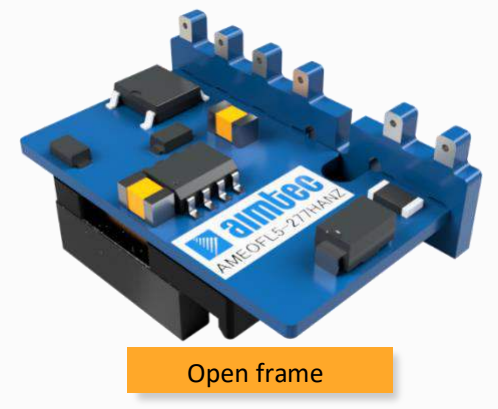


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## AMEOFL5-277HANZ



Open frame

The AMEOFL5-277HANZ series is one of Aimtec's highly efficient, green 5W AC-DC converter series. It features an ultra-wide input range accepting either AC or DC voltage, high efficiency, compact size in an open-frame, low power consumption and CLASS II reinforced insulation. A variety of EMC external circuits enable this series to meet the needs of multiple industries.

This 5W converter offers great operating temperatures, from -40°C to 85°C and also boasts an isolation of 3600VAC for improved reliability and system safety. Furthermore, a high MTBF of 1000,000h, output short circuit protection (OSCP) and an output over-current protection (OCP) come standard with the series.

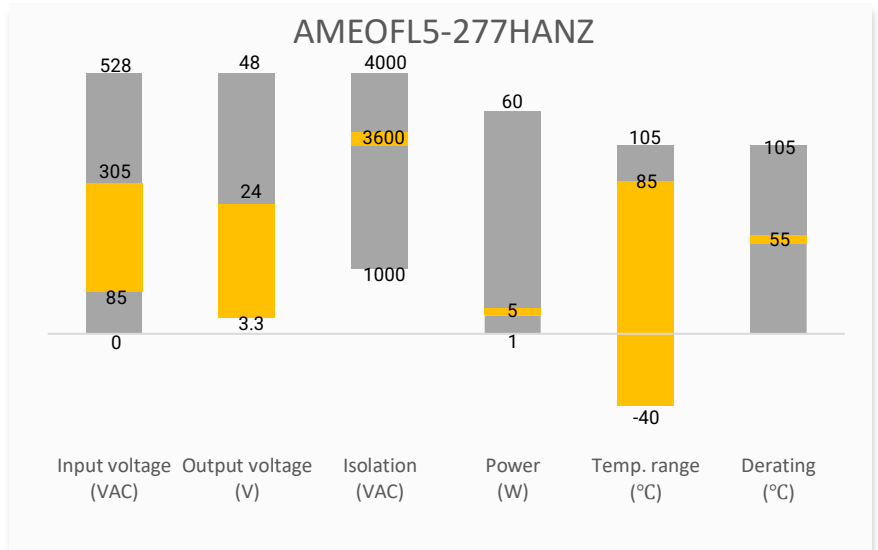
All models are suitable for industrial control, electric power, instrumentation and smart home applications.

## Features



- Universal Input: 85 - 305VAC/70 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 3600VAC
- Low ripple & noise, 150mV(p-p), max.
- Output short circuit, over-current
- Open frame package

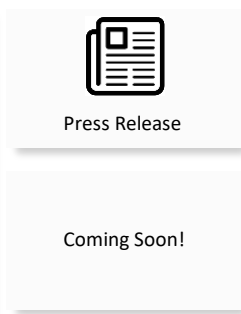
## Summary



## Training



Product Training Video  
(click to open)



