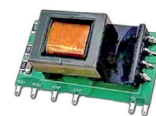


10ACFE4W_4 series

10W - Single Output AC-DC Converter



AC-DC Converter

10 Watt

- ⊕ SIP open frame package type
- ⊕ Universal input:
85-528VAC/110-745VDC
- ⊕ Operating temperature
range: -40°C to +85°C
- ⊕ 4000VAC isolation:
- ⊕ Up to 83% efficiency
- ⊕ Short circuit protection (SCP)
MTBF: >500,000 hours

Introducing our new 10ACFE4W_4 series, a versatile and high-isolation AC-DC converter platform designed for reliable performance in industrial and global power applications. Housed in a compact SIP open-frame package, the series supports a universal input range of 85–528 VAC or 110–745 VDC, ensuring maximum flexibility across worldwide power networks.

With reinforced 4000 VAC isolation and efficiencies of up to 83%, the 10ACFE4W_4 series delivers dependable power conversion while maintaining strong electrical separation for enhanced safety. Designed to operate across a wide temperature range from -40°C to +85°C, it performs reliably in demanding environments. Integrated short circuit protection (SCP) enhances operational security, while an MTBF of more than 500,000 hours supports long-term reliability in industrial control, automation, and energy management systems.



Common specifications	
Short circuit protection	Continuous, self recovery
Over current protection	110 (typ.) %Io
Over temperature Protection	Shut down output voltage; recovers automatically after temperature decreases.
Power derating	+55°C - +85°C, 1.5 (Min.) %/°C +55°C - +85°C, 1.8 (Min.) %/°C 85VAC - 100VAC, 1.5 (Min.) %/VAC 277VAC - 305VAC, 0.5 (Min.) %/VAC
Operating temperature	-40°C - +85°C (with derating)
Storage temperature	-50°C - +105°C
Soldering profile	Wave soldering, 260°C (±5°C); time: 5 - 10s Manual welding, 360°C (±5°C); time: 3 - 5s
Safety standard	IEC/UL62368-1, IEC/EN62477-1, EN61010-1
Safety class	CLASS II
MTBF	>500,000 h (MIL-HDBK-217F@25°C)
Hot plug	Unavailable
Package dimensions	38.00 x 20.00 x 15.25mm
Weight	11.2g (typ.)
Cooling method	Free air convection

Input specifications					
Item	Operating condition	Min	Typ	Max	Units
Input voltage	AC Input	85		528	VAC
	DC Input	100		745	VDC
Input current	110VAC			0.30	A
	230VAC			0.15	
Input frequency		47		63	HZ
Fuse	2A, slow-blow, required				
Leakage current	0.5mA RMS (typ.) 480VAC/50Hz				

Example:
10ACFE4W_2605S4
 10 = 10Watt; AC = AC-DC; F = Open Frame; E4 = Series; W = Wide input;
 26 = 26Vin; 05 = 5Vout; S = Single output; 4 = 4kVAC isolation

Output specifications						
Item	Operating condition	Min	Typ	Max	Units	
Output voltage accuracy	10% - 100% load		±5		%	
Linear regulation			± 1.5		%	
Load regulation	0% - 100% load, 3.3DC output		±3.0		%	
Ripple & noise	20MHz bandwidth, 10% - 100% load		100	180	mV	
Temperature coefficient			±0.2		%/°C	
Stand-by power consumption	230VAC			0.3	W	
Minimum load		10			%	

Isolation specifications						
Item	Operating Conditions	Min	Typ	Max	Units	
Isolation voltage	Input-output, test time 1 minute, leakage current less than 5mA	4000			VAC	
Insulation resistance	Input-output, insulated voltage 500VDC	50			MΩ	

- The input voltage should not exceed the specified range value, otherwise it may cause permanent and irreparable damage;
- It is recommended to use at a load of over 5%. If the load is below 5%, the ripple index of the product may exceed the specifications, but it does not affect the reliability of the product;
- Suggested dual output module load imbalance: $\leq \pm 5\%$. If it exceeds $\pm 5\%$, it cannot be guaranteed that the product performance meets all performance indicators in this datasheet;
- The maximum capacitive load is tested within the input voltage range and under full load conditions;
- Unless otherwise specified, all indicators in this datasheet are measured at $T_a = 25^\circ\text{C}$, humidity $<75\% \text{ RH}$, nominal input voltage, and output rated load;
- All indicator testing methods in this datasheet are based on our company's standards;
- For specific requirements please contact our technical team directly;
- Product specifications are subject to change without prior notice.

