TDK In Everything, Better

Product Catalog

TDK-Lambda Power Supplies, DC-DC Converters and EMI Filters

Edition 19

TDK·Lambda

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Introduction

Company Overview

At TDK-Lambda, a "Power Supply" is more than just an electronic device. It is the "heart" of our customers´ systems and the core element of safety and reliability.

TDK-Lambda Corporation, a group company of TDK Corporation, is a leading global power supply company providing highly reliable power supplies worldwide.

TDK-Lambda Corporation meets the various needs of customers with our entire range of activities, from research and development through to manufacturing, sales, and service with bases in five key areas, covering Japan, EMEA, North America, China, and SE Asia.

Since 1948, as a leading global manufacturer, we have been developing and producing innovative and highly reliable power supplies for a wide spectrum of applications. TDK-Lambda is one of the oldest and most trusted manufacturers of high-quality power supply solutions used in critical applications.

https://www.us.lambda.tdk.com

Organization

- Founded in 1948; offering long term financial stability
- An independently recognized market leader
- Worldwide recognition for high reliability
- Outstanding customer support
- International organization with strong local presence
- Local design capability
- Experts in power supply solutions
- Local inventory / local buffer

Benefits of using TDK–Lambda

- TDK-Lambda becomes an extension of your engineering team
- Global design locations for local tech support
- Global manufacturing footprints for flexible logistics
- Over 6,000 fully qualified standard models and up to 100kW
- Robust line of EMC and EMI noise filters

Key Market Segments

- Medical and Life Science
- Industrial
- Factory/Building Automation
- Process Control
- Robotics
- Test and Measurement
- Transportation
- Renewable Energy
- LED Applications & Signage
- Avionics
- Semiconductor Fabrication & Test Equipment
- Information & Communications Technology
- Broadcasting
- Food and Beverage

The Heart of your Application

At TDK-Lambda, a “Power Supply” is more than just an electronic device.

It is the “heart” of our customers’ systems and the core.

element of safety and reliability. Since 1948 as a leading global manufacturer we have been developing and producing innovative and highly reliable power supplies for a wide spectrum of applications. In addition, with our unique range of activities from research and development through to manufacturing, sales and service, our customers appreciate our experience, know-how and our passion for always wishing to find the best solution for our customers.

We are ready for the future – thanks to research and development we invest continuously in researching new technologies and developing new generations of our products. TDK-Lambda already holds over 700 patents.

This catalog will provide you with an overview of our power supplies, DC-DC converters and EMI filters that shows why we are a leading manufacturer of power solutions.

In Everything, Better

The choice and application of the power supply is an important one. Working with TDK-Lambda can help you save time and money, from design concept to years after your system or product is first installed.

Why TDK-Lambda?

- Over the last 78 years, TDK-Lambda has developed a worldwide reputation and heritage for high quality, robust power products.
- We at TDK-Lambda stand behind our products with industry leading warranties of up to a lifetime (limited).
- Our research and development budget is one of the largest in the industry, helping you design-in reliable, cutting edge technology, ahead of your competition.
- A broad range of product enables our customers to choose the right model for the application, and assists with their vendor reduction programs.
- Multiple manufacturing and design facilities across the globe. We can provide crucial local support when programs move between Asia, North America, and Europe. With those multiple factories we also have proven risk mitigation against natural disasters. Plus, our manufacturing sites are ISO9001, ISO14001 and ISO13485 certified.
- Our technical support can get your product to market faster. Please call 1-800-LAMBDA-4 (1-800-526-2324), or email: tla.powersolutions@tdk.com

TDK-Lambda offers a broad range of standard power supplies for many applications. This Catalog is designed to provide easy navigation of product selection by application and product type. The product ranges are sorted into special categories on the next page. Data sheets are supplied to make a selection of possible models for your application. For additional technical data, please follow the web link at the bottom or upper right hand corner of each data sheet.

Each product page contains the following symbols to indicate the main applications that each product is designed for. The symbols are intended to give a quick guideline for many applications. For assistance in finding a product for your application, please contact our technical support department.

