AM350W-NZ

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Enclosed

Aimtec's AM350W-NZ series is a 350W photovoltaic DC-DC converter. It provides an ultra-wide input voltage range of 200-1500VDC, high efficiency up to 92% and low no load power consumption for energy sensitive applications.

This series has input under-voltage protection, reverse input 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

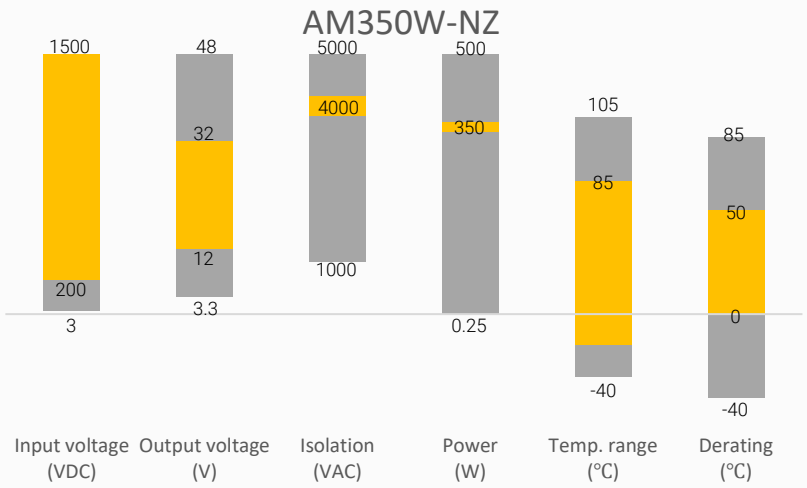
- Ultra-wide 200~1500VDC input voltage range.
- Operating Temp : -40 °C to +85 °C
- High I/O isolation voltage : 4000VAC
- Low ripple & noise: 300mV(p-p), typ.
- High reliability, Long lifespan: ≧ 300 000 hrs
- Input reverse polarity and under-voltage protection, output short circuit, over-current, over-voltage and over-temperature protection
- Meets 5000m altitude requirements

RoHS

3yr Warranty

CE

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 Voltage Adjustable Range (V)	Output Current Max (A)	Maximum Capacitive Load (µF)	Efficiency @1100VDC (%)
AM350W-110012SNZ	1100 (200 ~ 1500)	250.8	12	-	20.9	10000	90
AM350W-110024SNZ	1100 (300 ~ 1500)	350.4	24	21.6 ~ 26.4	14.6	2200	92
AM350W-110028SNZ	1100 (300 ~ 1500)	350.0	28	25.2 ~ 30.8	12.5	1500	92
AM350W-110032SNZ	1100 (300 ~ 1500)	350.4	32	28.8 ~ 35.2	10.95	1500	92

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Absolute maximum rating	Maximum duration 10s		1700	VDC
Input current	300 VDC		2000	mA
	1100 VDC		750	mA
	1500 VDC		600	mA
Inrush current	1500 VDC	300		A
Input under-voltage protection	12Vout, Under-voltage protection begins	140	195	VDC
	12Vout, Under-voltage protection release	165	205	VDC
	Others, Under-voltage protection begins	240	295	VDC
	Others, Under-voltage protection release	265	305	VDC
Input reverse polarity protection	Available			
External input fuse	6A/1500 VDC, Required			