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EMC specifications

EMI	CE	CISPR32/EN55032 CLASS A (application circuit 1, 4, 5, 6)		
EMI	RE	CISPR32/EN55032 CLASS B (application circuit 2, 3)		
EMS	RS	IEC/EN61000-4-3 10V/m	perf. criteria	A
EMS	EFT	IEC/EN61000-4-4 ±2kV (application circuit 1, 4, 6)	perf. criteria	B
EMS	Surge	IEC/EN61000-4-5 line to line ±1kV (application circuit 1, 2)	perf. criteria	B
		IEC/EN61000-4-5 line to line ±2kV (application circuit 3, 4)	perf. criteria	B
EMS	CS	IEC/EN61000-4-6 10Vr.m.s	perf. criteria	A
EMS	ESD	IEC/EN61000-4-2 Contact ±6kV / Air ±8kV	perf. criteria	B

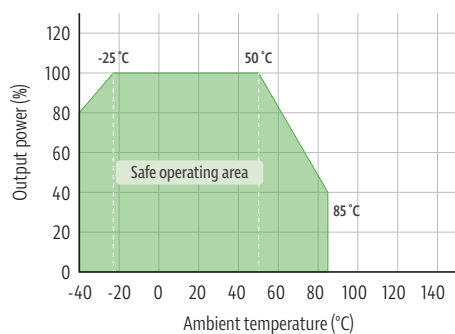
Product Selection Guide - Single output

Approval	Part number	Input Voltage (VAC)	Output Power (W)	Output Voltage (VDC)	Output Current (mA) max.	Full Load Efficiency % (typ.)	Capacitive Load (μF) max.
	10ACFE4W_2605S4	85-528	10	5	2000	77	1500
	10ACFE4W_2609S4	85-528	10	9	1100	79	1000
	10ACFE4W_2612S4	85-528	10	12	830	82	680
	10ACFE4W_2615S4	85-528	10	15	670	82	470
	10ACFE4W_2624S4	85-528	10	24	420	83	330

Note: (1) Output voltage - refers to the voltage value at the load end after adding peripheral application circuits;
 (2) For safer use, it is recommended to use this product with adhesive fixation in addition to welding fixation.

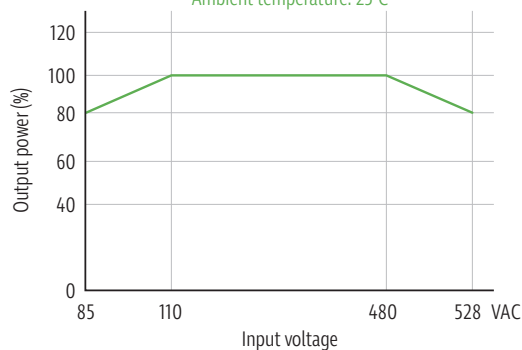
Typical characteristics

Temperature derating graph



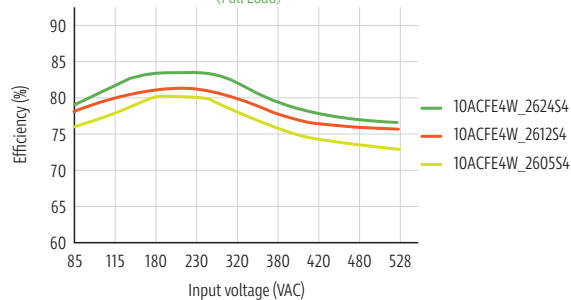
Input voltage derating curve

Ambient temperature: 25°C



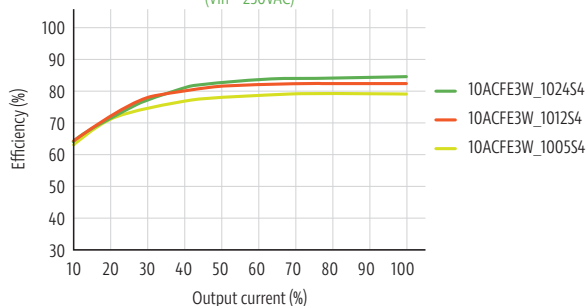
Efficiency vs input voltage

(Full Load)

