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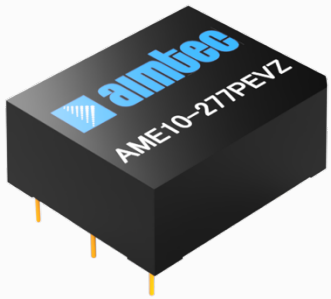
AME10-277PEVZ



Encapsulated

The AME10-277PEVZ is a whole 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 85-305VAC and an output voltage range from 3.3-24V, this series will offer many benefits to your new system design.

This series offers great operating temperatures from -40°C to 85°C, and also features an isolation of 4200VAC for improved reliability and system safety. Furthermore, a high MTBF of 500,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

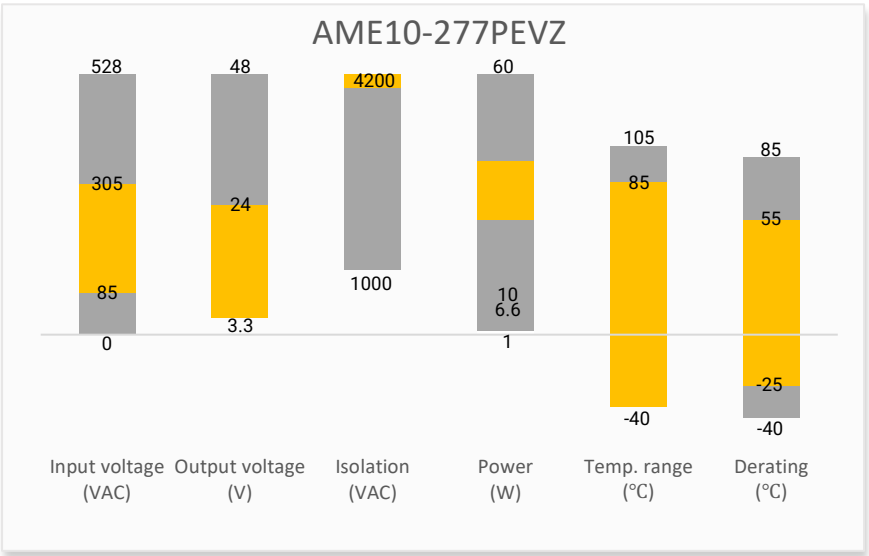
The AME10-277PEVZ is suitable for street lighting controls, grid power, EVSE, industrial controls, UPS, battery storage systems & energy management applications.

Features

- Universal Input: 85 - 305VAC/100 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 4200VAC
- Low ripple & noise, 50mV(p-p), typ.
- Output short circuit, over-current, over-voltage protection
- Regulated Output

RoHS · 3yr Warranty · c UL us · CE

Summary



Training

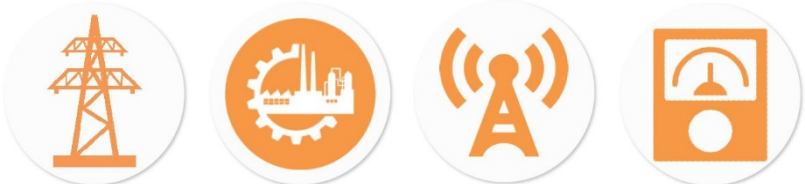
Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications



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Models & Specifications

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 @ 230VAC (%)
AME10-3S277PEVZ	85-305/47-63	100-430	6.6	3.3	2	26000	70
AME10-5S277PEVZ	85-305/47-63	100-430	10	5	2	9800	76
AME10-9S277PEVZ ※	85-305/47-63	100-430	10	9	1.1	3600	78
AME10-12S277PEVZ	85-305/47-63	100-430	10	12	0.9	2400	80
AME10-15S277PEVZ	85-305/47-63	100-430	10	15	0.7	1200	81
AME10-24S277PEVZ	85-305/47-63	100-430	10	24	0.45	400	82
Note: Use suffix "ST" for chassis and suffix "STD" for DIN-Rail mounting (ex. AME10-3S277PEVZ-ST is chassis mounting and AME10-3S277PEVZ-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		26		A
Leakage current	270V/50Hz			0.25	mA (RMS)
External fuse	slow blow type,300V		2		A

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	3.3V output	±3		%
	Others	±2		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load	±1		%
Ripple & Noise*	20MHz bandwidth	50	100	mV_{p-p}
Hold up time	115VAC	8		ms
	230VAC	65		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		4200	VAC
Tested Input to PE voltage	60 sec, leakage current < 5mA		2500	VAC
Tested Output to PE voltage	60 sec, leakage current < 5mA		1250	VAC
Impulse voltage (I/O, Input/PE, Output/PE)	Apply 6kV impulse test voltage. Add 1.2/50us impact waveform, including three positive impulse and three negative impulse, whose time interval is no less than 5 seconds.		6000	V
Insulation resistance (I/O, Input/PE, Output/PE)	500VDC		≥ 100	MΩ

