



The power to shape your world

TDK-Lambda Factory in Karmiel



HARSH ENVIRONMENT & MIL COTS **Power Solutions**

TDK-Lambda Ltd.

קצת עלינו

חברת טידיקיי למבדא ישראל, המייצרת בכרמיאל משנת 1979, היא חברת האלקטרוניקה המובילה בתחומה במתן פתרונות הספק אמינים במיוחד, ייצור סטנדרטי של ספקים מתוכנתים ופתרונות הספק המותאמים אישית לשוק הצבאי, התעשייתי ולתעשיית ההיי-טק בישראל.

משנת 1995, פועלת בחברתנו חטיבה המתמחה בפיתוח וייצור פתרונות הספק המותאמים לכל לקוח על מנת לעמוד במערכת הדרישות הייחודית של אותו הלקוח. החל מסטנדרטים צבאיים או תעשייתיים קיימים (כגון MIL-STD-461F או MIL-STD-810F), וכלה במארזים, בארונות ובחיבורים מיוחדים.

פתרונות אלו מבוססים על מוצריה הסטנדרטים של החברה. החל מספקי כוח AC/DC מודולים / DC המכסים טווח הספקים של 1w-50kw ועד לפילטרים אשר מותאמים לדרישות סביבה קשה / או סביבה צבאית, ההסתמכות על מוצרים סטנדרטיים מיעלת ומקצרת מאד את תהליך הפיתוח וגם מבטיחה אמינות מקסימלית.

בין לקוחותינו תוכלו למצוא מגוון חברות ישראליות מובילות ידועות כמו אלביט, רפאל, התעשייה האווירית ורבות נוספות.

אנו מתעדכנים באופן קבוע על טכנולוגיות חדשות ומשלבים אותן במיומנויות הקיימות שלנו בכדי לספק ללקוחותינו את הפתרונות ההנדסיים הנדרשים עבורם.

בעלון זה תוכלו לראות מבחר דוגמאות מצומצם המציג את היכולות שלנו.

לבדיקת מתן פתרון אישי עבורכם, נא צרו עמנו קשר.

About TDK

Since 1979, TDK-Lambda Israel whom manufacture in Karmiel is the leading electronic company that offers highly reliable standard and customized power solutions in Israeli Military, Industrial and Hi – Tech markets.

TDK-Lambda custom Power+Solutions include fully customized systems, modified standards and 'brick on board' products covering 1W to 50kW AC-DC and DC-DC circuits.

Our customized designs are developed by our engineers to meet the customer's unique set of requirements starting from existing military or industrial standards (such as MIL-STD-461F or MIL-STD-810F) and ending with specifically ordered cabling and filtering.

