EMC Filter



- FEATURES
- Compact size
- Cost-effective
- Meet IEC/EN61000-4 series standard and
- CISPR22/EN55022
- Meet railway industry EN50155 standard
- Input reverse polarity protection
- Efficiency up to 98%
- Mounting: PCB mounting, chassis mounting with screw terminals, DIN-Rail mounting

RoHS

This model applies to analog circuit which is noise-sensitive. Put FC-CxxD on to the input of DC/DC module can ensure the module meet the EMC request of EN50155 standard.

FC-CXXD used with the MORNSUN DC/DC railway module. DC/DC railway module's max. Input voltage must less than FC-CXXD's max. Voltage.

Selection Guide

Model	Input Voltage Range (VDC)	Max. output power(W)
FC-C01D	77-160	10
FC-CX1D	40-160	30
FC-C03D	40-160	50

Note: series with suffix "A2S" are chassis mounting, with suffix "A4S" are DIN-Rail mounting, for example FC-C01DA4S.

Input Specifications

Item	Test Conditions		Min.	Typ.	Max.	Unit
Input Voltage	Operating temperature range		40	110	160	VDC
No-load Current	FC-C01D&FC-CX1D	110VDC @ No-load	--	--	1	mA
	FC-C03D		--	--	3	

Output Specifications

Item	Test Conditions		Min.	Typ.	Max.	Unit
Efficiency	FC-C01D	110VDC @0.094A	--	95	--	%
	FC-CX1D	110VDC @0.276A	--	98	--	
	FC-C03D	110VDC @0.457A	--	98	--	VDC
Max. Output Voltage Limit*	Operating temperature range		--	165	--	

Note: * Products continue to work in the Max. Output Voltage Limit will be failures and damage.

General Specifications

Item	Test Conditions		Min.	Typ.	Max.	Unit
Operating Temperature			-40	--	85	℃
Storage Temperature			-55	--	125	
Storage Humidity			5	--	95	%
Casing Temperature Rise	110VDC @Full load		--	25	--	℃
Withstand voltage	+Vin~⏚, -Vin~⏚, leakage current<5mA	FC-C01D&FC-CX1D	--	--	500	VAC
		FC-C03D	--	1500	--	
MTBF	MIL-HDBK-217F@40℃		--	1200	--	K hours

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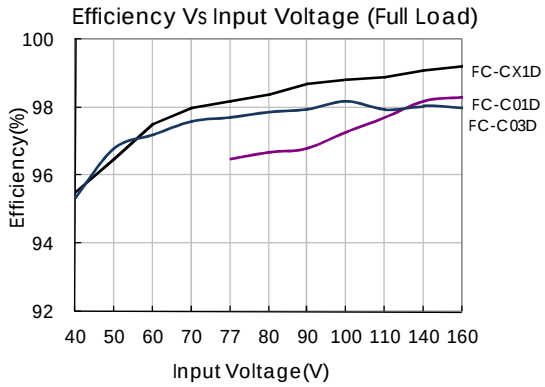
General Specifications

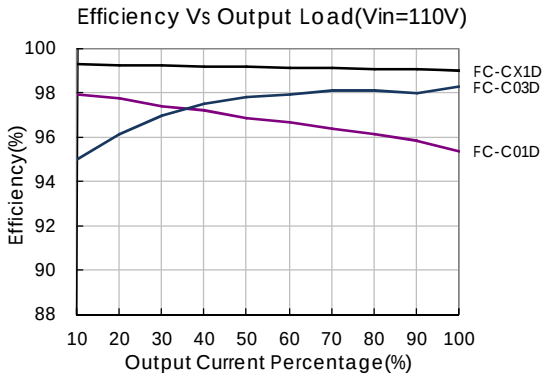
Casing Material		Black flame-retardant heat-proof epoxy resin (UL94-V0)	
Package Dimensions	FC-C01D	Horizontal package	50.80x25.40x15.16 mm
		A2S wiring package	76.00x31.50x24.96 mm
		A4S rail package	76.00x31.50x28.56 mm
	FC-CX1D&FC-C03D	Horizontal package	53.80x28.80x19.00 mm
		A2S wiring package	76.00x31.50x27.80 mm
		A4S rail package	76.00x31.50x32.40 mm
Weight	FC-C01D	Horizontal package/A2S wiring package/ A4S rail package	35g/55g/75g(Typ)
	FC-CX1D&FC-C03D		50g/70g/90g(Typ)

