368-1 ⁽⁶⁾				
	EN60601-1 3.1 Edition				
	TUV EN60950-1				
EMC	TUV EN62368-1				
	IEC EN60601-1 3.1 Edition				
	CB IEC 60950-1				
	CB IEC 62368-1				
	IEC60601-1-2	Ed4:2014			
	EN60601-1-2	Ed4:2015			
	EN55024				
	EN 55011	Class B			
EN55032	Class B				
FCC Part 15	Class B				
FCC Part 18	Class B				
CE					

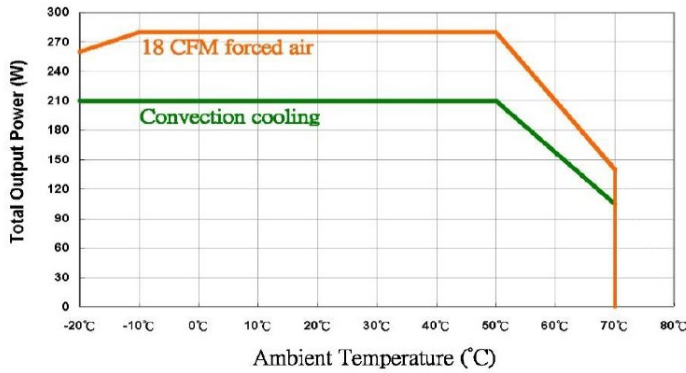
NOTES

- (1) "Z" in model number indicates output connector options:
 Z=T (Terminal block type, pitch 8.25mm) Suitable for all voltages
 Z=M (Mini-fit type, pitch 4.2mm)
 Z=C (Connector type, pitch=3.69mm): Suitable for 24V and up.
 "X" in model number indicates package type:
 X=O (Open Frame)
 X=E (Enclosed)
 X=U (U-Chassis)
- (2) All models are equipped with 5Vsb & 12V fan outputs.
 - a. 5Vsb meets ErP 0.5W @ No Load
- (3) All open frame models have total power 210W max. convection or 280W max. forced air cooling.
- (4) All enclosed and u-chassis models have total power 200W max. convection or 280W max. forced air cooling.
- (5) Ripple and noise are measured at oscilloscope 20MHz bandwidth by a 47uF electrolytic capacitor and a 0.1uF ceramic capacitor in parallel at output connector.
- (6) This product is Listed to applicable standards and requirements by UL.

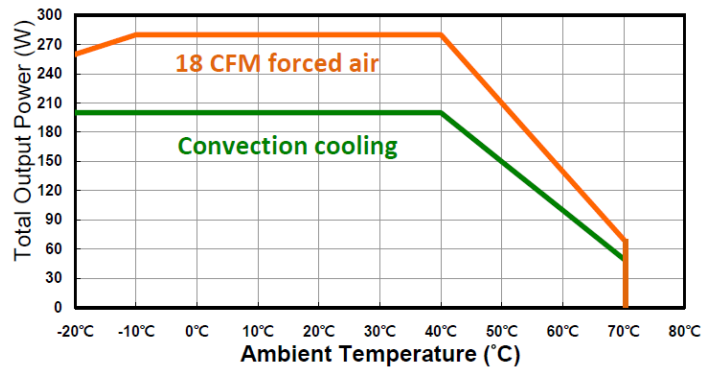
*Due to advances in technology, specifications subject to change without notice.

