



SERIES: VFK400W

**DESCRIPTION: CHASSIS MOUNT
DC-DC CONVERTER**

DESCRIPTION

The VFK400W series of rugged DC-DC converters are designed for high reliability applications, featuring integral heat sink, over-temperature protection, over-current protection and input transient voltage protection. With an external input fuse, the converter can protect accidental input polarity reversal. The wide 4:1 input range (10-36V) is very useful to stabilize an input source like batteries in various discharging and charging conditions.

Additionally, high efficiency, fast response, tight regulations, remote sense and remote On/Off control make these converters very useful in many industrial and communications applications.

FEATURES

- 400W isolated output
- Efficiency to 87%
- RoHS Compliant
- 4:1 input range
- Regulated output
- Continuous short circuit protection
- Metal enclosure with integrated heatsink
- Rugged design
- Over-temperature shutdown



MODEL

MODEL	input voltage		output voltage	output current	efficiency
	nominal (V dc)	range (V dc)	max (V dc)	max (A)	typ (%)
VFK400W-Q24-S12	24	10 ~ 36	12	33.3	87
VFK400W-Q24-S24	24	10 ~ 36	24	16.7	86
VFK400W-Q24-S48	24	10 ~ 36	48	8.3	86
VFK400W-Q48-S12	48	20 ~ 75	12	33.6	87
VFK400W-Q48-S24	48	18 ~ 75	24	16.7	86
VFK400W-Q48-S48	48	18 ~ 75	48	8.3	86.5

INPUT

parameter	conditions/description	min	nom	max	units	
under voltage lockout	power up	24 V input	9.5		V dc	
		48 V input	17.8		V dc	
	power down	24 V input		8.5		V dc
		48 V input		15.5		V dc
positive logic remote on/off control	module off			1.2	V dc	
	module on (or open circuit)	3.5		75	V dc	



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OUTPUT

parameter	conditions/description	min	nom	max	units
line regulation	measured from high line to low line			±1	%
load regulation	measured from full load to zero load			±1	%
voltage accuracy			±1.5		%
voltage adjustment range	%Vo	90		105	%
current limit		110		150	%
ripple & noise ¹	12 V model			80	mV
				200	mVp-p
	24 V model			120	mV
				240	mVp-p
	48 V model			200	mV
				480	mVp-p
short circuit protection	output shut down and auto-restart				
over voltage protection	%Vo	115		140	%

notes: 1. measured at 20MHz bandwidth with a 10 µF tantalum cap and a 1 µF ceramic cap on the output

GENERAL

parameter	conditions/description	min	nom	max	units
switching frequency			250		kHz
case operating temperature		-40		100	°C
storage temperature		-55		105	°C
thermal shutdown case temp.			110		°C
case material	steel and aluminum extrusion				
dimensions	7.84 x 4.99 x 1.54 inches (199 x 126.8 x 39 mm)				
RoHS compliant	yes				

ISOLATION SPECIFICATIONS

parameter	conditions/description	min	nom	max	units
isolation voltage	input to output	1,500			V dc
	input to case	1,500			V dc
	output to case	1,500			V dc

