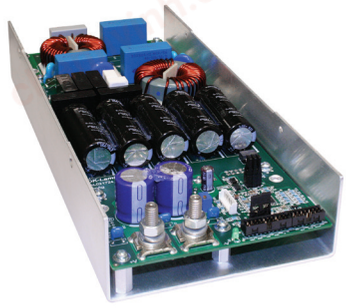
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TDK·Lambda CPFE1000Fi Series

720-1000W Conduction Cooled Power Supplies

https://product.tdk.com/en/power/cpfe
https://www.emea.lambda.tdk.com/uk/products/cpfe1000fi



Industrial | Test | LED | COMM | Broadcast | Renewable

The CPFE1000FI series industrial AC-DC power supplies offer output power up to 1008W in a conduction cooled low profile package. Features include voltage and current programming, remote on/off, remote sense, a standby supply, i^2C communication, and wide operating temperature range of -40°C to +70°C. The CPFE1000FI is designed to meet MIL-STD-810F vibration and shock.

Features	Benefits
• Smaller Size Than CPFE1000F	• Easier Integration For Industrial Systems
• Base Plate Cooled, No Fan Required	• Quiet Operation, Long Field Life
• Protective Coating Option	• Enables Use In Harsh Environments
• I^2C Interface	• Allows Remote Monitoring

Model Selector

Model	Nominal Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Max Power (W) @ 45°C
CPFE1000FI-12	12	9.6 - 14.4	60	720
CPFE1000FI-28	28	22.4 - 33.6	36	1008
CPFE1000FI-48	48	38.4 - 57.6	21	1008

Part Numbering Scheme

CPFE1000FI	-	28	-

- CPFE1000FI: Series Name
- 28: 12, 28, 48V
- -:

blank	U channel, no cover or coating
/C	U channel and cover, no coating
/P	Pcb only, no U channel or cover
/H	Pcb coating

Example: CPFE1000FI-28/CH

Output Power vs. Ambient Temperature (1)

Model	Input Voltage	Output Power (W) 30°C	40°C	45°C	50°C	60°C	70°C
CPFE1000FI-12/H, /P, /PH, /C, /CH	90V - 135Vac	720	720	720	720	720	720
	170V - 265Vac	720	720	720	720	720	720
CPFE1000FI-28/H, /P, /PH	90V - 135Vac	1008	1008	1008	1008	952	896
	170V - 265Vac	1008	1008	1008	1008	1008	1008
CPFE1000FI-28/C, /CH	90V - 135Vac	1008	952	952	896	840	784
	170V - 265Vac	1008	1008	1008	1008	1008	1008
CPFE1000FI-48/H, /P, /PH	90V - 135Vac	1008	1008	1008	1008	960	864
	70V - 265Vac	1008	1008	1008	1008	1008	1008
CPFE1000FI-48/C, /CH	90V - 135Vac	1008	960	960	912	864	816
	170V - 265Vac	1008	1008	1008	1008	1008	1008

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Specification

Model		CPFE1000FI-12	CPFE1000FI-28	CPFE1000FI-48
Input				
Input Voltage Range (Operating)	Vac	90 - 265		
Nominal Input Voltage Range	Vac	100 - 240 (Note: Safety certified for 90-264Vac only)		
Input Frequency	Hz	47 - 63		
Input Current (110 / 220Vac)	A	13.6 / 6.6 (Model dependent)		
Inrush Current (110 / 220Vac)	A	23 / 46 peak		
Leakage Current (at 230Vac, 50Hz)	mA	<1.5		
Power Factor	-	0.95 typical (meets EN61000-3-2)		
Hold Up Time (typ) at 230Vac Input	ms	20 @ 25°C and warmer		
Efficiency (Typical, 100% load, 110 / 220Vac)	%	83 / 86	85 / 88	86 / 89
Conducted & Radiated EMI	-	Conducted: EN55032/EN55011 Class B, Radiated: Class A		
Immunity	-	See Immunity table		
Line Dip	-	Complies with SEMI F47 (200Vac line only)		
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark and UKCA Mark		

