



## 500 to 2500W Front End Power Supplies

- ◆ 2U high
- ◆ Up to 12,500W in 19" rack
- ◆ Hotswap capable
- ◆ >90% efficiency
- ◆ Full power at 65°C ambient

### Key Market Segments & Applications

Power for Distributed Power Architecture  
Factory Automation

## TL Features and Benefits

Feature	Benefit
<ul style="list-style-type: none"> <li>◆ 2U high</li> <li>◆ Hotswap capable</li> <li>◆ High efficiency</li> <li>◆ Full array of signals</li> </ul>	<ul style="list-style-type: none"> <li>◆ Utilizes less cabinet space</li> <li>◆ Suitable for N+1 redundancy</li> <li>◆ Higher density</li> <li>◆ Easier system monitoring</li> </ul>

## Specifications

ITEMS	MODEL		12V Nominal (Factory Set)	24V Nominal (Factory Set)	48V Nominal (Factory Set)
	(1)	VDC	10.5-14V	21 - 28V	42 - 56V
Output Voltage Range	(1)	VDC	10.5-14V	21 - 28V	42 - 56V
Total Regulation		%	±1		
Current limit		%	105 to 120%, Factory Programmable		
Short Circuit Current		%	150% maximum, Factory Programmable		
Output Noise		mV	480mV maximum, peak to peak (10Hz to 20MHz)		
Output Rise Time		-	100 - 400ms		
Dynamic Response		-	3% in 10ms for a 10 - 100% load change		
Overvoltage Protection	(4)	VDC	13.5 to 15V	27 to 30V	54 to 60V
Load sharing		-	±10%		
Remote Sense		-	Compensates for 1V total cable drop (stand alone unit only)		
I2C programming	(1)	-	Set Output Volt., Monitors AC Present, Converter OK, Thermal profile, Fan fail		
Signals (opto isolated)	(2)	-	Converter OK, AC Present, and Over-temperature alarms. Active Low on Fail		
Remote On/Off	(3)	-	Shuts down output(s) by applying 5V		
Margining		-	Applying 0-5V raises output voltage 0-10V		
Auxiliary Output		-	12V 0.1A bias voltage		
AC Input		-	TL500-1000: 90~264VAC, 95VAC start up; TL1500-2500: 180~264VAC, 185VAC start up		
Power Factor		-	0.99 Typical meets EN61000-3-2		
Inrush Current		A	<40A		
Leakage Current		mA	<3.2mA		
Efficiency (typical)		%	92%		
Immunity		-	EN61000-4-2, -3, -4, -5, -6, -8		
EMC (conducted and radiated)		-	EN55022, level B, FCC Class B		
Operating Temperature		-	-40°C to +65°C, short duration at 75°C, no derating (TL250048: -40°C to 65°C)		
Storage Temperature		-	-40 to +85°C		
Humidity		-	5 - 95% RH non condensing		
Altitude		-	-200 to 8000 feet, derate max. ambient 2°C/1000 feet		
Shock		-	IEC68-2-27, MIL STD 810E, 20G		
Vibration		-	IEC68-2-64 (random) 20 - 200Hz, 30 minutes		
Safety Agency	(5)	-	UL60950, CSA 22.2 No. 60950-00, EN60950, CE Mark		
Size (L x W x H)		-	11.12" x 3.41" x 3.45" (stand alone), 14" x 18.9" (incl. ears) x 3.45" (TLR5 rack)		
Weight		lbs	Stand alone unit: 5.6lbs, Rack: 9.5lbs		
Warranty		-	Two Years		

(1) Contact Factory for application

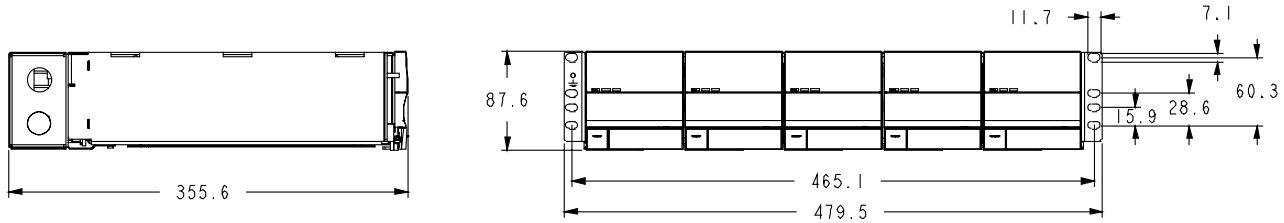
(2) All three signals share a common return - Logic GND