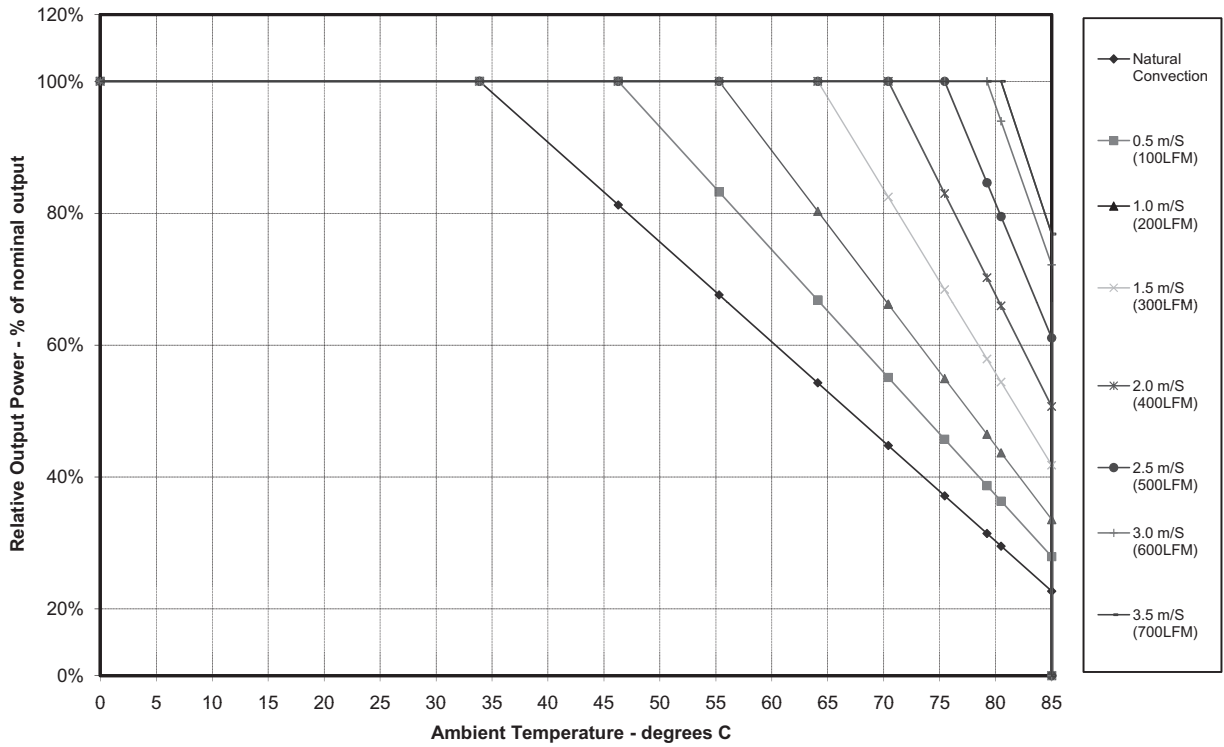


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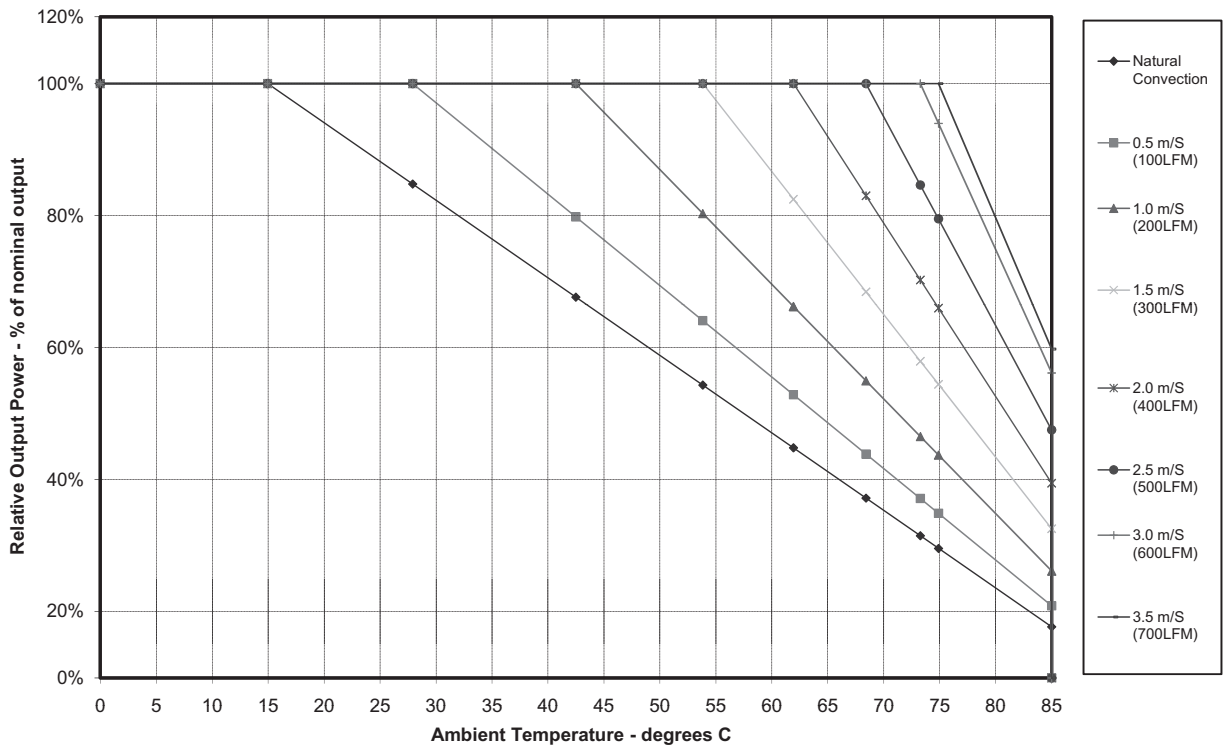
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POWER DERATING CURVES (AT NOMINAL INPUT)