Application Notes

## Applications



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 ( $\mu$ F)	Efficiency @ 230VAC (%)
AMEOFL5-3S277HANZ	85~305/47~63	70~430	3.3	3.3	1	2200	69
AMEOFL5-5S277HANZ	85~305/47~63	70~430	5	5	1	1500	76
AMEOFL5-9S277HANZ	85~305/47~63	70~430	5	9	0.56	680	77
AMEOFL5-12S277HANZ	85~305/47~63	70~430	5	12	0.42	470	79
AMEOFL5-15S277HANZ	85~305/47~63	70~430	5	15	0.34	330	79
AMEOFL5-24S277HANZ	85~305/47~63	70~430	5	24	0.21	100	81
AMEOFL5-3SL277HANZ	85~305/47~63	70~430	3.3	3.3	1	2200	69
AMEOFL5-5SL277HANZ	85~305/47~63	70~430	5	5	1	1500	76
AMEOFL5-9SL277HANZ	85~305/47~63	70~430	5	9	0.56	680	77
AMEOFL5-12SL277HANZ	85~305/47~63	70~430	5	12	0.42	470	79
AMEOFL5-15SL277HANZ	85~305/47~63	70~430	5	15	0.34	330	79
AMEOFL5-24SL277HANZ	85~305/47~63	70~430	5	24	0.21	100	81

### Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		200	mA
	230VAC		100	
Inrush current	115VAC	20		A
	230VAC	40		
External fuse	Slow blow type, required	1		A

### Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	10% - 100% load	$\pm 5$		%
Line regulation	Full load	$\pm 1.5$		%
Load regulation	10% - 100% load	$\pm 3$		%
Ripple & Noise	20MHz bandwidth, 10% - 100% load	80	150	mV p-p

NOTE: The output minimum load is 10%

### Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, 5mA max		3600	VAC
			5000	VDC

### General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		55		Khz

Safety class	Class II			
Over Current protection	Auto recovery	≥ 110		% of I <sub>out</sub>
Short circuit protection	Hiccup, Continuous, Auto recovery			
No-load power consumption	230VAC	0.1	0.15	W
Power derating	+55 °C to +85 °C	1.67		% / °C
	85VAC ~ 100VAC	1.33		% /VAC
	277VAC ~ 305VAC	0.72		% /VAC
Operating temperature	-40 to +85			°C
Storage temperature	-40 to +105			°C
Temperature coefficient		±0.15		% / °C
Cooling	Free air convection			
Storage Humidity			95	% RH
Weight	S277HANZ series	5.2		g
	SL277HANZ series	5.6		g
Dimensions (L x W x H)	S277HANZ series	1.04 x 0.58 x 0.43 inches ( 26.40 x 14.73 x 11.00 mm )		
	SL277HANZ series	1.10 x 0.46 x 0.69 inches ( 27.84 x 11.60 x 17.60 mm )		
MTBF	> 1 000 000 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.				

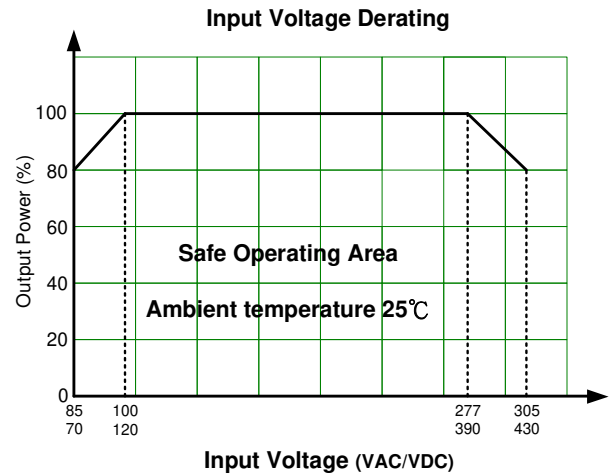
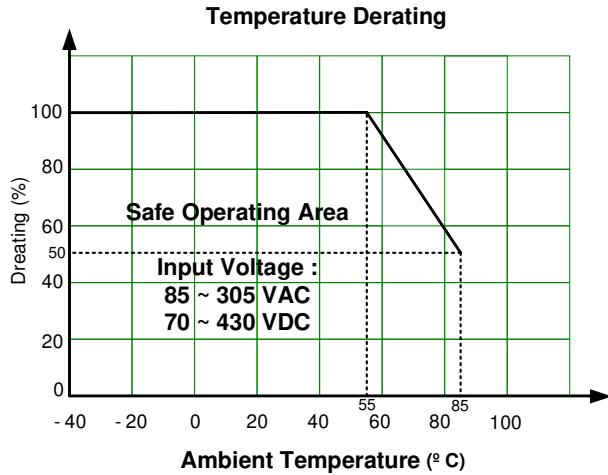
## Safety Specifications

