# FF

7.5V,0~5A,7.5W~37.5W
FLOATING FILAMENT
POWER SUPPLY

wisman®
High voltage power supply
威思曼高压电源

IOS9001:2015



CUSTOM APPLICATION

- *5kV, 10kV,15kV,20kV, 30kV ISOLATION*
- *REMOTE ADJUST*
- *LOW RIPPLE*
- *HIGH STABILITY, (TEMP -CO <200PPM/℃)*
- *CURRENT MONITOR*
- *VOLTAGE MONITOR*
- *ARC & SHORT CIRCUIT PROTECTED*
- *OEM CUSTOMIZATION AVAILABLE*

## INTRODUCTION

FF series are isolated input/output,High Stability and low ripple HV modules. FF series are isolated by many kV from Ground . The filaments can be floated on voltages up to ±2.5 kV (FFxx2.5), ±10 kV (FFxx010),±20 kV (Ffxx020),±30 kV (FFxx030). These units Output a 7.5Vdc and output current from 0 to 5A is controlled.

## TYPICAL APPLICATIONS

Ion gun,Electron gun,X-ray filaments,travelling-wave tube filaments, float filaments,Klystron,Magnetron, Medical, chemical Applications, Laboratory Applications, Industrial Applications.

## FF SELECTION TABLE

| MODEL | Voltage(V) | Current | Imax(A) | P(W) | Isolated | Ripple | MODEL | Voltage(V) | Current | Imax(A) | P(W) | Isolated | Ripple |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FF7.5*37.5F5 | 7.5 | 0 ~ 5A | 5 | 37.5 | X=±5kV | <200mVp-p | FF7.5*30F5 | 7.5 | 0 ~4A | 4 | 30 | X=±5kV | <200mVp-p |
| FF7.5*37.5F10 | 7.5 | 0 ~ 5A | 5 | 37.5 | X=±10kV | <200mVp-p | FF7.5*30F10 | 7.5 | 0 ~ 4A | 4 | 30 | X=±10kV | <200mVp-p |
| FF7.5*37.5F15 | 7.5 | 0 ~ 5A | 5 | 37.5 | X=±15kV | <200mVp-p | FF7.5*30F15 | 7.5 | 0 ~4A | 4 | 30 | X=±15kV | <200mVp-p |
| FF7.5*37.5F30 | 7.5 | 0 ~ 5A | 5 | 37.5 | X=±20kV | <200mVp-p | FF7.5*30F20 | 7.5 | 0 ~ 4A | 4 | 30 | X=±20kV | <200mVp-p |
| FF7.5*37.5F30 | 7.5 | 0 ~ 5A | 5 | 37.5 | X=±30kV | <200mVp-p | FF7.5*30F30 | 7.5 | 0 ~ 4A | 4 | 30 | X=±30kV | <200mVp-p |
| FF7.5*22.5F5 | 7.5 | 0 ~ 3A | 3 | 22.5 | X=±5kV | <200mVp-p | FF7.5*15F5 | 7.5 | 0 ~ 2A | 2 | 15 | X=±5kV | <200mVp-p |
| FF7.5*22.5F10 | 7.5 | 0 ~ 3A | 3 | 22.5 | X=±10kV | <200mVp-p | FF7.5*15F10 | 7.5 | 0 ~ 2A | 2 | 15 | X=±10kV | <200mVp-p |
| FF7.5*22.5F15 | 7.5 | 0 ~ 3A | 3 | 22.5 | X=±15kV | <200mVp-p | FF7.5*15F15 | 7.5 | 0 ~ 2A | 2 | 15 | X=±15kV | <200mVp-p |
| FF7.5*22.5F20 | 7.5 | 0 ~ 3A | 3 | 22.5 | X=±20kV | <200mVp-p | FF7.5*15F20 | 7.5 | 0 ~ 2A | 2 | 15 | X=±20kV | <200mVp-p |
| FF7.5*22.5F30 | 7.5 | 0 ~ 3A | 3 | 22.5 | X=±30kV | <200mVp-p | FF7.5*15F30 | 7.5 | 0 ~ 2A | 2 | 15 | X=±30kV | <200mVp-p |
| FF7.5*11.25F5 | 7.5 | 0 ~ 1.5A | 1.5 | 11.25 | X=±5kV | <200mVp-p | FF7.5*7.5F5 | 7.5 | 0 ~ 1A | 1 | 7.5 | X=±5kV | <200mVp-p |
| FF7.5*11.25F10 | 7.5 | 0 ~1.5A | 1.5 | 11.25 | X=±10kV | <200mVp-p | FF7.5*7.5F10 | 7.5 | 0 ~ 1A | 1 | 7.5 | X=±10kV | <200mVp-p |
| FF7.5*11.25F15 | 7.5 | 0 ~ 1.5A | 1.5 | 11.25 | X=±15kV | <200mVp-p | FF7.5*7.5F15 | 7.5 | 0 ~ 1A | 1 | 7.5 | X=±15kV | <200mVp-p |
| FF7.5*11.25F20 | 7.5 | 0 ~ 1.5A | 1.5 | 11.25 | X=±20kV | <200mVp-p | FF7.5*7.5F20 | 7.5 | 0 ~ 1A | 1 | 7.5 | X=±20kV | <200mVp-p |
| FF7.5*11.25F30 | 7.5 | 0 ~ 1.5A | 1.5 | 11.25 | X=±30kV | <200mVp-p | FF7.5*7.5F30 | 7.5 | 0 ~ 1A | 1 | 7.5 | X=±30kV | <200mVp-p |

