AM30CW-NZ

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1 x 1

The AM30CW-NZ is a 30W DC/DC converter that offers a regulated output which contributes to a more stable and reliable output performance. It features a wide 4:1 input voltage range of 18-75VDC, which will benefit your new system design.

This series offers great operating temperatures, from -40°C to 85°C. Furthermore, an isolation of 1500VDC, a high MTBF of 1,000,000h, continuous output short circuit protection (OSCP), over-current protection (OCP), over-voltage protection (OVP), and under voltage lock-out (UVLO) come standard with the series.

The AM30CW-NZ is suitable for grid power, instrumentation, industrial controls, communication, and civil applications.

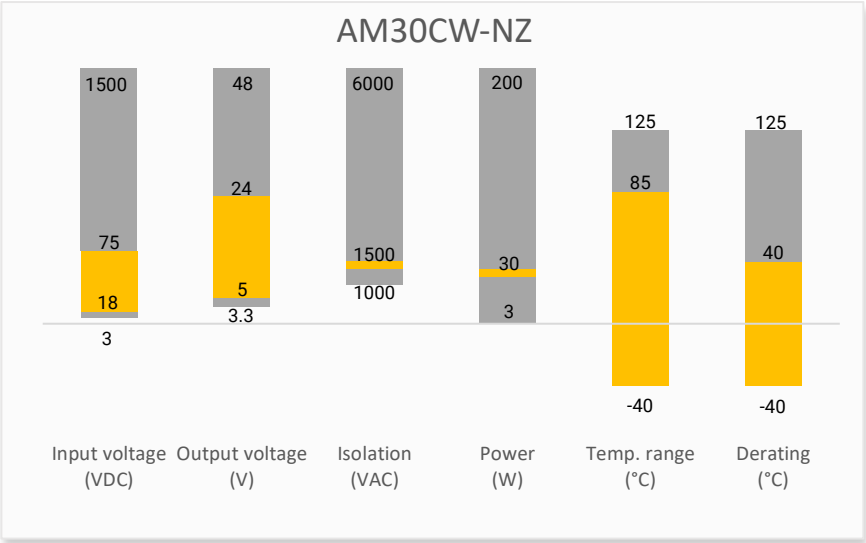
Features

- Operating Temp: -40 °C to +85 °C
- Isolation voltage: 1500VDC
- High efficiency: Up to 88% typ.
- Regulated single output
- Output short circuit, over-current, over-voltage, input under voltage protection
- Standard 1 x1 package
- Design to meet EN62368

RoHS

3yr Warranty

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 (VDC)	Output Voltage (VDC)	Nominal Vin Input Current Max (mA)		Output Current Max (A)	Maximum Capacitive Load (µF)	Efficiency Full Load Typ (%)
			No Load	Full Load			
AM30CW-4805SNZ	48 (18-75)	5	15	735	6	7200	88
AM30CW-4812SNZ	48 (18-75)	12	15	735	2.5	2000	88
AM30CW-4815SNZ	48 (18-75)	15	15	735	2	1500	88
AM30CW-4824SNZ	48 (18-75)	24	15	735	1.25	470	88

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Input voltage	Nominal input	18-75	80	VDC
Absolute maximum rating	Nominal input, 1s max.	≥-0.7	100	VDC
Start-up voltage			18	VDC
Start-up time	Nominal input	10		ms
Input reflected current	Nominal input	40		mA
Input under-voltage protection		15.5		VDC
On/Off control	On	Control pin open or 3.5-12VDC		
	Off	Control pin short to –Vin or 0-1.2VDC		
	Idle current	2	7	mA
Input filter	Capacitor filter			

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested isolation voltage	Input / output, 60 sec, ≤ 1mA	≥1500		VDC
Resistance	Input / output, 500VDC	≥1000		MΩ
Capacitance	Input / output, 100KHz / 0.1V	2000		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	5% -100% load	±1	±3	%
Line regulation	LL – HL 100% load	±0.2	±0.5	%
Load regulation	5% -100% load	±0.5	±1	%
Transient Recovery Time	25% load step change	250	500	µs
Transient Response Deviation	25% load step change, 5V output	±3	±8	%
	25% load step change, others	±3	±5	%
Ripple & Noise	5% -100% load, 24V output	60	150	mV pk-pk
	5% -100% load, others	60	120	mV pk-pk
Voltage adjustment			±10	%

* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.

