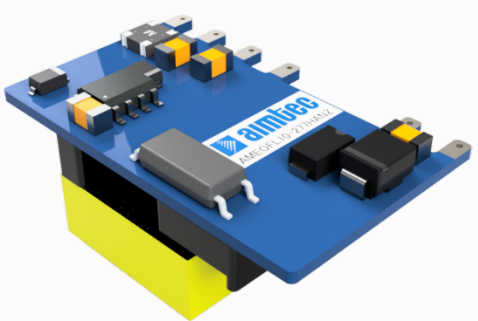




AMEOFL10-277HANZ



Open frame

AMEOFL10-277HANZ series is one of Aimtec highly efficient green power 10W AC-DC converter series. They feature ultra-wide wide input range accepting either AC or DC voltage, high efficiency, compact size, open-frame, low power consumption and CLASS II reinforced insulation. A variety of EMC external circuits meet the needs of multiple industries.

This new series offers great operating temperatures, from -40°C to 85°C also features an isolation of 3000VAC for improved reliability and system safety. Furthermore, a higher MTBF of 1000,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

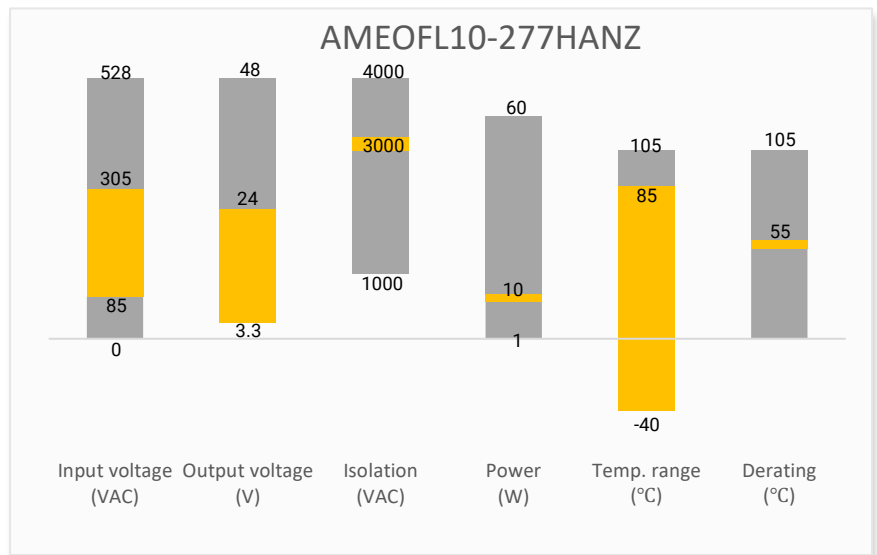
All models are particularly suitable for industrial control, electric power, instrumentation and smart home applications.

Features



- Universal Input: 85 - 305VAC/100 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 3000VAC
- Low ripple & noise, 150mV(p-p), max.
- Output short circuit, over-current, over voltage protection
- Open frame package

Summary



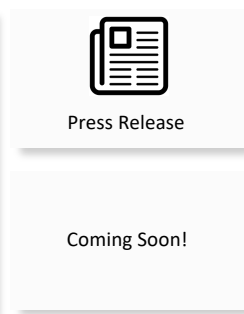
Training



Applications



Product Training Video
(click to open)



Application Notes



Power Grid



Industrial



Telecom



Instrumentation

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 (μ F)	Efficiency @ 230VAC (%)
AMEOFL10-3S277HANZ	85~305/47~63	100~430	6.6	3.3	2.0	1500	73
AMEOFL10-5S277HANZ	85~305/47~63	100~430	10	5	2.0	1500	77
AMEOFL10-9S277HANZ	85~305/47~63	100~430	10	9	1.1	1000	80
AMEOFL10-12S277HANZ	85~305/47~63	100~430	10	12	0.83	680	82
AMEOFL10-15S277HANZ	85~305/47~63	100~430	10	15	0.67	470	82
AMEOFL10-24S277HANZ	85~305/47~63	100~430	10	24	0.42	330	83

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input Current	115VAC		300	mA
	230VAC		180	mA
Inrush current	115VAC	15		A
	277VAC	30		A
External fuse	Slow blow type	1		A

