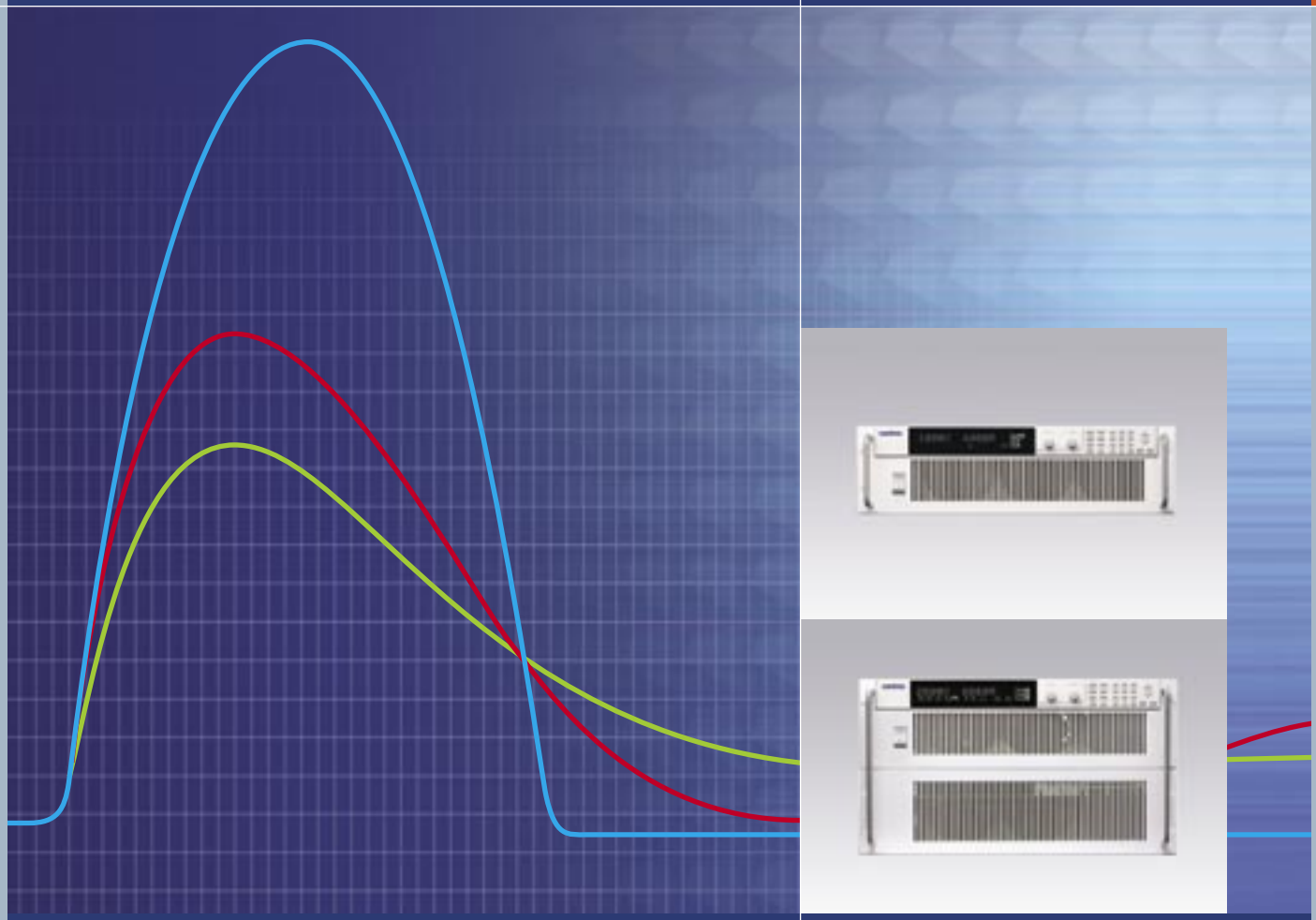
Smart choice for power

xantrex



Programmable Digital Controlled DC Power Supplies

High Power and Performance for:

- ATE
- Bulk Power
- Production Test
- OEM
- Burn-in

www.xantrex.com

XDC Series Digital Power Supplies

6 kW

12 kW

30 kW

The XDC Series represents today's state-of-the-art technology in programmable DC supplies, offering 6 kW and 12 kW of high power for ATE, production test, burn-in, bulk power and OEM applications.

