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	• EN55011/32 level B conducted EN55011/32 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, EN60950-1, IEC62368-1 CB report, UL62368-1, EN62368-1, IEC60601-1 CB report, CSA 22.2 No.60601-1, ANSI/AAMI ES60601-1, TUV60601-1, including risk management, CE & UKCA meets all applicable directives & legislation

Models and Ratings

FCM400 XP

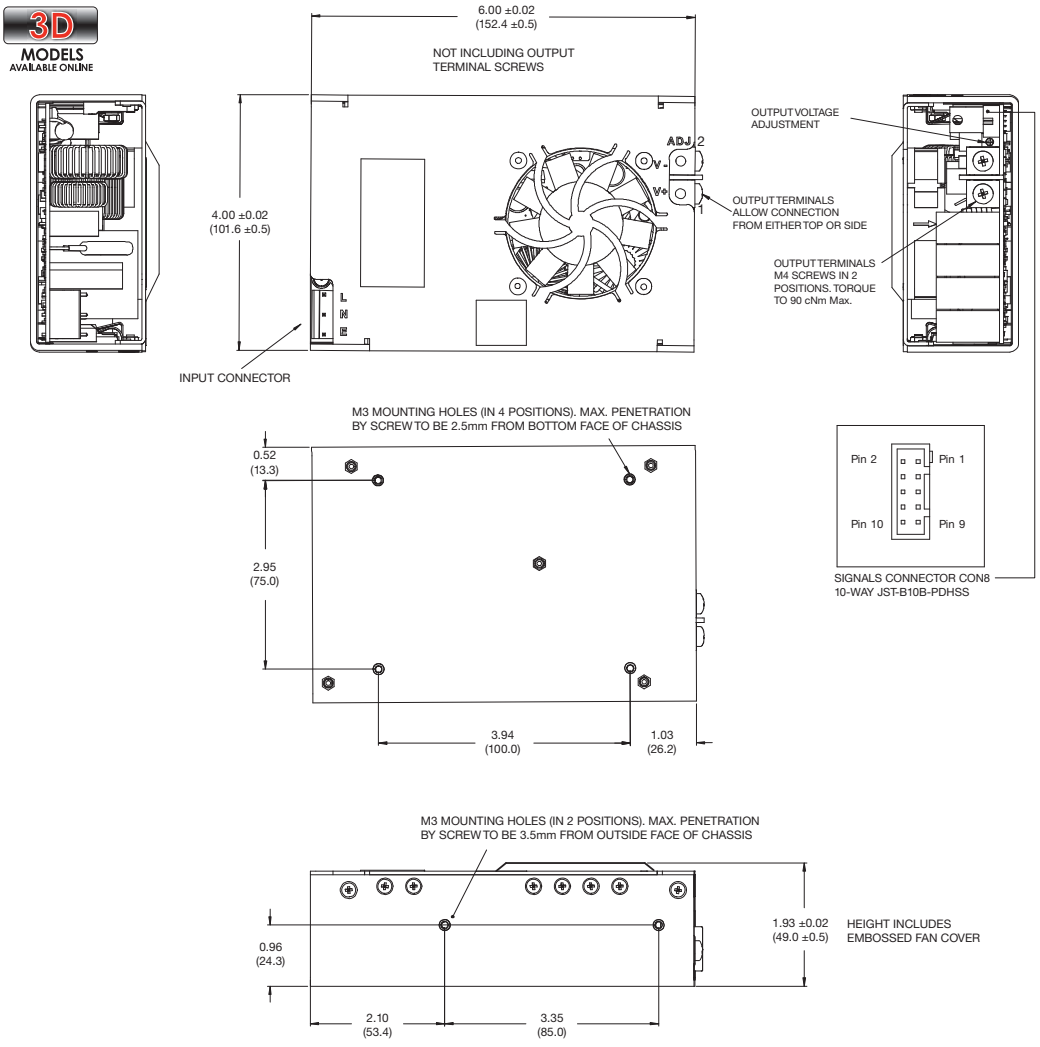
Output Voltage V1	Output Current V1		Standby Supply V2	Output Power		Model Number
	Continuous	Peak[1]		Continuous	Peak[1]	
12 V	33.3 A	50.0 A	5 V / 0.5 A	400 W	600 W	FCM400PS12
15 V	26.6 A	40.0 A	5 V / 0.5 A	400 W	600 W	FCM400PS15
24 V	16.6 A	25.0 A	5 V / 0.5 A	400 W	600 W	FCM400PS24
28 V	14.2 A	21.4 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

3D MODELS AVAILABLE ONLINE



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

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

Input Voltage & Temperature Derating

