FIL SERIES

Precision Filament Supply

The FIL Series is a non-isolated precision filament supply. This line of regulated DC-DC converters addresses the needs of the high precision and high stability power supply user. Designed and built utilizing a state-of-the-art power-conversion topology, these units feature surface-mount technology and encapsulation techniques that provide high reliability and low cost. The FIL Series supply allows users to properly operate the filament to maximize performance and extend its life. Typical applications for this series include precision filaments for mass spectrometry, electron beams, and test equipment.

- High precision and high stability
- 15PPM temperature coefficient
- 0 to 5VDC
- 0 to 3 Amps of current
- Maximum Iout capability down to 0 Volts
- Programmable voltage and current controls
- Indefinite output short-circuit protection
- Buffered output current & voltage monitors
- Excellent linearity & accuracy of control
- Current mode and voltage mode indicator
- Synchronizable

PARAMETER	CONDITIONS	MODELS	UNITS
INPUT		ALL TYPES	
Operating Range	All Conditions	+24 ± 10	VDC
Current	Full Load Output	900mA Typical	mA
OUTPUT		ALL TYPES	
Voltage Range	Nominal Input	0 to 5	VDC
DC Current Range	Nominal Input	0 to 3	Amps
Voltage Range	Derated	0 to 5.7	VDC
DC Current Range	Derated	0 to 3.3	Amps
Voltage Monitor Scaling	Full Load	10	VDC
Current Monitor Scaling	Full Load	10	VDC
PROGRAMMING & CONTROLS		ALL TYPES	
Input Impedance	Nominal Input	+ Output Models 10MΩ to GND	MΩ
Adjust Resistance	Typical Potentiometer Values	10K to 100K (Pot across Vref. & Signal GND, Wiper to Adjust)	Ω
Adjust Voltage	Referenced to signal ground	0 to +10 VDC	VDC
Accuracy	In current control	±0.1%	Amps
Offset	Voltage control	0.04%	VDC
Offset	Current control	0.001%	Amps
Output Voltage	T=+25°C, Initial Value	+10.0V ± 0.05%	VDC
Enable/Disable		0 to +0.5 Disable, +2.4 to 10 Enable (Default = Enable)	VDC
ENVIRONMENTAL		ALL TYPES	
Operating	Full Load, Max Eout, Case Temp.	+10 to +45	°C
Coefficient	Over the Specified Temperature	≤ 15	PPM/°C
Thermal Shock	Mil-Std 810, Method 503-4, Proc. II	-40 to +65	°C
Storage	Non-Operating, Case Temp.	-55 to +85	°C
Altitude	Standard Package, All Conditions	Sea Level through Vacuum	-
Shock	Mil-Std-810, Method 516.5, Proc. IV	20	G's
Vibration	Mil-Std-810, Method 514.5, Fig.514.5C-3	10	G's

Specifications subject to change without notice.

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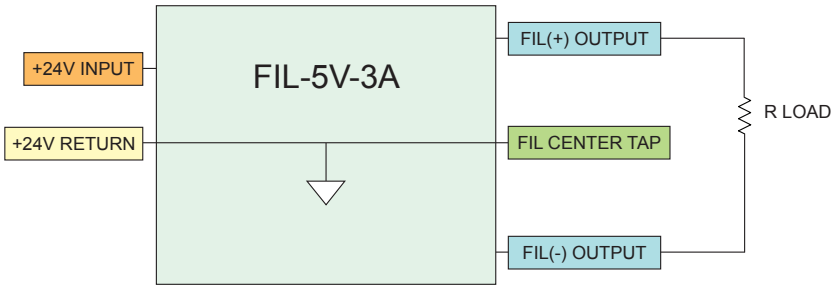
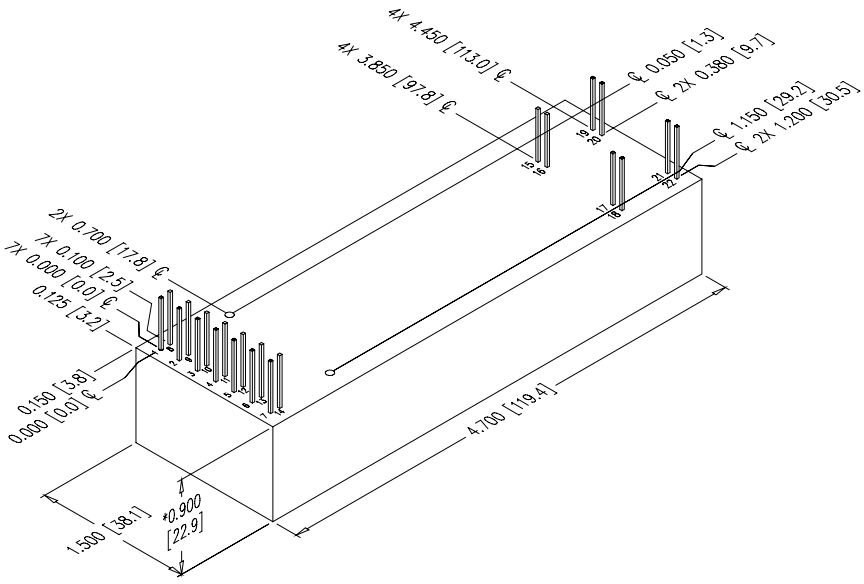
INPUT/OUTPUT WIRING DIAGRAM

The filament power supply load should be connected between the FIL(+) output and the FIL(-) output, load current should not flow through the center tap, which is common with the (+)24V return. The FIL(-) or FIL(+) outputs should not be grounded.





CONSTRUCTION

Epoxy-filled DAP box certified to ASTM-D-5948

SIZE

Volume:
6.35 in³ (104cc)
Weight:
6.75 oz (191g)

TOLERANCE

Overall ±0.050" (1.27)
Pin to Pin ±0.015" (0.38)
Mounting hole locations ±0.025" (0.64)

NOTES

-M equipped units are an additional 0.030" (0.76) in height. Contact UV Customer Service for drawings of models equipped with -E or -H options.

Downloadable drawings (complete with mounting & pin information) and 3D models are available online.

CONNECTIONS	
PIN	FUNCTION
1 & 8	Input-Power Ground
2 & 9	Positive Power Input
3	Iout Monitor
4	Enable/Disable
5	Signal Ground
6	Voltage Programming
7	+10.0V Reference Output
10	Sync In
11	Imode Indicator
12	Vmode Indicator
13	Current Programming
14, 17, & 18	Vout Monitor
15 & 16	Fil Output (-)
19 & 20	Fil Output (+)
21 & 22	Center Tap

All grounds joined internally.

RoHS COMPLIANT Non-RoHS compliant units are available. Please contact the factory for more information.

Manufactured in USA

ORDERING INFORMATION		
Type	0 to 5 VDC Output	FIL-5V
Current	Current Output (0 to 3A)	-3A
Case	'Eared' Chassis Mounting Plate	-E
Heat Sink	.400" High (sized to fit case)	-H
Shield	Six-sided Mu-Metal Shield	-M

Example: FIL-5V-3A-M

Model
Output Voltage
Output Current
Option (Mu-Metal)

Rev. E 10/14

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