



Automatic Test Solution

Programmable DC Power Supplies

Programmable AC Power Sources



EV Car



Electric Power



Renewable Power



Charging Station



DELTA



ABOUT DELTA

Delta was founded in 1971 and has been the global leader in switching power supply solutions since 2002 and DC brushless fans since 2006. Delta offers some of the most energy efficient power products in the industry, including switching power supplies with efficient over 90%, telecom power with up to 98%, and PV inverters with up to 98.8% efficient. We have also developed the world's first server power supply certified as 80 Plus Titanium with over 96% efficient. We regularly invest 6% to 7% of our annual sales revenues in R&D and have worldwide R&D facilities in Taiwan, China, Europe, India, Japan, Singapore, Thailand, and the U.S.

BUSINESS CATEGORIES



Power Electronics

- Components
- Embedded Power
- Fan & Thermal Management
- Automotive Electronics
- Merchant & Mobile Power

Innergie



Automation

- Industrial Automation
- Building Automation



Infrastructure

- ICT Infrastructure
- Energy Infrastructure & Industrial Solutions

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Wid. Cool. Vivid Life.

 **DELTA**
Smarter. Greener. Together.

Accurate, Fast Response and Easy to Measure

In response to industrial needs, Delta is committed to developing precision electronic measuring instruments and factory automation test systems. We develop one-stop solutions with high accuracy, immediate response, and easy-to-measure test equipment and detection systems for industrial manufacturing. We provide programmable AC and DC power supplies and energy recycling systems, and are able to integrate hardware and software to develop automatic test systems, offering highly efficient and flexible manufacturing test solutions.



| Programmable DC Power Supplies



High Voltage Power Supplies

Delta's high voltage DC power supplies feature tight regulation, small output ripple, and superior arc quenching ability. DSP-based digital control provides users with an accurate, repeatable, and quick output response. Up to 1900 V, adjustable ignition voltage is suitable for a diverse range of applications.



High Voltage Pulsed Power Supplies

The high voltage pulsed DC supplies are equipped with asymmetric pulsing output, which dramatically reduces arcing. With Delta's microsecond arc detection, the output will be reversed to a positive output to eliminate arcing and reduce arc energy.

Medium Voltage Power Supplies

Delta's medium voltage power supplies are switch mode power supplies. Equipped with active power factor correction, full range input voltage, and auto-switch constant voltage and current output, these are ideal for laboratory or large-scale mass production testing.



Low Voltage Power Supplies

Delta's low-voltage DC power supplies are designed to provide a wide range of variable voltage and current with high precision and stability. These power supplies achieve high power density and small package size with high efficiency. With low ripple, quick output response, they can be used in many applications.

| Programmable AC Power Sources



AC Power Sources

The output power of Delta's programmable AC power sources are from 1.5 to 9 KVA. Equipped with advanced DSP technology for accurate electronic parameters, they also have 30 sets of mainstream waveform synchronization built in for simulating various power grids, with comprehensive circuit and fan protection for ultimate safety.

High Voltage Power Supplies

Features



- Minimum 1% output voltage accuracy
- Ultra-fast arc suppression detection time (<1 microsecond)
- Relatively low arc energy for improved production quality
- Adjustable ramp and delay time to fulfill manufacturing process needs
- Multiple parallel to higher power output with current sharing
- Remote monitoring and control for output current stability
- Up to 1900V, adjustable ignition voltage for diverse applications