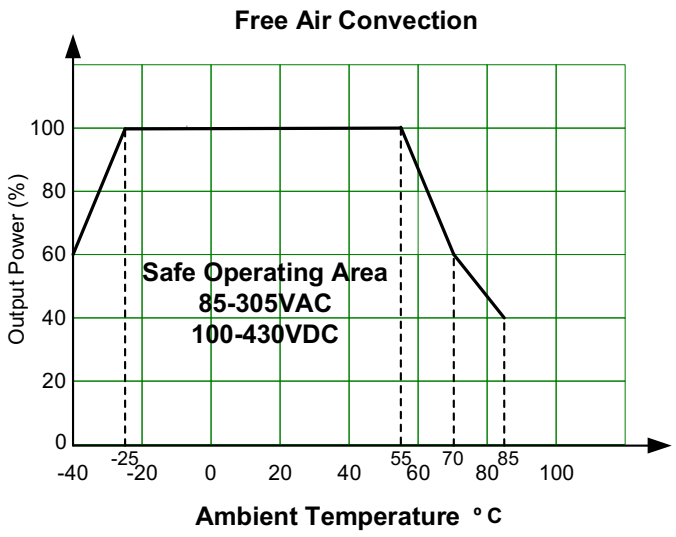
General Specifications

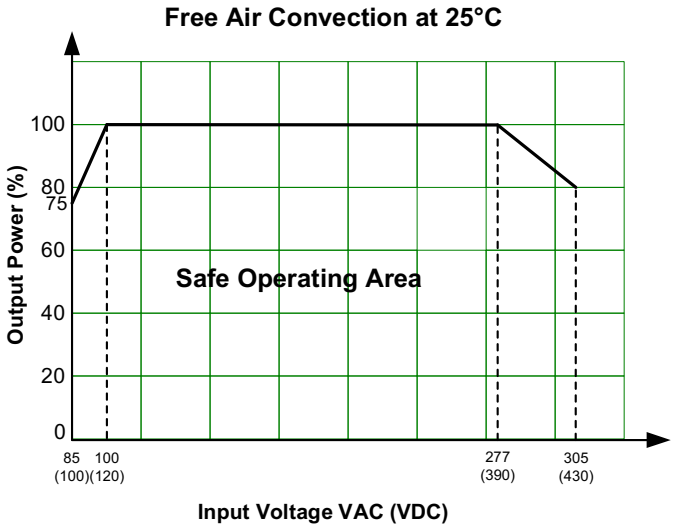
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class I			
Overvoltage category	OVC III; Per IEC 62477, 2000m			
Switching frequency		65		KHz
Over Current protection	Auto recovery	≥ 150		% of I_{out}
Over voltage protection	3.3V / 5V Vout		7.5	VDC
	9V Vout		15	VDC
	12V /15V Vout		20	VDC
	24V Vout		30	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-40 to +85		°C
Storage temperature		-40 to +105		°C
Lead temperature	Wave soldering	260 ± 5 °C; Duration: 5 - 10s		
	Hand soldering	360 ± 10 °C; Duration: 3 - 5s		
Power consumption			0.3	W
Power derating	-40 °C ~ -25 °C	2.67		% / °C
	55 °C ~ 70 °C	2.67		% / °C
	70 °C ~ 85 °C	1.33		% / °C
	85VAC ~ 100VAC	1.67		% / VAC
	277VAC ~ 305VAC	0.71		% / VAC
	2000m – 5000m	6.67		% / Km
Temperature coefficient		±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 With optional -ST mounting plate: With optional -STD mounting plate:	75 125 165		g
Dimensions (L x W x H)	PCB mountable models With optional -ST mounting plate With optional -STD mounting plate	2.17 x 1.77 x 0.83 inches (55.0 x 45.0 x 21.0mm) 3.78 x 2.13 x 1.16 inches (96.1 x 54.0 x 29.5mm) 3.78 x 2.13 x 1.34 inches (96.1 x 54.0 x 34.1mm)		
MTBF	> 500 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load			