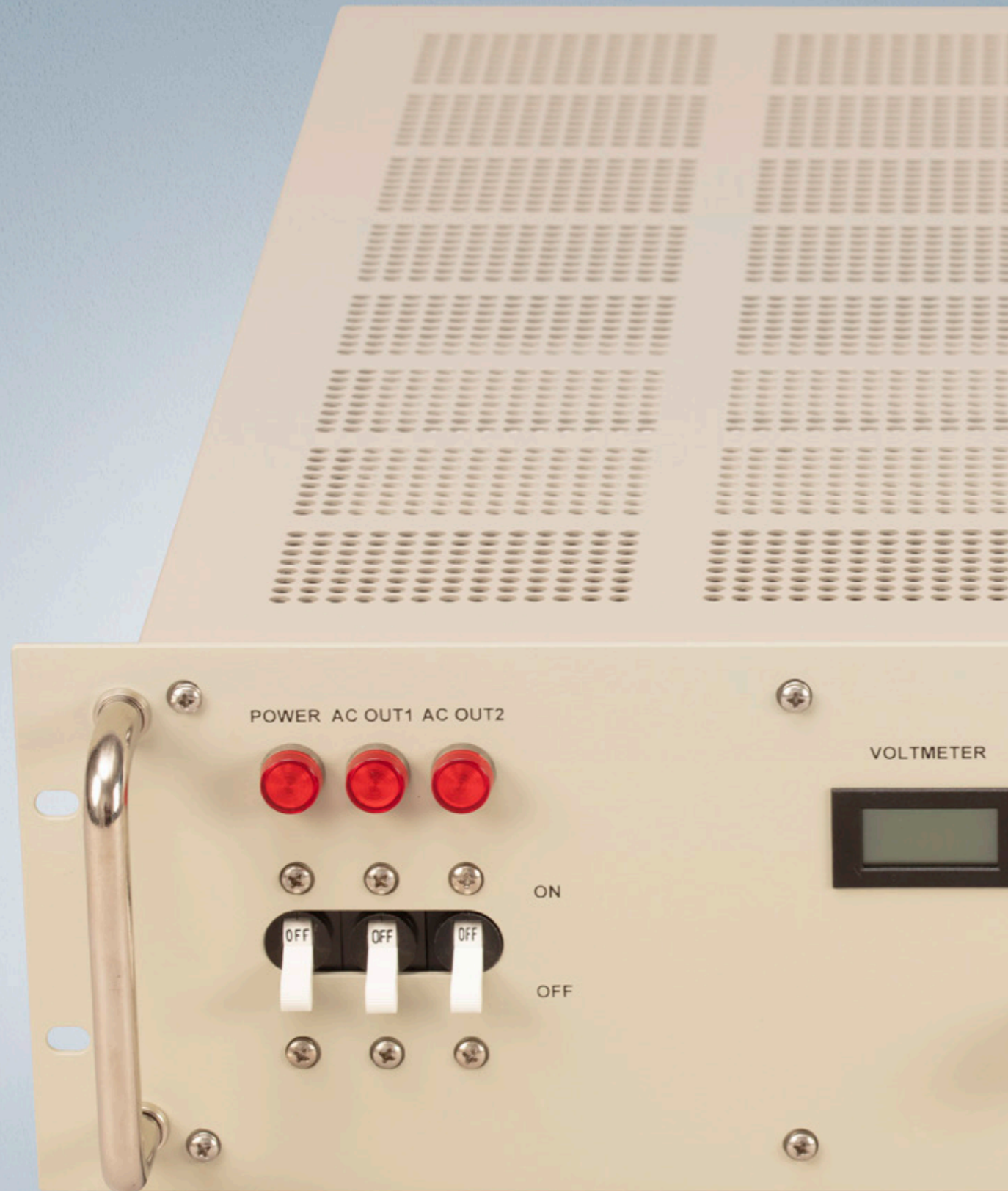
'Brick on board' modified products are based on our ruggedized Power Modules and may accurately fit your power demands.

TDK-Lambda programmable series surely will provide you with unprecedentedly high power density, flexible functionality and reliability that will turn your test and measurement stage into precisely going preprogrammed process.

Among our customers, you can find a variety of well-known leading companies.

We continuously adapt new technologies and integrate it with our existing engineering skills to provide you a solution that will keep you satisfied.





YM-13-1925

- AC / DC 1KW Power Supply.
- Wide range 85 to 265VAC Input, 28V Output.
- Industrial standards for EMI, EMC, Shock & Vibration.
- Operating at -40°C to 75°C base plate temperature.
- Internal Fan + Conduction Cooling.
- Dimensions: 217x124x100 mm.



YM-16-1989

- AC / DC 700W Power Supply.
- 200 to 265VAC Input, 28V Output.
- Industrial standards for EMC.
- MIL-STD-461F for Conducted and Radiated EMI.
- MIL-STD-810F for Shock & Vibration.
- Operating at -40°C to 50°C Ambient
- Convection Cooling.
- Sealed to IP55 Rating.
- Dimensions: 210x165x400 mm.



YM-10-1753

- AC / DC 1600W Power Distribution Supply.
- 3 Phase 100 to 240VAC Input, 7 DC Outputs, 3 AC Outputs.
- Voltage / Current Measurement for each DC Output.
- Filters for each Output, 50mV ripple.
- Industrial standards.
- Operating at 0C to 50C Ambient
- Internal Fans Cooling.
- Dimensions: 19" 3U Rack, 540mm Depth.



