

# Linear Mode DC Power Supplies

## Data Sheet



### Features & Advanced functions

- ◇ High Stability
- ◇ Low Ripple & Noise
- ◇ Voltage Sensing Operation
- ◇ Over Voltage Protection
- ◇ Over Current Protection
- ◇ Over Temperature Protection
- ◇ Remote Control (available in TRP series only)
  - ◆ RS-232C, USB Connector
  - ◆ RS-485 replacement (Optional)
- ◇ Advanced Functions (available in TDP, TRP series)
  - ◆ Over Current Protection (OCP) Setting
  - ◆ Buzzer Off Setting
  - ◆ Short Protection Setting (1mΩ ~ 9.999Ω)
  - ◆ Voltage Slope Mode (0.01 ~ 9999s)
  - ◆ Current Slope Mode (0.01 ~ 9999s)
  - ◆ Hold Mode (1 ~ 9999s)
  - ◆ Slope-Hold Mode
- ◇ 19" Rack Mountable

### Applications

- ◇ Component Aging Test
- ◇ Chlorine dioxide generators based on Electrolysis, Chemical Reaction Equipment
- ◇ Lamp Lighting (LED Test, CCFL Test and etc)
- ◇ Battery Charging, Capacitor Charging Test
- ◇ Industrial Electronic Design, Laboratory
- ◇ Experimental Education

Linear mode Power Supplies provide an ideal DC source to your DUT with high stability

TRP, TDP and TIP series are a basic design models for a power supply which consists of a linear device such as a transistor or MOSFET in series with a rectifier and load. Many engineers who have experienced serious problems caused by ripple and noise from SMPS still want to use linear mode power supplies under low efficiency and big size. It's very hard to reduce the size of a linear mode power supply because an irreducible big power transformer should be employed. But we can try to increase efficiency of a linear mode power supply with simple changes. Most of loss power is dissipated at the series linear device that is working as a variable resistor to maintain a stable DC output without ripple and noise. To minimize the power loss of a linear mode power supply, the phase controlled SCR method for a rectifier that maintains a low voltage drop across the series linear device has been used. Also many parallel MOSFETs with current sharing circuit that have low static drain-source on-resistance have been employed instead of transistors. It will reduce the voltage drop across MOSFET in series. Linear mode power supplies usually are the simplest, most effective solution for providing bench power because they provide sufficient power with stable regulation and little noise.

# 2kW TIP/TDP/TRP DC Power Supplies

## TIP/TDP/TRP 2kW Series Specifications

### TIP/TDP/TRP 2kW Series Electrical Characteristics

Model	TIP/TDP/TRP3068	TIP/TDP/TRP5040	TIP/TDP/TRP10020	TIP/TDP/TRP2010	TIP/TDP/TRP3007	TIP/TDP/TRP5004
Channels	1					
Voltage Range [V]	0 ~ 30	0 ~ 50	0 ~ 100	0 ~ 200	0 ~ 300	0 ~ 500
◆ Accuracy	±(0.01% + 20mV)		±(0.01% + 200mV)			
◆ Resolution	10mV		100mV			
Current Range [A]	0 ~ 68	0 ~ 40	0 ~ 20	0 ~ 10	0 ~ 7	0 ~ 4
◆ Accuracy	±(0.01% + 20mA)				±(0.01% + 2mA)	
◆ Resolution	10mA				1mA	
Line Regulation	≤ 0.05% ± 3mV					
Load Regulation	≤ 0.05% ± 3mV					
Ripple & Noise @ 20MHz	≤ 1mV <sub>RMS</sub>	≤ 1mV <sub>RMS</sub>	≤ 2mV <sub>RMS</sub>	≤ 3mV <sub>RMS</sub>	≤ 4mV <sub>RMS</sub>	≤ 6mV <sub>RMS</sub>
	≤ 12mV <sub>P-P</sub>	≤ 12mV <sub>P-P</sub>	≤ 17mV <sub>P-P</sub>	≤ 27mV <sub>P-P</sub>	≤ 37mV <sub>P-P</sub>	≤ 57mV <sub>P-P</sub>
Efficiency @ full load	60%	60%	60%	60%	60%	60%
Advanced Functions	For TDP, TRP					
◆ OCPL Mode	ON/OFF (Local and Remote)					
◆ Short Protection	Load resistance Limit = 0.001 ~ 9.999Ω (Local Only)					
◆ Slope Mode	Local : 1 ~ 9999s / Remote : 0.01 ~ 9999s					
◆ Hold Mode	1 ~ 9999s (Local Only)					
RS-232C/USB Bridge	Standard for TRP (RS-485 Replacement optional)					
AC Input	Single, 220V <sub>AC</sub> /60Hz					

### TIP/TDP/TRP 2kW Series Environmental and Physical Characteristics

Model	All Models on TIP/TDP/TRP 2kW series
Operating Temperature	0 ~ +40°C
Storage Temperature	-20 ~ +60°C
Operating Humidity	50°C/60%RH, 30°C/85%RH
Dimensions (W x H x D)	435 x 177 x 500mm
Weight	≤ 50kg
Shipping Package Dimensions	
Shipping Package Weight	

# 2kW TIP/TDP/TRP series DC Power Supplies

## TIP/TDP/TRP 2kW Series Specifications

### TIP/TDP/TRP 2kW Series Electrical Characteristics

Model	TIP/TDP/TRP10002	TIP/TDP/TRP12001.7M	TIP/TDP/TRP15001.4M	TIP/TDP/TRP20001M
Channels	1			
Voltage Range [V]	0 ~ 1000	0 ~ 1200	0 ~ 1500	0 ~ 2000
◆ Accuracy	±(0.01% + 2V)			
◆ Resolution	1V			
Current Range [A]	0 ~ 2	0 ~ 1700mA	0 ~ 1400mA	0 ~ 1000mA
◆ Accuracy	±(0.01% + 2mA)			
◆ Resolution	1mA			
Line Regulation	≤ 0.05% ± 3mV			
Load Regulation	≤ 0.05% ± 3mV			
Ripple & Noise @ 20MHz	≤ 13mV <sub>RMS</sub>	≤ 15mV <sub>RMS</sub>	≤ 18mV <sub>RMS</sub>	≤ 25mV <sub>RMS</sub>
	≤ 120mV <sub>P-P</sub>	≤ 140mV <sub>P-P</sub>	≤ 170mV <sub>P-P</sub>	≤ 200mV <sub>P-P</sub>
Efficiency @ full load	60%	60%	60%	60%
Advanced Functions	For TDP, TRP			
◆ OCPL Mode	ON/OFF (Local and Remote)			
◆ Short Protection	Load resistance Limit = 0.001 ~ 9.999Ω (Local Only)			
◆ Slope Mode	Local : 1 ~ 9999s / Remote : 0.01 ~ 9999s			
◆ Hold Mode	1 ~ 9999s (Local Only)			
RS-232C/USB Bridge	Standard for TRP(RS-485 Replacement optional)			
AC Input	Single, 220V <sub>AC</sub> /60Hz			

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