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Programmable Power Supplies
& Electronic Loads Mini Catalog

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New Product Solutions

Water-cooled Precision High Power DC Power Supply

ASD

The ASD with DaVinci Power™ technology represents the next generation of precision programmable AC-DC power conversion.



The ASD with its 3U, 30kW water-cooled packaging provides the highest power density available. The ASD is designed for industry leading load transient response with outstanding output ripple and noise. The water-cooled packaging allows for use in environments that normally exclude air-cooled power supplies.

Feature Summary

- High Power Density: 30kW in 3U
- Water-Cooled
- Full Digital Control Loops
- Advanced Digital Features, which include:
 - Precise programming of voltage and current slew rate for sensitive loads.
 - 10kW power blocks in one ASD can be connected to another ASD to form parallel systems. This provides the flexibility to form power subsystems from 10kW to 100s of kW.
 - Industrial field bus interface (Modbus-TCP, Modbus-RTU, Ethernet/IP (Industrial Protocol)) enable real-time digital control.
 - Built-in energy meter calculates the delivered energy throughout a process or period of time.
 - Real-time clock enables accurate timestamping of events.
 - Built in power quality monitoring detects and saves input voltage anomalies, which can be saved for later diagnostic analysis.
 - Programmable analog interface scaling facilitates incorporating the ASD to existing systems with minimal effort.
 - Load impedance measurement, including rate-of-change calculations, enable load "state of health" monitoring and implementation of system preventive maintenance algorithms
 - Programmable filter bandwidth of the output voltage, current and power monitors let the user accommodate their response speed to particular needs.
 - Full featured GUI (Graphical User Interface) helps to test and debug the system by communicating with the power supply in real time.

The ASD's Advanced Diagnostics And Maintenance (ADAMsm) feature includes a flight data recorder feature that lets you access multiple recorded parameters, such as: voltage, current, power, load impedance, faults and input voltage. This allows you to determine easily "why" you had a particular outcome.

The advanced digital monitoring and control features combined with industry leading power density and reliability, make the Sorensen ASD the supply of choice for stringent and high value processes and test and measurement applications.

IEC Compliance Test System

California Instruments MXCTS

A growing number of electronic products manufactured today are required to meet international regulatory requirements for emissions and immunity. This is particularly true for products sold in Europe and countries moving towards renewable energy solutions. The California Instruments Compliance Test System (CTS) provides a cost effective test solution aimed at verifying product compliance to a number of AC and DC Harmonized Standards.



Ranging in power levels from 5kVA up to 90kVA, the California Instruments CTS is used by EMC labs around the world and is widely recognized for performance, ease of use and true real-time data acquisition.

Compliance Test to the following standards:

- EN / IEC 61000-3-2
Harmonics - Including Am 14, < 16 Arms/Phase
- EN / IEC 61000-3-121 (standard under development)
Harmonics, < 75 Arms/phase
- EN / IEC 61000-3-3
Flicker Measurement, < 16 Arms/phase
- EN / IEC 61000-3-112
Flicker Measurement, < 75 Arms/phase
- EN / IEC 61000-4-11 (option)
AC Voltage Dips and Variations (option)
- EN / IEC 61000-4-13 (option)
Harmonics & Interharmonics (option)
- EN / IEC 61000-4-14
AC Voltage Fluctuations
- EN / IEC 61000-4-17
DC Ripple
- EN / IEC 61000-4-28
Frequency Variations

A high speed, no-gap, digital signal processor-based data acquisition system is used to implement the required IEC compliance measurement system. Direct access to the PC bus ensures a much higher data throughput capability (6144 samples/200 msec) than typically found in single box IEC test systems that use the IEEE-488 instrumentation bus to communicate with the PC.

Most recent Photovoltaic Energy Technologies, such as grid-tied PV inverters, require compliance to various EN/IEC standards. Simulating Utility Grid disturbances requires a Reference AC Source such as the Mx/RS with Regenerative Bi-Directional Sink capabilities. The combination of a California Instruments CTS and AC source offers a truly remarkable EN/IEC Compliance Test System!

New Products for Renewable Energy

Solar Energy Test Systems

ELGAR™

ETS - Embedded TerraSAS PV Simulator (80V, 600V and 1000V)

For microgrids, energy storage, and inverter test applications, the TerraSAS™ series photovoltaic (PV) simulators are specifically designed to

emulate the dynamic electrical behavior of a terrestrial PV solar array. They offer low output capacitance and high closed loop bandwidth to keep up with the advanced Maximum Power Point Tracking (MPPT) algorithms used in today's grid-tied inverters.

Our newest series, the ETS Embedded TerraSAS product, is a high performance solution in a small form factor that combines an agile power supply with an innovative I-V curve generator in a single standalone unit. It comes in three basic designs optimized to serve the specific needs and power levels of different PV inverter types:

- ETS1000: For non-isolated string inverters up to 1000Vdc Voc.
- ETS600: For use with string inverters that contain transformer isolation up to 600Vdc Voc.
- ETS80: For micro-inverters or DC optimizers up to 80Vdc Voc.

AMETEK has been building PV simulators capable of high performance programmed I-V characteristics since 1994. With the ETS line of PV simulators, customers now have access to powerful and intuitive software control screens, complex and real-world simulation of dynamic environmental conditions, and the fastest tracking capability of any off-the-shelf programmable power supply rated for high voltage operation.



Solar Energy Test Systems

ELGAR™

TerraSAS Solar Array Simulator

The Elgar Terrestrial Solar Array Simulator was designed to meet the testing needs of OEMs making inverters and DC charge controllers for large scale solar energy farms, which have their outputs connected to the national power grid. TerraSAS capabilities include:

- Programmable I-V curves for solar array inverter and DC charge controller testing
- Tests for inverter Maximum Power Point Tracking
- Simulation of PV cell types (silicon, CIGS, etc.)
- Simulation of dynamic irradiance & temperature
- SAM database with over 100 pre-loaded PV Panels
- Series, parallel and multi-channel capabilities—1000W-1MW

TerraSAS consists of programmable DC power supplies, a rack mounted controller, software, keyboard, LCD display, GUI, output isolation, polarity reversing relays, and a unique PV simulation engine that controls the power supplies. This integrated system simulates most events affecting solar installations.

TerraSAS uses special high speed switching power supplies with power MOSFETs and advanced DSP signal processing techniques that result in switching speeds up to 10 times faster than using linear amplifiers with IGBTs (insulated gate bipolar transistors). This is very important as the higher switching speed allows smaller output capacitors and inductors that will not suppress the AC ripple appearing at the solar array inverter inputs.



MX Series With SNK (Sink) Option

MX Series Programmable Power Source with Sink Option facilitates utility interconnection performance and anti-islanding compliance in solar inverter testing.

