



1000W single output, conduction/ baseplate cooled power supply

Features	Benefits
• Fanless	Longer field life and no fan noise
• Baseplate cooled	Conducts heat outside of the system
• Wide range ac input	Supports global use
• I ² C interface	Allows remote monitoring
• 2 Year Warranty	Low cost of ownership



Input			
Input Voltage	90-265Vac	Input Frequency	47 - 63Hz (440Hz with reduced PFC - consult factory)
Input Harmonics	EN61000-3-2 compliant	Power Factor	0.95 typical (meets EN61000-3-2)
Input Fuse	Fast acting (not user accessible)	Inrush Current	<40A at 25°C and 230Vac (cold start) (meets EN61000-3-3)
Earth Leakage Current	1.5mA at 23Vac (50Hz)		

QUICK SELECTOR - example configurations				
Output Voltage	Adjustment Range	Maximum Output Current	Description	
12V	9.6 - 14.4V	60A	CPFE1000F-12	
28V	22.4 - 33.6V	36A	CPFE1000F-28	
48V	38.4 - 57.6V	21A	CPFE1000F-48	

Global Signals	
Remote on/off	Opto isolated, 2.5mA (10-14V) to enable power supply, less than 0.15mA (0.5V) to disable
Standby supply	12V±2V / 20mA isolated supply, not affected by remote on/off.
Output good (ENA)	Open collector (10mA sink current). Low (on) when output is in regulation
I ² C	Provides manufacturing location, date, serial number, part number, unit revision, output voltage & current read back, base plate temperature, remote on/off, IOG, DC good and over temperature warning
IOG Signal	Normal or abnormal operation of the power module can be monitored by using the IOG terminal. This signal monitor output is located at secondary side (output side) and is an open collector output. This signal is LOW when inverter is normally operating and HIGH when inverter stops or when inverter is operating abnormally. (maximum sink current is 5mA, maximum applied voltage is 35V). See handbook for details.
Current Share (PC)	By connecting the PC terminal of each CPFE1000Fxx, output current can be equally drawn from each unit. A maximum of 6 units of the same model can be connected. See handbook for details.

Isolation			
Input to Output	4.24kVdc		
Input to Earth	2.12kVdc	Output to Earth	500Vdc

Output Specification

Total Output Power	1008W	Continuous. (12V versions = 720W)
Turn on time	1.5s max	at 90Vac and 100% rated output power
Efficiency	79-86%	typical (model dependent)
Hold up	25ms	typical at 230Vac, 100% load
Ripple and Noise	<1%	pk-pk, using EIAJ test method & 20MHz bandwidth (2% below 0°C)
Voltage Setting Accuracy	±2%	at 50% load
Remote Sense	Yes	Max 0.5V total line drop
Minimum Load	No	
Total Regulation	<4%	Including Line (for 90-264Vac input change), Load (for 0-100% load change) and Temperature (0-50°C).
Transient Response	<10%	of set voltage for 50% load change (in 50µs within the range 25-100% load)
Recovery	500µs	for recovery to 2% of set voltage
Over Voltage Protection	Yes	Auto recovery
Short Circuit Protection	Yes	Auto recovery after removal of short circuit
Over Temperature Protection	Yes	Auto recovery