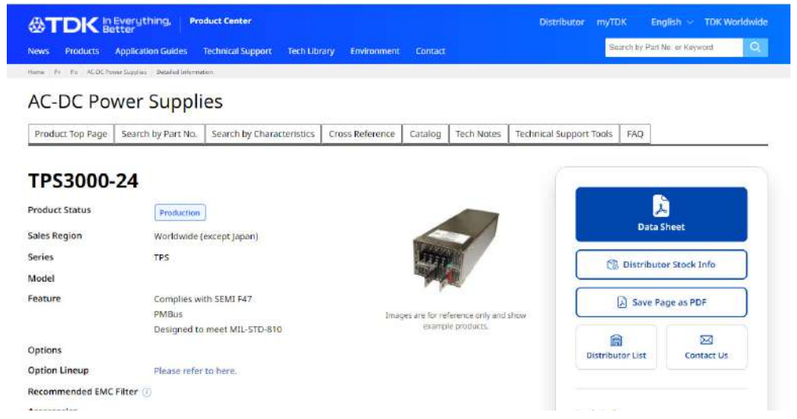
Thank you for your interest in TDK-Lambda products

Need Technical Information?

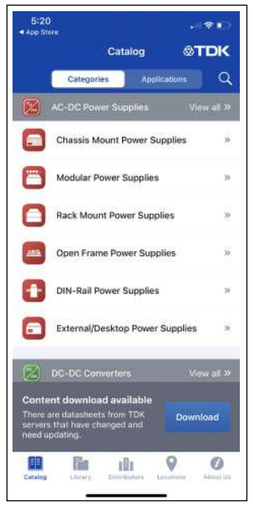
The TDK-Lambda website (https://www.us.lambda.tdk.com/) has a huge library of data:

- Installation Manuals
- Detailed Specifications
- Evaluation Data
- Outline Drawings & 3D Files
- MTBF Predictions
- Reliability Data
- Application Notes
- Power Guy Videos
- Educational Blogs

TDK-Lambda Product Center:



TDK-Lambda App:



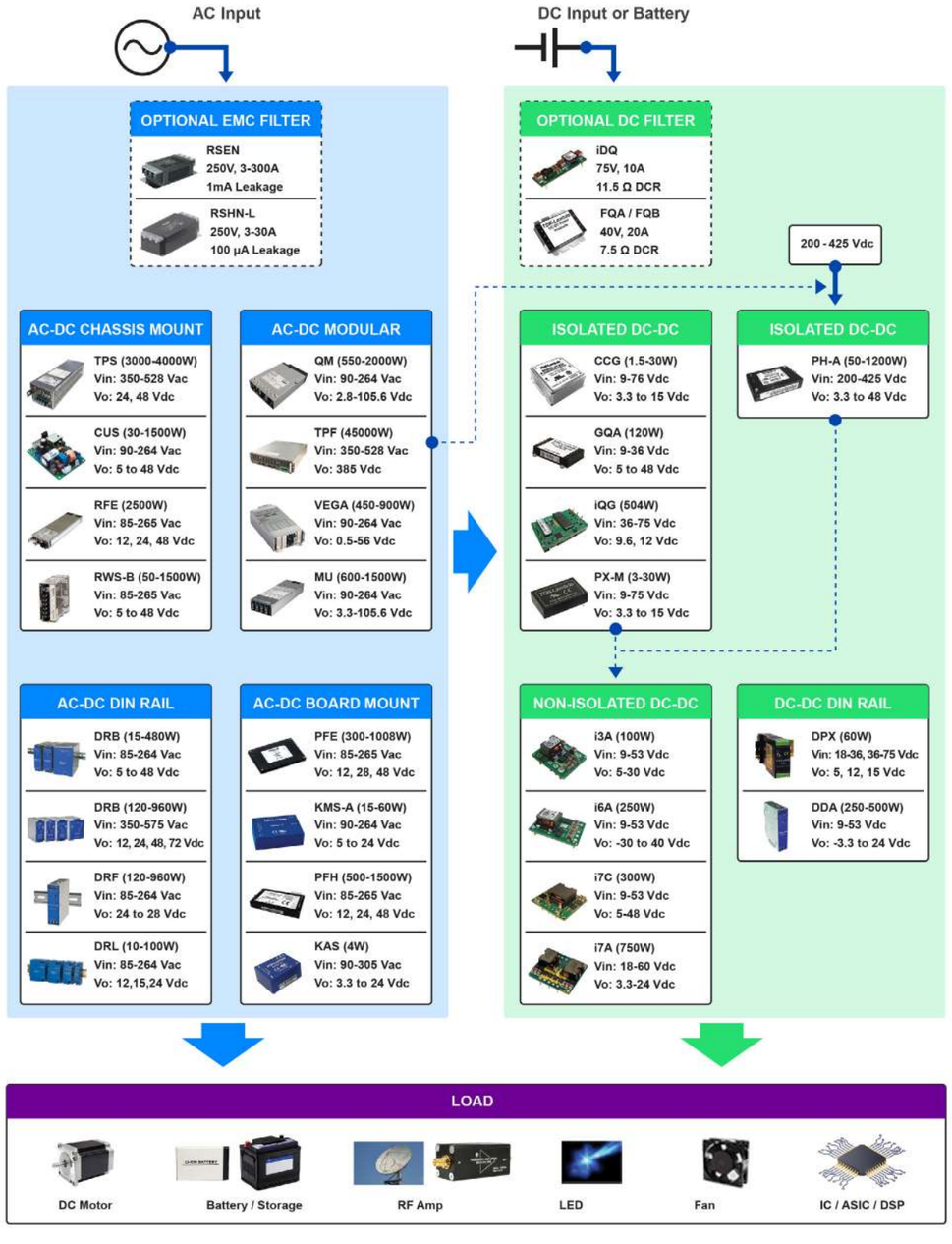
Want Technical Support?