By utilizing the MX Series to simulate the interconnection with the utility grid, the output power generated by the inverter is returned to the grid, saving over 50% of the energy consumption. The MX Series programmable source may be programmed to simulate utility power variability (voltage, frequency, harmonic distortion) necessary to test the inverter's ability to source energy to the grid.

Regenerative Mode Operation. In the Regenerative Mode, the MX Series can accept and sink (SNK) power returning from any connected equipment to the utility grid. This power return can be a short-term event or a semi-permanent condition. To handle these occurrences effectively under a wide range of supply voltages, the MX source with the SNK option has a programmable current limit, that is different in the SNK mode from the current limit when sourcing current.



RS Series AC/DC Power Source/Sink

The California Instruments RS Series has double the power density of the MX Series, providing a compact system for up to 1MVA of output. Like the MX Series, RS systems provide a regenerative mode of operation. The RS system consists of multiple high power AC and DC power supplies that provide controlled outputs not only for solar array system testing, but also many other applications.

- Create, run, save, reload and print transient programs
- Generate and save harmonic and arbitrary waveforms
- Capture and display output voltage and current waveforms
- Log, display and print harmonic voltage and current
- Display data bus traffic to and from the AC Source
- Optional Class C Ethernet Interface



Sources and Supplies for Challenging Test Applications

AC/DC Programmable Sources

California Instruments™

CSW Series

The CSW Series eliminates the need for multiple instruments in applications, such as testing load susceptibility to power bus anomalies, accomplished by combining a precision readback AC/DC power source with a high performance power analyzer and arbitrary waveform generator. This makes a CSW capable of complex testing that traditionally required digital multimeters, power harmonics analyzers, current shunts, etc. Since many components in the CSW are shared between the AC/DC source and the power analyzer, the total cost of this integrated system is less than the typical cost of a multiple instrument system. The CSW Series features:



- Constant Power Mode (up to 33.3kVA output)
- 16-8,000Hz Output Frequencies
- Scope Capture Capability
- Power Programming Software
- Plug & Play Paralleling
- Optional **LXI** Class C Ethernet Interface

Auto Parallel Mode, External Drive Input, USB, RS232, GPIB and LAN are just some examples of advanced features making the CSW one of the most versatile AC sources available. This makes the CSW Series ideal for testing today's complex avionics, telecommunications and other electronics where a sleek, low profile, light weight power supply better fits the application. These applications include:

- Testing under real-world power conditions using different waveforms on all 3 phases
- Load susceptibility tests with sequence/event programming and multiple harmonics
- MIL-STD-704, DO-160, B787 and ABD100 avionics testing
- Power supply testing for AC-DC, DC-DC converters and UPS's
- Transient tests on 12 and 24 VDC for automotive application

Please visit www.programmablepower.com for complete data sheets and more detailed specifications.

DC Programmable Sources

Sorensen™

SG Series – High Power, High Current and Fast Response

The popular Sorensen SG Series of programmable power supplies has been expanded to include output voltages from 0-10VDC to 0-800VDC.



Their high component density and modular expandability results in compact 4-15kW/3U and 20-30kW/6U rack designs. As many as five chassis can be paralleled to operate as a single supply, providing maximum system power up to 150kW. This expansion capability allows the SG Series to meet requirements in a wide range of test applications, from hybrid automobiles to inverters to semiconductors, and many more.

The SG Series is designed for exceptionally fast load transient response, low noise, and ease-of-use – making it suitable for the most demanding applications. Two basic designs are available: the Model SGA with local analog control, and the Model SGI that combines onboard intelligence for automated sequences with looping, custom waveform outputs, and save/recall of settings for repetitive tests. The SGI also features an impressive vacuum fluorescent graphical display in eight languages, context sensitive "soft" keys, and simplified programming with a front panel keyboard. Both versions are available with optional **LXI** Class C Ethernet or IEEE-488.2 (GPIB) interfaces.

DC Programmable Sources

Sorensen™

XG Series for Easy Integration and Control

The XG Series is now available in 850W, 1500W and 1700W versions in a 1U high rack mount. This programmable power series was designed for easy integration into automated test equipment (ATE) systems – but with its built-in sequencer and remote sense readback, it can be used as a stand-alone system for stimulus-response testing. Typical applications are production testing, R&D labs, and OEM quality assurance.



The new XG1700 Series features constant voltage and constant current modes with automatic cross-over, and an Auto Restart mode for recovery from a PC failure or reboot. Auto Restart returns the power output to its previous state after the loss of any remote digital control, which remains active to avoid disruption to any test process. A Foldback Mode is available to disable the output whenever the supply transitions between constant voltage and constant current operation, which protects sensitive loads.

Many other features are available to facilitate integration into larger test systems, such as standard USB and RS232/485 remote control interfaces, or optional low-cost **LXI** Ethernet and isolated analog interfaces. Moreover, multiple supplies can be configured as a multi-channel system with one acting as the master and the others as slave units. This allows easy test programming over a simple cable connection with a single GPIB or IP address.

Programmable Power that Saves You Money

Compact iX Series II

California
Instruments™

Compact Integrated Multi-function Instruments

The California Instruments Compact iX Series is a tightly integrated combination of AC/DC power sources, high performance power analyzer, and an arbitrary waveform generator for powerful output transient generation. Each unit can be used in AC, DC and AC+DC output modes. By eliminating the need for separate instruments, the Compact iX Series lowers the total cost of test equipment ownership for a broad range of applications. Beyond this combination of functions, Compact iX models can be purchased with the capabilities needed for your application, thereby saving even more. The range of options available includes:

- Multiple chassis configurations for multiple channels
- 750 to 2250 VA of AC output power (16-1000Hz)
- Single and three phase models with high crest factor capabilities
- Up to 400V/3.25A DC (1.5kW max.)
- Choice of data communications (USB, RS232, GPIB, **LXI** Ethernet)

A microprocessor provides the flexibility of using either a front panel keypad or remote control. Front panel functions are grouped logically to eliminate frustrating searches through menus and/or soft keys. A large analog control knob can quickly sweep through an entire variable range, while a dynamic rate change algorithm allows precise control over small parameter adjustments.

Remote control interfaces allow programming of all functions from an external PC using the popular SCPI command set. Drivers for several popular instrument programming environments are available, such as National Instruments' LabVIEW, DO-160, ABD-0100, MIL-STD-704A-F, and Boeing B787 to speed up system integration. Additional features including line distortion simulation (LDS), remote sense and precise readback measurements, and Windows® Instrument Control Software for easy access to instrument functions without the need for custom code.



Please visit www.programmablepower.com for complete data sheets and more detailed specifications.

