

TMF SERIES: 1U HOT-SWAP POWER SYSTEM

Single Output 400 Watt Modules with PFC



LVD73/23/EEC

MODULE FEATURES

- Only 1U High
- DC Good LED¹
- Integral Isolation Diodes
- Power Factor Correction
- Meets EN61000-3-2
- Single-Wire Current Sharing
- Class B EMI Filter
- High Reliability Connectors
- 3.3, 5, 12, 15, 24, 28 or 48VDC Output
- Universal AC Input: 85-264VAC
- 5V, 100mA Supervisory Output
- Overvoltage Protection
- Inhibit Control
- Front Panel Switch Option²

SYSTEM RACK FEATURES

- 1U High, Standard 19" Rack Mount
- True Hot-Plug Replacement
- 800W 2+1 Redundant
- 1200W Non-Redundant
- 5 AC Input Options

TWO-YEAR WARRANTY

HOT-PLUG MODULE ORDERING GUIDE

(Other Modules Available, Consult Factory)

Max Watts	Output Voltage	Output Current	PFC	Minimum Load	Total Regulation	MODEL NUMBER
200	3.3V	60.0A	✓	0A	2%	TMF9000
300	5.0V	60.0A	✓	0A	2%	TMF2000
400	12.0V	33.3A	✓	0A	2%	TMF3000
400	15.0V	26.7A	✓	0A	2%	TMF4000
400	24.0V	16.7A	✓	0A	2%	TMF5000
400	28.0V	14.3A	✓	0A	2%	TMF6000
400	48.0V	8.3A	✓	0A	2%	TMF7000

Option S: Front-Panel On/Off Switch. Add "S" as suffix to the module model number. See notes.

For modified versions, call our Modification Center at 954-346-2442, Ext. 400

ORDERING GUIDE

The hot-plug modules and the mating rack-mount are separate items and must be ordered separately.

HOT-PLUG MODULES: Order quantity using model number from the table.

SYSTEM RACK: Order TMFR1U and add option suffix.

NOTES:

- AC Good LED, DC Good LED and output trim potentiometer are standard on models with output voltages from 24 to 48 VDC. Models with output voltages from 3.3 to 15VDC have only DC Good LED.
- Front panel switch option is available only on models with output voltages from 3.3 to 15VDC.
- A rear safety cover makes the case 1.44 inches deeper.

SAFETY CERTIFICATIONS

AGENCY	STANDARD
UL	UL1950
CUL	CSA22.2, No. 950
DEMKO	EN60-950

MATING CONNECTOR KITS
Module Evaluation Connector Kit: For each TMF Hot-Plug Module Order Kit No. 775-1419-000 \$95.00
Rack-Mount Interconnection Kit: For TMFR1U Rack-Mount Order Kit No. 775-1423-000 \$25.00

SYSTEM RACK OPTIONS

CODE	OPTION
A	Standard: 2-position terminal block AC connector plus stud ground connection for 1200W max. output.
B	Option: IEC320, C14 AC connector for 800W max. output.
C	Option: IEC320, C19 AC connector for 1200W max. output with rear safety cover.
AE	Option: 2-position terminal block AC connector plus stud ground connection for 1200W max. output. Also has rear safety cover.
BF	Option: IEC320, C14 AC connector for 800W max. output with rear safety cover.

SPECIFICATIONS, TMF SERIES

Typical at Nominal 115/230VAC Line, Full Load and 25°C Unless Otherwise Noted.

OUTPUT SPECIFICATIONS

Total Output Power, Max.....	400 watts
Voltage Adjustment Range.....	>±5%
Total Regulation ¹	<±2.0%
Ripple & Noise (Pk-Pk) ²	<1% or 50mV
Hold-Up ³	>15mS
Dynamic Response ⁴	300µS
Temperature Coefficient.....	±0.02%/°C
Minimum Load.....	0A
Overload Protection.....	Foldback Current Limiting
Overvoltage Protection.....	Power Shutdown
Remote Sense.....	Up to 0.25V Per Wire

INPUT SPECIFICATIONS

Input Voltage Range.....	85-264VAC Single Phase
Power Factor.....	0.99
Input Frequency.....	47-63Hz
Inrush Limiting.....	30A Peak (Cold Start)
Input Current, Full Load.....	4.5A, 120VAC 2.4A, 230VAC
Input EMI Filter, Conducted.....	EN55022 Curve B FCC20780 pt. 15J Curve B
Harmonic Distortion.....	EN61000-3-2
Input Immunity, Conducted	
Fast Transients, Line-Line.....	±2kV (EN61000-4-4 Level 3)
Surges, Line-Line.....	±1kV (EN61000-4-5 Level 2)
Surges, Line-Ground.....	±2kV (EN61000-4-5 Level 3)
Input Protection.....	Internal Fuse, 6.3A

GENERAL SPECIFICATIONS

Efficiency.....	>75% at Full Load
Switching Frequency.....	150kHz Nominal
Isolation, class I ⁵	>3000VAC Input - Output >1500VAC Input - Ground >50VDC Output - Ground
Safety Standards.....	EN60-950, UL1950, CSA22.2-950