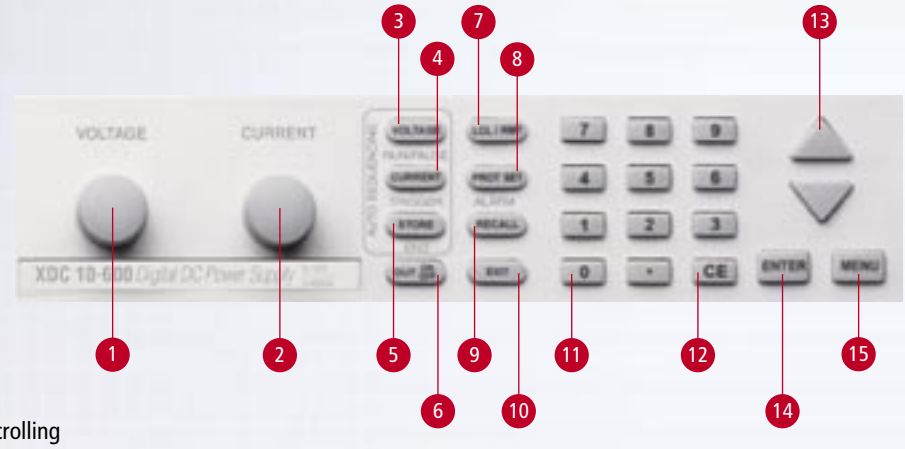
With an embedded controller, the XDC Series has a unique menu-driven auto sequencing capability. This powerful feature allows for complex test sequences to be entered and saved via the front panel without the need for external computers or software. Tests unique to a user's application are now possible with the XDC Series.

At 6 kW and 12 kW, the XDC Series offers up to ten different test programs, each with up to 99 voltage level steps varying from milliseconds to days. Programs can be executed by a manual or external trigger, or via a computer interface; a technician can single step through a sequence, run "n" times or run continuously when triggered from the front panel or remotely. This stand-alone capability can be used for constructing simple voltage ramps, battery charging and simulation of battery voltage at engine start-up, component testing, and MIL 704E testing. Additionally, up to ten configurations of differing protection and output set points may be stored, recalled at any time or set for default at start-up.

Both the XDC 6 kW and 12 kW are available in ten models. Simple, high power systems can also be configured by adding parallel power supplies that are controlled from a master XDC unit by a CANbus communications link.

Standard features include RS-232 and fully isolated analog control, extensive self-protection mechanisms, "soft switching" for better noise performance, efficiency and reliability, and input power factor correction (PFC) for lower current draw and low harmonic current generation.

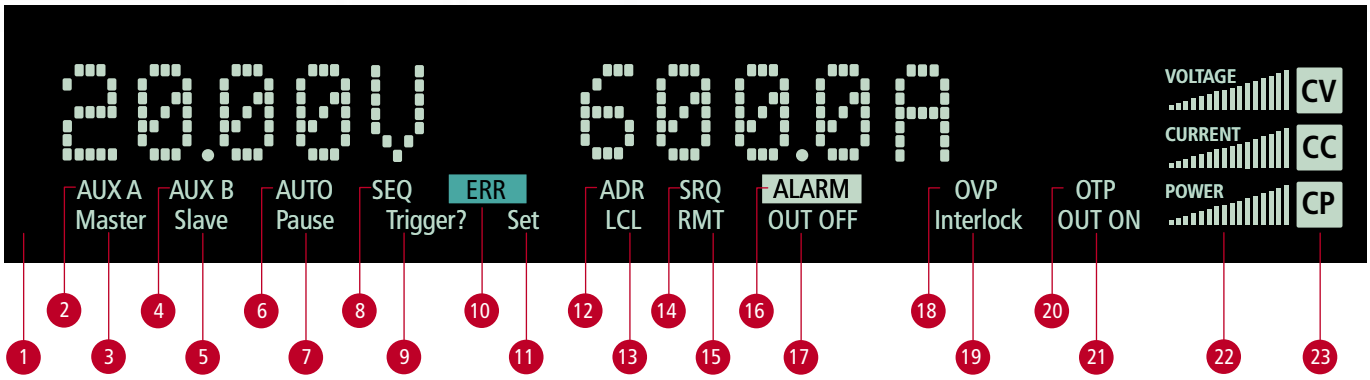
Front Control Panel



1. Precision digital encoded VOLTAGE knob
2. Precision digital encoded CURRENT knob
3. VOLTAGE set / Auto sequence RUN/PAUSE
4. CURRENT set / Auto sequence TRIGGER
5. STORE settings / Auto sequence END
6. OUTPUT ON or OFF
7. LOCAL or REMOTE
8. PROTECTION SETPOINTS / ALARM response
9. RECALL settings
10. EXIT (cancel)
11. Numeric keypad for data entry
13. UP/DOWN arrows for menu navigation and scrolling
14. ENTER
12. CLEAR entry
15. MENU access

