

Series AME20-JZ

20 Watt | AC-DC / DC-DC Converter

FEATURES:

- I/O Isolation 3000VAC
- Operating Temp: -40°C to +70°C
- Over current Protection
- Input: 85-305VAC, 47-63Hz, or 100-430VDC
- Low Ripple and Noise
- Over Voltage Protection
- Up to 85% efficiency
- Short Circuit Protection

Models

Single 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 (%)
							230 VAC
AME20-3.3SJZ	85-305/47-63	100-430	11.5	3.3	3.5	48000	75
AME20-5SJZ	85-305/47-63	100-430	17.5	5	3.5	12240	78
AME20-9SJZ	85-305/47-63	100-430	18.9	9	2.1	5600	79
AME20-12SJZ	85-305/47-63	100-430	19.2	12	1.6	5400	83
AME20-15SJZ	85-305/47-63	100-430	19.5	15	1.3	2400	84
AME20-24SJZ	85-305/47-63	100-430	20	24	0.85	1840	85

Note:

*Add suffix “-ST” for optional screw terminal bottom plate , add suffix “-STD” for optional DIN Rail screw terminal bottom plate

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115 VAC		600	mA
	230 VAC		340	mA
Inrush current <2ms (cold start)	115 VAC	15		A
	230 VAC	30		A
Leakage current			0.25	mA
External fuse	Recommended slow blow type	3.15		A

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Line regulation	(LL-HL)	±0.5		%
Load regulation	10-100% load	±1		%
Ripple & Noise			100	mV p-p
Hold-up time	115 VAC	15		ms
	230 VAC	80		ms
Voltage adjustment range			±10	% of Vout

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	Input to Output, 60 sec		3000	VAC
	Input to Ground		2000	
Isolation resistance		>1000		MΩ

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		65		KHz
Over current protection		≥110		% of Iout
Over voltage protection	Zener Diode Clamp			
Short circuit protection	Auto recovery			
Operating temperature	See derating curve	-40 to +70		°C
Maximum case temperature			100	°C
Storage temperature		-40 to +105		°C
Temperature coefficient		±0.02		% / °C

General Specifications (continued)

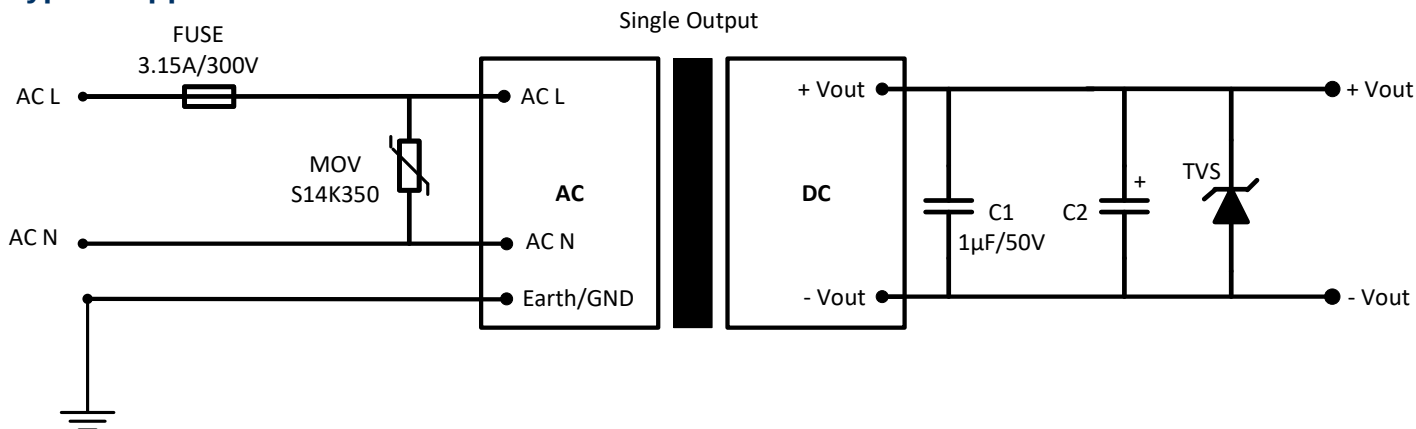
Parameters	Conditions	Typical	Maximum	Units
Cooling	Free air convection			
Humidity	Non condensing		95	% RH
Case material	Plastic (flammability to UL 94V-0)			
Weight	Pin mountable	120		g
	Screw terminal bottom plate	170		
	DIN Rail screw terminal bottom plate	210		
Dimensions (L x W x H)	Pin mountable	70.0 x 48.0 x 23.5 mm (2.76 x 1.89 x 0.93 inches)		
	Screw terminal bottom plate	96.1 x 54.0 x 32.0 mm (3.78 x 2.13 x 1.26 inches)		
	DIN Rail screw terminal bottom plate	96.1 x 54.0 x 36.6 mm (3.78 x 2.13 x 1.44 inches)		
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 (115/230VAC) and at rated output load unless otherwise specified.

