



A-600FGM-X

- ◇ Product Category: 600Watts Industrial Power Supply
- ◇ Version No.: R1.0
- ◇ Date Issued: July 24th, 2024

CHUANGLIAN

★ Product Features

- Input Voltage:
90-132VAC/176-264VAC (Selectable by switch)
127-186VDC/248-373VDC (Selectable by switch)
- Forced air cooling by built-in DC fan
- Multiple Protection: SCP, OVP, OCP, OTP
- Output voltage adjustment by potentiometer
- Can withstand 305VAC surge for 5s
- Operating Temperature: -30°C~+70°C (Refer to "Derating Curve")
- 3 Years warranty



💬 Product Description

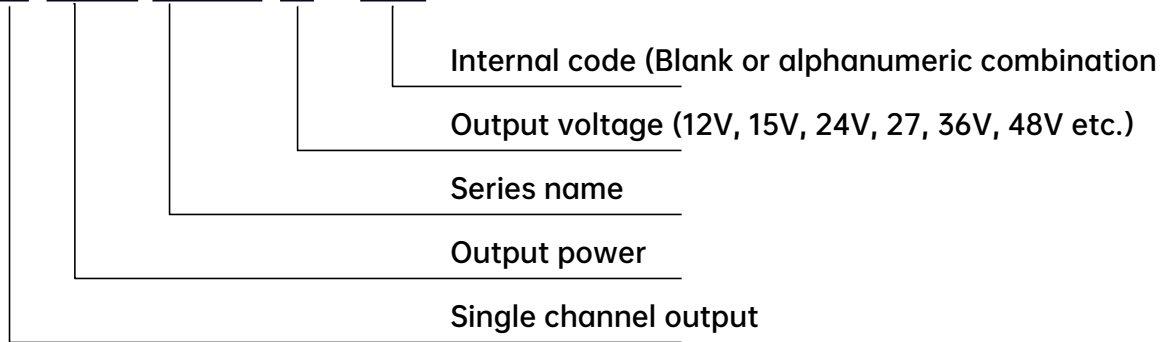
A-600FGM-x series is a 600 watts air-cooled metal enclosed industrial power supply. Adopting wide AC&DC input voltage, the entire series provides an output voltage line of 12V, 15V, 24V, 27V, 36V and 48V for option. It can be adapted to different load application and meet various industrial application requirements. Besides, the EMC and safety regulations comply with the IEC/EN/UL62368 standards. High conversion efficiency, compact housing design, good heat dissipation, and all-round protection guarantee the high reliability and stability of this power supply.

Applications

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

Model Encoding

A-600 FGM-X - YY



Model List:

Model	Output Power (W)	Output Voltage (V _{dc})	Adjustable output voltage [3] (V _{dc})	Output Current (A)	Ripple and noise (mV) ^[2]	Efficiency @230VAC (Typ.) ^[1]	Maximum capacitive load(μF)
A-600FGM-12	600	12	10.8-13.2	0-50	200	90%	20000
A-600FGM-15*	600	15	13.5-16.5	0-40	200	90%	20000
A-600FGM-24	600	24	21.6-26.4	0-25	240	92%	10000
A-600FGM-27*	599.4	27	24.3-29.7	0-22.2	270	92%	8000
A-600FGM-36	597.6	36	32.4-39.6	0-16.6	360	92%	6000
A-600FGM-48	600	48	43.2-52.8	0-12.5	480	92%	6000

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 47μF electrolytic capacitor and a 0.1μF 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 Specification:

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	90 V _{ac}		132 V _{ac}	Selectable by switch
	176 V _{ac}		264 V _{ac}	
Rated Input AC Voltage	100 V _{ac}		120 V _{ac}	
	200 V _{ac}		240 V _{ac}	
Input DC Voltage	127 V _{dc}		186 V _{dc}	
	248 V _{dc}		373 V _{dc}	
Input Frequency	47 Hz		63 Hz	
Maximum Input Current			12 A	115Vac, full load
			7.5 A	230Vac, full load
Leakage Current			3.5 mA	240Vac/50Hz
Surge Current		35 A		115V, cold start
		70 A		230V, cold start

◎ Output Specifications:

Parameter	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-1.5%		+1.5%	All models
Line Regulation	-0.5%		+0.5%	All models
Load Regulation	-0.5%		+0.5%	All models
Setup Time			1300ms	115Vac/230Vac, full load
Rise Time			50ms	115Vac/230Vac, full load
Hold up Time	20ms			230Vac, full load
	16ms			115Vac, full load

◎ Efficiency:

Parameter	Min.	Typ.	Max.	Notes
Efficiency@115 V_{ac}				
A-600FGM-12	88%	89%		Ambient temp. 25±5°C, full load
A-600FGM-15	88%	89%		
A-600FGM-24	90%	91%		
A-600FGM-27	90%	91%		
A-600FGM-36	90%	91%		
A-600FGM-48	90%	91%		
Efficiency@230 V_{ac}				
A-600FGM-12	89%	90%		Ambient temp. 25±5°C, full load
A-600FGM-15	89%	90%		
A-600FGM-24	91%	92%		
A-600FGM-27	91%	92%		
A-600FGM-36	91%	92%		
A-600FGM-48	91%	92%		

