



- 5kV, 10kV, 15kV, 20kV, 30kV ISOLATION
- REMOTE ADJUST
- LOW RIPPLE
- HIGH STABILITY, (TEMP -CO <200PPM/°C)
- 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 P:Positive Polarity N:Negative Polarity	Maximum Output Power(W)	OPTION Maximum Float voltage 30kV	OPTION VP:Voltage Programming IP: current programming VIP: Voltage and current programming	OPTION 10:0~+10Vdc=0to maximum output 5:0~+5Vdc=0to maximum output	OPTION Vm: Voltage Monitor IM:current monitor VIM:Voltage and current monitor	OPTION 10:0~+10Vdc=0to maximum output 5:0~+5Vdc=0to maximum output	OPTION Low start GND=ON	OPTION PIN1information: M1:simulation M2:RS485 M3:RS232	OPTION Vref: Reference FAS: Fault Alarm SYN: synchronization	OPTION L:Unshield cable LC:Shield cable X=Wire length

CUSTOM APPLICATION



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%/°C
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°C~+50 °C.
Storage Temperature	-35 °C~+85 °C.
Operating Altitude	Up to 2,000m
Storage Altitude	Up to 18,000m
Humidity	<31 °C,non-condensing 80% maximum, >30 °C,non-condensing Decrease linearly to 50% at 40°C.
Dimensions	8.07" D×3.94" W×1.69" H (205mm×100mm×43mm)
Weight	1.5kg

CUSTOM APPLICATION

M1 SIMULATE PIN INFORMATION

PIN	PARAMETER	DESCRIBE
1	+10Vdc	+10Vdc (OPTIONM1:ErrorAlarm M2:SYNC)
2	+24Vdc Input	+24Vdc Input,<3A
3	Voltage Monitor	0~+10Vdc=0 to 100%±3%,Zout = 1kΩ
4	VoltageProgram	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 to 100%±3%,Zout = 1kΩ
8	Power Ground	Power Ground

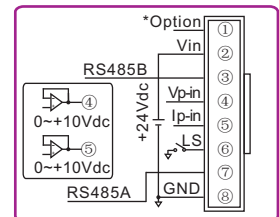
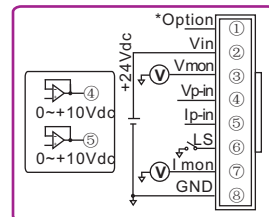
M2/M3 DIGITAL PIN INFORMATION

PIN	PARAMETER	DESCRIBE
1	+10Vdc	+10Vdc(OPTION 1:ErrorAlarm 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

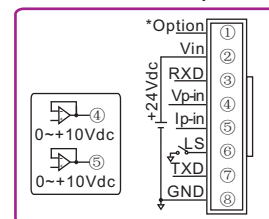
OUTPUT CONNECTION INFORMATION

PIN	PARAMETER	DESCRIBE
1	FG	Floating Ground
2	OUT	Filament Output

FFCONNECTION(simulation) FF CONNECTION (Rs485) D



FFCONNECTION(RS232) D



***Pin1 option**

- 1.10V:potentiometer programming
- 2.FAS:connected with aLED;if the output voltage is too high (ortoolow) theLED will be lighted
- 3.synchronization

DIMENSIONS : in. [mm]