### Parameters

Agency approvals	cULus UL 62368-1(Only for S277HANZ models)	
Standards	Design to meet IEC/EN60335, IEC/EN61558, IEC/EN62368	
	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 6300-4-2 Contact ±6KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC 6300-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 6300-4-4 ±2KV, Criteria B (With EMS Class III recommended circuit) IEC 6300-4-4 ±4KV, Criteria B (With EMS Class IV recommended circuit)
	Surge Immunity	IEC 6300-4-5 L-L ±1KV, Criteria B (With EMS Class III recommended circuit) IEC 6300-4-5 L-L ±2KV, Criteria B (With EMS Class IV recommended circuit)
	RF, Conducted Disturbance Immunity	IEC 6300-4-6 10Vr.m.s, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 6300-4-11 0%, 70%, Criteria B

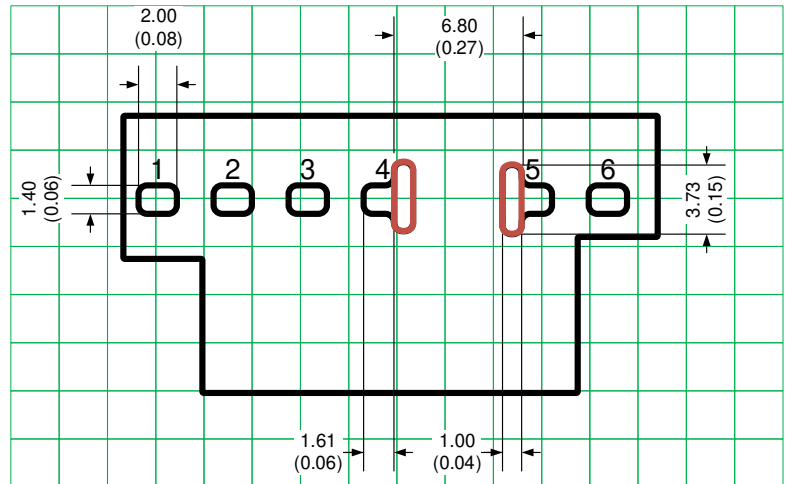
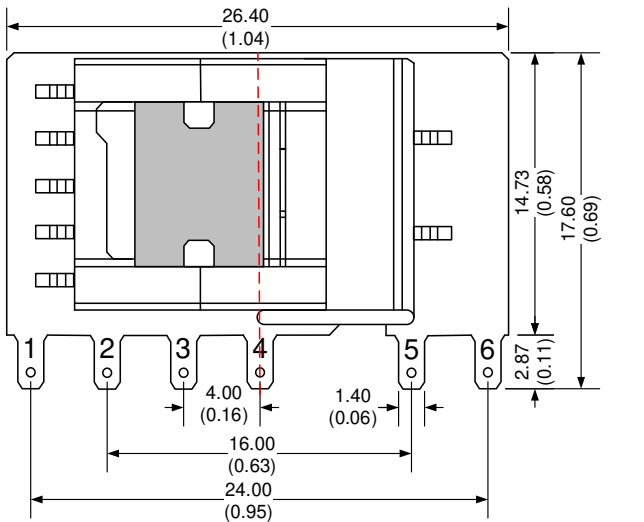
## Derating



