AMES75-NZ

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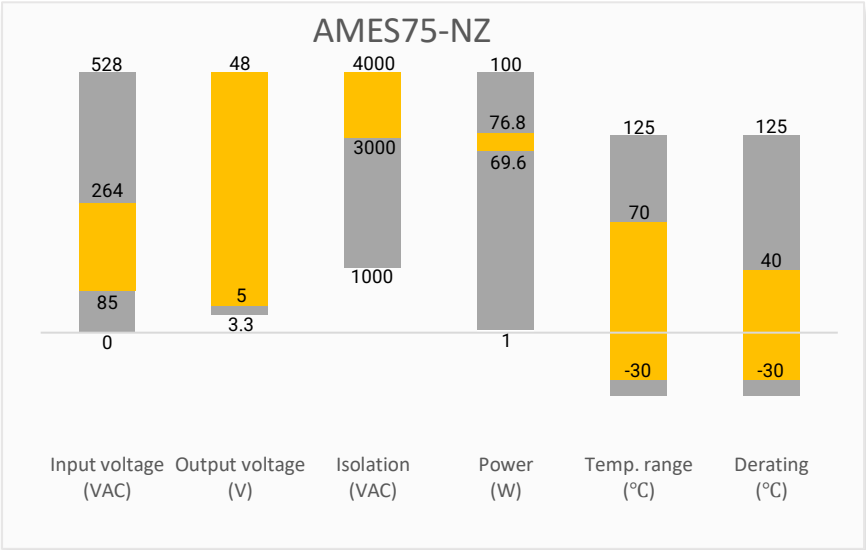
Enclosed

The new AMES75-NZ is a brand-new AC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 85-264VAC and an output voltage range from 5-48V, this series will offer many benefits to your new system design.
This new series offers great operating temperatures, from -30°C to 70°C also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a higher MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.
The AMES75-NZ is perfect for street lighting controls, grid power, LED, instrumentation, industrial controls, communication and civil applications.

Features

- Universal Input: 85 - 264VAC/120 - 373VDC
- Operating Temp: -30 °C to +70 °C
- High isolation voltage: Up to 4000VAC
- Low ripple & noise, 150mV(p-p).
- Output short circuit, over-current, over-voltage protection
- Regulated Output

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Power Grid | Industrial | Telecom | Instrumentation

Models & Specifications

Single Output								
Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output Wattage (W)	Output Voltage (V)	Output Voltage Adjustable Range (V)	Output Current max (A)	Maximum capacitive load (µF)	Efficiency @230VAC Typ. (%)
AMES75-5SNZ#	85-264/47-63	120-373	70	5	4.5-5.5	14	10000	86
AMES75-12SNZ#	85-264/47-63	120-373	72	12	10.2-13.8	6	6000	88
AMES75-15SNZ#	85-264/47-63	120-373	75	15	13.5-18	5	5000	88
AMES75-24SNZ#	85-264/47-63	120-373	76.8	24	21.6-28.8	3.2	1500	90
AMES75-36SNZ#	85-264/47-63	120-373	75.6	36	32.4-39.6	2.1	1000	90
AMES75-48SNZ#	85-264/47-63	120-373	76.8	48	43.2-52.8	1.6	680	91.5
Note: Add suffix "-P" for optional terminal protective cover (ex. AMES75-5SNZ-P is terminal with protective cover version) or suffix "-Q" for conformal coating (ex. AMES75-5SNZ-Q is conformal coating version).								

Dual Output								
Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output Wattage (W)	Output Voltage (Vo1/Vo2) (V)	Working Current Range (Io1/Io2) (A)*	Output Current (Io1/Io2) (A)	Maximum capacitive load (Vo1/Vo2) (µF)	Efficiency @230VAC (%)
AMES75-0512DNZ#	90-264/47-63	120-373	71	5/12	0.7-8/0.3-4	7/3	7000/3000	82
AMES75-0524DNZ#	90-264/47-63	120-373	73	5/24	0.5-6/0.2-3	5/2	5000/2000	84
Note: Use suffix "-Q" for conformal coating (ex. AMES75-0512DNZ -Q is conformal coating version). *Maximum duration 3sec when any of the outputs reaches its maximum working current. Total output power cannot exceed the rated power.								