Display

1. Main display of outputs and setpoints
2. AUXILIARY line A is true
3. MASTER in current share configurations
4. AUXILIARY line B is true
5. SLAVE in current share configurations
6. AUTO SEQUENCE OPERATION
7. Auto sequence program is in PAUSE
8. AUTO SEQUENCE SETUP mode
9. Auto sequence waiting for a TRIGGER signal
10. ERROR occurrence
11. SETTING or SETPOINT to be entered
12. Power supply is being ADDRESSED
13. Power supply is under LOCAL control
14. GPIB SERVICE REQUEST
15. Under REMOTE control
16. Operating outside set ALARM parameters
17. OUTPUT is disabled
18. Has exceeded and OVER VOLTAGE trip point
19. External safety INTERLOCK line disabled the power supply output
20. OVER TEMPERATURE PROTECTION disabled the power supply output
22. Graphical representation of output VOLTAGE, CURRENT and POWER
23. Constant VOLTAGE, CURRENT or POWER modes



XDC 6kW Product Specifications

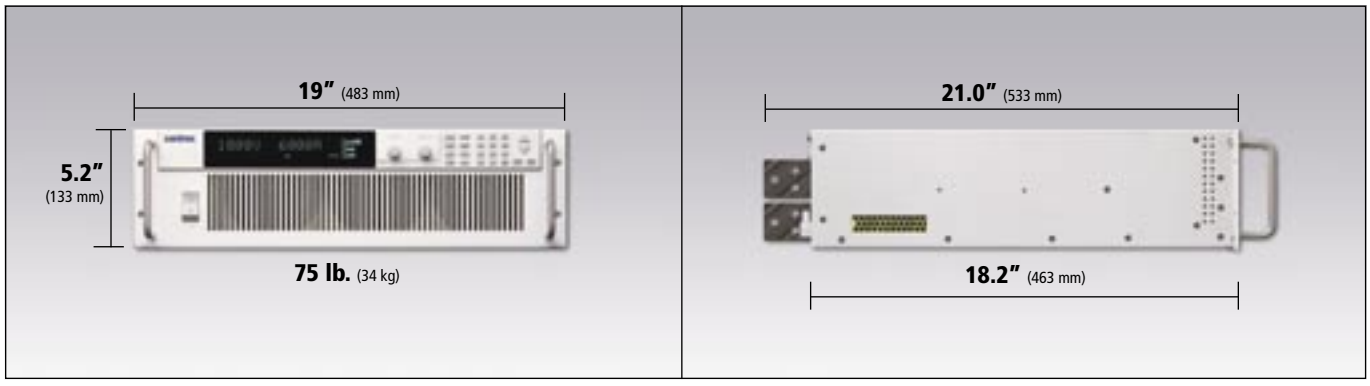
Electrical Specifications*

Models:	10-600	20-300	30-200	40-150	60-100	80-75	100-60	150-40	300-20	600-10
Output Ratings:										
Output Voltage[1]	0-10 V	0-20 V	0-30 V	0-40 V	0-60 V	0-80 V	0-100 V	0-150 V	0-300 V	0-600 V
Output Current[2]	0-600 A	0-300 A	0-200 A	0-150 A	0-100 A	0-75 A	0-60 A	0-40 A	0-20 A	0-10 A
Output Power	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W
Line Regulation:[3]										
Voltage (0.01% of Vmax)	1 mV	2 mV	3 mV	4 mV	6 mV	8 mV	10 mV	15 mV	30 mV	60 mV
Current (0.05% of Imax)	300 mA	150 mA	100 mA	75 mA	50 mA	37.5 mA	30 mA	20 mA	10 mA	5 mA
Load Regulation:[4]										
Voltage (0.05% of Vmax + 5 mV)	10 mV	15 mV	20 mV	25 mV	35 mV	45 mV	55 mV	80 mV	155 mV	305 mV
Current (0.1% of Imax + 20 mA)	620 mA	320 mA	220 mA	170 mA	120 mA	95 mA	80 mA	60 mA	40 mA	30 mA
Meter Accuracy:										
Voltage (0.15% of Vmax)	15 mV	30 mV	45 mV	60 mV	90 mV	120 mV	150 mV	225 mV	450 mV	900 mV
Current (.5% of Imax)	900 mA	450 mA	1 A	225 mA	150 mA	113 mA	90 mA	60 mA	30 mA	15 mA
Output noise (0-20 MHz):										
Voltage (p-p)	75 mV	75 mV	75 mV	75 mV	100 mV	100 mV	100 mV	150 mV	250 mV	350 mV
Output Ripple (rms):										
Voltage	10 mV	10 mV	12 mV	15 mV	15 mV	15 mV	20 mV	20 mV	30 mV	80 mV
Current[5]	3100 mA	1600 mA	1000 mA	750 mA	450 mA	320 mA	230 mA	120 mA	50 mA	25 mA
Drift (30 minutes):[6]										
Voltage (0.04% of Vmax)	4 mV	8 mV	12 mV	16 mV	24 mV	32 mV	40 mV	60 mV	120 mV	240 mV
Current (0.6% of Imax)	3600 mA	1800 mA	1200 mA	900 mA	600 mA	450 mA	360 mA	240 mA	120 mA	60 mA
Drift (8 hours):[7]										
Voltage (0.02% of Vmax)	2 mV	4 mV	6 mV	8 mV	12 mV	16 mV	20 mV	30 mV	60 mV	120 mV
Current (0.04% of Imax)	240 mA	120 mA	80 mA	60 mA	40 mA	30 mA	24 mA	16 mA	8 mA	4 mA
Temperature Coefficient:[8]										
Voltage (0.04% of Vmax/°C)	4 mV	8 mV	12 mV	16 mV	24 mV	32 mV	40 mV	60 mV	120 mV	240 mV
Current (0.06% of Imax/°C)	360 mA	180 mA	120 mA	90 mA	60 mA	45 mA	36 mA	24 mA	12mA	6 mA
OVP Adjustment Range:										
(0% to 103% of Vmax)	0 -10.3 V	0 -20.6 V	0 -30.9 V	0 -41.2 V	0 -61.8 V	0 -82.4 V	0 -103 V	0 -154.5 V	0 -309 V	0 -618 V
Efficiency:[9]	85%	87%	87%	87%	89%	89%	90%	90%	91%	91%

*Specifications are subject to change without notice

1. Minimum output voltage is < 0.15% of rated voltage at zero output setting.
2. Minimum output current is < 0.2% of rated current at zero output setting when measured with rated load resistance.
3. For input voltage variation over the AC input voltage range, with constant rated load.
4. For 0-100% load variation, with constant nominal line voltage.
5. Current mode noise is measured from 10% to 100% of rated output voltage, full current, unit in CC mode.
6. Maximum drift over 30 minutes with constant line, load, and temperature, after power on.
7. Maximum drift over 8 hours with constant line, load, and temperature, after 30 minute warm-up.
8. Change in output per degree C change in ambient temperature, with constant line and load.
9. Typical efficiency at nominal input voltage and full output power.