- Please call 1-800-LAMBDA-4 (1-800-526-2324) to speak to our inside technical support team, or email tla.powersolutions@tdk.com.
- TDK-Lambda's Field Application Engineers are available for in-depth technical consultation at your facility. Please contact your local TDK-Lambda Salesperson to schedule a visit.

Download here:

App Store Android Store

The Complete Power Solution



AC/DC Product Index by Wattage

Applications

- Industrial
- Healthcare / Medical
- Test & Measurement
- Communications
- Broadcast
- Display and Signage
- Transportation
- Renewables
- Food and Beverage
- Automation
- Robotics
- Semiconductor

Features

- Very broad product offering
- High reliability & quality
- Single & three phase input models
- Industrial & medical safety approvals
- Convection, conduction & forced air cooled
- Enclosed, open frame & module type
- High MTBF, long life
- High efficiency
- Long warranties (up to lifetime)

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AC/DC Product Index by Wattage

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200-250W	1	CUS200M	73
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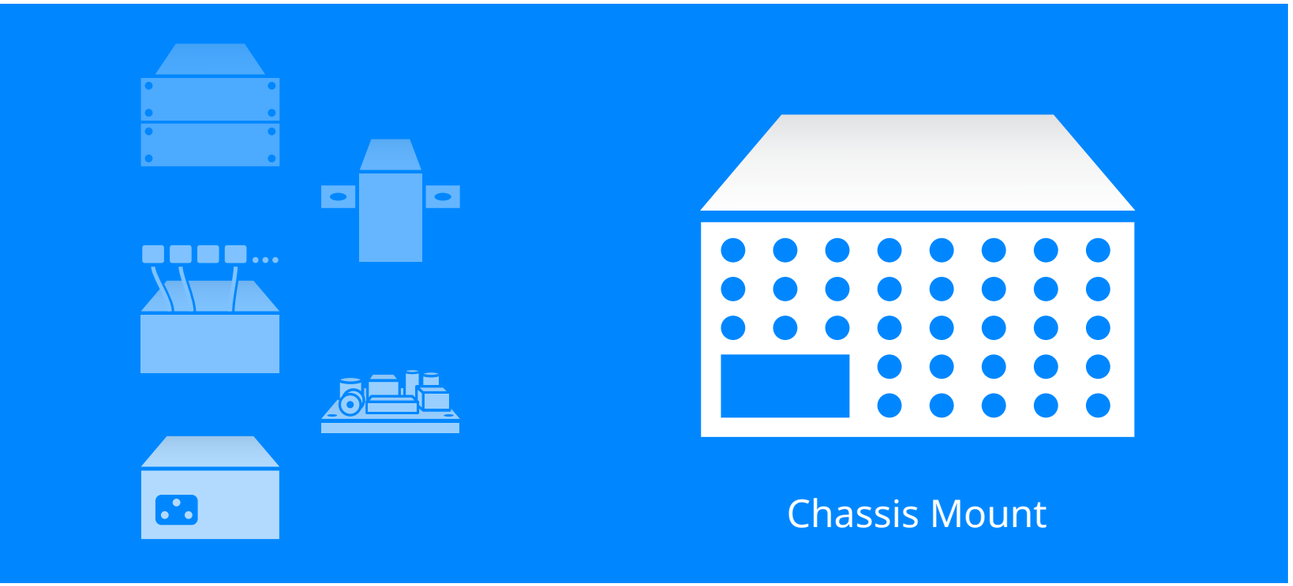
Listed by Wattage