DLM600W Programmable DC Sources

Sorensen™

Performance Rivaling Expensive Linear Supplies

Through the use of Zero Voltage Switching (ZVS) technology, the DLM600W Series achieves exceptionally low, near-linear ripple and noise in a compact 1U (1.75 inches) high, half-rack (8.5 inch) wide chassis. These 600W high density packages provide dual outputs for either rack or bench mounted applications requiring output voltages from 0-5VDC to 0-300VDC and currents from 0-2A to 0-75A. Ripple can be as low as 2.5mV rms, and noise as low as 15mV p-p. Easy master/slave paralleling with active current sharing is possible with as many as four units, or supplies can be connected in series for higher voltage output. Cooling air intake at the front and sides with exhaust at the rear and sides allows units to be stacked vertically without space between, yielding maximum rackmount density and operating temperatures up to 50°C.

Remote control with 16 bit programming is available through **LXI**-compliant Ethernet/RS-232C interfaces, or 12-bit programming through IEEE-488.2/RS-232C interfaces. Software includes an IVI-com driver, LabWindows™ CVI driver, and LabVIEW driver, depending on options selected. Analog programming is also available from the front panel with individual 10-turn potentiometer knobs. Other features include overvoltage protection, and voltage/current preview buttons that allow viewing set points on a 3½-digit display at any time with or without the output enabled.



DCS Series Programmable Power Supplies

Sorensen™

Many Choices and Capabilities

The DCS Series with its 5-year warranty is one of AMETEK's most popular DC power supply families.

The high reliability of this platform is demonstrated by a huge installed base that has satisfied diverse applications over many years. More than 30 different models provide outputs up to 600V or 350A in 1kW, 1.2kW and 3kW low-profile rackmount packages, supplying continuous full output power in any volt/amp combination within rated limits.

Easy-to-use 10-turn potentiometers on the front panel are used to adjust voltage and current settings, which are displayed simultaneously. LEDs indicate the status of overvoltage protection (OVP), overtemperature, remote programming, constant-voltage/constant-current mode, and shutdown. The 3kW models also have push button control of the output standby mode, OVP reset, remote/local programming, and preview status of voltage, current and OVP set points. Remote and analog control features are the same as in the DLM Series described above.



Distinctive Products for Diverse Applications

ReFlex Power™ AC/DC Sources & Loads

ELGAR™

Reconfigurable Modular Designs for Maximum Flexibility

The RFP™ Series is a modular, high-density, programmable power system that can be configured using AC and DC output modules, along with electronic loads, a controller and chassis (see table). This flexible platform is 100% digital, making it ideal for ATE and production test environments where it can provide programmable stimulus, bias power, and loading for devices under test (DUTs).



The EIA 4U-high mainframe chassis can hold up to 12 single-slot modules, or combinations of single-, dual- and triple-slot wide modules, supporting up to 6kW of output power, and any worldwide AC or DC input. Up to eight mainframes (potentially 95 modules) require only a single controller, which communicates with individual modules via a high-speed proprietary bus protocol. It can communicate with a host controller via an **LXI** Ethernet LAN connection, ensuring interoperability and ease of integration.

By using the powerful ReFlex Power software, modules can be combined via the controller in series or parallel groups or series/parallel arrays to form new assets, or “virtual outputs.” This can be accomplished “on the fly” within a test program – there’s no need to shut down when reconfiguring modules. The result is a reduction in the overall asset count for many of these systems, while increasing the range of voltage and currents available for the DUTs.

Modular AC / DC Products				ReFlex Power
Model	Voltage	Current	Power	Overview
RFP DC High Power	33-450V	2.3-30A	1000W	DC Output ReFlex Power Module
RFP DC Low Power	16-65V	5.1-20.6A	330W	DC Output ReFlex Power Module
RFP AC Power	140-280V	3.5-7A	875VA	AC Output ReFlex Power Module
RFP DC Load	500V	15-30A	375-750W	DC Load ReFlex Power Module
RFP Controller	—	—	—	Ethernet Enabled Controller ReFlex Power Module
RFP Chassis	115-400V Input	—	—	12 Slot, Universal AC/DC Input, ReFlex Power Module Chassis

SFA Series High-Power DC Current Sources

Sorensen™

Designed For Laser Diodes & Other High-Power Applications

The SFA family builds on the industry-leading Sorensen SGA series to provide a high power current source for laser diode applications, which require well-regulated current control to avoid catastrophic damage to these devices. By providing only a constant current regulation mode, the SFA's low stored energy output minimizes the potential for damage to sensitive laser diodes, while enabling a current slew rate of up to 400 A/msec. Other features include:



- High power density: up to 15kW in 3U and 30kW in 6U chassis
- Fast load transient response and protection from undesired voltage excursions
- Modular and parallelable up to 150kW, providing expandability and investment protection
- 16-bit resolution with optional IEEE-488.2 + RS-232C + Ethernet for precise control
- Ethernet **LXI** Class C compliant communication through integrated web server
- 5 Year Warranty

Ratings

Voltage	5kW	10kW	15kW	20kW	25kW	30kW
0 - 60V	0-83A	0-167A	0-250A	0-333A	0-417A	0-500A
0 - 100V	0-50A	0-100A	0-150A	0-200A	0-250A	0-300A
0 - 160V	0-31A	0-63A	0-94A	0-125A	0-156A	0-188A

Please visit www.programmablepower.com for complete data sheets and more detailed specifications.

AMREL ePower Line of DC Supplies

Programmable DC Power Supplies



AMREL PD Series Linear Power Supplies (15W-2000W)

AMREL PD Series of programmable DC linear power supplies, a member of the ePower line, are perfect for sensitive electronics testing. The PD series provide:



- Single- and dual-channel outputs; 0-5V to 0-350V, 0.15A to 50A per channel
- High power density; up to 2kW in a 4U package
- Parallel or series operation for higher current/voltage applications
- Fast, clean 50 μ s transient response and ultra-low noise and ripple
- Ultra-precision with micro-range resolution; accuracy of 600ppm or better
- LCD display for 16-bit, 4-digit voltage and current readback eliminates a DMM
- Exclusive digital encoder and keypad for user-friendly control interface
- Four 20-step VLIST or ILIST auto-sequencing profiles automate testing
- Over-voltage, over-current and over-temperature protection
- In-rack, closed-case digital calibration saves annual maintenance costs
- Low component count increases reliability and allows quick repair if needed

With countless voltage and current combinations, the PD series has a wide range of rackmount programmable DC linear power supplies to choose from.

AMREL PDS Series Multi-Channel Linear Supplies

AMREL PDS Series are customized multi-channel programmable DC power supplies that can be supplied with up to eight output channels, 200W per channel. This is the only linear supply that provides up to 350V, 50A at a maximum power of up to 2kW in a single 19" rackmount enclosure. The PDS design also allows multi-unit expandability using a master/slave parallel arrangement of identically rated systems. This arrangement provides control of up to 32 channels as a single unit via one GPIB, RS-232, or RS-485 address. Otherwise, features and benefits of the AMREL PDS Series are similar to the PD Series.