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 3.3V output	± 3		%
	Full load, Others	± 2		%
Line regulation	Full load	± 1		%
Load regulation	0-100% load	± 1.5		%
Ripple & Noise	20MHz bandwidth	80	150	mV p-p
Start-up time			2	S

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, 5mA max		3000	VAC

General Specifications

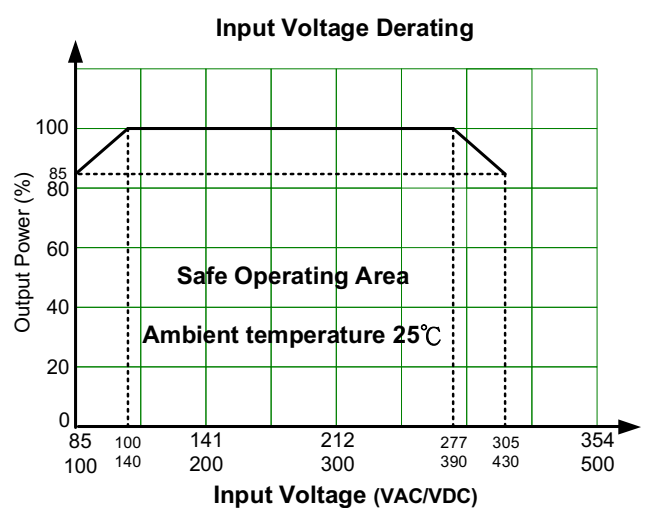
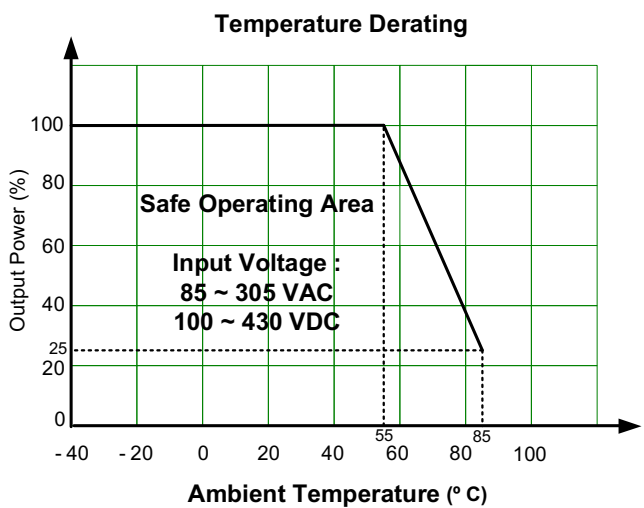
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class II			
Over Current protection	Auto recovery	≥ 110		% of Iout
Short circuit protection	Hiccup, Continuous, Auto recovery			
Over voltage protection	3.3V/5V output model	≤ 9 VDC (output voltage clamp or hiccup)		
	9V output model	≤ 15 VDC (output voltage clamp or hiccup)		
	12V output model	≤ 16 VDC (output voltage clamp or hiccup)		
	15V output model	≤ 21 VDC (output voltage clamp or hiccup)		
	24V output model	≤ 32 VDC (output voltage clamp or hiccup)		
Power consumption	230VAC, 3.3V	0.05	0.1	W