YM-12-1888A

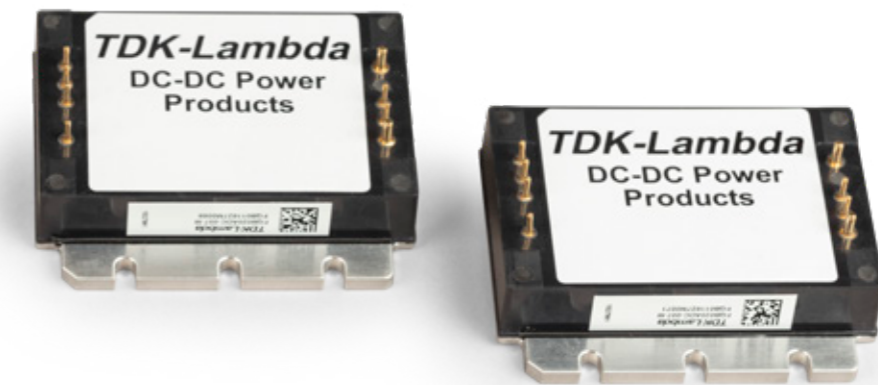
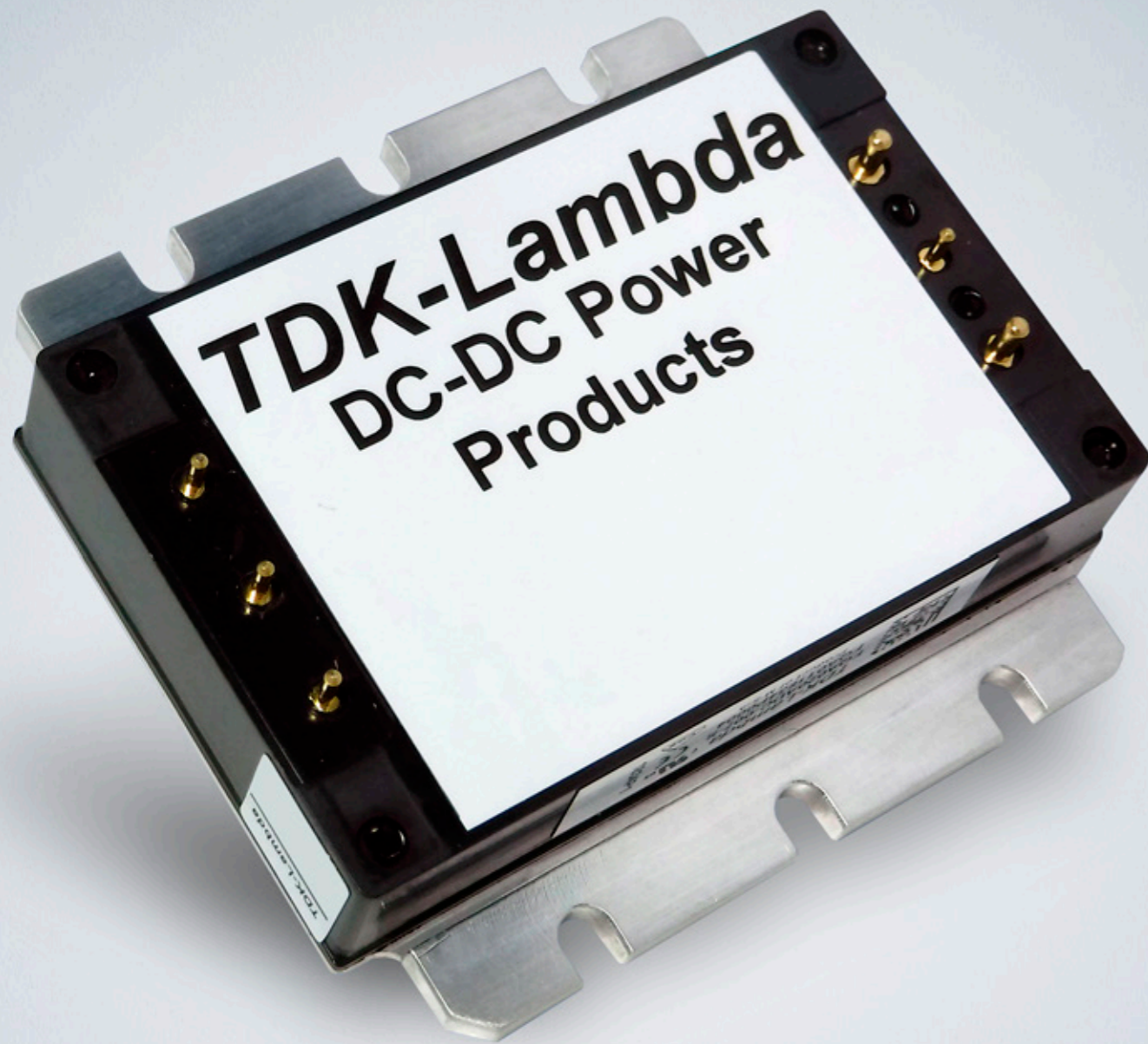
- AC / DC 2200W Power Distribution Supply.
- 3 Phase 200 to 240VAC Input, 16 DC Outputs, 8 AC Outputs.
- Each Output Protected by Changeable Fuse or Circuit Breaker.
- Industrial standards.
- Operating at 0C to 40C Ambient
- Internal Fans Cooling.
- Dimensions: 500x160x370 mm