Specification

Model Name	D20000		D300	
	Specification	Condition	Specification	Condition
Input Voltage	208 VAC ± 10% (Three Phase)	50 / 60 Hz	90 - 264 VAC (single phase)	47 to 63 Hz
Maximum Output Power	20 kW	-	300W	-
Output Voltage Range	0 to 1000 V	guaranteed from 131 to 1000 V	-20 KV Max.	Continuous working mode
Output Current Range	0 to 50 A	guaranteed from 5 to 50 A	15 mA Max.	-
Power Supply Efficiency	> 90%	Rated output power at 1000 V	> 81% at 220 Vac	Rated output power
Power Factor	> 0.9	Rated output power	> 0.9	Rated output power
Output Voltage Ripple	< 2%V RMS	20% to 100% output power	< 0.05% rms	Rated output power on 50kHz
Output Voltage Accuracy	1% of command setting or 0.5% of full scale voltage	Within operation range at 25 °C	0.5% of setting + 0.2% rated	-
Output Current Accuracy	1% of command setting or 0.5% of full scale current	Within operation range at 25 °C	1% of setting + 0.2% rated	Within operation range at 25 °C
D-sub Reader/Command (Analog Interface) Accuracy	1% of full scale rating P/I/V	Within operation range at 25 °C	Voltage:0.5% of setting + 0.2% rated Current:1% of setting + 0.2% rated	Within operation range at 25 °C
Load Regulation	1% of command setting or 0.5% of full scale voltage	10% to 100% Output Power	-	-
Temperature Coefficient	< 50 ppm / °C	20 to 40 °C Variation in regulated output	0.01% per °C	20°C to 40°C Variation in regulated output
Regulation Mode	Constant voltage, current, and power mode			
Mechanical				
Dimension (L x W x H)	600 x 483 x 133 mm		280 x 132 x 121 mm	
Weight	38.7 kg		6.5 kg	
Cooling	Fan cooling		Fan cooling	
AC Input Connector	4 pin terminal block		IEC 320 C14	
DC Output Connector	3 pin terminal block		GES HB30	
User Port	Analog I/O: 15-pin female D-sub		Analog I/O: 25-pin male D-sub	
Host Port	Digital I/O: 9-pin female RS232 and RS485		-	

High Voltage Pulsed Power Supplies

Features



- 5 to 400kHz wide and adjustable frequency to fulfill various equipment requirements
- Exclusive ground noise reduction technology for reduced noise impact
- Up to 1900 V, adjustable ignition voltage for diverse applications
- Advanced SiC MOSFET module for wide operation frequency & voltage
- Equipped with sync-up functionality for enhanced film quality

Specification

Model Name	D10000 HV	
	Specification	Condition
Input Voltage	208 VAC ± 10% (Three Phase)	50 to 60 Hz
Maximum Output Power	10 kW	Measured at the DC output
Output Voltage Range	131 Vdc to 1000 Vdc	Measured at the DC output
Output Current Range	5 A to 30 A	Measured at the DC output
Power Supply Efficiency	> 90%	Rated output power at DC 1000 V
Power Factor	> 0.9	Rated output power
Output Voltage Ripple	< 2%V RMS	At DC Mode
Output Voltage Accuracy	1% of command setting or 0.25% of full scale voltage	Within operation range at 25 °C at DC Mode
Output Current Accuracy	1% of command setting or 0.25% of full scale voltage	Within operation range at 25 °C at DC Mode
D-sub Reader/Command (Analog Interface) Accuracy	1% of full scale rating	Within operation range at 25 °C at DC Mode
Ignition Capability	1000 Vdc to 1900 Vdc / 100 Vdc increments	-
Temperature Coefficient	< 50 ppm / °C	20°C to 40°C Variation in regulated output
Operation Mode	CV, CC, and CP Mode	-
Operation Temperature	0°C to 40°C	-
Arc Energy	< 200uJ per 1 kW	-
Output Frequency	131 Vdc to 1000 Vdc	-
Reverse Time	0.4 us to 10 us, 0.1 us increments	Allowable reverse time is limited for a given frequency
Reverse Voltage	Approximately 10% of the applied voltage	-
Mechanical		
Dimension (L x W x H)	560 x 483 x 133 mm	
Weight	31.5 ±5% kg	
Cooling	Fan cooling	
AC Input Connector	4 pin terminal block	
DC Output Connector	UHF Connector, Female & Harting Connector	
User Port	Analog I/O: 15-pin female D-sub	
Host Port	Digital I/O: 9-pin female RS232 and RS485 and RJ45	

Medium Voltage Power Supplies

Features

- Full range input voltage
- Auto-switch constant voltage and current output
- Superimposed voltage by 2 units of series operation
- Supports active current balance via 4 units of parallel operation
- Comprehensive circuit and fan protection



