DCP SERIES DC POWER SUPPLIES

ADAPTIVE POWER SYSTEMS

DCP SERIES: 1200W - 2400W

Key features:

- 1200W and 2400W Power Levels
- 1U Compact Form Factor for most models
- Voltage Ranges up to 1200 Vdc
- Current Ranges up to 160 Adc
- High-Speed Precision Metering
- Active Parallel Operation for Higher Power
- Operating Modes: CV, CC and CP
- All Digital Controller
- Simple Front Panel Operation
- SD Memory Card Option
- PV Simulation Mode
- Isolated Analog Inputs and Outputs
- Digital I/O
- Universal AC Input
- Available Interfaces are USB, RS485, RS232 (standard), GPIB and LAN

GPIB RS232 USB UNIVERSAL SERIAL BUS LAN

CE

OVERVIEW

The ADAPTIVE POWER SYSTEMS DCP Series of precision programmable DC power supplies are aimed at demanding test applications that require stable and precise DC power. DCP models differ from most general purpose DC power supplies on the market today by using state-of-the-art, highly efficient soft-switching power conversion technology in a compact form factor. This space saving design allows up to 2400 Watt of power in a 1U height rack mount enclosure. For less demanding power requirements, 1200W versions are available in the same size package. For the occasional higher power demand, multiple DCP units can be paralleled using the optionally available Master/Slave (-MS) interface that actively controls current sharing between DCP units.

The DCP Series offers a wide range of voltage models from 15 Vdc through 1200 Vdc and allows the user to select the optimal model for his or her application.

A wide choice of operating modes ranging from constant voltage (CV), constant current (CC), constant power (CP) and internal resistance mode (IR) offers the user unparalleled flexibility.

WIDE RANGE OF APPLICATIONS

Target applications for these power supplies are research & development, production test, incoming inspection, quality control and service of a wide range of industrial, consumer, military and space related products.

The flexible DCP Series is equally suited for use in the engineering lab, the production or test floor, the EMC lab or the service lab.

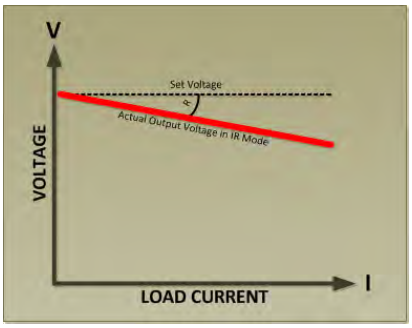
The DCP Series offers industry-leading performance and durability at an affordable price point.

ALL DIGITAL CONTROLLERS

Unlike conventional DC power supplies that use analog control loops to implement voltage and current control, the DCP Series uses advanced digital signal processing for enhanced performance and increased flexibility. The controller regulates voltage, current, power, internal impedance and special application modes like PVSim (see below). Users can program custom I-V tables and even adjust feedback loops to optimize the DC power supply's response to specific load conditions. This is useful for dealing with difficult loads that may have high inductance and can oscillate when powered by conventional DC power supplies.

Since the controller is all digital, there is no difference in behavior between front panel control or any of the remote control interfaces.

INTERNAL RESISTANCE MODE



The DCP Series offers a special internal resistance programming mode that supports simulation of a specific source impedance. This will cause the output voltage to sag as a function of the load current. This mode is particularly useful when testing inverters or loads that draw high inrush currents or to simulate battery discharge characteristics.

ATE SYSTEM FEATURES

For integrated automated test systems or automotive test systems uses, the DCP Series offers a range of available options that facilitate test system development and integration:

- Interfaces: USB, LAN, GPIB, RS232, RS485 or CAN
- Digital I/O
- Isolated Analog Programming Inputs
- Isolated Analog Monitoring Outputs
- Numerous Protection Modes
- Universal AC Input
- Rear Panel Load Connections
- Quiet Speed Controlled Fans
- Embedded Scripting (SD-Card Option)
- No Front Panel Controls Option Available