DERATING CURVES

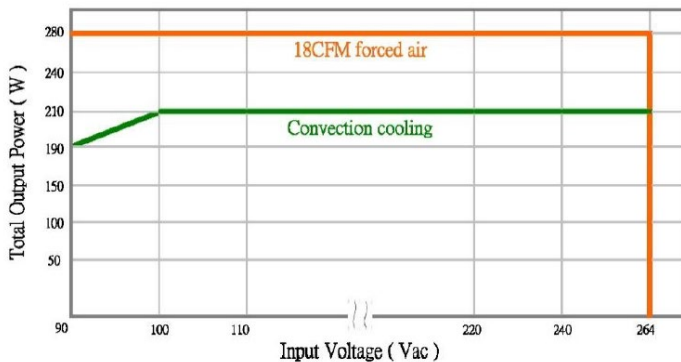
Power Derating Curve, Open Frame Models
 Convection Cooling and 18CFM Forced Air Cooling
 Derate Linearly 2.5% per °C from 51 to 70°C



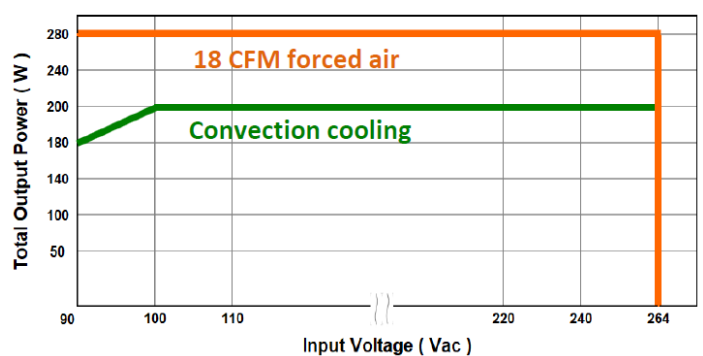
Power Derating Curve, Enclosed and U-Chassis Models
 Convection Cooling and 18CFM Forced Air Cooling
 Derate Linearly 2.5% per °C from 41 to 70°C



Input Voltage vs. Output Power, Open Frame Models
 Convection Cooling, Total Output 210W
 Derate Linearly 1% per VAC from 100 to 90VAC

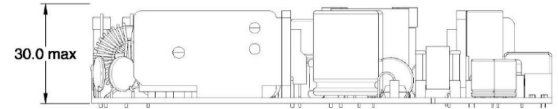
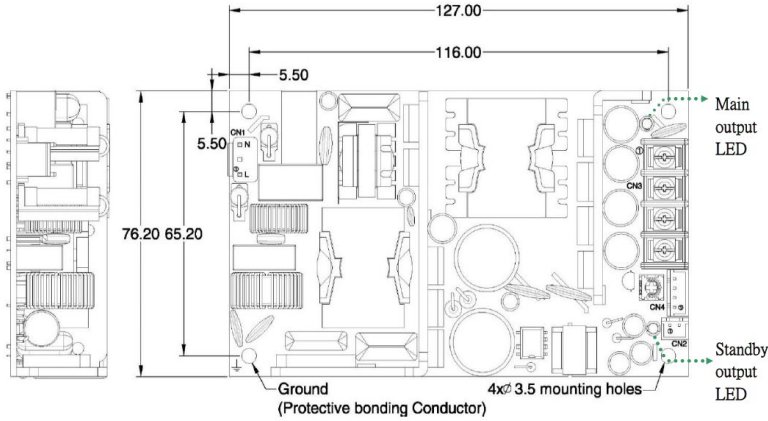


Input Voltage vs. Output Power, Open Frame Models
 Convection Cooling, Total Output 200W
 Derate Linearly 1% per VAC from 100 to 90VAC