Tri Output								
Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output Wattage (W)	Output Voltage (Vo1/Vo2/ Vo3) (V)	Working Current Range (Io1/Io2/Io3) (A)	Output Current (Io1/Io2/ Io3) (A)	Maximum capacitive load (Vo1/Vo2/Vo3) (µF)	Efficiency @230VAC (%)
AMES75-051212TNZ	90-264/47-63	120-373	69.6	+5/+12/-12	0.6-7/0.28-3.5/0.05-1	6/2.8/0.5	6000/2800/470	82
AMES75-051515TNZ	90-264/47-63	120-373	72	+5/+15/-15	0.6-7/0.23-3.5/0.05-1	6/2.3/0.5	6000/2300/470	82
AMES75-052412TNZ	90-264/47-63	120-373	73	+5/+24/+12	0.5-6/0.15-2/0.1-1.5	5/1.5/1	5000/1500/1000	84
Note: Use suffix "-Q" for conformal coating (ex. AMES75-051212TNZ -Q is conformal coating version). *Maximum duration 3sec when any of the outputs reaches its maximum working current. Total output power cannot exceed the rated power.								

Parameters	Conditions	Typical	Maximum	Units
Input current	Single output, 115VAC		2	A
	Single output, 230VAC		1	A
	Others, 115VAC		1.7	A
	Others, 230VAC		0.9	A
Inrush current	Single output, cold start, 115VAC	40		A
	Single output, cold start, 230VAC	65		A
	Others, 115VAC	30		A
	Others, 230VAC	45	50	A
Leakage current	Single output, 240VAC		0.75	mA
	others, 240VAC		2.0	mA

Output Specifications				
Parameters	**Conditions**	**Typical**	**Maximum**	**Units**
Voltage accuracy	Single output, Full load, 5V output	±2		%
	Single output, Full load, Others	±1		%
	Dual output, Full load, Output 1	±2		%
	Dual output, Full load, Output 2	±8		%
	Tri output, Full load, Output 1	±2		%
	Tri output, Full load, AMES75-051515TNZ, Output 2	≥ -4	+8	%
	Tri output, Full load, Others, Output 2	±6		%
	Tri output, Full load, AMES75-052412TNZ, Output 3	±6		%
	Tri output, Full load, Others, Output 3	±5		%
Line regulation	Single output, Full load	±0.5		%
	Dual output, Full load, Output 1	±0.5	±1	%
	Dual output, Full load, Output 2	±1.5		%
	Tri output, Full load, Output 1	±1		%
	Tri output, Full load, Output 2	±1		%
	Tri output, Full load, AMES75-052412TNZ, Output 3	±2		%
	Tri output, Full load, others, Output 3	±1		%
Load regulation**	Single output, 0-100% load, 5V output	±1		%
	Single output, 0-100% load, Others	±0.5		%
	Dual output, 10-100% load, Output 1	±0.5		%
	Dual output, 10-100% load, Output 2	±5		%
	Tri output, 10-100% load, Output 1	±1		%
	Tri output, 10-100% load, Output 2	±5		%
	Tri output, 10-100% load, AMES75-052412TNZ, Output 3	±5		%
	Tri output, 10-100% load, others, Output 3	±1		%
Ripple & Noise*	Single output, 5V output	100		mV p-p
	Single output, 12V,15V output	120		mV p-p
	Single output, 24V output	150		mV p-p
	Single output, 36V,48V output	200		mV p-p
	Dual output, Output 1	80		mV p-p
	Dual output, AMES75-0512DNZ, Output 2	120		mV p-p
	Dual output, AMES75-0524DNZ, Output 2	150		mV p-p
	Tri output, Output 1	80		mV p-p
	Tri output, AMES75-051212TNZ, Output 2	120		mV p-p
	Tri output, others, Output 2	150		mV p-p
	Tri output, AMES75-052412TNZ, Output 3	150		mV p-p
	Tri output, others, Output 3	80		mV p-p
Hold up time	Single output, 115VAC	8		ms
	Single output, 230VAC	55		ms
	Others, 115VAC	5		ms
	Others, 230VAC	30		ms
Voltage adjustable range	Output 1 of dual, tri output models	4.75 – 5.5		V
Switching delay time	Dual, tri output		3	S
Rise time	Dual output, 115/230VAC		30	mS
	Tri output, 115/230VAC		100	mS