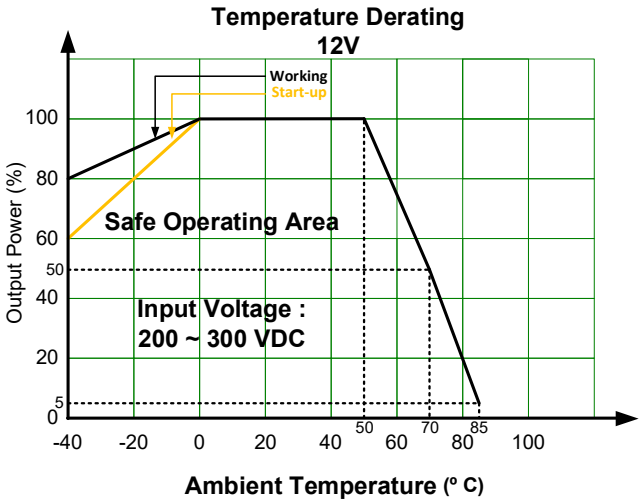
Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	0 ~ 100% load, constant voltage mode		± 2	%
Line regulation	Rated load		± 1	%
Load regulation	0 ~ 100% load		± 2	%
Ripple & Noise	12Vout, 20MHz bandwidth		200	mV pk-pk
	Others, 20MHz bandwidth		300	mV pk-pk
Hold-up time	Full load, 25 °C, 1100 VDC input	8		ms
Start delay time*	300 ~ 1500 VDC	3	5	s
* Start-up delay time Test conditions: full voltage input range, full output load range (product input power-down to the input voltage re-power-on cooler time is greater than 15s.)				

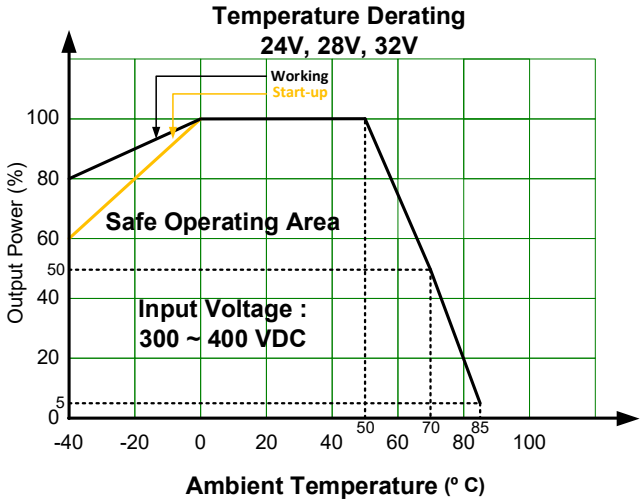
Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O, I/O to Case voltage	60 sec, leakage current < 10mA	> 4000		VAC
Resistance (I/O)	500VDC	> 50		MΩ

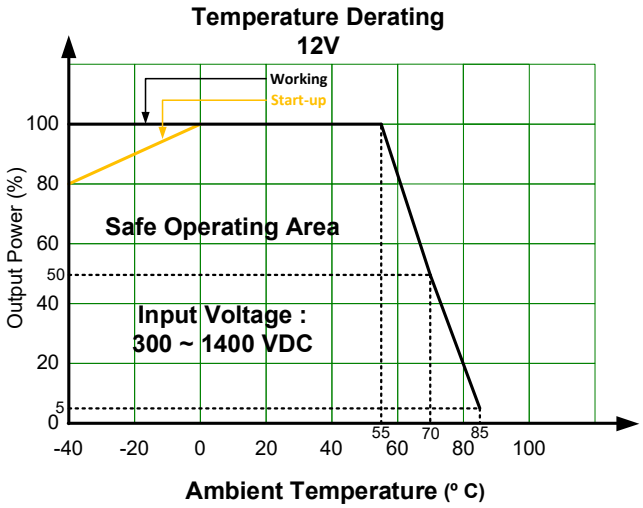
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency		65		KHz
Short circuit protection	Hiccup, continuous, self-recovery, Recovery time < 15s after the short circuit disappear			
Over current protection	Hiccup, continuous, rated load at normal/high temperature, 110%-300%Io, delay protection, delay time 1s, self-recovery after the abnormality is removed			
	Hiccup, continuous, rated load at low temperature, ≥110%Io, delay protection, delay time 1s, self-recovery after the abnormality is removed			
Over voltage protection	12Vout, hiccup or output voltage clamp		16	VDC
	24Vout, hiccup or output voltage clamp		35	VDC
	28Vout, hiccup or output voltage clamp		40	VDC
	32Vout, hiccup or output voltage clamp		45	VDC
Over temperature protection	Output voltage turn off, auto recover after temperature drops			
Operating temperature		-40 to +85		°C
Storage temperature		-40 to +85		°C
Power derating	-40 to 0°C, 200 ~ 300VDC, 12Vout	0.5		% / °C
	+50 to +70°C, 200 ~ 300VDC, 12Vout	2.5		% / °C
	+55 to +70°C, 300 ~ 1400VDC, 12Vout	3.33		% / °C
	+50 to +70°C, 1400 ~ 1500VDC, 12Vout	2.5		% / °C
	+70 to +85°C, 200 ~ 1500VDC, 12Vout	3		% / °C
	-40 to 0°C, 300 ~ 400VDC, Others	0.5		% / °C
	+50 to +70°C, 300 ~ 400VDC, Others	2.5		% / °C
	+55 to +70°C, 400 ~ 1400VDC, Others	3.33		% / °C
	+50 to +70°C, 1400 ~ 1500VDC, Others	2.5		% / °C
	+70 to +85°C, 300 ~ 1500VDC, Others	3		% / °C
	200 ~ 300 VDC, 12Vout	0.20		% / VDC
	300 ~ 400 VDC, Others	0.20		% / VDC
Temperature coefficient		± 0.02		%/°C
Cooling	Free air convection			
Humidity			95	% RH
Casing material	Metal			
Weight		1500		g
Dimensions (L x W x H)	8.47 x 4.92 x 1.97 inches, 215.00 x 125.00 x 50.00mm			
MTBF	≧ 300 000 hrs (MIL-HDBK -217F, t=+25°C)			