Dimensions and Weight



XDC 12 kW Product Specifications

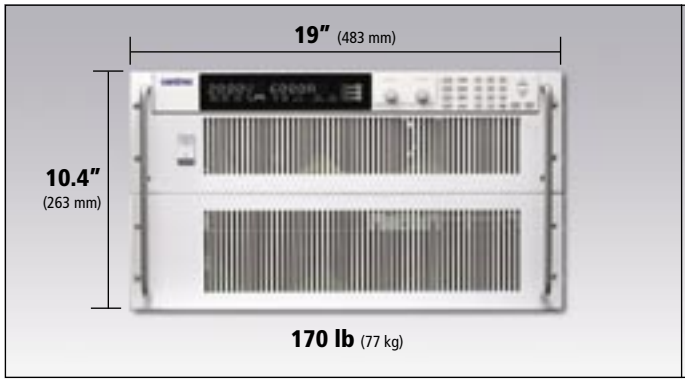
Electrical Specifications*

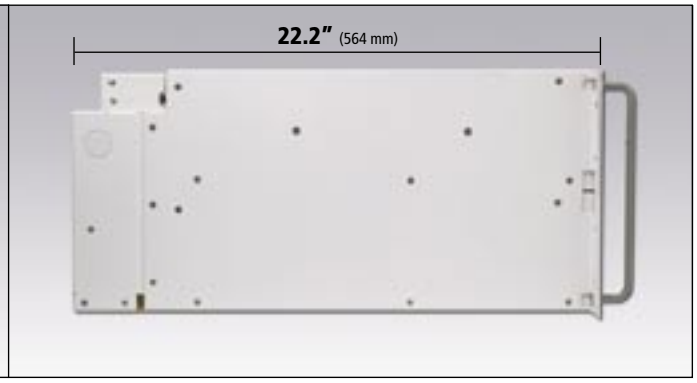
Models:	10-1200	20-600	30-400	40-300	60-200	80-150	100-120	150-80	300-40	600-20
Output Ratings:										
Output Voltage[1]	0-10 V	0-20 V	0-30 V	0-40 V	0-60 V	0-80 V	0-100 V	0-150 V	0-300 V	0-600 V
Output Current[2]	0-1200 A	0-600 A	0-400 A	0-300 A	0-200 A	0-150 A	0-120 A	0-80 A	0-40 A	0-20 A
Output Power	12000 W	12000 W	12000 W	12000 W	12000 W	12000 W	12000 W	12000 W	12000 W	12000 W
Line Regulation:[3]										
Voltage (0.01% of Vmax)	1 mV	2 mV	3 mV	4 mV	6 mV	8 mV	10 mV	15 mV	30 mV	60 mV
Current (0.1% of Imax)	1200 mA	600 mA	400 mA	300 mA	200 mA	150 mA	120 mA	80 mA	40 mA	20 mA
Load Regulation:[4]										
Voltage (0.05% of Vmax + 5 mV)	10 mV	15 mV	20 mV	25 mV	35 mV	45 mV	55 mV	80 mV	155 mV	305 mV
Current (0.2% of Imax + 40 mA)	2440 mA	1240 mA	840 mA	640 mA	440 mA	340 mA	280 mA	120 mA	100 mA	60 mA
Meter Accuracy:										
Voltage (0.15% of Vmax)	15 mV	30 mV	45 mV	60 mV	90 mV	120 mV	150 mV	225 mV	450 mV	900 mV
Current (.5% of Imax)	6 mA	3 mA	2 A	1.5 mA	1 mA	750 mA	600 mA	400 mA	200 mA	100 mA
Output noise (0-20 MHz):										
Voltage (p-p)	75 mV	75 mV	75 mV	75 mV	100 mV	100 mV	100 mV	150 mV	250 mV	350 mV
Output Ripple (rms):										
Voltage	10 mV	10 mV	12 mV	15 mV	15 mV	15 mV	20 mV	20 mV	30 mV	80 mV
Current[5]	6200 mA	3200 mA	2000 mA	1500 mA	900 mA	640 mA	460 mA	240 mA	100 mA	50 mA
Drift (30 minutes):[6]										
Voltage (0.04% of Vmax)	4 mV	8 mV	12 mV	16 mV	24 mV	32 mV	40 mV	60 mV	120 mV	240 mV
Current (0.6% of Imax)	7200 mA	3600 mA	2400 mA	1800 mA	1200 mA	900 mA	720 mA	480 mA	240 mA	120 mA
Drift (8 hours):[7]										
Voltage (0.02% of Vmax)	2 mV	4 mV	6 mV	8 mV	12 mV	16 mV	20 mV	30 mV	60 mV	120 mV
Current (0.04% of Imax)	480 mA	240 mA	160 mA	120 mA	80 mA	60 mA	48 mA	32 mA	16 mA	8 mA
Temperature Coefficient:[8]										
Voltage (0.04% of Vmax/°C)	4 mV	8 mV	12 mV	16 mV	24 mV	32 mV	40 mV	60 mV	120 mV	240 mV
Current (0.06% of Imax/°C)	720 mA	360 mA	240 mA	180 mA	120 mA	90 mA	72 mA	48 mA	24mA	12 mA
OVP Adjustment Range:										
(5% to 103% of Vmax)	0 -10.3 V	0 -20.6 V	0 -30.9 V	0 -41.2 V	0 -61.8 V	0 -88 V	0 -110 V	0 -165 V	0 -330 V	0 -660 V
Efficiency:[9]	85%	87%	87%	87%	89%	89%	90%	90%	91%	91%

*Specifications are subject to change without notice

1. Minimum output voltage is < 0.15% of rated voltage at zero output setting.
2. Minimum output current is < 0.2% of rated current at zero output setting when measured with rated load resistance.
3. For input voltage variation over the AC input voltage range, with constant rated load.
4. For 0-100% load variation, with constant nominal line voltage.
5. Current mode noise is measured from 10% to 100% of rated output voltage, full current, unit in CC mode.
6. Maximum drift over 30 minutes with constant line, load, and temperature, after power on.
7. Maximum drift over 8 hours with constant line, load, and temperature, after 30 minute warm-up.
8. Change in output per degree C change in ambient temperature, with constant line and load.
9. Typical efficiency at nominal input voltage and full output power.

