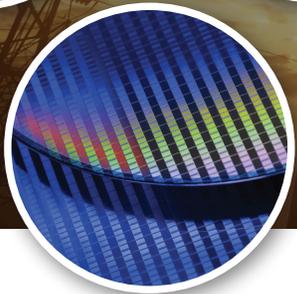


**AMETEK**<sup>®</sup>  
PROGRAMMABLE POWER



**ELGAR**<sup>™</sup>

**Sorensen**<sup>™</sup>

**California  
Instruments**<sup>™</sup>

# AC & DC

Programmable  
Power Supplies &  
Electronic Loads  
Mini Catalog



## The choice of test engineers for deep expertise in AC and DC power supplies, loads and simulation systems

Manufacturing the world's broadest selection of AC and DC power supplies and loads for more than forty years, AMETEK has produced precision programmable power, electronic loads and power bus simulators for test and measurement needs, ATE systems, R&D, process control, and power conditioning across diverse industries. Its products and services are recognized around the world for robust performance, high quality, reliability, and economic value.

### **ELGAR**<sup>™</sup>

AMETEK's Elgar brand Programmable Power Solutions are custom or quasi-custom configurable systems, which combine products from the broad AMETEK power portfolio with other system components and sophisticated software to solve unique testing requirements including:

- Power sub-systems
- Power conditioning and distribution units
- Turnkey power systems
  - Satellite Solar Array simulation
  - Terrestrial Solar Array simulation

### **Sorensen**<sup>™</sup>

Benchtop and rack mounted Programmable DC power supplies available in over 30 product lines featuring a broad range of output power, voltage and current ratings, as well as input voltage and control options.

Extensive selection of benchtop and rack mounted electronic loads and power supplies featuring high slew rate MOSFET designs, with CC, CV, CP and CR operating modes. High power models offered in both air- and water-cooled versions.

### **California Instruments**<sup>™</sup>

AC sources featuring programmable amplitudes and frequency, ranging from 250VA single  $\Phi$  benchtop units to 3 $\Phi$  systems > 1 MVA with optional high frequency and energy saving regenerative operation for grid simulation and renewable energy test applications. Sophisticated controls and software support generation and application of complex waveforms for avionics testing, including high frequency and DC power.

# New Product Solutions

## High Performance AC Source

**California Instruments™**

### California Instruments Asterion AC/DC Power Sources (500VA/W to 3000VA/W)

**Performance. Reliance. Brilliance.**



Inspired by the enduring power of a brilliant star, the California Instruments "Asterion" line of AC power sources by AMETEK Programmable Power combines intelligence and flexibility to create an advanced platform of AC solutions. This easy-to-configure design features sophisticated technology for delivering high performance, programmable AC and DC power. Its sleek design packs maximum power density into a low-profile form factor with an intuitive touch screen interface placing that power at your fingertips. Centralized control and unparalleled modularity make Asterion the most adaptable platform on the market. Its groundbreaking capabilities set the standard for affordable, precision power sources.

**Output frequency up to 5,500Hz, output power from 500VA to 3000VA single phase and three phase, current up to 10A/phase for three phase and 30A/phase for single phase.**

#### Advanced Features:

- Intuitive touch panel control
- iX2™ current doubling technology
- Multi-language for global operation
- Avionics Test Ready suites include MIL-STD 704, RTCA/DO-160, Boeing & Airbus test suites
- ATE version available
- IEC 61000 Compliance Test Ready (Available IEC 61000 test suites include 4-11, 4-13, 4-14, 4-17, 4-27, 4-28, & 4-29)

#### iX2™ current doubling technology



All Asterion sources employ AMETEK's latest current enhancing technology, iX2™. The iX2 current doubling technology enables output current to increase linearly up to two times the full output current as the voltage decreases from range maximum to one-half of range voltage. iX2 technology results in a source that delivers full power over the widest voltage ranges. This eliminates the need to buy overpowered sources just to reach low line current requirements.

## Precision Water-cooled Modular DC Power Supply

**Sorensen™**

### ASD FLX

The ASD FLX gets its name from its modular design with front loading modules for easy access and flexible voltage assignment. The chassis with removable, lightweight modules allows for easy one person installation. Furthermore, this product has a wide range of voltage input, 324 VAC to 528 VAC, giving it the flexibility to be utilized globally in a single configuration.