AC/DC Chassis Mount



Applications

- Embedded (built-in) power supplies for a broad range of applications
- Suitable for Industrial Applications, Automation, Test Equipment
- High Reliability and low cost products available

Features

- 5 to 4500W output power
- Single-phase wide range input 85 – 265VAC
  Three-phase input 170 – 265VAC & 350 – 528VAC
- Power factor correction meets EN61000-3-2 class A harmonics
- Input/output connection with screw terminals or PCB connectors
- Enclosed or open frame case style
- Safety meets EN/IEC/UL 62638-1 standard
  CE and UKCA marks

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AC/DC Chassis Mount Index by Wattage

Wattage	Number of Outputs	Series	Page
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40-65W	1	CSW65	20
50-600W	1	RWS50B-RWS600B	21
79-153W	1	CUS200LD	22
100W	1	CUS100ME	69
150W	1	CUS150M	70
150-200W	1	LS200	23
175-200W	1-5	NV175	72
250W	1	CUS250M	75
350-1000W	1	GUS350-1000	26
300-1500W	1	HWS300-1500	24
350-420W	1	CUS350M	25
350-1150W	1-8	NV350/700	48
400W	1	CUS400M	77
450-900W	1-10	Vega	49
500W	1	CUS500M1	79
500W	1	XMS500A	80
550-900W	1-10	Vega-Lite	50
500-1500W	1	LZSA	27
550-2000W	1-18	QM	53-54
600-1200W	1	QS	28
600W	1	GXE600	29
600W	1	CUS600M and CUS600M1	30
720-1000W	1	CPFE1000F	31
720-1000W	1	CPFE1000Fi	32
680-1200W	1	CUS800M/CUS1000M/CUS1200M	33
1000-1500W	1	RWS1000/1500-B	34
1000-1500W	1	RWS1000/1500-B/ME	35
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3000W	1	HWS3000GT	41
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Listed by Wattage

10-150W Single Output Industrial Power Supplies

Industrial Test COMM LED Broadcast Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/hws-a

The ultra reliable, conservatively rated HWS-A series of 10W to 150W AC-DC power supplies has a limited lifetime warranty (1), unique to the industry. The series accepts a wide range 85 to 265Vac (300Vac peak for 5s) input with output voltages from 3.3V to 48V. The products are certified to IEC 62368-1, UL 508 and EN 62477-1 OVC III (HWS150A) and are SEMI F47 compliant . They also meet Class B conducted and radiated emissions without additional filtering or shielding. Models with push-in wire terminals are available for systems utilizing cost-saving automated and robotic assembly techniques.

Features	Benefits
• Limited Lifetime Warranty (1)	• Low Cost of Ownership
• Very Conservative Electrolytic Capacitor Ratings	• Long Service Life
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Low Off-Load Power Consumption	• Energy Saving
• UL 508 Certified	• Suitable For Industrial Control Equipment

