



POWERSTAX F501 Series DC-DC Converter

500W Single Output Full Brick

Outline Product Specification

FEATURES

- ❑ Exceptional efficiency of >91%
- ❑ Outstanding power density – 5.53w/cm³
- ❑ Standard “full brick” package
116.8 x 61 x 12.7mm (4.6 x 2.4 x 0.50“)
- ❑ Low input & output ripple currents
- ❑ Input transient voltage protection
- ❑ Thermal monitoring voltage to provide early warning of system fault
- ❑ Single connection for parallel operation to provide true N+1 redundancy capability
- ❑ No need for master/slave operation
- ❑ External synchronisation facility
- ❑ Hot plug in capability
- ❑ Remote sensing provided
- ❑ Remote shutdown
- ❑ Wide input voltage range
- ❑ Output current monitor voltage
- ❑ Thermal protection & Current limit protection
- ❑ STEP-UP version also available.
eg: 24Vi to 48Vo

This very high efficiency converter gives the Power system designer added versatility and space saving capability in a cost effective package.

The Powerstax F501 represents a major achievement in the development of high power, high-density DC converter modules, providing 500Watts of power in the industry standard “full brick” size case.

This gives exceptional power density (90w/in³ / 5.53w/cm³) and at greater than 91% efficiencies, with fixed frequency operation and low ripple the F501 is ideally suited for the telecoms and IT industries, while automated production and test ensure high reliability.

The comprehensive list of in-built protection functions such as over voltage protection, under-voltage protection and short circuit protection are complemented by unique features such as the thermal monitoring voltage to provide early warning of system fault.

