Industrial Test Broadcast Comms Renewable

# 500W 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 |
| • Diode ORing + share option | Increase system reliability |
| • 2 Year Warranty | Low cost of ownership |

## Input

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

## QUICK SELECTOR - example configurations

Additional variants available, see "How to Create a Product Description"

| Output Voltage | Max Output Current | ORing diode? | Units with cover | |
|---|---|---|---|---|
| | | | Description | Order Code |
| 12V | 42A | Yes | CPFE500F-12-DL-C | T800097 |
| | | No | CPFE500F-12-NL-C | T800100 |
| 24V | 18A | Yes | CPFE500F-24-DL-C | T800111 |
| | | No | CPFE500F-24-NL-C | T800122 |
| 28V | 18A | Yes | CPFE500F-28-DL-C | T800133 |
| | | No | CPFE500F-28-NL-C | T800144 |
| 48V | 10.5A | Yes | CPFE500F-48-DL-C | T800155 |
| | | No | CPFE500F-48-NL-C | T800166 |

## How To Create A Product Description

| Output | Adjustment range | Maximum Current |
|---|---|---|
| 12 | 9.6 - 14.4V | 42A |
| 24 | 22.4 - 33.6V | 18A |
| 28 | 22.4 - 33.6V | 18A |
| 48 | 38.4 - 57.6V | 10.5A |

| | |
|---|---|
| N | No ORing diode |
| D | ORing diode included<br>Note: reduces maximum output voltage by 1V |

| CPFE500F | Vout | - | ORing diode | Cover Option | - | Coating Option |
|---|---|---|---|---|---|---|

| | |
|---|---|
| C | Protective coating applied |

| | |
|---|---|
| -L | Supplied with cover fitted |
| -N | Open frame |

Confirm availability of created product with TDK-Lambda

## Isolation

| | | | |
|---|---|---|---|
| Input to Output | 4.24kVdc | | |
| Input to Earth | 2.12kVdc | Output to Earth | 500Vdc |

## Output Specification

| | | |
|---|---|---|
| Total Output Power | 504W | Continuous. Do not exceed maximum output current in 'How to create a product description' |
| Turn on time | 1.5s max | at 90Vac and 100% rated output power |
| Efficiency | 85% | typical (at 75% load, without ORing diodes, 230Vac input) |
| Hold up | 10ms | typcial at 230Vac, 100% load |
| Ripple and Noise | <1% | pk-pk, using EIAJ test method & 20MHz bandwidth<br>(1.5% below -10°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). The ORing diode option adds 1V to the load regulation specification. |
| Transient Response | <10% | of set voltage for 50% load change<br>(in 50µs within the range 25-100% load) |
| Recovery | 500µs | for recovery to 2% of set voltage |
| Over Voltage Protection | Yes | Latching, need to cycle ac to restart unit |
| Short Circuit Protection | Yes | Auto recovery after removal of short circuit |
| Over Temperature Protection | Yes | Latching, need to cycle ac to restart unit |
| Series Operation | Yes | |
| Parallel Operation | Yes | Single wire, current share, up to 6 units |

## Global Signals

| | |
|---|---|
| Remote on/off | Opto isolated, 2.5mA (10-14V) to enable power supply, less than 0.15mA (0.5V) to disable or fit supplied links to permanently enable (see handbook for details) |
| 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 |
| ORing diode | (option) - Allows redundant connection of power supplies with no additional diodes required. |

## Environment

| | |
|---|---|
| Baseplate Temperature | -40°C to 85°C operational (12V version 80°C max), -40°C to 85°C storage (max 12 months). |
| Low Temp Startup | -40°C |
| Humidity | 20 - 95% RH non condensing |
| Shock | ±3 x 30g shocks in each plane, total 18 shocks<br>30g shock = 11ms (+/-0.5msec), half sine<br>Conforms to EN60068-2-27, EN60068-2-47, IEC68-2-27, IEC68-2-47, JIS C0041-1987.<br>Conforms to MIL-STD-810E/F, Method 516.5, Pro I, IV, VI |
| Vibration | Single axis 10 - 500 Hz at 2g (sweep and endurance at resonance) in all 3 planes<br>Conforms to EN60068-2-6, IEC68-2-6<br>Conforms to MIL-STD-810E, Method 514.4, Pro I, Cat 1,9 |
| Altitude | -200 to 2000 metres operational (-200 to 5000m storage/transportation) |
| Weights | With lid = 1.4kg, no lid = 1.2kg |
| Pollution | Degree 2, Material group IIIb |

## Immunity EN61000-6-2:2005

| | | | | Criteria |
|---|---|---|---|---|
| Electrostatic Discharge | EN61000-4-2 | Level 2 | Air discharge level 3, Contact discharge level 2. Not applicable to units without cover fitted | 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 4 | Common mode - 4.4kVac, Differential - 2.2kVac | A |
| 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 and dips to 40% for 5 cycles. | 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

| | | |
|---|---|---|
| Radiated Electric Field | EN55011, EN55022 | (as per CISPR.11/22) Class B, FCC47 part 15 subpart B<br>see application note for details. |
| Conducted Emissions | EN55011, EN55022<br>MIL STD 461E/462D CE102 | (as per CISPR.11/22) Class B, FCC47 part 15 subpart B<br>115V and 220V |
| Conducted Harmonics | EN61000-3-2 | Class A, Class C at full load |
| Flicker | EN61000-3-3 | Compliant - $d_{max}$ <4% only |

