AM150W-WLPZ

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Enclosed

Aimtec's AM150W-WLPZ series is a 150W photovoltaic DC-DC converter. It provides an ultra-wide input voltage range of 250-1500VDC, high efficiency up to 92% and low no load power consumption for energy sensitive applications.

This series has input under-voltage protection, output short circuit, over-current and over-voltage protection to maintain the system's stability and avoid frequent restarts. These protections greatly reduce the probability of power supply failure while enhancing the safety performance of the modular power supply and the load under abnormal working conditions.

Offering an MTBF over 300,000h and an isolation voltage up to 4000VAC, these models can be widely used in photovoltaic power generation, energy storage BMS, high voltage inverters and other related applications.

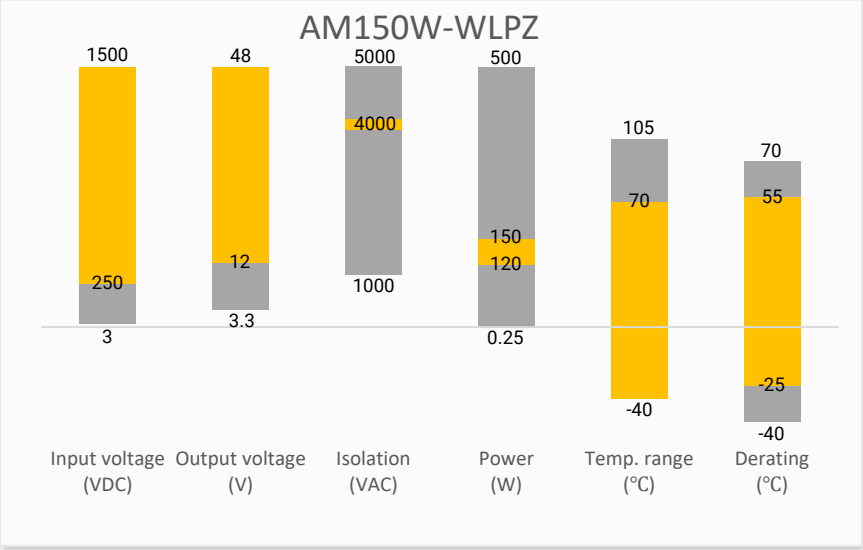
Features

- Ultra-wide 250~1500VDC input voltage range.
- Operating Temp : -40 °C to +70 °C
- High I/O isolation voltage : 4000VAC
- Low ripple & noise: 150mV(p-p), typ.
- High reliability, Long lifespan: ≧ 300 000 hrs
- Input under-voltage protection, output short circuit, over-current, over-voltage protection
- Meets 5000m altitude requirements
- Designed to meet IEC/EN 62109-1, CSA-C22.2 No.107.1-16

RoHS

3yr Warranty

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Renewable Energy

Models & Specifications

Single Output						
Model	Input Voltage (VDC)	Max Output Wattage (W)	Output Voltage (VDC)	Output Current Max (A)	Maximum Capacitive Load (µF)	Efficiency @800VDC (%)
AM150W-80012SA40WLPZ	800 (250 ~ 1500)	120	12	10	3500	88
AM150W-80015SA40WLPZ	800 (250 ~ 1500)	120	15	8	3000	89
AM150W-80024SA40WLPZ	800 (250 ~ 1500)	150	24	6.25	2000	90
AM150W-80028SA40WLPZ	800 (250 ~ 1500)	150	28	5.36	2000	91
AM150W-80032SA40WLPZ	800 (250 ~ 1500)	150	32	4.69	1500	91
AM150W-80048SA40WLPZ	800 (250 ~ 1500)	150	48	3.125	1000	92

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Input current	250 VDC	--	1000	mA
	800 VDC	--	400	mA
Inrush current	800 VDC	--	100	A
	1500 VDC	--	200	A
Input under-voltage protection	Under-voltage protection begins	> 125	225	VDC
	Under-voltage protection release	> 150	250	VDC
External input fuse	4A/1500 VDC, Required			

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	--	± 1	± 2	%
Line regulation	Full load	± 0.25	± 0.5	%
Load regulation	0 ~ 100% load	± 0.5	± 1	%
Ripple & Noise*	20MHz bandwidth	150	300	mV pk-pk
Hold-up time	Full load, 800 VDC input	2	--	ms
	Full load, 1500 VDC input	10	--	ms
Start-up time	--	--	3	Sec

* Ripple and Noise are measured at 20MHz bandwidth with a 47µF electrolytic capacitor and a 0.1µF ceramic capacitor. Please refer to the application note for specific details.

