



# SF120P, SFU120P, SFC120P Series

Date: 10/23/18

91.5 - 120 Watt AC - DC Power Supply, Open Frame or U-Channel  
UL, EN, IEC 60950-1 2<sup>nd</sup> Edition, RoHS 2 Compliant

Rev: 080118

Page: 1 of 6

The SF120P, SFU120P, SFC120P Series open frame switch mode power supply offers 91.5 - 120 Watts output power (convection cooled) in a 3" x 5" size, with UL/CUL, IEC, and EN 60950-1, 2<sup>nd</sup> Edition safety approval. It is offered as an open frame or U-chassis (cover available), with input configuration and single, dual and triple output options.

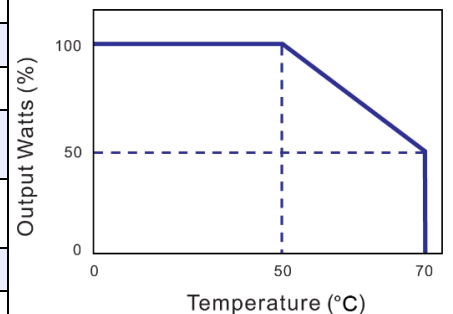


Input Voltage	90 to 264 Vac
Input Frequency	47 to 63 Hz
Input Current (Low Line)	1.75 A Typ. at 100 Vac
Input Current (High Line)	0.72 A Typ. at 240 Vac
Safety Ground Leakage Current	0.75 mA Max. at 240 Vac, Full Load
Output Voltage & Current	See Tables on Pages 2 - 4
Over-Voltage Protection	112 - 132%
Over-Current Protection	110 - 150%
Temperature Coefficient	± 0.04% / °C Max.
Transient Response	50% Load Change at 110 Vac Input: 4 ms Max.
Efficiency	Single Output: 70 - 82% Typ. Multi-Output: 70 - 80% Typ.
No Load Power Consumption	5-5.5 Watts Typ.
Line Regulation	± 1% Max. at Full Load
Load Regulation	± 5% Max. at 230 Vac
Start-Up Time	3 s Max.
Hold-Up Time	16 ms Min.
Withstanding Voltage	Primary to Secondary: 4,242 Vdc Primary to Ground: 2,121 Vdc
Inrush Current	37 A Max. @ 100 Vac, 25°C Cold Start 88 A Max. @ 240 Vac, 25°C Cold Start
Mean Time Between Failure	100,000 Hrs. Min. (MIL-HDBK-217F, Full Load at 25°C)
Operating Temperature	See Derating Curve
Storage Temperature	-40 to 85°C
Weight	SF120P: 350 - 428 g Typ. SFU120P: 476 - 582 g Typ.
Industry Compliance	Directive 2011/65/EU (RoHS 2)
EMI Requirements	Meets Conduction and Radiation Limits of: FCC Part 15 Class B, CISPR-32 Class B, EN 55032 Class B
Safety Compliance	UR/cUR (UL 60950-1:2nd Ed.), TUV (EN 60950-1:2005/A2), CE, CB (IEC 60950-1:2005/A2), CCC

## Features:

- Universal Input 100 - 240 Vac
- Convection Cooled
- Internal EMI Filter
- Over-Voltage, Over-Current, and Short Protection
- 100% Burn-In
- Class I System
- RoHS 2 Compliant