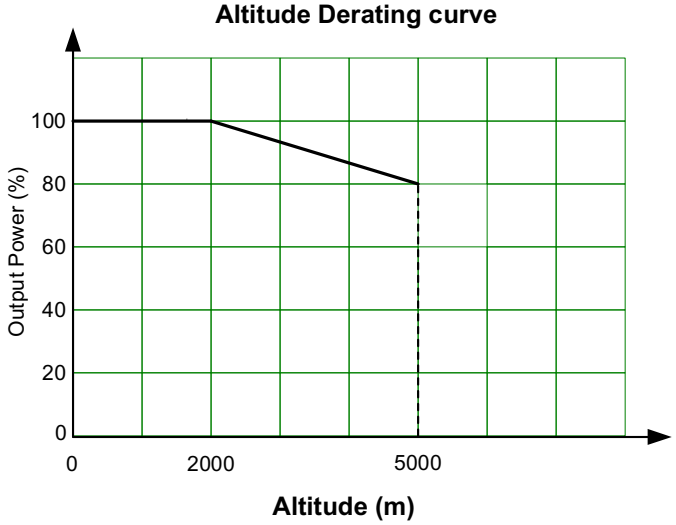
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications		
Parameters		
Agency approvals	CE EN62368-1; cULus UL 62368-1 (With exception of models marked with ※)	
Standards	Information technology Equipment	Designed to meet IEC/UL 62368-1, IEC 62477-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±8KV / Air ±15KV, 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 ±2KV/L-G ±4KV, Criteria A
		IEC 61000-4-5 L-L ±4KV/L-G ±6KV, with EMC recommended circuit, 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

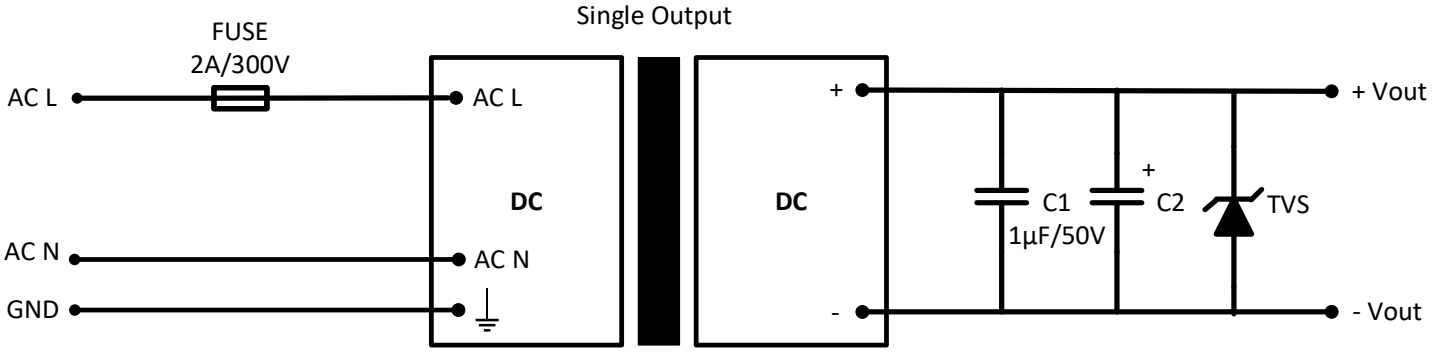
Derating







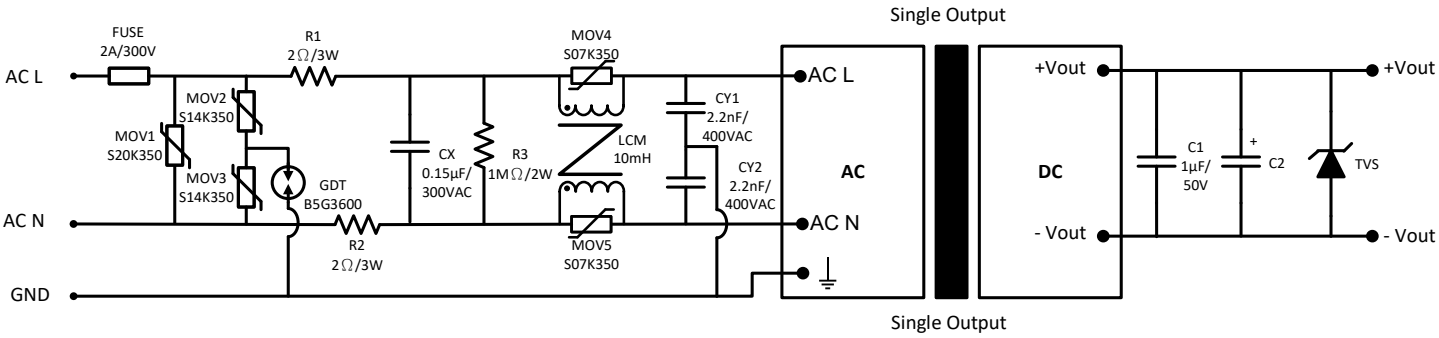
Typical Application Circuit



Model	C2	TVS
3.3 Vout	470 µF / 16V	SMBJ7.0A
5 Vout	330 µF / 16V	SMBJ7.0A
9 Vout	120 µF / 35V	SMBJ12A
12 / 15 Vout	120 µF / 35V	SMBJ20A
24 Vout	68 µF / 35V	SMBJ30A

