

EMC Filter



RoHS

FEATURES

- Compact size
- Cost-effective
- Meet IEC/EN61000-4 series standard and CISPR22/ EN55022
- Input reverse polarity protection
- Efficiency up to 98%
- With slow start function
- Mounting: PCB mounting, chassis mounting with screw terminals, DIN-Rail mounting

This model applies to analog circuit which is noise-sensitive. Put the filter on to the input of DC/DC module can ensure the module meet the EMC request of IEC/EN61000-4 ,CISPR22/EN55022 standard.

The filter used with the MORNSUN DC/DC module, DC/DC module's max. Input voltage must less than the filter's max. Voltage. DC/DC module's power must less than the filter's Max. output power.

Selection Guide

Model	Input Voltage Range (VDC)	Max. output power(W)
FC-AX3D	10~36	30
FC-B02D	18~75	30
FC-D03D	18~36	50
FC-E03D	36~75	75

Note: series with suffix "A2S" are chassis mounting, with suffix "A4S" are DIN-Rail mounting, for example FC-AX3DA4S.

Input Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	FC-AX3D	10	24	36	VDC
	FC-B02D	18	48	75	
	FC-D03D	18	24	36	
	FC-E03D	36	48	75	
No-load Current	FC-AX3D	--	--	10	mA
	FC-B02D	--	--		
	FC-D03D	--	--	5	
	FC-E03D	--	--		

Output Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Efficiency	FC-AX3D	24VDC @30W	97	--	%
	FC-B02D	48VDC @30W	97	--	
	FC-D03D	24VDC @50W	97	--	
	FC-E03D	48VDC @50W	96	--	
Max. Output Voltage Limit	FC-AX3D	Input voltage < 47V	--	39	VDC
	FC-B02D	Input voltage < 100V	--	82	
	FC-D03D	Input voltage < 47V	--	39	
	FC-E03D	Input voltage < 100V	--	82	

General Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Operating Temperature		-40	--	85	°C
Storage Temperature		-55	--	125	
Casing Temperature Rise	FC-AX3D	24VDC @30W	--	40	
	FC-B02D	48VDC @30W	--	40	
	FC-D03D	24VDC @50W	--	75	
	FC-E03D	48VDC @50W	--	70	
Withstand voltage	+Vin~ $\frac{1}{2}$, -Vin~ $\frac{1}{2}$, leakage current <5mA	--	--	500	VAC
MTBF	MIL-HDBK-217F@40°C	--	1000	--	K hours

General Specifications

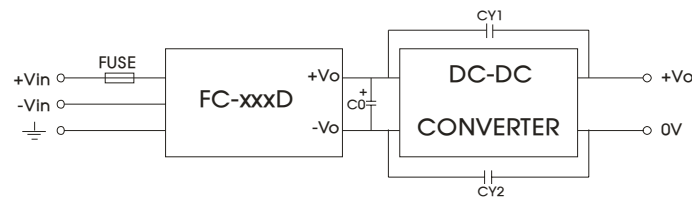
Casing Material	Black flame-retardant heat-proof epoxy resin (UL94-V0)	
Package Dimensions	Horizontal package	53.80x28.80x19.00 mm
	A2S wiring package	76.00x31.50x27.80 mm
	A4S rail package	76.00x31.50x32.40 mm
Weight	Horizontal package/A2S wiring package/A4S rail package 50g/70g/90g(Typ)	

SAFE & EMC

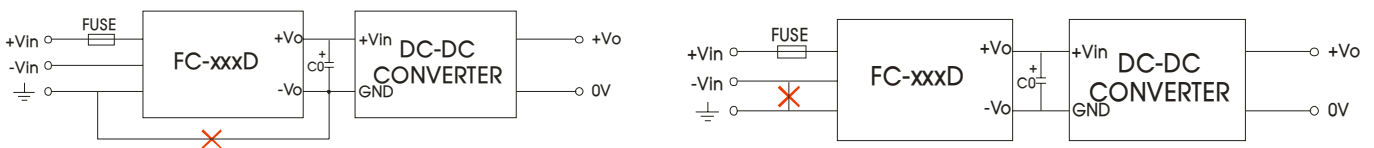
Item	Test Conditions	Test Procedure
EMI	Conducted disturbance	150KHz-30MHz Class B (With MORNSUN's Module) CISPR22, EN55022, GB9254
	Radiated emission	30MHz-1GHz Class B (With MORNSUN's Module) CISPR22, EN55022, GB9254
EMS	Electrostatic discharge	Air ±8KV Contact ±6KV perf. Criteria B IEC/EN61000-4-2,GB/T17626.2
	EFT	±4kv (5KHz,100KHz) perf. Criteria B IEC/EN61000-4-3,GB/T17626.3
	Surge immunity	±2KV(1.2µs/50µs 2Ω)/±4KV(1.2µs/50µs 12Ω) perf. Criteria B IEC/EN61000-4-6,GB/T17626.6
	Radiation immunity	10V/m (With MORNSUN's Module) perf. Criteria B IEC/EN61000-4-4,GB/T17626.4
	Conducted disturbance immunity	10V (With MORNSUN's Module) perf. Criteria B IEC/EN61000-4-5,GB/T17626.5

