

# Alpha 1500



## 1500W Multiple Output Modular Power Supply

- ◆ Customized Power Supplies
- ◆ Power factor Corrected
- ◆ Capable of up to 16 fully regulated and independent outputs
- ◆ Output Voltages from 1.8V - 48V
- ◆ Low Leakage Options
- ◆ Input Transient Protection
- ◆ Low Profile Package
- ◆ International Safety Agency Approvals

**RoHS**

### Alpha Features and Benefits

Feature	Benefit
◆ PFC compliant to EN61000-3-2	◆ Supports global use
◆ Fast-on Tab Connections	◆ Quick installation
◆ No Minimum Load	◆ Eliminates the need for external components
◆ Wide Range Output Modules	◆ Capable of providing non-standard voltages, eliminates customs

### Specifications

ITEMS		MODELS
AC Input Volt. range & Freq.	-	150 - 264VAC, 47 - 63Hz (1500W). See power limitations for lower input ranges.
Input Current	A	16A maximum
Inrush Current	A	Less than 50A
Leakage Current	-	1.1mA @ 264VAC, 63Hz (low leakage current options available)
Efficiency	%	75% typical (configuration and input dependent)
Power Factor Correction	-	Compliant to EN61000-3-2 (> 0.99 typical, reduced PFC > 255VAC)
Conducted EMI	-	EN55022 level A
Output Power	W	800W@85VAC (50°C max); 1000W@100VAC (50°C max); 1000W@90VAC (45°C max); 1500W @ 150VAC (50°C max)
Output Load Regulation	-	2% max. without remote sensing. 0.5% max. remote sense connected
Output Line Regulation	-	0.5% maximum.
Ripple & Noise	-	2% pk-pk or 100mV (Whichever is greater)
No Load Operation	-	No preload is required on any output module
Hold Up Time	ms	>15ms
Remote Sense	-	Available on single output modules only
Options (see option codes)	-	AC Fail, Global Inhibit, Module Inhibit, 5V@50mA aux., Parallel, Low Leakage
Operating Temperature	°C	0°C to +50°C full load, derate each output at 2.5% /°C from 50°C to 65°C
Thermal Protection	-	Converter protected against over-temperature conditions. Recycle I/P power to restore output
Storage Temperature	°C	-40°C to +85°C
Temperature Coefficient	-	0.02% per °C
Humidity	% RH	5% - 95% Non-condensing
Altitude	-	3000m Operating
Cooling	-	Internal fan provides forced-air cooling. Airflow intake on I/P end, exhaust on O/P end of unit.
Isolation	-	Input - Output 4.3kVDC, Input - Ground 2.3kVDC, Output - Ground 500VDC
Switching Frequency	-	100kHz on PFC, 200kHz on forward converter.
Vibration	-	1.5G, 10 - 200Hz
Shock	-	3,000 bumps, 10G, 16ms half-sine pulses.
Safety Agency Approvals	-	UL60950-1, IEC60950-1, CSA22.2 No.60950-1, EN60950-1, IEC61010-1, EN61010-1, CE Mark
Size (WxHxD)	in.	8" x 2.5" x 11"
Weight	lbs.	8 (3.6kg) typical dependent on configuration
Warranty	-	Three Years

## 1 Case Code

Code	Wattage	Max Slots	Size (H x W x L)	Input Voltage*
CA1500	1500	8	2.5" x 8" x 11"	150 - 264VAC

## \*Input Voltage/Power Limitations

Input Voltage	Intermittent Output Power Rating	Continuous Output Power Rating	Max. Ambient Temperature
85 - 99.9VAC	-	800W	50°C
100 - 149.9VAC	-	1000W	50°C
150 - 164.9VAC	-	1500W	50°C
165 - 179.9VAC	-	1595W	50°C
180 - 264VAC	-	1690W	50°C
90 - 264VAC	-	1000W	45°C
85 - 264VAC	1000W*	-	50°C

\* - 1000W for 30 seconds maximum followed by 800W for 60 seconds min.  
 Note: Ratings are not affected by the use of input or output connector housings

## 2 Output Module Codes

Code	V1 Adjust	V1 Amps	V2 Adjust	V2 Amps	Slot(s) <sup>1)</sup>
L	1.8 - 3.2	25	-	-	1
T	1.8 - 3.2	60	-	-	2
Q	2.7 - 3.9	25	-	-	1
R	2.7 - 3.9	60	-	-	2
B	4.5 - 5.5	25	-	-	1
A	4.5 - 5.5	60	-	-	2
BB	4.5 - 6.5	25	-	-	1
AA	4.5 - 6.5	60	-	-	2
S	2.5 - 5.7	85	-	-	2
M	5.0 - 16.0	8	-	-	1
C	5.0 - 16.0	16	-	-	1
F	9.0 - 16.0	33	-	-	2
U	10.0 - 21.0	16	-	-	1
N	18.0 - 29.0	5	-	-	1
D	18.0 - 29.0	8	-	-	1
K	18.0 - 29.0	15	-	-	2
G	17.5 - 29.0	25	-	-	2
J	30.0 - 48.0	10	-	-	2
E	5.0 - 16.0	8	5.0 - 16.0	8	1
P	18.0 - 29.0	5	5.0 - 16.0	8	1
H	18.0 - 32.0	5	18.0 - 32.0	5	1

Notes: 1) The total # of slots must not exceed 8 for CA1500.  
 2) Slot position may change upon order placement.