*** 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.**
**** Balanced load for dual and tri output models.**

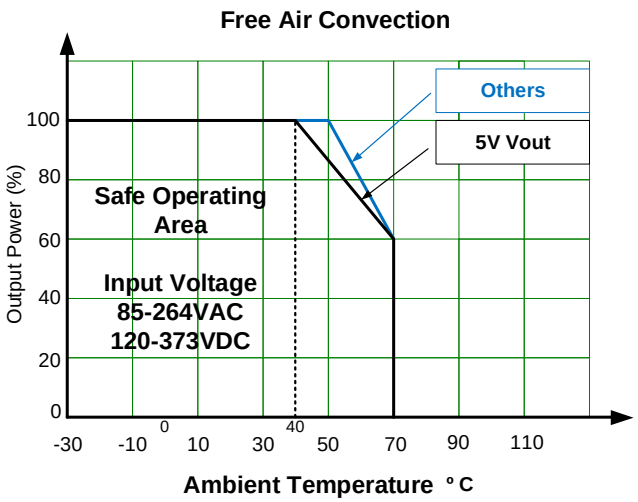
Isolation Specifications				
Parameters	**Conditions**	**Typical**	**Rated**	**Units**
Tested I/O voltage	60 sec, leakage current < 10mA, Single output		4000	VAC
	60 sec, leakage current < 10mA, Dual, tri output		3000	VAC
Tested Input to GND voltage	60 sec, leakage current < 10mA, Single output		2000	VAC
	60 sec, leakage current < 10mA, Dual, tri output		2000	VAC
Tested Output to GND voltage	60 sec, leakage current < 10mA, Single output		1250	VAC
	60 sec, leakage current < 10mA, Dual, tri output		500	VAC
Tested Vo1 to Vo2 voltage	Dual output model only		500	VDC
Resistance (I/O, I/O to GND)	500VDC		100	MΩ

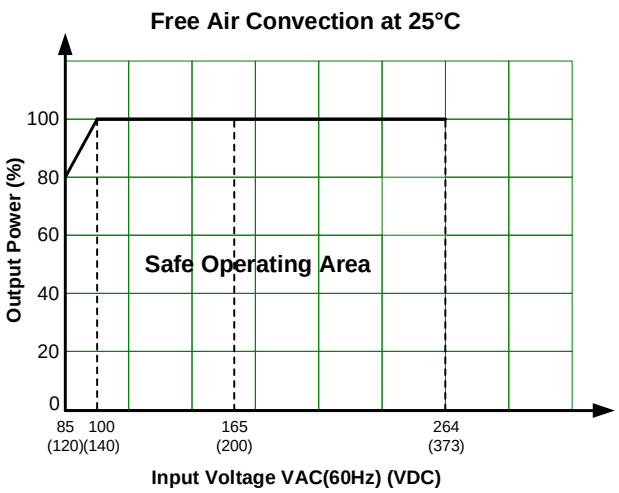
General Specifications				
Parameters	**Conditions**	**Typical**	**Maximum**	**Units**
Safety class	Class I			
Switching Frequency	Single output	65		KHz
Over Current protection	Single output, Auto recovery	≥ 110	200	% of Iout
	Dual, tri output, balanced load, Auto recovery	≥ 110		% of Iout
Over voltage protection	Single output, 5V output, Manual recovery		6.3	VDC
	Single output, 12V output, Voltage clamp		16.2	VDC
	Single output, 15V output, Voltage clamp		21.75	VDC
	Single output, 24V output, Voltage clamp		33.6	VDC
	Single output, 36V output, Voltage clamp		50	VDC
	Single output, 48V output, Manual recovery		60	VDC
	Dual, tri output, Hiccup	5.75 ≤ Output 1 ≤ 6.75		VDC
Short circuit protection*	Hiccup, Continuous, Auto recovery, Recovery time < 5 sec			
Operating temperature	See derating graph	-30 to +70		°C
Storage temperature		-40 to +85		°C
Power consumption	Single output		0.3	W
Power derating	Single output, 40 °C to 70 °C, 5V output	1.3		% / °C
	Single output, 50 °C to 70 °C, Others	2		% / °C
	Single output, 85VAC ~ 100VAC	1.33		% / VAC
	Dual output, 45 °C to 70 °C	2		% / °C
	Tri output, 40 °C to 70 °C	2		% / °C
	Dual, tri output, 90VAC - 115VAC	0.8		% / VAC
	Dual, tri output, 120VDC - 160VDC	0.5		% / VAC
Temperature coefficient	Single output models and Output 1 of dual, tri output models	±0.03		% / °C
Cooling	Free air convection			
Humidity	Non-condensing	≥ 10	95	% RH
	Non-condensing, Operating	≥ 20	90	% RH
Case material	Metal (1100 Aluminum, Hot dip galvanized steel)			
Weight	Single output	220		g
	Dual output	310		g
	Tri output	320		g
Dimensions (L x W x H)	Single output	3.90 x 3.82 x 1.18inch (99.0 x 97.0 x 30.0mm)		
	Dual, tri output	5.07 x 3.82 x 1.18inch (129.0 x 97.0 x 30.0mm)		
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.
***Output 3 cannot be shorted for long period of time.**