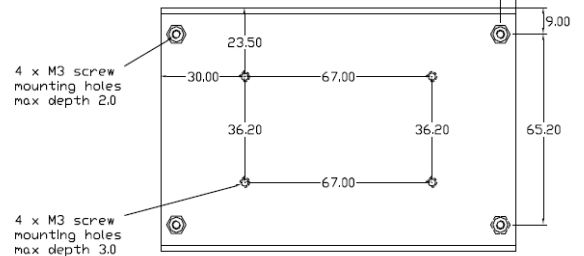
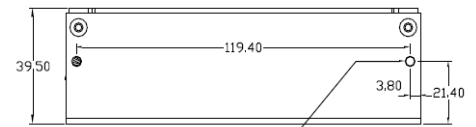
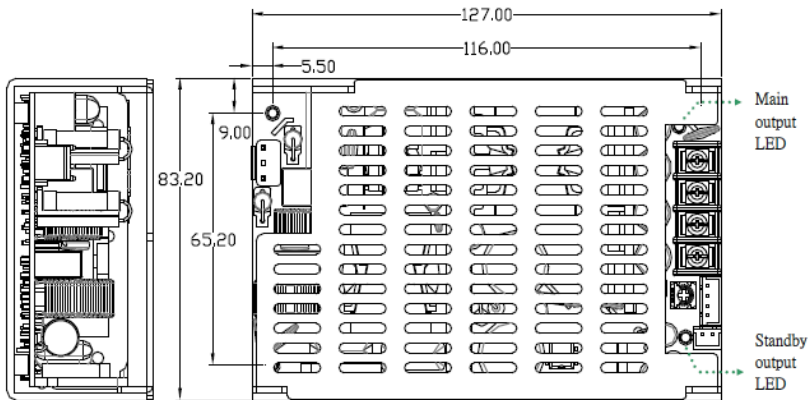
MECHANICAL DRAWINGS

Open Frame ("O" Suffix)



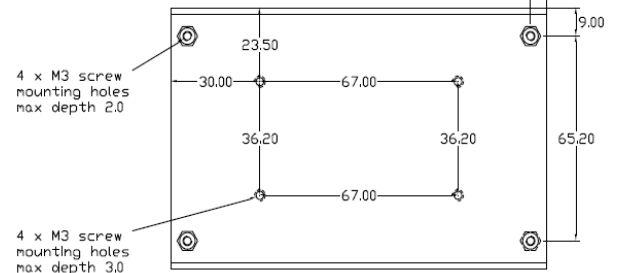
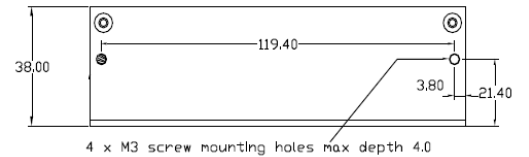
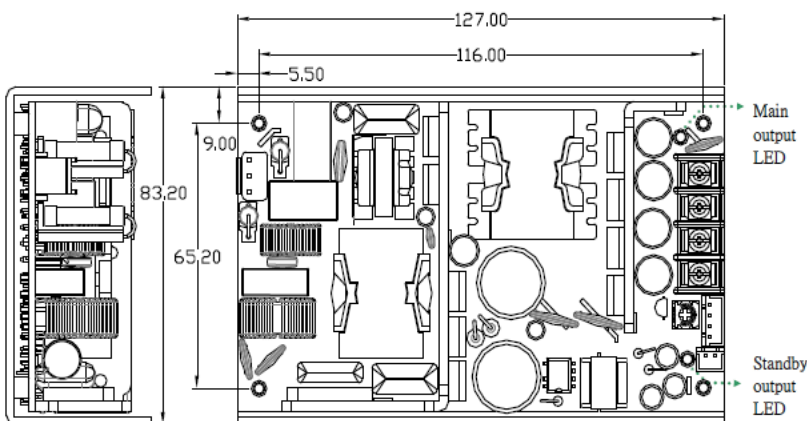
Dimension : L127 xW76.2 xH30mm (5" x 3" x 1.18")
NOTE:TOLERANCE:±/−0.5mm(0.02")

Enclosed ("E" Suffix)



Dimension : L127 xW83.2 xH39.5mm (5" x 3.28" x 1.56")
NOTE:TOLERANCE:±/−0.5mm(0.02")