Safety Specifications

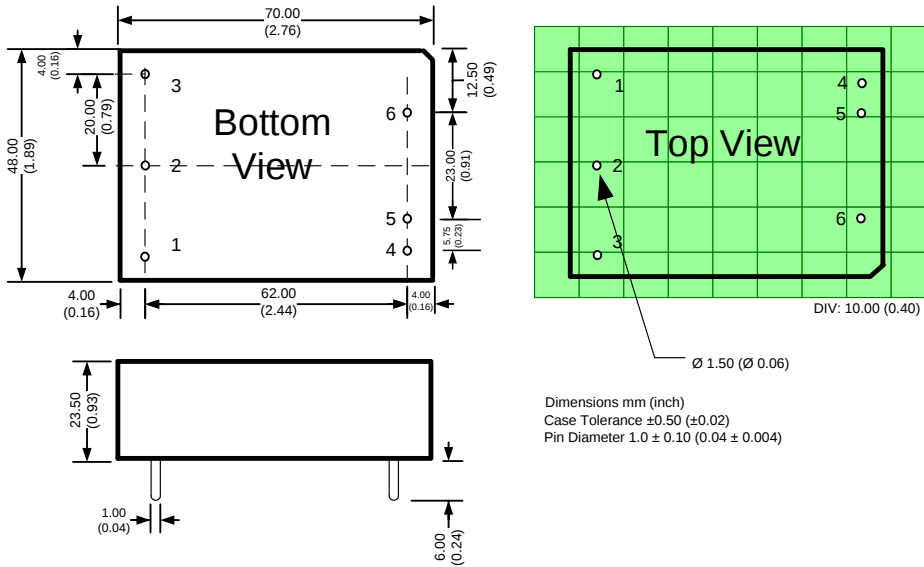
Parameters		
Agency approvals	CE, UL	
	Information Technology Equipment	
Standards	EMI - Conducted and radiated emission	IEC/EN/UL 60950-1 EN55022, class B EN55024: 2010
	Electrostatic Discharge Immunity	IEC 61000-4-2: Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3: 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4: $\pm 2\text{KV}$, Criteria B
	Surge Immunity	IEC 61000-4-5: $\pm 1\text{KV}/\pm 2\text{KV}$, Criteria B
	RF, Conducted Disturbance Immunity	IEC 61000-4-6: 10Vrms, Criteria A
	Power frequency Magnetic Field Immunity	IEC 61000-4-8: 10A/m, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11: 0-70%, Criteria B

Typical Application circuit



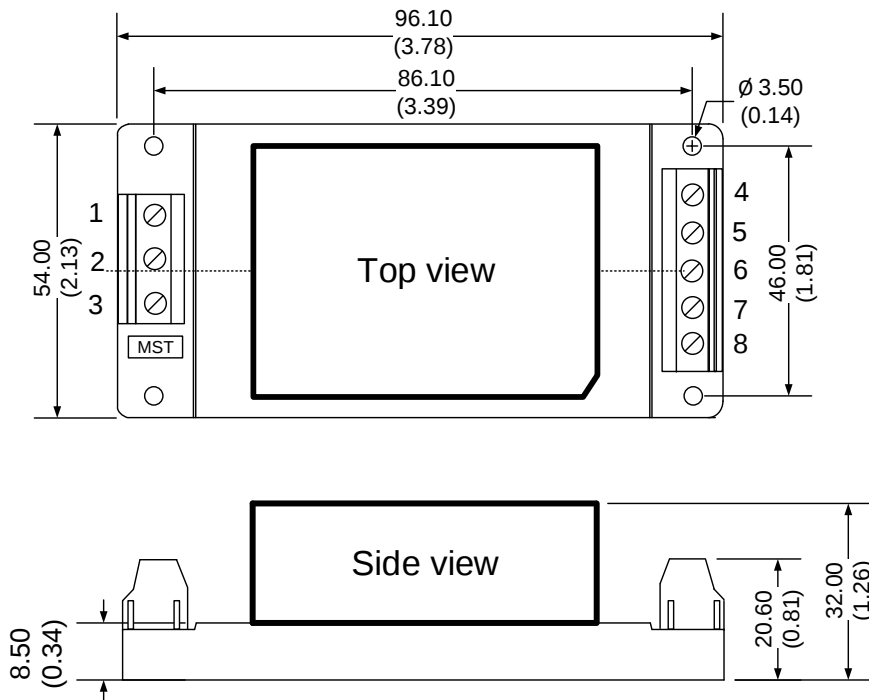
Vout	C2	TVS
3.3 & 5V	330 $\mu\text{F}/50\text{V}$	7A
9V	220 $\mu\text{F}/50\text{V}$	12A
12 & 15V		20A
24V		30A

