AMEOFL10-480LPZ

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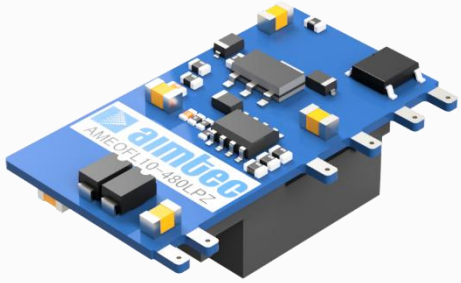


Open frame

The AMEOFL10-480LPZ series is one of Aimtec's highly efficient 10W AC-DC converter series. They feature an ultra-wide input range accepting either AC or DC voltage, high efficiency, compact size, an open-frame package, 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 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of greater than 500,000h, output short circuit protection (OSCP) and an output over-current protection (OCP) come standard with the series.

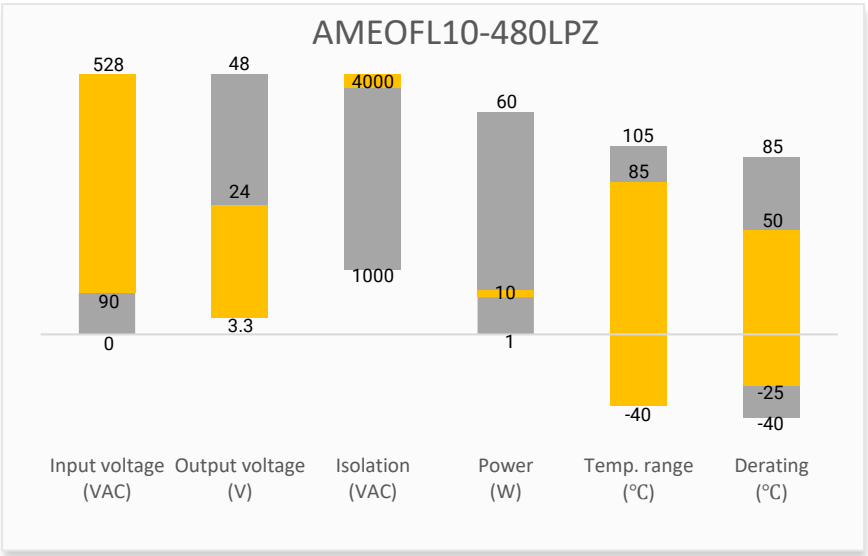
All models are particularly suitable for industrial control, 3-phase applications and instrumentation.

Features

- Ultra-Wide Input: 90 - 528VAC/100 - 745VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 180mV(p-p), max.
- Output short circuit, over-current protection
- Open frame package

RoHS 3yr Warranty CE

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 (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (µF)	Efficiency @ 230VAC Typ. (%)
AMEOFL10-3S480LPZ	90-528/47-63	100-745	6.6	3.3	2.0	1500	70
AMEOFL10-5S480LPZ	90-528/47-63	100-745	10	5	2.0	1500	77
AMEOFL10-9S480LPZ	90-528/47-63	100-745	10	9	1.1	1000	80
AMEOFL10-12S480LPZ	90-528/47-63	100-745	10	12	0.83	680	82
AMEOFL10-15S480LPZ	90-528/47-63	100-745	10	15	0.67	470	82
AMEOFL10-24S480LPZ	90-528/47-63	100-745	10	24	0.42	330	83

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input Current	90VAC	230	300	mA
	115VAC	180	250	mA
	230VAC	120	200	mA
	380VAC	90	150	mA
Inrush current	90VAC	11.6		A
	115VAC	13.5		A
	230VAC	28.6		A
	380VAC	42.6		A
External fuse	Slow blow type, required	2		A
Leakage current	480VAC/50Hz		0.5	mA(RMS)

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	10-100% load, 3.3V output	±3	±6	%
	10-100% load, others	±2.5	±5	%
Line regulation	Full load, 3.3V output	±2		%
	Full load, Others	±1.5		%
Load regulation	10-100% load	± 3		%
Ripple & Noise	20MHz bandwidth	100	180	mV p-p
* Ripple and Noise are measured at 20MHz bandwidth by using a 12" twisted pair-wire with a 47µF electrolytic capacitor and a 0.1µF ceramic capacitor.				

Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, 5mA max		4000	VAC
Insulation resistance	500VDC	>100		MΩ

General Specifications

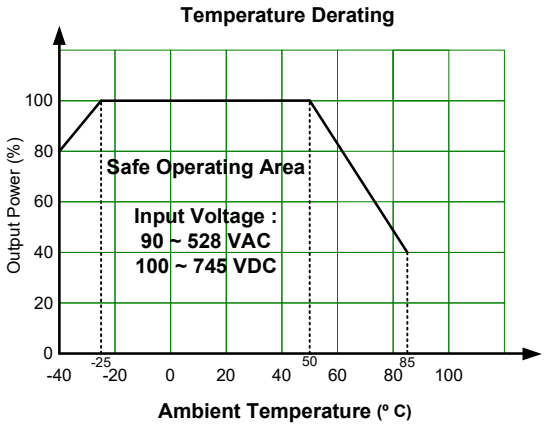
Parameters	Conditions	Typical	Maximum	Units
Switching frequency		50		Khz
Safety class	Class II, no FG			
Over Current protection	Auto recovery	≥ 110		% of Iout
Short circuit protection	Hiccup, Continuous, Auto recovery			
Power consumption	115VAC	0.2	0.3	W
	Others	0.1	0.15	W
Power derating	+50 °C to +85°C	1.72		% / °C
	-40 °C to -25 °C	1.33		% / °C
	90VAC ~ 115VAC	1.6		% /VAC
	400VAC ~ 528VAC	0.31		% /VAC
Operating temperature	See derating graph	-40 to +85		°C
Storage temperature		-40 to +105		°C
Temperature coefficient		±0.2		% / °C
Cooling	Free air convection			
Storage Humidity			95	% RH
Weight		11		g
Dimensions (L x W x H)	1.50 x 0.79 x 0.60 inches (38.00 x 20.00 x 15.25mm)			
MTBF	> 500 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load			

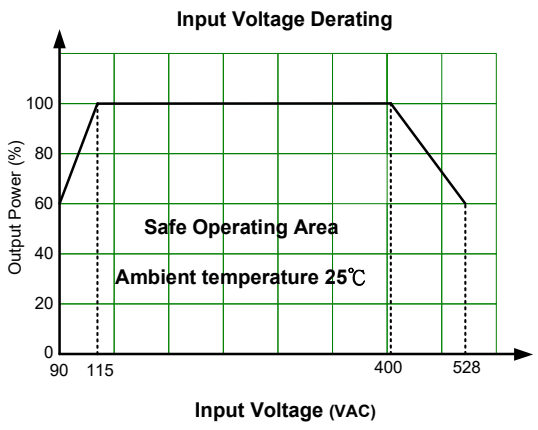
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