AMREL SPD Series Dual-Channel Power Supplies

The SPD Series of dual-channel switching power supplies packs two output channels into a compact 1U form factor. Currently available with two front panel designs and numerous voltage and current options, the SPD Series offers a wide selection of dual channel switching power supply models to choose from.



O-Panel Version:

- Independent 4 digit LED Voltage and Current Display for each channel

K-Panel Version (Keypad and Encoder):

- Precise Voltage/Current Measurements, Programmable OVP, OCP, VLIST, ILIST, and other system indicators are conveniently presented on a 2X20 VFD display

AMREL Programmable DC Linear and Switching Power Supplies



Product Series	Power Rating	Voltage Rating	Current Rating	Interfaces	Dimensions
SPD Series <i>Dual-channel programmable dc switching power supply</i>	300W ~ 360W	8Vdc ~ 300Vdc	1Adc ~ 40Adc	RS-232, GPIB, RS-485, Ethernet	1U, Full Rack
HPS Series <i>High-power programmable dc switching power supply</i>	45kW ~ 150kW+	10Vdc ~ 800Vdc	20Adc ~ 2500Adc	RS-232, GPIB, Ethernet	22U, 28U or 40U Cabinet
PD Series <i>Single or dual channel programmable dc linear power supply. Available in 1/4, 1/2, 3/4 and Full Rack</i>	20W ~ 2kW	5Vdc ~ 350Vdc	0.2Adc ~ 50Adc	RS-232, GPIB, USB, Ethernet	4U, 1/4 ~ Full Rack
PDS Series <i>Multi-channel programmable dc linear power supply. Available in 1/2 and Full Rack</i>	up to 200W per Channel	5Vdc ~ 350Vdc	0.2Adc ~ 50Adc	RS-232, GPIB, USB, Ethernet	4U, Full Rack

Award-Winning Line of Electronic Loads

Programmable DC Electronic Loads



PLA Series Air-Cooled Loads (600W-250kW)

AMETEK's AMREL PLA Series air-cooled DC eLoads® offers a small footprint, high power density and current rating, along with a broad selection of high voltage models.



Traditional DC electronic loads are bulky, and most are only offered with a few standard voltage, current and power ratings. In ATE systems, rack space is usually limited, and application demands are constantly changing with new technology development. This environment requires the unique features, fit and benefits of the PLA Series.

AMREL PLW Series Water-Cooled Loads (3kW-250kW+)

For lights-out production applications like burn-in of power components, fuel cells, batteries, power supplies, alternators, etc., it's important to minimize rack space and maximize reliability. These are the hallmarks of the AMREL PLW Series of water-cooled DC eLoads. They can be custom designed to meet the requirements of just about any water-cooled load application. In addition, the PLW Series comes with unique condensation protection, high power density and current rating, as well as a wide selection of high-voltage models.



AMREL LPL Series Low-Profile Loads (150W-800W)

The LPL Series of "Low-profile" DC Electronic eLoads occupies only 1U (1.75") of rack space, while offering the industry's highest power density, making it an ideal ATE solution. With the industry's widest model selection, the LPL Series ranges from 150W to 800W without the added cost of a mainframe or sacrificing valuable rack space. For an economical solution with all the necessary ATE capabilities in an ultra compact package, the LPL eLoad is your clear choice!



Not Sure Which Model You Need?

AMETEK Programmable Power provides application assistance to help you select just the right electronic load for applications, such as:

- Battery/Energy Storage/Ultra Capacitor Testing and Validation
- Fuel Cell Durability, Lifetime and Performance Characterization
- DC Power Supply and Battery Charger Validation and Testing
- Single Cell and Short Stack Fuel Cell Characterization
- EIS/Impedance Measurement
- Defense/Aerospace and Avionics ATE, Electronics and Power Source Testing
- Thin-film, Single- and Poly-silicon PV Design Validation and Testing
- Power Electronics/Component Validation and Testing
- Testing Generator/Alternator, Datacenter Backup Power, and Automotive Power Electronics & Components
- Simulating HBLEDs for Driver Supply Testing
- QA/QC Production Testing

ZVL Series of Zero-volt dc Electronic Loads (60W-1.5kW)

The ZVL Series of Zero-volt dc Electronic Loads was designed for Fuel Cell and PV Testing, offering one of the industry's highest current ratings for "0-Volt" operation, along with a wide range of voltage and current ratings to meet diverse applications. All this in a compact, fully-integrated rackmount-ready form factor.



Traditional dc Electronic Load Solutions have inherent limitations for testing single cell fuel cells and PV cells/modules. DC electronic loads use power dissipating components that require a minimum compliance voltage of 0.6Vdc ~ 1.5Vdc for operation. However, single cell fuel cells and PV cells often require the dc electronic load to operate at below 0.1Vdc. The ZVL was designed to address all of these needs.

AMREL FCL, Integrated Fuel Cell eLoad (200W-1.5kW)

The AMREL Integrated Fuel Cell Load "FCL" Series is the ideal all-in-one solution that packages a booster supply for true "0-volt at high-current" operations. The FCL also has an embedded Frequency Analyzer (FRA) for impedance measurement/EIS, and a full featured high-speed dynamic dc load in an ultra-compact 3U (5.25") air-cooled package.



Exceptional Features and Benefits include:

- Embedded FRA (Frequency Response Analyzer) Without the Hassles of External Cables
- Built-in Booster Power Supply to Test Down to 0Vdc at Full Operating Current
- Impedance Measurement Software Without the Costs of Purchasing Additional Software

Award-Winning Line of Electronic Loads

FEL Series of Low-voltage dc Electronic Loads (60W-300W)

The AMREL FEL Series of "Low-voltage" dc Electronic eLoads offers affordable, compact rackmount-ready programmable loads for high-current dissipation at ultra-low compliance voltage. High current ratings go up to 200Adc.

- Broad Model Selection: 60W, 150W, 300W
- Exclusive Voltage Models: Standard 10V, 20V
- Ideal for Unique Test Applications
- Ultra Low-voltage Operation: Up to 200Adc at 0.8Vdc and Operable Down to 0.1Vdc



AMREL PEL Low Power Series eLoad (60W-600W)

The AMREL PEL Series of "Low-power" dc Electronic eLoads, designed for your daily testing needs, offers affordable value, dynamic pulse shaping, autosequencing, embedded GPIB/RS-232 and closed-case calibration in a portable rackmount-ready package.



