



SF31P Series

20 - 30 Watt AC - DC Open Frame Power Supply
UL/EN/IEC 60950-1 2nd Edition, RoHS 2 Compliant

Date: 10/11/18

Rev: 080118

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The SF31P Series open frame switch mode power supply offers 20 Watts to 30 Watts output power (convection cooled), with an output voltage range of 5 Vdc – 27 Vdc. PCB size is 1.5" x 4", with 2-pin input and 4-pin output headers. Safety approvals include UL/CUL, EN, and IEC 60950-1, 2nd Edition.

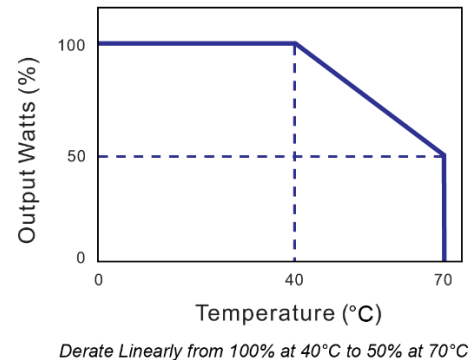


Input Voltage	90 to 264 Vac
Input Frequency	47 to 63 Hz
Input Current (Low Line)	0.6 A Typ. at 100 Vac
Input Current (High Line)	0.25 A Typ. at 240 Vac
Safety Ground Leakage Current	0.75 mA Max. at 240 Vac, Full Load
Output Voltage & Current	See Table on Page 2
Ripple & Noise (P-P)	See Table on Page 2
Over-Voltage Protection	112 - 132%
Over-Load Protection	110 - 150%
Temperature Coefficient	± 0.04% / °C Max.
Transient Response	50% Load Change at 110 Vac Input: 4 ms Max.
Efficiency	78 – 85% Typ.
No Load Power Consumption	0.3 Watts Typ.
Line Regulation	± 1% Max. at Full Load
Load Regulation	± 5% Max. at 230 Vac
Start-Up Time	2 s Max.
Hold-Up Time	12 ms Min.
Withstanding Voltage	Primary to Secondary: 4,242 Vdc Primary to Ground: 2,121 Vdc
Inrush Current	18 A Max @ 100 Vac, 25°C Cold Start 43 A Max @ 240 Vac, 25°C Cold Start
Mean Time Between Failure	100,000 Hrs. Min. (MIL-HDBK-217F, Full Load @ 25°C)
Weight	85 g, Typ.
Operating Temperature	See Derating Curve
Storage Temperature	-40 to 85 °C
Industry Compliance	Directive 2011/65/EU (RoHS 2)
EMI Requirements	Meets Conduction Limits of: FCC Part 15 Class B, CISPR-32 Class B, and EN 55032 Class B
Safety Compliance	UR/cUR (UL 60950-1:2nd Ed., CSA C22.2 No. 60950-1-07), CE, TUV (EN 60950-1:2006/A2:2013), CB (IEC 60950-1:2005 /A2:2013)

Features:

- Universal Input 100 - 240 Vac
- 1.5" x 4" Size
- Convection Cooled
- Class I System
- Over-Voltage, Over-Load, and Short Circuit Protection
- 100% Burn-In
- RoHS 2 Compliant

Derating Curve





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Output Voltage and Current Table

Model Number	Output Voltage	Output Current ¹ <i>Limited to output Power</i>	Ripple & Noise ² (Pk - Pk)	Output Power
SF31P1__R	5 – 6 Vdc	3.33 – 4.00 A	60 mV	20 W
SF31P1__R	11 – 13 Vdc	2.30 – 2.73 A	150 mV	30 W
SF31P1__R	16 – 21 Vdc	1.43 – 1.88 A	200 mV	30 W
SF31P1__R	22 – 27 Vdc	1.11 – 1.36 A	200 mV	30 W

¹ To find Output Current:

Output Current = Max Power ÷ Output Voltage

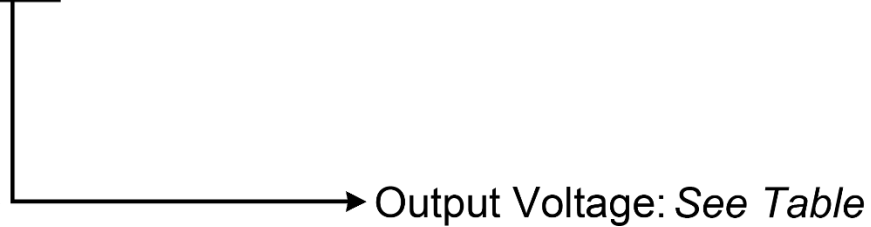
Example: Output Current for SF31P124R (24 Vdc Output)

Output Current = 30 W ÷ 24 V

Output Current = 1.25 A

² Measured with a 0.1 µF ceramic capacitor & 47 µF electrolytic capacitor in parallel and a 20 MHz bandwidth-limited scope

SF31P1□□R





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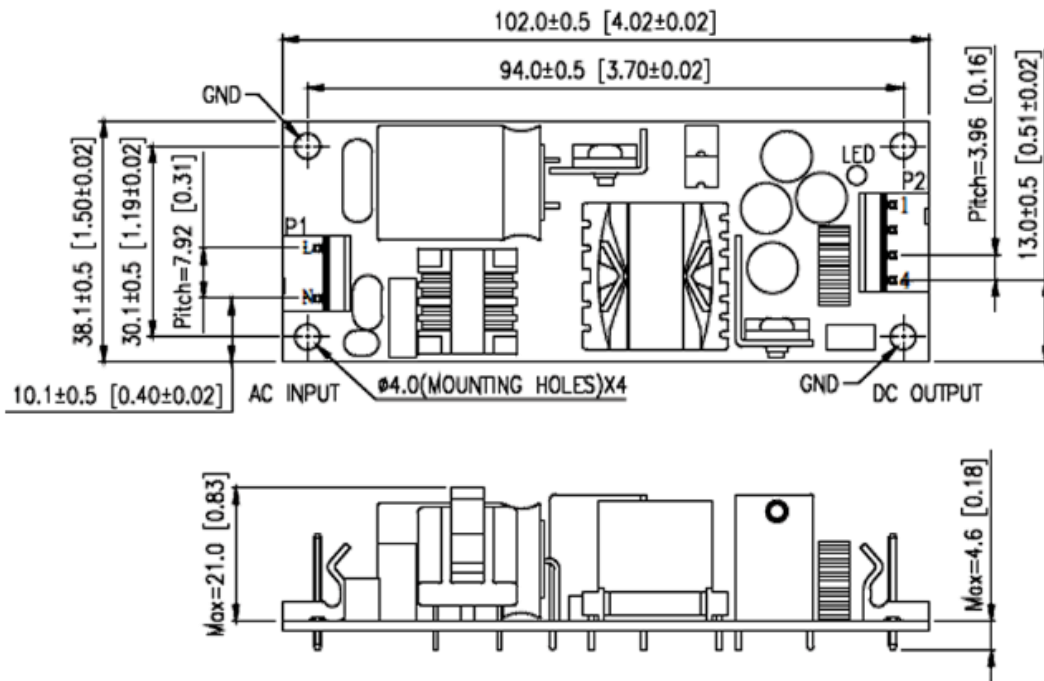
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Mechanical Specification (mm [in])



Pin Connection	
Output: 4-Pin Header	
Pin	Output
1 - 2	+V
3 - 4	Return

Input Connector Mating:

- o 2-Pin Header: Mates with Molex Housing 09-50-3031 and Molex 2478 Series Crimp Terminal

Output Connector Mating:

- o 4-Pin Header: Mates with Molex Housing 09-50-3041 and Molex 2478 Series Crimp Terminal