



CFM80S SERIES 80 WATT OPEN FRAME AC-DC MODULES

Features

- Universal Input Range 90~264Vac
- High Efficiency up to 90%
- 2"x 4" Open Frame Compact Size
- Class I
- No Load Input Power Consumption<0.5W
- Approval Safety IEC/EN/UL 62368-1 Ed 3.0
- Approval EN 55032 and CISPR/FCC Class B
- Operating Altitude 2000m
- Continuous Short Circuit Protection



MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE & NOISE NOTE2	VOLTAGE ACCURACY NOTE1	VOLTAGE ADJ RANGE	LINE REGULATION NOTE3	LOAD REGULATION NOTE4	%EFF. (Typ.) NOTE5
CFM80S050	5 V	12 A	±1%	±1%	4.75~5.25 V	±0.5%	±1%	86%
CFM80S120	12 V	6.7 A	±1%	±1%	11.4~12.6 V	±0.5%	±1%	88%
CFM80S150	15 V	5.36 A	±1%	±1%	14.25~15.75 V	±0.5%	±1%	90%
CFM80S240	24 V	3.35 A	±1%	±1%	22.8~25.2 V	±0.5%	±1%	90%
CFM80S480	48 V	1.67 A	±1%	±1%	45.6~50.4 V	±0.5%	±1%	90%

Note:

1. Voltage accuracy is set at 100% full load.
2. Add a 0.1uF ceramic capacitor and a 10uF E.L. capacitor to output for ripple & noise measuring @20MHz BW.
3. Line regulation is measured from 0V_{ac} to 264V_{ac} with 100% full load.
4. Load regulation is measured from 10% to 100% full load.
5. Typical efficiency at 230 Vac and full load at 25°C.
6. Standard input and output connectors (CN1 and CN2) wafer with TAIWAN KING PIN TERMINAL PVHI series and mate with JST housing VHR series and JST SVH-21/41T-P1.1 series crimp terminal or equivalent.

PART NUMBER

Series	Number of Outputs	Nominal Output Voltage	Type
CFM80	X	XXX	-X (Option)
CFM80	S : Single	050 : 5V 120 : 12V 150 : 15V 240 : 24V 480 : 48V	None : Open Frame P : With Pin

Part Number Example:

CFM80S120: 80W, Single 12Vdc Output



CFM80S 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		All	90		264	V _{ac}
Operating Temperature	See Derating Curve	All	-20		80	°C
Storage Temperature		All	-20		85	°C
Operating Altitude		All			2000	m

INPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Operating Voltage Range		All	100		264	V _{ac}
Input Frequency Range		All	47		63	Hz
Maximum Input Current	100% Load, V _{in} =100Vac	All			2	A
Inrush Current	V _{in} =240V _{ac} , Cold start @25°C	All			100	A
Leakage Current		All			3.5	mA

OUTPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Set Point	V _{in} =90V _{ac} ~264V _{ac} , I _o =Full load, ambient temperature=25°C	CFM80S050	4.75	5	8.25	V _{dc}
		CFM80S120	11.4	12	12.6	
		CFM80S150	14.25	15	15.75	
		CFM80S240	22.8	24	25.2	
		CFM80S480	45.6	48	50.4	
Operating Output Current Range	V _{in} =90V _{ac} ~264V _{ac} , See Derating Curve	CFM80S050			12	A
		CFM80S120			6.7	
		CFM80S150			5.36	
		CFM80S240			3.35	
		CFM80S480			1.67	
Holdup Time	V _{in} =115V _{ac}	All		12		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	TVS component to clamp output voltage	CFM80S050		6.8		V _{dc}
		CFM80S120		15		
		CFM80S150		18		
		CFM80S240		30		
		CFM80S480		56		
Over Current Protection	Output voltage=90% nominal output Voltage	All	130	160	180	%
Short Circuit Protection	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	CFM80S050			50	mV
		CFM80S120			120	
		CFM80S150			150	
		CFM80S240			240	
		CFM80S480			480	