SAFE & EMC

Item		Test Conditions		Test Procedure
Shake		10 cycles in each axis Test time in each axis: 3 minute Frequency: 5-150Hz amplitude: 7.5mm acceleration: 10g		IEC/EN61373
EMI	Conducted disturbance	150KHz-30MHz Class B (With MORNSUN's Module)		CISPR22,EN55022
	Radiated emission	30MHz-1GHz Class B (With MORNSUN's Module)		CISPR22,EN55022
EMS	Electrostatic discharge	Air ±8KV Contact ±6KV	perf. Criteria B	IEC/EN61000-4-2,GB/T17626.2
	Radiation immunity	10V/m (With MORNSUN's Module)	perf. Criteria B	IEC/EN61000-4-3,GB/T17626.3
	Conducted disturbance immunity	10V (With MORNSUN's Module)	perf. Criteria B	IEC/EN61000-4-6,GB/T17626.6
	EFT	±4KV (5KHz,100KHz)	perf. Criteria B	IEC/EN61000-4-4,GB/T17626.4
	Surge immunity	±2KV(1.2μs/50μs 2Ω)/±4KV(1.2μs/50μs 12Ω)	perf. Criteria B	IEC/EN61000-4-5,GB/T17626.5

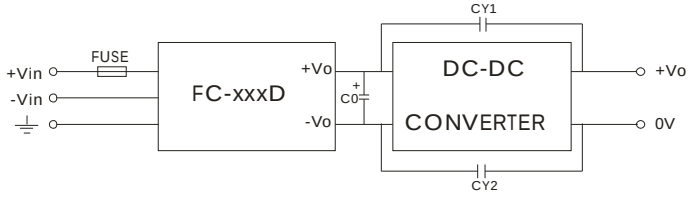
Product Typical Curve





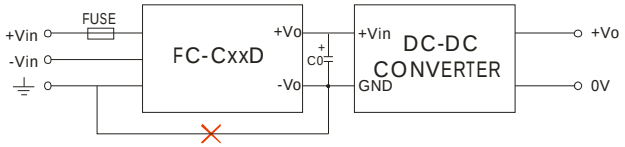
Design Reference

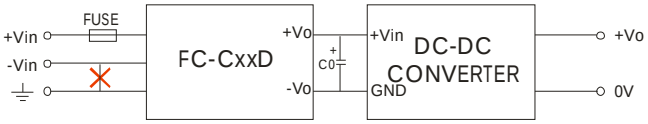
1. Typical application



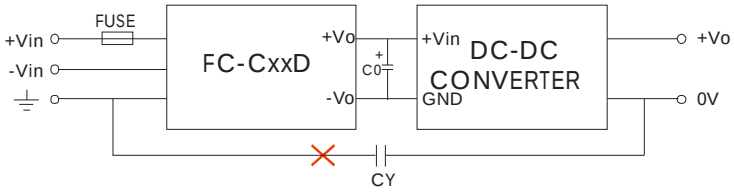
Model	Recommended external circuit parameters	
C0	FC-C01D&FC-CX1D	Recommend to use 100uF/200V electrolytic capacitor
	FC-C03D	Recommended to use 200uF/400V electrolytic capacitors in parallel
CY1, CY2	1nF/2000V	
FUSE	Due to the difference of the power module input current, the fuse of the recommended values, please refer to the Technical Manual for the power module	