YM-16-AP23

- AC / DC 1500W Power Distribution Supply.
- 2 Inputs 108 to 132VAC Input, 30 DC Outputs
- Each Output Protected by Resettable PTC.
- Industrial standards.
- Operating at 0C to 50C Ambient
- Internal Fans Cooling.
- Dimensions: 19" 3U Rack, 500mm Depth.
- Internal Construction:





FQB

The FQB filter modules reduce conducted emissions from dc-dc switching converters, and in addition, contains active suppression circuitry to block input voltage surges and transients. The FQB series simplifies system level compliance to MIL-STD-461, MIL-STD-1275, RTCA/DO-160 and MIL-STD-704 per MIL-HDBK-704-8.

The encapsulated rugged package design and a choice of baseplate options make the FQA and FQB modules suitable for use in a wide variety of harsh and demanding environments, including MIL-COTS

- Filtering for Compliance to MIL-STD-461 (F,G)
- Input Spike and Surge Suppression per MIL-STD-1275(D,E), MIL-STD-704(A-F) and RTCA/DO-160G (Sec 16-18)
- High Differential and Common Mode Noise Attenuation
- 55 to 115°C Temperature Range (M-Grade)
- Standard (S-Grade) or Enhanced Screening (M-Grade) Options

FQA

The FQA filter modules reduce differential and common mode conducted emissions from dc-dc switching converters. The series takes advantage of TDK technologies to simplify system level compliance to MILSTD-461.

- Filtering for Compliance to MIL-STD-461G
- Input Spike suppression per MIL-STD-1275D and RTCA/DO-160G
- High Differential and Common Mode Noise Attenuation
- Standard (S-Grade) or Enhanced Screening (M-Grade) Options





HQA Series

The HQA series of encapsulated DC-DC converters packaged in a ruggedized quarter brick form factor and can deliver 85W and 120W output power. The HQA series operate over a 9V to 40V or 18V to 40V input range (50V for 1 second). These converters, with efficiencies as high as 92%, are suitable for use in COTS, communications and industrial equipment.

- 9-40, 18-40VDC Inputs
- Up to 91.5% Efficiency
- -40c/-55c operation temp.
- Up to 115°C Baseplate Temperatures
- For Rugged Environments
- MIL-STD-883F and MIL-STD-202G
- Encapsulated for MIL-STD shock and vibration
- Fixed switching frequency.
- Buck boost converter

PAH Series

In the industry standard half brick footprint, the conservatively rated PAH series of 300W to 451W DC-DC converters are available with output voltages of 2.5V to 48V. This large series of regulated power modules features wide input ranges with both 24V and 48V nominal inputs, remote sense, output adjustment and remote on/off.

- Wide range product family
- Wide input range 18-36 or 36-76
- No minimum load
- Adjustable output voltage
- Remote on/off ,Remote sense (single output)
- Operation at +100°C baseplate



CCG15-30 Series

Packaged in the industry standard 1 x 1 inch footprint, the 15W - 30W CCG series can operate over a wide 9 to 36V or 18 to 76Vdc input range. The units enclosed in a metal case with 6-sided shielding for lower noise and encapsulated for rugged shock and vibration performance.