Dimensions and Weight

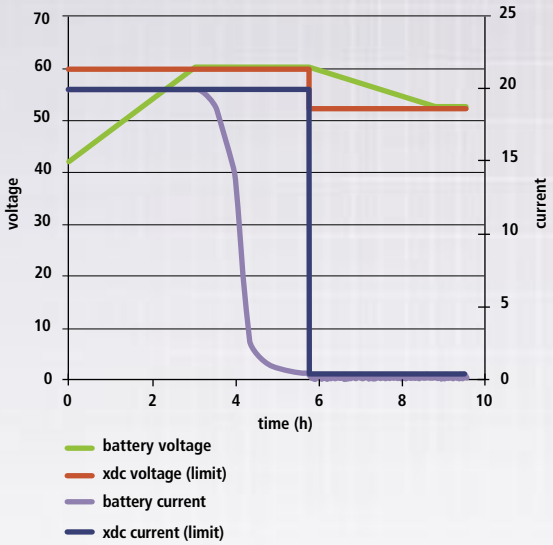




XDC Series Sequence Programming Examples

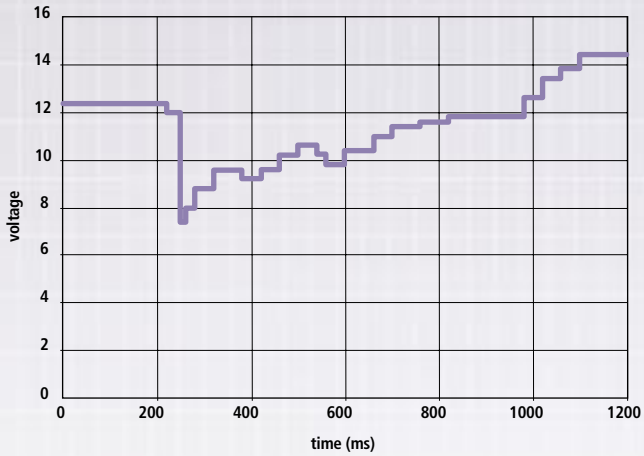
Automated Charging of a 48 V Battery

Automating battery charging with the XDC allows you to initiate a bulk charging mode with voltage/current limits plus OVP. The power supply can also be programmed for a float charge mode that holds the battery voltage at a slightly lower level for a sustained charge.



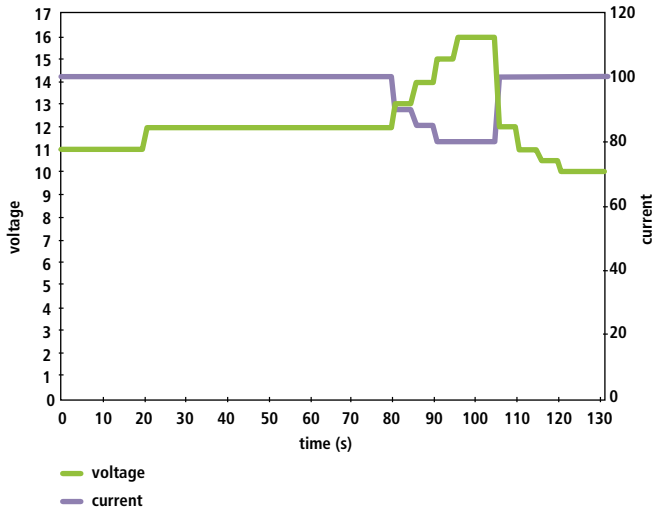
Simulation of Automotive Battery Voltage at Engine Start-up

Automating test sequences such as those for power inverters can be done with the XDC without the use of any external programming source. This can streamline and reduce manufacturing test times and costs.