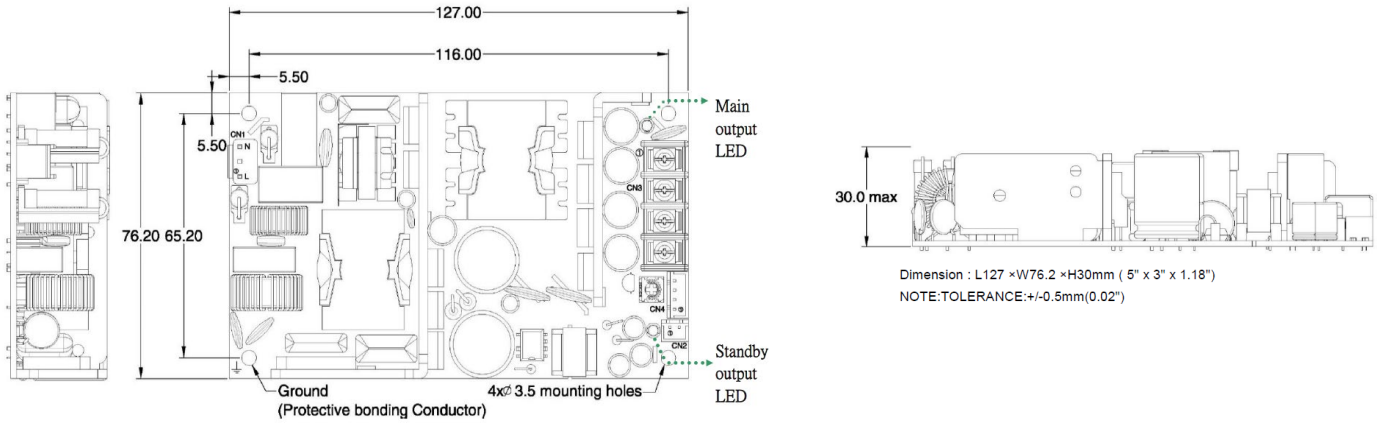
U-Chassis ("U" Suffix)



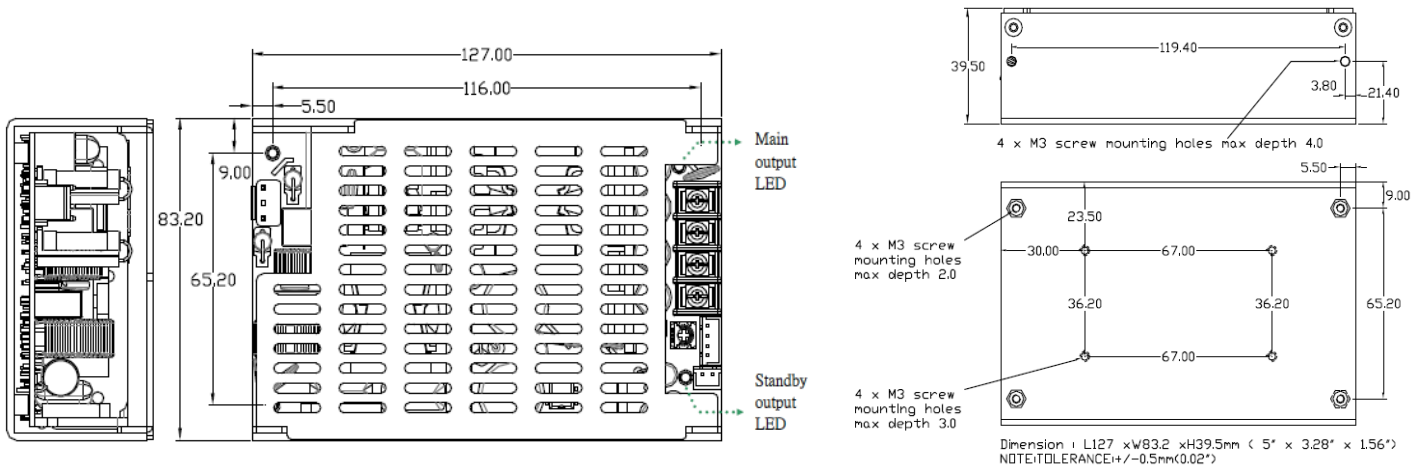
Dimension : L127 xW83.2 xH38mm (5" x 3.28" x 1.5")
NOTE:TOLERANCE:±/−0.5mm(0.02")