- 15W and 30W Output Power Levels
- Wide Range 9 – 36V or 18 – 76VDC Inputs
- 3.3, 5, 12, 15, +/-12 & +/-15V Outputs
- Industry Standard 25 x 25mm (1 x 1") Footprint
- Operation Temp -40°C to +110°C Case
- Adjustment via trim pin on single output models
- 3.3V: 2.97-3.63, 5V: 4.5-5.5V, 12V: 10.8-13.2V, 15V: 13.5-16.5V
- Six Sided Shielding for good EMI performance



PXF Series

Housed in a metal case for six sided shielding, these 40 to 60W 2" x 2" footprint converters cover the commonly used nominal input voltages of 12V, 24V or 48V with either 2:1 or 4:1 versions. Both, single (3.3V to 15V), dual output (5V, 12V or 15V) or triple output (3.3V to 15V) models are available with remote on/off and adjustment trim pin (single/dual models).

- Industry Standard 2" x 2" Footprint
- 1-3 outputs
- 12, 24 and 48V Inputs
- 4:1 Wide Range Input Models 9 – 36V/18-75V
- Input Surge Voltage (Maximum for 100ms) 12V input: 36V, 24/28V input: 50V, 48V input: 100V
- Thermal Shock MIL-STD-810F
- Switching Frequency (Fixed) 300kHz typ.
- Six Sided Shielding



PH-A Series

The second generation PH-A power modules feature higher efficiencies and smaller sizes than the previous PH series. These conduction cooled units accept a wide 200V to 425Vdc input, making them suitable for the emerging 380Vdc power architecture, which is used in datacenters and telecommunications facilities, where the use of higher voltage helps to reduce losses.

- 50, 75, 100 & 150W Output Power Levels
- 200 – 425VDC Input
- 3.3V, 5V, 12V, 15V, 24V, 28V & 48V Outputs
- ¼ Brick Package Size
- High Efficiency up to 90%.
- Operating temperature – 100% loading
-40°C to +100°C (Baseplate)
-40°C to +85°C (Ambient)
- Remote on/off, referenced to -Vin
- Remote sense connection



GQA Series

The GQA series of DC-DC converters have 4 ruggedized package styles, with the industry standard quarter brick form pin-out, to allow product performance optimization in multiple applications. The 120W rated GQA series operate over a 9V to 36V or 18V to 36V input range, withstanding 50V for 1 second. Input to output isolation voltage is 1,500VDC, 2,250VDC or 3,000VDC depending on the package style.

- 9-36, 18-36VDC Inputs
- Outputs 5V /12V/ 15V /24V /28V /48V
- Up to 91.5% Efficiency
- Easier System Thermal Management
- Up to 105°C Baseplate Temperatures
- Conduction Cooling, For Rugged Environments



i3A/i6A Series

The highly efficient I6A series of step-down converters includes the basic I6A supplying up to 14A, the wide input range i6A4W supplying up to 20A, and the i6AN allowing the creation of negative voltages delivers currents up to 8A. With an efficiency of up to 98%, these 1/16th DIP and SIP format non-isolated converters offer a cost effective solution with an adjustable output range

The i3A converters are ideal for creating additional mid-current output voltages from a single output 12V, 24V, 36V or 48V AC-DC power supply. These 100W step-down converters can accept a wide of 9 to 53Vdc input and deliver wide adjustable output voltages of 3.3 to 16.5V at up to 8A or 5 to 30V at up to 4.5A. With efficiencies of up to 98%.

- 100W 4.5 or 8A Output (i3A)
- 1/32nd brick Footprint (i3A)
- Minimal External Components Needed (i3A/i6A)
- Operating Temperature -40°C to 125°C (i3A/i6A)
- i6A:
- 9-40V 250W 3.3 – 24V outputs
- 9-40V 75W -3.3 to -30V outputs
- 9-53V 250W 3.3 to 40V/ 3.3 to 15V outputs
- Very high Efficiency up to 98% (i3A/i6A)
- Wide Output Adjustment 3.3 to 24V (i6A) 3.3 to 30V (i3A)
- Minimal External Components Needed (i3A/i6A)
- Operating Temperature -40°C to 125°C (i3A/i6A)



i7A/ i7C Series

i7C power modules step the voltage up or down to perform local voltage conversion between 12V, 24V, or well-regulated 48V buses. The i7C series utilizes a non-isolated power topology offering a low component count and resulting in a low cost structure and a superior level of performance. The open-frame, compact, design features a low profile and weight that allow for extremely flexible and robust manufacturing processes. The ultra-high efficiency allows for a high amount of usable power even in the most demanding thermal environments.

