

Power Supplies

Multi-Functional Programmable DC Electronic Load Offers Fast Response and Linear Turn-On with Multiple Operating/Load Modes in 300W and 1kW Power Ratings

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TDK Corporation announces the introduction of the TDK-Lambda [SFL Programmable DC Electronic Load Series](#). This new product introduction is available in four models over two power levels that include **300W** (120V-60A, 500V-12A) and **1kW** (120V-180A, 500V-36A) and have the capability to operate in *four different operating modes* with a choice of *seven different load modes*. This offers the user flexible load current control to simulate many different types of load conditions, thus making them an ideal product for use in the Research, Design and Development of products such as AC/DC & DC/DC converters, Fuel Cells, Batteries and Semiconductor components in the Test & Measurement, Industrial, Aerospace, Renewable, Semiconductor and Medical markets.

Along with the *seven different load modes* (Constant-Current: **CC**, Constant-Resistance: **CR**, Constant-Power: **CP**, Constant-Voltage: **CV**, External Control: **EXT**, Short Circuit: **Short**, Constant-Voltage with Current Limit: **CV+Climit**) and *four different operating modes* (**Normal** - for DC load operation, **Dynamic Time and Dynamic Frequency**) – for pulsed load operation, **Sequence** – for complex waveform generation and **Sweep** (R, C, and P) – for testing product V/I, OCP or OPP characteristics) the **SFL DC Electronic Load Series** offers *high-speed current control* (which eliminates load current overshoot and oscillation), *low voltage operation* and *no turn-On delay with linear operation from 0V*.

Other key built-in features/functions include a *VMode* function (to set load rising/falling operating conditions), a *Memory* function (which allows the user to store and recall eight (8) different load operation settings), *Remote Sense* capability (for unit-under-test voltage measurement) and a *Trigger* (TRIG-OUT) function (for pulsed load waveform or test equipment synchronization).

All models operate from a wide-range single-phase AC Input (85VAC to 264VAC) and have built-in *Protection* functions that include *Current Limit*, *Power Limit* and *OTP* and Alarms such as *OVP* and *Reverse Connection*.

High power *parallel DC load systems* are achievable using a paralleled Master-Slave unit arrangement along with a parallel cable connection (from unit-to-unit) where up to ten units can be connected in parallel for a maximum load power of 10kW. *Multi-Channel Synchronous operation* can also be realized which allows multiple DC electronic loads to be connected to separate devices using the same Master-Slave parallel cable connection (from unit-to-unit) for synchronized load ON/OFF and Dynamic operation (up to ten units).

Built-in standard control methods include the local 3.5" color LCD **front panel display**, the Remote Analog **EXT** Interface and the Remote Digital **USB (2.0)** Interface. Optional rear panel Remote Digital Interfaces available are the **IEEE** (488.1) Interface (with a built-in **DIDO** Interface for PLC interfacing) along with an optional **R** (Ripple Noise Measurement) Interface that measures switching/line voltage ripple without the need for an added oscilloscope.

Each 300W model comes in a lightweight *3U Half-Rack* profile (14.3lbs / 6.5kg) with the 1kW model being offered in a *3U Full-Rack* profile (28.6lbs / 13kg). Both have front and rear panel load terminals, have an *easy carry-handle* on the side panel and there is a *Rack-Mount Kit* accessory that allows for either two 300W units to be mounted side-by-side or a single 1kW unit to be mounted stand-alone. Also, with the addition of a *Blank Panel*, one 300W unit can be full-rack mounted (on the right or left side).

The ***SFL Programmable DC Electronic Load Series*** carries a two (2) year warranty and is compliant to IEC/EN 61010-1 for Safety and to EN61326-1: 2013 (Class A) for EMC.

Major Applications

Programmable DC Load for Aerospace, Industrial, Automotive and Semiconductor Test & Measurement Design & Development applications such as:

- AC/DC & DC/DC power supplies
- Fuel Cells
- Batteries
- Semiconductor Components