General Specifications

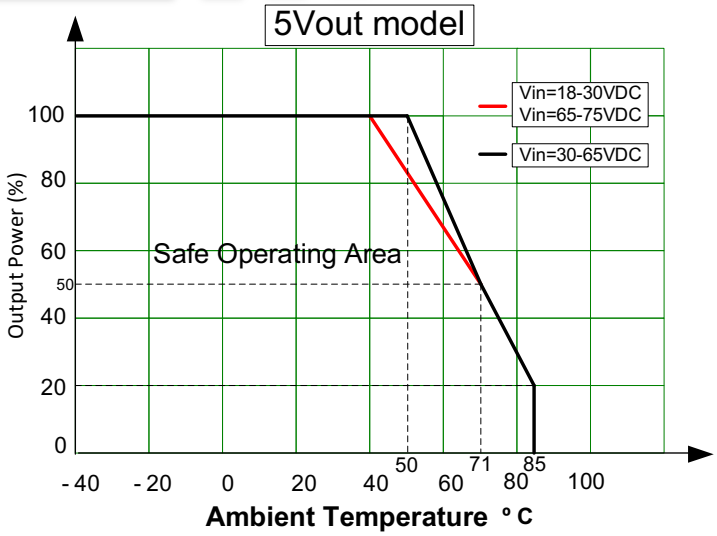
Parameters	Conditions	Typical	Maximum	Units
Switching frequency*	100% load	270		KHz
Short circuit protection	Continues, Auto recovery			
Over Current protection		170	260	% of Iout
Over voltage protection		≥110	160	% of Vout
Operating temperature	With derating	-40 to +85		°C
Storage temperature		-55 to +125		°C
Soldering temperature	1.5mm distance, ≤ 10s		300	°C
Temperature coefficient	100% Load		± 0.03	%/ °C
Cooling	Free air convection			
Humidity	Non-condensing	≥5	95	% RH
Weight		18.4		g
Vibration test	10-150Hz, 5G, 0.75mm, 90min along all axis			
Dimensions (L x W x H)	1.00x 1.00 x 0.46 inches (25.40 x 25.40 x 11.70 mm)			
Case material	Aluminum			
MTBF	≥ 1 000 000 hrs (MIL-HDBK -217F, t=+25°C)			

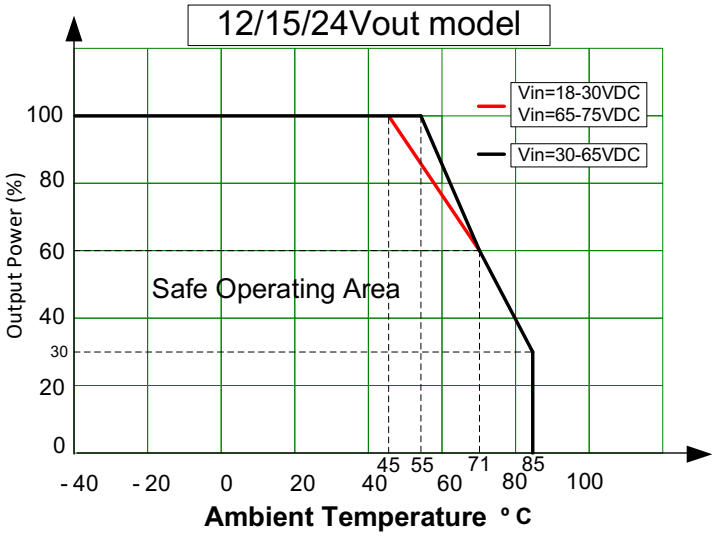
*Switching frequency reduced when load < 50%.
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

