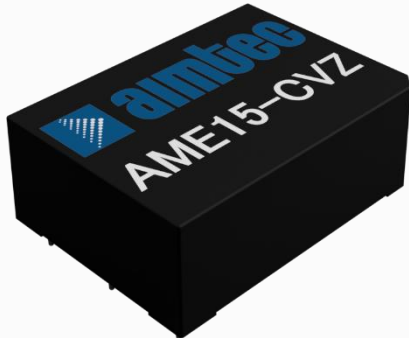


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AME15-CVZ



Encapsulated

The AME15-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.

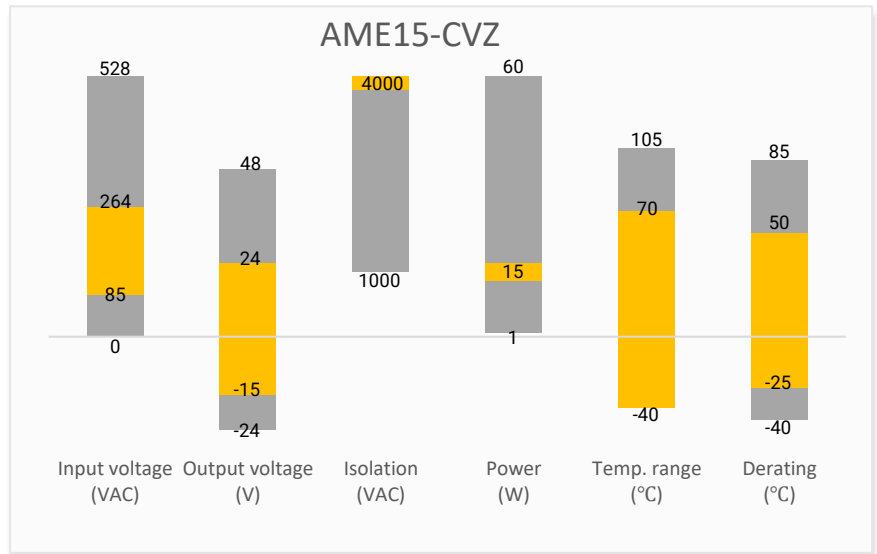
The AME15-CVZ is great for grid power, instrumentation, industrial controls, communication and civil applications.

Features



- Universal Input: 85 - 264VAC/100 - 370VDC
- Operating Temp: $-40^{\circ}C$ to $+70^{\circ}C$
- High isolation voltage: 4000VAC
- Low ripple & noise, 200mV(p-p), Max.
- Output short circuit, over-current, over-voltage protection
- Regulated Output

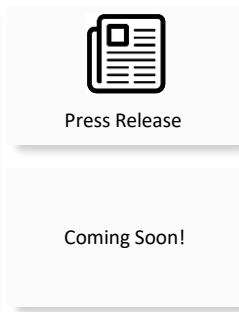
Summary



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	
AME15-5DCVZ	85-264/47-63	100-370	15	5	-5	1.5	-1.5	12800	12800	76
AME15-12DCVZ	85-264/47-63	100-370	15	12	-12	0.65	-0.65	2600	2600	80
AME15-15DCVZ	85-264/47-63	100-370	15	15	-15	0.5	-0.5	2400	2400	81

Note: Use suffix "ST" for chassis and suffix "STD" for DIN-Rail mounting (ex. AME15-5DCVZ-ST is chassis mounting and AME15-5DCVZ-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	
AME15-505TCVZ	85-264/47-63	100-370	15	5	±5	2	±0.5	11000	±2200	75
AME15-512TCVZ	85-264/47-63	100-370	15	5	±12	2	±0.2	11000	±800	77
AME15-515TCVZ	85-264/47-63	100-370	15	5	±15	1.8	±0.2	6000	±370	78

Note: Use suffix "ST" for chassis and suffix "STD" for DIN-Rail mounting (ex. AME15-512TCVZ-ST is chassis mounting and AME15-512TCVZ-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	
AME15-505DCVZ	85-264/47-63	100-370	15	5	5	2	0.8	15000	3000	76
AME15-512DCVZ	85-264/47-63	100-370	15	5	12	2	0.4	12000	1800	78
AME15-524DCVZ	85-264/47-63	100-370	15	5	24	2	0.2	1300	800	78

Note: Use suffix "ST" for chassis and suffix "STD" for DIN-Rail mounting (ex. AME15-505DCVZ-ST is chassis mounting and AME15-505DCVZ-STD is DIN-Rail mounting version).