- Broad Model Selection: 60W, 150W, 300W, 600W
- Exclusive Voltage Models: Standard 60V, 120V, 300V, 600V
- Ideal for Unique Test Applications
- Low-voltage Operation: Up to 120Adc at 1Vdc and Operable Down to 0.1Vdc

Markets and Applications:

- Fuel Cells
 - Single Cell and Short Stack Fuel Cell Characterization, Break-in and Testing Applications
 - Gstat Impedance Measurement (EIS & AC Modulation)
 - Polarization Curve Data Capture (CV & CC Control)
 - Durability
 - Lifetime Tests
 - Performance/Design Characterization
- Battery Testing
 - Dynamic Profiling
 - Battery Characterization
 - Charge/Discharge and Lifetime/Cycle Tests
- Power Electronics Testing
 - dc-dc Converters
 - ac-dc Power Supplies
 - Switching Power Supplies
 - POL (Point of Load)
- Power Electronic Components Testing
- Battery Chargers & Load Profile Simulation
- Laboratories, Universities and R&D
- Defense/Aerospace/Avionics/Industrial ATE and Integrated Test Systems
- Portable Applications

AMREL™					
Product Series	Power Rating	Voltage Rating	Current Rating	Interfaces	Dimensions
FEL Series <i>Low-voltage programmable electronic load</i>	60W–300W	10VDC or 20VDC	50–200ADC	RS-232, GPIB	4U, 1/4–1/2 Rack
PEL Series <i>Low-power programmable electronic load</i>	60W–600W	60VDC–600VDC	10ADC–120ADC	RS-232, GPIB	4U, 1/4–3/4 Rack
BPL Series <i>Bench-top programmable electronic load</i>	400W–800W	60VDC–600VDC	10ADC–200ADC	RS-232, GPIB, USB, Ethernet	3U, 1/2 Rack
LPL Series <i>Low-profile programmable electronic load</i>	60W–800W	60VDC–600VDC	10ADC–100ADC	RS-232, GPIB, USB, Ethernet	1U, Full Rack
PLA Series <i>Air-cooled programmable electronic load</i>	600W–250kW+	60VDC–1200VDC	10ADC–3000ADC	RS-232, GPIB, USB, Ethernet	2U–6U, Full Rack Cabinet System
PLW Series <i>Water-cooled programmable electronic load</i>	3kW–250kW+	60VDC–1200VDC	10ADC–5000ADC	RS-232, GPIB, USB, Ethernet	2U–4U, Full Rack Cabinet System
FCL Series <i>Fuel Cell programmable electronic load</i>	200W–1.5kW	10VDC–150VDC	10ADC–200ADC	RS-232, GPIB, USB, Ethernet	3U, Full Rack
ZVL Series "E"-Models <i>Zero-volt programmable electronic load (Ethernet-based)</i>	200W–1.5kW	10VDC–150VDC	10ADC–200ADC	RS-232, GPIB, USB, Ethernet	1U or 3U, Full Rack
ZVL Series "L"-Models <i>Zero-volt programmable electronic load</i>	60W–300W	10VDC–150VDC	10ADC–100ADC	RS-232, GPIB	4U, 1/2–3/4 Rack

Precision Linear DC Bench Power Supplies

Precision Linear DC Bench Power Supply

Sorensen™

XDL Series II

Building upon success, the original XDL Series re-defined the laboratory power supply in terms of precision and performance. Now the XDL Series II builds upon that success and adds new features and models.



Exceptional Precision

The XDL Series offers an unparalleled level of precision. Voltage and current are controlled using instrumentation quality 16-bit DACs, enabling voltages to be set to 1mV resolution even at full output voltage.

Multiple Ranges for Greater Flexibility

The XDL series II provides multiple ranges for increased current capability at lower voltages. The XDL 56-4, for example, is a 112W power supply with three ranges. The main range offers 0 to 56 volts at up to 2 amps. The higher current range provides up to 4 amps for voltages up to 25V. A further low current range provides an enhanced current setting and measurement resolution of 0.1mA.

Unrivalled Performance

The XDL Series uses pure linear technology and offers unrivalled performance in terms of regulation, output noise and dynamics.

Line and load regulation are close to the limit of measurement. Recovery time from transient current pulses is better than 50µs.

Differential output noise is less than 350µV rms in Constant Voltage mode and down to 20µA rms in Constant Current mode.

Feature Summary

- Advanced dc power supply range, single or triple output
- Very high precision, very low noise, excellent dynamics
- Advanced user interface with numeric and rotary control
- Multiple voltage/current ranges for increased flexibility
- Multiple non-volatile memories for power supply setups
- Front panel lock-out capability
- Switchable remote sense provides perfect load regulation
- Comprehensive protection including OVP and OCP trips
- Compact bench footprint; modular width for rack mounting
- Auxiliary output fully variable 1.00V to 6.00V at 3A with selectable voltage and current metering (T models)
- Bus programmable via USB, RS232, GPIB or LAN (P models)
- LAN interface is LXI Class C compliant
- Duplicate power and sense terminals at rear (P models)

Precision Linear DC Bench Power Supply

Sorensen™

XEL-P Series

The New Sorensen XEL-P Series includes all of the manual control features of the XEL series, but adds comprehensive remote control facilities.

The ultra-compact rack-modular sizing makes it ideally suited to rack mounted system applications, while its user-friendly manual controls are retained for bench top applications.



Rear Power Terminals

Power and sense terminals are duplicated on the rear panel; for rack mount applications, rear connection is more appropriate.

Digital Remote Control

A comprehensive array of interfaces is provided. RS-232, USB and LXI Class C compliant LAN (Ethernet) are provided as standard. An additional GPIB interface is also optionally available.



The XEL Series Introduces S-Lock

One press of the Lock button transfers control of voltage and current from the analog controls to internal digital circuitry. This offers security and exceptional stability, with each setting controlled by an instrumentation quality DAC.



Choose a Voltage Range with V-Span

When working with any particular piece of equipment, engineers often require a voltage source variable over only a narrow range. Set the voltage too high and damage might occur, set it too low and the circuit may reset. The V-Span function allows the user to redefine the end-stop values of the voltage control to define a specific voltage range.