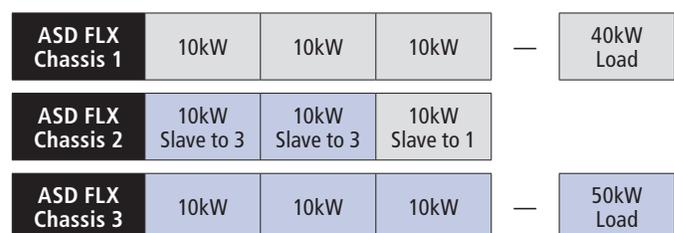
The ASD FLX with its 3U, 30kW water-cooled packaging provides one of the highest power densities available with outstanding output ripple and noise. The water-cooling allows for use in environments that normally exclude air-cooled power supplies.

Advanced digital controls included in the ASD FLX have the ability to allow you to program slew rates, such as current and voltage, as well as program transient response times to emulate specific recovery times. The ASD FLX optional advanced features also allow you to program different "fault levels", enabling detection of output cabling, connections or load problems before they cause critical system problems. The factory flight data recorder feature has the ability to record parameters such as voltage, current, power, load impedance, faults and input voltages, allowing the factory to easily determine "why" you had an unexpected outcome.

#### Advanced features include:

- Precise programming of voltage and current slew rate for sensitive loads
- Industrial field bus interface (Modbus-TCP, Modbus-RTU, Ethernet) enable real-time digital control
- Built in power quality monitoring detects and saves input voltage anomalies which can be saved for later diagnostic analysis
- Programmable analog interface scaling facilitates integrating the ASD FLX with existing systems easily
- Built-in energy meter calculates the delivered energy throughout a process or period of time
- Optional real time clock enables accurate timestamping of events

The ASD FLX has the unique ability to allow modules within a given chassis to be slaves for different masters, thus limiting the number of chassis required should an application need more than 30kW. See diagram below.



# New Product Solutions (Continued)

## Economical High Power DC Power Supply

**Sorensen™**

### SGe 4kW - 150kW Programmable DC Power

The SGe is an economical, FET based, high switching speed, programmable, dc power supply alternative to SCR and IGBT based dc supplies.



Most topologies use either a MosFET or IGBT approach within their power stage to execute their power conversion topology. At the same time end users value low output ripple and noise in conjunction with achieving high slew rates. Both IGBT and SCR based designs typically run at much lower switching speeds requiring a larger LC output filter design for similar performance or require degrading ripple and noise performance in order to maintain competitive power densities. The filter design in this case may be balanced to trade off performance of response time with output ripple and noise and densities.

In contrast, our SGe line leverages the benefits of using high switching speed Mosfets requiring a much smaller output stage LC filter in order to provide competitive output ripple and noise performance and response time without compromising power densities. Available in two control versions, the SGe has basic analog controls, while the SGI provides intelligent control features.

#### SGe: Real Value - Analog Control

The SGe, with its outstanding FET based power electronics, is available for customers requiring simple front panel analog controls or external control. With high performance power electronics the SGe provides essential features like 10- turn potentiometers for setting voltage and current, 3½ digit LED readout plus front panel over-voltage protection (OVP) preview/adjustment and reset.

## High Power Extensible Programmable DC System

**Sorensen™**

### HPX DC Supply System

#### Configurable High Power Solution

The Sorensen HPX High Power Extensible, Programmable DC Series from 36kW ~ 240kW+, delivers unsurpassed quality & reliable low-noise performance, fast and precise programmability with premium features at an affordable price, all in a convenient rack-mount cabinet with casters.



#### Advanced Features

- High Power Density: Up to 150KW in a single bay rack-mount cabinet
- Up to 240KW in a dual bay rack
- Fast Load Transient Response: Protection from undesired voltage excursions
- Fast Slew Rate with exceptional rise/fall times for speed-critical applications
- Low Ripple: Suitable for the most sensitive applications
- Low Audible Noise: Temperature controlled variable speed fans
- High accuracy: Voltage/current measurements without external DMMs

#### The Flexibility You Want with the Capability You Need in One System

The HPX Series features two modes in one: Automatic constant voltage and constant current mode crossover with protection against hazardous faults. Remote Shutdown (S/D) Interlock provides various external output shutdown capability in case hazardous faults occur. Other features such as External Analog Programming provide increased control and convenience for external programming applications achieved through various external voltage control methods. The HPX also includes Remote Sense for correcting errors from line voltage drops. Sophisticated power conversion technology, with State-of-the-art FET-based high frequency switching technology provides accuracy, exceptional load transient response & low noise in a smaller footprint as compared to other technologies.

