



Industrial Power Supply

A-150FKC Series

Datasheet

A-150FKC-XP

- ◇ Product Category: 150Watts Industrial Power Supply
- ◇ Version No.: R1.0
- ◇ Issued Date: Aug.12th, 2024

CHUANGLIAN

Product Features

- Universal Input Voltage Range:
90-264VAC or 120-370VDC
- Standard ultra-thin product, height 30mm
- Fanless natural cooling
- All-around Protection Function: SCP, OVP, OTP, OCP
- High efficiency with PFC, efficiency up to 88%
- With remote control switch
- Output voltage adjustment by potentiometer
- Operating Temperature: -30°C~+70°C (Refer to "Derating Curve")
- 3 Years warranty



RoHS

Product Description

A-150FKC-XP series product is a 150W self-cooling metal case industrial power supply. Adopting universal AC&DC input voltage, the entire series provides an output voltage line of 12V, 15V, 24V, 27V, 36V and 48V for option. It can be adapted to different load application and meet various industrial application requirements. Besides, the EMC and safety regulations comply with the IEC/EN/UL62368, GB4943 standards. High conversion efficiency, compact housing design, good heat dissipation, and all-round protection guarantee the high reliability and stability of this power supply.

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Applications

Industrial control system, Mechanical and electrical equipment, Electronic instruments and equipment, Industrial automation machinery, Semiconductor device

Model Encoding

A-150 FKC-X-P-YY

Internal code (Blank or alphanumeric combination)

PFC Function

Output voltage (12V, 15V, 24V, 36V, 48V etc.)

Series name

Output power

Single channel output

Model List:

Model	Output Power (W)	Output Voltage (V _{dc})	Output voltage adjustable range ^[3] (V _{dc})	Output Current (A)	Ripple and noise (mV) ^[2]	Efficiency@ 230VAC (Typ.) ^[1]	Maximum capacitive load(uF)
A-150FKC-5P	150	5	4.75-5.5	0-30	100	86%	6000
A-150FKC-12P	150	12	10.8-13.2	0-12.5	100	88%	3600
A-150FKC-15P	150	15	13.5-16.5	0-10	100	88.5%	3000
A-150FKC-24P	151.2	24	21.6-26.4	0-6.3	100	88.5%	2000
A-150FKC-36P	151.2	36	32.4-39.6	0-4.2	150	89%	1200
A-150FKC-48P	153.6	48	43.2-52.8	0-3.2	250	89.5%	1000



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Note: [1] All Parameters not specially mentioned are measured at rated input voltage, full load and 25°C ambient temperature.

[2] Ripple & noise are measured at 20MHz of oscilloscope bandwidth(oscilloscope probe cap and ground clamp are removed)by using a 20±2cm twisted pair-wire terminated with a 47uF electrolytic capacitor and a 0.1uF high frequency capacitor that are connected in parallel at the output end.

[3] Under any steady operating condition, the total output power shall not exceed the rated output power. When the output voltage is raised, the total output power cannot exceed the rated output power. When the output voltage is turned down, the output current cannot exceed the rated output current.

※ For the product models under development, please contact our sales team or distributor for more information.

© Input Specifications:

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	90 V _{ac}		264 V _{ac}	
Rated Input AC Voltage	100 V _{ac}		240 V _{ac}	
Input DC Voltage	120 V _{dc}		370 V _{dc}	
Input Frequency	47 Hz		63 Hz	
Maximum Input Current			2 A	115Vac/full load
			1 A	230Vac/full load
PFC		0.98		115Vac,full load
		0.93		230Vac,full load
Leakage Current			2 mA	240Vac/50Hz
Surge Current		30 A		115Vac,cold start
		60 A		230Vac,cold start

© Output Specifications:

Parameter	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-2%		+2%	A-150FKC-5 A-150FKC-12
	-1%		+1%	other models
Line Regulation	-0.5%		+0.5%	All models
Load Regulation	-2%		+2%	A-150FKC-5 A-150FKC-12
	-1%		+1%	Other models
Turn On Delay Time			2000ms	115Vac/230Vac,full load
Rise Time			50ms	115Vac/230Vac,full load
Stand-by power consumption	16ms			115Vac/230Vac,full load



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◎ Efficiency:

Parameter	Min.	Typ.	Max.	Notes
Efficiency@115 V _{ac}				
A-150FKC-5P	84%	85%		Ambient temp. 25±5°C, full load
A-150FKC-12P	86%	87%		
A-150FKC-15P	86.5%	87.5%		
A-150FKC-24P	86.5%	87.5%		
A-150FKC-36P	87%	88%		
A-150FKC-48P	87.5%	88.5%		
Efficiency@230 V _{ac}				
A-150FKC-5P	85%	86%		Ambient temp. 25±5°C, full load
A-150FKC-12P	87%	88%		
A-150FKC-15P	87.5%	88.5%		
A-150FKC-24P	87.5%	88.5%		
A-150FKC-36P	88%	89%		
A-150FKC-48P	88.5%	89.5%		

◎ Function overview:

Function	Description
Cooling mode	Fanless natural cooling
remote control	CN1: < 0~0.8VDC power on, 4~10VDC power off

◎ Protection:

Parameters	Min.	Typ.	Max.	Notes
Over Load	105%		135%	Constant current limited mode. When the fault is removed, the output automatically recovers to normal
Output Over Voltage	110%V _o		140%V _o	Double loop constant voltage output, when the fault is removed, the output automatically returns to normal
Over-temperature protection (ambient temperature)		70°C		When the power supply is over-temperature protected, the output voltage is turned off. When the fault is rectified, the output automatically recovers to normal
Short circuit	short circuit fault at the output end, the constant current limit protection of the power supply. When the short circuit fault is removed, the power automatically restores to normal output			



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◎ Safety & EMC:

Safety Category	Country/ Territory	Item	Standards
UL/CUL	USA/ Canada	Safety Standard	UL 62368-1
			CAN/CSA C22.2 No. 62368-1:19
CE	Europe		EN 62368-1
CB	CB Countries		IEC 62368-1
CCC	China		GB 4943.1

EMI Category	Country/ Territory	Item	Standards/Criteria	
FCC	USD/ Canada	Conducted Emission	FCC part 15(ANSI C63.4)	Class B
		Radiated Emission	FCC part 15(ANSI C63.4)	Class B
CE	Europe	Conducted Emission	EN 55032	Class B
		Radiated Emission	EN 55032	Class B
		Harmonic Current	EN 61000-3-2	Class D
		Voltage Flicker	EN 61000-3-3	
CCC	China	Conducted Emission	GB/T 9254.1	Class B
		Radiated Emission	GB/T 9254.1	Class B
		Harmonic Current	EN 61000-3-2	Class D

EMS Category	Country/ Territory	Item	Standards/Criteria		
CE	Europe	Electro-static Discharge	EN 61000-4-2	Air 8 kV / Contact 4 kV	Criteria B
		Radiated Susceptibility	EN 61000-4-3	80MHz-1GHz 10V/m	Criteria A
		Electrical Fast Transient	EN 61000-4-4	±2KV	Criteria B
		Surge Immunity	EN 61000-4-5	CM±2KV/DM ±1KV	Criteria B
		Conducted Emission Immunity	EN 61000-4-6	10Vr.m.s	Criteria A
		Power Frequency Magnetic Field Immunity	EN 61000-4-8	30A/m, continuous	Criteria A
		Voltage Dips, Drops and Interruptions Immunity	EN 61000-4-11	Drop 100%, 0.5 cycle	Criteria B
				Drop 100%, 250 cycle	Criteria B
				Drop 30%, 25 cycle	Criteria B
				Interrupt 100%, 250 cycles	Criteria C



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Note:

The power supply is considered as a component which will be installed into a final equipment. All the EMC tests are executed by mounting the unit on a metal plate with size 400mm*400mm*3mm. The final equipment must be re-confirmed that it still meets EMC directives.