D750



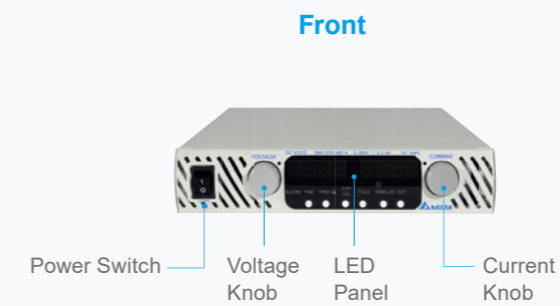
D3000

Specification

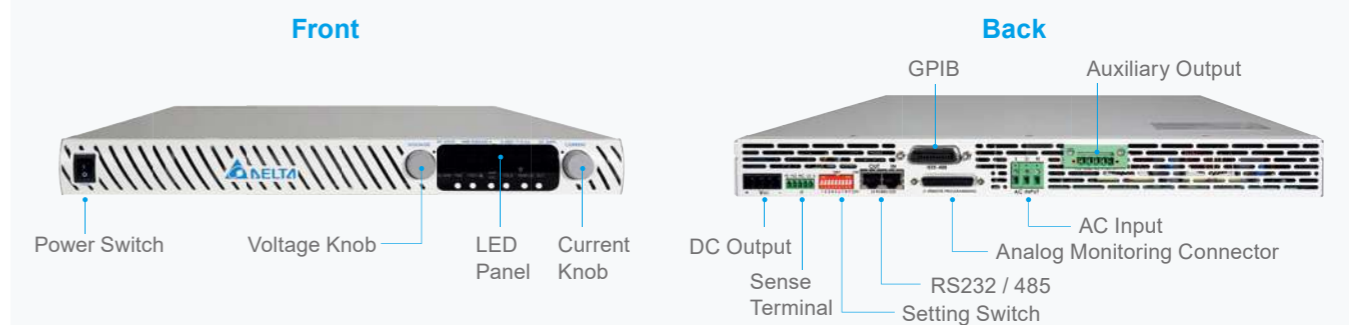
Model Name	D750	D3000
Electrical		
Input voltage range	85-264Vac (1Φ), 47-63Hz	170-265Vac (1Φ), 47-63Hz
Max. output power	750W	3000W
Output voltage range	0 ~ 300V	0 ~ 600Vdc
Output current range	0 ~ 2.5A	0 ~ 6A
Output voltage accuracy/resolution	± (0.05% + 0.05% F.S.) / 0.012% full scale	± (0.05% + 0.05% F.S.) / 0.012% full scale
Output current accuracy/resolution	± (0.1% + 0.2% F.S.) / 0.012% full scale	± (0.1% + 0.2% F.S.) / 0.012% full scale
Efficiency	Min 83 / 87 (100V / 200V input under 100% load)	88%(200Vac input under 100% load)
Load voltage regulation (CV mode)	≤ 0.01% of full scale +2mV	≤ 0.015% of full scale +5mV
Line voltage regulation (CV mode)	≤ 0.01% of full scale +2mV	≤ 0.01% of full scale +2mV
Load current regulation (CC mode)	≤ 0.02% of full scale +5mA	≤ 0.02% of full scale +5mA
Line current regulation (CC mode)	≤ 0.01% of full scale +2mA	≤ 0.01% of full scale +2mA
Operation mode	CV / CC	CV / CC
Voltage rise time	< 150ms (rated load by fixed resistor)	< 150ms (rated load by fixed resistor)
Voltage fall time	< 150ms (full load) < 2.5s (no load)	< 150ms (full load) < 3s (no load)
Protection	OVP, UVL, OCP, OPP, OTP, SCP, Fan Lock	OVP, UVL, OCP, OPP, OTP, SCP, Fan Lock
Certification	CE	CE
Operating temperature	0 ~ 50°C	0 ~ 50°C
Mechanism		
Cooling system	Fan Cooling	Fan Cooling
Dimensions (L x W x H)	437 x 214 x 44 mm	438 x 423 x 44 mm
Weight	4.5 Kg	8.8 Kg
AC input connector	RS232, RS485, GPIB	RS232, RS485, GPIB