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O, I/O to Case voltage	60 sec, leakage current < 5mA	> 4000	--	VAC
Tested I/O to Case voltage	60 sec, leakage current < 5mA	> 2000	--	VAC
Resistance (I/O)	500VDC, 25 °C, 70%RH	> 50	--	MΩ

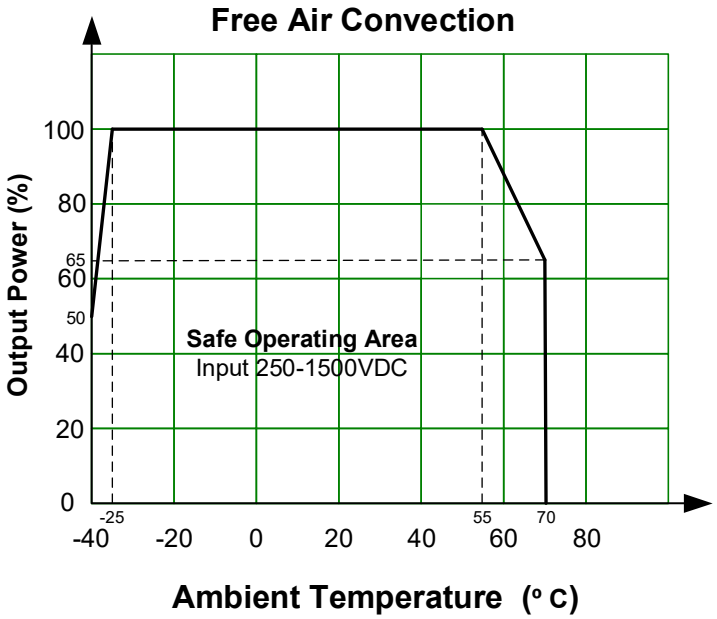
General Specifications				
Parameters	**Conditions**	**Typical**	**Maximum**	**Units**
Switching frequency	35KHz ~ 110Hz	65	110	KHz
Short circuit protection	Hiccup, continuous, self-recovery			
Over current protection	Hiccup, continuous, self-recovery	> 110	--	% of Iout
Over voltage protection	12Vout, hiccup or output voltage clamp	--	20	VDC
	15Vout, hiccup or output voltage clamp	--	25	VDC
	24Vout, hiccup or output voltage clamp	--	32	VDC
	28Vout, hiccup or output voltage clamp	--	35	VDC
	32Vout, hiccup or output voltage clamp	--	45	VDC
	48Vout, hiccup or output voltage clamp	--	60	VDC
Operating temperature	See power derating	-40 to +70	--	°C
Storage temperature	--	-40 to +85	--	°C
Storage humidity	--	> 10	95	% RH
Case temperature	--	--	95	°C
Power derating	-40 to -25°C	3.33	--	% / °C
	+55 to +70°C	2.33	--	% / °C
	250 ~ 300 VDC	0.8	--	% / VDC
	1400 ~ 1500 VDC	0.2	--	% / VDC
	2000m – 5000m	6.67	--	%/Km
Temperature coefficient	--	± 0.02	--	%/ °C
Altitude application	See power derating	--	5000	m
Cooling	Free air convection			
Casing material	Aluminum alloy			
Weight	Wired connections	980	--	g
Dimensions (L x W x H)	6.61 x 4.38 x 1.65 inches, 168.00 x 111.20 x 42.00mm			
MTBF	≧ 300 000 hrs (MIL-HDBK -217F, t=+25°C)			