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HWS15A–150A Series

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current(A)	Maximum Output Power (W)	Line Reg (mV)	Load Reg (mV)	Overvoltage (V)	Efficiency (115/230Vac)(%)
HWS15A-3/A	3.3	2.97 - 3.96	3	10	20	120	4.13 - 4.95	70 / 71
HWS30A-3/A	3.3	2.97 - 3.96	6	20	20	120	4.13 - 4.95	75 / 77
HWS50A-3/A	3.3	2.97 - 3.96	10	33	20	120	4.13 - 4.95	76 / 78
HWS100A-3/A	3.3	2.97 - 3.96	20	66	20	120	4.13 - 4.95	82 / 84
HWS150A-3/A	3.3	2.97 - 3.96	30	99	20	120	4.13 - 4.95	82 / 84
HWS15A-5/A	5	4.0 - 6.0	3	15	20	120	6.25 - 7.25	77 / 79
HWS30A-5/A	5	4.0 - 6.0	6	30	20	120	6.25 - 7.25	80 / 82
HWS50A-5/A	5	4.0 - 6.0	10	50	20	120	6.25 - 7.25	82 / 84
HWS100A-5/A	5	4.0 - 6.0	20	100	20	120	6.25 - 7.25	84 / 86
HWS150A-5/A	5	4.0 - 6.0	30	150	20	120	6.25 - 7.25	85 / 87
HWS15A-12/A	12	9.6 - 14.4	1.3	16	48	150	15 - 17.4	80 / 83
HWS30A-12/A	12	9.6 - 14.4	2.5	30	48	150	15 - 17.4	84 / 86
HWS50A-12/A	12	9.6 - 14.4	4.3	52	48	150	15 - 17.4	83 / 85
HWS100A-12/A	12	9.6 - 14.4	8.5	102	48	150	15 - 17.4	86 / 88
HWS150A-12/A	12	9.6 - 14.4	13	156	48	150	15 - 17.4	85 / 88
HWS15A-15/A	15	12.0 - 18.0	1	15	60	150	18.8 - 21.8	81 / 84
HWS30A-15/A	15	12.0 - 18.0	2	30	60	150	18.8 - 21.8	85 / 87
HWS50A-15/A	15	12.0 - 18.0	3.5	53	60	150	18.8 - 21.8	83 / 86
HWS100A-15/A	15	12.0 - 18.0	7	105	60	150	18.8 - 21.8	86 / 88
HWS150A-15/A	15	12.0 - 18.0	10	150	60	150	18.8 - 21.8	86 / 89
HWS15A-24/A	24	19.2 - 28.8	0.65	16	96	150	30 - 34.8	82 / 85
HWS30A-24/A	24	19.2 - 28.8	1.3	31	96	150	30 - 34.8	86 / 88
HWS50A-24/A	24	19.2 - 28.8	2.2	53	96	150	30 - 34.8	84 / 87
HWS100A-24/A	24	19.2 - 28.8	4.5	108	96	150	30 - 34.8	87 / 89
HWS150A-24/A	24	19.2 - 28.8	6.5	156	96	150	30 - 34.8	88 / 90
HWS15A-48/A	48	38.4 - 52.8	0.33	16	192	200	55.2 - 64.8	80 / 80
HWS30A-48/A	48	38.4 - 52.8	0.65	31	192	200	55.2 - 64.8	82 / 83
HWS50A-48/A	48	38.4 - 52.8	1.1	53	192	200	55.2 - 64.8	84 / 86
HWS100A-48/A	48	38.4 - 52.8	2.1	101	192	200	55.2 - 64.8	88 / 90
HWS150A-48/A	48	38.4 - 52.8	3.3	158	192	200	55.2 - 64.8	89 / 91

25-150W Single Output General Purpose Power Supplies

Industrial Test COMM LED Broadcast

Full Datasheet
https://product.tdk.com/en/power/ls

The LS series offers economically priced 25 to 150W power supplies for general purpose light industrial use. With output voltages ranging from 3.3 to 48V, the products have a five-year warranty (3) and conservatively rated electrolytic capacitor temperatures for longer field life. These compact products have a wide -25 to +70°C temperature range and are capable of withstanding a 300Vac surge for up to five seconds.

Features	Benefits
• Compact Package Sizes	• Space Saving in End Equipment
• Low Cost	• Suitable for General Purpose Light Industrial Use
• Withstands 300Vac Input Surges	• Can Operate on Unstable Input Voltages
• Conservative Electrolytic Capacitor Temperatures	• Long Field Life
• Five Year Warranty (3)	• Lower Cost of Ownership