## Derating Curve



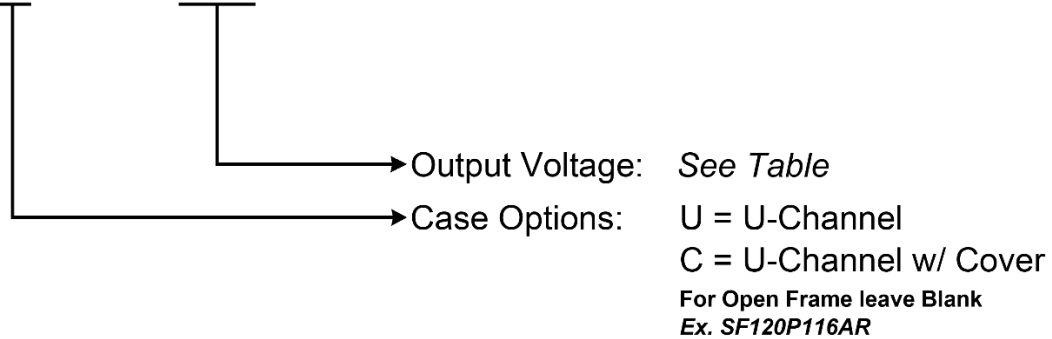
Derate Linearly from 100% at 50°C to 50% at 70°C



## Output Voltage and Current Table: Single Output

Model Number	Output Voltage	Output Current <i>Limited to Output Power</i> <sup>3</sup>	Ripple & Noise (mV P-P) <sup>4</sup>	Output Power
SF_120P1__AR	5 – 6 Vdc	18.33 – 22.00 A	60	110 W
SF_120P1__AR <sup>1</sup>	9 – 11 Vdc	10.90 – 13.33 A	100	120 W
SF_120P1__AR	12 – 13 Vdc	9.23 – 10.00 A	130	120 W
SF_120P1__AR	14 – 16 Vdc	7.50 – 8.57 A	150	120 W
SF120P1__AR <sup>2</sup>	17 – 20 Vdc	6.00 – 7.06 A	200	120 W
SF_120P1__AR	21 – 27 Vdc	4.44 – 5.71 A	200	120 W
SF_120P1__AR	28 – 33 Vdc	3.63 – 4.29 A	250	120 W
SF_120P1__AR	34 – 40 Vdc	3.00 – 3.53 A	250	120 W
SF_120P1__AR	41 – 50 Vdc	2.40 – 2.93 A	300	120 W

SF□120P1□□AR



### Notes:

1. U-Channel or U-Channel w/cover Only
2. PCB Configuration Only
3. To find Output Current:  
Output Current = Max Power ÷ Output Voltage  
*Example: Output Current for SF120P124R (24 Vdc Output, 3-Pin input, PCB)*  
Output Current = 120 W ÷ 24 V  
Output Current = 5 A
4. Measured w/ 0.1 µF ceramic capacitor & 47 µF electrolytic capacitor in parallel and a 20 MHz Bandwidth-limited scope.

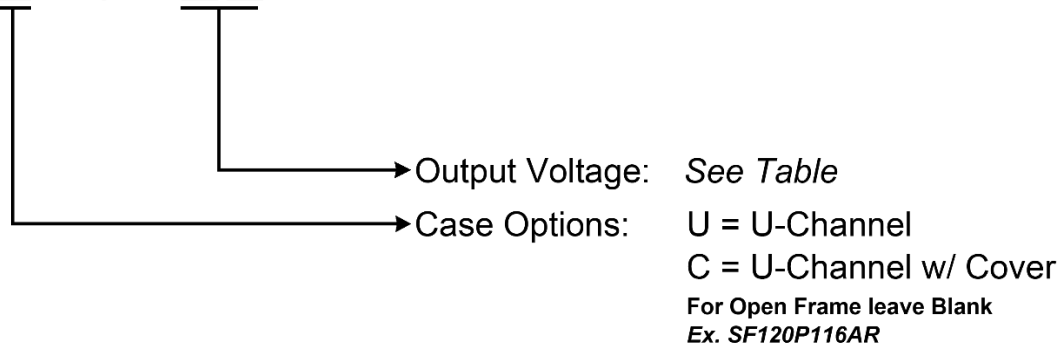




## Output Voltage and Current Table: *Dual Output*

Model Number	Output Voltage	Output Current <i>Limited to Output Power<sup>2</sup></i>	Ripple & Noise (mV P-P) <sup>3</sup>	Output Power
SF120P260AR <sup>1</sup>	V1: 3.3 Vdc	1.50 – 15.00 A	50	120 Watts
	V2: 12 Vdc	0.60 – 6.00 A	120	
SF_120P250AR	V1: 5 Vdc	1.50 – 15.00 A	50	120 Watts
	V2: 12 Vdc	0.80 – 6.00 A	120	
SF_120P254AR	V1: 5 Vdc	1.50 – 15.00 A	50	120 Watts
	V2: 24 Vdc	0.40 – 3.50 A	240	
SF120P258AR <sup>1</sup>	V1: 28 Vdc	0.40 – 3.92 A	280	120 Watts
	V2: 5 Vdc	0.00 – 2.00 A	50	