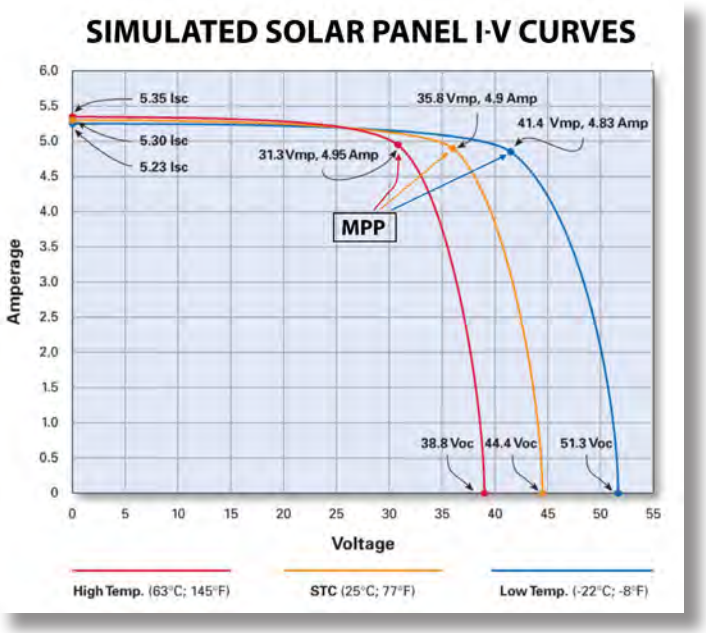
SD-CARD Option

The available SD-Card storage option adds removable data storage for settings, measurements and data logging as well as program scripting. The scripting mode allows complex sequences of voltage or current transients to be programmed and executed on the internal DCP controller. This allows test execution without the need to be connected to a computer and eliminates remote control command processing overhead. Complex automotive starting current patterns can be easily programmed this way.

SOLAR PANEL SIMULATION

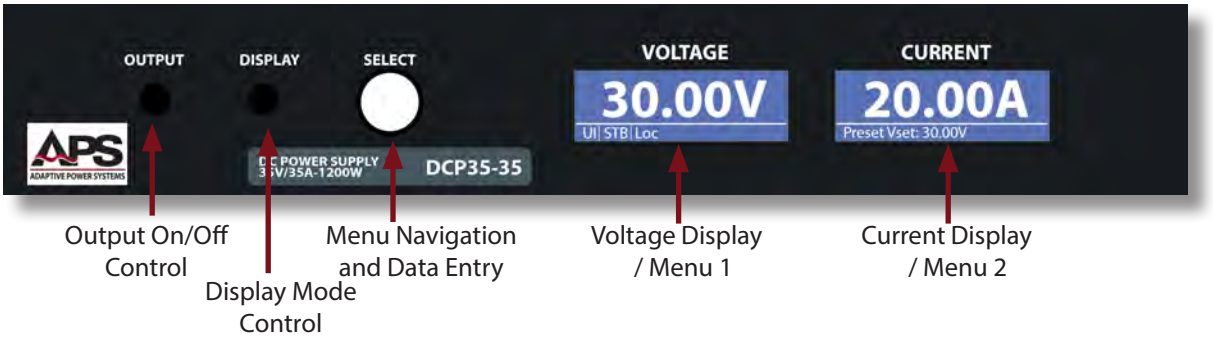
The advanced digital controller described above allows special application programming such as photo-voltaic solar panel simulation. This PVSim mode accurately simulates the output voltage and current of a solar panel under various irradiance levels and solar angles. User settings for open circuit voltage (Voc) and short circuit current (Isc) allow easy generation of I-V control curves for various panel types. During inverter testing, the DCP Series can display maximum power point (MPP), Vmp and Imp for a given I-V curve. This is illustrated for various panel temperatures in the graph to the right.

PVSim mode allows design and testing of solar inverters without the need to use actual panels.