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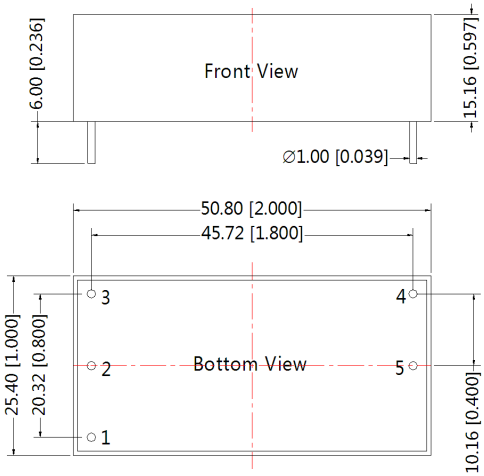
Note: These applications is not supported for this model.

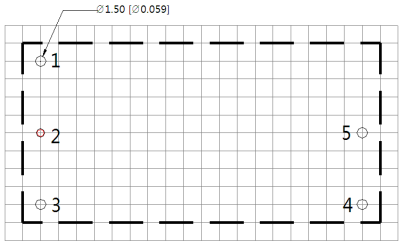


Note: This applications is not supported for FC-C03D.

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

FC-C01D Dimensions and Recommended Layout



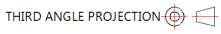


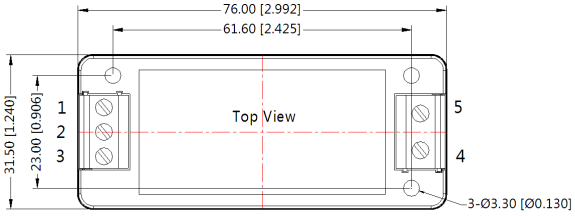
Note:Grid 2.54*2.54mm

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

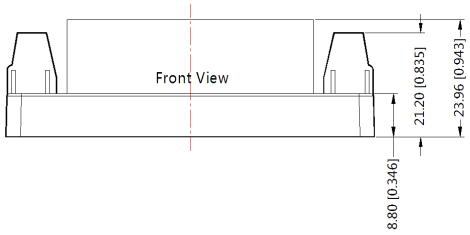
Note:
Unit :mm[inch]
Pin diameter tolerances :±0.10[±0.004]
General tolerances:±0.50[±0.020]

FC-C01DA2S Dimensions





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

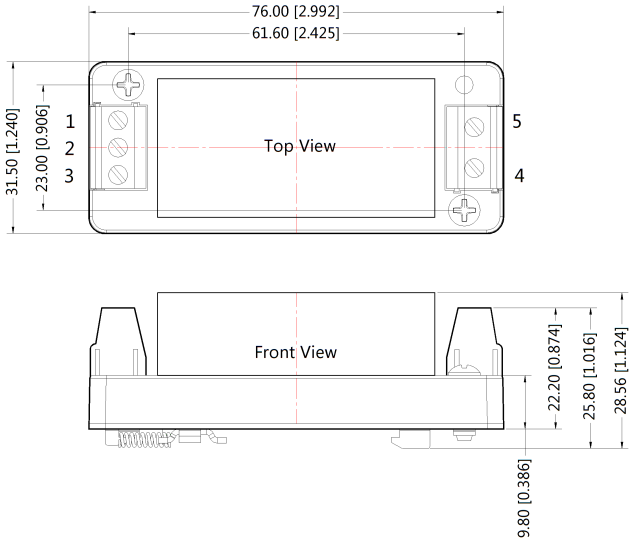


Note:
Unit: mm[inch]
Wire range : 24~12 AWG
General tolerances:±0.50[±0.020]