- 9-53V Input, 12A Output (i7C)
- 300W Wide 1/16th Brick Power Module Buck Boost converter (i7C)
- 750W / 500W Non-Isolated Step-Down (i7A)
- 3.3–18V @ up to 45A 500W (18-32 Vin) or 3.3 – 24V@up to 33A 750W(18-60 Vin) (i7A)
- Size: Wide 1/16 Brick - standard pinout (34 x 36.8 x 12.7 mm) Pin-compatible footprint with i6A (i7A/i7C)
- Constant switching frequency, Remote Sense, Full, auto-recovery protection: Input under voltage, Short circuit, Thermal limit (i7A/i7C).
- Optional :Baseplate and Heatsink, Frequency Synchronization, Output Current Monitor with external circuit (i7A/i7C)



PFH500F

500W Single output AC-DC power module

The 4" x 2.4" footprint, high efficiency PFH500 series of AC-DC power modules are used in environments where convection or forced air cooling is not viable. Suitable for outdoor enclosures or liquid cooled applications, these PCB mounted power modules accept a wide range AC input and deliver an adjustable, regulated 28V output. High ambient temperatures can be tolerated as the conduction cooled baseplate can withstand -40°C to 100°C temperatures. These next generation modules also have a PMBus™ interface with read/write capability for remote monitoring and programming..

- Shock & Vibration MIL-STD-810G
- Remote On-Off, Power Good Signal, Auxiliary Supply.
- Parallel Capable
- Conduction Cooled
- 3 years warranty

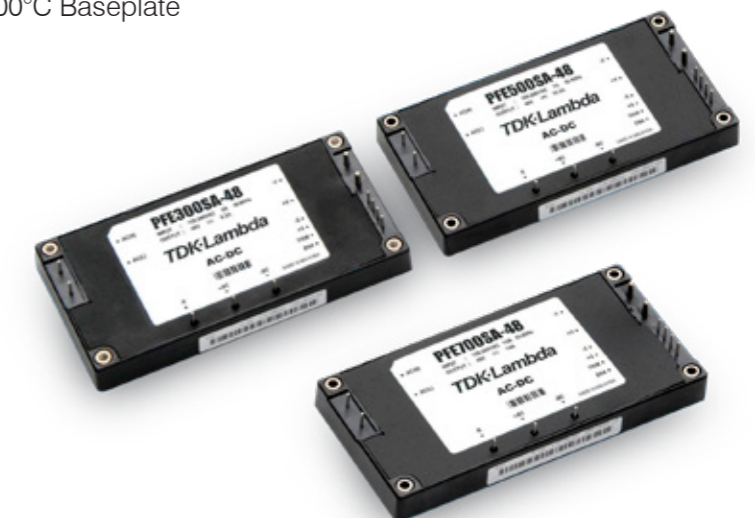


PFE

300-1000W AC-DC power module

For designers of equipment used in environments where fan cooling is not viable, the PFE power modules offer the obvious solution. Suitable for outdoor enclosures or liquid cooled applications, these baseplate mounted power modules accept a wide range AC input and deliver isolated, regulated voltages with power levels from 300 to 1000W.

- Operation temperature up to -40°C-100°C Baseplate
- High Efficiency
- Power Factor Corrected
- Low Profile
- 5 years warranty



CPFE1000Fi / CPFE1000F

1000W single output AC-DC power supply

Based on TDK-Lambda's PFE series of power modules, these 500 to 1000W AC-DC power supplies feature baseplate cooling. The CPFE series can operate in harsh environments where no fan cooling is permitted. The power supply is available with protective coating to protect against the ingress of dust, moisture and other contaminants making the product ideal for harsh, dusty or outdoor applications. The units conform to MIL STD 461/462D CE102 EMC specifications for COTS applications.