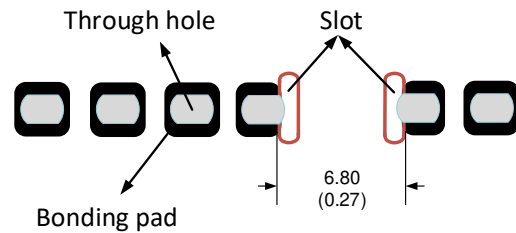


**Dimensions**

**S277HANZ series**



Note : Grid 2.54\*2.54 mm



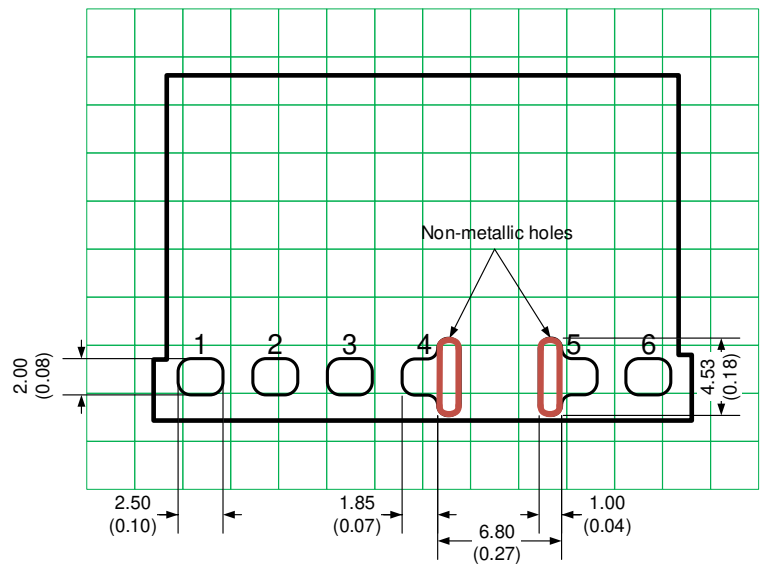
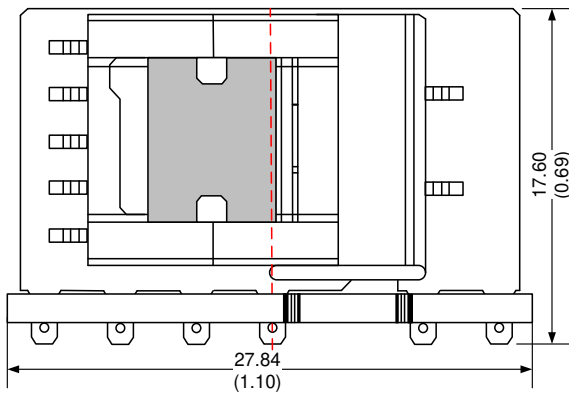
**Note:**  
Unit: mm [inch]  
General tolerances:  $\pm 1.00$  [ $\pm 0.040$ ]

Pin Output Specifications	
Pin	Function
1	+V Input (L)

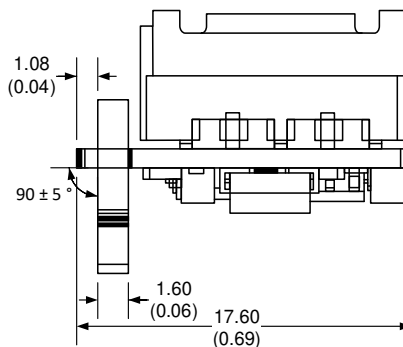
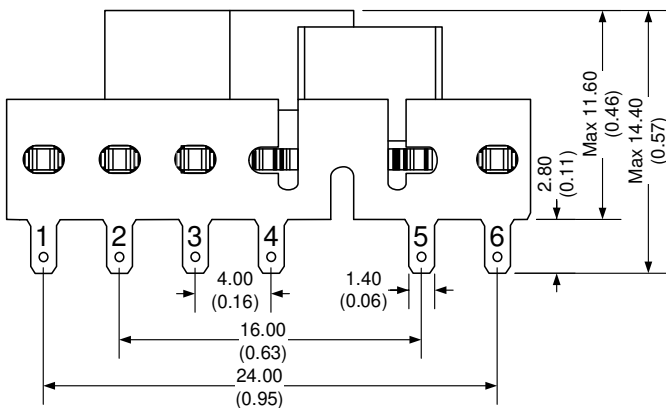
2	-V Input (N)
3	+V_Cap
4	-V_Cap
5	-V Output
6	+V Output