Environment

Baseplate Temperature	-40°C to 85°C operational (CPFE1000F-28 and CPFE1000F-48, -40°C to 70°C below 170Vac input) -40°C to 100°C storage (max 12 months).	<table border="1"> <thead> <tr> <th colspan="7">Ambient Temperature Operating Limits</th> </tr> <tr> <th rowspan="2">Model No</th> <th rowspan="2">Input Voltage</th> <th colspan="4">Output Power</th> <th rowspan="2">Derating Factor</th> </tr> <tr> <th>50°C</th> <th>60°C</th> <th>70°C</th> <th>85°C</th> </tr> </thead> <tbody> <tr> <td rowspan="2">CPFE1000F-12</td> <td>85-170Vac</td> <td>720W</td> <td>720W</td> <td>576W</td> <td>360W</td> <td>14.4W/°C</td> </tr> <tr> <td>170-265Vac</td> <td>720W</td> <td>720W</td> <td>670W</td> <td>595W</td> <td>5W/°C</td> </tr> <tr> <td rowspan="2">CPFE1000F-28</td> <td>85-170Vac</td> <td>1008W</td> <td>864W</td> <td>720W</td> <td></td> <td>14.4W/°C</td> </tr> <tr> <td>170-265Vac</td> <td>1008W</td> <td>1008W</td> <td>958W</td> <td>883W</td> <td>5W/°C</td> </tr> <tr> <td rowspan="2">CPFE1000F-48</td> <td>85-170Vac</td> <td>1008W</td> <td>864W</td> <td>720W</td> <td></td> <td>14.4W/°C</td> </tr> <tr> <td>170-265Vac</td> <td>1008W</td> <td>1008W</td> <td>958W</td> <td>883W</td> <td>5W/°C</td> </tr> </tbody> </table>	Ambient Temperature Operating Limits							Model No	Input Voltage	Output Power				Derating Factor	50°C	60°C	70°C	85°C	CPFE1000F-12	85-170Vac	720W	720W	576W	360W	14.4W/°C	170-265Vac	720W	720W	670W	595W	5W/°C	CPFE1000F-28	85-170Vac	1008W	864W	720W		14.4W/°C	170-265Vac	1008W	1008W	958W	883W	5W/°C	CPFE1000F-48	85-170Vac	1008W	864W	720W		14.4W/°C	170-265Vac	1008W	1008W	958W	883W	5W/°C
Ambient Temperature Operating Limits																																																											
Model No	Input Voltage	Output Power				Derating Factor																																																					
		50°C	60°C	70°C	85°C																																																						
CPFE1000F-12	85-170Vac	720W	720W	576W	360W	14.4W/°C																																																					
	170-265Vac	720W	720W	670W	595W	5W/°C																																																					
CPFE1000F-28	85-170Vac	1008W	864W	720W		14.4W/°C																																																					
	170-265Vac	1008W	1008W	958W	883W	5W/°C																																																					
CPFE1000F-48	85-170Vac	1008W	864W	720W		14.4W/°C																																																					
	170-265Vac	1008W	1008W	958W	883W	5W/°C																																																					
Ambient Temperature	See 'Ambient Temperature Operating Limits'																																																										
Low Temp Startup	-40°C																																																										
Humidity	20 - 95% RH non condensing (non operating 10-95% RH) (PCB assembly protective coated)																																																										
Shock	Conforms to MIL-STD-810E/F, Method 516.5, Pro I, IV, VI																																																										
Vibration	Conforms to MIL-STD-810E, Method 514.4, Pro I, Cat 1,9																																																										
Altitude	-200 to 2000 metres operational (-200 to 5000m storage/transportation)																																																										
Pollution	Degree 2, Material group IIIb																																																										

Immunity EN61000-6-2:2005, EN60601-1-2:2001

				Criteria
Electrostatic Discharge	EN61000-4-2	Level 2	Air discharge level 3, Contact discharge level 2	A
Electromagnetic Field	EN61000-4-3	Level 3	12V/m	A
Fast / Burst Transient	EN61000-4-4	Level 3		A
Surge Immunity	EN61000-4-5	Level X (better than level 4)	Common mode - 6kVac, Differential - 3kVac	B
Conducted RF Immunity	EN61000-4-6	Level 3	12V	A
Power Frequency Magnetic Field	EN61000-4-8	Level 4	30A/m	A
Voltage Dips, Variations, Interruptions	EN61000-4-11	Class 3	Criteria B for 5 sec interruption	A
Ring Wave	EN61000-4-12	Level 3	Common mode - 2.2kV, Differential - 1.1kV	A
Voltage Fluctuations	EN61000-4-14	Class 3		A

Emissions EN61000-6-3:2007, EN60601-1-2:2001

Radiated Electric Field	EN55011, EN55022	Class B see application note for details.
Conducted Emissions	EN55011, EN55022 MIL STD 461E/462D CE102	Class B
Conducted Harmonics	EN61000-3-2	
Flicker	EN61000-3-3	Compliant - d_{max} <4% only