◎ Protection:

Parameter	Min.	Typ.	Max.	Notes
Over Load	105%		150%	When OLP, the power supply is in constant current limited mode, which lasts for about 3S and then turns off. When the overload fault is removed, the power supply restarts to restore normal output.
Over Voltage	110%Vo		140%Vo	When OVP, the output voltage is turned off, recovers automatically after fault condition is removed.
Over Temperature (Ambient Temp.)		70°C		When OTP, the output voltage is turned off, recovers automatically after fault condition is removed.
Short Circuit	When SCP, the power supply is in constant current limited mode, which lasts for about 3S and then turns off. When the overload fault is removed, the power supply restarts to restore normal output.			

AC/DC 600W Switching Power Supply

A-600FGM Series



◎ 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	USA/Canada	Conducted Emission	FCC part 15(ANSI C63.4)	Class A
		Radiated Emission	FCC part 15(ANSI C63.4)	Class A
CE	Europe	Conducted Emission	EN 55032	Class A
		Radiated Emission	EN 55032	Class A
		Voltage Flicker	EN 61000-3-3	
CCC	China	Conducted Emission	GB/T 9254.1	Class A
		Radiated Emission	GB/T 9254.1	Class A

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 B
		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 B
		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	
Drop 100%,250 cycles				Criteria B	
Drop 30%,25 cycles				Criteria B	
Interrupt 100%, 250 cycles				Criteria C	

AC/DC 600W Switching Power Supply

A-600FGM Series



Note:

1. The power supply is considered as a component which will be installed into a final equipment. All the EMC tests are to be 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.

2. This power supply does not meet the harmonic current requirements specified in EN61000-3-2.

Please do not use this power supply under the following conditions:

- The terminal equipment is used in the European countries.
- The terminal equipment is connected to a public main power supply with a rated voltage of 220Vac or higher.
- The power supply:
 - Installed in terminal equipment with an average or continuous input power greater than 75W.
 - Is a part of lighting system.

Exception:

The power supply used in the following terminal equipment does not need to meet EN61000-3-2.

- Professional equipment with total rated input power greater than 1000W.
- Symmetrical controlled heating elements with a power rating of 200W or less.

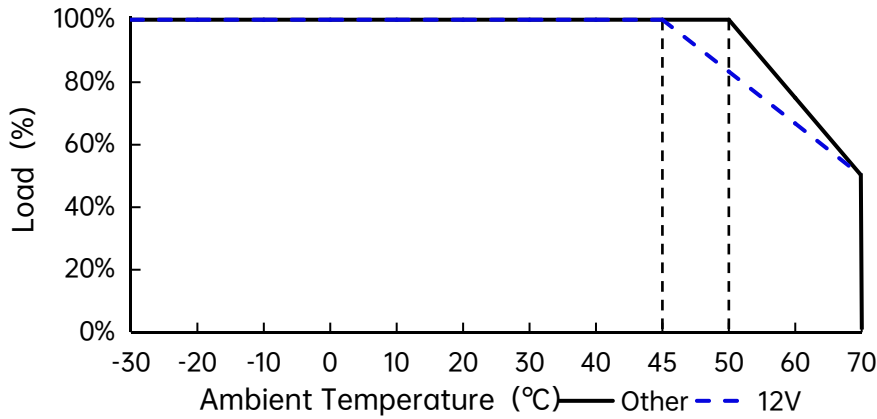
◎ General Specifications:

Parameter		Min.	Typ.	Max.	Notes
Dielectric Strength [4]	Input-Output	3000 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 hours			25°C, MIL-HDBK-217F
Dimension		225*124*41mm			L*W*H
Net Weight			900g		
Packing		12PCS/12Kg/Carton, Carton Dimension: 435(L)*250(W)*225(H)mm			

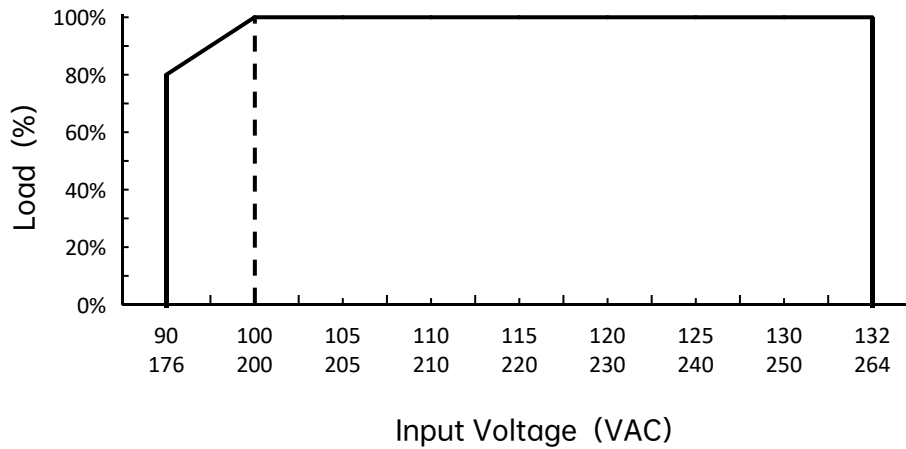
Note: [4] The minimum withstand voltage is 3000Vac, if a higher test standard is needed, please contact our sales representative or FAE.

