

# 42000 Series© Programmable DC Power Supply

## FEATURES:

- **Nine Models:** 42006-100-25  
42006-300-8  
42012-80-60  
42012-100-50  
42012-600-8  
42012-40-120  
42024-80-60  
42024-100-50  
42050-100-100
- **Wide range of voltage & current combination with constant power**
- **Voltage range: 0 - 600V**  
**Current range: 0 - 120A**  
**Power range: 600W, 1200W, 2400W, 5000W**
- **Digital encoder knobs, keypad and function keys**
- **Power Factor Correction (0.95)**
- **High-speed Programming**
- **Precision V&I Measurements**
- **Current sharing for parallel operation with Master Slave Control**
- **Auto Sequencing Programming: 10 Programs / 100 Sequences / 8 bit TTL**
- **Voltage & Current Slow Rate Control**
- **OVP, Current Limit, Thermal protection**
- **Remote sense, 5V line loss compensation**
- **APG (Analog Programmable Interface) with Isolated Analog Interface Card**
- **Optional GPIB control with SCPI**
- **Standard RS-232 interface**
- **LabView and LabWindows**
- **CE Certified**
- **Standard USB interface**

## Introduction

QuadTech's new 42000 Series© of programmable DC power supplies offer many unique advantages for ATE integration and testing. These advantages include a constant power operating envelope, precision readback of output current and voltage, output trigger signals, as well as, the ability to create complex DC transients waveforms to test device behavior to spikes, drops and other voltage deviations. Designed for automated testing DC-DC converters and similar products, the 42000 sets a new standard for high accuracy programmable DC supplies.

The 42000 Series includes nine different models ranging from 600W to 5000W, up to 120A and up to 600V. Due to their constant power operating envelope, a single instrument can provide both high voltage/low current and low voltage/high current, thereby reducing the number of supplies needed in typical ATE applications.

## Description

**Capabilities:** The 42000 Series includes a 16-bit readback capability for accurate voltage and current readings. This means, systems no longer need complex shunt/multiplexers to make accurate readings of the UUT's input parameters. The instruments also include I/O ports providing 8-bit TTLs, DC-ON, fault output signal and remote inhibit, as well as, an output trigger signal for system timing measurements.

Another unique capability of the 42000 Series supplies is their ability to create complex DC transient waveforms. This capability allows devices to be tested to DC voltage dropouts, spikes and other voltage variations making them an ideal choice for airborne device testing, inverter testing and other devices which will experience voltage interrupts. Applications include DC/DC Converter & Inverter voltage drop test, engine startup simulation, battery automated charging, electronic product life cycle test, etc.

**Wide Operating Region With Constant Power:** The 42000 Series offers a wide operating region. For example, the output specification for model 42012-



80-60 is 1200W/80V/60A, it allows operating flexibly in various combinations as shown in the figure above. As shown, conventional power supplies provide the same rated current at all output voltages, however, the 42000 provides greater current at lower output voltages. This means both low voltage/high current and high voltage/low current UUTs can be tested using a single supply avoiding the multiple supplies cost and space within the typical ATE systems.



*For more detailed information on specifications, pricing and special purchase, rent and lease options, contact us at:*