MECHANICAL DRAWINGS

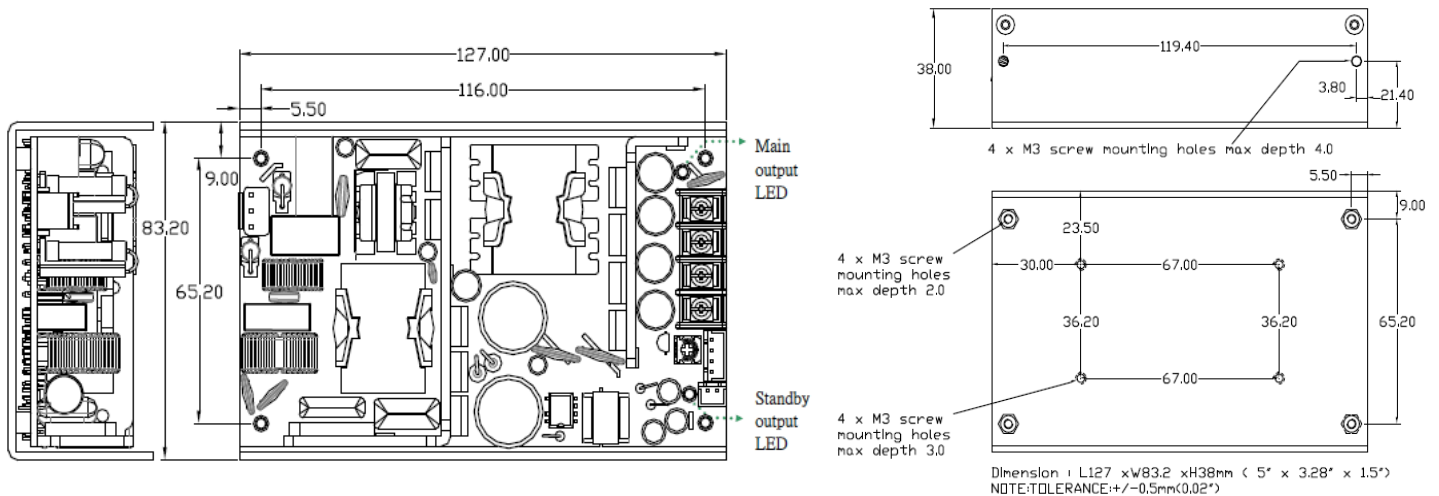
Open Frame ("O" Suffix)



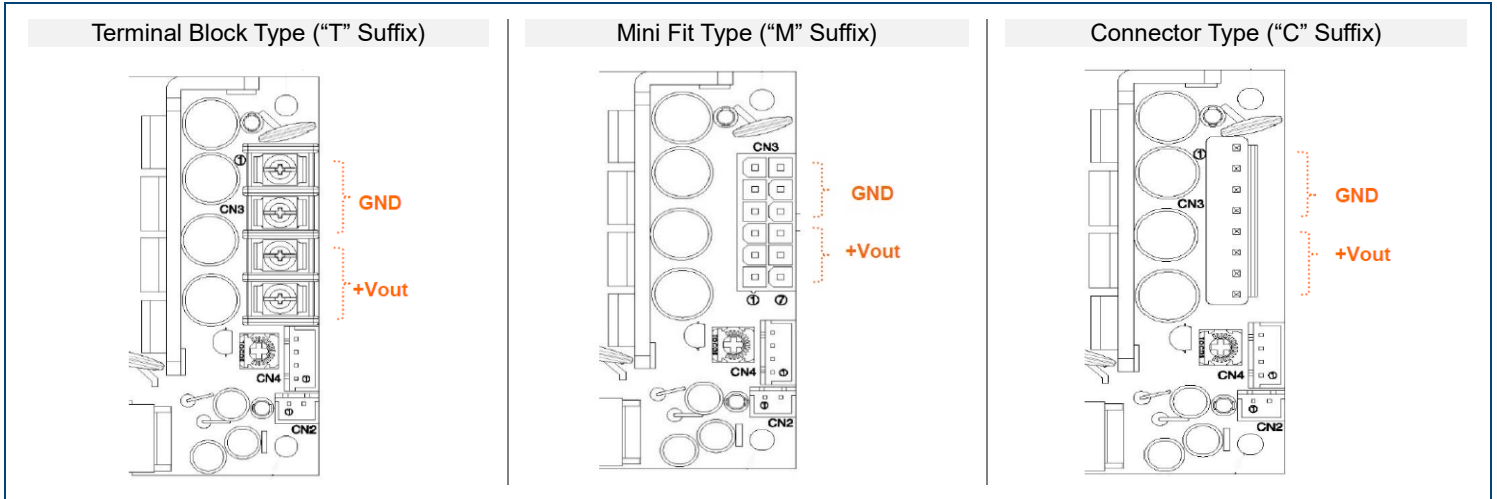
Enclosed ("E" Suffix)