Preliminary

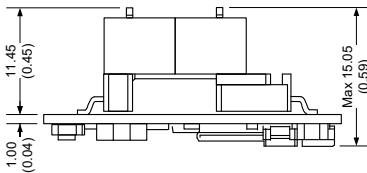
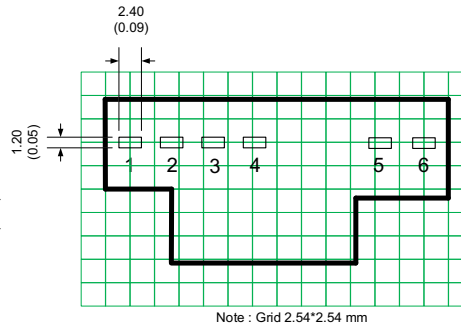
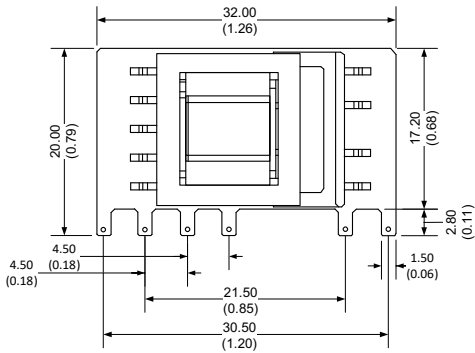
Power derating	230VAC, 9V/15V	0.09	0.12	W
	230VAC, 24V	0.13	0.15	W
	230VAC, 5V/12V		0.3	W
	+55 °C to +85 °C	2.5		% / °C
	85VAC ~ 100VAC	1		% /VAC
	277VAC ~ 305VAC	0.54		% /VAC
Operating temperature	-40 to +85			°C
Storage temperature	-40 to +105			°C
Temperature coefficient		±0.02		% / °C
Cooling	Free air convection			
Storage Humidity			95	% RH
Weight		8.2		g
Dimensions (L x W x H)	1.26 x 0.79 x 0.59 inches (32.00 x 20.00 x 15.05mm)			
MTBF	> 1000 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	UL 62368-1	
Standards	Design to meet IEC/EN60335, IEC/EN61558, IEC/EN/UL62368	
	EMC - Conducted and radiated emission	CISPR32 / EN55032, Class A (With EMI class A recommended circuit) CISPR32 / EN55032, Class B (With EMI class B recommended circuit)
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±6KV, 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 (With EMS Class III recommended circuit) IEC 61000-4-4 ±4KV, Criteria B (With EMS Class IV recommended circuit)
	Surge Immunity	IEC 61000-4-5 L-L ±1KV, Criteria B (With EMS Class III recommended circuit) IEC 61000-4-5 L-L ±2KV, Criteria B (With EMS Class IV recommended circuit)
	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



Dimensions

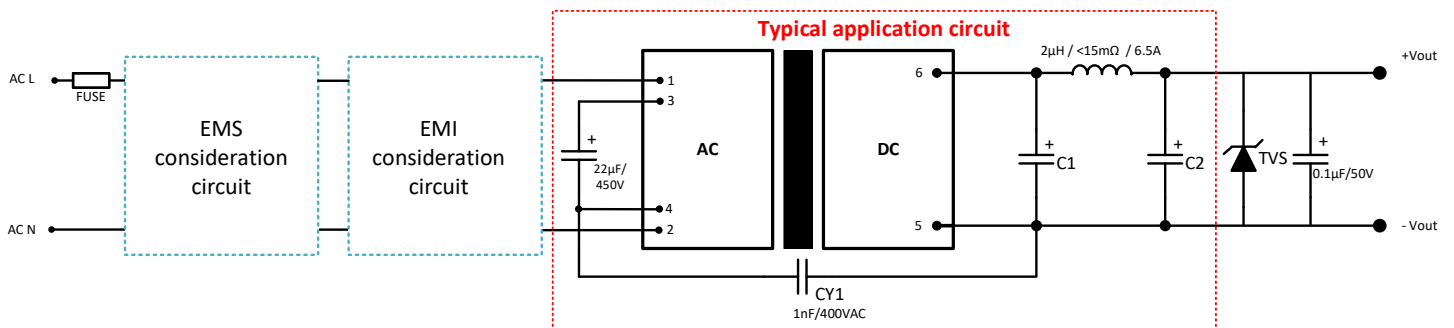


Note:
Unit: mm [inch]
General tolerances: $\pm 1.00 [\pm 0.040]$

Pin Output Specifications	
Pin	Function
1	-V Input (N)
2	+V Input (L)
3	+V_Cap
4	-V_Cap
5	-V Output
6	+V Output