© General Specifications:

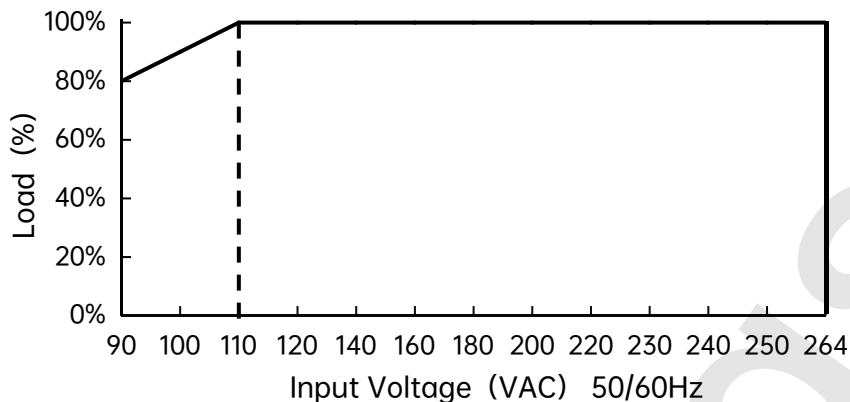
Parameter		Min.	Typ.	Max	Notes
Dielectric Strength [4]	Input-Output	4000 V _{ac}			Last for 60s, leakage current < 10mA
	Input-PE	2000 V _{ac}			
	Output-PE	500 V _{ac}			
Insulation Resistance	Input-Output	100MΩ			Test Voltage: 500V _{dc}
	Input-PE	100MΩ			
	Output-PE	100MΩ			
Working Temp.		-30°C		+70°C	Refer to "Derating Curve"
Working Humidity		20%RH		95%RH	Non-condensing
Storage Temp.		-40°C		+85°C	
Storage Humidity		10%RH		95%RH	Non-condensing
Temp. Coefficient		-0.03%/°C		0.03%/°C	0~50°C
Mean Time Between Failure (MTBF)		200000小时			Ambient temp. 25°C, MIL-HDBK-217F
Dimension		199*99*30mm			L*W*H
Net Weight			600g		
Packing		20PCS/14.5Kg/Carton, Carton Dimension: 430(L)*200(W)*225(H)mm			

Note: [4] The minimum isolated voltage of this product is 3000Vac, if you use a higher test standard, please contact our sales representative or FAE.

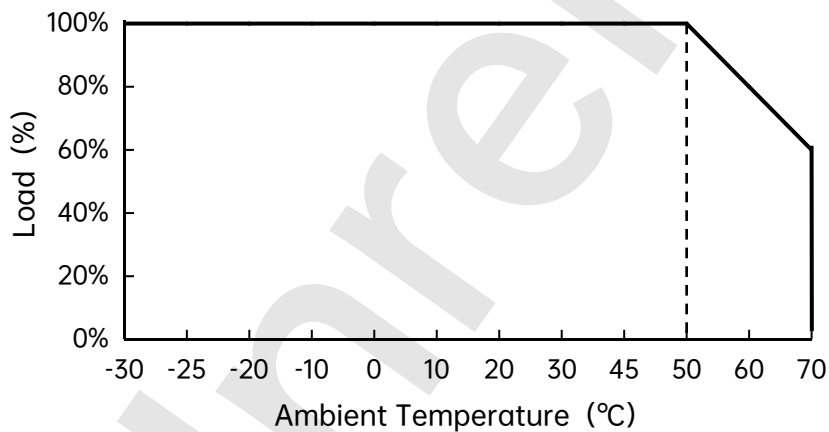


◎ Performance Curve:

AC input voltage VS. Output power



Working ambient temperature VS. Output power



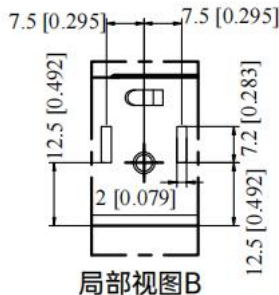
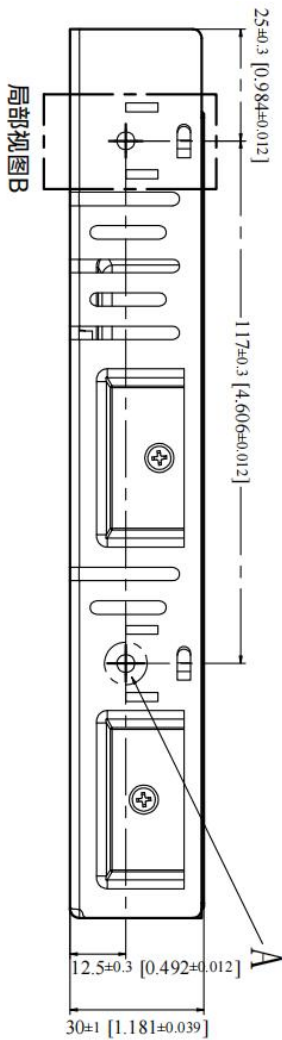
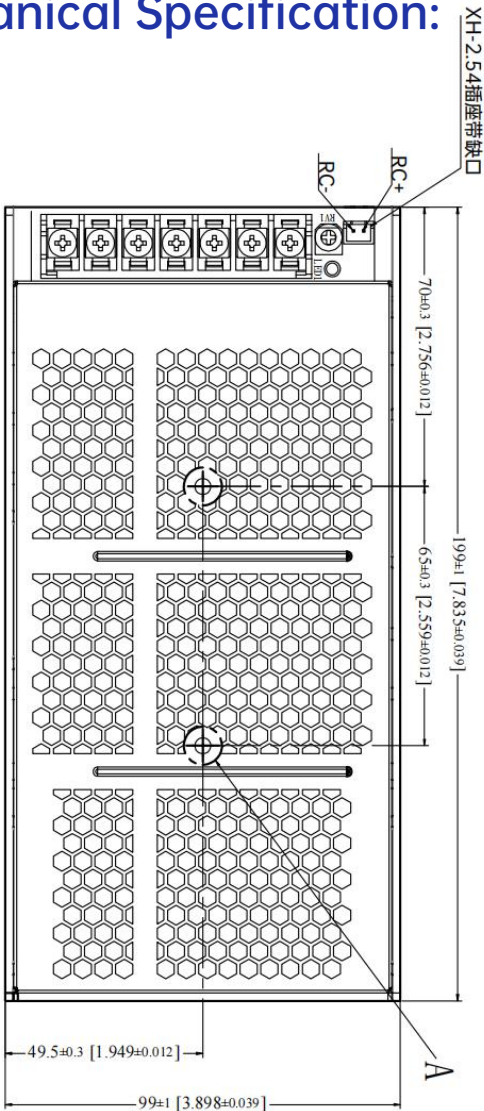
Note:

If more detailed test data during application is needed, please contact our technical team to obtain application notes of related products.

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◎Mechanical Specification:



6-M4 Mounting holes for the customer system

Mounting screw: M4
Installation torque :8Kgf.cm(0.8N.m)
Screw into the housing is not more than 4mm
B: Be consistent everywhere

Input/Output pin function

Pin	Function	Screw Torque
L	AC LINE	Screw: M4*7 Torque: 12Kgf.cm(1.2N.m)
N	AC NETURAL	
⊕	EARTH	
V-	DC output -	Screw: M4*7 Torque: 12Kgf.cm(1.2N.m)
V-	DC output -	
V+	DC output +	
V+	DC output +	

Note:
Unit: mm[inch]; The unmarked tolerance
±0.5[±0.020]