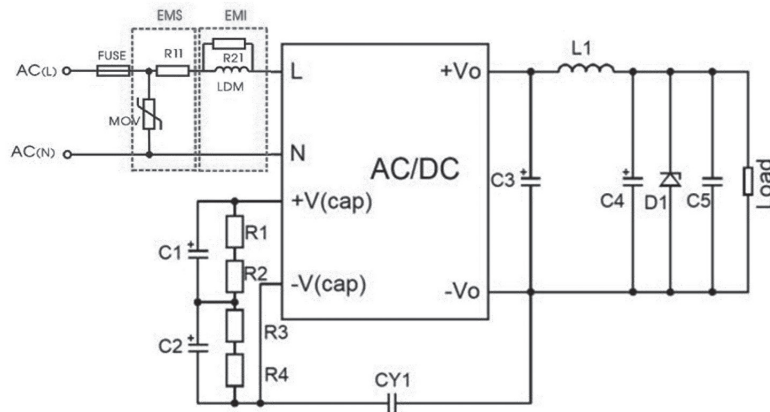


Efficiency vs output load

(Vin = 230VAC)



Application circuit



Reference table 1 for selection of peripheral devices

Output voltage	FUSE	C1, C2 (required)	R21	R11	R1, R2, R3, R4	LDM	LDM
5VDC	2A/500VAC slow-blow required	47uF/400V	10K/1206 (chip resistor)	6.8Ω/3W (Winding resistance, required)	1MΩ/1206 (required)	14D911K	2.2mH Max: 4.81Ω Min: 0.31A
9/12VDC		47uF/400V					
15/24VDC		33uF/400V					

Reference table 2 for selection of peripheral devices

Output voltage	CY1	L1	C3	C4	C5	D1
5VDC	1nF/400VAC (required)	2.2uH/6.5A	820uF/16V Solid state capacitor	680uF/25V	0.1uF/25	D1 is a TVS transistor that can protect the downstream circuit in case of module abnormalities. It is recommended to choose a model that is 1.2 times the output voltage.
9/12/15VDC			470uF/25V Solid state capacitor	330uF/25V	0.1uF/25	
24VDC			470uF/35V	100uF/35V	0.1uF/50	

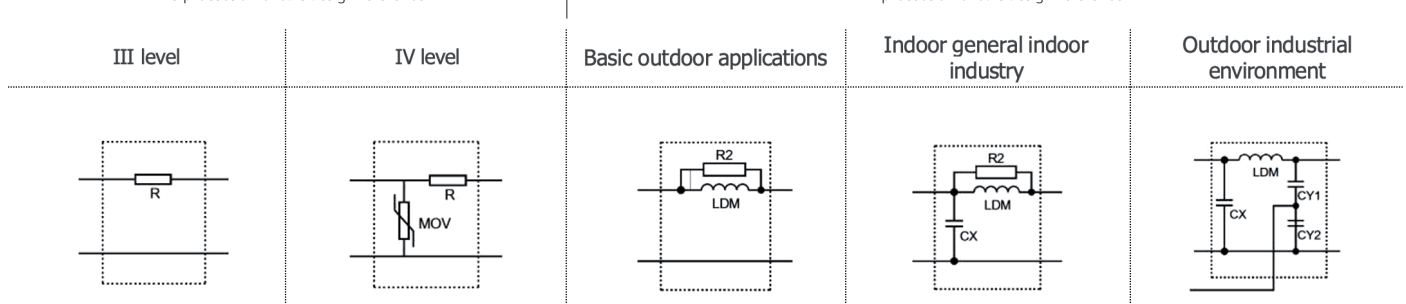
Note:

1. FUSE or front-end EMC and EMI devices can be selected according to actual application requirements;
2. C1 and C2 are filtering electrolytic capacitors, which are necessary components. It is recommended to use ripple current >400mA@100KHz Electrolytic capacitors.
3. C4 is an output filtering electrolytic capacitor (must be externally connected), which forms a Pi type filtering circuit with C3 and L1. It is recommended to use high-frequency low resistance electrolytic capacitors (ESR of C4 at low temperature $-40^{\circ}\text{C} \leq 1.1\Omega$) or solid-state capacitors. When applied in room temperature and high temperature environments, C4 can use electrolytic capacitors. Please refer to the technical specifications provided by each manufacturer for capacity and rated ripple current. The capacitance withstand voltage should be reduced to at least 80%. C4 is a ceramic capacitor used to filter out high-frequency noise.

