



AME10-CVZ



Picture coming soon

Encapsulated

The AME10-CVZ is a compact AC/DC converter that offers a commercial input voltage range of 85-264VAC and multiple outputs ranging from 5 / 24 to $\pm 15V$.

This series offers great operating temperatures of $-40^{\circ}C$ to $70^{\circ}C$ with full power throughout the entire range. It also features an isolation of 4000VAC for improved reliability and system safety, a high 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.

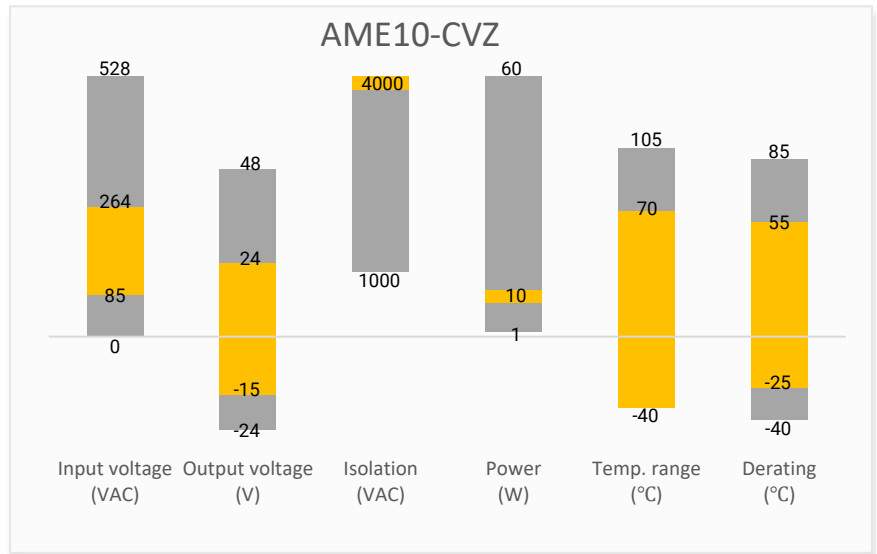
The AME10-CVZ is great for grid power, instrumentation, industrial controls, communication and civil applications.

Features

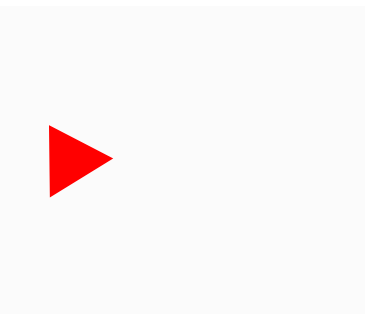


- Universal Input: 85 - 264VAC/100 - 370VDC
- Operating Temp: $-40^{\circ}C$ to $+70^{\circ}C$
- High isolation voltage: 4000VAC
- Low ripple & noise, 130mV(p-p), Max.
- Output short circuit, over-current, over-voltage protection
- Regulated Output

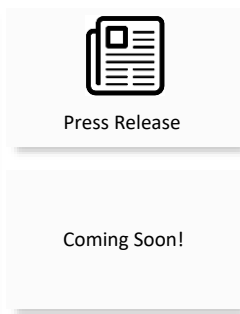
Summary



Training



Product Training Video
(click to open)



Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

Models & Specifications

Dual Output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)		Output Current max (A)		Maximum capacitive load (μF)		Efficiency @ 230VAC (%)
				Vout 1	Vout 2	Iout 1	Iout 2	Vout 1	Vout 2	
AME10-5DCVZ	85-264/47-63	100-370	10	5	-5	1	-1	8800	8800	76
AME10-12DCVZ	85-264/47-63	100-370	10	12	-12	0.45	-0.45	1970	1970	80
AME10-15DCVZ	85-264/47-63	100-370	10	15	-15	0.35	-0.35	1970	1970	81

Note: Use suffix "ST" for chassis and suffix "STD" for DIN-Rail mounting (ex. AME10-5DCVZ-ST is chassis mounting and AME10-5DCVZ-STD is DIN-Rail mounting version).