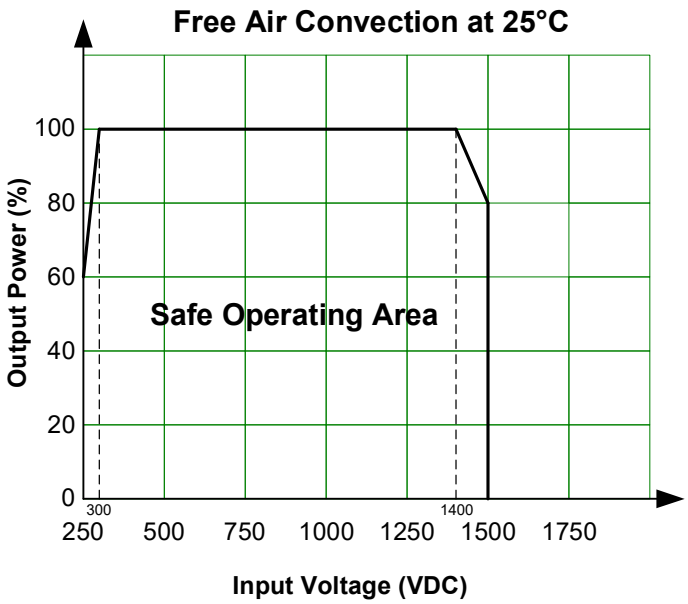
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

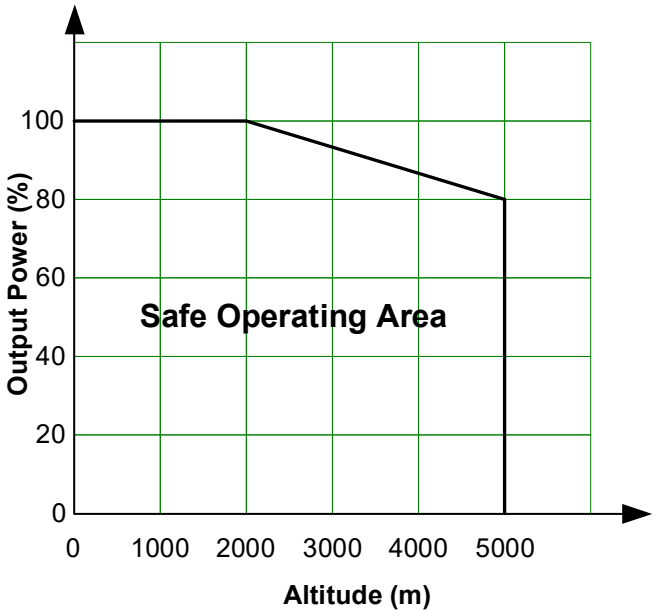
Safety Specifications		
Parameters		
Standards	Design to meet IEC/EN 62109-1, CSA-C22.2 No.107.1-16	
	EMI - Conducted and radiated emission	CISPR32/EN55032, Class A
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2, Contact ± 6KV / Air ± 8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4, ± 2KV, Criteria B
	Surge Immunity	IEC/EN 61000-4-5, L- L ± 1KV / L- G ± 2KV, Criteria B
	CS, Conducted Disturbance Immunity	IEC/EN 61000-4-6, 10Vr.m.s, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC/EN 61000-4-11 0%, 70%, Criteria B

Note: *During conduction and radiation testing in order to avoid new interference brought by the input line, it is necessary to cover the input line with a nickel-zinc ferrite or nanocrystalline magnetic ring.