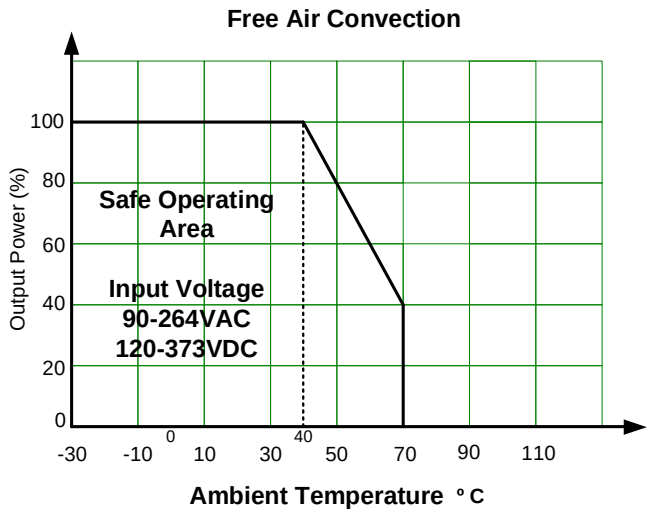
Safety Specifications		
Parameters		
Agency approvals	UL 62368-1 (Only for the models marked #)	
Standards	Information technology Equipment	Design to meet IEC/EN/UL 62368-1, EN60335, GB4943
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Harmonic current	IEC 61000-3-2 Class A
	Electrostatic 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 ±2KV, Criteria A
	Surge Immunity	IEC 61000-4-5 L-L ±2KV/L-G ±4KV, Criteria A
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 0%, 70%, Criteria B

