

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 • 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 ³ |
| 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 • EN55011/22 level A radiated |
| Harmonic Currents | • EN61000-3-2, class A • 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, • 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 |

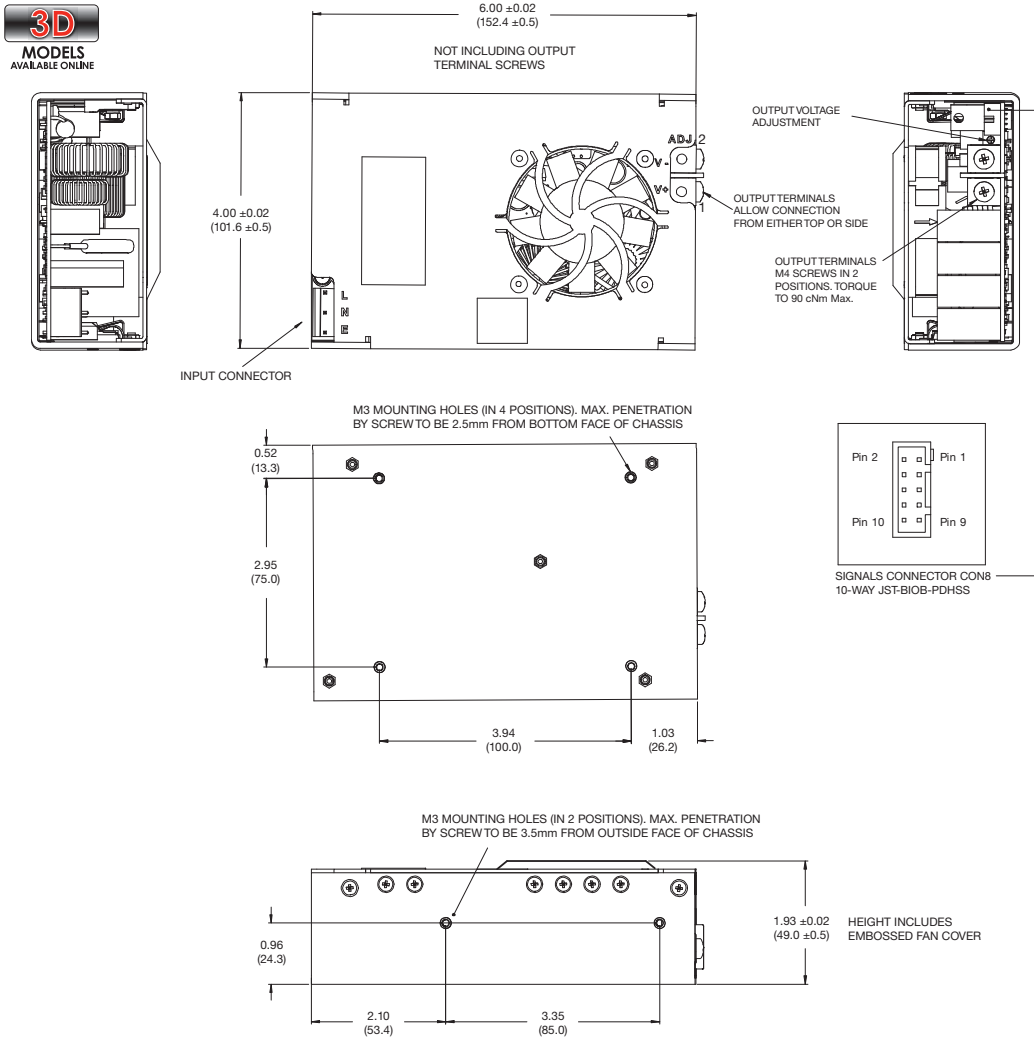
Models and Ratings

| Output Voltage V1 | Output Current V1 | | Standby Supply V2 | Output Power | | Model Number |
|-------------------|-------------------|---------------------|-------------------|--------------|---------------------|--------------|
| | Continuous | Peak ⁽¹⁾ | | Continuous | Peak ⁽¹⁾ | |
| 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 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