(3) Either stand alone unit or entire rack

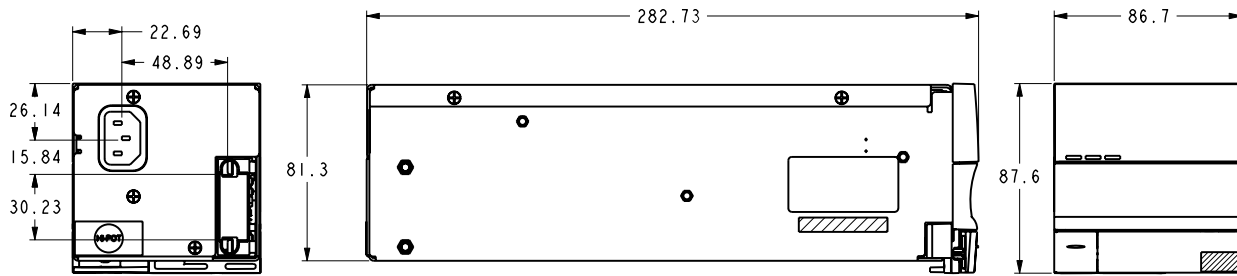
(4) Factory Programmable

(5) Use cable assembly TLRC01 for safety compliance

## TL Rack Outline Drawing



## TL Module Outline Drawing



## Output Connector (Module)

TL Module Connector (Part Number: FCI 51732-007)

	D	C	B	A
6	Converter OK	12VAux	SCL	SDA
5	Logic GND	n/c	Reserved	Overtemp
4	AC Present	Reserved	n/c	LOC0
3	Present	n/c	LOC1	LOC2
2	Remote on/off	Short Pin	n/c	I Share
1	+Remote Sense	-Remote Sense	n/c	V Margin
P2		Negative Output		
P1		Positive Output		

Note: View facing rear of module

## Output Signal Connector (Rack)

TL Rack Connector (Part Number: Molex 43045)

1	12V Aux	11	Signal GND
2	SCL	12	I Share
3	SDA	13	V Margin
4	Logic GND	14	n/c
5	Remote on/off	15	Overtemp
6	AC Present (Bay 1)	16	Converter OK 1
7	AC Present (Bay 2)	17	Converter OK 2
8	AC Present (Bay 3)	18	Converter OK 3
9	AC Present (Bay 4)	19	Converter OK 4
10	AC Present (Bay 5)	20	Converter OK 5

Note: 1. Pin 1 is top left, view from rear of rack  
Pin 11 is bottom left, view from rear of rack  
2. Module Bay 1 is far left of rack, view from front

## Models

Model	Output Voltage	Output Current	Maximum Power
TL50012	12V	40A	500W
TL75012	12V	60A	750W
TL50024	24V	20A	500W
TL100024	24V	40A	1000W
TL150024	24V	55A	1500W
TL50048	48V	10A	500W
TL100048	48V	20A	1000W
TL150048	48V	30A	1500W
TL200048	48V	40A	2000W
TL250048	48V	50A	2500W
TLR5	19" Rack, holds up to 5 TL Modules		
TLRBP	Blanking Panel for One Module Slot		
TLRC01	Signal Cable		
TLCK	I2C Communications Kit		
TLHB19*	Angled Baffle Kit (for horizontal air flow)		

## Other Lambda Industrial Products

X, SX, PAQ, PAH, PAF DC-DC Converters  
JWS, JFS, LZS 50W to 2000W Single and triple output

For Additional Information, please visit  
[www.lambdapower.com/products/tl-series.htm](http://www.lambdapower.com/products/tl-series.htm)