Triple Output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)		Output Current max (A)		Maximum capacitive load (μF)		Efficiency @ 230VAC (%)
				Vout 1	Vout 2	Iout 1	Iout 2	Vout 1	Vout 2	
AME10-512TCVZ	85-264/47-63	100-370	9.8	5	±12	1	±0.2	3200	±260	75
AME10-515TCVZ	85-264/47-63	100-370	10.5	5	±15	0.9	±0.2	2100	±80	75

Note: Use suffix "ST" for chassis and suffix "STD" for DIN-Rail mounting (ex. AME10-512TCVZ-ST is chassis mounting and AME10-512TCVZ-STD is DIN-Rail mounting version).

Dual Separated Output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)		Output Current max (A)		Maximum capacitive load (μF)		Efficiency @ 230VAC (%)
				Vout 1	Vout 2	Iout 1	Iout 2	Vout 1	Vout 2	
AME10-505DCVZ	85-264/47-63	100-370	10	5	5	1.8	0.2	8000	540	75
AME10-512DCVZ	85-264/47-63	100-370	10	5	12	1.5	0.2	4400	260	78
AME10-515DCVZ	85-264/47-63	100-370	10	5	15	1.4	0.2	4400	170	79
AME10-524DCVZ	85-264/47-63	100-370	10	5	24	1	0.2	4000	170	80

Note: Use suffix "ST" for chassis and suffix "STD" for DIN-Rail mounting (ex. AME10-505DCVZ-ST is chassis mounting and AME10-505DCVZ-STD is DIN-Rail mounting version).

Input Specifications

Parameters	Conditions	Minimum	Typical	Maximum	Units
Current	115VAC			0.26	A
	230VAC			0.16	A
Inrush current	115VAC		13		A
	230VAC		23		A
External fuse	slow blow type,250V		1		A

Output Specifications					
Parameters	Conditions		Typical	Maximum	Units
Voltage accuracy	Vout 1		±2		%
	Vout 2		±10		%
Line regulation	Full load	Vout 1	±0.5		%
		Vout 2	±1.5		%
Load regulation	10-100% load	Dual separated output models	Vout 1	±3	%
			Vout 2	±5	%
		Dual output models		±2	
Ripple & Noise*	20MHz bandwidth	Dual 12,15V output		130	mV p-p
		Others		100	mV p-p
Hold up time	115VAC		8		ms
	230VAC		60		ms

* Ripple and Noise are measured at 20MHz bandwidth by using the referenced Application circuit.

Isolation Specifications					
Parameters	Conditions		Typical	Rated	Units
Tested I/O voltage	60 sec, leakage current < 5mA	All models		4000	VAC
Tested Input to GND voltage				2500	VAC
Tested Vout 1 to Vout 2 voltage		Dual separated output models		500	VDC

General Specifications					
Parameters	Conditions		Typical	Maximum	Units
Safety class	Class I				
Switching Frequency			100		KHz
Over current protection	Auto recovery	Triple output models	≥ 130		% of Iout
		Others	≥ 150		% of Iout
Over voltage protection	Vout 1	5V Vout		7.5	VDC
		12V,15V Vout		20	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery				
Operating temperature	See derating graph		-40 to +70		°C
Storage temperature			-40 to +85		°C
Lead temperature	Wave soldering		260 ± 5 °C; time : 5 - 10s		
	Hand soldering		360 ± 10 °C; time : 3 - 5s		
Power derating	-40 °C ~ -25 °C		2.5		% / °C
	55 °C ~ 70 °C		3.3		% / °C
	85VAC ~ 100VAC		1		% / VAC
Temperature coefficient	Vout 1		±0.02		% / °C
Cooling	Free air convection				
Humidity	Non-condensing		95		% RH
Case material	Heat resistant black Plastic (flammability to UL 94V-0)				
Weight	PCB mountable models		75		g
	With optional -ST mounting plate:		130		
	With optional -STD mounting plate:		170		
Dimensions (L x W x H)	PCB mountable models		2.17 x 1.77 x 0.83 inches (55.0 x 45.0 x 21.0mm)		
	With optional -ST mounting plate:		3.78 x 2.13 x 1.16 inches (96.1 x 54.0 x 29.5mm)		
	With optional -STD mounting plate:		3.78 x 2.13 x 1.34 inches (96.1 x 54.0 x 34.1mm)		
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load				

