



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# 400 Watts

## FCM Series



- 400 W Continuous, 600 W Peak
- IT and Medical Approvals
- 80 V – 275 VAC Operation
- Low Noise Fan
- Screw Terminals
- 5 V Standby, AC OK and Remote On/Off
- 3 Year Warranty

### Specification

#### Input

|                       |  |
|-----------------------|--|
| Input Voltage         | • 80-275 VAC, derate output power <90 VAC (see derating curve)   |
| Input Frequency       | • 47-63 Hz   |
| Input Current         | • 4.1 A at 115 VAC typical<br>• 2.1 A at 230 VAC with 400 W load |
| Inrush Current        | • 60 A max at 264 VAC, cold start 25 °C                          |
| Power Factor          | • >0.9   |
| Earth Leakage Current | • 260 µA max, 264 VAC, 60 Hz                                     |
| Input Protection      | • F10 A / 250 V internal fuse in line and neutral                |

#### Output

|                            |  |
|----------------------------|--|
| Output Voltage             | • 12-48 VDC (see tables)   |
| Output Voltage Trim        | • ±10% V1  |
| Initial Set Accuracy       | • ±1% V1, ±5% V2   |
| Minimum Load               | • No minimum load required   |
| Start Up Delay             | • 1 s typical  |
| Start Up Rise Time         | • 50 ms  |
| Hold Up Time               | • 20 ms minimum  |
| Line Regulation            | • ±0.5% maximum  |
| Load Regulation            | • ±1% V1, ±5% V2   |
| Transient Response         | • 4% max. deviation, recovery to within 1% in 500 µs for a 50-75-50% load change |
| Ripple & Noise             | • 1% pk-pk, 20 MHz bandwidth   |
| Overvoltage Protection     | • 115-140% Vnom, recycle input to reset  |
| Overtemperature Protection | • Auto reset   |
| Overload Protection        | • 150-165%, V1 only  |
| Short Circuit Protection   | • Continuous, approximately constant current                                     |
| Temperature Coefficient    | • 0.05% / °C   |
| Remote On/Off              | • Uncommitted isolated optocoupler diode, powered diode inhibits V1 & Fan        |

#### General

|                     |  |
|---------------------|--|
| Efficiency          | • 85% typical  |
| Isolation           | • 4000 VAC input to output, 2 x MOPP, 1500 VAC input to ground, 1 x MOPP, 500 VAC output to ground |
| Switching Frequency | • PFC 70 kHz, main converter 65 kHz typical  |
| Power Density       | • 8.6 W/in <sup>3</sup>  |
| Signals             | • AC OK, remote on/off, 5 V standby  |
| MTBF                | • 236 kHrs to MIL-HDBK-217F at 25 °C, GB   |

#### Environmental

|                       |  |
|-----------------------|--|
| Operating Temperature | • -10 °C to +70 °C, derate linearly from +50 °C at 2.5% / °C to 50% load at +70 °C |
| Cooling               | • Forced cooled with integral fan  |
| Operating Humidity    | • 95% RH, non-condensing   |
| Storage Temperature   | • -40 °C to +85 °C   |
| Operating Altitude    | • 3000 m   |
| Shock                 | • 30 g pk, half sine, 6 axes   |
| Vibration             | • 2 g rms, 5 Hz to 500 kHz, 3 axes   |

#### EMC & Safety

|                      |  |
|----------------------|--|
| Emissions            | • EN55011/22 level B conducted<br>• EN55011/22 level A radiated  |
| Harmonic Currents    | • EN61000-3-2, class A<br>• EN61000-3-2, class C for loads ≥50%  |
| Voltage Flicker      | • EN61000-3-3  |
| Radiated Immunity    | • EN61000-4-3, level 3 Perf Criteria A   |
| EFT/Burst            | • EN61000-4-4, level 3 Perf Criteria A   |
| Surge                | • EN61000-4-5, installation class 3, Perf Criteria A   |
| Conducted Immunity   | • EN61000-4-6, level 3, Perf Criteria A  |
| Dips & Interruptions | • EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B,<br>• EN60601-1-2, 30% 500 ms, 60% 100 ms, 100% 10 ms, 100% 5000 ms, Perf Criteria A, A, A, B - 230 VAC. Consult longform datasheet for 115 V operation |
| Safety Approvals     | • IEC60950-1 CB report, UL60950-1, TUV, EN60950-1, IEC60601-1 CB report, CSA 22.2 No.60601-1, ANSI/AAMI ES60601-1, TUV60601-1, including risk management   |