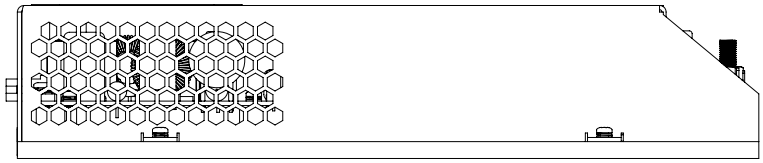
| Safety Approvals | Notes |
|---|---|
| IEC/EN 60950-1, UL60950-1 / CSA 22.2 No 60950-1 | File E135494 |
| CE Mark (EN60950-1) | LV Directive 2006/95/EC |
| CB certificate and Report available on request | *Please check with technical sales for status of approvals* |

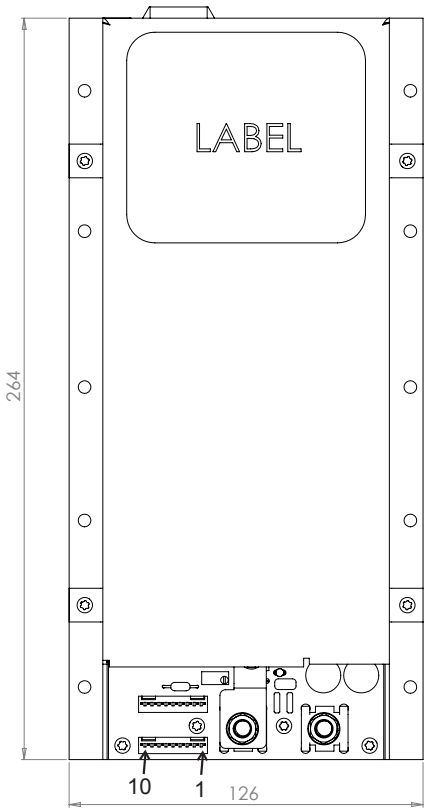
## Outline & Connection Drawings

**Signals Connections**
Housing - Molex 22-01-1102
Crimp - Molex 08 70 0064
(or equivalents)

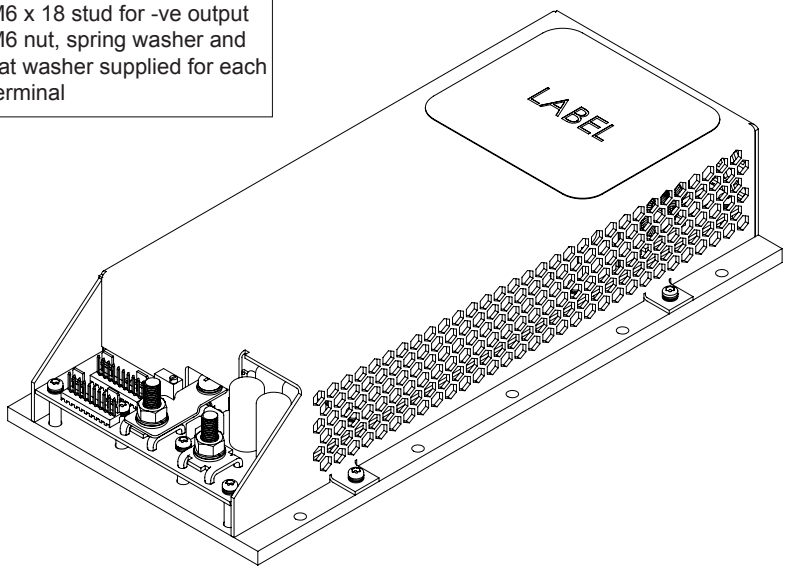
| Pin | Function |
|---|---|
| 10 | Do not connect |
| 9 | Output good - ENA |
| 8 | Trim |
| 7 | Current share |
| 6 | Aux |
| 5 | +remote on/off |
| 4 | -remote on/off |
| 3 | Aux common |
| 2 | - Sense |
| 1 | + Sense |

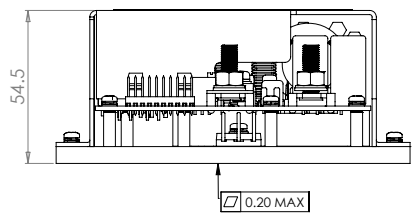
**ac input connector**
Housing Tyco 350766-4
Crimp 926895-1 (3 off)
or equivalent

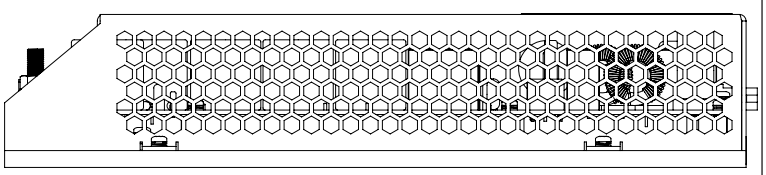






**dc output**
M6 x 18 stud for +ve output
M6 x 18 stud for -ve output
M6 nut, spring washer and flat washer supplied for each terminal



Notes: 1. Customer fixings 10 x M4 clearance holes
2. All tolerances ±0.5mm

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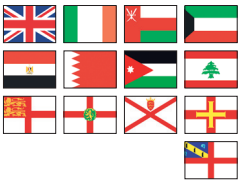

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