

70050M5

200W MULTIPLE OUTPUT PFC POWER SUPPLY (400Hz)

Providing six independent output voltages at up to 200W continuous output power, the 70050M5 is the highest power discrete supply that PPI offers. Nominal line efficiency exceeds 75% at ½ to full output load. The **70050M5** is capable of providing full load power during momentary input AC brown-out conditions for up to 25mSec. This time is expandable by inclusion of an external capacitor bank that can be easily connected with an optional two wire/pin connector. Additionally, the supply houses an intelligent Nickel Cadmium battery charger with the ability to operate for up to five minutes at full rated load from an external 24Vdc (20Vdc-30Vdc) battery.



Weighing less than 32 ounces, the **70050M5** is housed in an aluminum enclosure with outer dimensions of 7.25" x 5.00" x 1.40". The top cover is perforated with two cover options: with or without recessed fan. The lower U-Chassis accepts five #4 screws to facilitate system mounting. Interconnection is accomplished with four Molex straight locking vertical connectors.

FEATURES

▶	Exceeds Boeing specification D6-44588 (AA) for power factor and input current harmonic distortion levels at 400Hz +/- 40Hz
▶	Efficiency: 75% typical, ½ to full rated output load, nominal line (115Vrms)
▶	Wide input range: 97Vrms – 134Vrms, 47 – 440Hz
▶	Complies with RTCA/DO-160D for conducted emissions and susceptibility
▶	Active inrush current limiting: 7Apk
▶	Size: 7.25" x 5.00" x 1.40"; weight: less than 32 ounces
▶	Six standard outputs: +/-5V, +/-12V, 28Vdc, 24Vdc (battery charger)
▶	Independent over current protection each output
▶	Built-in intelligent battery charger / operation from external 24Vdc battery
▶	AC status line (TTL)
▶	Output enable line (TTL)

STANDARD OUTPUTS

PARAMETER	VOLTAGE					
	+5.125V	+12V	-5V	-12V	+28V	+24Vbatt
Voltage Regulation	+/-2.5%	+/-5%	+/-5%	+/-5%	+/-5%	+/-5%
Output Current	15A	7A	1A	1A	300mA	600mA
Minimum Load	1A	0	0	0	0	0
Pk-pk ripple + noise (20MHz)	50mVpp	120mVpp	50mVpp	120mVpp	120mVpp	120mVpp
Over current trip-point	18A	7.5A	2.1A	2.1A	1A	600mA
Notes	1	2	2	2	2	3

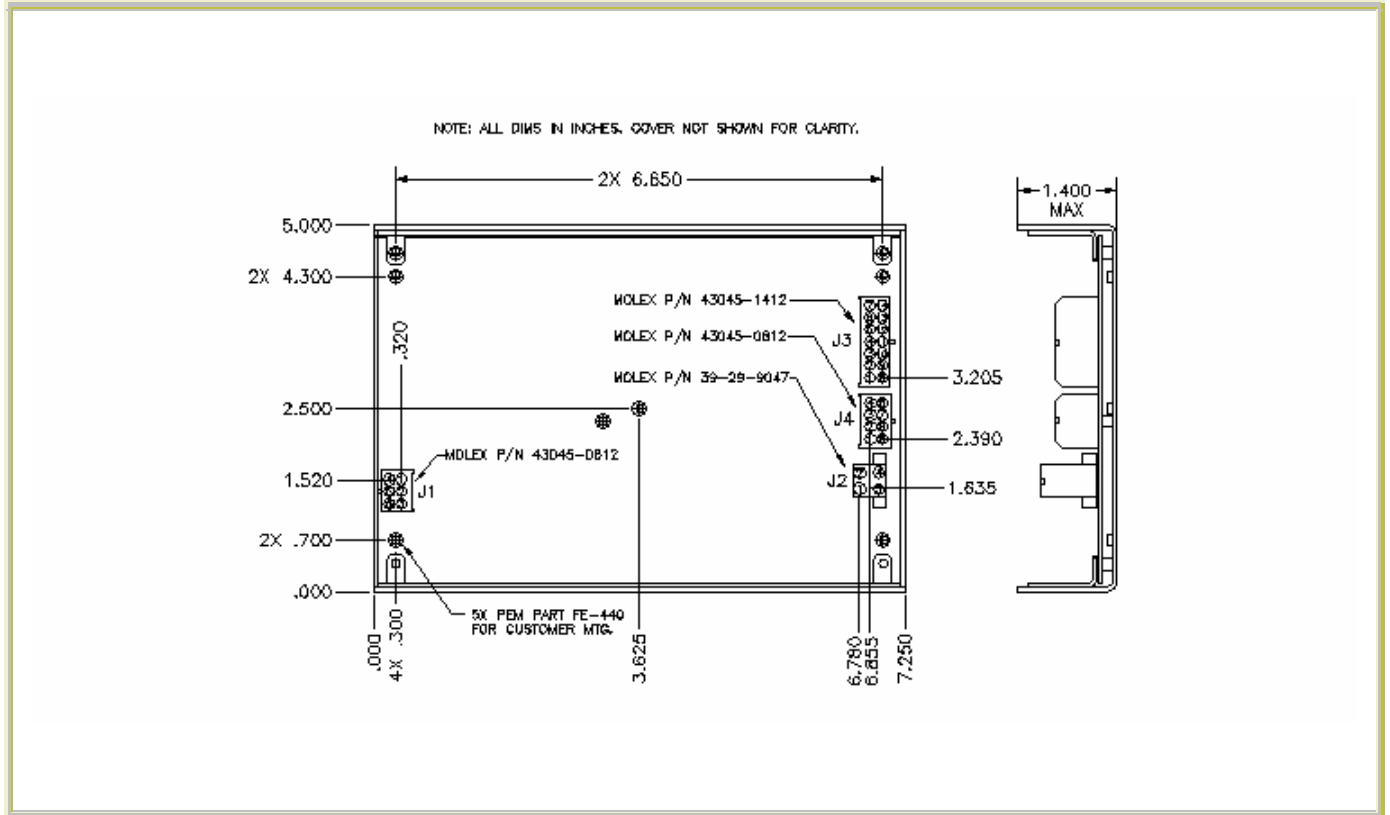
Notes:

- 1) Pulse-retry circuit limited to 3% duty cycle
- 2) Fold back current limited
- 3) 600mA constant current source

INTERCONNECTION

Connector	J1	J2	J3	J4
Type (Molex) Pin	43045-0612	39-29-9047	43045-1412	43045-0812
1	AC Line	Battery +	+5Vdc	Output Enable
2	Chassis	Battery -	+5Vdc	Battery Enable
3	AC Neutral	Battery +	DC Return	Battery Low
4	Chassis	Battery -	+12Vdc	Ext Pwr Fail
5	Chassis		DC Return	+28Vdc
6	Chassis		-12Vdc	DC Return
7			DC Return	DC Return
8			+5Vdc	DC Return
9			DC Return	
10			DC Return	
11			+12Vdc	
12			DC Return	
13			-5Vdc	
14			DC Return	

MECHANICAL DIAGRAM



ELECTRICAL SPECIFICATIONS

UNLESS OTHERWISE SPECIFIED THE FOLLOWING TEST CONDITIONS APPLY: $T_a=25^{\circ}\text{C}$,. CONSTANT RESISTIVE LOADS APPLIED TO OUTPUT, $V_{IN}=115\text{Vrms}$, 400Hz, < 1.25% THD SINUSOID

INPUT CHARACTERISTICS

PARAMETER	70050M5	REMARKS
INPUT VOLTAGE RANGE	97-134Vrms	COMPLIES WITH NORMAL/ABNORMAL INPUT VOLTAGES PER RTCA/DO-160D, SECTION 16
INPUT FREQUENCY RANGE	400Hz \pm 10%	REDUCED OUTSIDE OF 400Hz \pm 10% DISTORTION PERFORMANCE
LEAKAGE CURRENT	<5mA	AC LINE/NEUTRAL TO CHASSIS, @ 115Vrms / 400Hz
INRUSH CURRENT	<7.0A _{pk}	
TOTAL HARMONIC DISTORTION (INPUT CURRENT)	<3.5%	1/2 TO FULL OUTPUT LOAD
INDIVIDUAL HARMONICS AC CLEAN	EVEN: < 1% I_f / n , (n<10) EVEN: <0.1% I_f (n \geq 10) ODD: < 30% I_f / n ODD TRIPLENS: < 15% I_f / n	I_f = FUNDAMENTAL CURRENT $V_{thd} \leq 1\%$, n = 1 THRU 99, n = ORDER OF HARMONIC 1/2 TO FULL LOAD
INDIVIDUAL HARMONICS - DISTORTED INPUT	EVEN: < 1% $I_f / n + V_n$ (n<10) EVEN: <0.1% $I_f + V_n$ (n \geq 10) ODD: < 30% $I_f / n + V_n$ ODD TRIPLENS: < 15% $I_f / n + V_n$	$V_{thd} \geq 5\%$, n = 1 THRU 99, V_n = CORRESPONDING INPUT VOLTAGE HARMONIC 1/2 TO FULL LOAD
POWER FACTOR	0.90 min	$P_{out} > 50W$