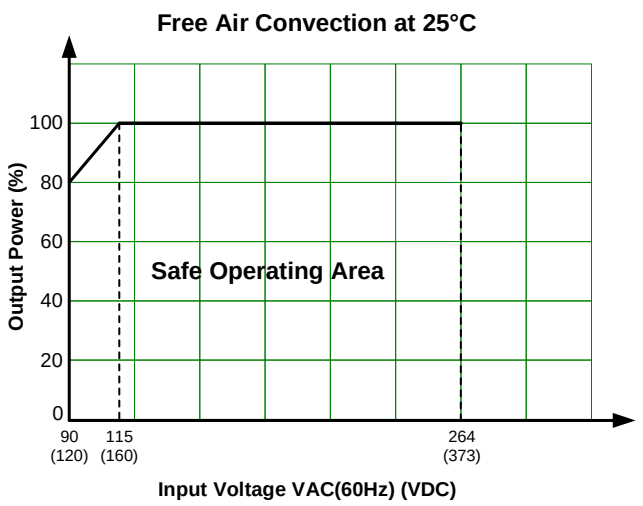
Single Output Models Derating



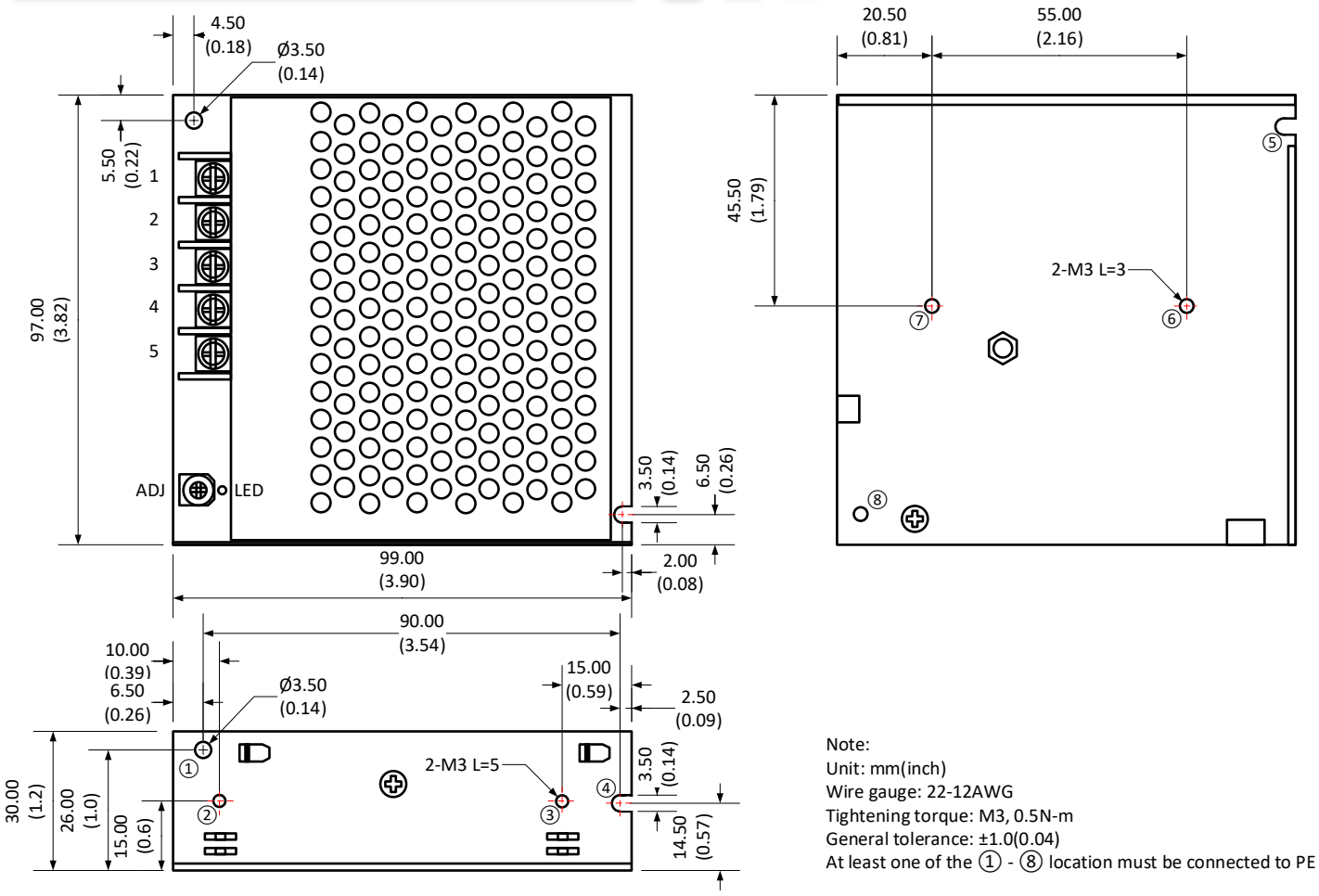


Dual, Tri Output Models Derating





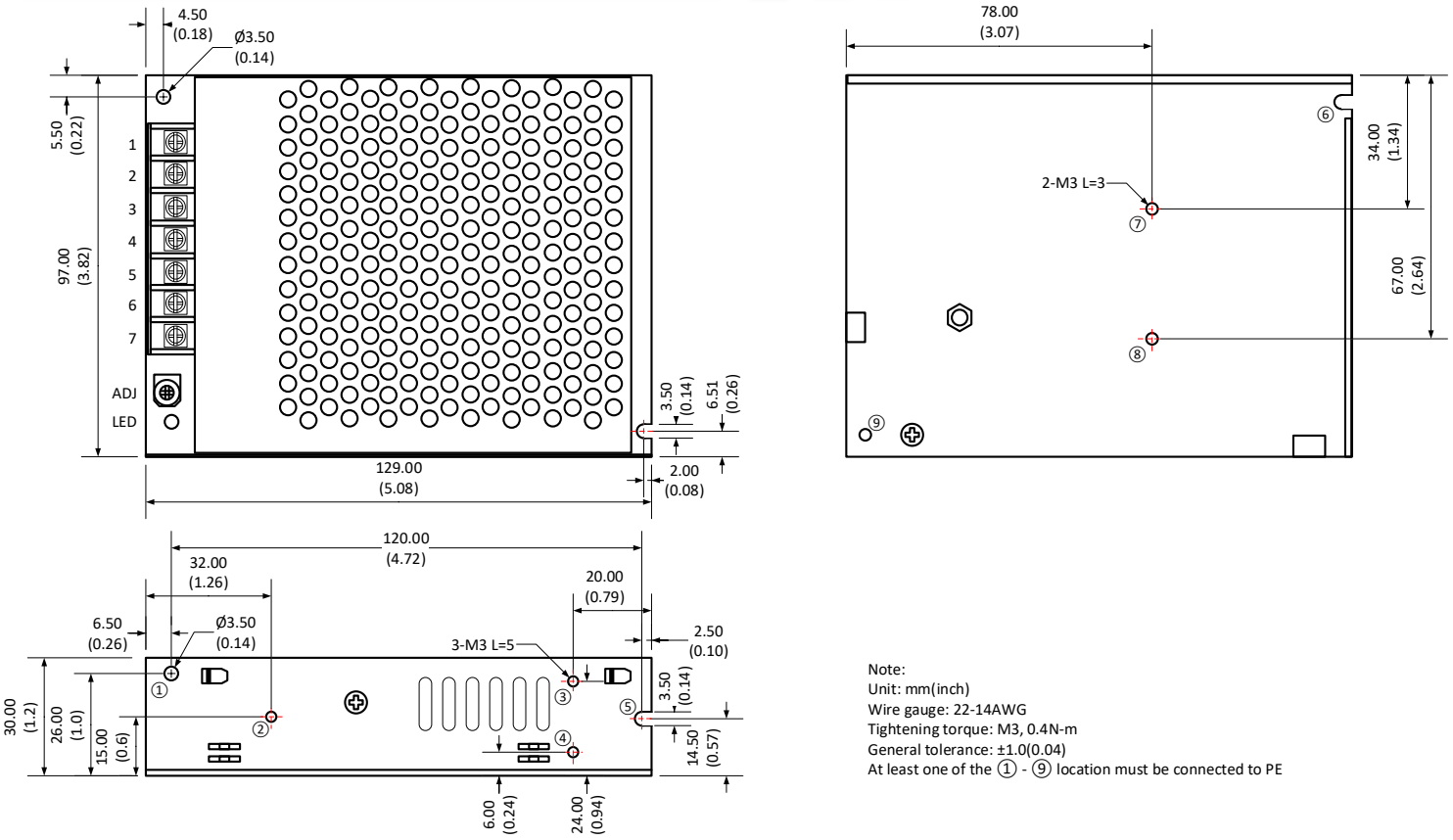
Single Output Models Dimensions



Note:
Unit: mm(inch)
Wire gauge: 22-12AWG
Tightening torque: M3, 0.5N-m
General tolerance: ±1.0(0.04)
At least one of the ① - ⑧ location must be connected to PE

Single Pin Output Specifications	
Pin	**Function**
1	-V Input (L)
2	+V Input (N)
3	PE GND
4	-V Output
5	+V Output
ADJ	Vo1 voltage adj knob

Dual, Tri Output Models Dimensions



Note:
Unit: mm(inch)
Wire gauge: 22-14AWG
Tightening torque: M3, 0.4N-m
General tolerance: ±1.0(0.04)
At least one of the ① - ⑨ location must be connected to PE

Dual Pin Output Specifications	
Pin	Function
1	-V Input (L)
2	+V Input (N)
3	PE GND
4	-V Output 2
5	+V Output 2
6	-V Output 1
7	+V Output 1
ADJ	Vo1 voltage adj knob

Triple Pin Output Specifications	
Pin	Function
1	-V Input (L)
2	+V Input (N)
3	PE GND
4	+V Output 3
5	+V Output 2
6	Common
7	+V Output 1
ADJ	Vo1 voltage adj knob

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4.** All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. **5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.