Dimensions



Pin	Single
1	Earth/Ground
2	AC Input (L)
3	AC Input (N)
4	Trim
5	- V output
6	+ V output

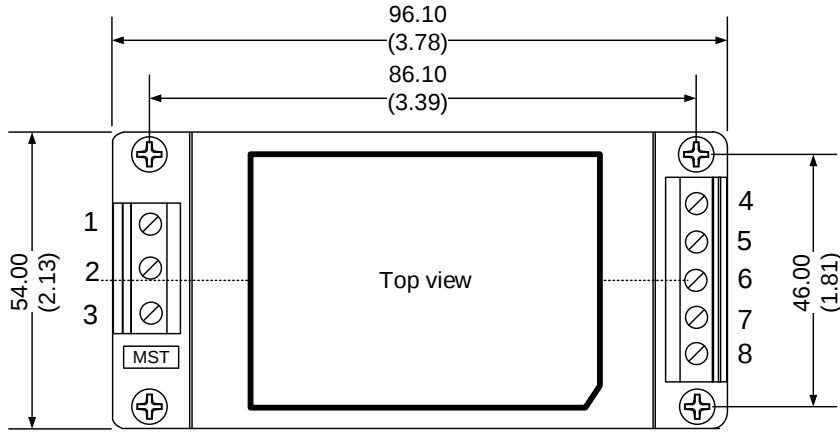
Dimensions with optional ST model



Pin Out Specifications

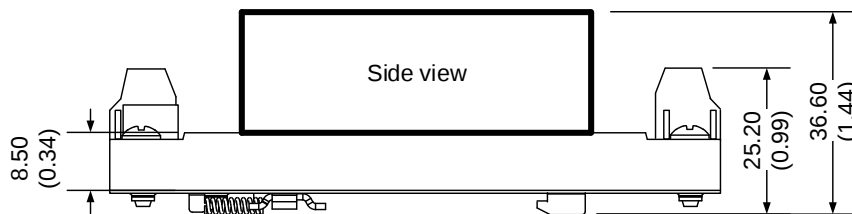
Pin	Single
1	Earth/Ground
2	AC Input (N)
3	AC Input (L)
4	- V output
5	No Connection
6	Trim
7	No Connection
8	+ V output

Dimensions with optional STD model



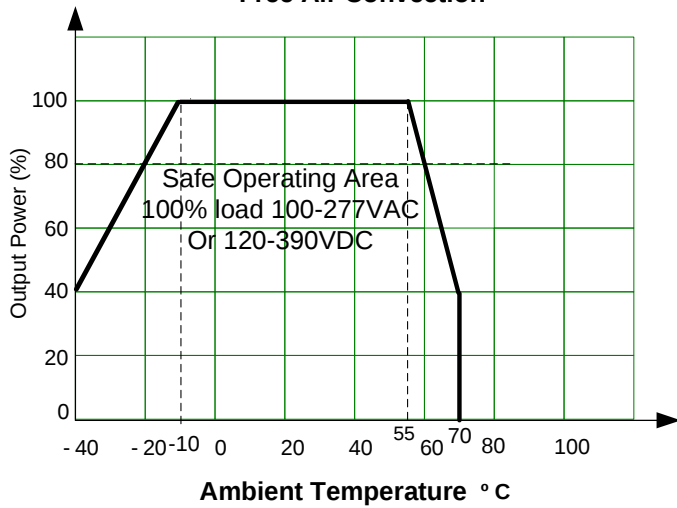
Pin	Single
1	Earth/Ground
2	AC Input (N)
3	AC Input (L)
4	- V output
5	No Connection
6	Trim
7	No Connection
8	+ V output

Dimensions: mm (inch)
General Tolerance: ± 1.00 (0.04)
Holding holes tolerance: ± 0.20 (0.01)
Wire gauge: 24-12AWG
DIN rail type: TS35