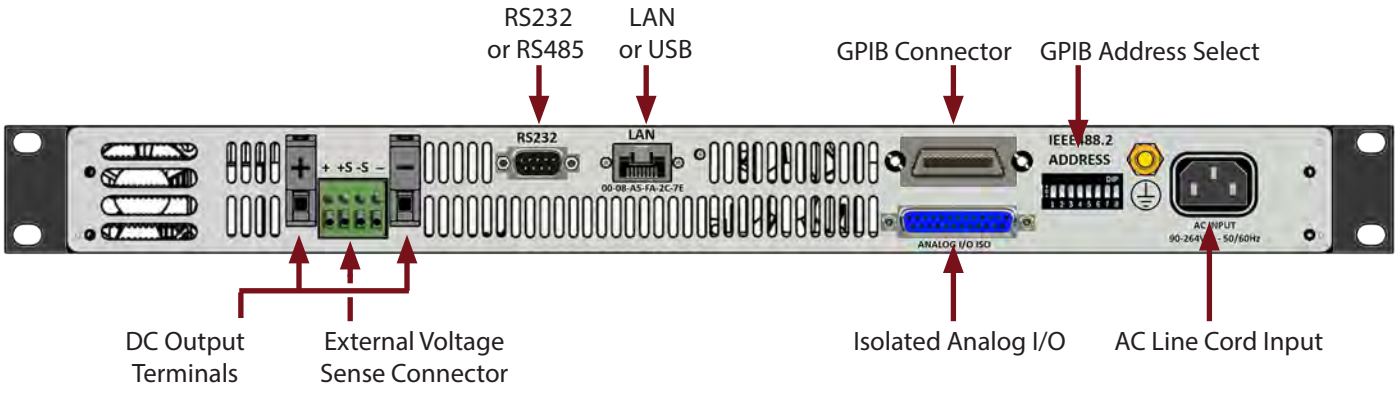


FRONT PANEL OPERATION

The DCP Series power supplies use a very straightforward front panel layout with a minimal number of controls. User settings are menu driven and the SELECT rotary knob if used to slew settings as well as parameters. Two large, back-lit multi-function graphic LCDs are used to display settings, readings and any other pertinent information. Large display characters allow reading of measurement data even from a distance if needed.



REAR PANEL



DCP SERIES DC POWER SUPPLIES

AVAILABLE 1200 WATT DCP MODELS

MODEL	RATED POWER (W)	VOLTAGE (V)	CURRENT (A)	INPUT POWER	Height
DCP15-80	1200	0-15	0-80	90- 264Vac, 47-63 Hz	2U
DCP35-35	1200	0-35	0-35	90- 264Vac, 47-63 Hz	1U
DCP60-20	1200	0-60	0-20	90- 264Vac, 47-63 Hz	1U
DCP80-15	1200	0-80	0-15	90- 264Vac, 47-63 Hz	1U
DCP100-12	1200	0-100	0-12	90- 264Vac, 47-63 Hz	1U
DCP150-8	1200	0-150	0-8	90- 264Vac, 47-63 Hz	1U
DCP300-4	1200	0-300	0-4	90- 264Vac, 47-63 Hz	1U
DCP600-2	1200	0-600	0-2	90- 264Vac, 47-63 Hz	1U
DCP1200-1	1200	0-1200	0-1	90- 264Vac, 47-63 Hz	1U

AVAILABLE 2400 WATT DCP MODELS

MODEL	RATED POWER (W)	VOLTAGE (V)	CURRENT (A)	INPUT POWER	Height
DCP15-160	2400	0-15	0-160	208-230Vac, 47-63 Hz	2U
DCP35-68	2400	0-35	0-68	208-230Vac, 47-63 Hz	1U
DCP60-40	2400	0-60	0-40	208-230Vac, 47-63 Hz	1U
DCP80-30	2400	0-80	0-30	208-230Vac, 47-63 Hz	1U
DCP100-24	2400	0-100	0-24	208-230Vac, 47-63 Hz	1U
DCP150-16	2400	0-150	0-16	208-230Vac, 47-63 Hz	1U
DCP300-8	2400	0-300	0-8	208-230Vac, 47-63 Hz	1U
DCP600-4	2400	0-600	0-4	208-230Vac, 47-63 Hz	1U
DCP1200-2	2400	0-1200	0-2	208-230Vac, 47-63 Hz	1U

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SPECIFICATIONS - COMMON TO ALL DCP MODELS

DC OUTPUT	
Operation Modes	Constant Voltage, Constant Current, Constant Power, Internal Resistance
Voltage	
Accuracy	± 0.25 % of F.S.
Dynamic Response	< 2 ms (typ.)
Ripple	< 0.2 % (typ.)
Stability	± 0.05%
Line Regulation	< ± 0.1 % of F.S.
Load Regulation	< ± 0.1 % of F.S.
Current Limit	
Accuracy	± 0.4 % of F.S.
Regulation	± 0.1 % of F.S.
Output Isolation	3000V

MEASUREMENTS	
Voltage Range	See Model Tables
Accuracy	± 0.25 % of F.S. + 1 Digit
Current Range	See Model Tables
Accuracy	± 0.5 % of F.S. + 1 Digit
Power Range	See Model Tables
Accuracy	± 1.0 % of F.S. + 1 Digit

PROTECTION MODES	
Protection Modes	Over Current, Over Voltage Over Power, Over Temperature
OVP Range	0 - 120% Vmax