Feature Summary

- Ultra-low output noise and fast transient recovery
- 90 watts per output from an ultra-compact case size
- Exceptional line and load regulation; easy-switch remote sense
- High accuracy four digit fixed-resolution meters; low current range; current meter averaging
- Quick and intuitive adjustment of voltage and current
- Unique S-Lock and V-Span functions
- Dc output switch – check your settings before applying them; 'view settings' button – check and adjust limits at any time
- Lockable voltage and current settings (using S-Lock); connect via safety binding-post terminals

Sorensen DC Product Listing

Overview of Rack Mounted Programmable DC Power Sources				
Series	Voltage	Current	Power	Overview
DLM600	5V - 300V	2A - 75A	600W	1/2 Rack DC Power Supplies
XG 850	6V - 600V	1A - 110A	670 - 850W	1/2 Rack DC Power Supplies
XTR Series	6V - 600V	1A - 110A	670 - 850W	1/2 Rack DC Power Supplies
XG 1500	6V - 600V	2A - 187A	1500 - 1560W	1500W, 1U DC Power Supplies
XG 1700	6V - 600V	2A - 220A	1330 - 1710W	1700W, 1U DC Power Supplies
XFR Series	6V - 600V	2A - 300A	1.2k - 2.8kW	Analog DC Power Supplies
DCS Series	8V - 600V	1A - 350A	1 - 3kW	DC Switching Supplies
DLM Series	5V - 600V	5A - 450A	3 - 4kW	DC Power Supplies
SG Series	10V - 800V	6A - 6000A	4 - 150kW	Modular DC Power Supplies
SFA Series	60V - 160V	31A - 500A	5 - 150kW	High Slew Rate Current Source
ASD Series	40V - 60V	167A - 8000A	10kW - 320kW	Water-Cooled High Power DC Power

Overview of Bench Mounted Programmable DC Power Sources				
Series	Voltage	Current	Power	Overview
XT Series	7V - 250V	0A - 6A	0 - 60W	Linear DC supply; 1/4-rack-width chassis
XPL Series	18V - 56V	1A - 3A	30 - 125W	Economical, compact linear power supplies
XEL Series	15V - 250V	0A - 6A	75 - 180W	User-friendly linear supplies
XDL Series	35V - 56V	1A - 5A	105 - 215W	Digitally controlled power supplies
XBT Series	15V - 32V	3A - 5A	0 - 222W	True triple output digital power supplies
XPF Series	35V - 60V	10A - 20A	175 - 840W	Power supplies with dual isolated outputs
HPD Series	15V - 60V	5A - 20A	0 - 300W	1/4-rack chassis width power supplies
XPH Series	18V - 150V	2A - 10A	175 - 420W	Compact, high performance power supplies
XPD Series	8V - 120V	5A - 67A	0 - 500W	1/4-rack-width power supplies
XHR Series	7V - 600V	1A - 130A	0 - 1000W	Compact 1/2-rack-wide package

Note: Please contact us for other output voltage / current combinations.

Please visit www.programmablepower.com for complete data sheets and more detailed specifications.

AC Product Listing

Overview of Programmable AC Power Sources				
Model	Voltage*	Current	Power	Overview
TL Series	135 - 270V	0A - 4A	250 - 350VA	Cost effective low noise, linear AC power
P Series	135 - 270V	9A - 28A	800 - 1250VA	General purpose benchtop AC power
RP Series	150 - 300V	14A - 28A	800 - 2000VA	General purpose AC power sources
Compact iX Series	150 - 300V	10A - 40A	750 - 2250VA	AC/DC source with high performance power analyzer
Continuous Wave (CW)	135 - 270V	3A - 19A	800 - 2500VA	Cost-effective low profile AC source
True Wave (TW)	156 - 312V	7A - 64A	1.75 - 55.5kVA	Avionics and commercial source
iX and i Series II	150 - 300V	0A - 120A	3 - 15kVA	AC/DC source with high performance power analyzer
L Series	150 - 300V	4A - 133A	2 - 18kA	Precision AC power in single, split or three phase
Ls/Lx Series	150 - 300V	0A - 50A	3 - 18kVA	Three phase and single phase source
CSW Series	156 - 312V	8A - 288A	5.5 - 33.3 kVA	High performance AC/DC source
MX Series	150 - 300V	0A - 160A	15 - 270kVA	High power AC/DC source in a compact floor standing cabinet
XWave	132 - 528V	150 - 4000A	30 - 480kVA	High power density, efficiency and modular flexibility
RS Series	150 - 400V	0 - 1500A	90 - 1MVA+	High power AC/DC source and analyzer
Global UPS (GUPS)	115/230V	21A rms	1920W	Ruggedized Uninterruptible Power Supply
CS Series	208 - 400V	44.44 - 177.77A	3 - 18kVA	High power AC current source

* Voltage is Line to Neutral (L-N) for multi-phase sources. For Line to Line (L-L), the conversion is $(V_{L-N} \times \sqrt{3})$.
(For example, an output setting of 277V Line to Neutral = 480V Line to Line ($277 \times \sqrt{3}$))

Note: Please contact us for other output voltage/current combinations.

Please visit www.programmablepower.com for complete data sheets and more detailed specifications.

DC Product Selector Guide

Voltage	Current	Model
5	3	PD 5-3
5	10	PD 5-10
5	12	PD 5-12
5	20	PD 5-20
5	24	PD 5-24
5	30	PD 5-30
5	40	PD 5-40
5	75	DLM 5-75
5	350	DLM 5-350E
5	450	DLM 5-450E
6	110	XG 6-110
6	110	XTR 6-110
6	220	XG 6-220
7	6	XT 7-6
7.5	67	XPД 7.5-67
7.5	130	XHR 7.5-130
7.5	300	XFR 7.5-300
8	2	PD 8-2
8	4	PD 8-4
8	10	PD 8-10
8	20	PD 8-20
8	40	PD 8-40
8	40	SPD 8-40
8	75	DLM 8-75
8	100	XG 8-100
8	100	XTR 8-100
8	125	DCS 8-125E
8	140	DCS 8-140E
8	187.5	XG 8-187.5
8	200	XG 8-200
8	350	DCS 8-350E
8	350	DLM 8-350E
8	450	DLM 8-450E

Voltage	Current	Model
10	60	DLM 10-60
10	100	DCS 10-100E
10	100	XHR 10-100
10	120	DCS 10-120E
10	400	SG 10-400
10	800	SG 10-800
10	1200	SG 10-1200
10	3600	HPS 10-3600
12	70	XG 12-70
12	70	XTR 12-70
12	140	XG 12-140
12	220	XFR 12-220
12	250	DCS 12-250E
12.5	120	XG 12.5-120
15	1.5	XEL 15-5
15	4	XT 15-4
15	5	XBT 32-3FTP
15	20	HPD 15-20
15	267	SG 15-267
15	534	SG 15-534
15	801	SG 15-801
15	2403	HPS 15-2403
15	3204	HPS 15-3204
16	20.6	RFP-D1016-021
16	185	DLM 16-185E
16	250	DLM 16-250E
18	3	XPL 18-3
18	10	XPH 18-10
18	30	XPД 18-30
20	1	PD 20-1
20	2	PD 20-2
20	3	PD 20-3
20	3	XT 20-3