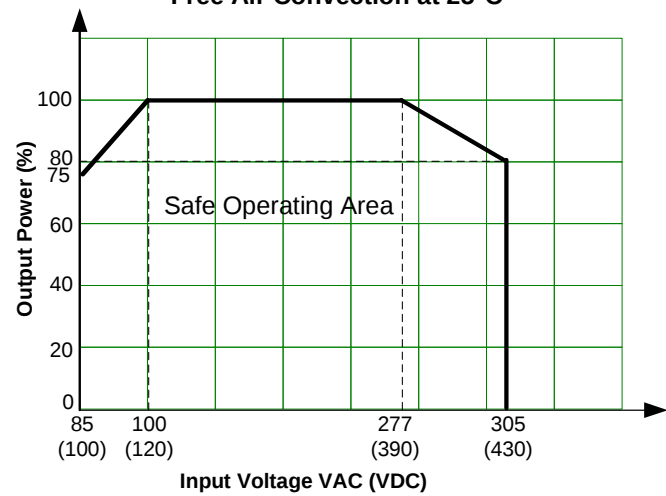


Derating

Free Air Convection



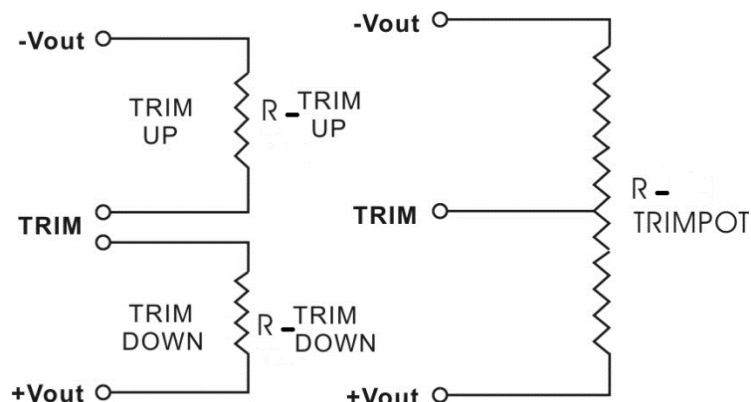
Free Air Convection at 25°C



Trimming

Output voltage can be externally trimmed by utilizing the methods as shown below

Fixed Resistor Variable Potentiometer



Leave open if not used.

AME20-3.3SJZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	3.27	3.23	3.2	3.17	3.14	3.1	3.07	3.04	3	2.97
Rt down (KΩ)	181.7	84.657	59.638	45.602	36.62	28.7	24.517	21.275	17.939	15.957
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	3.33	3.37	3.4	3.43	3.47	3.5	3.53	3.56	3.6	3.63
Rt up (KΩ)	174.371	63.611	42.843	32.178	24.053	20.166	17.322	15.153	12.95	11.656

AME20-5SJZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	4.95	4.9	4.85	4.8	4.75	4.7	4.65	4.6	4.55	4.5
Rt down (KΩ)	160.7	78.2	50.7	36.95	28.7	23.2	19.271	16.325	14.033	12.2
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	5.05	5.1	5.15	5.2	5.25	5.3	5.35	5.4	5.45	5.5
Rt up (KΩ)	164	81.5	54	40.25	32	26.5	22.571	19.625	17.333	15.5

AME20-9SJZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	8.91	8.82	8.73	8.64	8.55	8.46	8.37	8.28	8.19	8.1
Rt down (KΩ)	389.533	221.43	153.157	116.145	92.925	76.997	65.393	56.562	49.617	44.011
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	9.09	9.18	9.27	9.36	9.45	9.54	9.63	9.72	9.81	9.9
Rt up (KΩ)	328.532	126.639	78.148	56.357	43.975	35.99	30.412	26.297	23.134	20.629

AME20-12SJZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	11.88	11.76	11.64	11.52	11.4	11.28	11.16	11.04	10.92	10.8
Rt down (KΩ)	183.233	111.59	79.474	61.246	49.499	41.299	35.249	30.602	26.921	23.933
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	12.12	12.24	12.36	12.48	12.6	12.72	12.84	12.96	13.08	13.2
Rt up (KΩ)	211.778	57.03	32.596	22.642	17.238	13.845	11.516	9.819	8.527	7.511

AME20-15SJZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	14.85	14.7	14.55	14.4	14.25	14.1	13.95	13.8	13.65	13.5
Rt down (KΩ)	616.5	304	199.833	147.75	116.5	95.667	80.786	69.625	60.944	54
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	15.15	15.3	15.45	15.6	15.75	15.9	16.05	16.2	16.35	16.5
Rt up (KΩ)	124	61.5	40.667	30.25	24	19.833	16.857	14.625	12.889	11.5

AME20-24SJZ

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	23.76	23.52	23.28	23.04	22.8	22.56	22.32	22.08	21.84	21.6
Rt down (KΩ)	471.081	287.942	205.845	159.249	129.221	108.258	92.793	80.914	71.504	63.865
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	24.24	24.48	24.72	24.96	25.2	25.44	25.68	25.92	26.16	26.4
Rt up (KΩ)	239.556	64.606	36.982	25.728	19.619	15.783	13.15	11.232	9.771	8.622

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.