- -40°C to 85°C operational
- Shock & Vibration MIL-STD-810E/F
- Altitude -200 to 2000 meters operational (-200 to 5000m storage/transportation)
- Protective coating option.
- Conducted Emissions EN55011, EN55022, MIL STD 461E/462D CE102

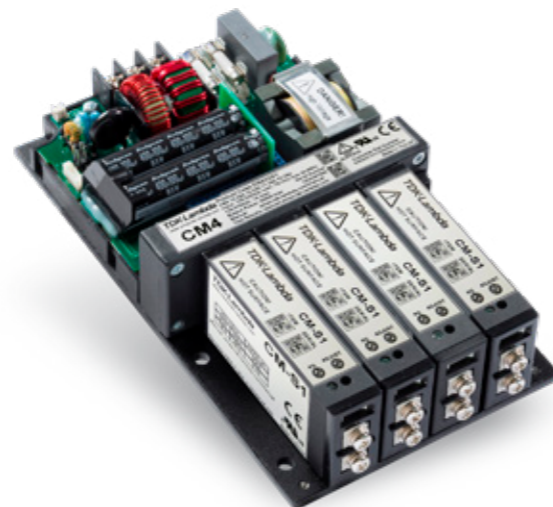


CM-4

600W Modular AC-DC power supply up to 4 outputs

The CM4 range is the world's first conduction cooled modular power supply with a conduction cooled rating of 600W and up to 750W peak power for 5 seconds with up to 4 programmable outputs. CM4 may also be configured as convection or forced air cooled. Combining a 4kVac (2 x MOPP) input-to-output isolation and 1 x MOPP input-to-ground isolation, the CM4 is certified for medical and industrial equipment. 5V / 1A standby output is standard on all models and all output modules are supplied with remote sense and remote on/off.

- Shipboard electric power, voltage spike
- MIL-STD-1399, MIL-STD-704F, MIL-STD-461F compliant
- Shock & Vibration MIL-STD-810G
- Global signals: Global bias supply, AC_OK signal, Global DC power good, Global inhibit/enable, Internal temperature sensor

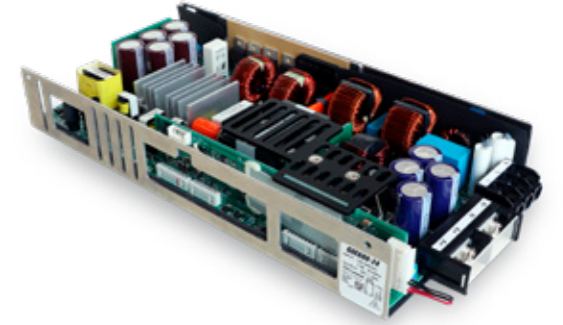


GXE

600W AC-DC power supply

GXE600 series offers constant voltage / constant current (CVCC) operation and read-write programming through a robust RS-485 communication (Modbus RTU protocol). Both the output voltage and current can be adjusted over a very wide range using digital or analogue programming. The 95% efficient power supply can be operated without the need for forced air cooling, minimizing system acoustic noise.

- Up to 95% Efficient, Convection Cooled
- Constant Voltage & Constant Current Modes
- Shock & Vibration MIL-STD-810G
- Monitoring & Programming Functions
- Medical & ITE Certification
- 7 years warranty

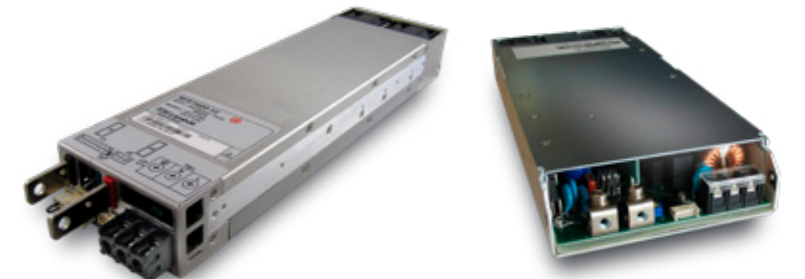


RFE

1600-2500W AC-DC power supply

Based on TDK-Lambda's popular FPS1000, HFE1600 and HFE 2500 plug-in, hot swap power supplies, the RFE models have terminal block and bus bar connections and can be used without a rack. This allows these 1000W, 1600W and 2500W power supplies to be mounted close to the load, and being just 41mm, be located where space is at a premium. Available with 12V, 24V, 32V and 48V outputs, the outputs can be paralleled easily to provide more power. I2C communication is available as an option.