#### Modular Architecture Benefits

The SGe Series and the HPX System both take advantage of Modular building blocks. The HPX system does not go down in the event that one of the power building blocks fails. The modularity of both SGe and HPX allows more efficient maintenance as sparing can be done at the building block level. The HPX's Intelligent controls enable sophisticated sequencing, constant power mode to allow for independent settings of max voltage, current and power and save/recall of the supply settings. Flexible control includes front panel manual control, isolated analog input, RS232 and Ethernet (LXI) with an option to replace the Ethernet interface with IEEE-488.

# 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. The Embedded TerraSAS (ETS) 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.



- ETS 600 / 1000: For isolated and non-isolated string inverters up to 1000Vdc Voc.
- ETS 60 / 80 / 150: For use with micro-inverters or DC optimizers up to 150Vdc 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.

### 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 Pan
- 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. Furthermore, 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.

## Solar Energy Test Systems

**California Instruments**

### California Instruments MX & RS series AC/DC Power Sources (22.5KVA/W to >1MVA/W)

The MX and RS Series Programmable Power Sources with Sink Option facilitates utility interconnection performance and anti-islanding compliance in solar inverter testing. The RS Series has double the power density of the MX Series, providing a compact system for up to 1MVA of output.

By utilizing the MX or RS 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 or RS 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 or RS 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.



- **Solar Energy/Power Grid Simulation**
- **Power Grid Modeling** (Unique External Drive (EXTD) option allows the MX or RS to be controlled as hardware In the Loop (HIL) via external waveform inputs from a Real Time Simulator or other source)
- **Avionics Test Ready** (Available avionic test suites include MIL-STD 704, RTCA/DO-160, Boeing & Airbus test suites)
- **IEC 61000 Compliance Test Ready** (Available IEC 61000 test suites include 3-2, 3-3, 3-11, 3-12, 4-11, 4-13, 4-14, 4-17, 4-27, 4-28, & 4-29)

# 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)
- 2-8,000Hz 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](http://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

## BPS Bulk Power Series

**California Instruments™**

### High Power AC Source for Frequency Conversion and Test

The BPS Series consists of multiple high power AC power systems that provide controlled AC output for ATE and product test applications. This high power AC test system covers a wide spectrum of AC power applications at an affordable cost. Using state-of-the-art PWM switching techniques, the BPS Series combines compactness, robustness and functionality in a compact floor-standing chassis, no larger than a typical office copying machine. This higher power density has been accomplished without the need to resort to elaborate cooling schemes or additional installation wiring. Simply roll the unit to its designated location (using included casters), plug it in, and the BPS Series is ready to work for you.



- **High Power AC Source**  
Programmable AC power for frequency conversion and product test applications
- **Expandable Power Levels**  
Available output power of 30, 45, 75 and 90 kVA per unit and multi-unit configurations for power requirements up to 180 kVA and above
- **Remote Control**  
Standard RS232, USB and IEEE-488 (GPIB) and optional LAN interfaces are available for automated test applications

Please visit [www.programmablepower.com](http://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 |                |           |          | <b>ReFlex Power</b>   |
|--------------------------|----------------|-----------|----------|---|
| Model                    | Voltage        | Current   | Power    | Overview  |
| <b>RFP DC High Power</b> | 33-450V        | 2.3-30A   | 1000W    | DC Output ReFlex Power Module                               |
| <b>RFP DC Low Power</b>  | 16-65V         | 5.1-20.6A | 330W     | DC Output ReFlex Power Module                               |
| <b>RFP AC Power</b>      | 140-280V       | 3.5-7A    | 875VA    | AC Output ReFlex Power Module                               |
| <b>RFP DC Load</b>       | 500V           | 15-30A    | 375-750W | DC Load ReFlex Power Module                                 |
| <b>RFP Controller</b>    | —              | —         | —        | Ethernet Enabled Controller ReFlex Power Module             |
| <b>RFP Chassis</b>       | 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 - 40V  | 0-125A | 0-250A | 0-375A |        |        |        |
| 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 |
| 0 - 250V | 0-20A  | 0-40A  | 0-60A  | 0-80A  | 0-100A | 0-120A |

Please visit [www.programmablepower.com](http://www.programmablepower.com) for complete data sheets and more detailed specifications.