Main Features and Benefits

- 300W/1kW models (*120V-60A or 500V-12A / 120V-180A or 500V-36A*)
- *High-Speed Current Control* (to eliminate load current overshoot and oscillation)
- *Low Voltage Operating Capability*
- *No Turn-On Delay and Linear Operation from 0V*
- *High Slew Rate* capability (up to 30A/us)
- Seven Load Modes (*CC, CR, CP, CV, EXT, Short, CV+Climit*)
- Four Operating Modes (*Normal (DC) Operating Mode, Dynamic (Time) and Dynamic (Frequency) Operating Modes* (for single/multi-pulse load operation), *Sequence Mode* (for complex load waveform generation) and *Sweep Mode* (Test Function for V/I, OCP and OPP testing)
- *VMode* function (to set load rising/falling operating conditions)
- *Memory* Function (store/recall up to 8 load operational settings)
- *Remote Sense* feature (remote voltage measurement across test device)
- *TRIG OUT* function (trigger for scope viewing or synchronization to other equipment)
- *Built-In Protection and Alarms*: Current Limit, Power Limit and OTP Protection; OVP and Reverse Connection Alarms
- *Parallel Operation* (up to 10kW; up to 10 units)
- *Multi-Channel Synchronous Operation* (for separate unit operation – up to ten units)
- Large 3.5" color LCD multi-functional scope-like viewing screen
- Load terminals on front and rear panels (300W and 1kW)
- *Bench-top or Rack-Mount* capability (300W and 1kW models)
- *Front-to-Rear Airflow and Zero-Stacking*: 3U Half-Rack (300W) and 3U Full-Rack (1kW)
- *Light-weight* (< 14.3lbs (6.5kg) - 300W models; < 28.6lbs (13kg) – 1kW models) with *easy carry-handle*
- *Built-In USB (2.0) Digital Programming Interface*
- *Optional IEEE (488.1) Digital Programming Interface with built-in DIDO Interface* (for PLC applications)
- *Optional R (Ripple Noise Measurement) Interface* (for measuring switching/line voltage ripple – eliminates the need for a separate oscilloscope).
- Safety compliant to IEC/EN61010-1; 3rd Edition
- EMC compliant to EN61326-1:2013 (Class A)
- Two Year Warranty

Major Specifications

	SFL 120-60-300	SFL 500-12-300	SFL 120-180-1K	SFL 500-36-1K
Load Voltage Rating	120V	500V	120V	500V
Load Current Rating	60A	12A	180A	36A
Load Power Rating	300W	300W	1000W	1000W
Load Modes	CC (Constant-Current), CR (Constant Resistance), CV (Constant Voltage), CP (Constant Power), EXT (External Control, CC), Short (Short-Circuit), CV+Climit (Constant Voltage w/ Current Limit)			
Minimum Operating Voltage	1.08V (60A) 0.54V (30A) 0.22V (12A)	1.2V (12A) 0.6V (6A) 0.28V (2.8A)	1.08V (180A) 0.54V (90A) 0.22V (36A)	1.2V (36A) 0.6V (18A) 0.22V (8.4A)
Operating Modes	Normal (DC), Dynamic Time (Repeating Pulse), Dynamic Frequency (Single or Repeating Pulse), Sequence (Complex Waveform), Sweep (R, C, P)			
Size (WxHxD)	8.46in. x 5.06in. x 16.54in. (215mm x 128.6mm x 420mm)		16.93in. x 5.06in. x 17.72in. (430mm x 128.6mm x 450mm)	
Weight	14.3lbs (6.5kg)		28.6lbs (13kg)	
Safety	Compliant to IEC/EN 61010-1; 3 rd Edition			
EMC	Compliant to EN61326-1:2013 (Class A)			
Warranty	2yrs			

For more information about the TDK-Lambda 3U Half-Rack/Full-Rack SFL Programmable DC Electronic Load Series, visit the TDK-Lambda Americas website at <https://www.us.lambda.tdk.com/products/programmable-loads/sfl.html>

Also available is the Cost Effective, General Purpose [Genesys™ DC Programmable Power Supply Series](#) which offers Output voltages from 7.5V to 1500V at power levels from 750W to 15kW and the Advanced, High Power Density, Feature-Rich [GENESYS™ DC Programmable Power Supply Series](#) which offers Output voltages from 10V to 600V at power levels from 1kW to 15kW. Both product lines can be viewed from the TDK-Lambda Americas website at <https://www.us.lambda.tdk.com/products/programmable-power/>.

About TDK Corporation

TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately “Attracting Tomorrow.” It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK’s comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda. TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2020, TDK posted total sales of USD 12.5 billion and employed about 107,000 people worldwide.

About TDK-Lambda Corporation

TDK-Lambda Corporation is a trusted, innovative leader and global supplier of highly reliable power conversion products for industrial and medical equipment worldwide. TDK-Lambda Corporation is aligned for fast responses to any customer need with R&D, manufacturing, sales and service locations in five key geographic regions, namely Japan, EMEA, Americas, China and ASEAN.

For more details, please pay a visit to: www.jp.lambda.tdk.com/en/

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