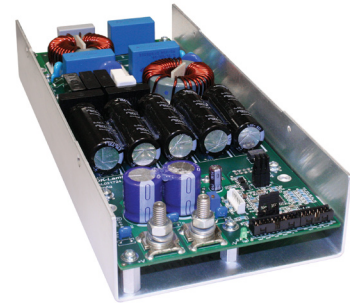


720-1000W Conduction Cooled Power Supplies

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

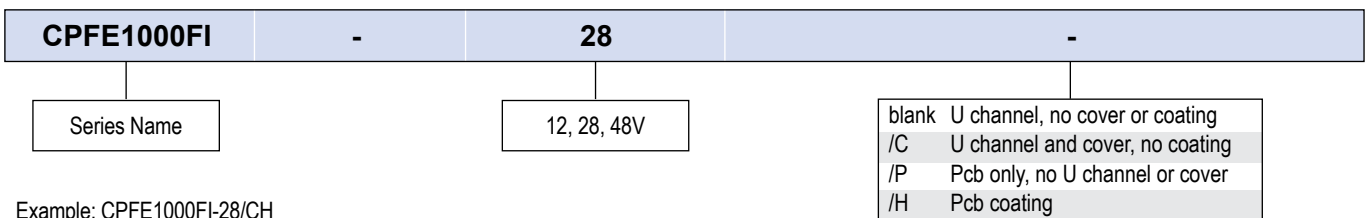


The CPFE1000Fi series industrial AC-DC power supplies offer output power up to 1008W in a conduction cooled low profile package. Features include voltage and current programming, remote on/off, remote sense, a standby supply, i²C communication, and wide operating temperature range of -40°C to +70°C. 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 ² C 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



| Derating Ambient Temperature ⁽¹⁾ | | | | | |
|---|------------------|------------------|------|------|------|
| Model | Input Voltage | Output Power (W) | | | |
| | | 45°C | 50°C | 60°C | 70°C |
| CPFE1000FI-12 | 85Vac to 170Vac | 720 | 720 | 720 | 720 |
| | 170Vac to 265Vac | 720 | 720 | 720 | 720 |
| CPFE1000FI-28 | 85Vac to 170Vac | 1008 | 980 | 952 | 896 |
| | 170Vac to 265Vac | 1008 | 1008 | 1008 | 1008 |
| CPFE1000FI-48 | 85Vac to 170Vac | 1008 | 1008 | 1008 | 1008 |
| | 170Vac to 265Vac | 1008 | 1008 | 1008 | 1008 |

| Specification | | | | |
|---|-----|---|---------------|---------------|
| Model | | CPFE1000FI-12 | CPFE1000FI-28 | CPFE1000FI-48 |
| Input | | | | |
| Input Voltage range | Vac | 90 - 265 | | |
| 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) | uA | <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) | % | 79 / 81 | 83 / 86 | 83 / 86 |
| 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 | |

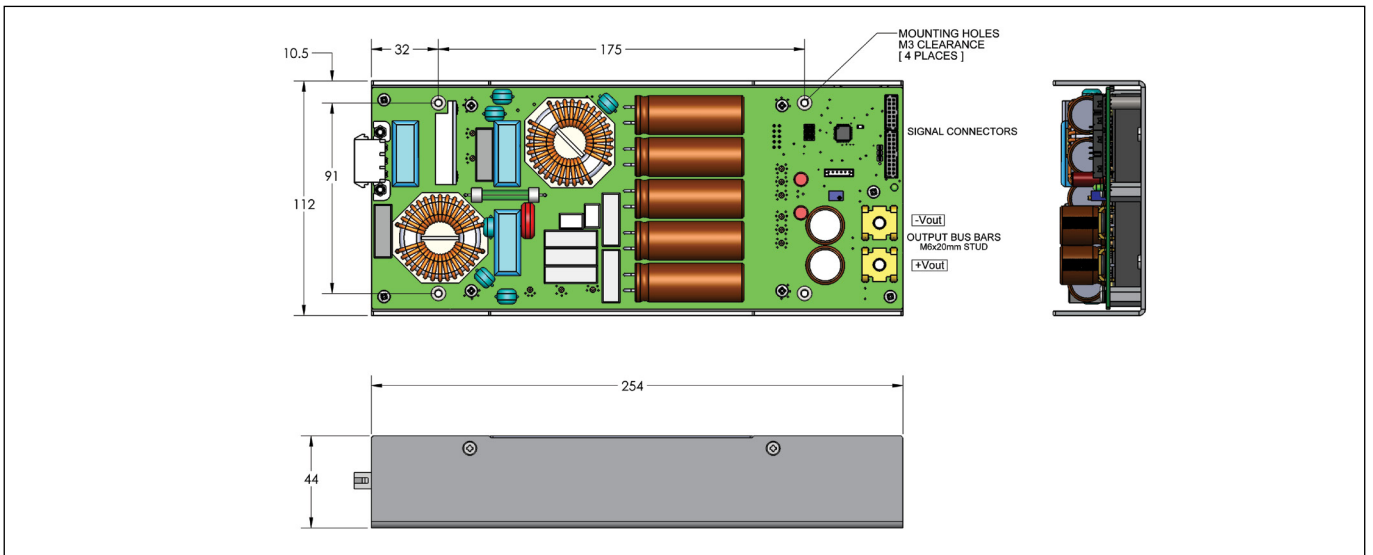
| Specification | | | | |
|-------------------------------|--------|---|---------------|---------------|
| Model | | CPFE1000FI-12 | CPFE1000FI-28 | CPFE1000FI-48 |
| Output | | | | |
| Line Regulation | mV | 48 | 56 | 96 |
| Load Regulation | mV | 48 | 56 | 96 |
| Temperature Coefficient | ppm/°C | 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 | | |