Voltage	Current	Model
20	4	PD 20-4
20	5	PD 20-5
20	10	PD 20-10
20	18	SPD 20-18
20	30	DLM 20-30
20	30	PD 20-30
20	42	XG 20-42
20	42	XTR 20-42
20	50	DCS 20-50E
20	50	PD 20-50
20	50	XHR 20-50
20	60	DCS 20-60E
20	76	XG 20-76
20	84	XG 20-84
20	130	XFR 20-130
20	150	DCS 20-150E
20	250	SG 20-250
20	500	SG 20-500
20	750	SG 20-750
20	2250	HPS 20-2250
20	3000	HPS 20-3000
20	3750	HPS 20-3750
30	0.6	PD 30-0.6
30	1	XPL 30-1
30	1.2	PD 30-1.2
30	1.3	XEL 30-3
30	2	PD 30-2
30	2	XPL 30-2
30	2	XPL 30-2D
30	2	XPL 30-2T
30	2	XT 30-2
30	2.5	PD 30-2.5
30	3.5	PD 30-3.5

Voltage	Current	Model
30	5	PD 30-5
30	6	XEL 30-3D
30	10	HPD 30-10
30	10	PD 30-10
30	10	SPD 30-10
30	50	XG 30-50
30	167	SG 30-167
30	334	SG 30-334
30	501	SG 30-501
30	1503	HPS 30-1503
30	2004	HPS 30-2004
30	2505	HPS 30-2505
30	3507	HPS 30-3507
32	95	DLM 32-95E
32	125	DLM 32-125E
33	16	XPД 33-16
33	25	XG 33-25
33	25	XTR 33-25
33	33	DCS 33-33E
33	33	XHR 33-33
33	36	DCS 33-36E
33	43	RFP-D2033-030
33	50	XG 33-50
33	85	XFR 33-85
35	2	PD 35-2
35	4	XPH 35-4D
35	4	XPH 35-4T
35	5	XDL 35-5
35	5	XDL 35-5T
35	5	XPH 35-5
35	10	XPФ 35-10
40	0.5	PD 40-0.5
40	1	PD 40-1

DC Product Selector Guide

Voltage	Current	Model
40	1.5	PD 40-1.5
40	2	PD 40-2
40	3.5	PD 40-3.5
40	5	PD 40-5
40	7	PD 40-7
40	8	SPD 40-8
40	15	DLM 40-15
40	21	XG 40-21
40	21	XTR 40-21
40	25	DCS 40-25E
40	25	PD 40-25
40	25	XHR 40-25
40	30	DCS 40-30E
40	30	PD 40-30
40	38	XG 40-38
40	42	XG 40-42
40	75	DLM 40-75E
40	100	DLM 40-100E
40	125	SG 40-125
40	250	ASD 40-250
40	250	SG 40-250
40	375	SG 40-375
40	500	ASD 40-500
40	750	ASD 40-750
40	1125	HPS 40-1125
40	1500	HPS 340-1500
40	1875	HPS 40-1875
40	2625	HPS 40-2625
50	100	SG 50-100
50	200	SG 50-200
50	300	SG 50-300
55	55	DCS 55-55E
56	1.1	XPL 56-1

Voltage	Current	Model
56	4	XDL 56-4
56	4	XDL 56-4P
60	0.3	PD 60-0.3
60	1	PD 60-1
60	1	XT 60-1
60	1.5	XEL 60-1.5
60	3	PD 60-3
60	5	HPD 60-5
60	6	PD 60-6
60	6	SPD 60-6
60	9	XPD 60-9
60	10	DLM 60-10
60	10	PD 60-10
60	14	XG 60-14
60	14	XTR 60-14
60	18	DCS 60-18E
60	18	XHR 60-18
60	20	DCS 60-20E
60	20	PD 60-20
60	20	XPF 60-20
60	25	XG 60-25
60	28	XG 60-28
60	46	XFR 60-46
60	50	DCS 60-50E
60	50	DLM 60-50E
60	66	DLM 60-66E
60	83	SFA 60-83
60	83	SG 60-83
60	167	ASD 60-167
60	167	SFA 60-167
60	167	SGA 60-167
60	250	SFA 60-250
60	250	SG 60-250

Voltage	Current	Model
60	333	SFA 60-333
60	333	SG 60-333
60	334	ASD 60-334
60	417	SFA 60-417
60	417	SG 60-417
60	500	SFA 60-500
60	500	SG 60-500
60	501	ASD 60-501
60	658	HPS 160-658
60	750	HPS 60-750
60	1000	HPS 60-1000
60	1250	HPS 60-1250
60	1750	HPS 60-1750
60	2500	HPS 60-2500
65	5.1	RFP-D1065-5A1
75	2	XPH 75-2D
80	0.25	PD 80-0.25
80	2.5	PD 80-2.5
80	3.5	PD 80-3.5
80	4	SPD 80-4
80	7.5	DLM 80-7.5
80	10.5	XG 80-10.5
80	10.5	XTR 80-10.5
80	13	DCS 80-13E
80	15	DCS 80-15E
80	19	XG 80-19
80	21	XG 80-21
80	37	DCS 80-37E
80	37	DLM 80-37E
80	50	DLM 80-50E
80	63	SG 80-63
80	125	SG 80-125
80	188	SG 80-188

Voltage	Current	Model
80	250	SG 80-250
80	313	SG 80-313
80	375	SG 80-375
80	564	HPS 80-564
80	752	HPS 80-752
80	940	HPS 80-940
80	1316	HPS 80-1316
80	1875	HPS 80-1875
100	8.5	XG 100-8.5
100	8.5	XTR 100-8.5
100	10	DCS 100-10E
100	12	DCS 100-12E
100	15	XG 100-15
100	17	XG 100-17
100	28	XFR 100-28
100	50	SFA 100-50
100	50	SG 100-50
100	100	SFA 100-100
100	100	SG 100-100
100	150	SFA 100-150
100	150	SG 100-150
100	200	SFA 100-200
100	200	SG 100-200
100	250	SFA 100-250
100	250	SG 100-250
100	300	SFA 100-301
100	300	SG 100-300
100	450	HPS 100-450
100	600	HPS 100-600
100	750	HPS 100-750
100	1000	HPS 100-1000
100	1500	HPS 100-1500
120	0.3	PD 120-0.3

DC Product Selector Guide

Voltage	Current	Model
120	0.5	PD 120-0.5A
120	0.5	XT 120-0.5
120	1	PD 120-1
120	2	PD 120-2
120	3	SPD 120-3
120	4.5	XPD 120-4.5
150	4	DLM 150-4
150	5.6	XG 150-5.6
150	5.6	XTR 150-5.6
150	7	DCS 150-7E
150	7	XHR 150-7
150	8	DCS 150-8E
150	10	XG 150-10
150	11.2	XG 150-11.2
150	18	XFR 150-18
150	20	DCS 150-20E
150	20	DLM 150-20E
150	26	DLM 150-26E
160	31	SFA 160-31
160	31	SG 160-31
160	63	SFA 160-63
160	63	SG 160-63
160	94	SFA 160-94
160	94	SG 160-94
160	125	SFA 160-125
160	125	SG 160-125
160	156	SFA 160-156
160	156	SG 160-156
160	188	SFA 160-188
160	188	SG 160-188
160	282	HPS 160-282
160	376	HPS 160-376
160	470	HPS 160-470

