

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.

1kW TIP/TDP/TRP series DC Power Supplies

TIP/TDP/TRP 1kW Series Specifications

TIP/TDP/TRP 1kW Series Electrical Characteristics

Model	TIP/TDP/TRP3034	TIP/TDP/TRP5020	TIP/TDP/TRP10010	TIP/TDP/TRP2005	TIP/TDP/TRP3004	TIP/TDP/TRP5002
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 ~ 34	0 ~ 20	0 ~ 10	0 ~ 5	0 ~ 4	0 ~ 2
◆ Accuracy	±(0.01% + 20mA)			±(0.01% + 2mA)		
◆ Resolution	10mA			1mA		
Line Regulation	≤ 0.05% ± 3mV					
Load Regulation	≤ 0.05% ± 3mV					
Ripple & Noise @ 20MHz	≤ 1mV _{RMS}	≤ 1mV _{RMS}	≤ 2mV _{RMS}	≤ 3mV _{RMS}	≤ 4mV _{RMS}	≤ 6mV _{RMS}
	≤ 10mV _{P-P}	≤ 10mV _{P-P}	≤ 15mV _{P-P}	≤ 25mV _{P-P}	≤ 35mV _{P-P}	≤ 55mV _{P-P}
Efficiency @ full load	60%	60%	60%	60%	60%	60%
Advanced Functions						
◆ 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(RS-485 Replacement optional)					
AC Input	Single, 220V _{AC} /60Hz					

TIP/TDP/TRP 1kW Series Environmental and Physical Characteristics

Model	All Models on TIP/TDP/TRP 1kW 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 360mm
Weight	≤ 40kg
Shipping Package Dimensions	
Shipping Package Weight	

1kW TIP/TDP/TRP series DC Power Supplies

TIP/TDP/TRP 1kW Series Specifications

TIP/TDP/TRP 1kW Series Electrical Characteristics

Model	TIP/TDP/TRP10001	TIP/TDP/TRP1200.8M	TIP/TDP/TRP1500.7M	TIP/TDP/TRP2000.5M
Channels	1			
Voltage Range [V]	0 ~ 1000	0 ~ 1200	0 ~ 1500	0 ~ 2000
◆ Accuracy	±(0.01% + 2V)			
◆ Resolution	1V			
Current Range [A]	0 ~ 1	0 ~ 0.8	0 ~ 0.7	0 ~ 0.5
◆ Accuracy	±(0.01% + 2mA)	±(0.01% + 200μA)		
◆ Resolution	1mA	100μA		
Line Regulation	≤ 0.05% ± 3mV			
Load Regulation	≤ 0.05% ± 3mV			
Ripple & Noise @ 20MHz	≤ 13mV _{RMS}	≤ 15mV _{RMS}	≤ 18mV _{RMS}	≤ 25mV _{RMS}
	≤ 110mV _{P-P}	≤ 130mV _{P-P}	≤ 160mV _{P-P}	≤ 200mV _{P-P}
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 _{AC} /60Hz			

TIP/TDP/TRP 1kW Series Environmental and Physical Characteristics

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Operating Temperature	0 ~ +40°C
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Operating Humidity	50°C/60%RH, 30°C/85%RH
Dimensions (W x H x D)	435 x 177 x 360mm
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