# Industrial Power Supply

A-200FGE Series

## Product Features

- AC input range selectable by switch
- High efficiency, long life and high reliability
- Output protections: SCP/OVP/OLP
- Operating temperature: -30℃~+70℃
- LED indicator for power on
- 100% full load burn-in test
- Low profile, 30mm
- Cooling by free air convection
- 3 years warranty

E255042 RoHS

## Product Description

A-200FGE-X series is a 200W single-output industrial power supply. With AC/DC input voltage selectable by switch and output voltages of 12V/15V/24V/36V/48V, it can adapt to diverse load requirements and meet the needs of most industrial applications. Furthermore, the product meets international EMC and safety standards, including IEC/EN/UL62368 and GB4943. High conversion efficiency, a compact housing design, excellent heat dissipation, and comprehensive protection ensure the high reliability and stability.

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## Applications

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

## Model Encoding

A-200 FGE-X

- Output Voltage(12V/15V/24V/36V/48V)
- Series name
- Output power
- Single channel output

## ◎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(uF) |
|---|---|---|---|---|---|---|---|
| A-200FGE-12 | 200.4 | 12 | 10.8-13.2 | 0-16.7 | 150 | 85% | 4000 |
| A-200FGE-15 | 201 | 15 | 13.5-16.5 | 0-13.3 | 150 | 85% | 3300 |
| A-200FGE-24 | 199.2 | 24 | 21.6-26.4 | 0-8.3 | 250 | 86.5% | 1500 |
| A-200FGE-36 | 198 | 36 | 32.4-39.6 | 0-5.5 | 250 | 88% | 1500 |
| A-200FGE-48 | 196.8 | 48 | 43.2-52.8 | 0-4.1 | 250 | 88% | 470 |

**Note**: **[1]** All parameters not specially mentioned are measured at rated input voltage, full load and 25℃ 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.

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## ◎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 | |
| Max. Input Current | | | 4.2 A | 115Vac, full load |
| | | | 2.1 A | 230Vac, full load |
| Leakage Current | | | 3.5 mA | 240Vac/50Hz |
| Inrush Current | | 35 A | | 115Vac, cold start |
| | | 70 A | | 230Vac, cold start |

## ◎Output Specifications:

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| Output Voltage Tolerance | -1% | | +1% | All models |
| Line Regulation | -0.5% | | +0.5% | All models |
| Load Regulation | -1% | | +1% | All models |
| Setup Time | | | 2500ms | 115Vac/230Vac, full load |
| Rise Time | | | 140ms | 115Vac/230Vac, full load |
| Hold up Time | 20ms | | | 230Vac, full load |
| | 16ms | | | 115Vac, full load |

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## ◎Efficiency:

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| **Efficiency@115 $V_{ac}$** | | | | |
| A-200FGE-12 | 83% | 84% | | Ambient temp. 25±5°C, full load |
| A-200FGE-15 | 83% | 84% | | |
| A-200FGE-24 | 84.5% | 85.5% | | |
| A-200FGE-36 | 86% | 87% | | |
| A-200FGE-48 | 86% | 87% | | |
| **Efficiency@230 $V_{ac}$** | | | | |
| A-200FGE-12 | 84% | 85% | | Ambient temp. 25±5°C, full load |
| A-200FGE-15 | 84% | 85% | | |
| A-200FGE-24 | 85.5% | 86.5% | | |
| A-200FGE-36 | 87% | 88% | | |
| A-200FGE-48 | 87% | 88% | | |

## ◎Protection:

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| Over Load | 110% | | 150% | Hiccup mode, auto recovery after fault condition is removed. |
| Over Voltage | 110%Vo | | 140%Vo | Constant voltage, auto recovery after fault condition is removed. |
| Short Circuit | Hiccup mode, auto recovery after fault condition is removed. | | | |

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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 | USA/ 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 |
| | | Voltage Flicker | EN 61000-3-3 | |
| CCC | China | Conducted Emission | GB/T 9254.1 | Class B |
| | | Radiated Emission | GB/T 9254.1 | Class B |

| 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 B |
| | | Voltage Dips, Drops and Interruptions Immunity | EN 61000-4-11 | Drop 100%, 0.5 cycle | Criteria B |
| | | | | Drop 20%,250 cycles | Criteria B |
| | | | | Drop 30%,25 cycles | Criteria B |
| | | | | Interrupt 100%, 250 cycles | Criteria C |

