



Data Sheet

IAM48™

Input Power Conditioning Module



Shown actual size:
2.28 x 1.45 x 0.5 in
57,9 x 36,8 x 12,7 mm

Features

- Wide input voltage range
- High surge withstand
- 97% Efficiency
- Input reverse polarity protection
- On/Off control feature
- MicroMod Package

Primary Function

- Inrush current limiting
- Input transient protection

Products Highlights

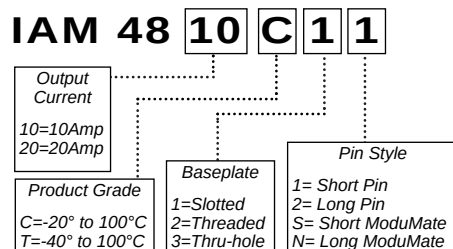
The 2nd Generation IAM48 is a component level, DC input front-end designed to occupy minimum board space while providing maximum transient protection for today's sophisticated electrical systems. The IAM48, in combination with Vicor's 48V input 2nd Generation DC-DC converters, provides a highly efficient, high density power system with outputs from 1 to 100Vdc.

When the IAM48 is used with the Vicor FM48-FiltMod, the combination meets the conducted EMI specifications of Telcordia, FCC and European Norms.

Compatible Products

- FM48-FiltMod
- 2nd Generation 48V input DC-DC converters

Part Numbers



Absolute Maximum Rating

Parameter	Rating	Unit	Notes
+In to -In	80	Vdc	Continuous
+In to -In	100	V	100ms
+Out to -Out	75	Vdc	Continuous
Mounting torque	5(0.57)	in-lbs	6 each, #4-40 or M3
Pin soldering temperature	500 (260)	°F(°C)	<5 sec; wave solder
Pin soldering temperature	750 (390)	°F(°C)	<7 sec; hand solder
Storage temperature C-,T-Grade	-40 to +125	°C	
Operating temperature C-Grade	-20 to +100	°C	Baseplate
Operating temperature T-Grade	-40 to +100	°C	Baseplate

IAM48 Specifications

(typical at T_{BP} = 25°C, nominal line, unless otherwise specified)

Parameter	Min	Typ	Max	Remarks
Input voltage	36Vdc	48Vdc	76Vdc	Continuous
Inrush limiting			14mA/μF	6A with 330μF capacitor (See Fig 1)
Safety approvals	UL 1950, CSA 22.2-950, EN 60950			
Transient immunity				
Telcordia-GR-499-CORE Section 132			200V	1μsec duration
ETS 300 386-1 Class 2			200V	5.0μsec rise time, 50μsec duration surge
			250V	1-100 nsec burst
				When used with Vicor FM-48 filter module
Dielectric withstand	1,500Vrms			Input/Output to base
Output current				Delivered current to any combination of Vicor's 2nd Generation 48Vin DC-DC converters
IAM4810C12			10A	
IAM4820C12			20A	
Efficiency		97%		Internal voltage drop is 1.1V max. @ 20A, 100°C baseplate
ON/OFF control				
ENABLE(ON)	0.0Vdc		1.0Vdc	Referenced to -Vout.
DISABLE(OFF)	3.5Vdc		5.0Vdc	100KΩ internal pull-up resistor
Reverse polarity protection				No damage to module, external fuse required
External capacitance				See Fig 3
IAM4810C12	10μF		150μF	100V
IAM4820C12	100μF		330μF	100V
Weight	1.7 ounces (50 grams)			
Warranty	2 years			

Typical Inrush Limiting and Transient Immunity Characteristics

Inrush Limiting

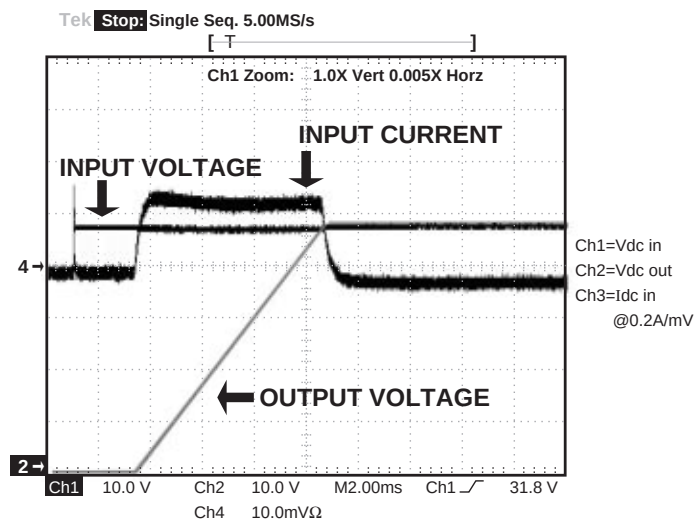


Figure 1—Inrush current with 330 μ F on the IAM4820C12.