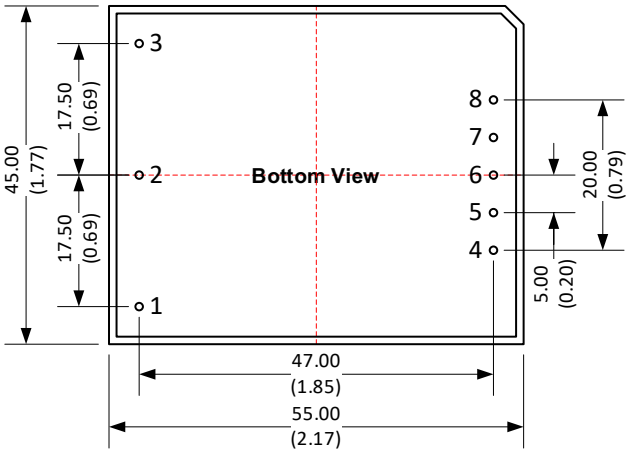
Output Filter Components:
We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2. C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode.

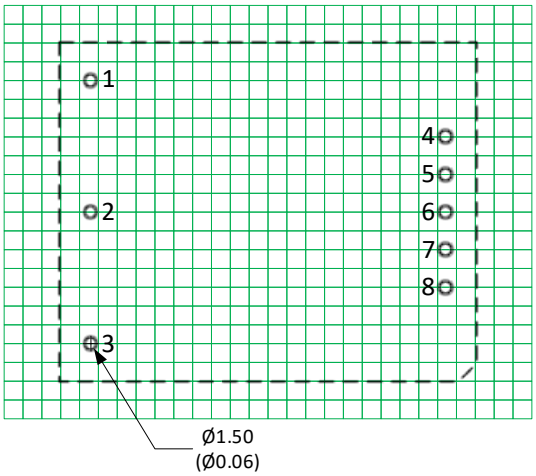
EMC Recommended Circuit



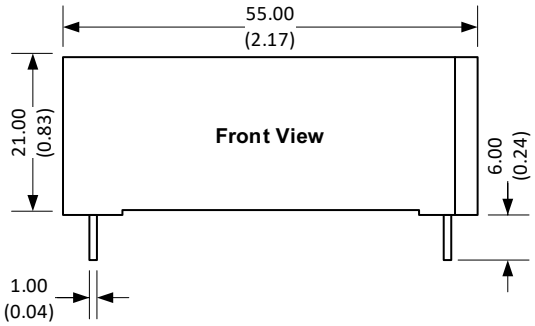
NOTE: R1 & R2 should be wire-wound resistors