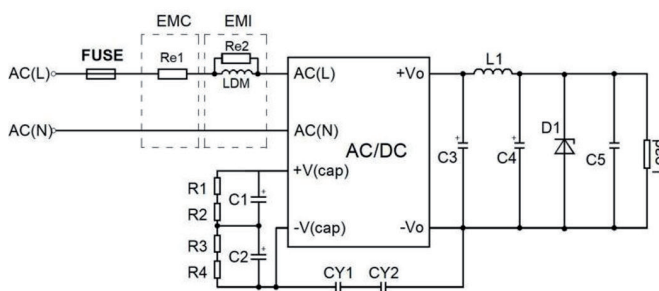
EMS solutions - recommended circuits

EMS protection circuit design reference

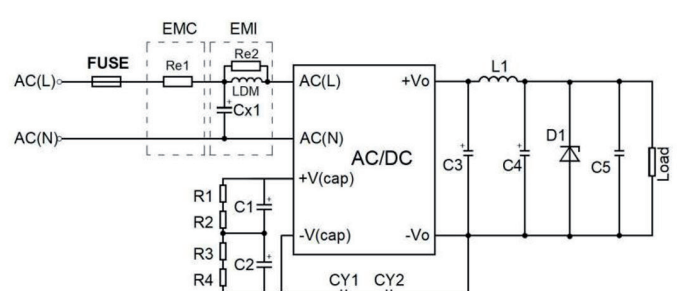
EMI protection circuit design reference



EMC Solutions - recommended circuits



Recommended circuit 1, basic application

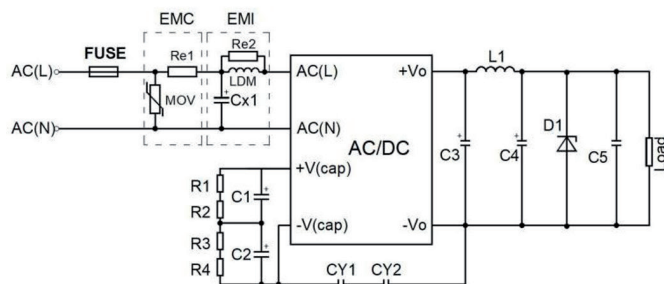


Recommended circuit 2, general indoor environment system

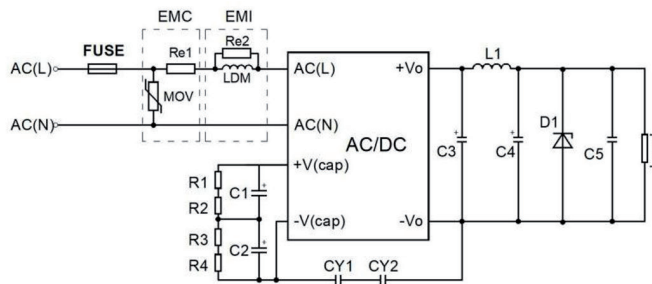
10ACFE4W_4 series

10W - Single Output AC-DC Converter

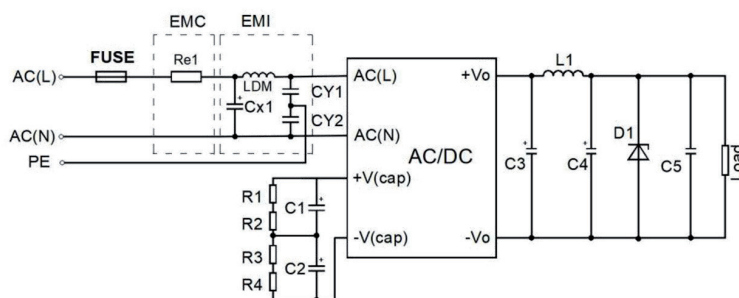
EMC solutions - recommended circuits



Recommended circuit 3, general system for indoor industrial environment



Recommended circuit 4, general outdoor environment system

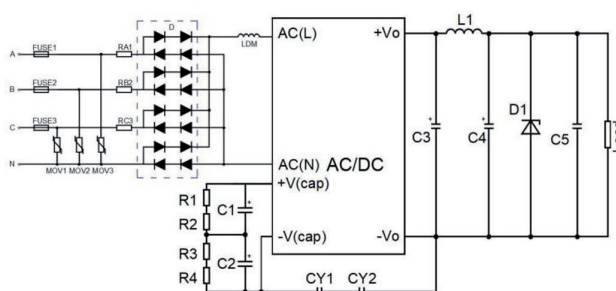


Recommended circuit 5, general system for outdoor industrial environment

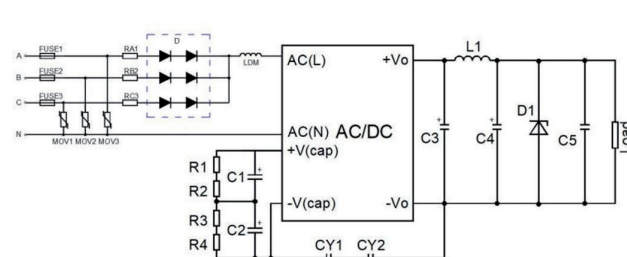
EMC Recommended Circuit Device Selection Reference Table

Components	Recommended circuit 1	Recommended circuit 2	Recommended circuit 3	Recommended circuit 4	Recommended circuit 5
FUSE			2A/500V, slow-blow, required		