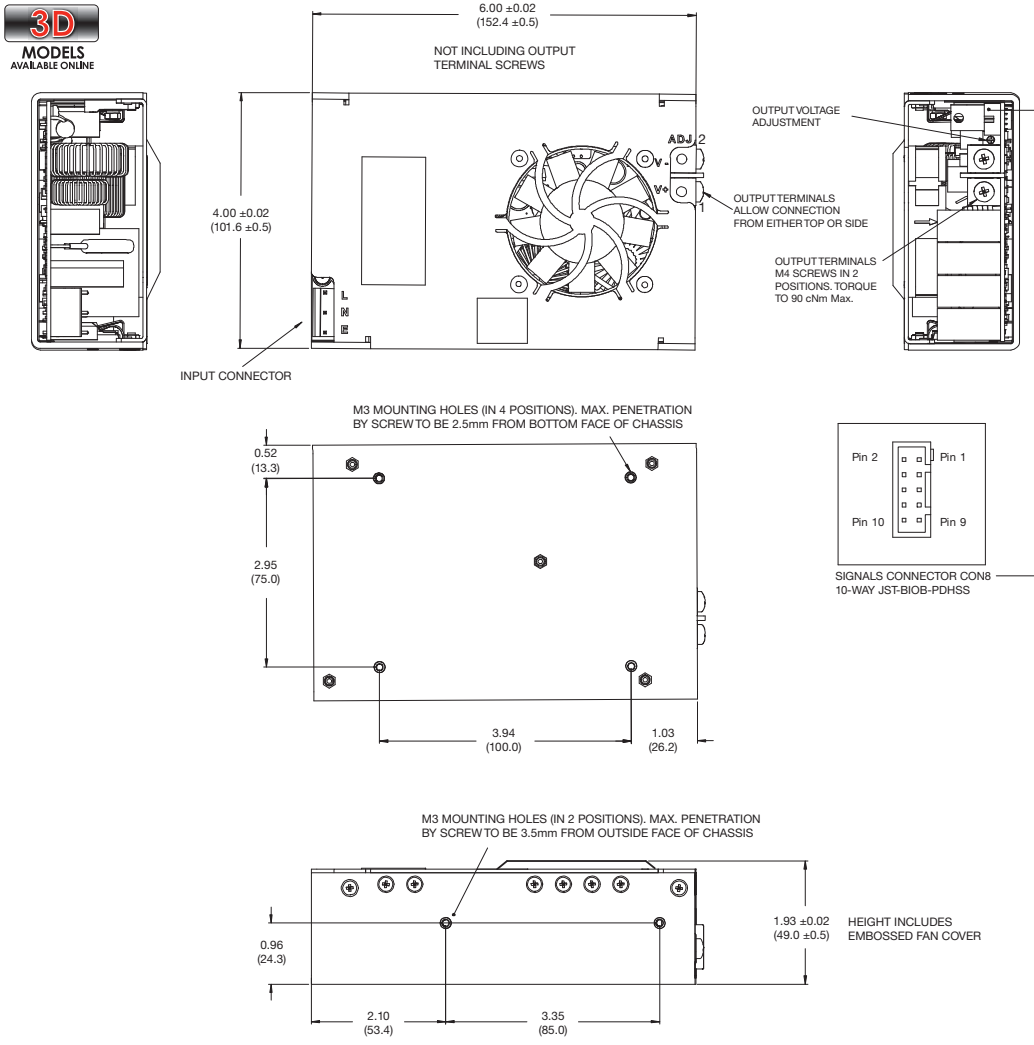
**Models and Ratings**

| Output Voltage V1 | Output Current V1 |                     | Standby Supply V2 | Output Power |                     | Model Number |
|-------------------|-------------------|---------------------|-------------------|--------------|---------------------|--------------|
|                   | Continuous        | Peak <sup>(1)</sup> |                   | Continuous   | Peak <sup>(1)</sup> |              |
| 12 V              | 33.3 A            | 50.0 A              | 5 V / 0.5 A       | 400 W        | 600 W               | FCM400PS12   |
| 15 V              | 26.6 A            | 40.0 A              | 5 V / 0.5 A       | 400 W        | 600 W               | FCM400PS15   |
| 24 V              | 16.6 A            | 25.0 A              | 5 V / 0.5 A       | 400 W        | 600 W               | FCM400PS24   |
| 28 V              | 14.2 A            | 21.4 A              | 5 V / 0.5 A       | 400 W        | 600 W               | FCM400PS28   |
| 36 V              | 11.1 A            | 16.7 A              | 5 V / 0.5 A       | 400 W        | 600 W               | FCM400PS36   |
| 48 V              | 8.3 A             | 12.5 A              | 5 V / 0.5 A       | 400 W        | 600 W               | FCM400PS48   |

**Notes**

1. Peak Output Power - The peak duration is 500 ms maximum, average power must not exceed 400 W.

**Mechanical Details**



| Input Connector<br>Tyco part #640445-5 |         |
|--|---------|
| Pin 1                                  | Line    |
| Pin 2                                  | Neutral |
| Pin 3                                  | Earth   |

J1 mates with Tyco MTA-156 & SL-156 product lines

| Signals Connector |                           |
|-------------------|---------------------------|
| Pin 1             | 5 V Standby Return        |
| Pin 2             | 5 V Standby               |
| Pin 3             | 5 V Standby Return        |
| Pin 4             | 5 V Standby               |
| Pin 5             | 5 V Standby Return        |
| Pin 6             | 5 V Standby               |
| Pin 7             | Power Fail (Collector)    |
| Pin 8             | Power Fail (Emitter)      |
| Pin 9             | Remote On / Off (Cathode) |
| Pin 10            | Remote On / Off (Anode)   |

Mating plug:  
JST p/n PHDR-10VS  
Contact:  
26-22 AWG JST p/n  
SPHD-001T-P0.5

| Output Connector |        |
|------------------|--------|
| Pin 1            | +V1    |
| Pin 2            | V1 RTN |

**Notes**

- Dimensions shown in inches (mm). Tolerance: ±0.02 (±0.5)
- Weight: 1.8 lb (800 g).

**Input Voltage & Temperature Derating**