## FF SELECTION EXAMPLE

| FF | 7.5 | * | 37.5 | F30 | VIP | 10 | VIM | 10 | LS | / | M1 | Vref | LX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Series Number | Maximum Output Voltage(V) | Output polarity<br>P:Positive Polarity<br>N:Negative Polarity | Maximum Output Power(W) | OPTION<br>Maximum Float voltage 30kV | OPTION<br>VP:Voltage Programming<br>IP: current programming<br>VIP:Voltage and current programming | OPTION<br>10:0~+10Vdc=0to maximum output<br>5:0~+5Vdc=0to maximum output | OPTION<br>Vm: Voltage Monitor<br>IM:current monitor<br>VIM:Voltage and current monitor | OPTION<br>10:0~+10Vdc =0 to maximum output<br>5:0~+5Vdc= 0 to maximum output | OPTION<br>Low start GND=ON | | OPTION<br>PIN1information:<br>M1:simulation<br>M2: RS485<br>M3:RS232 | OPTION<br>Vref: Reference<br>FAS: Fault Alarm<br>SYN: synchronization | OPTION<br>L:Unshield cable<br>LC:Shield cable<br>X=Wire length |



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## FF SPECIFICATIONS

| PARAMETER | DESCRIBE | | |
|---|---|---|---|
| Input Voltag/Currente | +24V dc±10%,maximum inputcurrent 3A. | | |
| Output Voltage | 7.5Vdc.maximum output power 37.5W (option AC filament) | | |
| Stability | 0.1% per hour after 1 hour warm up. | | |
| Temperature Coefficient | <0.1%/℃ | | |
| Current Programming | 0~+10Vdc for 0 to 100% ±3%,(Zin = 10MΩ) | | |
| Voltage Programming | 0~+10Vdc for 0 to 100% ±3%,(Zin = 10MΩ) | | |
| Current Monitor | 0~+10Vdc for 0 to 100% ±3%,(Zout = 1kΩ) | | |
| Voltage Monitor | 0~+10Vdc for 0 to 100% ±3%,(Zout = 1kΩ) | | |
| Protection (all outputs) | Protected against intermittent arcing and continued short circuit to ground | | |
| line Regulation | Less than 1% for 0.5Vdc change in +24Vdc. | | |
| Load Regulation | Less than 1% for 10% change in filament resistance. | | |
| Operating Temperature | +10℃~+50 ℃. | | |
| Storage Temperature | -35 ℃~+85 ℃. | | |
| Operating Altitude | Up to 2,000m | | |
| Storage Altitude | Up to 18,000m | | |
| Humidity | <31 ℃,non-condensing 80% maximum, >30 ℃,non-condensing Decrease linearly to 50% at 40℃. | | |
| Dimensions | 8.07" D×3.94" W×1.69" H（205mm×100mm×43mm） | Weight | 1.5kg |