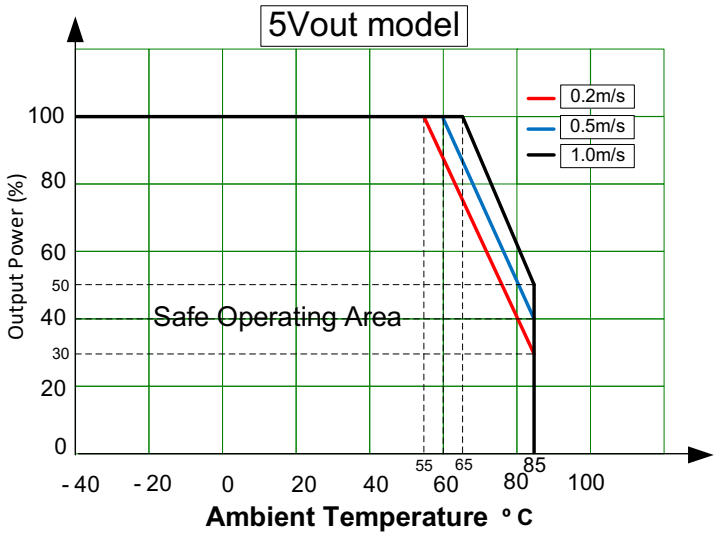
Safety Specifications

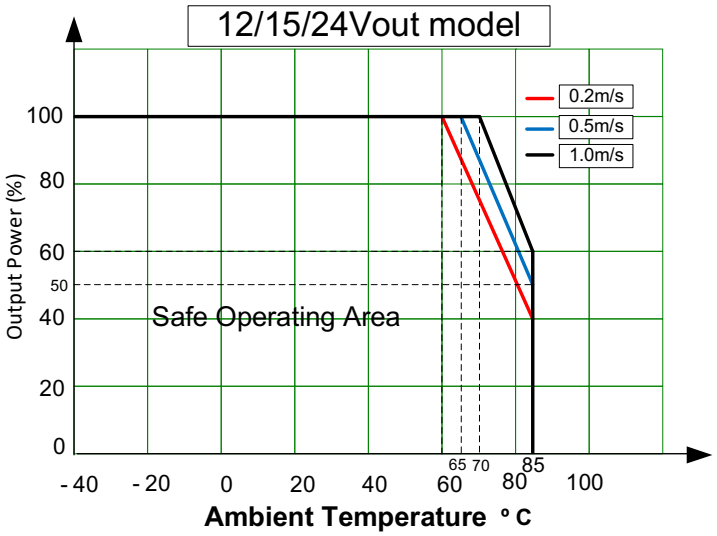
Parameters		
Standards	Design to meet EN62368	
	EMI - Conducted and radiated emission	CISPR32/EN55032 Class B with the recommended EMC circuit part B CISPR32/EN55032 Class A with the recommended EMI circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2, Contact ±6KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3, 10V/m, Criteria B
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4, ±2KV, Criteria B with the recommended EMC circuit part A
	Surge Immunity	IEC/EN 61000-4-5, L-L ±2KV, Criteria B with the recommended EMC circuit part A
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6, 3Vr.m.s, Criteria B

Derating

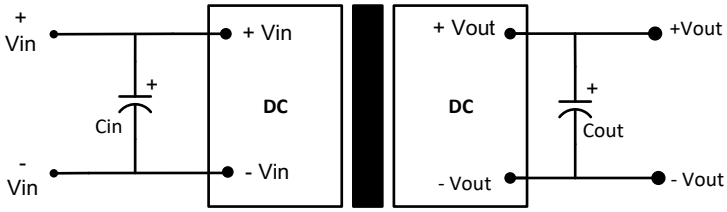






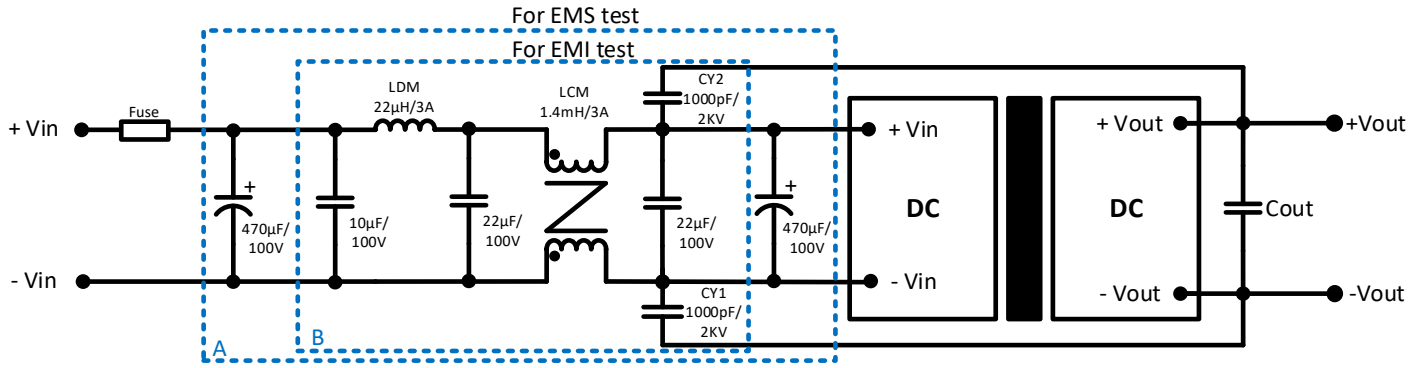


Typical application circuit



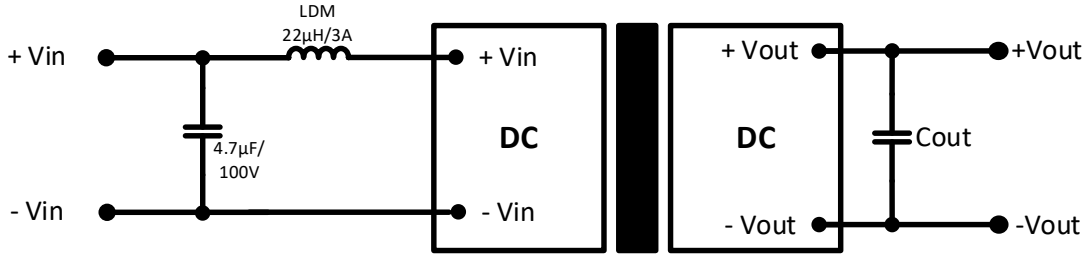
Single output		
Vout	Cin	Cout
5/12/15	100μF	100μF
24	100μF	47μF