Transient Immunity

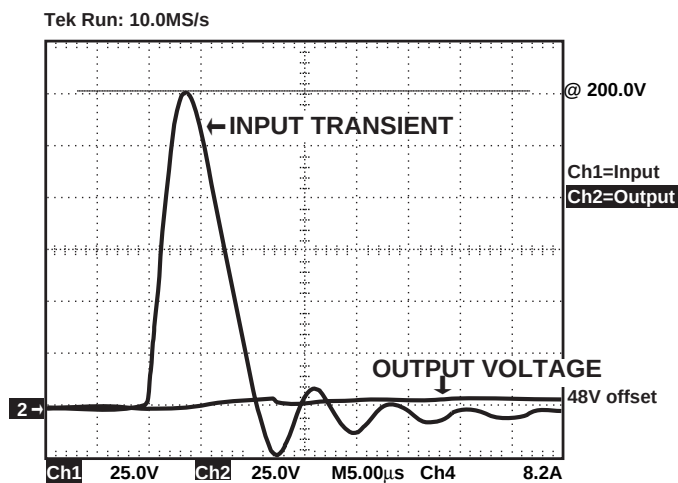


Figure 2—Output response to a transient on the 48V input of a FM48-FiltMod/IAM48 combination.

Typical Transient, Surge Protection and Filtering Solution

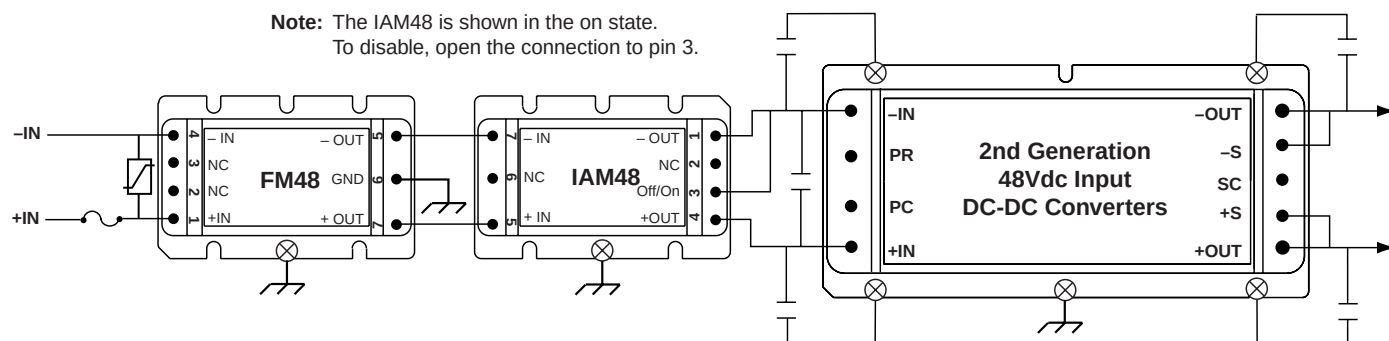


Figure 3

Module Outline

Slotted (Style 1) 

or

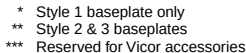
Threaded (Style 2) 

4-40 UNC-2B (6X)

or

Thru Hole (Style 3) 

#30 Drill Thru (6X)
(0.1285)



PCB THICKNESS $\frac{0.062 \pm 0.010}{1.57 \pm 0.25}$

0.800*
20.32

0.525*
13.34

0.275*
6.99

0.170*
4.32

PLATED THRU HOLE DIA

0.133
3.38

1.734**
44.04

2.000*
50.80

0.06
1.5 (4X)

0.400*
10.16

1.140**
28.96

*DENOTES TOL = $\pm 0.003 \pm 0.08$

**PCB WINDOW

INBOARD SOLDER MOUNT

PIN STYLE 1
 $\frac{0.094 \pm 0.003}{2.39 \pm 0.08}$

ONBOARD SOLDER MOUNT

PIN STYLE 2
 $\frac{0.094 \pm 0.003}{2.39 \pm 0.08}$

0.43
10.9

0.53
13.5

ALL MARKINGS THIS SURFACE

ALUMINUM BASEPLATE

PINS: TIN/LEAD

HOT SOLDER DIPPED

Decimals	Tol.	Angles
0.XX	± 0.01	
	± 0.25	$\pm 1^\circ$
0.XXX	± 0.005	
	± 0.127	

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