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature.....	0°C to 70°C Ambient
Derating.....	2.5% / °C 50°C to 70°C
Storage Temperature.....	-40°C to +85°C
Cooling.....	2 Integral Ball Bearing Fans

PHYSICAL SPECIFICATIONS

Case Material, Module.....	Aluminum
Rack.....	Steel
Rack Finish.....	Powder Coat Gray

Dimensions, Inches (mm)

Hot-Plug Module.....	1.66 (42.2)H x 5.00 (127)W x 11.95 (304)D
3-Module Rack (A & B)....	1.72 (43.7)H x 16.88 (429)W x 16.00 (406)D
3-Module Rack (C, AE & BF).....	1.72 (43.7)H x 16.88 (429)W x 17.44 (443)D

NOTES:

1. No Load to full load, including line regulation and load regulation.
2. Whichever is greater. 20MHz bandwidth. Measured with 0.1µF ceramic and 10µF tantalum capacitors in parallel across the output.
3. 400W output power at nominal AC line.
4. <4% deviation recovering to within 1% for 25% load change.
5. Input - output isolation figure is for isolation components only. 100% production Hipot tested.

MODULE CONNECTOR

MODULE J1 POWER CONNECTIONS

TERMINAL	FUNCTION	TERMINAL	FUNCTION
A	Frame Ground	F	+V Output
B	AC Neutral	G	+V Output
C	AC Line	H	-V Output
D	Not Used	I	-V Output
E	Not Used		

NOTE: J1 connector is an ELCON FLATPAQ™ No. 279-0320-00100.
Mating receptacle is No. 279-0320-00200.

MODULE J1 CONTROL & SUPERVISORY SIGNALS

PIN	FUNCTION	PIN	FUNCTION
1	Interlock	13	Control Common
2	Remote Adjust	14	- Sense
3	Enable	20	Current Share
4	DC Good	21	5V, 100mA Aux.
9	Control Common	22	+ Sense
12	AC Power Good		

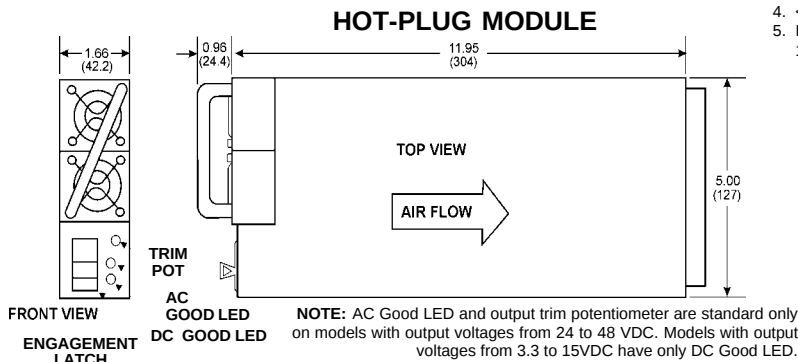
NOTE: All other pins are No Connection.

RACK MOUNT P3 CONTROL & SUPERVISORY SIGNALS

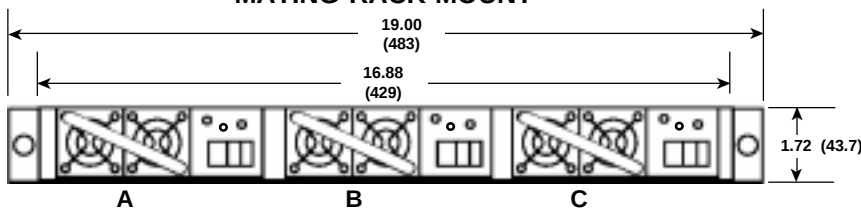
PIN	FUNCTION	PIN	FUNCTION	PIN	FUNCTION
1	AC Power Good-C	6	DC Power Good-B	11	Control Common
2	AC Power Good-B	7	DC Power Good-A	12	5V, 100mA Aux.
3	AC Power Good-A	8	Enable-C	13	- Sense
4	Current Share	9	Enable-B	14	+ Sense
5	DC Power Good-C	10	Enable-A	15	Not Used

NOTE: 1. A, B and C refer to the module position from left to right, viewed from the front of the system.

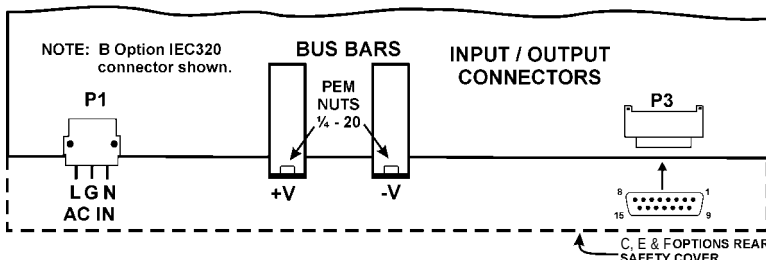
2. P3 is AMP AMPLIMATE No. 747845, 15 pos. subminiature 'D' connector.
Mating connector is AMP No. 747908-2.



MATING RACK-MOUNT



REAR, TOP VIEW OF RACK-MOUNT



ALL DIMENSIONS IN INCHES (mm).

All specifications subject to change without notice.

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