ADMESS

TELEDYNE TEST TOOLS
Everywhereyoulook™

T3PS40381P/T3PS60251P/ T3PS062001P Data Sheet

Programmable Switching DC Power Supply

Power With Confidence

Voltage: Up to 60 Volts
Current: Up to 200 Amps
Power: Up to 1520 Watts

Tools for Improved Debugging

• Dual measurement display.	✓ Clear visibility of your power settings.
• Switched mode high efficiency Power Supply Design.	✓ Small footprint whilst maintaining high power density.
• Constant Voltage and Constant Current Operation.	✓ Wider application coverage for a more complete solution.
• Remote sensing to compensate for voltage drop in load leads.	✓ Ensure that the full voltage gets to your DUT. Sense compensates for wiring losses.
• Supports various interfaces like USB, LAN, RS-232, RS-485.	✓ Support for the maximum control flexibility.
• 1U Height and 19" Rack Mount Size.	✓ Provides more flexible system integration.

Key Specifications

Model	Voltage Rating	Current Rating	Power
T3PS062001P	6 V	200 A	1200 W
T3PS40381P	40 V	38 A	1520 W
T3PS60251P	60 V	25 A	1500 W

PRODUCT OVERVIEW

Teledyne Test Tools new T3PS series is a single power output DC programmable power supply, which outputs 1200 W to 1520 W. This rack mount power supply is suitable for electronic component manufacturers to verify withstanding current tests of 100A and above. Such tests incude micro-resistor, relay, shunt resistors etc. The standard 1U form factor of the power supply not only satisfies the extensive voltage demands but also provides system integrators the flexiblity of system integration.

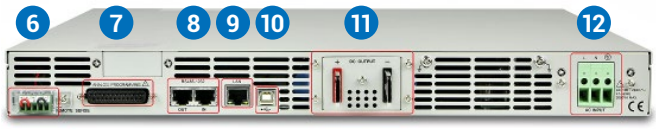
The T3PS series allows settings for CC priority or CV priority. Under CC or CV mode, users can adjust slew rate for output voltage or current based upon test requirements. There are two kinds of slew rate settings: high speed priority and slew rate priority. High speed priority sets slew rate at the maximum speed to reach CC or CV mode. Slew rate priority allows users to set slew rate for CC or CV mode in order to control rise or fall slew rate. Slew rate priority mode is ideal for motor tests because it can protect DUT from being damaged by inrush current occurring at turn-on.

Compared to other 1U power supplies available in the market, T3PS series supports a more complete array of interfaces, including USB, LAN, RS-232, RS-485, analog control interface, isolated analog interface (voltage control), and isolated analog interface (current control).

The T3PS series is ideal for the primary input of DC/DC converter and servo motor production application. T3PS series is often integrated into component test systems such as aging test equipment for capacitors, aging test equipment for diode, semiconductor production equipment, such as engine ECU and 48 V hybrid system testing, etc.

The T3PS series provides users with flexible settings of High/Low Level or Trigger input/Trigger output with pulse width of 1 ms – 60 ms. Trigger input controls T3PS series to output or upload preset voltage, current and memory parameters. While outputting or uploading preset voltage, current, and memory parameters, T3PS series can produce corresponding Trigger output signals.

Panel Introduction



1. AC Power Switch (AC Power On/Off)
2. USB A Port
3. Voltage Knob
4. Display Area
5. Current Knob
6. Remote Sense
7. Analog Control Interface
8. RS 485/RS 232
9. LAN Port
10. USBTMC Port
11. DC Output Terminal
12. AC Input

Applications

- The primary input of DC/DC converter
- Servomotor Manufacturing Equipment
- Aging test equipment for Capacitor
- Aging test equipment for Diodes
- Power supply for communications Equipment
- Automotive 12/48 V Systems
- Military and Aviation

Features

- CC or CV Priority Mode
- Adjustable Voltage/Current Rise and Fall Time
- Three sets of Preset Functions
- Bleeder Control Function
- Internal Resistance Function
- Panel Lock Function
- Protection: OVP, OCP, OHP, UVL, AC Fail, FAN Fail
- Standard: USB, LAN, RS-232, RS-485, Analog Control