CREST FACTOR (CURRENT)	1.314 - 1.514	RATIO OF PEAK/RMS
START-UP TIME	<500mSec	OUTPUTS WITHIN REGULATION
CONDUCTED EMISSIONS	RTCA/DO-160D	CATEGORY H EQUIPMENT
STORAGE TEMPERATURE RANGE	-55°C TO +100°C	NON-OPERATIONAL
OPERATING TEMPERATURE RANGE	-25°C TO +70°C	REQUIRES EXTERNAL AIRFLOW TO ASSURE CASE TEMPERATURE DOES NOT EXCEED 100°C
OUTPUT ENABLE - H	TTL LEVEL SECONDARY REFERENCED	DISABLE ALL OUTPUTS EXCEPT +28V WHEN ASSERTED LOW. REQUIRES 2.5V MIN LEVEL TO ENABLE SUPPLY OUTPUTS (NO INTERNAL PULL-UP)

OUTPUT CHARACTERISTICS

PARAMETER	70050M5	REMARKS
RATED OUTPUT POWER	200W	CONTINUOUS
RATED OUTPUT VOLTAGES		SEE "STANDARD OUTPUTS" TABLE
TEMPERATURE STABILITY COEF.	0.01% / °C	OUTPUT VOLTAGE
OUTPUT RIPPLE + NOISE (pk - pk)	<1%	20MHz BANDWIDTH (EACH OUTPUT)
LINE REGULATION	<0.5%	INDIVIDUAL OUTPUT DEVIATION FOR ± 20%, STEP CHANGE IN LINE VOLTAGE
LOAD REGULATION	OUTPUTS REMAIN WITHIN REGULATION	50% STEP CHANGE IN INDIVIDUAL OUTPUT LOAD
HOLD-UP TIME	25mSec	NO EXTERNAL CAPACITORS OR BATTERY
ISOLATION VOLTAGE INPUT TO CHASSIS	1500Vac, 60Hz	NO ARCING OR DAMAGE FOR 60 SECOND TEST DURATION
ISOLATION VOLTAGE INPUT TO OUTPUT	1500Vac, 60Hz	NO ARCING OR DAMAGE FOR 60 SECOND TEST DURATION
OUTPUT VOLTAGE ADJUSTMENT	NONE	
AC GOOD-H STATUS LINE	HIGH STATE, 2.5Vmin LOW STATE, 0.5Vmax @ 3mA SINK CURRENT	ACTIVE HIGH (W/ RESPECT TO DC(rtn) UPON DETECTION OF INPUT AC > 95 ± 2Vrms. ASSERTS LOW 10mSEC UPON DETECTION OF INPUT AC SOURCE FALLING BELOW 95 ± 2Vrms

OPTIONAL BATTERY CHARGER CHARACTERISTICS

PARAMETER	70050M5	REMARKS
RATED OUTPUT VOLTAGE	29V	0.6A CONSTANT CURRENT SOURCE
FAST CHARGE CURRENT	0.6A TYPICAL	SEE "BATTERY OPERATION SUMMARY" FOR TERMINATION OF FAST CHARGING MODE
TRICKLE CHARGE CURRENT	10mA	CONTINUOUS WHEN NOT IN FAST CHARGE MODE OF OPERATION
BATTERY ENABLE SIGNAL	2.5V Min	APPLY A TTL HIGH (W/RESPECT TO DCrtn) TO ACTIVATE BATTERY CHARGER AND BATTERY CHARGER CONVERTER, A TTL LOW WILL DISABLE BATTERY CONVERTER IF OPERATING FROM

		BATTERIES
BATTERY LOW STATUS LINE	3.5 V Min	ACTIVE HIGH OUTPUT UPON DETECTION OF BATTERY VOLTAGE AT 22 V ± 0.5V
OFF STATE LEAKAGE CURRENT	<30mA	

BATTERY OPERATION SUMMARY

When an external rechargeable +24Vdc Nickel Cadmium battery is connected to J2, and AC is applied to the power supply (at J1), and BATTERY ENABLE is asserted high with respect to DCrtn, the internal battery charger will begin the FAST CHARGE mode of operation. Provided the battery is capable of taking a charge (i.e., the initial battery voltage is greater than 18V), the FAST CHARGE mode will commence and will continue for no less than 7 minutes. Once the initial 7 minute time period has timed out, the FAST CHARGE mode will be terminated if the battery voltage is sensed to be higher than 29.3V or 90 minutes elapses - whichever occurs first. The charger circuit will then enter the TRICKLE CHARGE mode which will occur continuously to keep the battery "topped off". If the AC input power is removed, the power supply will automatically switch over to battery operation. The five DC outputs are guaranteed to remain in regulation during the switchover time period. If the AC input voltage is reapplied, battery operation will cease and the charger circuit will re-establish the FAST CHARGE mode of operation. The charger circuit is disabled while operating from batteries.

The power supply will operate from battery voltage as long as this voltage is larger than 18V. If the battery voltage discharges below 18V, the supply will automatically shutdown and remain latched off. Only application of AC input power will clear this latching mechanism. The **70050M5** supply cannot start from battery voltage, only AC input power.

To inquire about price and delivery please contact us.