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FC-C01DA4S Dimensions

THIRD ANGLE PROJECTION

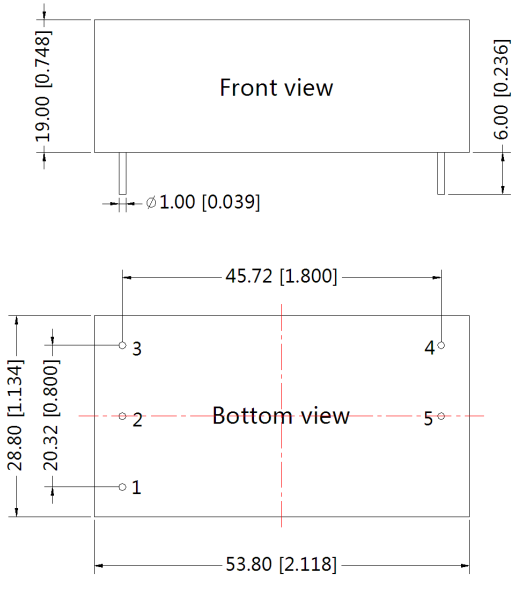


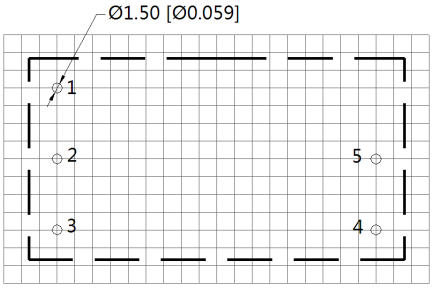
Pin-Out					
Pin	1	2	3	4	5
Connection	⏚	-Vin	+Vin	+Vo	-Vo

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

FC-CX1D&FC-C03D Dimensions and Recommended Layout

THIRD ANGLE PROJECTION





Note : Grid 2.54*2.54mm

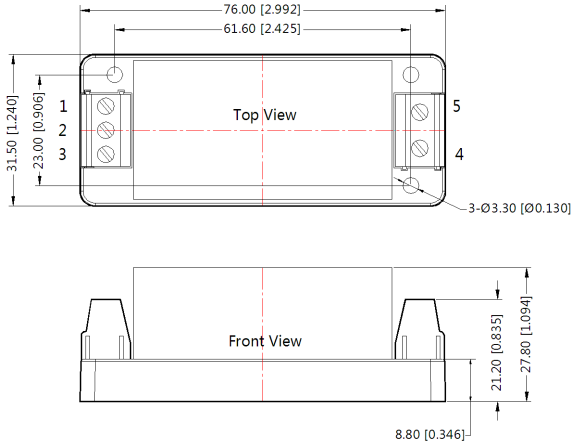
Pin-Out	
Pin	Function
1	⏚
2	-Vin
3	+Vin
4	+Vo
5	-Vo

Note:
Unit :mm[inch]
Pin diameter tolerances :±0.10[±0.004]
General tolerances:±0.50[±0.020]

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FC-C01DA2S & FC-B02DA2S Dimensions

THIRD ANGLE PROJECTION

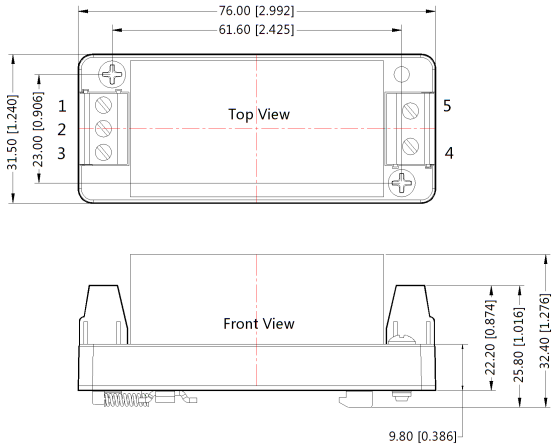


Pin-Out					
Pin	1	2	3	4	5
Connection	⏚	-Vin	+Vin	+Vo	-Vo

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

FC-C01DA4S & FC-B02DA4S 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 : 58220003 (FC-C01D),58220005(FC-CX1D&FC-C03D), 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

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