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**Note:**
1.The power supply is considered as a component which will be installed into a final equipment. All the EMC tests are 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:
a) The terminal equipment is used in the European countries.
b) The terminal equipment is connected to a public main power supply with a rated voltage of 220Vac or higher.
c) 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.
a) Professional equipment with total rated input power greater than 1000W.
b) 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 $V_{ac}$ | | | Test time 1 minute leakage current < 7mA |
| | Input-PE | 1800 $V_{ac}$ | | | |
| | Output-PE | 500 $V_{ac}$ | | | |
| Insulation Resistance | Input-Output | 100MΩ | | | Test Voltage: 500$V_{dc}$ |
| | Input-PE | 100MΩ | | | |
| | Output-PE | 100MΩ | | | |
| Working Temp. | | -30℃ | | +70℃ | Refer to "Derating Curve" |
| Working Humidity | | 20%RH | | 95%RH | Non-condensing |
| Storage Temp. | | -40℃ | | +85℃ | |
| Storage Humidity | | 10%RH | | 95%RH | Non-condensing |
| Temp. Coefficient | | -0.03%/℃ | | 0.03%/℃ | 0~50℃ |
| Mean Time Between Failure (MTBF) | | 100000 hours | | | 25℃, MIL-HDBK-217F |
| Dimension | | 215*115*30mm | | | L*W*H |
| Net Weight | | | 300g | | |
| Packing | | 20PCS/14Kg/CTN, Carton Dimension: 375(L)*235(W)*260(H)mm | | | |

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

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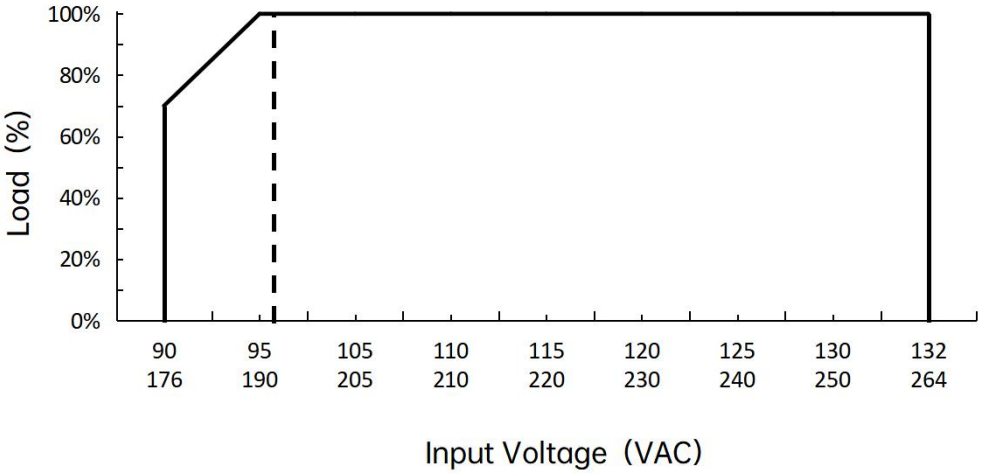
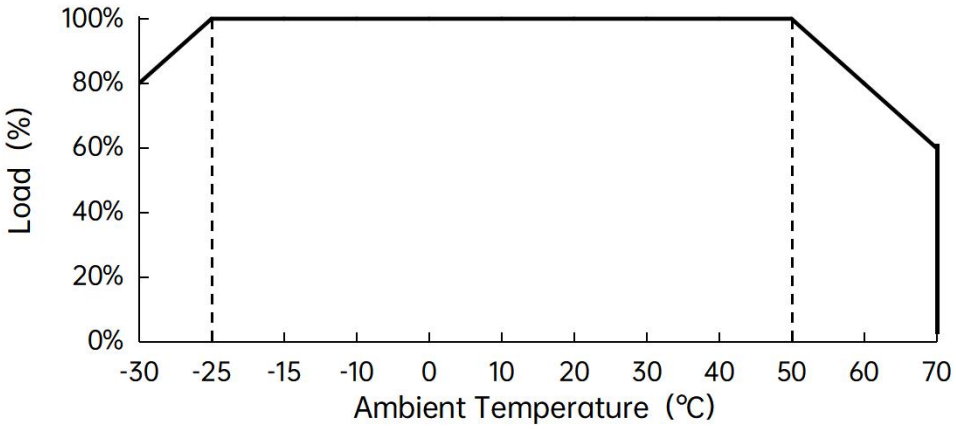
## ◎Derating Curve:

### Input voltage VS Output power




### Ambient temperature VS Output power




**Note:**
1. If you need to know more detailed test data, please contact our technical support.
2. This product is suitable for use in natural air convection environments. If used in a closed environment, please contact our technical support.