- 1U High
- Internal ORing FETs & Current Share
- Suitable for N+1 redundancy
- High Efficiency
- I2C, PMBus™ Communication Option



HWS/HD

15-1500W AC-DC power supply

Backed by the same limited lifetime warranty as the HWS15A-150A and HWS300-1500 series, the HWS/HD models offer PCB coating and -40°C start up characteristics for harsh environments. The HWS/HD series deliver power levels from 30 to 1500W and output voltages from 3.3V to 60V.

- -10°C to +71°C Operation (-40°C start up)
- Conformal coated PCB's
- Limited Lifetime Warranty
- Operates in Harsh Environment



Programmable Power Supplies

Since 1999, TDK-Lambda Israel develops and manufactures in Carmiel Israel a very high reliable standard Programmable Power supplies which leads the market worldwide in the last 20 years. Starting with Series ZUP, continue with series Genesys, Z+ , GENESYS+™ and GSP each series Innovative than the previous and in the same time compatible its previous one, Last three series carrying a 5-year warranty.

The Z+ programmable series of TDK-Lambda are compact high power density products offered with output voltages from 10 to 650Vdc. They are presented in 4 power Line-Ups: 200W, 400W, 600W and 800W, all sharing the same 2U height could be connected in parallel in master-slave configuration.

All models can be programmed via the front panel or remotely by using the built-in USB, RS232 / RS485 or analogue control interfaces. Optional LAN, GPIB (IEEE488) and isolated analogue programming interfaces are also available. The Z+ high voltage series conforms to EN55022/EN55024, as well as IEC/EN61326-1 for conducted (FCC part-15-B and VCCI-B) and radiated (FCC part-15-A and VCCI-A) EMI.

The GENESYS+™ series is available in 1.7kW, 2.7kW, 3.4kW and 5kW models. All of these share a common 1U high 19" (483mm) rack mountable chassis and weigh up to just 7kg, the lightest in the industry.

Programming is possible using the front panel controls, remotely via LAN (LXI 1.5), USB 2.0 and RS232/485 communications, or by using the isolated analogue control and monitoring (0-5V, 0-10V) which been provided as standard. Optional interfaces include a choice of GPIB (IEEE488.2) and the Anybus CompactCom interface platform for DeviceNet™, EtherCat, Modbus, PROFIBUS and other interface options as they have released. Software drivers, "waveform creator" and a "virtual front panel" GUI are provided in the software package.

The series offers voltages of up to 600V and output current up to 500A with constant voltage, constant current and constant power operation. Control of voltage and current slew rate, arbitrary waveform generation and storage, internal resistance simulation and display brightness control are among new features bringing even more flexibility to customer's power scheme.

A unique, easy auto configuring master / slave paralleling system enables scalable power systems up to 30kW to be configured.

GSP models is an expansion of GENESYS+™ family that is capable to provide 2U high 10kW and 3U high 15kW solutions with output voltages and currents of up to 0-10V/1,500A to 0-600V/25.5A with ability for scaling up and further increasing the power.

The GSP series contains 20 new high power models and could be programmed to operate in constant voltage, constant current or constant power modes. Surely, it inherits all the functions with basic GENESYS+ platform.

For example, arbitrary waveform profiles, for such applications as vehicle battery simulation at start up, of up to 100 steps can be generated and stored in four memory cells, allowing the user to quickly switch between programs.

All functions, of course, can be programmed via the front panel or remotely using the LAN (LXI 1.5), USB 2.0 or RS232/485 communications interfaces, which are provided as standard, and optional interfaces such as GPIB (IEEE).

New and easy to read LCD display with user controllable brightness and dimming functions serves for better ergonomics and extended life. Slew Rate programming, Safe/Auto Re-Start modes, Last Setting Memory and full set of programmable protective functions are also available.

GSP line can be ordered with inputs that accept three-phase 170-265Vac, 342-460Vac or 342-528Vac input and addresses a very broad market, including military, aerospace and automotive testing, semiconductor fabrication, water treatment, plating and solar array simulation.

TDK-Lambda programmable Power supplies line is ideally suited for ATE and OEM rack mounted or integrated applications such as Test & Measurement, Semiconductor Burn-in, Component Test, Laser Diode, Heater Supplies, RF Amplifiers, Electromagnets, general laboratory, automotive, aerospace testing, semiconductor fabrication, solar array, battery simulation, plating and water treatment and industrial use.





TDK-Lambda Ltd.

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