Voltage	Current	Model
160	940	HPS 160-940
200	25	SG 200-25
200	50	SG 200-50
200	75	SG 200-75
200	100	SG 200-100
200	125	SG 200-125
200	150	SG 200-150
200	225	HPS 200-225
200	300	HPS 200-300
200	375	HPS 200-375
200	525	HPS 200-525
200	750	HPS 200-750
250	0.2	PD 250-0.2
250	0.4	PD 250-0.4
250	0.6	PD 250-0.6A
250	20	SG 250-20
250	40	SG 250-40
250	60	SG 250-60
250	80	SG 250-80
250	100	SG 250-100
250	150	SG 250-150
250	180	HPS 250-180
250	240	HPS 250-240
250	300	HPS 250-300
250	420	HPS 250-420
250	600	HPS 250-600
300	1	SPD 300-1
300	2	DLM 300-2
300	2.8	XG 300-2.8
300	2.8	XTR 300-2.8
300	3.5	DCS 300-3.5E
300	3.5	XHR 300-3.5
300	4	DCS 300-4E

Voltage	Current	Model
300	4	PD 300-4
300	5	XG 300-5
300	5.6	XG 300-5.6
300	9	XFR 300-9
300	10	DLM 300-10E
300	13	DLM 300-13E
330	15	SG 330-15
330	30	SG 330-30
330	45	SG 330-45
330	61	SG 330-61
330	76	SG 330-76
330	91	SG 330-91
330	135	HPS 330-135
330	180	HPS 330-180
330	225	HPS 330-225
330	315	HPS 330-315
330	455	HPS 330-455
350	0.15	PD 350-0.15
350	0.6	PD 350-0.6
350	1.2	PD 350-1.2
400	12	SG 400-12
400	25	SG 400-25
400	38	SG 400-38
400	50	SG 400-50
400	63	SG 400-63
400	75	SG 400-75
400	114	HPS 400-114
400	152	HPS 400-152
400	190	HPS 400-190
400	266	HPS 400-266
400	375	HPS 400-375
450	2.3	RFP-D2450-2A3
600	1.4	XG 600-1.4

Voltage	Current	Model
600	1.4	XTR 600-1.4
600	1.7	DCS 600-1.7E
600	1.7	XHR 600-1.7
600	2.6	XG 600-2.6
600	2.8	XG 600-2.8
600	4	XFR 600-4
600	5	DLM 600-5E
600	6.6	DLM 600-6.6E
600	8	SG 600-8
600	17	SG 600-17
600	25	SG 600-25
600	33	SG 600-33
600	42	SG 600-42
600	50	SG 600-50
600	75	HPS 600-75
600	100	HPS 600-100
600	125	HPS 600-125
600	175	HPS 600-175
600	250	HPS 600-250
800	6.2	SG 800-6.2
800	12.5	SG 800-12.5
800	18.7	SG 800-18.7
800	56	HPS 800-56
800	75	HPS 800-75
800	93	HPS 800-93
800	133	HPS 800-133

Engineered Solutions

When Requirements Go Beyond the Catalog

AMETEK Programmable Power provides engineered solutions that require “outside the box” thinking, and sometimes far outside the box development. We work directly with our customers to develop application specific solutions through modified standard products, integrated power systems using standard products, or fully customized solutions. These include:

- Power conditioning
- Custom power supplies
- OEM power subsystems
- Turnkey power systems
- And many other system solutions

We have performed hundreds of cost effective, value-added integration solutions across dozens of market segments worldwide.

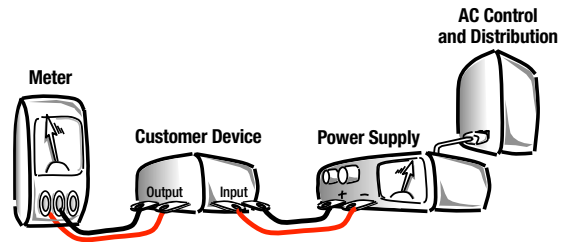
Spanning:

- solar array power simulation
- product burn-in systems
- custom multi-channel power supplies

You can trust us to mitigate the risk of meeting your goal.

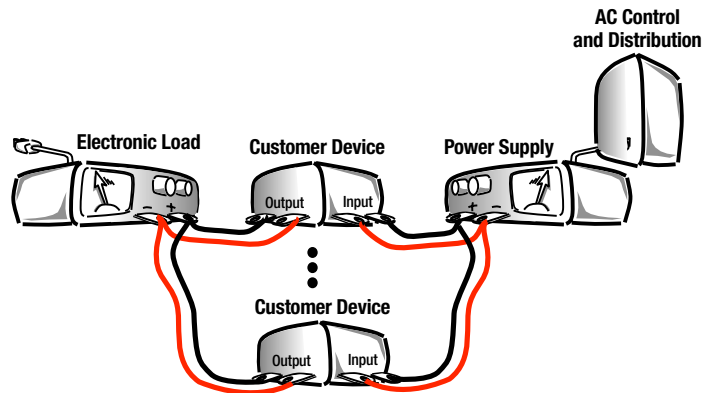
Contact AMETEK's Solutions team at:
Solutions.ppd@ametek.com

Customer solutions fit into three basic categories:



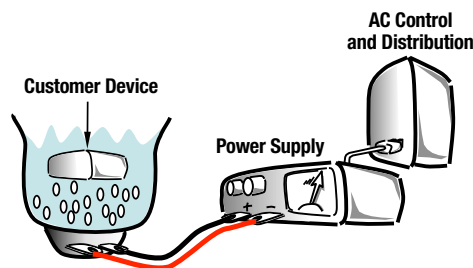
Measurement and Control

This category of power systems involves the power supply providing stimulus, either AC or DC, to a customer device so that its behavior can be measured and validated. These applications range from Research and Development Laboratories to high-rate production machines.



Reliability and Burn-in

This category essentially deals with applications where the customer device is put under a load for an extended period of time. The input power, either AC or DC, is held constant at full power or varied to promote stress in the customer device to assess product reliability or to propagate infant mortality.



Process Control

In these applications, the power subsystem is providing power to create an environment necessary to add value to a customer product. Typically, the power component of these systems has to be carefully chosen to meet the end requirements because its behavior directly affects the quality of the customer product.