Immunity

Test	Standard	Test Level	Criteria	Notes
ESD	IEC 61000-4-2	±8 kV air discharge, ±4 kV contact discharge	B	See test report
Radiated Susceptibility	IEC 61000-4-3	10 V/m from 80-1000 MHz (80% AM at 1kHz)	A	
Electrical Fast Transient Burst	IEC 61000-4-4	Power line pulses of ± 2kV; I/O line pulses of ± 1kV	B	
Surge	IEC 61000-4-5	±2kV common mode, ±1kV differential mode	B	
Conducted Susceptibility	IEC 61000-4-6	10 Vrms, 150 kHz - 80 MHz 1 kHz 80% AM	B	
Magnetic fields	IEC 61000-4-8	Inductive loop at 50 Hz, to 1.0 amps (rms) per meter	A	
Voltage Dips and Input Interruptions	IEC 61000-4-11	Voltage Dips of 30% and >95%; Interruptions of >95%.	B / C	
Ring Wave	IEC 61000-4-12	±1kV, ±2kV common mode surges. ±0.5kV, ±1kV differential mode surges.	B	
Voltage Fluctuation	EN 61000-4-14	Level 3 ΔU=12% Un	A	

Specification

Model		CPFE1000FI-12	CPFE1000FI-28	CPFE1000FI-48
Output				
Line Regulation	mV	48	56	96
Load Regulation	mV	48	56	96
Temperature Coefficient	ppm/°C	200		
Ripple & Noise (20MHz BW) (2)	%	1 (2 below 0°C)		
Minimum Load	A	None		
Overcurrent Protection	%	105 - 140 (Automatic Recovery)		
Overvoltage Protection	%	125 - 145 (Automatic Recovery)		
Overtemperature Protection	°C	Shuts down between 90 - 115 (Auto Recovery)		
Remote Sense	-	Yes, compensates up to 500mV cable drop		
Remote On/Off (Opto Isolated)	-	High = ON		
Power On Signal (ENA)	-	Open Collector (10mA sink current). Low (on) when output is present		
Auxiliary Supply	-	10 - 14V, 20mA		
Parallel Operation	-	Yes, single wire		
Series Operation	-	Possible, see installation manual		

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Specification

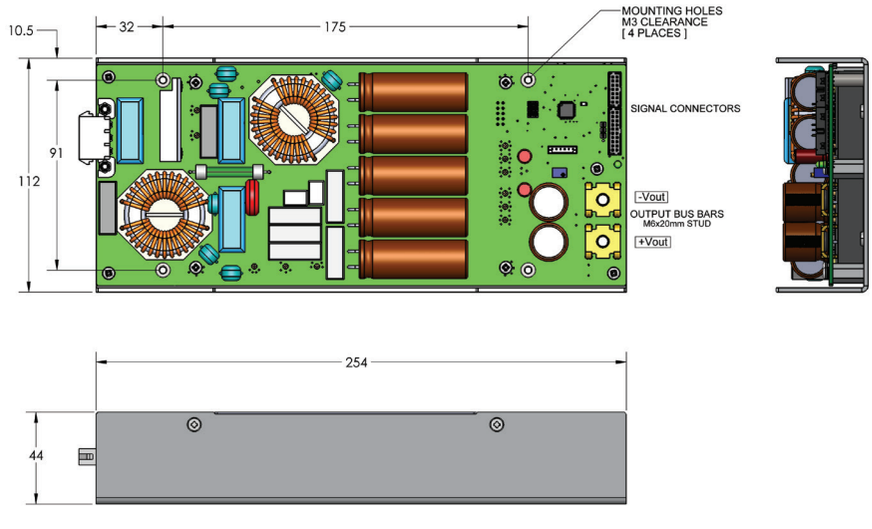
Model		CPFE1000FI-12	CPFE1000FI-28	CPFE1000FI-48
Environmental				
Operating Temperature	°C	-40 to +70 ambient, (85 baseplate maximum) (see installation manual for derating)		
Storage Temperature	°C	-40 to +100		
Humidity (non condensing)	%RH	Operating: 20 - 90, Non operating: 10 - 95 (PCB assembly protective coated)		
Cooling	-	Conduction cooled		
Altitude	m	3000		
Withstand Voltage	Vdc	Input to Ground 2121, Input to Output 4242, Output to Ground 500		
Isolation Resistance	MΩ	>100 at 25°C, 70%RH & 500Vdc		
Vibration (Non operating)	-	MIL-STD-810F, Method 514.5, Proc I, Category 4, 10		
Shock	-	MIL-STD-810F, Method 516.5, Procedure I, IV & VI		
Other				
Weight (Typ)	g	1240 (without cover)		
Size (WxHxD)	mm	112 x 43 x 254 (262mm including AC connector)		
Size (WxHxD)	Inches	4.4 x 1.69 x 9.9		
MTBF - Telcordia	Hours	98,173 hours Method 1, Ground Benign, 25C, 100Vac input, 85C baseplate		
Warranty	Years	2		

I²C Interface

Output Voltage Monitoring
Output Current Monitoring
Base Plate Temperature Monitoring
Remote On/Off Programming
IOG, DC Good, over temperature warning
Reading Manufacturing Related Data

(1) Models mounted in the horizontal orientation. See instruction manual for alternative mounting positions and the corresponding derating guidelines.
(2) Warm up period of 30 minutes below -30°C for ripple. Jeita RC-9131C Method, see instruction manual for test methods.