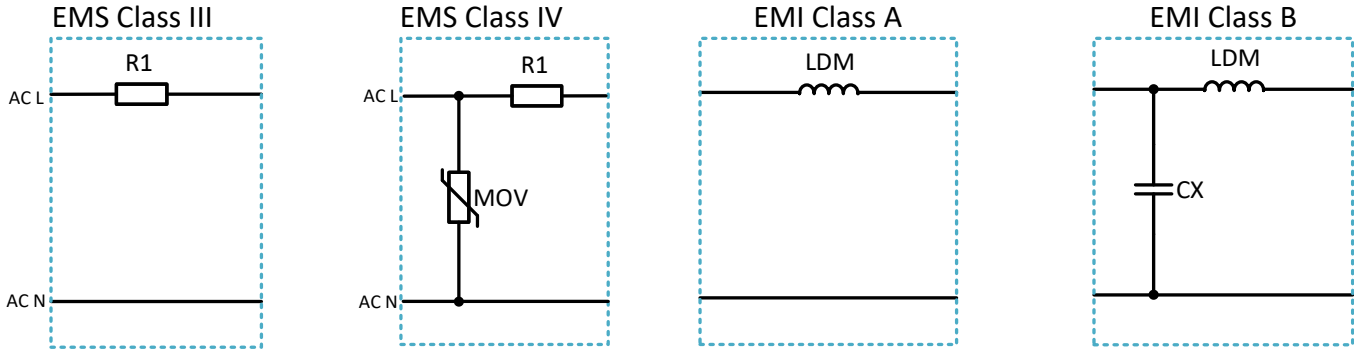
1. It is necessary to add C1 between pin3 to pin4
2. It is necessary to add circuit to the output as shown in recommended circuit
3. The layout of the device is for reference only, please refer to the actual product

Recommended EMC external circuit



- With the variable combination of below EMS and EMI circuits which offer the different level of protection.
- The components are the must for typical application circuit in red framed area.
- A suppressor diode (TVS) is recommended to protect the application in case of a converter failure and specification should be 1.2 times of the output voltage.

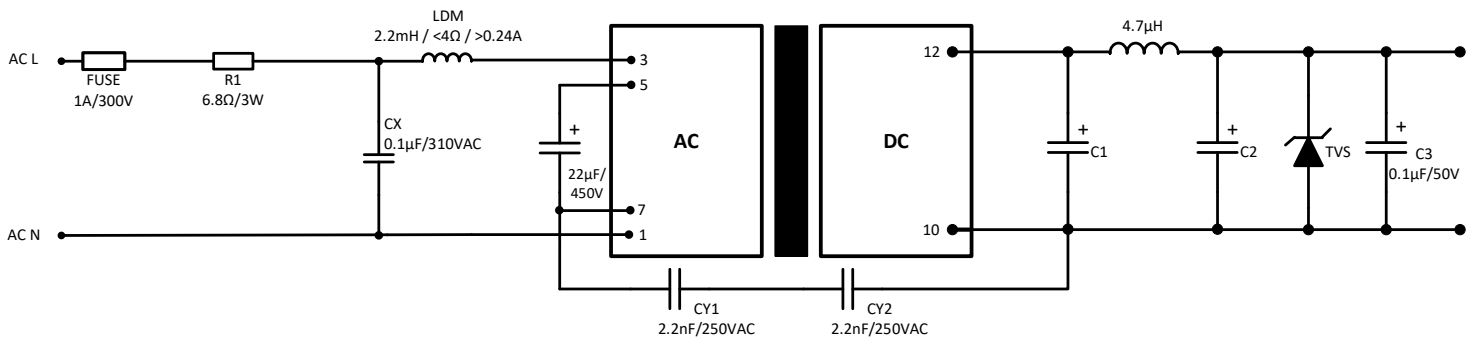
EMI & EMS Recommended Circuit



Component	EMS		EMI	
	Class III	Class IV	CLASS A	CLASS B
MOV	-	S14K350	-	-
R1	6.8Ω/3W	6.8Ω/3W	-	-
CX	-	-	-	0.1μF/310VAC
LDM	-	-	2.2mH / <4Ω / >0.24A	2.2mH / <4Ω / >0.24A
FUSE	1A/300V slow blow	2A/300V slow blow	1A/300V slow blow	1A/300V slow blow

Model name	C1	C2	TVS
AMEOFL10-3S277NZ	820μF/16V solid-state capacitor	150μF/35V	7V
AMEOFL10-5S277NZ	820μF/16V solid-state capacitor	150μF/35V	7V
AMEOFL10-9S277NZ	270μF/16V solid-state capacitor	150μF/35V	12V
AMEOFL10-12S277NZ	270μF/16V solid-state capacitor	150μF/35V	20V
AMEOFL10-15S277NZ	470μF/35V	220μF/35V	20V
AMEOFL10-24S277NZ	470μF/35V	220μF/35V	30V

Recommended EMC circuit for EN60335



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