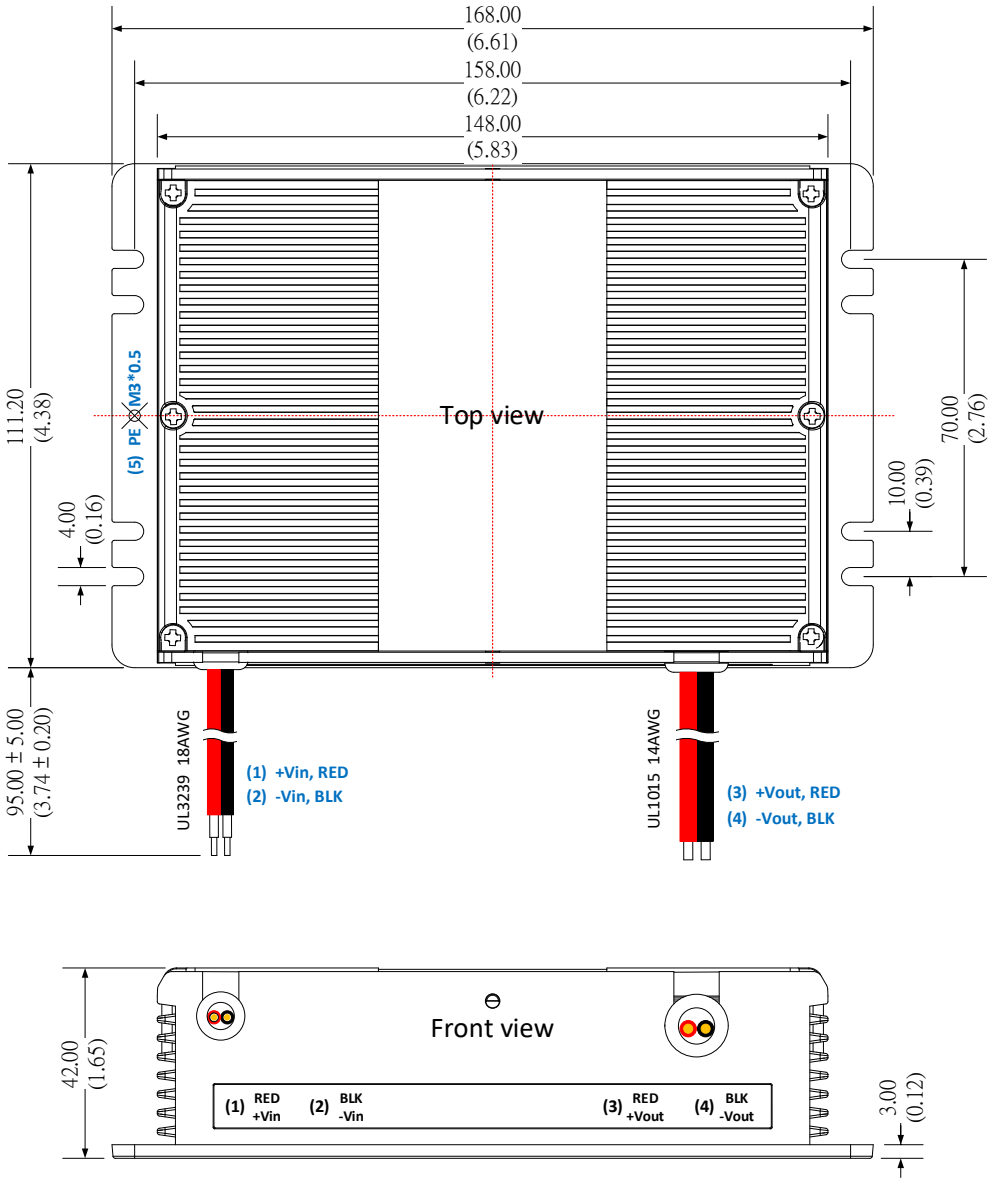
Derating


Free Air Convection
Output Power (%)
100
80
65
60
50
40
20
0
Safe Operating Area
Input 250-1500VDC
-25
55
70
-40
-20
0
20
40
60
80
Ambient Temperature (° C)


Free Air Convection at 25°C
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
300
1400
250
500
750
1000
1250
1500
1750
Input Voltage (VDC)


Output Power (%)
100
80
60
40
20
0
Safe Operating Area
0
1000
2000
3000
4000
5000
Altitude (m)

Dimensions



Note:
Unit: mm(inch)
General tolerance: ±1.00 (±0.04)