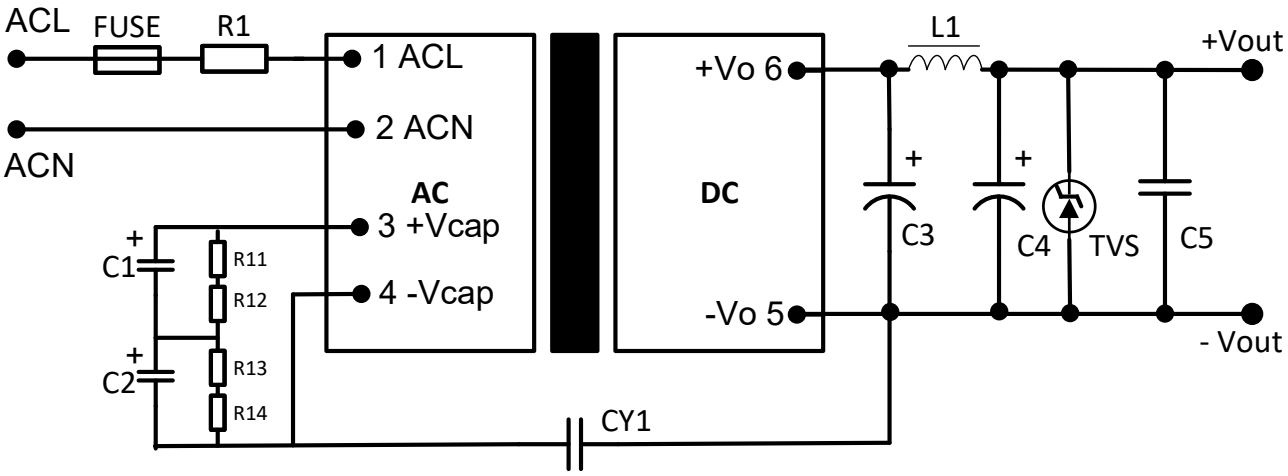
Parameters		
Standards	Designed to meet IEC/EN/UL 62368-1, EN 60335-1, EN 61558-1	
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class A CISPR32 / EN55032, class B (with the recommended EMC circuit)
	Electrostatic Discharge Immunity	IEC/EN61000-4-2 Contact ±6KV, Air ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN61000-4-4 ±2KV, Criteria B ±4KV, Criteria B (with the recommended EMC circuit)
	Surge Immunity	IEC/EN61000-4-5 L-L ±1KV, Criteria B L-L ±2KV, Criteria B (with the recommended EMC circuit)
	RF, Conducted Disturbance Immunity	IEC/EN61000-4-6 10Vr.m.s, Criteria A

Derating





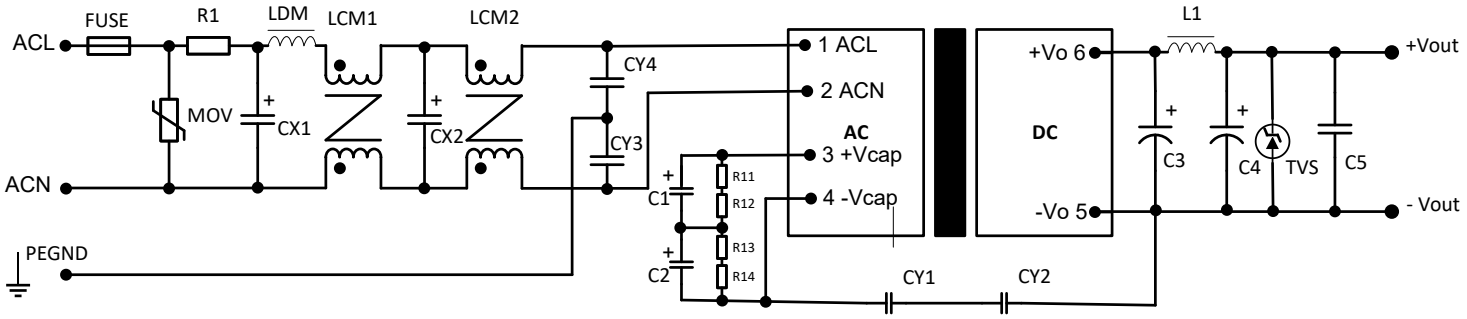
Typical Application Circuit



This circuit is the basic design reference, components with "" are required for the converter's operation.
FUSE to be 1A, slow blow and is also required for safety.
R1 is wire-wound resistor.

Vout	R1*	R11*, R12*, R13*, R14*	C1*, C2*	C3*	C4*	C5	CY1*	L1*	TVS
3.3V	6.8Ω, 3W	1MΩ, 1206	47uF, 400VAC	1500uF, 6.3V	680uF, 25V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6.5A	SMBJ7.0A
5V	6.8Ω, 3W	1MΩ, 1206	47uF, 400VAC	820uF, 16V	680uF, 25V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6.5A	SMBJ7.0A
9V	6.8Ω, 3W	1MΩ, 1206	47uF, 400VAC	470uF, 25V	330uF, 25V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6.5A	SMBJ12A
12V	6.8Ω, 3W	1MΩ, 1206	47uF, 400VAC	470uF, 25V	330uF, 25V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6.5A	SMBJ20A
15V	6.8Ω, 3W	1MΩ, 1206	33uF, 400VAC	470uF, 25V	330uF, 35V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6.5A	SMBJ20A
24V	6.8Ω, 3W	1MΩ, 1206	33uF, 400VAC	470uF, 35V	100uF, 35V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6.5A	SMBJ30A