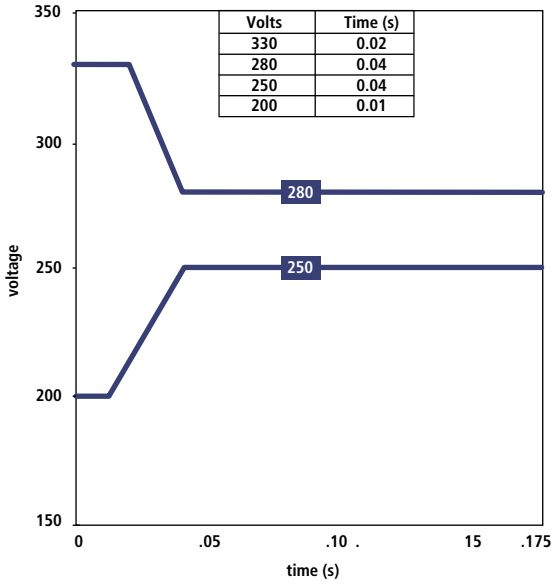
Inverter Test Sequence

Simulating automotive battery voltage at engine start-up allows for the testing of devices that operate off the battery and ensures their effective operation during the voltage drop and recovery time that occurs when the starter pulls a large current surge from the battery.



MIL-STD-704E Testing

Simulation of voltage transient envelopes of 270 V DC systems for testing devices that must conform to MIL-STD-704E.