U-Chassis ("U" Suffix)



MAIN OUTPUT OPTIONAL TYPE (CN3)



MATCHING CONNECTORS

CN1: Input Connector

JST B2P3-VH pitch: 3.96mm or equivalent,
mates with JST VAR-2 or equivalent

Pin#	Signal
1	AC Line
2	AC Neutral

CN4: Remote Control & Standby Supply

JST B4B-XH-A pitch: 2.5mm or equivalent,
Mates with JST XHP-4 or equivalent

Pin#	Signal
1	GND
2	+5VSB
3	INHIBIT (Remote Control)
4	GND

INHIBIT → Logic Level HIGH (5V) or
Floating: Enable, Logic Level Low: Disable

**CN3: Main Output Connector
Terminal Block Type**

4-Pole Terminal block pitch: 8.25mm,
Rate 20A/300V or equivalent

Pin #	Signal
1	GND
2	GND
3	+Vout
4	+Vout

Mini Fit Type

12 PIN Min. Fit Pitch: 4.2mm

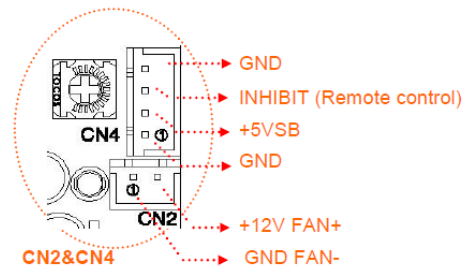
Molex P/N 39-28-1123 or equivalent

Pin#	Signal	Pin#	Signal
1	+Vout	7	+Vout
2	+Vout	8	+Vout
3	+Vout	9	+Vout
4	GND	10	GND
5	GND	11	GND
6	GND	12	GND