Dimensions





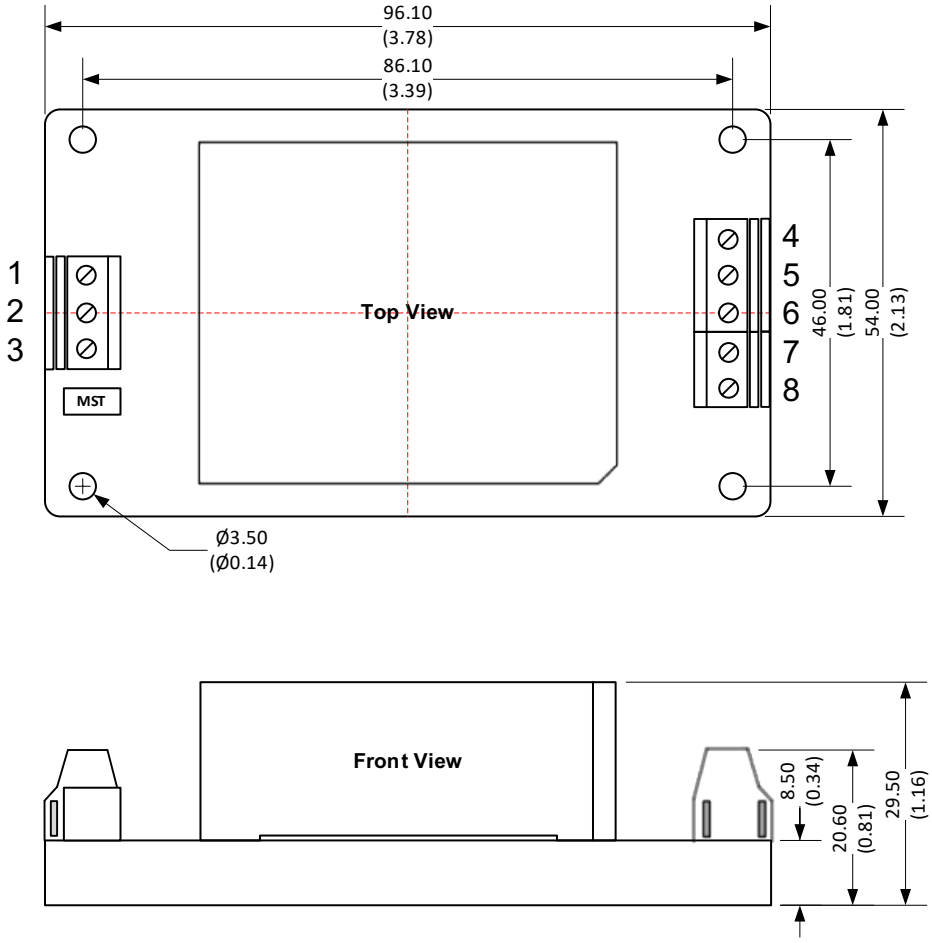
Note : Grid 2.54*2.54 mm



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	Single	Pin	Single
1	Ground	5	NC
2	AC Input (N)	6	NC
3	AC Input (L)	7	NC
4	-V Output	8	+V Output

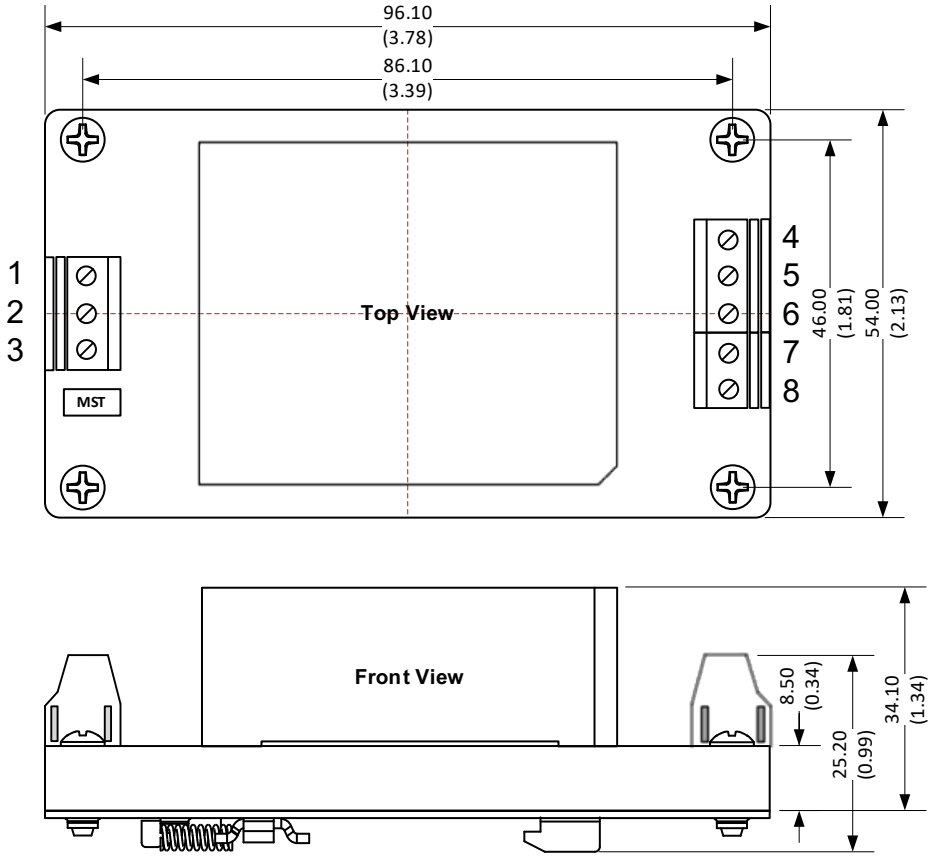
Dimensions with ST Optional



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	Single	Pin	Single
1	Ground	5	NC
2	AC Input (N)	6	NC
3	AC Input (L)	7	NC
4	-V Output	8	+V Output

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	Single	Pin	Single
1	Ground	5	NC
2	AC Input (N)	6	NC
3	AC Input (L)	7	NC
4	-V Output	8	+V Output

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