Control Interface

D750



D3000



Low Voltage Power Supplies

Features



- Minimum 1% output voltage accuracy
- Adjustable output current to fulfill the different output values of equipment
- Remote monitoring & control of output current via Ethernet communication
- HARTING AC input connector for easy installation
- External hardware interlock input for complete protection

Specification

Model Name	D1000	
	Specification	Condition
Input Voltage	90 - 264 VAC	47 to 63 Hz
Maximum Output Power	1 kW	-
Output Voltage Range	0 Vdc to 10 Vdc	Full range
Output Current Range	100 A Max.	Full range
Power Supply Efficiency	> 80 %	Rated Output Power
Power Factor	> 0.95	Rated Output Power
Output Voltage Ripple	< 4 mV RMS	Full Range
Output Voltage Accuracy	< 128 mA RMS	Full Range
Output Current Accuracy	± 0.1% of full scale	Full Range
Output Stability	± 0.5% of full scale	Full Range
Ignition Capability	± 0.05% over 8 hours	Rated Output Power
Temperature Coefficient	< 200 ppm /°C for voltage ; < 300 ppm /°C for current	0 °C to 50 °C
Operation Mode	CV, CC	-
Operation Temperature	0 °C to 50 °C	-
Main Protection	OVP, OCP, OTP, SCP	
Mechanical		
Dimension (L x W x H)	445 x 483 x 44 mm	
Weight	7.5 kg	
Cooling	Air cooling	
AC Input Connector	3 pin terminal block	
Host Port	Digital I/O: 9-pin female RS232	



D1000



D10000 LV



D15000

Specification

Model Name	D10000 LV		D15000	
	Specification	Condition	Specification	Condition
Input Voltage	190 - 230 Vac (Three Phase)	50 / 60 Hz	190 - 230 Vac (Three Phase)	50 / 60 Hz
Maximum Output Power	10.2 kW	-	15 kW	-
Output Voltage Range	2.4 to 41 V	-	2.4 to 41 V	-
Output Current Range	15 to 250 A	-	20 to 375 A	-
Power Supply Efficiency	> 85%	Rated output power at 250 A	> 85%	Rated output power at 375 A
Power Factor	> 0.9	Rated output power	> 0.9	Rated output power
Output Current Ripple	250 mA pp @ max output current	A magnet coil load	250mA pp @ max output current	A magnet coil load
Mechanical				
Dimension (L x W x H)	554 x 483 x 88 mm		607 x 483 x 133 mm	
Weight	23 +/- 3 kg		27 +/- 3 kg	
Cooling	Air Cooling		Air Cooling	
AC Input Connector	Harting 4 Pin Connector		DINKLE (PPACV-16)	
DC Output Connector	APP PMHP Connector		Bus Bar with holes for 3/8" bolts	
User Port	-		Analog I/O: 25-pin female D-sub	
Host Port	-		-	

Programmable AC Power Sources

Features

- Programmable control voltage and current limits
- High-peak output current for accurate inrush current testing
- Advanced DSP technology provides accurate electronic parameters
- 30 sets of mainstream waveform synchronization built in for simulating various power grids
- Single-phase parallel or three-phase configurations for different environments (A9000 model)
- Comprehensive circuit and fan protection