**[www.quadtech.com](http://www.quadtech.com)**

**800-253-1230**

# 42000 Series Electrical Specifications

MODEL	42006-100-25	42006-300-8	42012-40-120	42012-80-60	42012-100-50	42012-600-8	42024-80-60	42024-100-50	42050-100-100
<b>Output Ratings</b>									
Output Voltage	0-100V	0-300V	0-40V	0-80V	0-100V	0-600V	0-80V	0-100V	0-100V
Output Current	0-25A	0-8A	0-120A	0-60A	0-50A	0-8A	0-60A	0-50A	0-100A
Output Power	600W	600W	1200W	1200W	1200W	1200W	2400W	2400W	5000W
<b>Line Regulation</b>									
Voltage	0.01%+6mV	0.01%+18mV	0.01%+2mV	0.01%+8mV	0.01%+10mV	0.01%+18mV	0.01%+8mV	0.01%+10mV	0.01%+8mV
Current	0.01%+5mA	0.03%+20mA	0.01%+25mA	0.01%+10mA	0.01%+12mA	0.03%+20mA	0.01%+10mA	0.01%+12mA	0.01%+24mA
<b>Load Regulation</b>									
Voltage	0.01%+10mV	0.01%+50mV	0.01%+3mV	0.01%+12mV	0.01%+18mV	0.01%+50mV	0.01%+12mV	0.01%+18mV	0.01%+12mV
Current	0.01%+5mA	0.03%+40mA	0.01%+10mA	0.01%+20mA	0.01%+28mA	0.03%+40mA	0.01%+20mA	0.01%+28mA	0.01%+56mA
<b>Voltage Measurement</b>									
Range	20V / 100V	60V / 300V	8V / 40V	16V / 80V	20V / 100V	120V / 600V	16V / 80V	20V / 100V	20V / 100V
Accuracy	0.05% + 0.05%F.S.								
<b>Current Measurement</b>									
Range	5A / 25A	1.6A / 8A	24A / 120A	12A / 60A	10A / 50A	1.6A / 8A	12A / 60A	10A / 50A	20A / 100A
Accuracy	0.1% + 0.2%F.S.								
<b>Output Noise (0-20MHz)</b>									
Voltage (P-P)	85 mV	180 mV	90 mV	100 mV	100 mV	180 mV	100 mV	100 mV	50 mV
Voltage Ripple (rms)	10 mV	90 mV	10 mV	10 mV	15 mV	90 mV	10 mV	15 mV	15 mV
Current Ripple (rms)	10 mA	60 mA	120 mA	30 mA	20 mA	60 mA	30 mA	20 mA	40 mA
<b>OVP ADJUSTMENT RANGE</b> 110% of Vset to 110% of Vmax									
<b>SLEW RATE RANGE</b>									
Voltage (with USB)	0.001V - 10V/ms	0.01V - 10V/ms	0.001V - 5V/ms	0.001V - 10V/ms	0.01V - 10V/ms	0.001V - 10V/ms			
Current (with USB)	0.001A - 1A/ms								
<b>Programming Response Time (Typical)</b>									
Rise Time	10 ms	30 ms	8 ms	8 ms	10 ms	60 ms	8 ms	10 ms	10 ms
(Full & No Load)									
Fall Time	300 ms(max)	2.5 s(max)	240 ms(max)	240 ms(max)	300 ms(max)	5 s(max)	240 ms(max)	300 ms(max)	850 ms(max)
Efficiency	0.75	0.75	0.8	0.8	0.8	0.8	0.85	0.85	0.85
<b>Drift (8 hours)</b>									
Voltage	0.02% of Vmax								
Current	0.04% of Imax								
<b>Temperature Coefficient</b>									
Voltage	0.02% of Vmax/°C								
Current	0.04% of Imax/°C								
<b>Transient response time</b> 3 mS									
10 % step change	180 mV	600mV	150mV	250 mV	250 mV	600mV	250 mV	250 mV	250 mV
<b>Voltage Limit @</b>	500V	800V	200V	400V	500V	800V	400V	500V	500V
<b>Series Mode</b>									
<b>AC Line Input</b>	95 to 250Vac	95 to 250Vac	95 to 250Vac	95 to 250Vac	95 to 250Vac	95 to 250Vac	190 to 250Vac	190 to 250Vac	190 to 250Vac
<b>Voltage Ranges</b>							(Single phase)	(Single phase)	(3phase 4wire, Deltaconnection) or342 to 440Vac (3phase, 5 wire, Y connection)
<b>Weight</b>	13kg								
<b>Operating Temperature</b>	0 - 40°C								
<b>Dimensions (HxWxD) mm</b>	88 x 428 x 425								
	177 x 428 x 566								

## Ordering Information

42006-100-25 : Programmable DC Power Supply, 100V / 25A / 600W 42006-300-8 : Programmable DC Power Supply, 300V / 8A / 600W  
 42012-40-120 : Programmable DC Power Supply, 40V / 120A / 1200W 42012-80-60 : Programmable DC Power Supply, 80V / 60A / 1200W  
 42012-100-50 : Programmable DC Power Supply, 100V / 50A / 1200W 42012-600-8 : Programmable DC Power Supply, 600V / 8A / 1200W  
 42024-80-60 : Programmable DC Power Supply, 80V / 60A / 2400W 42024-100-50 : Programmable DC Power Supply, 100V / 50A / 2400W  
 42050-100-100 : Programmable DC Power Supply, 100V / 100A / 5000W A420004 : GPIB Interface A420006 : Rack Mounting Kit for Model 42000 Series (2U) A420009 : Softpanel for 42000 Series A420015 : Rack Mounting Kit for Model 42050-100-100

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P/N 42000/A2