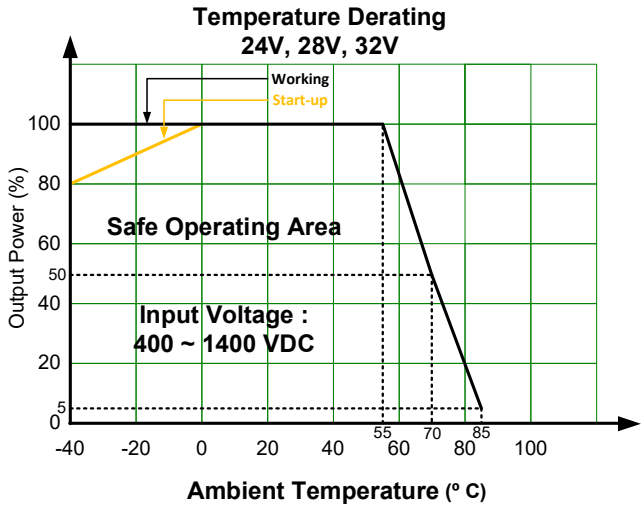
Safety Specifications		
Parameters		
Agency approval	EN/BS EN 62109-1	
Standards	Design to meet UL 1741, IEC 62109-1, CSA-C22.2 No.107.1-16	
	EMI - Conducted and radiated emission	CISPR32/EN55032, Class A
	Electrostatic Discharge Immunity	IEC 61000-4-2, Contact ± 6KV / Air ± 8KV, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4, ± 4KV, Criteria A
	Surge Immunity	IEC 61000-4-5, L- L ± 1KV / L- G ± 2KV, Criteria A
	CS, Conducted Disturbance Immunity	IEC 61000-4-6, 10Vr.m.s, Criteria A
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.		