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
4. The slots between pin 4 and pin 5 are required for creepage distance consideration.

### SL277HANZ series

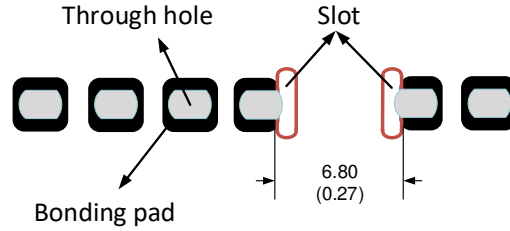


Note : Grid 2.54\*2.54 mm



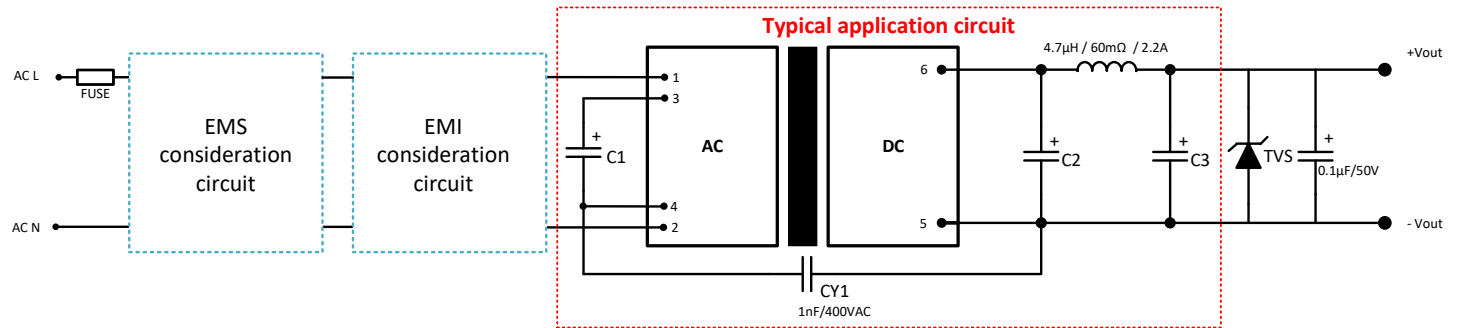
**Note:**  
Unit: mm [inch]  
General tolerances: ± 1.00 [± 0.040]