| Specification | | 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 | | |

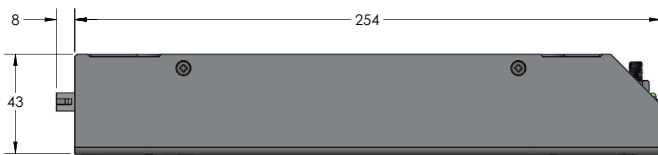
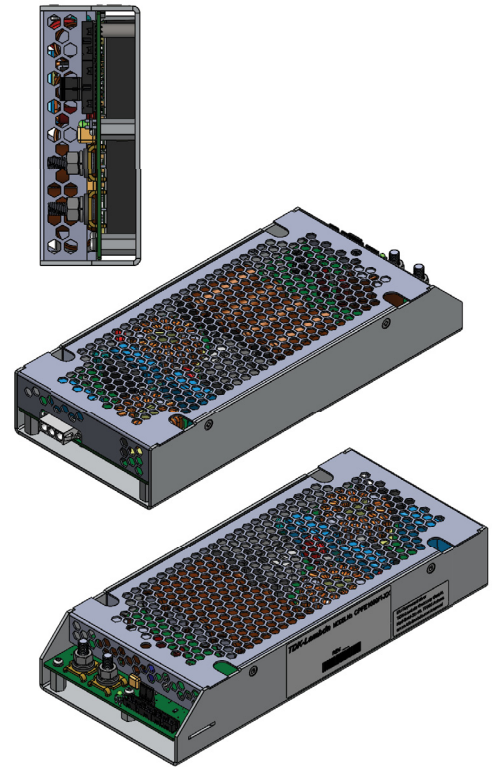
| I ² C Interface | |
|--|--|
| Output Voltage Monitoring | |
| Output Current Monitoring | |
| Base Plate Temperature Monitoring | |
| Remote On/Off Programming | |
| IOG, DC Good, over temperature warning | |
| Reading Manufacturing Related Data | |

- (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



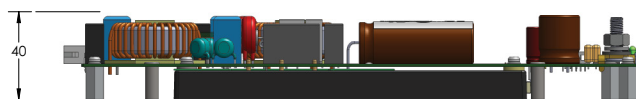
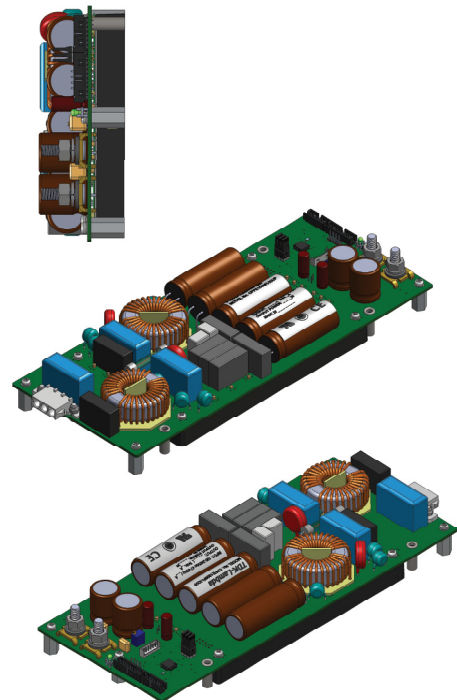
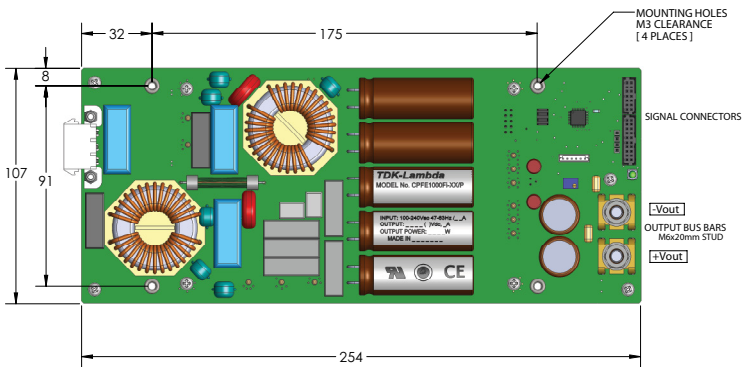
Outline Drawing with Cover (IC)



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 (IP)



CONDUCTION COOLED POWER SUPPLY:
720W TO 1000W
(IP 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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