◎ Performance Curve:

Derating Curve



Static Characteristics



Note:

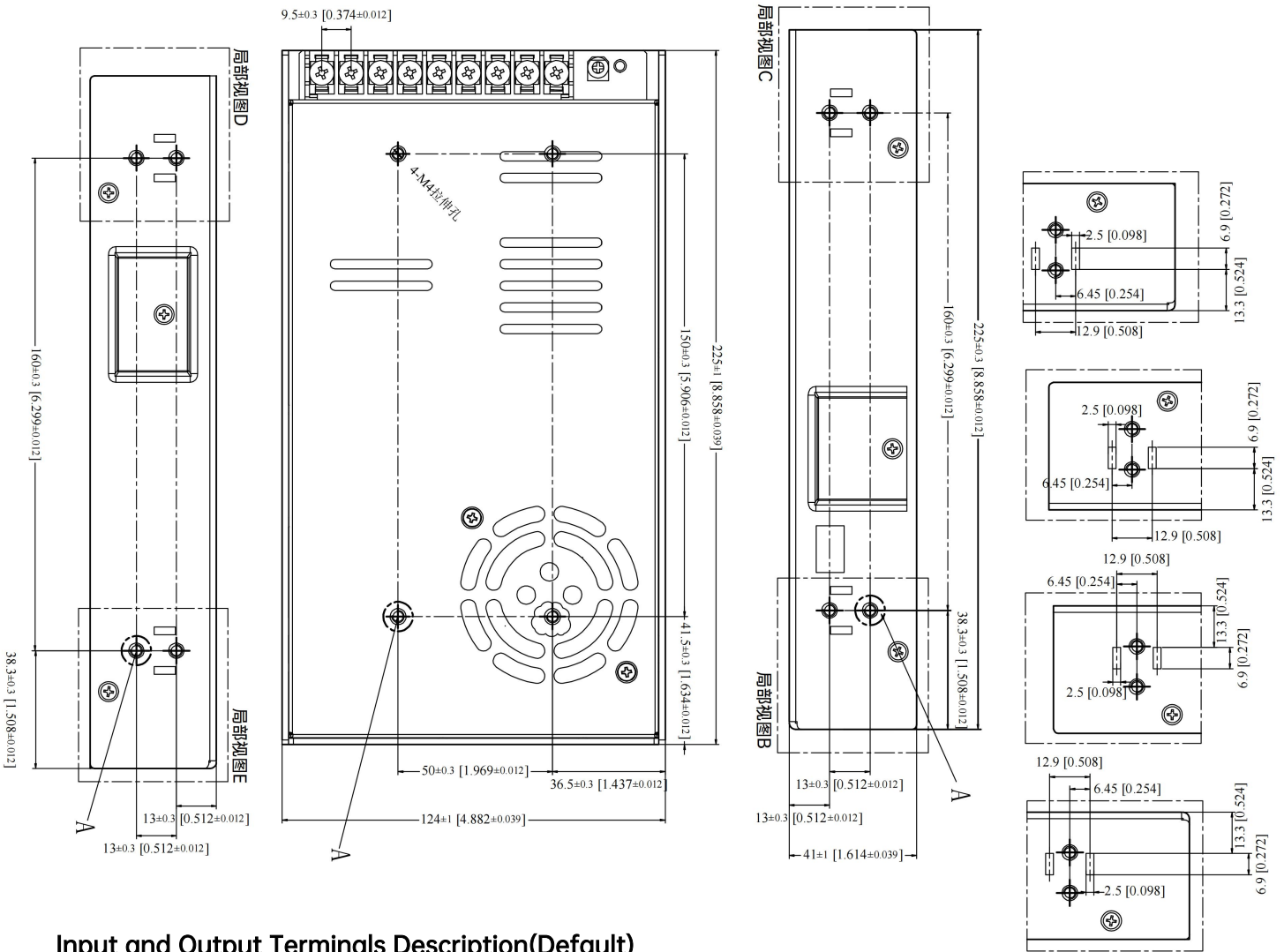
1. If more detailed test data during application is needed, please contact our technical team to obtain application notes of related products.
2. This product is suitable for use in natural air convection environment, if used in a closed environment, please consult our technical support personnel.

AC/DC 600W Switching Power Supply

A-600FGM Series



◎ Mechanical Specification:



Input and Output Terminals Description(Default)

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

12-M4 mounting hole

Screw: M4
Torque(max): 8Kgf.cn(0.8N.m)
Penetration Depth L (max): 4mm

Note:
Unit: mm[inch],
General tolerances: ±0.5[±0.020]