INTERFACE OPTIONS	
Available Type	USB, LAN, GPIB, RS232, RS485 (max 3)
Command Syntax	ASCII
GPIB Compatability	IEEE488.1

DIGITAL & ANALOG I/O	
Digital Inputs	Analog I/O Enable Output Disable (+5V to +10V)
Digital Outputs	Output Enabled Status
Analog Inputs	Set V, I, OVP / 0-5 V or 0-10 V for Full Scale / Isolated
Analog Outputs	Monitor Vset, Vmeas, Iset, Imeas, Pmeas / 0-5 V or 0-10 V for Full Scale / Isolated

POWER INPUT	
AC Voltage	90 -264 Vac
Optional 3 Phase Inputs	208V, 400V, 440V, 480V ±10%
Frequency	47-63 Hz standard, 400Hz Optional
Power Factor Correction	Active
DC Voltage	250Vdc - 750Vdc Optional
Efficiency	up to 94%

DIMENSIONS & WEIGHT	
Dimensions (H x W x D)	
1U Models	44.5 x 483 x 440mm / 1.75" x 19" x 17.3"
2U Models	89 x 483 x 440mm / 3.5" x 19" x 17.3"
Weight (net)	7 kg / 15.4 lbs
shipping	10 kg / 22 lbs

ENVIRONMENTAL	
Cooling	Fan Cooled
Operating Temperature	0 to 50 °C / 32 to122 °F
Storage Temperature	-20 to 70 °C / -4 to 158 °F
Humidity	< 80%, non-condensing
Altitude (max.)	2000 m / 6500 feet
Vibration Resistance	10 - 55 Hz, 1 minute, 2 G XYZ
Shock	< 20 G

SAFETY & REGULATORY	
Safety Standard	EN 60950
EMC Emissions	EN61000-6-4:2007
EMC Immunity	EN61000-6-2:2005
Product Category	EN61010-1:2006 (Measurement, Laboratory and Control Equipment
Approvals	CE Mark

MISCELLANUOUS FEATURES AND OPTIONS	
PV Simulation Mode	I-V Curve, MPP
Master/Slave Interface	Active Parallel Mode, Max. 20 kW
Option -SD	SC-Card Reader: Measurement Data logging, Command Scripting, Output Sequencing
Option -ATE	Removes front panel knob and buttons for remote control only applications

DCP SERIES DC POWER SUPPLIES

ORDERING INFORMATION:

Line 1: Specify DC Power Supply Model:
DCPnnn-nn

Configured Options (See Option Table):

Line 2: Specify one Power Input Option

Line 3: Specify Control Interface Option as needed

Line 4: Specify Other Options

Example:

DCP300-8-230-GPIB-SD

Model DCP300-8, 2.4KW, 230V AC input, RS232 & GPIB Interface, Analog I/O and SD card option.

Included in Ship kit:

- User Manuals in PDF Format on CD ROM.
- AC Line Cord.
- Certificate of Conformance.

Available Options:

Option P/N	*Description*
Power Input Options	
-WI	90 - 264 Vac Universal Input (1200 Watt models)
-230	230Vac Input (2400 Watt Models)
-3P208	3 Phase AC Input, 208V
-3P400	3 Phase AC Input, 400V
-3P440	3 Phase AC Input, 440V
-3P480	3 Phase AC Input, 480V
-400Hz	400 Hz AC Input. Add to any other AC input opt.
-DC	DC Input
Remote Control Options	
-GPIB	Interface - GPIB
-485	Interface - RS485
-LAN	Interface - LAN
-USB	Interface - USB
Analog Options	
-ATE	Removes Front Panel Controls (Displays only)
Other Options	
-SD	SD Memory Card
-BSC12	Battery Starting Curve, 12VDC
-BSC24	Battery Starting Curve, 24VDC

Service and Support

Adaptive Power Systems' customer support is second to none. Our Customer Support Program provides the training, repair, calibration, and technical support services that our customers value. So, in addition to receiving the right test equipment, our customers can also count on excellent support before, during and after the sale. With company owned support and service centers around the world, support is never far away.

New Product Warranty: AC Sources & Loads: 1 year, DC Power Supplies: 2 years.

Complete calibration and repair services are offered at our US, European and Chinese manufacturing facilities (see contact info below). Calibrations are to original factory specifications and are traceable to NIST (National Institute of Standards and Technology).

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