## Max. Output Current Limitations

All modules can be used at their full rated current in all slot positions unless otherwise stated below

A module:	Limited to 51A in slot 7/8
B module:	Limited to 20A in slot 8
C module:	Limited to 12A if output exceeds 12V
L module:	Limited to 20A in slot 8
Q module:	Limited to 20A in slot 8
R module:	Limited to 51A in slot 7/8
S module:	Limited to 65A in slot 7/8, 66A in slot 6/7, 80A in slot 5/6, 85A in slot 4/5, 66A in slot 3/4, 68A in slot 2/3, 73A in slot 1/2
T module:	Limited to 51A in slot 7/8

## Other Lambda Modular Products

NV	350W to 700W up to 8 outputs
Vega	450W to 900W up to 10 outputs
Alpha1000	1000W up to 14 outputs

For Additional Information, please visit  
[us.tdk-lambda.com/lp/products/alpha-series.htm](http://us.tdk-lambda.com/lp/products/alpha-series.htm)

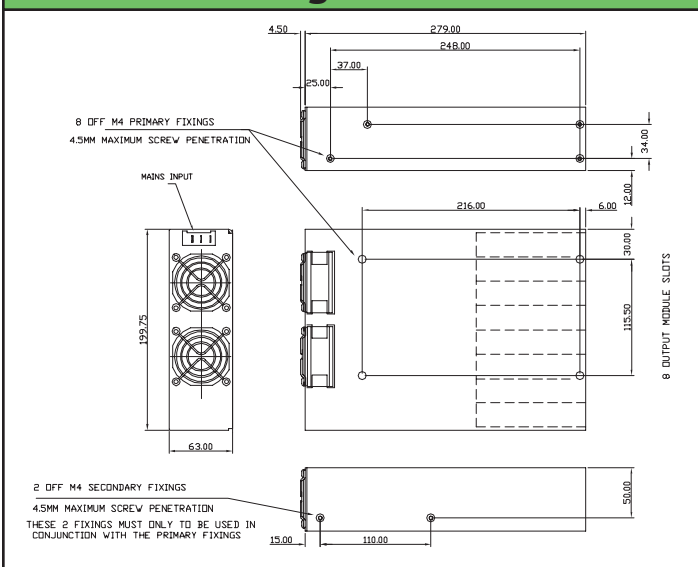
## 3 Option Codes

If required the following options may be added to the configuration by placing the code after the module. (i.e. Inhibiting a 5V @ 25A = 5B + Inhibit code = "5B\_IN")

Code	Description	Available On
MF <sup>2</sup>	Mains Fail This option provides an AC fail signal, power supply inhibit, and 5V@50mA auxiliary supply. This is only placed in the first module slot. (TTL compatible reference to 0 volts of Aux. Supply)	All modules except Dual output (E, H, P)
PP	Parallel for Power This option allows 2 adjacent modules to be paralleled together for increased output power. Bus bars provided.	Modules: A, B, C, D, F, G, M, N, Q, R
PA	Parallel for Redundancy This option allows modules to be connected for N+1 redundancy. A DC good signal is also offered (electrically similar to AC fail.) No bus bars provided.	Modules: A, B, C, D, F, G, M, N, Q, R, S
IN <sup>3</sup>	Inhibit Module inhibit and DC good signal. (TTL compatible referenced to (-V) of the module)	Modules A, B, C, D, F, G, J, M, N, Q, R
<b>Low Leakage Options</b>		All converters
	Max. Leakage Current	Conducted RFI
LL	240 µA	Curve A
RL	100 µA	Above Curve A
TL	50 µA	Above Curve A

Notes: 1) Only one option per module may be used.  
 2) Mains Fail: AC Fail "AC On" = ≤ 0.8V, 50mA max.  
 "AC Off" = open circuit, 50V abs max.  
 PS Inhibit "PS On" = ≥ 2.0V or open circuit.  
 "PS Off" = ≤ 0.8V @ 5mA.  
 (TTL compatible, Referenced to 0 volts of Aux. Supply.)  
 3) Inhibit: DC Good Electrically similar to AC fail module.  
 Inhibit Electrically similar to PS inhibit.

## Outline Drawing



## Sample Configurations

Description	O/P 1	O/P 2	O/P 3	O/P 4	O/P 5
CA1500 24G PP* 24G PP*	24V 50A	-	-	-	-
CA1500 5S MF 12F PP* 12F PP*	5V 80A	12V 60A	-	-	-
CA1500 LL 5A 28G 36J IN	5V 60A	28V 25A	36V 10A	-	-
CA1500 5A PP* 5A PP* 3.3R 12C 12C	5V 120A	3.3V 60A	12V 16A	12V 16A	-
CA1500 24G_PP* 24D_PP* 3.3S 5S 12/12E	24V 33A	3.3V 85A	5V 66A	12V 8A	12V 8A

Actual part number (format CA1500Hxxxxx) assigned on quotation.  
 \* Outputs paralleled via bus bars. (O/P = Output)