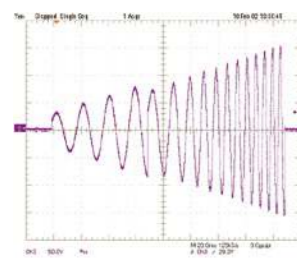
Specification

Model Name	A1500	A3000
Electrical		
Input voltage range	90-254Vac (3Φ), 47-63Hz	190-254VAC, 47-63Hz
Max. output power	1500VA	3000VA
Output voltage range	-424 - +424Vdc, 0-300Vac	150V / 300V
Output current range	0-16A	150V / 30Arms & 300V / 15Arms
Output voltage accuracy/resolution	± (0.2% + 0.2%F.S) / 0.1V	± (0.2% + 0.2%F.S) / 0.1V
Output current accuracy/resolution	± (0.4% + 0.3%F.S) / 0.01A	± (0.4% + 0.3%F.S) / 0.01A
Efficiency	78%	Min 82% (Efficiency under the condition of 100% load)
Line voltage regulation	≤ 0.1% of full scale	
Operation mode	CV	
Protection	OVP, OCP, OPP, OTP, SCP, Fan lock	
Certification	CE	
Operating temperature	0 ~ 40°C	
Peak current	90A / 45A (150V / 300V)	
Mechanism		
Cooling system	Fan Cooling	
Dimensions (L x W x H)	500 x 425x 133 mm	570 x 425x 176 mm
Weight	22 Kg	28 Kg
AC input connector	Terminal	Terminal
DC input connector		Terminal
Communicator	RS232, GPIB	

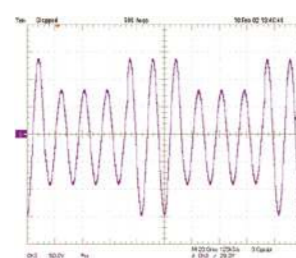


Model Name	A6000	A9000
Electrical		
Input voltage range	190-254VAC(3Φ), 47-63Hz	190-250V _{LL} (3Φ), 47-63Hz, 3P4W or 329-433V _{LL} (3Φ), 47-63Hz, 3P5W
Max. output power	6000VA	9000VA
Output voltage range	150V / 300V	150V / 300V
Output current range	150V / 60A, 300V / 20A	150V / 90A, 300V / 45A
Output voltage accuracy/resolution	± (0.2% + 0.2%F.S) / 0.1V	± (0.2% + 0.2%F.S) / 0.1V
Output current accuracy/resolution	± (0.4% + 0.3%F.S) / 0.01A	± (0.4% + 0.3%F.S) / 0.01A
Efficiency	Min 80% (Efficiency under the condition of 100% load)	Min 79% (Efficiency under the condition of 100% load)
Line voltage regulation	≤ 0.1% of full scale	
Operation mode	CV	
Protection	OVP, OCP, OPP, OTP, SCP, Fan lock	OCP, OPP, OTP, SCP, Fan Lock
Certification	CE	
Operating temperature	0 ~ 40°C	
Peak current	180A / 90A (150V / 300V)	270A / 135A (150V / 300V)
Mechanism		
Cooling system	Fan Cooling	
Dimensions (L x W x H)	700 x 546 x 758 mm	700 x 546 x 941 mm
Weight	116 Kg	153 Kg
AC input connector	Terminal	
Communicator	RS232, GPIB	

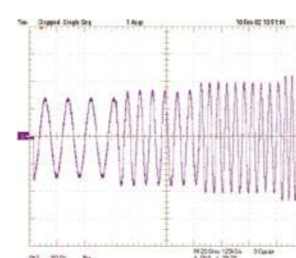
Complete Waveform Simulation



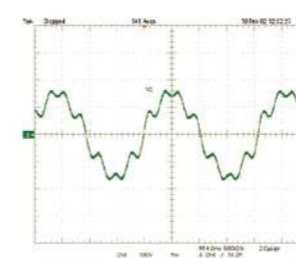
List Mode



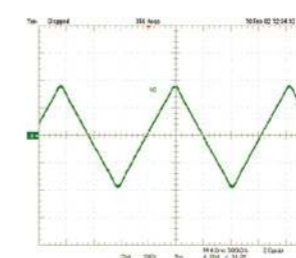
Pulse Mode



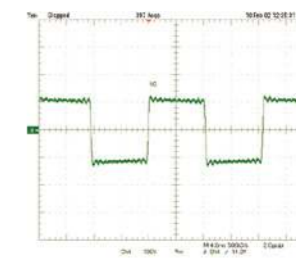
Step Mode



Non Linear



Triangle



Square



Delta

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