Input Specifications

Parameters	Conditions	Minimum	Typical	Maximum	Units
Current	115VAC			0.37	A
	230VAC			0.22	A
Inrush current	115VAC		20		A
	230VAC		30		A
External fuse	slow blow type,250V		2		A

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Vout 1	±2		%
	Vout 2, dual output models	±2		%
	Vout 2, triple output models	±10		%
	Vout 2, dual separated output models	±10		%
Line regulation	Full load, Vout 1	±0.5		%
	Full load, Vout 2, dual output models	±0.5		%
	Full load, Vout 2, triple output models	±1.5		%
	Full load, Vout 2, dual separated output models	±1.5		%
Load regulation (Balanced Load)	10-100% load, Vout 1	±2		%
	10-100% load, Vout 2, dual output models	±2		%
	10-100% load, Vout 2, triple output models	±5		%
	10-100% load, Vout 2, dual separated output models	±5		%
Ripple & Noise*	20MHz bandwidth, Vout 1	50	100	mV p-p
	20MHz bandwidth, Vout 2, dual output models		100	mV p-p
	20MHz bandwidth, Vout 2, triple output models		200	mV p-p
	20MHz bandwidth, Vout 2, dual separated output models		200	mV p-p
Hold up time	115VAC	8		ms
	230VAC	50		ms

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

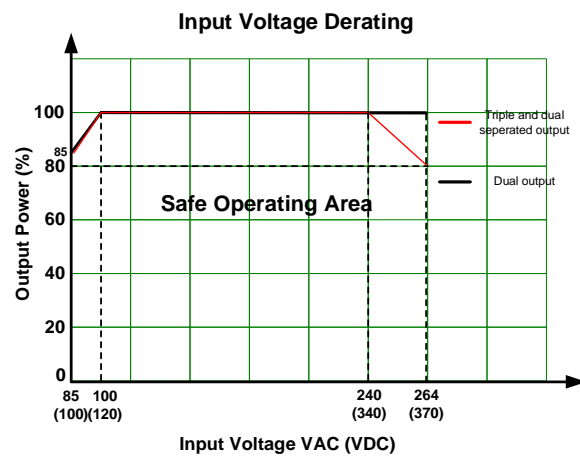
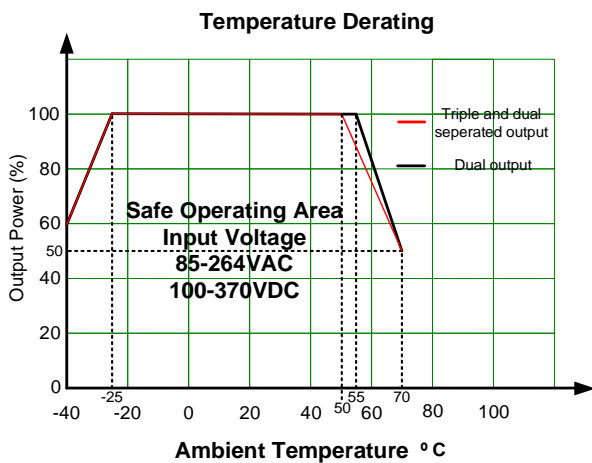
Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, leakage current < 5mA	All models	4000	VAC
Tested Input to GND voltage			2000	VAC
Tested Vout 1 to Vout 2 voltage			500	VDC

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class I			
Switching Frequency		65		KHz
Over current protection	Auto recovery	150~300		% of Iout
Over voltage protection	Vout 1	5V Vout	7.5	VDC
		12V Vout	20	VDC
		15V Vout	22	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	2.67		% / °C
	55 °C ~ 70 °C, dual output models	3.33		% / °C
	50 °C ~ 70 °C, triple output and dual separated output models	2.5		% / °C
	85VAC ~ 100VAC	1		% / VAC

	240VAC ~ 264VAC, triple output and dual separated output models	0.83	% / 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	90	g
	With optional -ST mounting plate:	140	
	With optional -STD mounting plate:	180	
Dimensions (L x W x H)	PCB mountable models	2.44 x 1.77 x 0.86 inches (62.0 x 45.0 x 22.5mm)	
	With optional -ST mounting plate:	3.78 x 2.13 x 1.22 inches (96.1 x 54.0 x 31.0mm)	
	With optional -STD mounting plate:	3.78 x 2.13 x 1.40 inches (96.1 x 54.0 x 35.6mm)	
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 ±6KV / Air ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ±2KV, Criteria B
		IEC 61000-4-4 ±4KV, with EMC recommended circuit, Criteria B
	Surge Immunity	IEC 61000-4-5 L-L ±1KV/L-G ±2KV, Criteria B
		IEC 61000-4-5 L-L ±2KV/L-G ±4KV, 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	