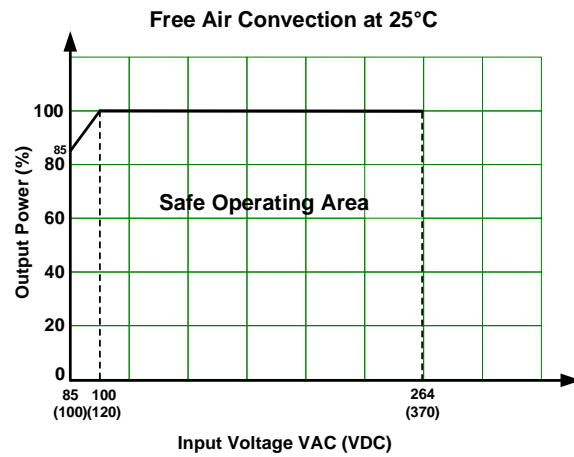
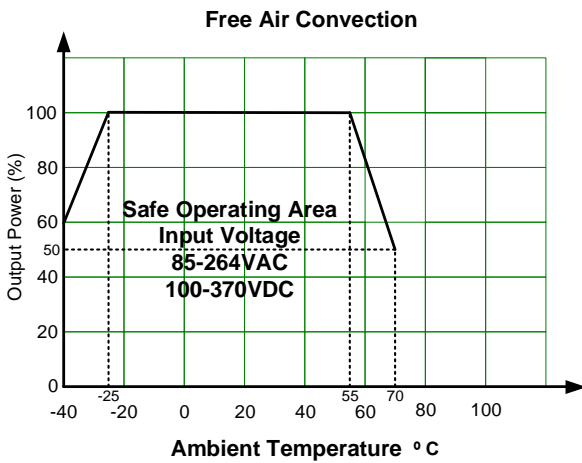
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

Parameters

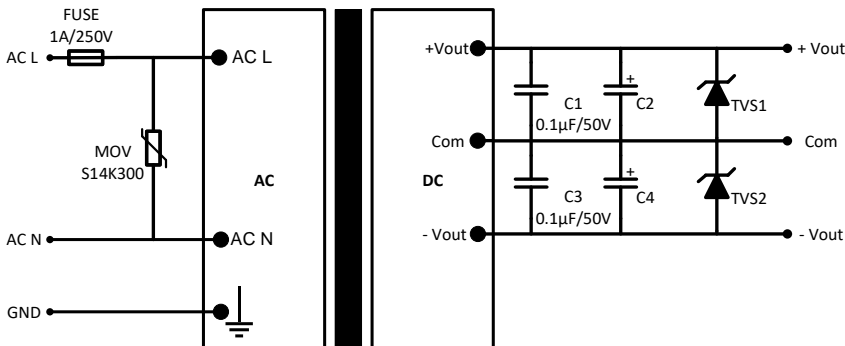
Standards	Information technology Equipment	Design to meet IEC/EN/UL 62368
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact $\pm 6\text{KV}$ / Air $\pm 8\text{KV}$, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 $\pm 2\text{KV}$, Criteria B
		IEC 61000-4-4 $\pm 4\text{KV}$, with EMC recommended circuit, Criteria B
	Surge Immunity	IEC 61000-4-5 L-L $\pm 1\text{KV}$ /L-G $\pm 2\text{KV}$, Criteria B
		IEC 61000-4-5 L-L $\pm 2\text{KV}$ /L-G $\pm 4\text{KV}$, with EMC recommended circuit, Criteria B
	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	