SF□120P2□□AR



**Notes:**

1. PCB Configuration Only
2. Total (combined) Output Voltage/Current cannot exceed Output Power.  
(Voltage #1 x Current #1) + (Voltage #2 x Current #2) ≤ Max. Power (Watts)
3. Measured w/ 0.1 μF ceramic capacitor & 47 μF electrolytic capacitor in parallel and a 20 MHz Bandwidth-limited scope.

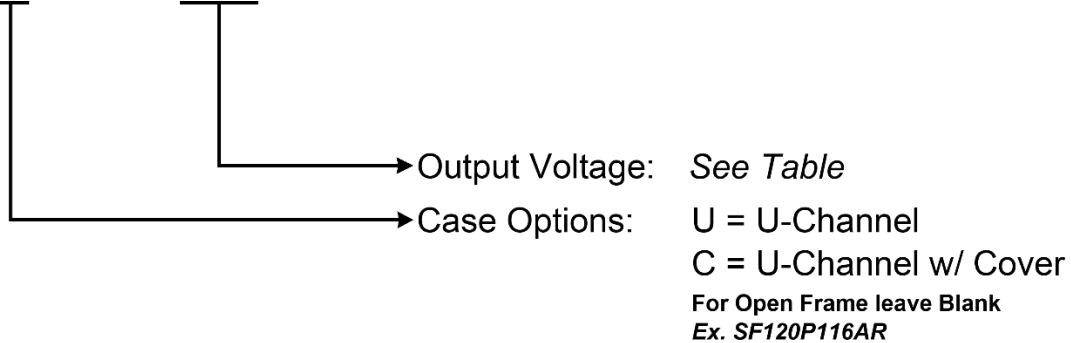




## Output Voltage and Current Table: Triple Output

Model Number	Output Voltage	Output Current <i>Limited to Output Power<sup>2</sup></i>	Ripple & Noise (mV P-P) <sup>3</sup>	Output Power
SF_120P370AR	V1: 5 Vdc	1.5 – 15.0 A	50	120 Watts
	V2: 12 Vdc	0.8 – 6.0 A	120	
	V3: -12 Vdc	0.0 – 0.8 A	120	
SF120P374AR <sup>1</sup>	V1: 5 Vdc	1.5 – 15.0 A	50	120 Watts
	V2: 15 Vdc	1.0 – 6.0 A	150	
	V3: -15 Vdc	0.0 – 0.8 A	150	
SF120P388AR <sup>1</sup>	V1: 5 Vdc	1.5 – 15.0 A	50	120 Watts
	V2: 24 Vdc	0.5 – 3.5 A	240	
	V3: 12 Vdc	0.0 – 0.8 A	120	
SF120P390AR <sup>1</sup>	V1: 5 Vdc	1.5 – 15.0 A	50	120 Watts
	V2: 10 Vdc	0.6 – 6.0 A	100	
	V3: -10 Vdc	0.0 – 1.0 A	100	
SF120P394AR <sup>1</sup>	V1: 3.3 Vdc	1.5 – 15.0 A	66	91.5 Watts
	V2: 5 Vdc	0.8 – 6.0 A	50	
	V3: 12 Vdc	0.0 – 1.0 A	120	

SF□120P3□□AR



**Notes:**

1. PCB Configuration Only
2. Total (combined) Output Voltage/Current cannot exceed Output Power.  
(Voltage #1 x Current #1) + (Voltage #2 x Current #2) + (Voltage #3 x Current #3) ≤ Max. Power (Watts)
3. Measured w/ 0.1 μF ceramic capacitor & 47 μF electrolytic capacitor in parallel and a 20 MHz Bandwidth-limited scope.