Re1			6.8Ω/3W (Winding resistance, required)		
MOV			14D911K		
Re2	5V, 9V, 12V, Output		10k/1206(1/4W)		
	15V, 24V, Output		4.7k/1206(1/4W)		
LCM2			2.2mH/Max: 4.8Ω/Min:0.35A		
Cx1, Cx2			0.1uF/480VAC		

EMC solution for strong lightning surge environment - recommended circuit



Recommended circuit 6-1, 4kV differential mode surge high requirement - full wave rectification

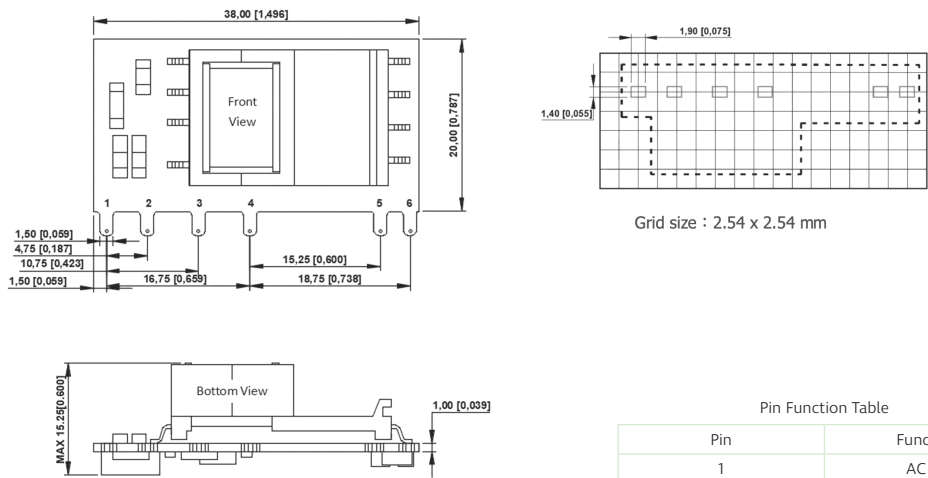


Recommended circuit 6-2, 4kV differential mode surge high requirement - half wave rectification

Recommended parameter values for circuit component selection

Model	Recommended circuit 6	Recommended circuit 7	Recommended circuit 3
FUSE1, FUSE2, FUSE3		6.3A/500VAC,slow-blow,required	
MOV1, MOV2, MOV3		14D911K	
RA1, RB2, RC3		12Ω/5W (Winding resistance, required)	
LDM		2.2mH/max: 4.8Ω/Min: 0.35A	
D		2A/1000V	

Mechanical dimensions



Pin Function Table

Pin	Function
1	AC (L)
2	AC (N)
3	+V (CAP)
4	-V (CAP)
5	-Vo
6	+Vo

Note:
Unit: mm [inch]
Pin section tolerances: ± 0.10 [± 0.004]
General tolerances: ± 0.50 [± 0.020]