SPECIFICATIONS

Model	T3PS062001P	T3PS40381P	T3PS60251P
Output Ratings			
Rated Output Voltage[1]	6 V	40 V	60 V
Rated Output Current[2]	200 A	38 A	25 A
Rated Output Power	1200 W	1520 W	1500 W
Ripple and Noise[5]			
CVp-p (10 ~ 20 MHz) p-p[6]	60 mV	60 mV	60 mV
CVrms (5 Hz ~ 1 MHz) r.m.s[7]	8 mV	8 mV	8 mV
CCrms (5 Hz ~ 1 MHz) r.m.s[12]	400 mV	95 mV	75 mV
Load Regulation			
Voltage[4]	2.6 mV	6 mV	8 mV
Current[11]	45 mA	12.6 mA	10 mA
Line Regulation			
Voltage[3]	2.6 mV	6 mV	8 mV
Current[3]	22 mA	5.8 mA	4.5 mA
Analog Programming and Monitoring			
External Voltage Control Output Voltage	Accuracy and linearity: ± 0.5 % of rated output voltage		
External Voltage Control Output Current	Accuracy and linearity: ± 1 % of rated output current		
External Resistor Control Output Voltage	Accuracy and linearity: ± 1 % of rated output voltage		
External Resistor Control Output Current	Accuracy and linearity: ± 1.5 % of rated output current		
Output VoltageMonitor	Accuracy: ± 1 %		
Output CurrentMonitor	Accuracy: ± 1 %		
Shutdown Control	Turns the output off with a LOW (0 V to 0.5 V) or short-circuit		
Output On/Off Control	Possible logic selections: Turn the output on using a LOW (0 V to 0.5 V) or short-circuit Turn the output off using a HIGH (4.5 V to 5 V) or open-circuit Turn the output on using a HIGH (4.5 V to 5 V) or open-circuit Turn the output off using a LOW (0 V to 0.5 V) or short-circuit		
Alarm Clear Control	Clear alarms with a LOW (0 V to 0.5 V) or short-circuit		
CV/CC/ALM/PWRON/OUT ON Indicator	Photocoupler open collector output; Maximum voltage 30 V, maximum sink current 8 mA		
Trigger Out	Maximum low level output = 0.8 V Minimum high level output = 2 V Maximum source current = 8 mA		
Trigger In	Maximum low level input voltage = 0.8 V Minimum high level input votage = 2 V Maximum sink current = 8 mA		
Front Panel			
Display, 4 digits, Voltage Accuracy 0.1 %+ Current Accuracy 0.2 %+	12 mV		
Indications	GREENLED's: CV, CC,V, A, VSR,ISR, DLY, RMT, LAN, M1, M2, M3, RUN, Output ON; REDLED's: ALM, ERR		
Buttons	Lock/Local (Unlock), PROT (ALM_CLR), Function (M1), Test (M2), Set (M3), Shift, Output		
Knobs	Voltage, Current		
USBPort	Type A USB connector		
Transient Response Time[10]			
Transient Response Time	1.5 mv	1 ms	1 ms
Output Response Time			
RiseTime[8] Rated load	80 ms	80 ms	80 ms
No Load	80 ms	80 ms	80 ms
Fall Time[9] Rated load	10 ms	80 ms	80 ms
No Load	500 ms	1100 ms	1100 ms

SPECIFICATIONS

Model	T3PS062001P	T3PS40381P	T3PS60251P
Temperature Coefficience			
Voltage & Current	100 ppm/°C after a 30 minute warm-up		
Remote Sense Compensation Voltage (Single Wire)			
Voltage	1 V	2 V	3 V
Programming and Measurements (RS-232/485, USB, LAN)			
Output Voltage Programming Accuracy 0.05 %+	3 mV	20 mV	30 mV
Output Current Programming Accuracy 0.2 %+	200 mA	38 mA	25 mA
Output Voltage Programming Resolution	0.2 mV	1.3 mV	2 mV
Output Current Programming Resolution	6 mA	1.2 mA	0.8 mA
Output Voltage Measurement Accuracy 0.1 %+	6 mV	40 mV	60 mV
Output Current Measurement Accuracy 0.2 %+	400 mA	76 mA	50 mA
Output Voltage Measurement Resolution	0.2 mV	1.3 mV	2 mV
Output Current Measurement Resolution	6 mA	1.2 mA	0.8 mA
Protection Function			
Over Voltage Protection (OVP) Setting Range	0.6 ~ 6.6 V	4 ~ 44 V	5 ~ 66 V
Setting Accuracy	60 mV	400 mV	600 mV
Over Current Protection (OCP) Setting Range	5 ~ 220 A	3.8 ~ 41.8 A	2.5 ~ 27.5 A
Setting Accuracy	4000 mA	760 mA	500 mA
Under Voltage Limit (UVL) Setting Range	0 ~ 6.3 V	0 ~ 42 V	0 ~ 63 V
Over Temperature Protection (OHP) operation	Turn the output off.		
Incorrect Sensing Connection Protection (SENSE) operation	Turn the output off.		
Low AC Input Protection (AC-FAIL) operation	Turn the output off.		
Shutdown (SD) operation	Turn the output off.		
Power Limit (POWER LIMIT) operation	Over power limit		
Value (Fixed)	Approx. 105 % of rated output power		
Interface Capabilities			
USB	Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB Class: CDC (Communications Device Class)		
LAN	MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask		
RS-232/RS-485	Complies with the EIA232D/EIA485 Specifications		
Environmental Conditions			
Operating Temperature	0 °C ~ 50 °C [14)]		
Storage Temperature	-25 °C ~ 70 °C		
Operating Humidity	20 % ~ 85 % RH; No condensation		
Storage Humidity	90 % RH or less; No condensation		
Altitude	Maximum 2000 m		