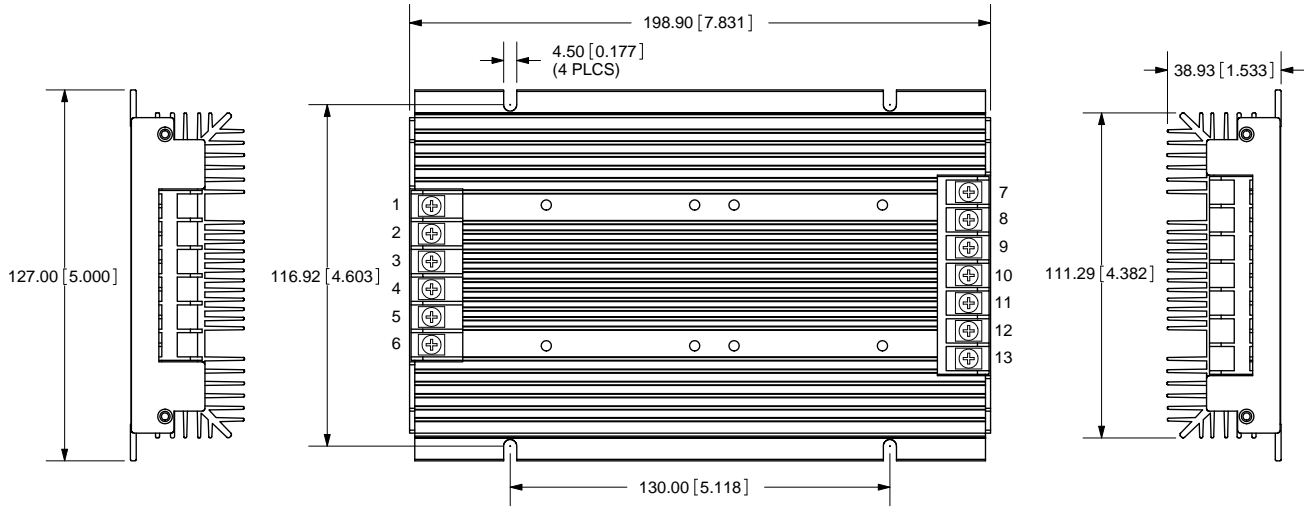
Q24-S12
Q48-S12
Q48-S24
Q48-S48



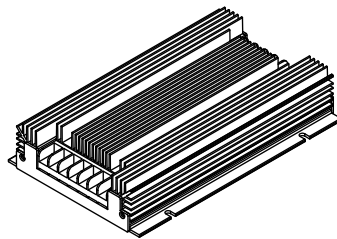
Q24-S24
Q24-S48



REV.	DESCRIPTION	DATE
A	NEW DRAWING	8/30/2010



PINOUT	
1, 2	+V Input
3, 4	-V Input
5	On/Off
6	Case
7, 8	+V Output
9	+Sense
10	Trim
11	-Sense
12, 13	-V Output



SCALE: 1:4

TOLERANCE:
X.X = ±0.5mm
X.XX = ±0.25mm



20050 SW 112th Ave.
Tualatin, OR 97062
Phone: 503-612-2300
800-275-4899
Fax: 503-612-2383
Website: www.cui.com

TITLE: VFK		REV: A
PART NO: VFK	UNITS: MM [INCHES]	
DRAWN BY: ZRJ	APPROVED BY:	SCALE: 1:2

PC FILE NAME: VFK

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