

### GENERAL SAFETY INSTRUCTIONS

#### High Voltage Warning

Dangerous voltages are present within the power supply.

#### Critical Components

This product is not authorised for use as a critical component in nuclear control systems, life support systems or equipment for use in hazardous environments without the express written approval of the Managing Director of TDK-Lambda UK Ltd.

#### Servicing

This product is not customer serviceable.

Unit repairs shall only be carried out by TDK- Lambda UK Ltd or their authorised agents.

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#### Safety Class of Protection

The unit is designed for the following parameters : Material Group IIIb, Pollution Degree 2, Overvoltage Category II, Class 1 (earthed), Indoor use. The unit is considered as fixed and rated IPX0. The CPFE500F-12 and CPFE500F-24 are classed as having SELV outputs. The CPFE500F-48 is classed as having a NON SELV output. All outputs are capable of providing hazardous energy (>240VA). The final equipment should provide protection to service personnel against inadvertent contact with the PSU output terminals.

#### Installation

This product is designed for use within other equipment which restrict access to authorised competent personnel only. The unit covers/chassis must not be made user accessible. The appliance may be mounted in any orientation except inverted (baseplate uppermost). The customer has to ensure the baseplate temperature remains below certain limits. Horizontal orientation input 90-149V baseplate temperature limited to 75°C. Horizontal orientation input 150V or greater baseplate temperature limited to 85°C. All other orientations baseplate temperature limited to 85°C. With open frame version, any orientation is permitted at 85°C baseplate temperature. The mains input connector is not acceptable for use as field wiring terminals. The appliance must be securely mounted and the baseplate properly bonded to the main protective earth contact before any connection to AC mains supply is made. The ventilation openings must not be impeded – ensure a space at least 5cm between any obstruction and the ventilation openings.

### Environmental Parameters

	Operation	Storage & Transportation
Temperature	-40°C to +50°C <sup>(note 1,2)</sup>	-40°C to +85°C
Humidity	30% to 90% RH, non-condensing	10% to 95% RH, non-condensing
Air Pressure	70kPa to 106kPa	54kPa to 106kPa
Altitude	-200m to 2000m	-200m to 2000m

\* Note 1 – heatsinking must be provided to ensure the PSU baseplate temperature does not exceed 85DegC (see diagram for measurement location) and installation notes.

\* Note 2 – For 3 year life expectancy, continuous temperature of electrolytic capacitors should not exceed :- C11,12,25,26 67.5°C  
C22,23,16,17 81°C

### Level of Insulation

Primary mains circuit to earth	2.25~2.35KVDC
Primary mains circuit to output	4.25~4.35KVDC
Output to earth	500VDC max

### Input Parameters

Maximum input voltage range	85 – 265VAC <sup>(note 3)</sup>
Nominal input voltage range	100 – 240VAC
Input frequency range	47 – 63 Hz <sup>(note 3)</sup>
Maximum input current	8.2Arms
Earth leakage	1650µA Max
Efficiency (25°C,100% Load)	80% min

\* Note 3 - In cases where conformance to various specs (UL, EN) are required, input voltage range will be 100~240VAC(50/60Hz).

### Output Parameters

	CPFE500F-12	CPFE500F-28	CPFE500F-48
Nom output Voltage	12VDC ± 1%	28VDC ± 1%	48VDC ± 1%
Max adjust range <sup>(note 4)</sup>	9.6-14.4V	22.4-33.6V	38.4-57.6V
Maximum output current	42A	18A	10.5A
Overcurrent protection	105-140%	105-140%	105-140%
Overvoltage Protection	125-145% latched shutdown	125-145% latched shutdown	125-145% latched shutdown
Over-temp Protection	Latched Shutdown at 90~115°C baseplate temperature	Latched Shutdown at 105~130°C baseplate temperature	Latched Shutdown at 105~130°C baseplate temperature

\* Note 4 - Max output power is limited to 504W

### CONNECTION DETAILS

#### Input Connection

Mains input connection by 3way AMP 'Mate-n-lock' connector  
 Mating 3-way housing: AMP 350766-1.  
 Mating crimp terminals: AMP 926893-1 (14~20AWG), 926895-1 (18~24AWG)

Pin 3 : Live, Pin 2 : Earth, Pin 1 : Neutral  
 Internal Fuse Type: F15AH 250V

#### Output Power Connection

DC output +ve & -ve connection by two M6x18 studs, max torque 10Nm.  
 Use appropriate ring terminals and wire for the load and short circuit current.

#### Output Signals

Signal connections available on two 10-way 2.5mm header connectors (ref J2,J3).  
 Mating 10-way housing : Molex 22-01-1102.  
 Mating crimp terminals : 08 70 0064  
 Pinout :-

J2,J3 Pin	Function
1	+ Sense
2	- Sense
3	COM
4	- remote on/off
5	+ remote on/off
6	Aux
7	Current share
8	Trim
9	ENA
10	IOG

Note : Two shorting links (supplied) may be fitted at J2 or J3 to permanently enable the PSU.  
 Fit one link between pins 3&4 and one link between pins 5&6 to permanently enable.

#### Safety Approvals

UL/CSA 60950-1, IEC/EN60950-1  
 Intended for installation in a non-operator access environment  
 Intended for installation in an external electrical/mechanical fire enclosure.

### EMC & IMMUNITY

Conducted Emissions - EN55022 Class B  
 Radiated Emissions - EN55022 Class B <sup>(Note 5)</sup>  
 Immunity - EN61000-4-2, -3, -4, -5, -6, -8, -11  
*(Note 5) see application note for curve B*

### FAULT FINDING

If the unit shuts down, switch off or remove the supply as it could be that an over voltage or over temperature condition has occurred. In the event of an over temperature condition, ensure the unit has cooled down before re-applying the supply.  
 If the unit still fails to power up, return to TDK-Lambda UK Ltd for investigation and repair.

### MECHANICAL DIMENSIONS