SPECIFICATIONS

Model	T3PS062001P	T3PS40381P	T3PS60251P
Input Characteristics			
Nominal Input Rating	100 Vac to 240 Vac, 50 Hz to 60 Hz, single phase		
Input Voltage Range	85 Vac ~ 265 Vac		
Input Frequency Range	47 Hz ~ 63 Hz		
Maximum Input Current 100 Vac / 200 Vac (A)	21/11		
Inrush Current	Less than 50 A		
Maximum Input Power	2000 VA		
Power Factor 100 Vac / 200 Vac	0.99/0.98		
Hold-up Time	20 ms or greater		
Efficiency[13] 100 Vac / 200 Vac (%)	77/79	84/87	84/87
Dimensions & Weight	423 (W) × 43.6 (H) × 447.2 (D) mm, Approx. 8.7 kg		

[1] Minimum voltage is guaranteed to maximum 0.2 % of the rated output voltage.
[2] Minimum current is guaranteed to maximum 0.4 % of the rated output current.
[3] At 85 ~132 Vac or 170 ~ 265 Vac, constant load.
[4] From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.
[5] Measure with JEITA RC-9131B (1:1) probe.
[6] Measurement frequency bandwidth is 10 Hz ~ 20 MHz.
[7] Measurement frequency bandwidth is 5 Hz ~ 1 MHz.
[8] From 10 % ~ 90 % of rated output voltage, with rated resistive load.
[9] From 90 % ~ 10 % of rated output voltage, with rated resistive load.
[10] Time for output voltage to recover within 0.5 % of its rated output for a load change from 10 ~ 90 % of its rated output current. Voltage set point from 10 % ~100 % of rated output.
[11] For load voltage change, equal to the unit voltage rating, constant input voltage.
[12] For 6 V model the ripple is measured at 2 ~ 6 V output voltage and full output current. For other models, the ripple is measured at 10 ~ 100 % output voltage and full output current.
[13] At rated output power.
[14] If the front panel filter kit is installld, the temperature is guaranteed to 40 °C.

ORDERING INFORMATION

Ordering information

Model		
T3PS062001P	1200 W Programmable Switching DC Power Supply	
T3PS40381P	1520 W Programmable Switching DC Power Supply	
T3PS60251P	1500 W Programmable Switching DC Power Supply	
Standard Accessories		**Quantity**
	Output terminal cover	1
	Analog connector plug kit	1
	Output terminal M8 bolt set (6 V ~ 60 V model)	1
	Input terminal cover	1
	1U Handle (RoHS)	2
	1U Bracket (LEFT, RoHS)	1
	1U Bracket (RIGHT, RoHS)	1

ABOUT TELEDYNE TEST TOOLS

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Company Profile

Teledyne LeCroy is a leading provider of oscilloscopes, protocol analyzers and related test and measurement solutions that enable companies across a wide range of industries to design and test electronic devices of all types. Since our founding in 1964, we have focused on creating products that improve productivity by helping engineers resolve design issues faster and more effectively. Oscilloscopes are tools used by designers and engineers to measure and analyze complex electronic signals in order to develop high-performance systems and to validate electronic designs in order to improve time to market.

The Teledyne Test Tools brand extends the Teledyne LeCroy product portfolio with a comprehensive range of test equipment solutions. This new range of products delivers a broad range of quality test solutions that enable engineers to rapidly validate product and design and reduce time-to-market. Designers, engineers and educators rely on Teledyne Test Tools solutions to meet their most challenging needs for testing, education and electronics validation.

Location and Facilities

Headquartered in Chestnut Ridge, New York, Teledyne Test Tools and Teledyne LeCroy has sales, service and development subsidiaries in the US and throughout Europe and Asia. Teledyne Test Tools and Teledyne LeCroy products are employed across a wide variety of industries, including semiconductor, computer, consumer electronics, education, military/aerospace, automotive/industrial, and telecommunications.

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T3 stands for Teledyne Test Tools.

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