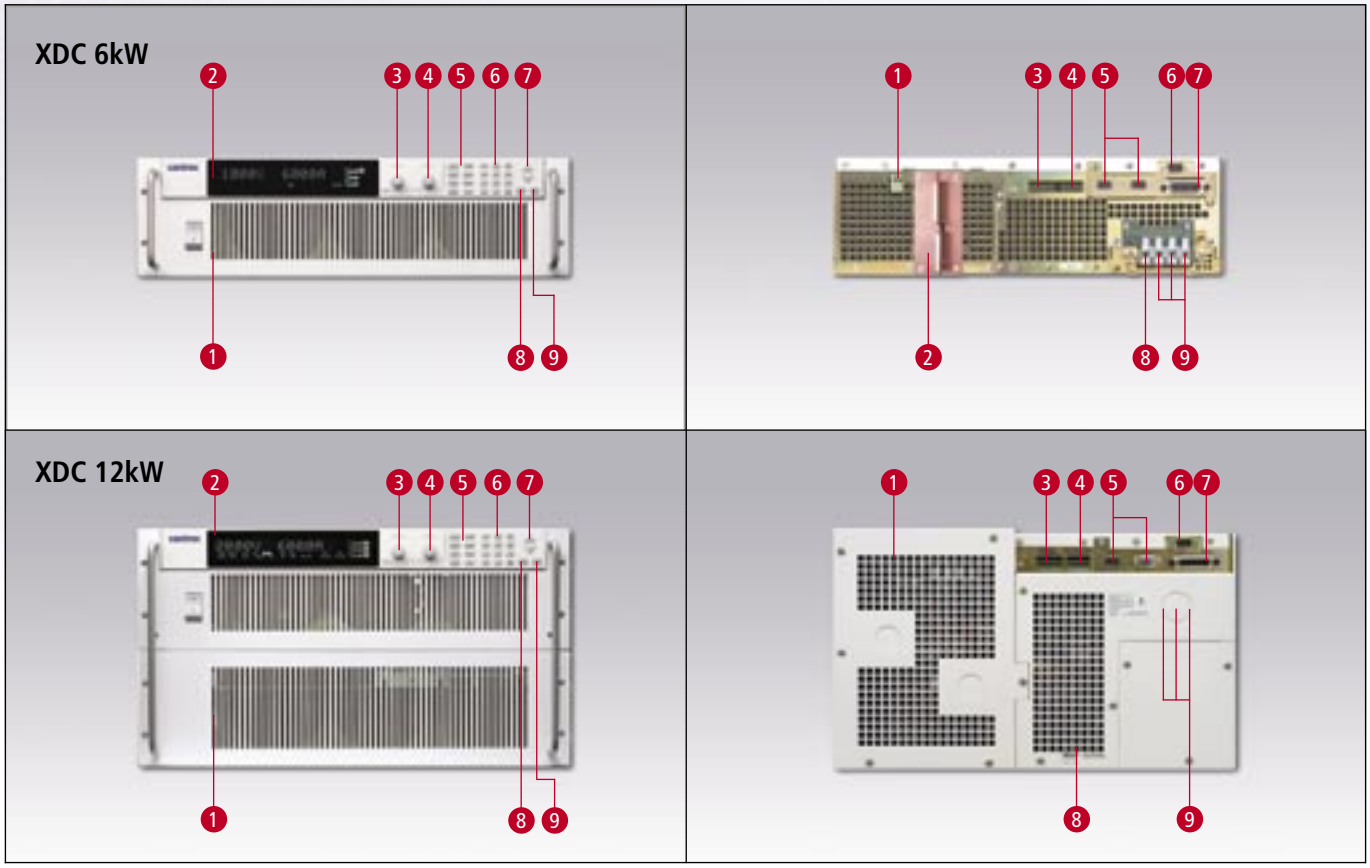
Features and Options

Standard Features

- 3Ø 208 VAC input
- Power Factor Correction (PFC)
- Zero voltage "soft switching"
- Constant power mode
- 16-bit digital processing
- Ten store/recall locations
- 99-step, menu-driven auto sequencing
- Advanced internal programming
- Nine self-protection mechanisms
- Isolated analog programming
- RS-232 interface
- LabView® drivers
- Bright vacuum fluorescent display
- Front panel software-based calibration
- Remote sense with 5 V line loss compensation
- UL, CSA, CE approvals; FCC compliant

Options

- GPIB interface card (488.2 with SCPI)
- CANbus communications link
- High voltage input: 3Ø 342-500 VAC HV input
- GPIB-multichannel



Front View

1 Large air intake area for maximum ventilation and cool operation
2 Vacuum fluorescent display
3 Precision digital encoded voltage knob
4 Precision digital encoded current knob
5 Control keys (see details)
6 Numeric keypad
7 Arrow keys (see details)
8 Enter key
9 Menu key

Back View

1 Remote sense ports
2 DC output (bus bars shown, terminal blocks for higher voltages)
3 Status lines, external interblock, and trigger input connectors
4 Isolated analog programming and readback
5 CANbus ports for master/slave or multi-channel operation
6 RS-232 connector
7 GPIB (IEEE 488.2) connector (optional)
8 Safety ground connector
9 AC input connectors

General Specifications*

Operational AC Input Voltage	3ø 190 to 242 VAC (47-63 Hz) (standard); 3ø 342-500 VAC, 47-63 Hz, 3 wire and safety ground (optional)
Switching Frequency	Typical 31 kHz; 62 kHz output ripple
Time Delay	5 s maximum from power on until output stable
Voltage Mode Transient Response Time	< 3ms (6 kW models) and < 20 ms (12 kW models) for output voltage to recover within0.75% of its rated voltage after a step change in load current from 50% to 100% of rated output or from 100% to 50%