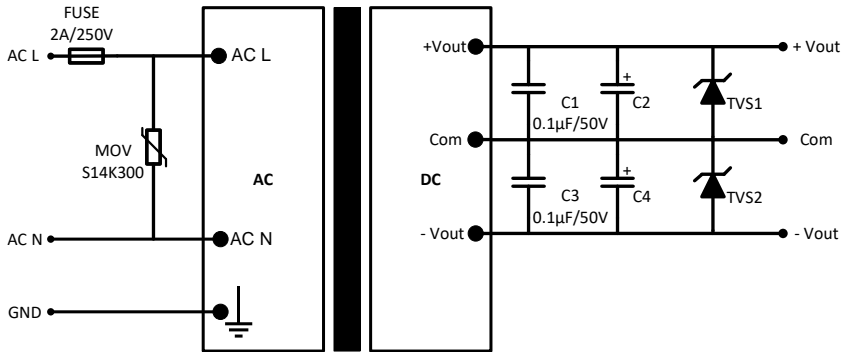
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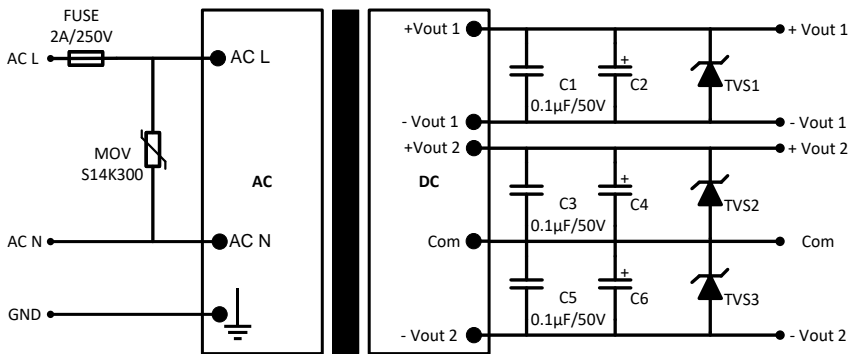
Typical Application Circuit