# Sorensen DC Product Listing

| Overview of Rack Mounted Programmable DC Power Sources |             |               |              |  |
|--|-------------|---------------|--------------|--|
| Series   | Voltage     | Current       | Power        | Overview                                     |
| DLM600   | 5V – 300V   | 2A – 75A      | 375 – 600W   | 1/2 Rack DC Power Supplies                   |
| XG 850   | 6V – 600V   | 1.4A – 110A   | 670 – 850W   | 1/2 Rack DC Power Supplies                   |
| XG 1500  | 6V – 600V   | 2.6A – 187.5A | 1500 – 1560W | 1500W, 1U DC Power Supplies                  |
| XG 1700  | 6V – 600V   | 2.8A – 220A   | 1330 – 1710W | 1700W, 1U DC Power Supplies                  |
| XFR Series   | 7.5V – 600V | 4A – 300A     | 2.8kW        | Analog DC Power Supplies                     |
| DCS Series   | 8V – 600V   | 1.7A – 350A   | 1 – 3kW      | DC Switching Supplies                        |
| DLM Series   | 5V – 600V   | 5A – 450A     | 3 – 4kW      | DC Power Supplies                            |
| SG Series  | 10V – 1000V | 5A – 6000A    | 4 – 150kW    | High Power Modular DC Power Supplies         |
| SGe Series   | 10V – 1000V | 5A – 6000A    | 4 – 150kW    | Economical High Power DC Power Supplies      |
| SFA Series   | 40V – 250V  | 20A – 2250A   | 5 – 150kW    | High Slew Rate Current Source                |
| ASD FLX Series   | 40V – 160V  | 167A – 8000A  | 10kW – 320kW | Modular Water-Cooled High Power DC Power     |
| HPX Series   | 10V – 1000V | 45A – 6000A   | 36kW – 240kW | High Power Extensible Programmable DC Series |

| Overview of Bench Mounted Programmable DC Power Sources |             |             |            |  |
|---|-------------|-------------|------------|--|
| Series  | Voltage     | Current     | Power      | Overview                                       |
| XT Series   | 7V – 250V   | 0.25A – 6A  | 0 – 60W    | Linear DC supply; 1/4-rack-width chassis       |
| XPL Series  | 18V – 56V   | 1A – 3.3A   | 30 – 125W  | Economical, compact linear power supplies      |
| XEL Series  | 6V – 250V   | 370mA – 6A  | 48 – 180W  | User-friendly linear supplies                  |
| XDL Series  | 35V – 56V   | 0.5A – 5A   | 105 – 215W | Digitally controlled power supplies            |
| XBT Series  | 15V – 32V   | 3A – 5A     | 0 – 222W   | True triple output digital power supplies      |
| XPF Series  | 60V         | 10A – 20A   | 175 – 840W | Single or dual isolated outputs with PowerFlex |
| HPD Series  | 15V – 60V   | 5A – 20A    | 0 – 300W   | 1/4-rack chassis width power supplies          |
| XPH Series  | 18V – 75V   | 2A – 20A    | 175 – 420W | Compact, high performance power supplies       |
| XPD Series  | 7.5V – 120V | 4.5A – 67A  | 0 – 540W   | 1/4-rack-width power supplies                  |
| XHR Series  | 7.5V – 600V | 1.7A – 130A | 0 – 1000W  | Compact 1/2-rack-wide package                  |

