



CFM260S SERIES 260 WATT OPEN FRAME AC-DC MODULES

Features

- Universal Input Range 85~264Vac
- High Efficiency up to 93.5%
- 2"x 4" Compact Size @CFM260SXXX
- Meets Class I
- No Load Input Power Consumption<0.2W
- Peak Power Operation up to 312Watt for 5s
- Approval Safety IEC/EN/UL 62368-1 Ed 3.0
- Active PFC Meets EN 61000-3-2
- Design Meets IEC/EN 60335-1
- Meets EN55032 (Class B)
- Operating Altitude 5000m
- 220W with Natural Convection
- 260W with Fan-Cooled
- Continuous Short Circuit Protection
- Over Temperature Protection
- 12V Fan Output



MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT NOTE1				VOLTAGE ACCURACY NOTE2	RIPPLE & NOISE NOTE3	VOLTAGE ADJ. RANGE	LINE REGULATION NOTE4	LOAD REGULATION NOTE5	%EFF. (Typ)
		With Fan	Without Fan								
			Cover	Base	Open						
CFM260S120	12 V	21.67 A	18.34 A	15.84 A	11.67 A	±1%	120 mV	11.4~12.6 V	±0.5%	±1%	92%
CFM260S240	24 V	10.83 A	9.17 A	7.92 A	5.83 A	±1%	240 mV	22.8~25.2 V	±0.5%	±1%	93.5%
CFM260S360	36 V	7.22 A	6.11 A	5.28 A	3.89 A	±1%	360 mV	34.2~37.8 V	±0.5%	±1%	93%
CFM260S480	48 V	5.42 A	4.58 A	3.96 A	2.92 A	±1%	480 mV	45.6~50.4 V	±0.5%	±1%	93.5%
Fan Output Voltage											
All	+12V	0.3A (NOTE 6)				---	---	---	---	---	---

Note:

1. Forced air convection with fan. (Open frame with 19CFM, Base & Case with 10 CFM)
2. Voltage accuracy is set at 60% rated load.
3. Add a 0.1uF ceramic capacitor and a 10uF E.L. capacitor to output for ripple & noise measuring @20MHz BW.
4. Line regulation is measured from high line to low line with rated load.
5. Load regulation is measured from full to 10% rated.
6. Fan output can only operate normal when the main output is above 1A.
7. CFM260S120X DC output connector (CN2) use terminal.

PART NUMBER

Series	Number of Outputs	Nominal Output Voltage	Type
CFM260	O	XXX	Y (Option)
CFM260	S : Single	120 : 12VDC 240 : 24VDC 360 : 36VDC 480 : 48VDC	None : Open Frame B : With Base C : With Cover

Part Number Example:

CFM260S120: Open Frame, 260W, Single 12Vdc Output

CFM260S120B: With Base, 260W, Single 12Vdc Output

CFM260S120C: With Case, 260W, Single 12Vdc Output



CFM260S Series

TECHNICAL SPECIFICATIONS

(All specifications are typical at nominal input, full load at 25°C unless otherwise noted.)

ABSOLUTE MAXIMUM RATINGS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input Voltage	Safety approvals only to the AC input	All	85		264	V _{ac}
Operating Temperature	See Derating Curve	All	-30		80	°C
Storage Temperature		All	-40		85	°C
Operating Altitude	IEC/EN/UL 62368-1	All			5000	m

INPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Operating Voltage Range		All	100		240	V _{ac}
Input Frequency Range		All	47		63	Hz
Maximum Input Current	100% Load, V _{in} =100V _{ac}	All			3.5	A
Power Factor	V _{in} =230V _{ac} , Full load	All		0.92		
Leakage Current		All			3.5	mA
Inrush Current	V _{in} =240V _{ac} , Cold start at 25°C	All			150	A

OUTPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Set Point	V _{in} =Nominal V _{in} , I _o =I _o max., ambient temperature=25°C	CFM260S120	11.88	12	12.12	V _{dc}
		CFM260S240	23.76	24	24.24	
		CFM260S360	35.64	36	36.36	
		CFM260S480	47.52	48	48.48	
Operating Output Current Range	See Derating Curve	CFM260S120			21.67	A
		CFM260S240			10.83	
		CFM260S360			7.22	
		CFM260S480			5.42	
Holdup Time	V _{in} =115V _{ac}	All		16		ms
Output Voltage Regulation						
Load Regulation	10% Load to full load	All			±1.0	%
Line Regulation	V _{in} =High line to low line	All			±0.5	%
Over Voltage Protection	Latch off (AC recycle to reset)	CFM260S120			16	V _{dc}
		CFM260S240			35	
		CFM260S360			50	
		CFM260S480			63	
Over Current Protection	Hiccup mode (Auto recovery)	All	120		190	%
Peak Power	1. V _{in} =115V _{ac} and 230V _{ac} 2. Ambient temperature=25°C 3. Peak power should be less than 5seconds, with a maximum 10% duty cycle, peak power function by 120% load 5S and 75% load 45S	All		120		%
Short Circuit Protection	Hiccup mode (Auto recovery)	All				
Output Ripple and Noise	1. Add a 0.1uF ceramic capacitor and a 10uF aluminum electrolytic capacitor to output 2. Oscilloscope is 20MHz band width 3. Ambient temperature=25°C	CFM260S120			120	mV
		CFM260S240			240	
		CFM260S360			360	
		CFM260S480			480	
Load Capacitance	1. Input voltage is 115V _{ac} and 230V _{ac} 2. Output is max. load 3. Ambient temperature=25°C	CFM260S120			22000	uF
		CFM260S240			10880	
		CFM260S360			7220	
		CFM260S480			3960	



CFM260S Series

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Efficiency	1. Input voltage is 230V _{ac} 2. Output is rated load 3. Ambient temperature=25°C	CFM260S120		92		%
		CFM260S240		93.5		
		CFM260S360		93		
		CFM260S480		93.5		

ISOLATION CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input to Output	1 minute	All			3000	V _{ac}
Isolation Resistance	Input to output	All	100			MΩ

FEATURE CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Switching Frequency		All		100		kHz
Output Voltage Adjustment		All	-5		+5	%

GENERAL SPECIFICATIONS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	I _o =100%; T _a =25°C per MIL-HDBK-217F I _o =100%; T _a =25°C per Telcordia SR332	All	270			k hours
Humidity	Non-condensing	All			93	% RH
Shock	Meets MIL-STD-810F Table 516.5, Table 516.5-I 10ms, each axis 3 times(±X · ±Y · ±Z axis)	All		75		g
Vibration	Meets MIL-STD-810F Table 514.5C-VIII, 15~2000Hz, X · Y · Z axis, 1 hour (each axis),. Total 3 hrs.	All		4		g
Weight	Open frame versions	All		245		grams
	Baseplate versions			280		
	Covered versions			332		
Dimensions	Open frame	All	4.000x2.000x1.441 Inches (101.60x50.8x36.60mm)			
	B (with Base)	All	4.598x2.000x1.520 Inches (116.80x50.8x38.60mm)			
	C (with Cover)	All	4.598x2.520x1.594 Inches (116.80x64.00x40.50mm)			
Safety	Class I, IEC/EN/UL 62368-1					Ed 3.0
EMC Emission	EN 55032 Class B, 47 CFR FCC Part 15 Subpart B, Oct.2014 EN 61000-3-2:2019, EN 61000-3-3:2013+A1:2019, EN 61000-6-3:2007+A1:2011+AC:2012, EN 61000-6-4:2019, EN 61204-3:2000					Class B
Conducted Disturbance	EN 55032, EN 61204-3:2000, EN 61000-6-3:2007+A1:2011+AC:2012, EN 61000-6-4:2019, Class B, 47 CFR FCC Part 15 Subpart B					Class B
Radiated Disturbance	EN 55032, EN 61204-3:2000, EN 61000-6-3:2007+A1:2011+AC:2012, EN 61000-6-4: 2019, Class B, 47 CFR FCC Part 15 Subpart B					Class B
Harmonic Current Emissions	EN 61000-3-2:2019					
Voltage Fluctuations & Flicker	EN 61000-3-3:2013+A1:2019					
EMC Immunity	EN 55035, EN 61204-3:2000, EN 61000-6-1:2019+CRGD:2019, EN 61000-6-2:2019					
Electrostatic Discharge (ESD)	IEC 61000-4-2:2008, Air Discharge: ±8kV, Contact Discharge: ±4kV					Criterion A
Radio-Frequency, Continuous Radiated Disturbance	IEC 61000-4-3:2020					Criterion A
Electrical Fast Transient (EFT)	IEC 61000-4-4:2012, ±1kV, ±2kV					Criterion A
Surge	IEC 61000-4-5:2014+A1:2017, L-N: ±0.5kV, ±1kV, L-E(Ground): ±0.5kV, ±1kV, ±2kV					Criterion A
Conducted Disturbances, Induced by RF Fields	IEC 61000-4-6:2013+COR1:2015					Criterion A
Power Frequency Magnetic Field	IEC 61000-4-8:2009					Criterion A
Voltage Dips	IEC 61000-4-11:2020, Dip: 30% Reduction, Dip >95% Reduction					Criterion A
Voltage Interruptions	IEC 61000-4-11:2020, >95% Reduction					Criterion B
Application Note Link						CFM260S Series App Notes