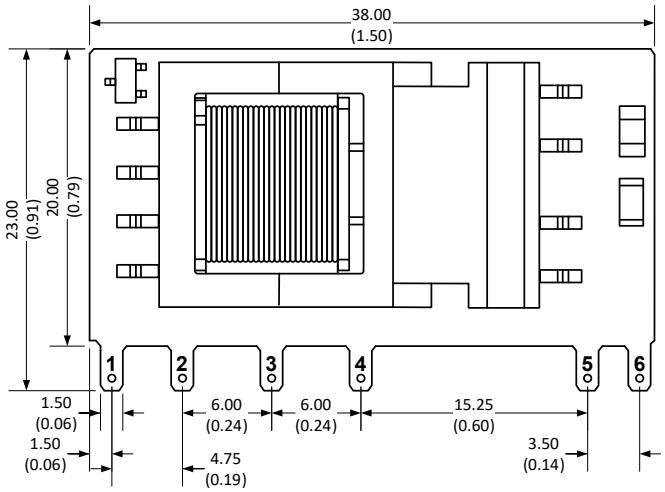
EMC Recommended Circuit

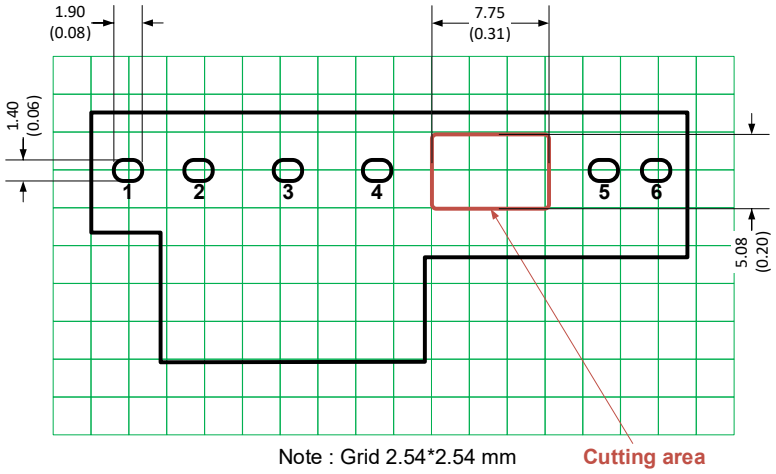


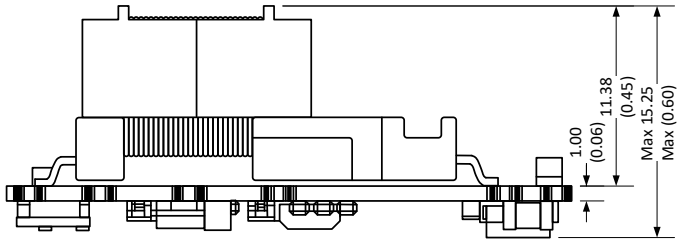
Components above with "" are required for the converter's operation.
For other components, please refer to the typical application circuit

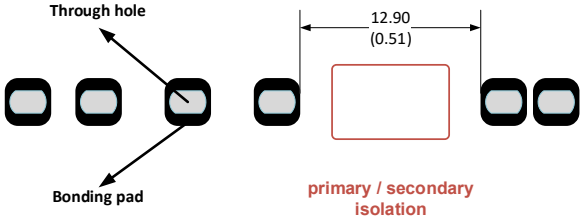
FUSE*	MOV	LDM	LCM1	LCM2	CX1, CX2	C1*, C2*	CY1, CY2	CY3, CY4
2A, 500VAC	14D911K	2.2mH, 0.35A	200uH, 0.8A	12.6mH, 0.5A	0.1uF, 480VAC	47uF, 400VAC	1nF, 400VAC	1nF, 400VAC

Dimensions









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

Pin Output Specifications	
Pin	**Function**
1	Input AC L
2	Input AC 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