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PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Load Capacitance	1. Input voltage is 115V _{ac} and 230V _{ac} 2. Output is max. full load 3. Ambient temperature=25°C	CFM80S050			12700	uF
		CFM80S120			6600	
		CFM80S150			5500	
		CFM80S240			3300	
		CFM80S480			1680	
Efficiency	1. Input voltage is 230V _{ac} 2. Output is 75% full load 3. Ambient temperature=25°C	CFM80S050		86%		%
		CFM80S120		89%		
		CFM80S150		90%		
		CFM80S240		90%		
		CFM80S480		90%		

ISOLATION CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input to Output	1 Minute	All			3000	V _{ac}
Input to Earth (Ground)	1 Minute	All			1500	V _{ac}
Output to Earth (Ground)	1 Minute	All			500	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

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 Telcordia SR332	All	280			k hours
Life Time	@75% Load, 40°C	All	26			k hours
Humidity	Non-condensing	All			93	% RH
Shock	Meets MIL-STD-810F Table 516.5, TABLE 516.5-1 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 hr (each axis),. total 3 hrs.	All		4		g
Weight		All		155		grams
Dimensions	Open Frame	All	4.000x2.000x1.07 inches (101.6x50.8x27.1 mm)			
	-P : With Pin		4.000x2.000x1.142 inches (101.6x50.8x29.00 mm)			
Safety	Class I, IEC/EN/UL 62368-1					Ed 3.0
EMC Emission	EN55032, EN61000-3-2, EN6100-3-3, EN61000-6-1, EN61000-6-3, 47 CFR FCC Part 15 Subpart B					Class B
Conducted Disturbance	EN 55032, FCC CFR 47 Part 15 Subpart B					Class B
Radiated Disturbance	EN 55032, FCC CFR 47 Part 15 Subpart B					Class B
Harmonic Current Emissions	IEC 61000-3-2:2019					Class A, D
Voltage Fluctuations & Flicker	IEC 61000-3-3:2013					Criterion A
EMC Immunity	EN 55035, EN 61204-3:2000, EN 61000-6-1:2007					Criterion A
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					Criterion A
Surge	IEC 61000-4-5:2014, L-N:±1kV, L-E(Ground) :±2kV					Criterion A
Conducted Disturbances, Induced by RF Fields	IEC 61000-4-6:2013					Criterion A
Power Frequency Magnetic Field	IEC 61000-4-8:2009					Criterion A



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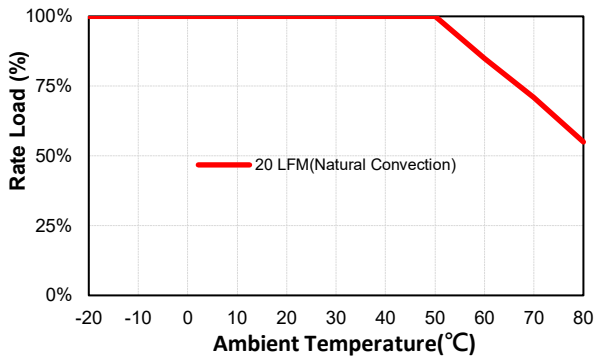
GENERAL SPECIFICATIONS

Voltage Dips	IEC 61000-4-11:2020, Dip: 30% 10ms, Dip: 60% 100ms, Dip >95% 5000ms	Criterion A
Voltage Interruptions	IEC 61000-4-11:2020, >95% 5000ms	Criterion B
Application Note Link	CFM80S Series App Notes	