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

*Please visit [www.programmablepower.com](http://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  |
| Asterion AC/DC 500VA/W to 3000VA/W        | 200 - 400V | 1.25A - 30A | 500 - 18000VA  | High Performance AC Power Sources   |
| iX and i Series II                        | 150 - 300V | 0A - 120A   | 3 - 15kVA      | AC/DC source with high performance power analyzer                           |
| Ls/Lx Series                              | 156 - 400V | 0A - 132A   | 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 - 400V | 0A - 375A   | 15 - 135kVA    | High power AC/DC source in a compact floor standing cabinet                 |
| BPS Series                                | 150 - 400V | 0 - 400A    | 30 - 180kVA    | High power programmable AC source for frequency conversion and product test |
| RS Series                                 | 150 - 400V | 0 - 1500A   | 90 - 1MVA+     | High power AC/DC source and analyzer  |

\* 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](http://www.programmablepower.com) for complete data sheets and more detailed specifications.*

# AMETEK Programmable Power Support

AMETEK Support begins with your first contact and continues throughout the life of our products. We'll help you pick the right product for your application, use it properly, and provide service and parts when needed.

## Support

**Applications Assistance:** For help on how to use a product you own, contact the AMETEK Programmable Power Support Department at one of the following email addresses, based on the BRAND of your product.

Email your pre or post applications support question to:

**Elgar Brand:**

[Elgar.ppd@ametek.com](mailto:Elgar.ppd@ametek.com)

**Sorensen Brand (including Xantrex):**

[Sorensen.ppd@ametek.com](mailto:Sorensen.ppd@ametek.com)

**California Instruments Brand:**

[CI.ppd@ametek.com](mailto:CI.ppd@ametek.com)

**AMREL Brand:**

[Amrel.ppd@ametek.com](mailto:Amrel.ppd@ametek.com)

An Applications Specialist with expert knowledge of your specific brand of power supply will reply to you.

For immediate self support, try the **Frequently Asked Questions (FAQ)** postings at the following link:

<http://www.programmablepower.com/support/FAQ.htm>

Also you can download Application Notes and How-To articles on the use of Programmable Power products at:

[http://www.programmablepower.com/Application\\_Notes](http://www.programmablepower.com/Application_Notes)

Finally, all product manuals are available online under the Support/Downloads tab or on the downloads page of each product section.

## Spare Parts

To order spare parts or determine the correct replacement part for your AMREL, California Instruments, Elgar, Sorensen, Power Ten or Xantrex supply, contact the AMETEK Programmable Power Customer Service Department by emailing us at: [parts.ppd@ametek.com](mailto:parts.ppd@ametek.com)

## Repair

A return material authorization (RMA) number is required for products being sent to AMETEK for repair. An RMA number can be obtained using the online RMA form at:

<http://www.programmablepower.com/support/RMA.htm>

If you are unable to use the online RMA form, please contact the AMETEK Customer Service Administrator (Monday-Friday from 8:00am – 4:00pm PT) at [repair.ppd@ametek.com](mailto:repair.ppd@ametek.com) and a representative will complete and submit an RMA request on your behalf.

To obtain a quote or check the status of your repair order, contact the Customer Service Administrator at [repair.ppd@ametek.com](mailto:repair.ppd@ametek.com)

Outside the USA, contact your local representative or nearest Authorized Service Center. Contact information for all Service Centers can be found at: [http://www.programmablepower.com/support/service\\_centers.html](http://www.programmablepower.com/support/service_centers.html)

## Purchase Orders

If emailing in a purchase order, please use one of the addresses below, based on your location inside or outside of the United States.

**US DOMESTIC Purchase Orders for New Products:**

Send all US Domestic POs to: [domorders.sd@ametek.com](mailto:domorders.sd@ametek.com)

**INTERNATIONAL Purchase Orders for New Products:**

Send all International POs to: [intlorders.sd@ametek.com](mailto:intlorders.sd@ametek.com)

*Please visit [www.programmablepower.com](http://www.programmablepower.com) for further support, RMA or order help as well as warranty information*

AMETEK Programmable Power has an extensive network of worldwide Reps and Distributors. To find local sales support, please visit us online at [www.programmablepower.com/contact](http://www.programmablepower.com/contact)



**AMETEK®**  
PROGRAMMABLE POWER

**Sales: North America Headquarters**

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Phone // 858.458.0223  
800.733.5427 (US only)  
[www.programmablepower.com](http://www.programmablepower.com)

**Sales : AMETEK Singapore  
Representative Office**

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43 Changi South Ave 2. #04-01  
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Phone // + 65 9878 5933  
Fax // + 65 6481 6588

**Sales : AMETEK India  
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