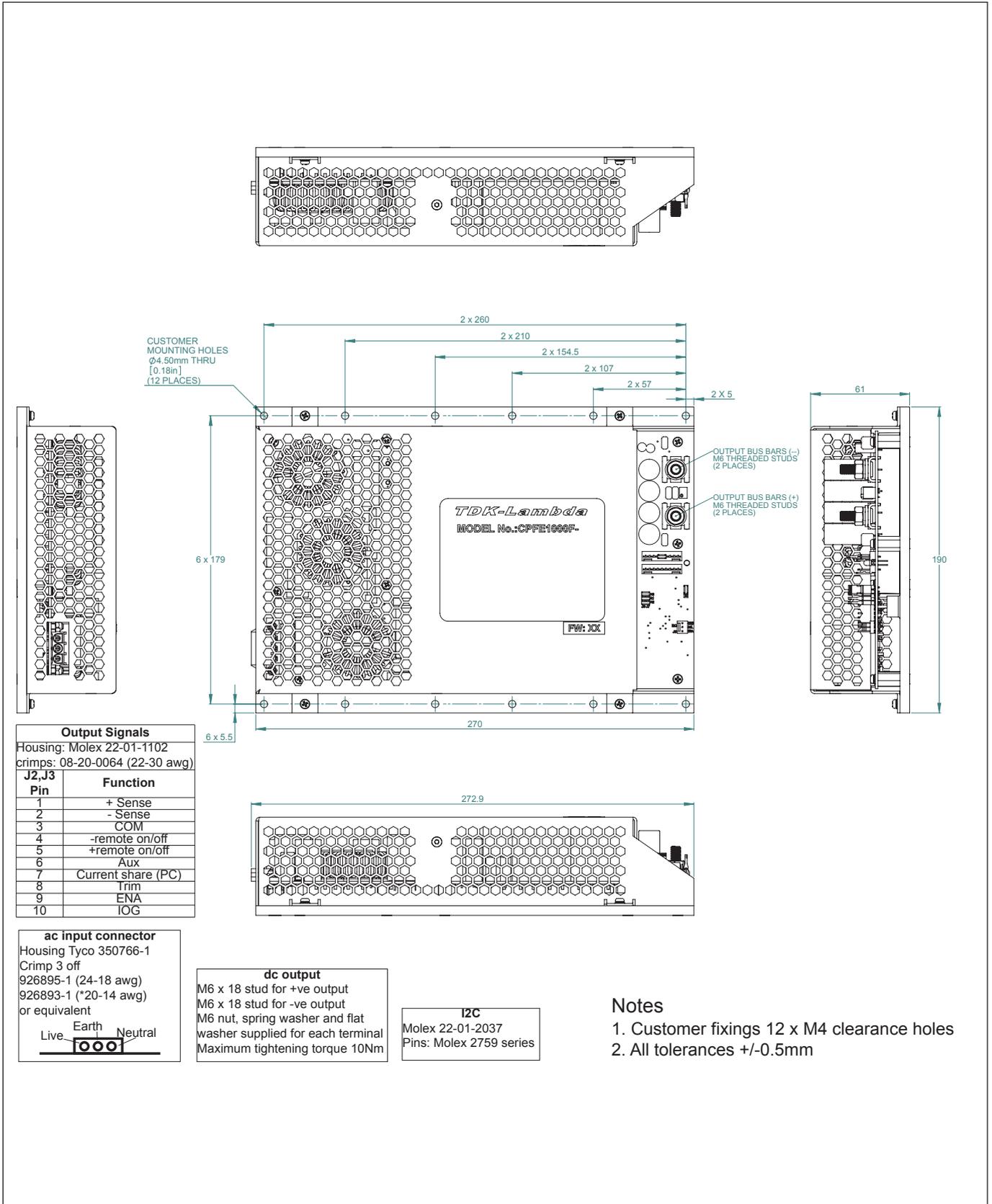
Safety Approvals

IEC/EN 60950-1, UL60950-1 / CSA 22.2 No 60950-1
 CE Mark (EN60950-1)
 CB certificate and Report available on request

Notes

File E135494
 LV Directive 2006/95/EC
 Please check with technical sales for status of approvals

Outline & Connection Drawings



Notes

1. Customer fixings 12 x M4 clearance holes
2. All tolerances +/-0.5mm