Maximum Voltage Differential	±600 VDC from output to safety ground
Remote On/Off and Interlock	4 to 15 V signal or TTL-compatible input
Remote Analog Programming	Voltage and current programming inputs 0-5 V, 0 -10 V (default) voltage sources. Inputs galvanically isolated from supply output.
Remote Analog Monitoring	Voltage and current monitor outputs 0-5 V, 0-10 V (default) ranges for 0 to 100% of output. Galvanically isolated from supply output.
Remote Programming and Monitoring Accuracy	<± 0.5% of full scale output
Maximum Remote Sense Line Drop Compensation	5 V/line (Line drop is subtracted from total voltage available at supply output.)
Operating Temperature Range	0 to 50° C
Storage Temperature Range	–40 to 85° C
Humidity Range	30 to 95% RH, non-condensing
Front Panel Voltage and Current Control	Rotary encoder knobs or keypad entry
Front Panel Voltage Control	Resolution 0.002% with keypad
AC Input Connector Type	4-terminal, wire clamp connector with strain relief cover
Main Output Connector	10 V to 150 V models: nickel-plated copper bus bars with bus bar shield; 300 V to 600 V models: 4-terminal wire clamp connector with strain relief
Regulatory Approvals	CE-marked units meet EN61010-1, EN50081-2 and EN500082-2. CSA C/US certified to C22.2 No. 1010.1 and UL 3111-1. Meets USA EMS standard: FCC, part 15, class A. Meets Canadian ECMC standard: ICES-001

*Specifications are subject to change without notice.

xantrex™

Smart choice for power

Xantrex Technology Inc.
Headquarters
8999 Nelson Way
Burnaby, British Columbia
Canada V5A 4B5
604 422 8595 Phone
604 420 1591 Fax

Europe
Edificio Diagonal 2A,
C/ Constitución 3, 4º2ª
08960 Sant Just Desvern
Barcelona, Spain
General Tel: +34 93.470.5330
General Fax: +34 93.473.6093

BR20030825R0001

Printed in Canada