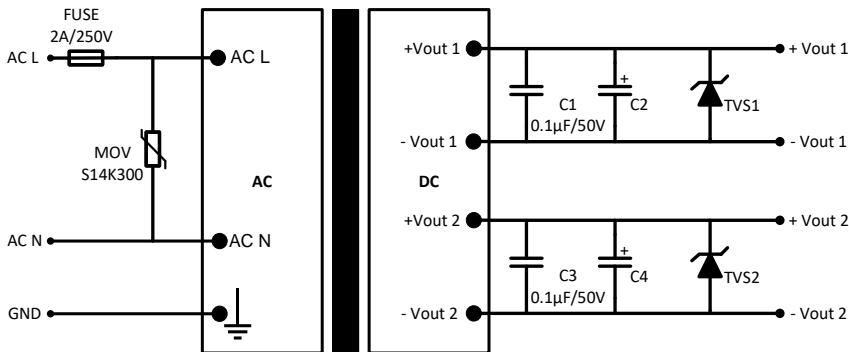
Dual Output Models



Triple Output Models



Dual Separated Output Models

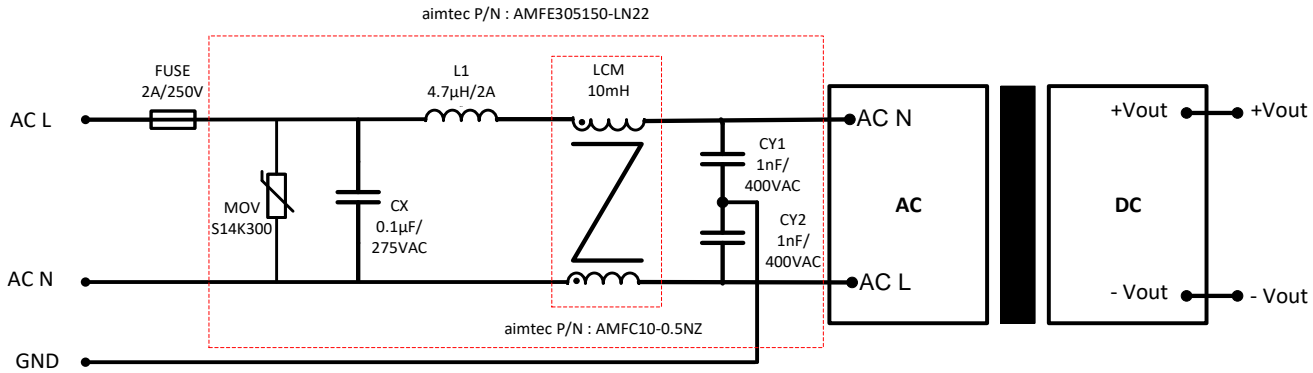


Model	C2 (µF)	C4 (µF)	C6 (µF)	TVS1	TVS2	TVS3
AME15-5DCVZ	470	470	N/A	SMBJ7.0A	SMBJ7.0A	N/A
AME15-12DCVZ	220	220	N/A	SMBJ20A	SMBJ20A	N/A
AME15-15DCVZ	120	120	N/A	SMBJ20A	SMBJ20A	N/A
AME15-505TCVZ	470	220	220	SMBJ7.0A	SMBJ7.0A	SMBJ7.0A
AME15-512TCVZ	470	120	120	SMBJ7.0A	SMBJ20A	SMBJ20A
AME15-515TCVZ	470	120	120	SMBJ7.0A	SMBJ20A	SMBJ20A
AME15-505DCVZ	470	470	N/A	SMBJ7.0A	SMBJ20A	N/A
AME15-512DCVZ	470	220	N/A	SMBJ7.0A	SMBJ7.0A	N/A
AME10-524DCVZ	470	120	N/A	SMBJ7.0A	SMBJ20A	N/A

Output Filter Components:

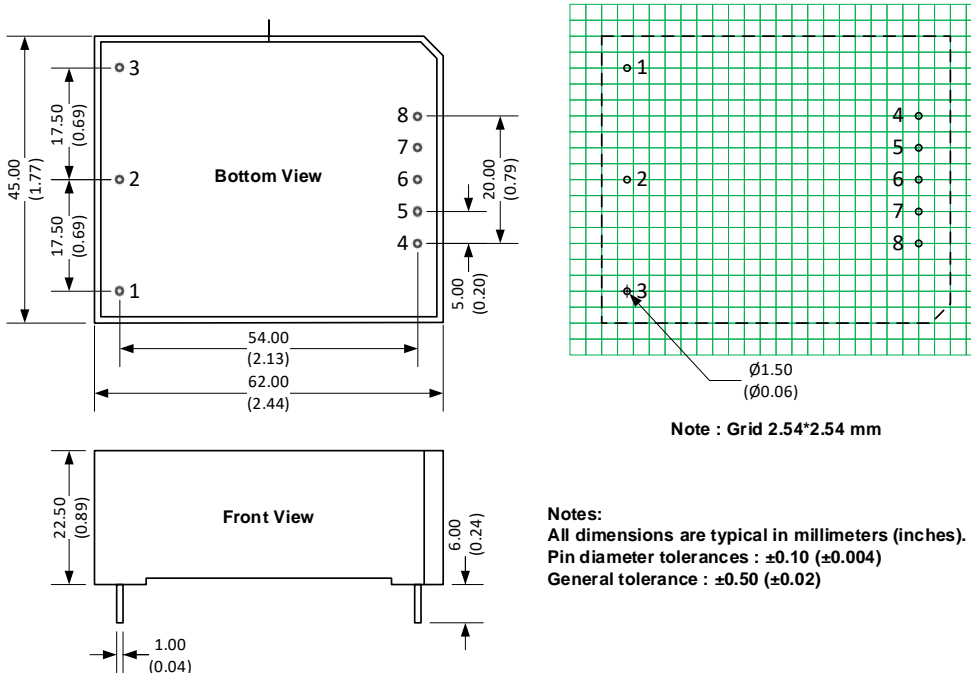
We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2, C4 and C6. C1, C3 and C5 are ceramic capacitors used for filtering high-frequency noise and TVS is a recommended suppressor diode.