CHARACTERISTIC CURVE

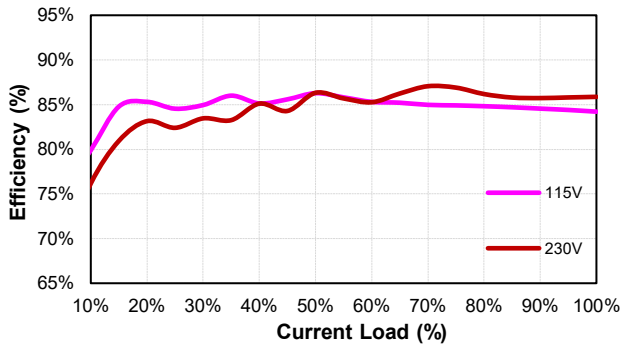
Power Derating Curve

Output power & Ambient Temperature

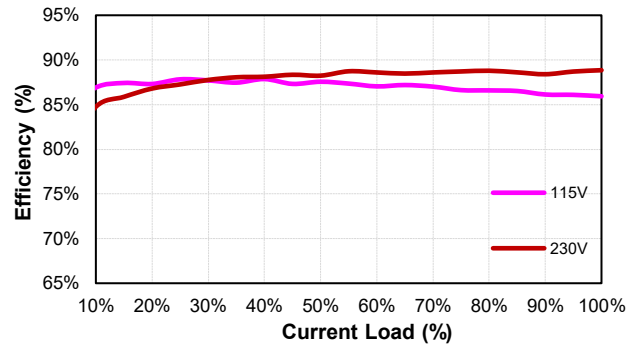


Performance Data

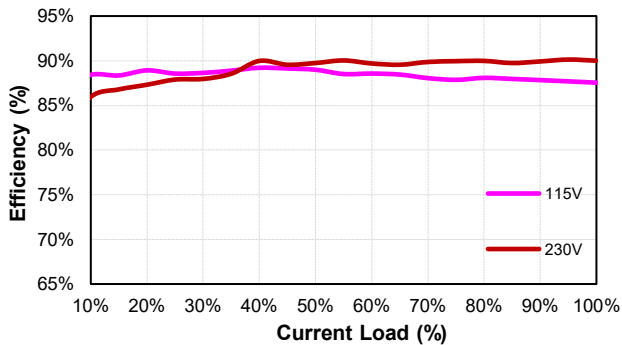
CFM80S050 (Eff Vs Io)



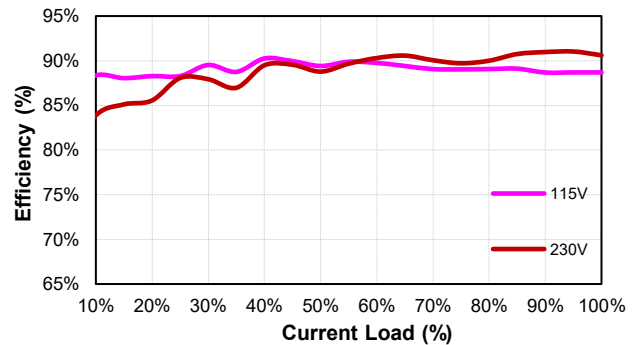
CFM80S120 (Eff Vs Io)



CFM80S150 (Eff Vs Io)

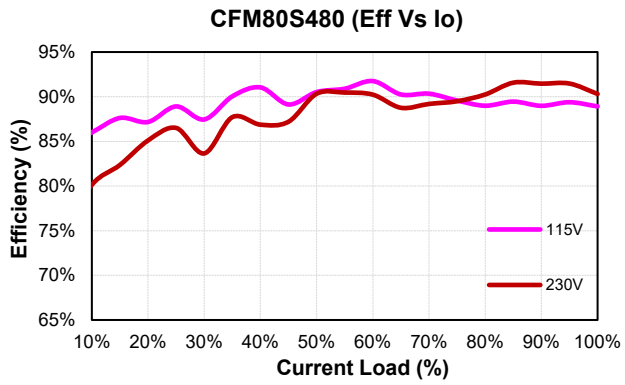


CFM80S240 (Eff Vs Io)