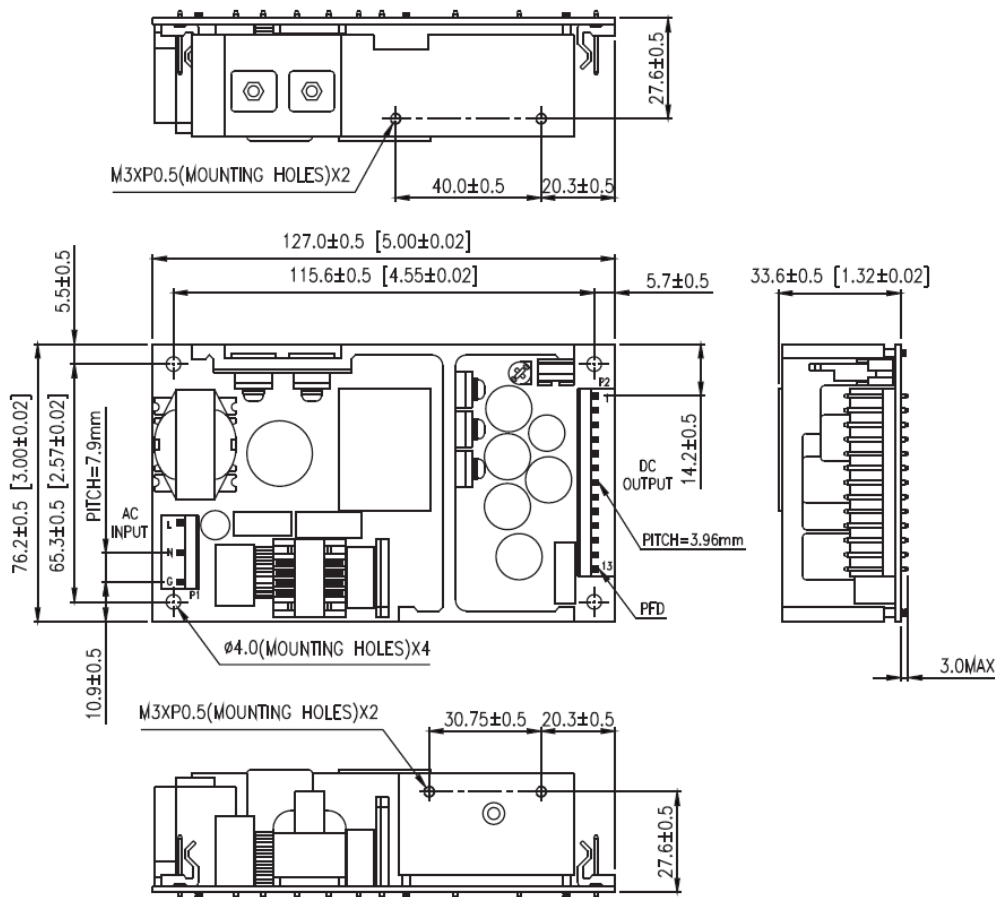




## Mechanical Specification (mm [in])

SF120P\_ \_ \_AR: PCB Style

Pin Connection 13-Pin Header													
Output Type	Pin												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Single Output	+V	+V	+V	+V	+V	+V	Rtn	Rtn	Rtn	Rtn	Rtn	Rtn	PFD
Dual Output	V2	V2	V1	V1	V1	V1	Com	Com	Com	N/C	Com	Com	PFD
Triple Output	V2	V2	V1	V1	V1	V1	Com	Com	Com	V3	Com	Com	PFD



- **Input Connector Mating:**
  - 3-Pin Header: Molex Housing 09-52-4054 and Molex 2478 Series Crimp Terminals