EMC Recommended Circuit



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

Dimensions

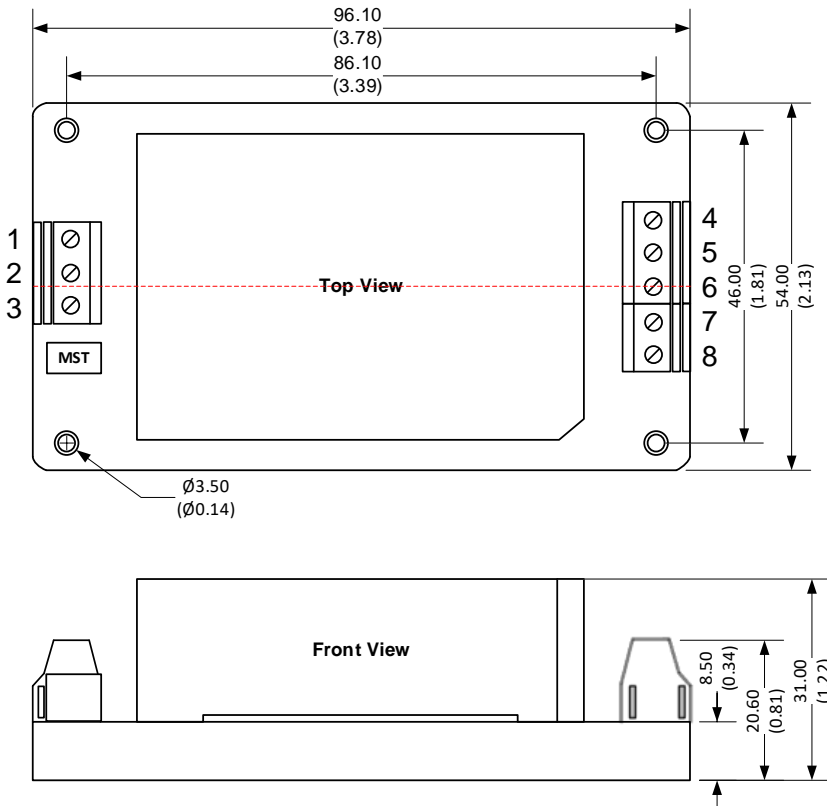


Pin Output Specifications

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	No Pin	+V Output 1	+V Output 1
6	Com	-V Output 2	No Pin
7	No Pin	Com	-V Output 2
8	+V Output	+V Output 2	+V Output 2

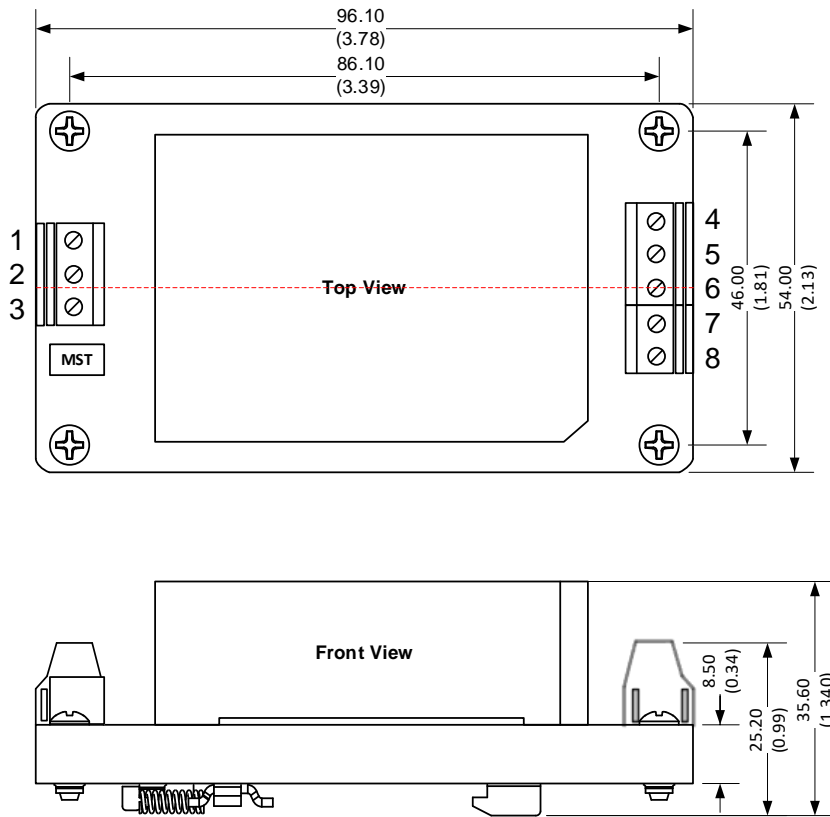
Dimensions with ST Optional



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

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