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



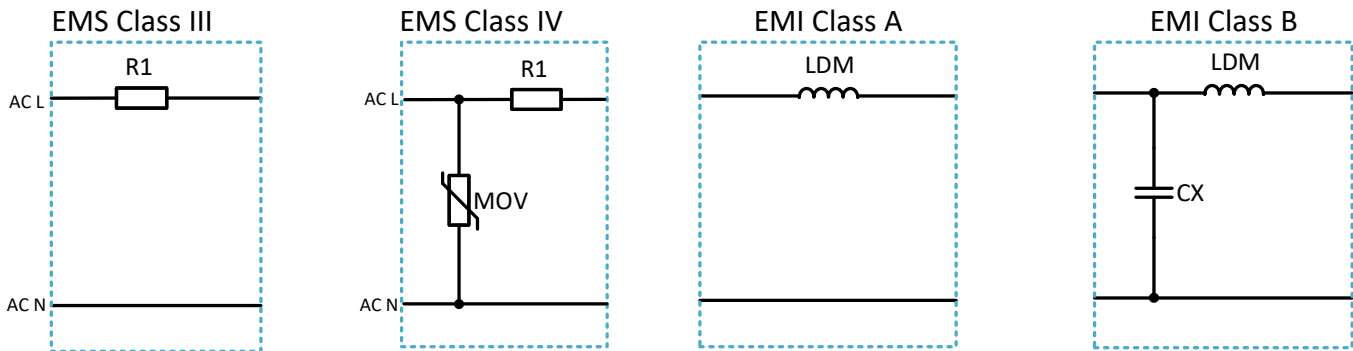
1. It is necessary to add C1 between pin3 to pin4
2. It is necessary to add circuit to the output as shown in recommended circuit
3. The layout of the device is for reference only, please refer to the actual product
4. The slots between pin 4 and pin 5 are required for creepage distance consideration.

## 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

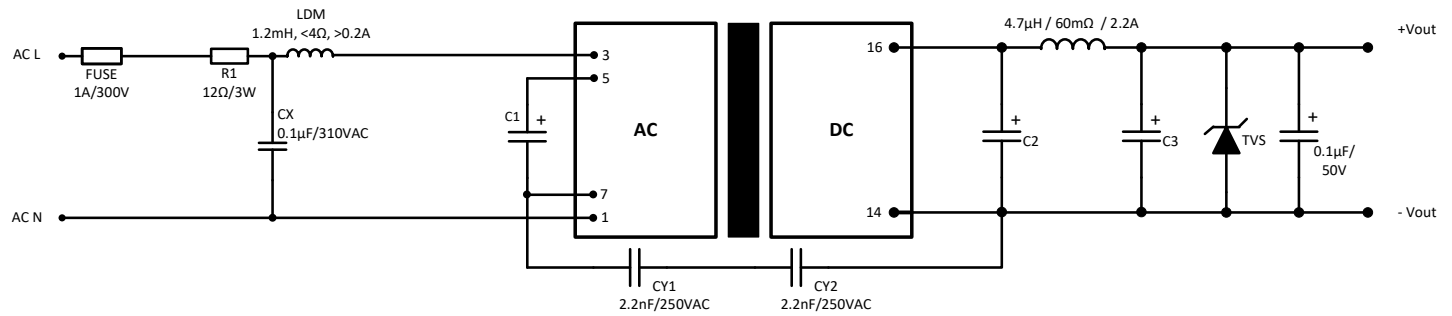


Component	EMS		EMI	
	Class III	Class IV	CLASS A	CLASS B
MOV	-	S14K350	-	-
R1	12Ω/3W, wire-wound	12Ω/2W, wire-wound	-	-

CX	-	-	-	0.1μF/310VAC
LDM	-	-	4.7mH / <15Ω / >0.2A	1.2mH / <4Ω / >0.2A
FUSE	1A/300V slow blow	2A/300V slow blow	-	-

Model name	C1	C2	C3	TVS
AMEOFL5-3S277NZ	10μF/450V	820μF/6.3V solid-state capacitor	100μF/35V	7V
AMEOFL5-5S277NZ	(-25°C ~ +85°C, 85 – 305VAC input; -40°C ~ +85°C, 165 – 305VAC input)	470μF/16V solid-state capacitor	100μF/35V	7V
AMEOFL5-9S277NZ		270μF/16V solid-state capacitor	47μF/35V	12V
AMEOFL5-12S277NZ	22μF/450V (-40°C ~ +85°C, 85 – 305VAC input)	270μF/16V solid-state capacitor	47μF/35V	20V
AMEOFL5-15S277NZ		220μF/35V	47μF/35V	20V
AMEOFL5-24S277NZ		220μF/35V	47μF/35V	30V

## Recommended EMC circuit for EN60335



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