CN2: FAN Output Connector

JST B2B-XH-A pitch: 2.5mm or equivalent,
Mates with JST XHP-2 or equivalent

Pin#	Signal
1	GND FAN-
2	+12V FAN+

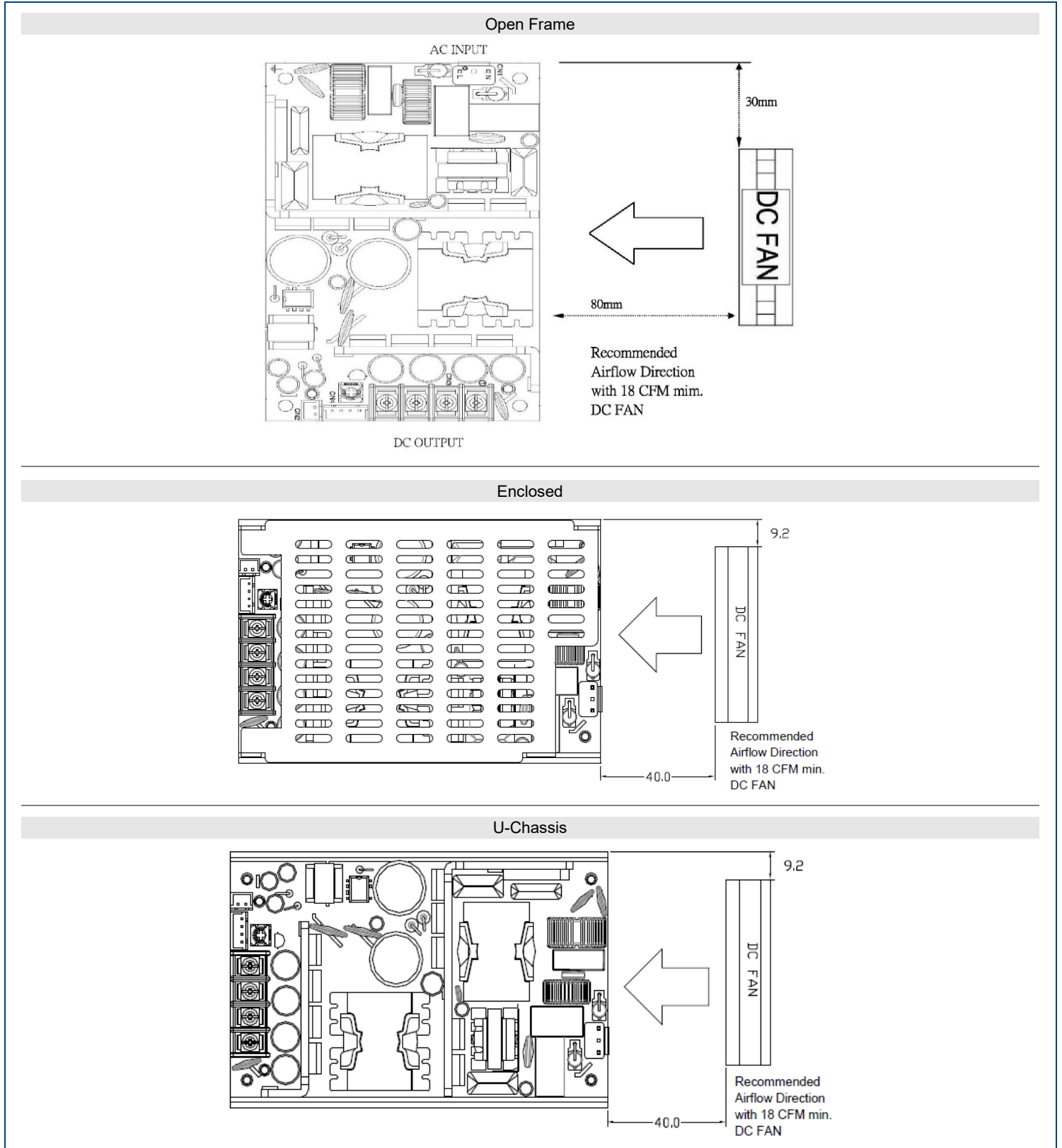


Connector Type

JST B8P-VH-B pitch: 3.96mm or equivalent,
Mates with JST VHR-8N or equivalent

Pin #	Signal	Pin #	Signal
1	GND	5	+Vout
2	GND	6	+Vout
3	GND	7	+Vout
4	GND	8	+Vout

DC FAN RECOMMENDED DIRECTION



MODEL NUMBER SETUP

PSIM	280B	-	1Y120	Z	X
Series Name	Output Power		Output Voltage	Output Connector	Case Type
			1Y120: 12V 1Y240: 24V 1Y280: 28V 1Y360: 36V 1Y480: 48V 1Y540: 54V	T: Terminal Block Type M: Mini-Fit Type C: Connector Type	O: Open Frame E: Enclosed U: U-Chassis

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: 2015 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:

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