Outline Drawing U Channel

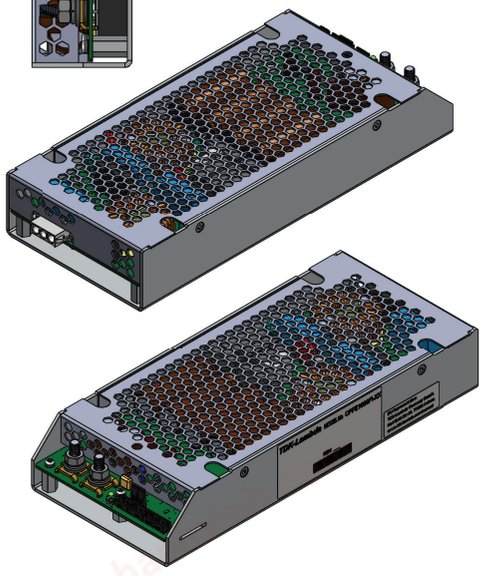


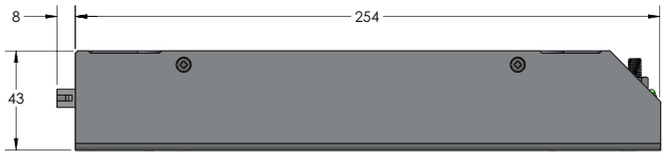
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Outline Drawing with Cover (/C)





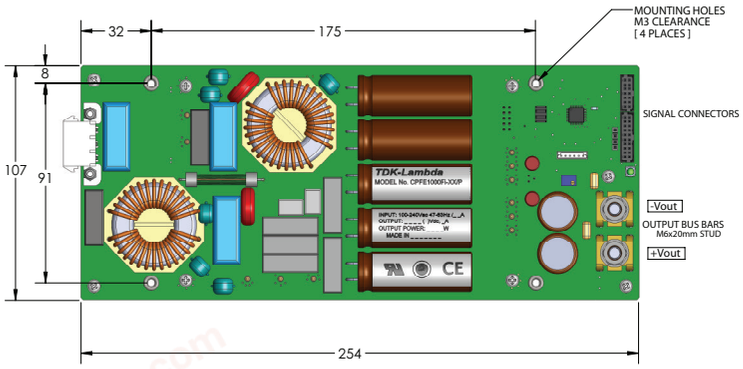


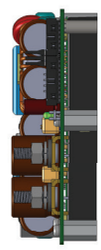


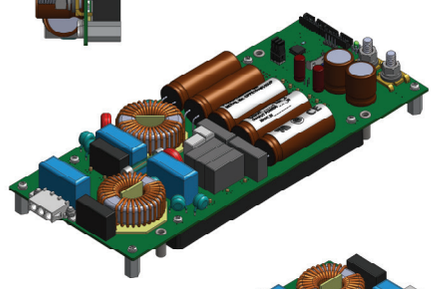
CONDUCTION COOLED POWER SUPPLY:
720W TO 1000W
(SHOWN WITH OPTIONAL COVER)

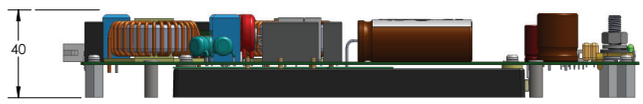
12V (9.6V-14.4V) @ 60A MAX.
28V (22.4V - 33.6V) @ 36A MAX.
48V (38.4V - 57.6V) @ 21A MAX.

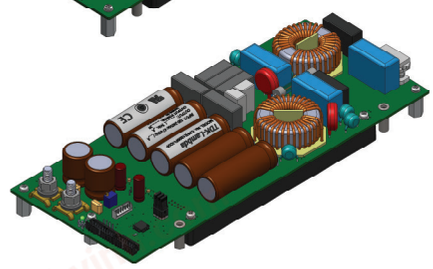
Outline Drawing Open Frame (/P)











CONDUCTION COOLED POWER SUPPLY:
720W TO 1000W
(/P OPTION SHOWN)

12V (9.6V-14.4V) @ 60A MAX.
28V (22.4V - 33.6V) @ 36A MAX.
48V (38.4V - 57.6V) @ 21A MAX.

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