Design Reference

1. Typical application



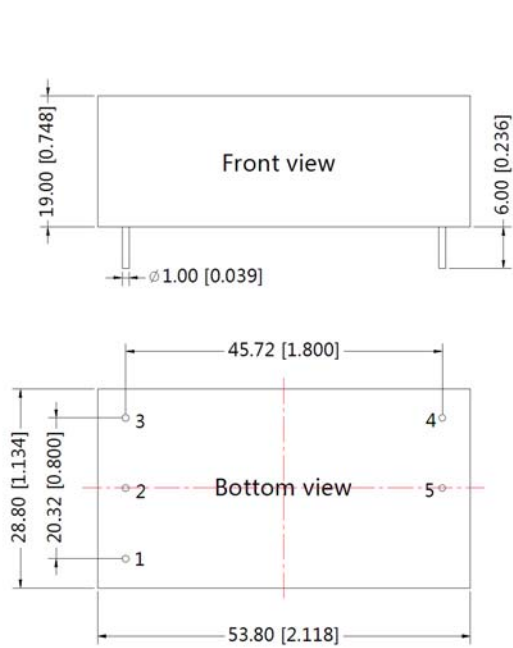
Model	Recommended external circuit parameters
C0	Recommend to use 400uF/200V electrolytic capacitor.
CY1, CY2	1nF/2000V
FUSE	Due to the difference of the power module input current, the fuse of the recommended values, please refer to the Technical Manual for the power module.



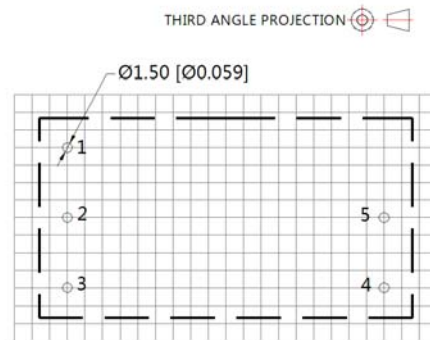
Note: These applications is not supported for this model.

2. For more information please find the application notes on www.mornsun-power.com

FC-xxxD Dimensions and Recommended Layout



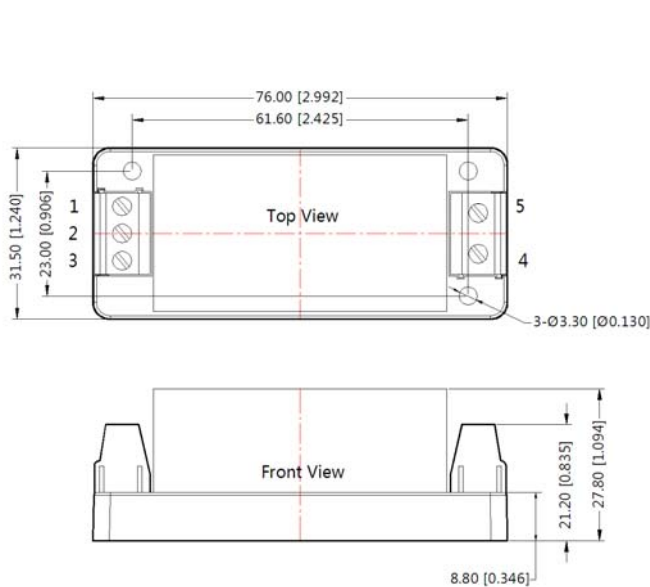
Note:
Unit :mm[inch]
Pin diameter tolerances : $\pm 0.10[\pm 0.004]$
General tolerances: $\pm 0.50[\pm 0.020]$



Note : Grid 2.54*2.54mm

Pin-Out	
Pin	Function
1	
2	-Vin
3	+Vin
4	+Vo
5	-Vo

FC-xxxDA2S Dimensions

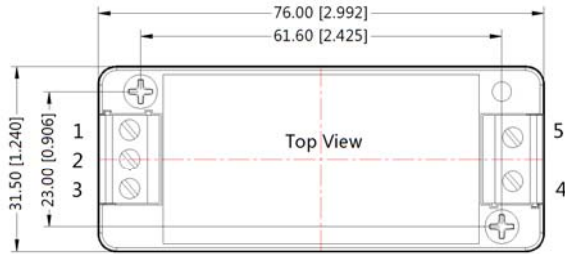


Pin-Out					
Pin	1	2	3	4	5
Connection		-Vin	+Vin	+Vo	-Vo

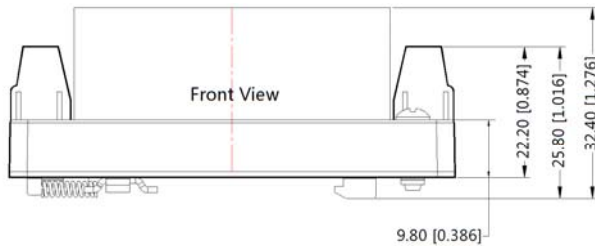
Note:
Unit:mm[inch]
Wire range : 24~12 AWG
General tolerances: $\pm 0.50[\pm 0.020]$

FC-xxxDA4S Dimensions

THIRD ANGLE PROJECTION



Pin-Out					
Pin	1	2	3	4	5
Connection		-Vin	+Vin	+Vo	-Vo



Note:
Unit:mm[inch]
Wire range : 24~12 AWG
General tolerances:±0.50[±0.020]

Note:

1. Packing Information please refer to 'Product Packing Information'. The Packing bag number of Horizontal package : 58220005, the Packing bag number of A2S/ A4S package:58220022;
2. Unless otherwise specified, data in this data sheet should be tested under the conditions of Ta=25°C, humidity<75%;
3. All index testing methods in this datasheet are based on our Company's corporate standards;
4. The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, and please directly contact our technicians for specific information;
5. We can provide product customization service;
6. Specifications of this product are subject to changes without prior notice.

MORNSUN Guangzhou Science & Technology Co., Ltd.

Address: No. 5, Kehui St. 1, Kehui Development Center, Science Ave., Guangzhou Science City, Luogang District, Guangzhou, P. R. China
Tel: 86-20-38601850-8801 Fax: 86-20-38601272 E-mail: info@mornsun.cn