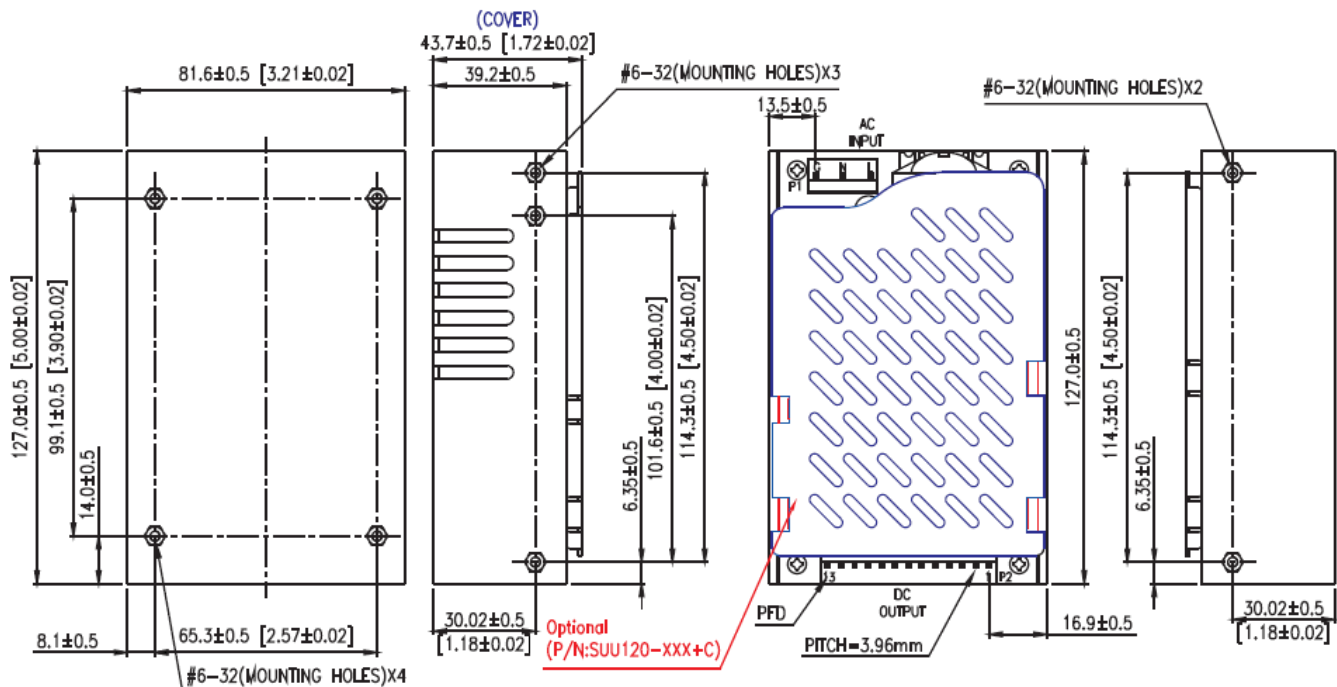
- **Output Connector Mating:**
  - 13-Pin Header: Molex Housing 09-52-4134 and Molex 2478 Series Crimp Terminals



## Mechanical Specification (mm [in]) Continued

SFU120P \_\_ \_AR: U-Channel Style      SFC120P \_\_ \_AR: U-Channel w/ Cover

Pin Connection 13-Pin Header													
Output Type	Pin												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Single Output	+V	+V	+V	+V	+V	+V	Rtn	Rtn	Rtn	Rtn	Rtn	Rtn	PFD
Dual Output	V2	V2	V1	V1	V1	V1	Com	Com	Com	N/C	Com	Com	PFD
Triple Output	V2	V2	V1	V1	V1	V1	Com	Com	Com	V3	Com	Com	PFD



**Input Connector Mating:**

- 3-Pin Header: Molex Housing 09-52-4054 and Molex 2478 Series Crimp Terminals

**Output Connector Mating:**

- 13-Pin Header: Molex Housing 09-52-4134 and Molex 2478 Series Crimp Terminals