2 Year Warranty





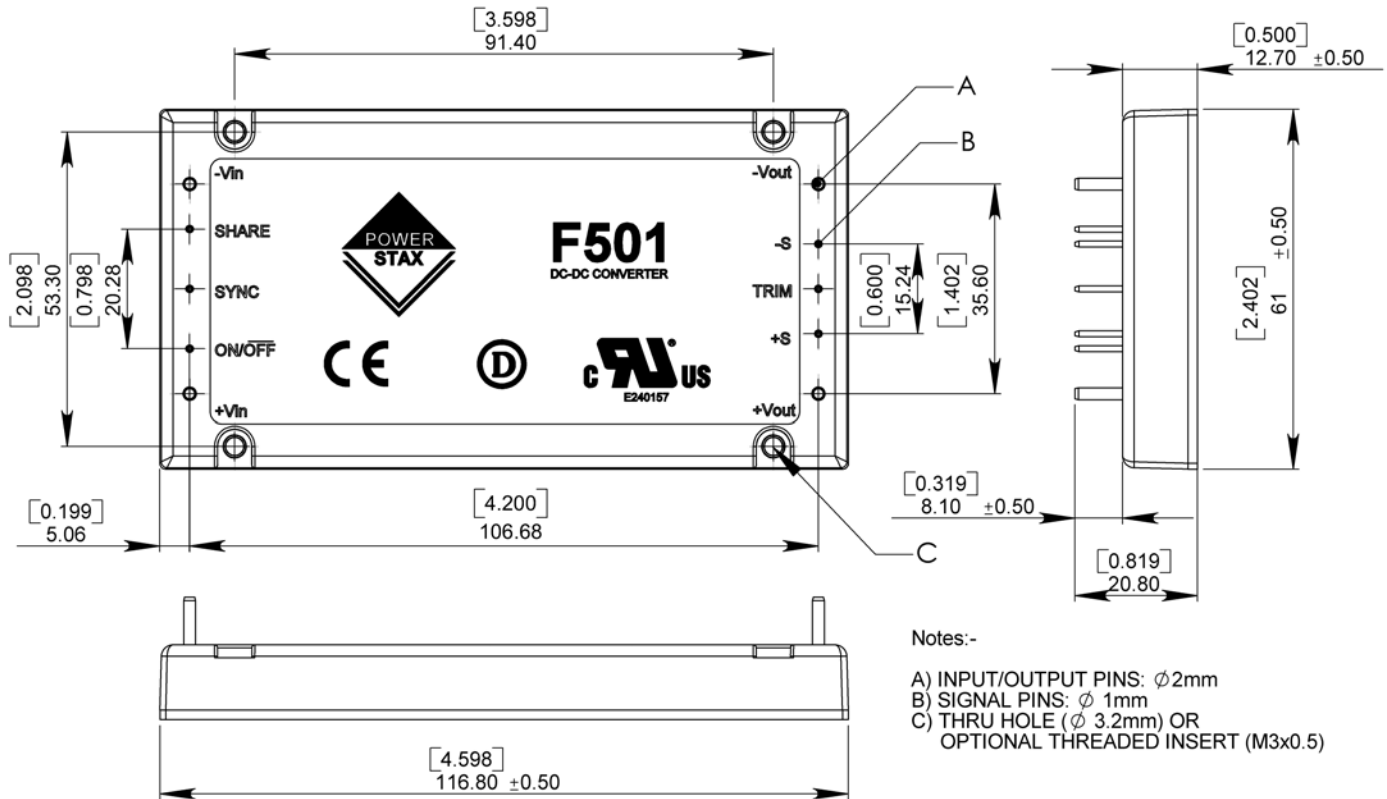
General Specifications

General Characteristics	Conditions	Min	Typ	Max	Unit
Efficiency	Vin = Vin nom, Ta25°C, 75% load		91		%
Switching Frequency			150		KHz
Isolation resistance Input to Output			10		Mohms
Calculated MTFB	Tc = 25°C		1.1		Mhr.
Weight			170		g
Tc	Operating Case Temperature	-20		100	°C
Tstg	Storage Temperature	-40		125	°C
Vin trans	Transient input voltage (48V)			120	V
Viso	Input to Output Isolation Voltage	2000			VAC
Input Characteristics	Conditions	Min	Typ	Max	Unit
Vin	Operating Input Voltage (48V)	36	48	75	V
	Operating Input Voltage (24V)	18	24	36	V
Iin	Typical Input Current (48V)		11.5		A
Vi(on)	Input rising (48V)		34.6		V
Vi (off)	Input Falling (48V)		29		V
Ir	Input Ripple Rejection (120Hz)		60		dB
Output Characteristics	Conditions	Min	Typ	Max	Unit
Vo Output Setpoint	Vin = Vin nom, Ta = 25°C Io = Io max	-0.70%	0	0.70%	% Vo(nom)
Vo Output voltage Tolerance band	Over all line, load & Temp Conditions	-1.10%		1.10%	% Vo(nom)
Vo Line Regulation	Vin = Vin min to Vin max		0.05		% Vo
Vo Load Regulation	Io = Io min to Io max		0.05	0.2	% Vo
Vo Temperature Regulation	Tc = 20°C, to +100°C		0.003		%/°C
Vtr Vo Load voltage deviation	Vin = Vin nom Ta = 25°C, Io/50% step t=0.1A/us		1.5		%
Vtr Vo Load recovery time	Io change from 50% to 100% of Io, max or 100% to 50% of Io, max		500		us
Io Output Current	The module may exceed output ripple specification at I = Io min	0.5		10	%
Po, output power	48V and 24V	0		500	W
Io Output Current Limit		100	115	130	%Io(nom)
Vo Output Ripple & Noise RMS	Test Frequency band width <20MHz		0.3		%Vo (nom)
Short Circuit Current Limit			3.3		%Io(nom)
Trim Range	Limited by Po max & Io max	60		110	%Vo (nom)

Note: This power module can be used in a wide variety of applications. To preserve maximum flexibility, internal fusing is not included. However, to achieve maximum safety and system protection, an inline fuse must be used. The safety agencies require a normal-blow, DC fuse with a maximum rating of 20A (48V). The same type fuse with a lower rating can be used in practice.



Mechanical Outline



Range

Model Reference	Input Voltage (V)	Output Voltage (V)	Output Current (A)
12V input			
SEE F351 RANGE	12	24	14.5
SEE F351 RANGE	12	28	12.5
SEE F351 RANGE	12	48	7.3
24V input			
F501-024-120	24	12	37.5
F501-024-150	24	15	30
F501-024-240	24	24	18.8
F501-024-280	24	28	16.1
F501-024-480	24	48	10.4
48V input			
F501-048-120	48	12	41.7
F501-048-150	48	15	33.3
F501-048-240	48	24	20.8
F501-048-280	48	28	17.8
F501-048-480	48	48	10.4

Exceeding absolute maximum ratings may cause permanent damage and may reduce reliability. Information and specifications contained in this data sheet are believed to be correct at the time of publication. However, Powerstax accept no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subject to change without notice.