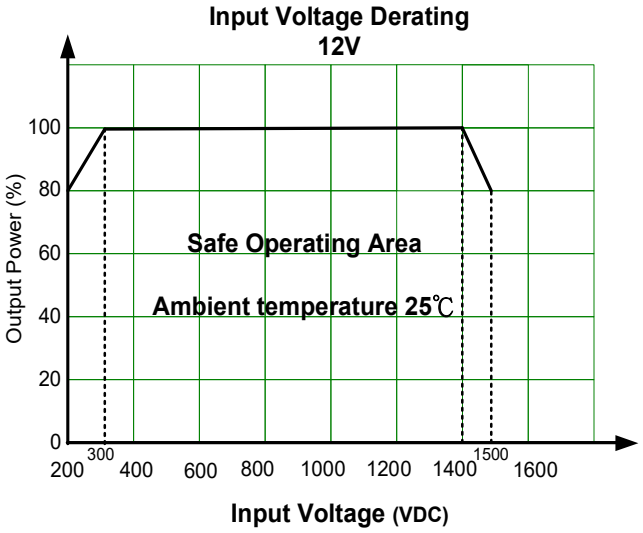
Derating

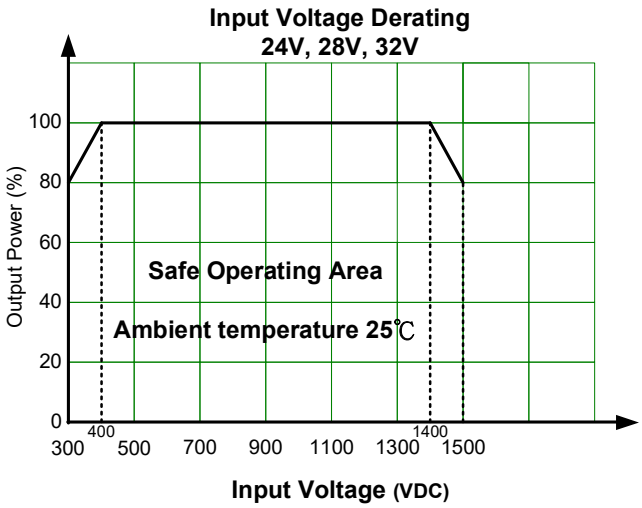


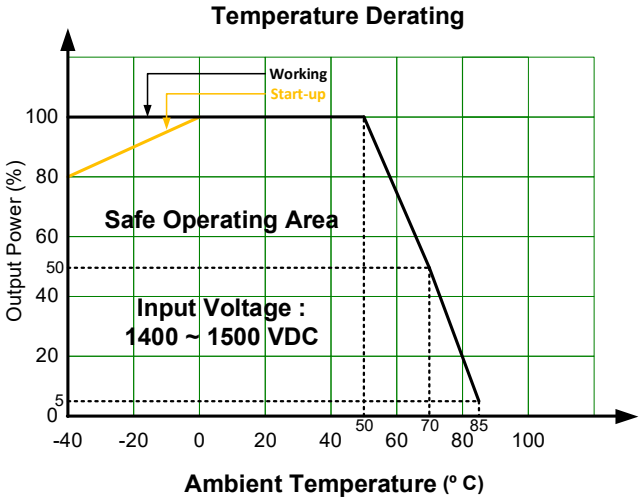


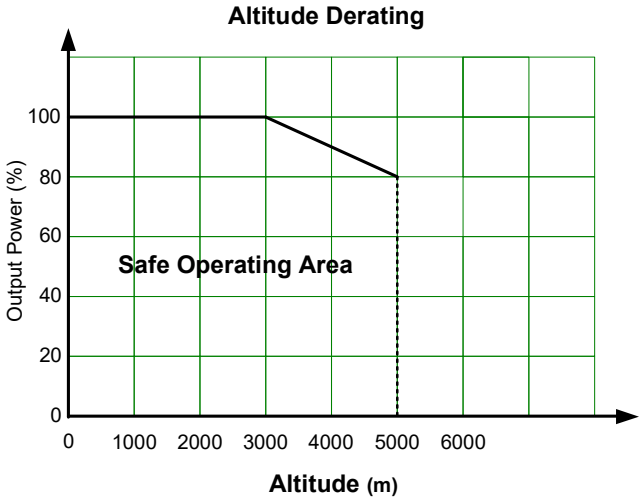




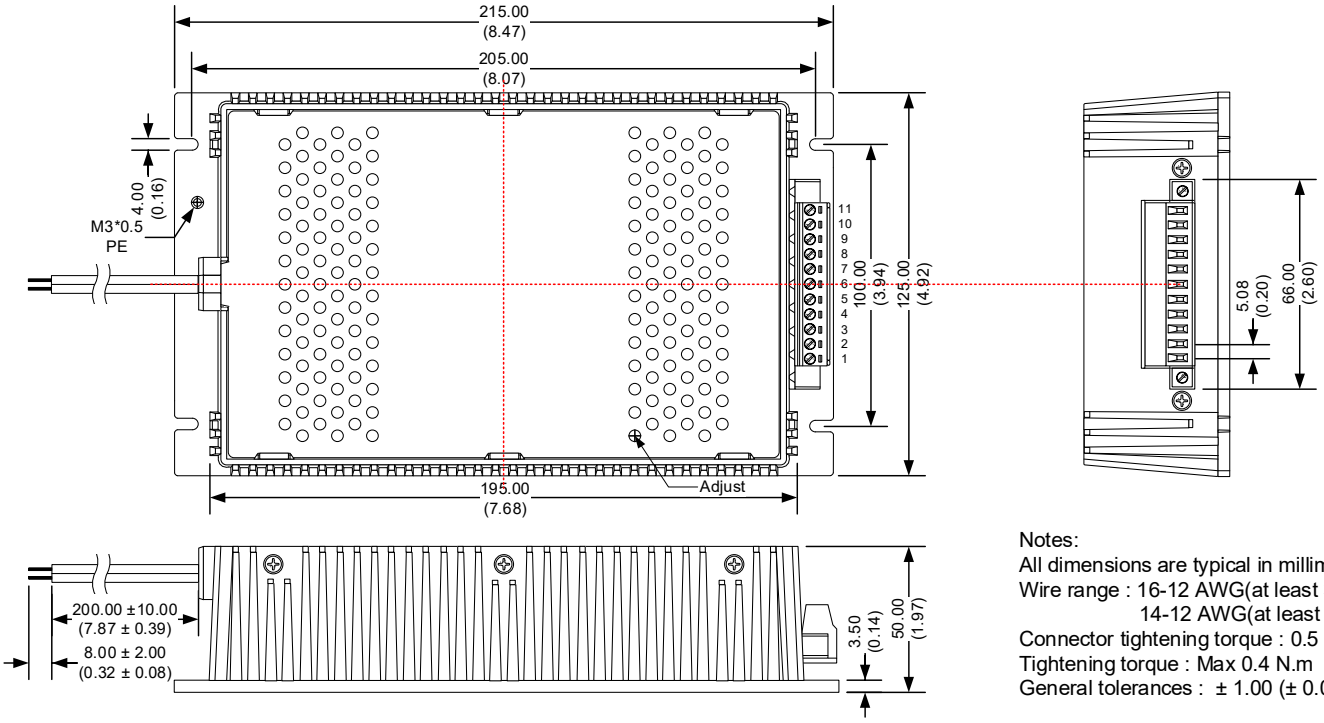

Input Voltage Derating
12V
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
Ambient temperature 25℃
200
300
400
600
800
1000
1200
1400
1500
1600
Input Voltage (VDC)


Input Voltage Derating
24V, 28V, 32V
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
Ambient temperature 25℃
300
400
500
700
900
1100
1300
1400
1500
Input Voltage (VDC)


Temperature Derating
Working
Start-up
Output Power (%)
100
80
60
50
40
20
5
0
Safe Operating Area
Input Voltage :
1400 ~ 1500 VDC
-40
-20
0
20
40
50
60
70
80
85
100
Ambient Temperature (° C)


Altitude Derating
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
0
1000
2000
3000
4000
5000
6000
Altitude (m)

Dimensions



Notes:
All dimensions are typical in millimeters (inches).
Wire range : 16-12 AWG(at least 3 Pin)
14-12 AWG(at least 2 Pin)
Connector tightening torque : 0.5 ± 0.05 N.m
Tightening torque : Max 0.4 N.m
General tolerances : ± 1.00 (± 0.04)

Pin Out Specifications			
Pin	Function	Pin	Function
1	N.C	6	-V Output
2	N.C	7	-V Output
3	N.C	8	+V Output
4	-V Output	9	+V Output
5	-V Output	10	+V Output
		11	+V Output
Red Wire (14AWG)	+V Input	Black Wire (14AWG)	-V Input