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LS25–150 Series

Model Selector

Model	Voltage (V)	Adjustable Range (V)	Max Current (A)	Load Reg (mV)	Line Reg (mV)	Ripple Noise (mV)	Efficiency (typ) %
LS25-3.3	3.3	2.85 - 3.6	6	66	16.5	80	72
LS35-3.3	3.3	2.85 - 3.6	7	66	16.5	80	73
LS50-3.3	3.3	3.0 - 3.6	10	40	20	80	75
LS75-3.3	3.3	3.0 - 3.6	15	40	20	80	75
LS100-3.3	3.3	3.0 - 3.6	20	66	16.5	80	74
LS150-3.3	3.3	3.0 - 3.6	30	66	16.5	80	74
LS25-5	5	4.75 - 5.5	5	50	25	80	77
LS35-5	5	4.75 - 5.5	7	50	25	80	77
LS50-5	5	4.75 - 5.5	10	40	20	80	80
LS75-5	5	4.75 - 5.5	12	40	20	80	79
LS100-5	5	4.75 - 5.5	16	50	25	80	77
LS150-5	5	4.75 - 5.5	26	50	25	80	78
LS25-12	12	10.8 - 13.2	2.1	60	60	120	79
LS35-12	12	10.8 - 13.2	3	60	60	120	81
LS50-12	12	10.8 - 13.2	4.2	96	48	120	84
LS75-12	12	10.8 - 13.2	6	96	48	120	84
LS100-12	12	10.8 - 13.2	8.5	60	60	120	81
LS150-12	12	10.8 - 13.2	12.5	60	60	120	93
LS25-15	15	13.5 - 16.5	1.7	75	75	120	82
LS35-15	15	13.5 - 16.5	2.4	75	75	120	83
LS50-15	15	13.5 - 16.5	3.4	120	60	120	85
LS75-15	15	13.5 - 16.5	5	120	60	120	85
LS100-15	15	13.5 - 16.5	7	75	75	120	82
LS150-15	15	13.5 - 16.5	10	75	75	120	84
LS25-24	24	22 - 27.2	1.1	120	120	120	84
LS35-24	24	22 - 27.2	1.5	120	120	120	84
LS50-24	24	22 - 27.2	2.2	192	96	120	86
LS75-24	24	22 - 27.2	3.2	192	96	120	86
LS100-24	24	22 - 27.2	4.5	120	120	120	84
LS150-24	24	22 - 27.2	6.5	120	120	120	86
LS25-36	36	32 - 40	0.75	150	150	150	85
LS35-36	36	32 - 40	1	150	150	150	84
LS50-36	36	32 - 40	1.4	288	144	150	86
LS75-36	36	32 - 40	2.1	288	144	150	86
LS100-36	36	32 - 40	3	150	150	150	84
LS150-36	36	32 - 40	4.3	150	150	150	86
LS25-48	48	42 - 54	0.57	180	180	200	85
LS35-48	48	42 - 54	0.8	180	180	200	84
LS50-48	48	42 - 54	1.1	384	192	200	86
LS75-48	48	42 - 54	1.6	384	192	200	87
LS100-48	48	42 - 54	2.3	180	180	200	84
LS150-48	48	42 - 54	3.3	180	180	200	87

20-1500W Single Output Industrial Power Supplies

Industrial COTS Test LED Broadcast COMM

Full Datasheet
https://product.tdk.com/en/power/hws-hd

The ultra reliable, conservatively rated HWS/HD series of 20W to 1500W AC-DC power supplies has a limited lifetime warranty (1), unique to the industry. Based on the HWS-A and HWS series, the models offer pcb coating and start-up in -40°C ambient temperatures as standard for harsh environments. They accept a wide range 85 to 265Vac input with output voltages from 3.3V to 60V and are certified to IEC 62368-1. The HWS/HD also meet conducted and radiated emission standards without additional filtering or shielding.

Features	Benefits
• Pcb Coating and -40°C Ambient Start-up	• Operation in Harsh Environments
• Limited Lifetime Warranty (1)	• Low Cost of Ownership
• Very Conservative Electrolytic Capacitor Ratings	• Long Service Life
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance

HWS	300	-	3	/	HD
Series	Nominal power level and product size		Output voltage 3 (3.3V), 5, 6, 7 (7.5V) 12, 15, 24, 36, 48, 60		blank No options /HDA The cover option for HWS50A-150A is special order only