Derating

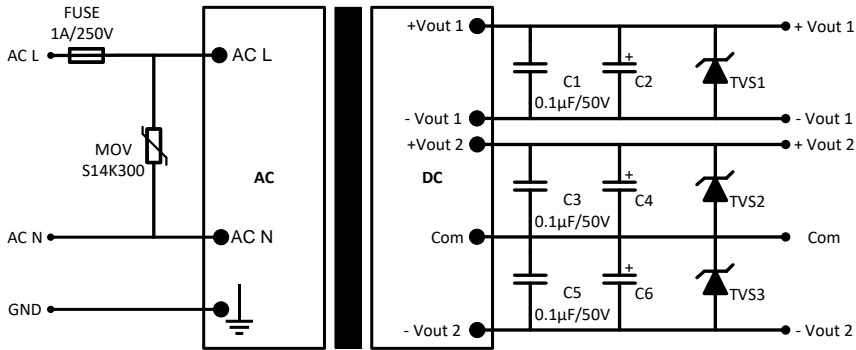


Typical Application Circuit

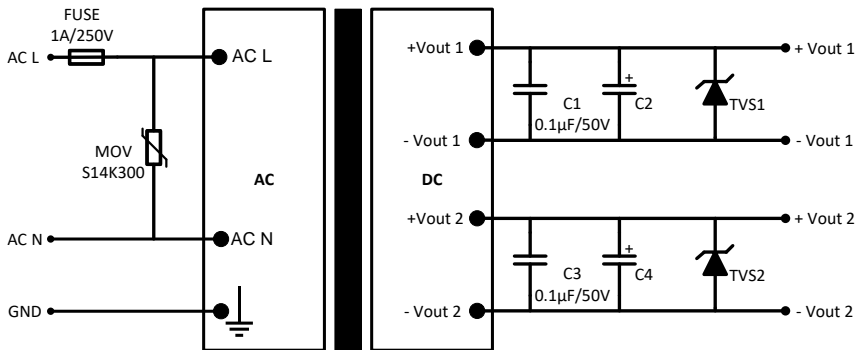
Dual Output Models



Triple Output Models



Dual Separated Output Models

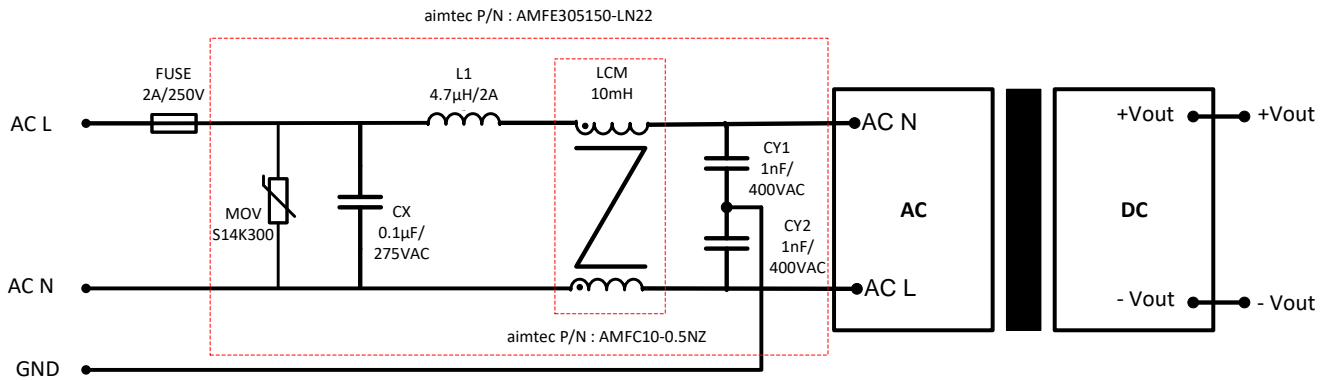


Model	C2 (µF)	C4 (µF)	C6 (µF)	TVS1	TVS2	TVS3
AME10-5DCVZ	220	220	N/A	SMBJ7.0A	SMBJ7.0A	N/A
AME10-12DCVZ	120	120	N/A	SMBJ20A	SMBJ20A	N/A
AME10-15DCVZ	47	47	N/A	SMBJ20A	SMBJ20A	N/A
AME10-512TCVZ	47	47	47	SMBJ7.0A	SMBJ20A	SMBJ20A
AME10-515TCVZ	47	47	47	SMBJ7.0A	SMBJ20A	SMBJ20A
AME10-505DCVZ	100	100	N/A	SMBJ7.0A	SMBJ7.0A	N/A
AME10-512DCVZ	100	100	N/A	SMBJ7.0A	SMBJ20A	N/A
AME10-515DCVZ	100	100	N/A	SMBJ7.0A	SMBJ20A	N/A
AME10-524DCVZ	100	100	N/A	SMBJ7.0A	SMBJ30A	N/A

Output Filter Components:

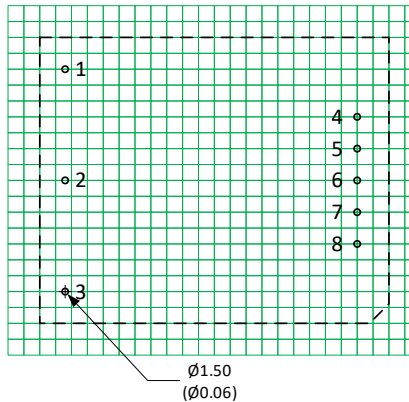
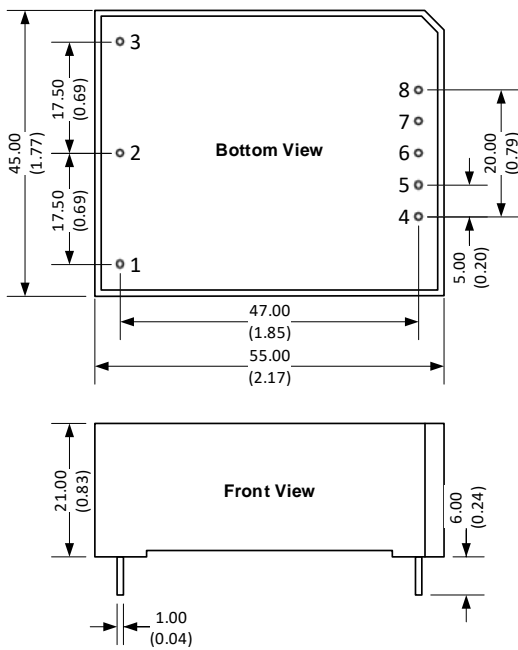
We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2, C4 and C6. C1, C3 and C5 are ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode.

EMC Recommended Circuit



Note : AMFE305150-LN22 is aimtec 2KV/4KV EMC filter.
AMFC10-0.5NZ is aimtec Common mode choke.

Dimensions



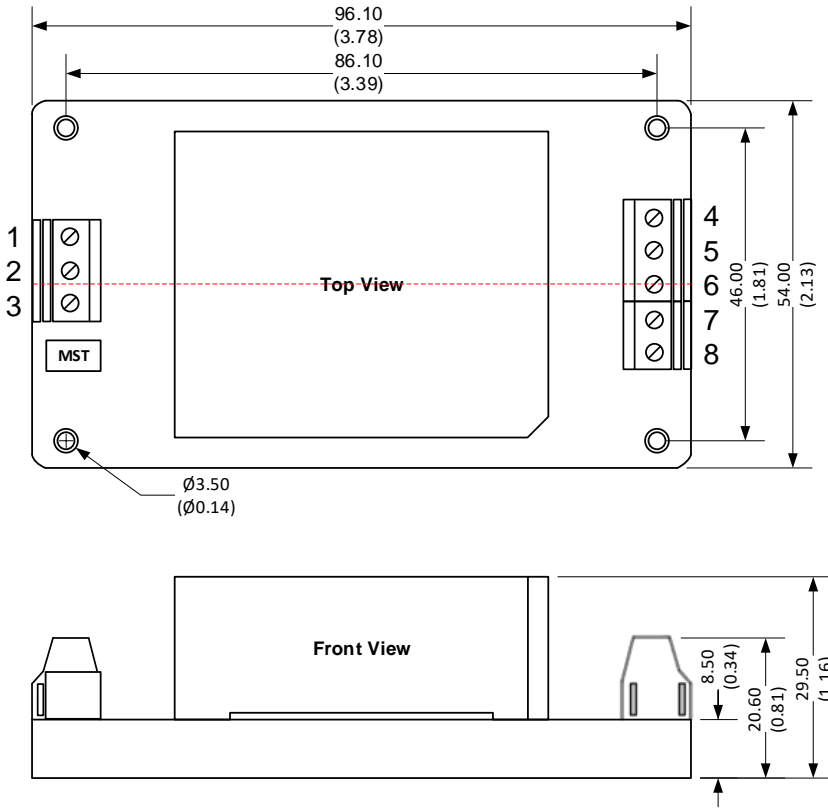
Note : Grid 2.54*2.54 mm

Notes:
All dimensions are typical in millimeters (inches).
Pin diameter tolerances : ± 0.10 (± 0.004)
General tolerance : ± 0.50 (± 0.02)