## M1 SIMULATE PIN INFORMATION

| PIN | PARAMETER | DESCRIBE |
|---|---|---|
| 1 | +10Vdc | +10Vdc (OPTION M1:Error Alarm M2:SYNC) |
| 2 | +24Vdc Input | +24Vdc Input,<3A |
| 3 | Voltage Monitor | 0~+10Vdc=0 to 100%±3%,Zout = 1kΩ |
| 4 | Voltage Program | 0~+10Vdc=0 to 100%±3%,Zin= 10MΩ |
| 5 | Current Program | 0~+10Vdc=0 to 100%±3%,Zin =10MΩ |
| 6 | LS | ON=GND,OFF=OPEN |
| 7 | Current Monitor | 0~+10Vdc=0 to100%±3%,Zout = 1kΩ |
| 8 | Power Ground | Power Ground |

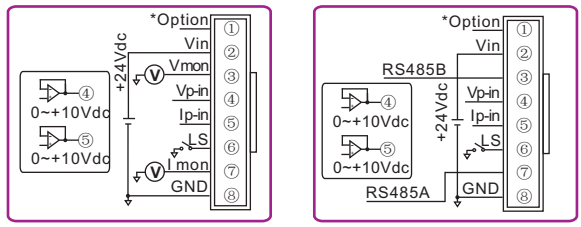
## M2/M3 DIGITAL PIN INFORMATION

| PIN | PARAMETER | DESCRIBE |
|---|---|---|
| 1 | +10Vdc | +10Vdc(OPTION 1:Error Alarm N2:SYNC) |
| 2 | +24Vdc Input | +24Vdc Input,<3A |
| 3 | RS485B/RXD | R-485B/RXD |
| 4 | Voltage Program | 0 ~+10Vdc=0 to 100%±3%,Zin= 10MΩ |
| 5 | Current Program | 0 ~+10Vdc=0 to 100%±3%,Zin=10MΩ |
| 6 | LS | ON=GND,OFF=OPEN |
| 7 | RS485B/RXD | RS485B/RXD |
| 8 | Power Ground | Power Ground |

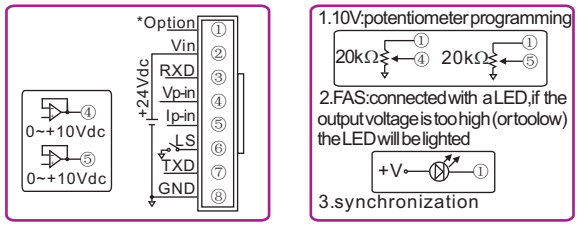
## OUTPUT CONNECTION INFORMATION

| PIN | PARAMETER | DESCRIBE |
|---|---|---|
| 1 | FG | Floating Ground |
| 2 | OUT | Filament Output |

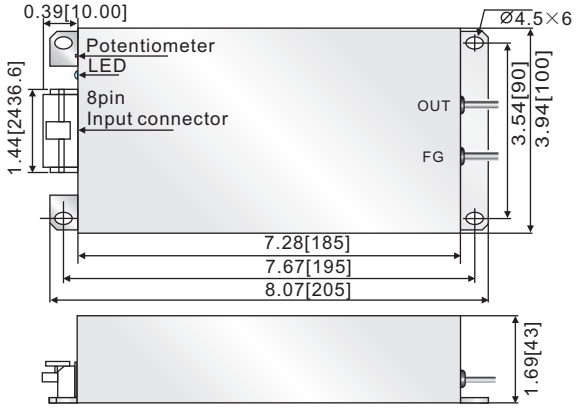
**FF CONNECTION(simulation)** **FF CONNECTION (Rs485)** D




**FF CONNECTION(RS232)** D ***Pin1 option**




## DIMENSIONS： in. [mm]




CUSTOM APPLICATION

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