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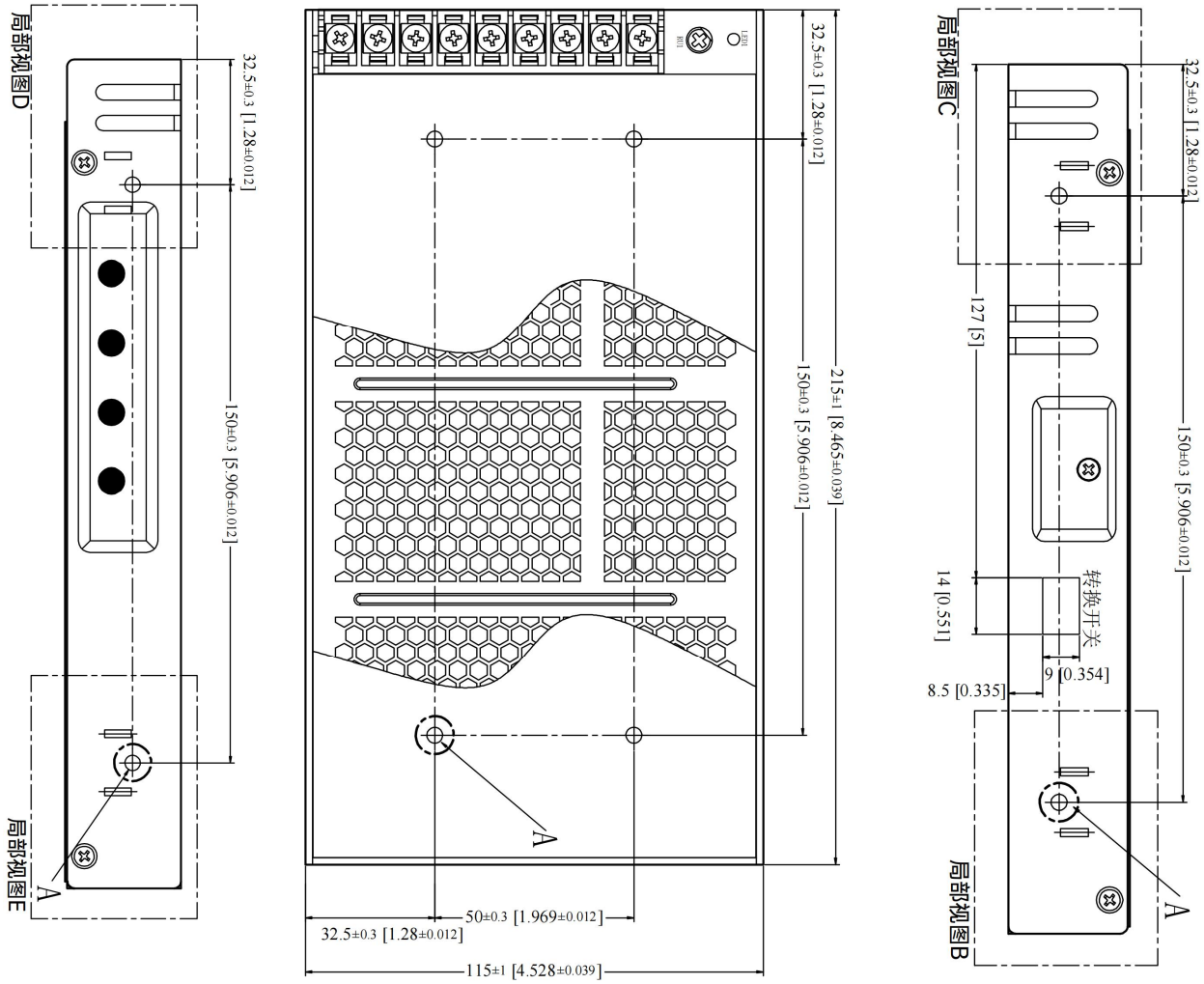
## ◎ Mechanical Drawing:




### Input and Output Terminals Description(Default)

| Pin | Function | Screw spec. & Torque(max) |
|---|---|---|
| L | AC/L | Screw: M4*7<br>Torque: 12Kgf.cn(1.2N.m) |
| N | AC/N | |
| ⏚ | EARTH | |
| V- | DC output - | Screw: M4*7<br>Torque: 12Kgf.cn(1.2N.m) |
| V- | DC output - | |
| V- | DC output - | |
| V+ | DC output + | |
| V+ | DC output + | |
| V+ | DC output + | |

Note:
8-M4 mounting holes
Mounting Instruction:
Screw: M4
Installation torque: 8Kgf.cn(0.8N.m)
Penetration Depth L (max): 3mm
Unit: mm[inch];
The unmarked tolerance is±0.5[±0.020]

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