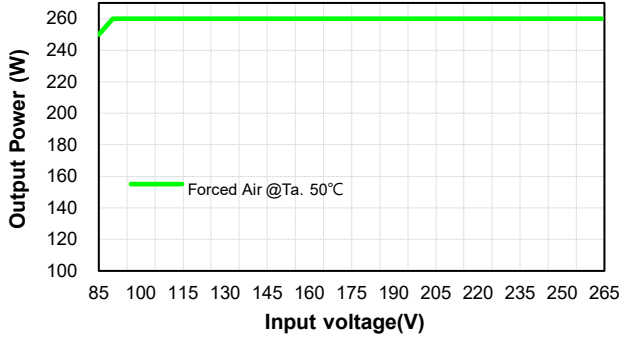


CFM260S Series

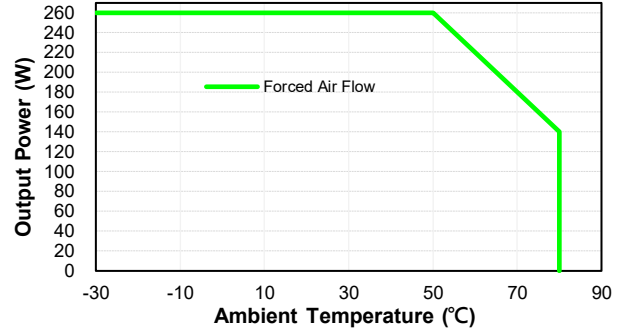
CHARACTERISTIC CURVE

Power Derating Curve

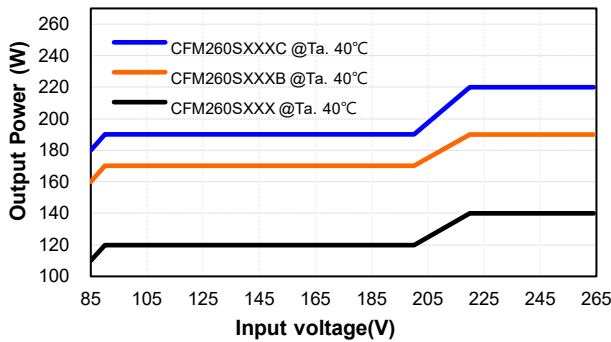
Forced Air Flow



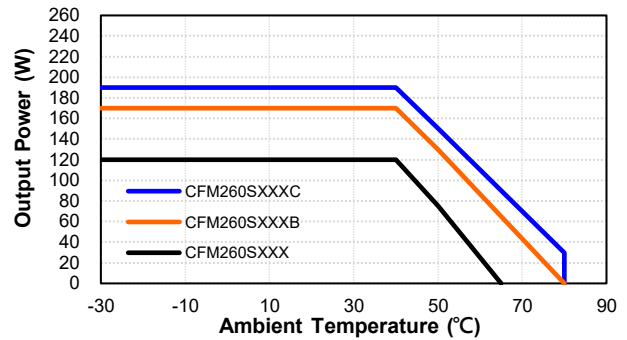
Forced Air Flow



Natural Convection