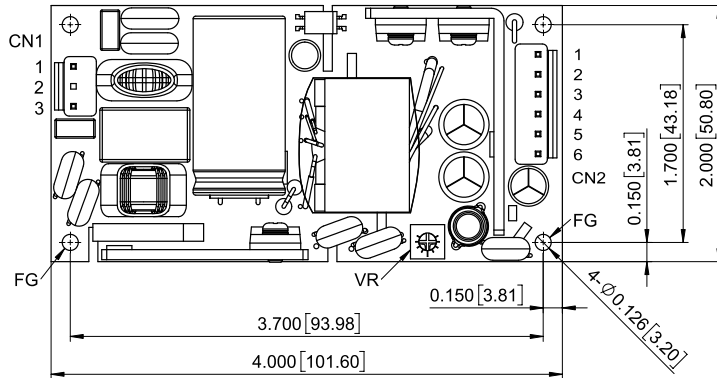
CFM80S Series





CFM80S Series

MECHANICAL SPECIFICATION



CFM80SXXX

All Dimensions in Inches[mm]

Tolerance Inches: x.xxx=±0.020

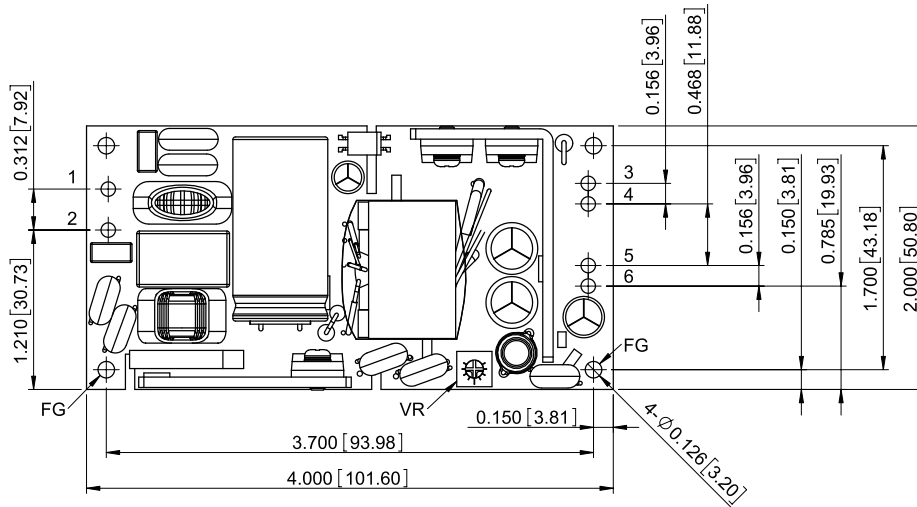
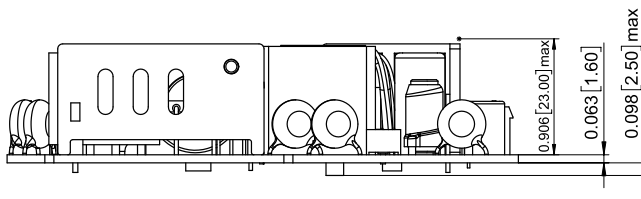
Millimeters: x.xx=±0.50

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 Connection(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		



CFM80SXXX-P

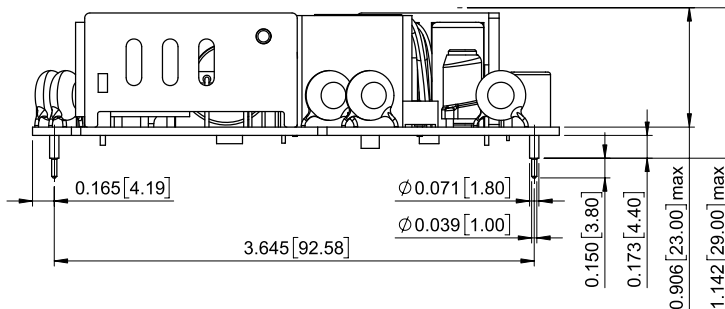
All Dimensions in Inches[mm]

Tolerance Inches: x.xxx=±0.020

Millimeters: x.xx=±0.50

Pin Connection

Pin	Function
1	ACL
2	ACN
3	+Vout
4	+Vout
5	-Vout
6	-Vout



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