Pin Output Specifications

Pin	Dual output	Triple output	Dual separated
1	GND	GND	GND
2	AC Input (N)	AC Input (N)	AC Input (N)
3	AC Input (L)	AC Input (L)	AC Input (L)
4	-V Output	-V Output 1	-V Output 1
5	NC	+V Output 1	+V Output 1
6	Com	-V Output 2	NC
7	NC	Com	-V Output 2
8	+V Output	+V Output 2	+V Output 2

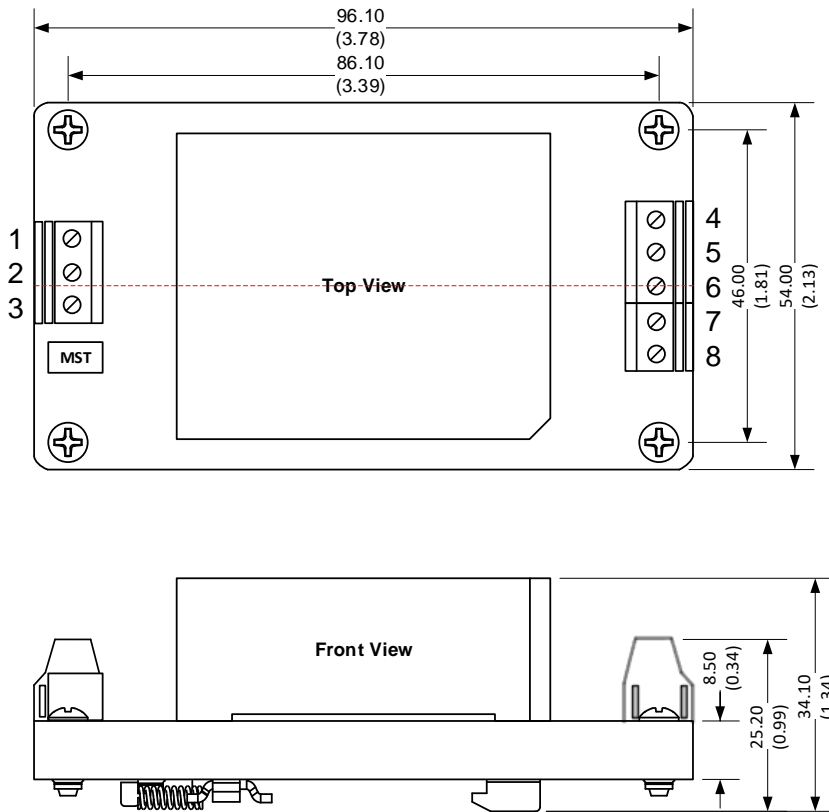
Dimensions with ST Optional



Notes:
 All dimensions are typical in millimeters (inches).
 Wire range : 24-12 AWG
 Tightening torque : Max 0.4 N.m
 General tolerance ± 1.00 : (± 0.04)

Pin Output Specifications			
Pin	Dual output	Triple output	Dual separated
1	GND	GND	GND
2	AC Input (N)	AC Input (N)	AC Input (N)
3	AC Input (L)	AC Input (L)	AC Input (L)
4	-V Output	-V Output 1	-V Output 1
5	NC	+V Output 1	+V Output 1
6	Com	-V Output 2	NC
7	NC	Com	-V Output 2
8	+V Output	+V Output 2	+V Output 2

Dimensions with STD Optional



Notes:
 All dimensions are typical in millimeters (inches).
 Mounting rail : TS35, rail need to connect safety ground
 Wire range : 24-12 AWG
 Tightening torque : Max 0.4 N.m
 General tolerance ± 1.00 : (± 0.04)

Pin Output Specifications			
Pin	Dual output	Triple output	Dual separated
1	GND	GND	GND
2	AC Input (N)	AC Input (N)	AC Input (N)
3	AC Input (L)	AC Input (L)	AC Input (L)
4	-V Output	-V Output 1	-V Output 1
5	NC	+V Output 1	+V Output 1
6	Com	-V Output 2	NC
7	NC	Com	-V Output 2
8	+V Output	+V Output 2	+V Output 2

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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.