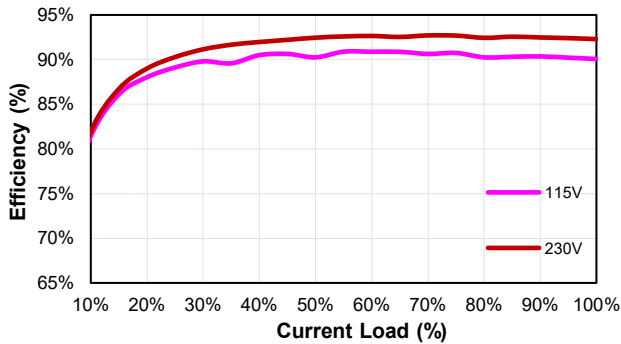


Natural Convection

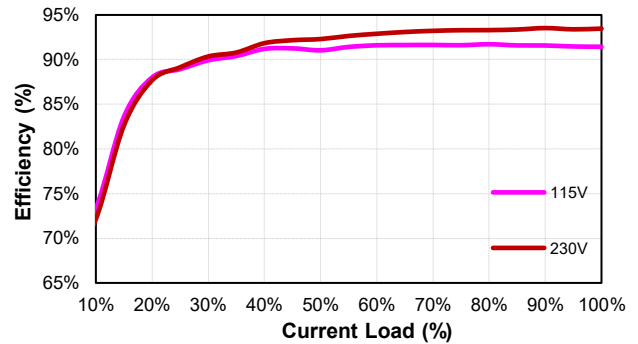


Performance Data

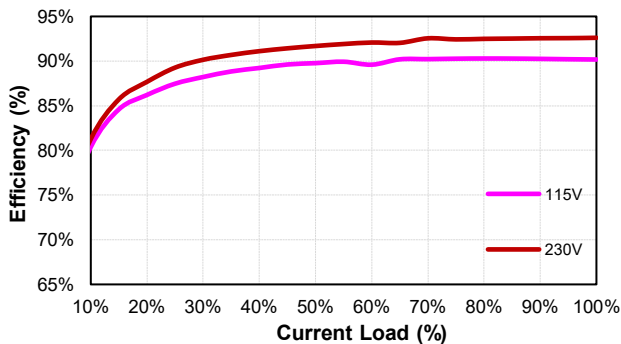
CFM260S120 (Eff Vs Io)



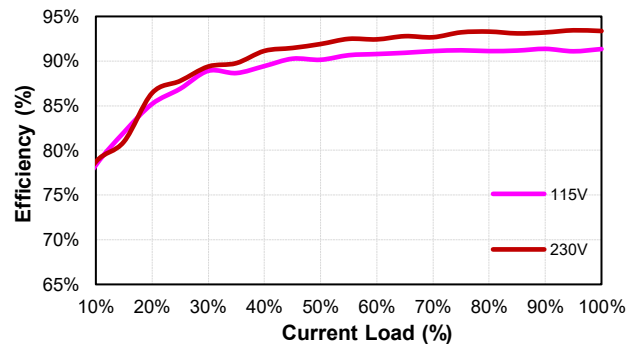
CFM260S240 (Eff Vs Io)



CFM260S360 (Eff Vs Io)



CFM260S480 (Eff Vs Io)