Recommended EMC circuit

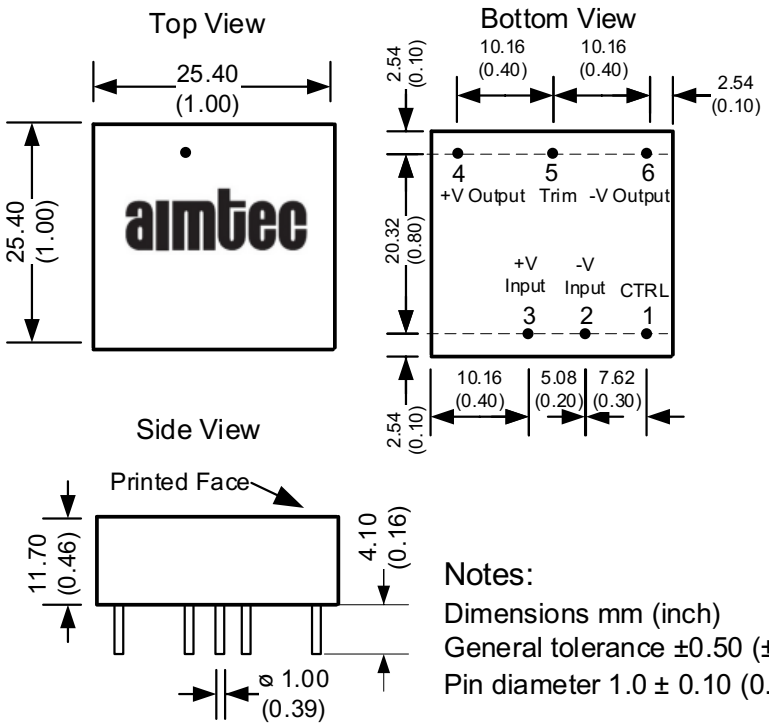


Notes:Part A for EMS filtering and Part B is used for EMI filtering.

Recommended EMI circuit



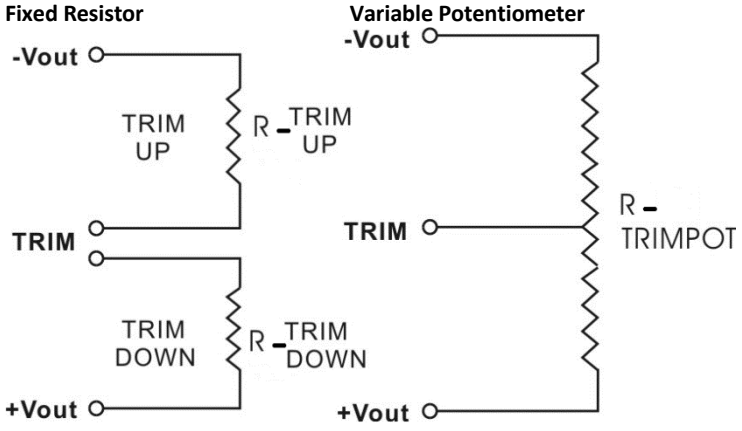
Dimension



Pin Out Specifications	
Pin	Single
1	On/off control
2	-Vin
3	+Vin
4	+Vout
5	Trim
6	-Vout

Notes:
Dimensions mm (inch)
General tolerance ±0.50 (±0.02)
Pin diameter 1.0 ± 0.10 (0.04 ± 0.004)

Trim



Vout = 5V

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)	299.364	197.323	144.837	112.86	91.336	75.859	64.195	55.09	47.784	41.793
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)	-1861.079	238.43	106.404	66.009	46.428	34.869	27.24	21.829	17.79	14.661

Vout = 12V

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)	502.892	308.252	219.327	168.385	135.373	112.242	95.132	81.964	71.516	63.023
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)	713.235	165.72	90.679	60.875	44.877	34.895	28.074	23.117	19.352	16.395

Vout = 15V

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)	908.813	501.361	341.572	256.271	203.218	167.033	140.774	120.851	105.216	92.62
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)	328.2	130.38	78.573	54.696	40.959	32.034	25.769	21.13	17.556	14.718

Vout = 24V

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)	1302.021	804.549	577.271	447.071	362.697	303.576	259.846	226.19	199.486	177.781
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)	808.05	189.109	104.278	70.586	52.501	41.217	33.506	27.902	23.646	20.303

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