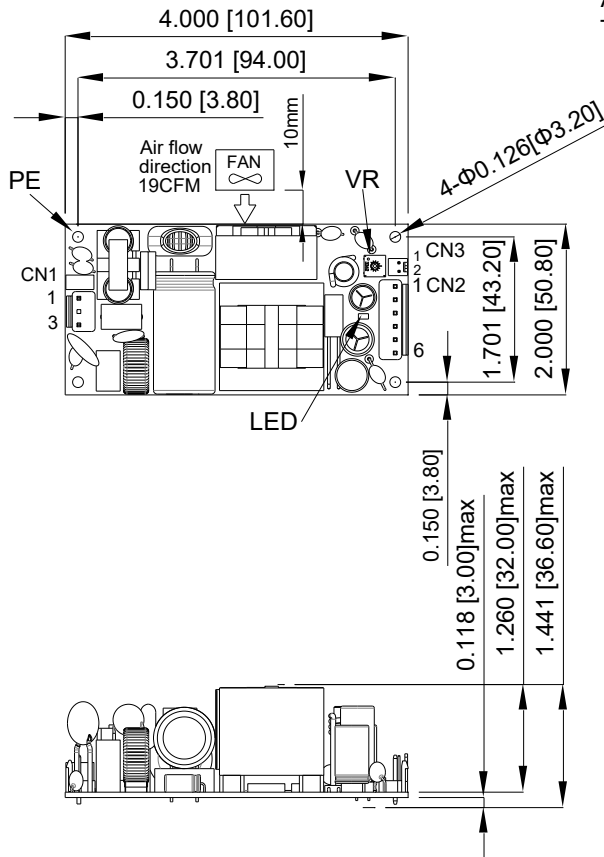




CFM260S Series

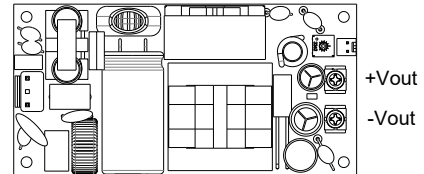
MECHANICAL SPECIFICATION

CFM260S240~480



All Dimensions In Inches[mm]
Tolerance Inches:x.xxx= ± 0.02
Millimeters:x.xx = ± 0.5

CFM260S120



AC Input Connector(CN1):TKP PVHI-03N2 or equivalent

Pin	Function	Mating Housing	Terminal
1	ACL	JST VHR-3N or equivalent	JST SVH-21T-P1.1 or equivalent
2	-		
3	ACN		

DC Output Connector(CN2):TKP PVHI-06 or equivalent

Pin	Function	Mating Housing	Terminal
1	+Vout	JST VHR-6N or equivalent	JST SVH-21T-P1.1 or equivalent
2	+Vout		
3	+Vout		
4	-Vout		
5	-Vout		
6	-Vout		

DC Output Connector(CN3):CHYAO SHIUNN JS-6001-02 or equivalent

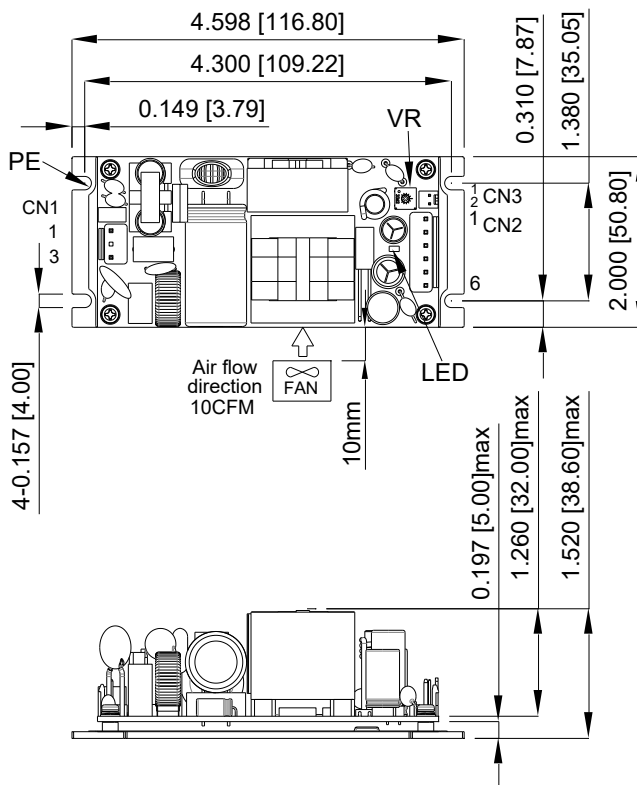
Pin	Function	Mating Housing	Terminal
1	+Fan output	MOLEX 22-01-3027 or equivalent	MOLEX 39-00-0380 or equivalent
2	-Fan output		

CFM260S120I-BI-C

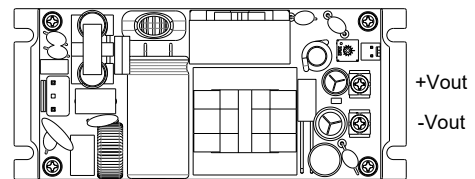
DC Output Connector:KANG YANG PCB-17AB-1

Function	The screw locked torque
+Vout	M3 6kgf-cm
-Vout	

CFM260S240~480B



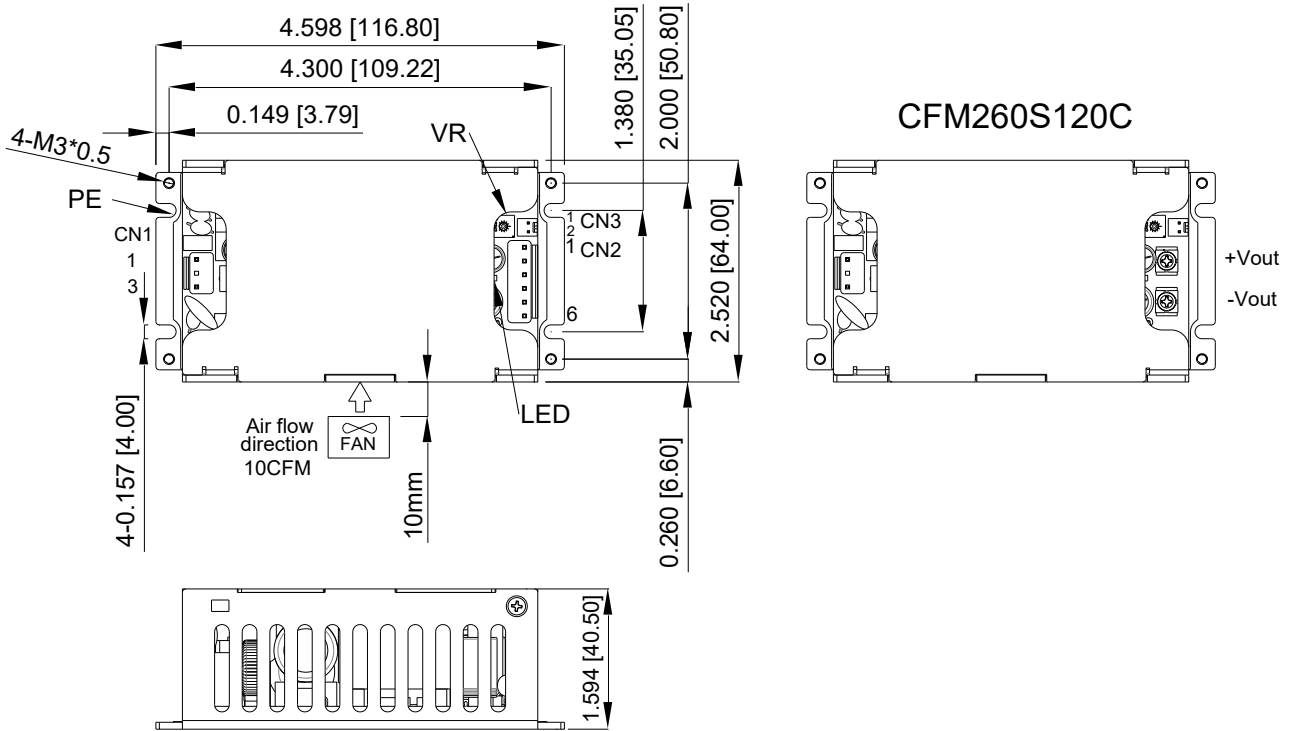
CFM260S120B





CFM260S Series

MECHANICAL SPECIFICATION



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