Preferred

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HWS30-1500/HD Series

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Peak Current (A)(2)	Load Reg (mV)	Line Reg (mV)	Ripple Noise (mV)	Overvoltage (V)	Efficiency (115/230Vac) (%)
HWS30A-3/HD	3.3	2.97 - 3.96	6	-	40	20	120	4.13 - 4.95	75 / 77
HWS50A-3/HD	3.3	2.97 - 3.96	10	-	40	20	120	4.13 - 4.95	82 / 84
HWS100A-3/HD	3.3	2.97 - 3.96	20	-	40	20	120	4.13 - 4.95	82 / 84
HWS150A-3/HD	3.3	2.97 - 3.96	30	-	40	20	120	4.13 - 4.95	78 / 81
HWS300-3/HD	3.3	2.64 - 3.96	60	-	30	20	120	4.13 - 4.95	74 / 77
HWS600-3/HD	3.3	2.64 - 3.96	120	-	30	20	120	4.13 - 4.95	75 / 78
HWS1000-3/HD	3.3	2.64 - 3.96	200	-	40	20	120	4.12 - 4.62	71 / 73
HWS1500-3/HD	3.3	2.64 - 3.96	300	-	60	36	150	4.12 - 4.62	72 / 75
HWS30A-5/HD	5	4.0 - 6.0	6	-	40	20	120	6.25 - 7.25	80 / 82
HWS50A-5/HD	5	4.0 - 6.0	10	-	40	20	120	6.25 - 7.25	82 / 84
HWS100A-5/HD	5	4.0 - 6.0	20	-	40	20	120	6.25 - 7.25	84 / 86
HWS150A-5/HD	5	4.0 - 6.0	30	-	40	20	120	6.25 - 7.25	85 / 87
HWS300-5/HD	5	4.0 - 6.0	60	-	30	20	120	6.25 - 7.25	79 / 82
HWS600-5/HD	5	4.0 - 6.0	120	-	30	20	120	6.25 - 7.25	80 / 83
HWS1000-5/HD	5	4.0 - 6.0	200	-	40	20	120	6.25 - 7.0	76 / 78
HWS1500-5/HD	5	4.0 - 6.0	300	-	60	36	150	6.25 - 7.0	77 / 81
HWS1000-6/HD	6	4.8 - 7.2	167	-	60	36	150	7.5 - 8.4	79 / 81
HWS1000-7/HD	7.5	6.0 - 9.0	134	160	60	36	150	9.37 - 10.5	80 / 82
HWS30A-12/HD	12	9.6 - 14.4	2.5	-	96	48	150	15.0 - 17.4	84 / 86
HWS50A-12/HD	12	9.6 - 14.4	4.3	-	96	48	150	15.0 - 17.4	83 / 85
HWS100A-12/HD	12	9.6 - 14.4	8.5	-	96	48	150	15.0 - 17.4	86 / 88
HWS150A-12/HD	12	9.6 - 14.4	13	-	96	48	150	15.0 - 17.4	85 / 88
HWS300-12/HD	12	9.6 - 14.4	27	-	72	48	150	15.0 - 17.4	80 / 83
HWS600-12/HD	12	9.6 - 14.4	53	-	72	48	150	15.0 - 17.4	80 / 83
HWS1000-12/HD	12	9.6 - 14.4	88	100	100	48	150	15.0 - 17.4	82 / 85
HWS1500-12/HD	12	9.6 - 14.4	125	-	72	48	150	15.0 - 17.4	82 / 85
HWS30A-15/HD	15	12.0 - 18.0	2	-	120	60	150	18.8 - 21.8	85 / 87
HWS50A-15/HD	15	12.0 - 18.0	3.5	-	120	60	150	18.8 - 21.8	83 / 86
HWS100A-15/HD	15	12.0 - 18.0	7	-	120	60	150	18.8 - 21.8	86 / 88
HWS150A-15/HD	15	12.0 - 18.0	10	-	120	60	150	18.8 - 21.8	86 / 89
HWS300-15/HD	15	12.0 - 18.0	22	-	90	60	150	18.8 - 21.8	80 / 83
HWS600-15/HD	15	12.0 - 18.0	43	-	90	60	150	18.8 - 21.8	81 / 84
HWS1000-15/HD	15	12.0 - 18.0	70	80	120	60	150	18.8 - 21.8	83 / 85
HWS1500-15/HD	15	12.0 - 18.0	100	-	90	60	150	18.8 - 21.8	83 / 87
HWS30A-24/HD	24	19.2 - 28.8	1.3	-	192	96	150	30.0 - 34.8	86 / 88
HWS50A-24/HD	24	19.2 - 28.8	2.2	-	192	96	150	30.0 - 34.8	84 / 87
HWS100A-24/HD	24	19.2 - 28.8	4.5	-	192	96	150	30.0 - 34.8	87 / 89
HWS150A-24/HD	24	19.2 - 28.8	6.5	-	192	96	150	30.0 - 34.8	88 / 90
HWS300-24/HD	24	19.2 - 28.8	14	16.5	144	96	150	30.0 - 34.8	82 / 85
HWS600-24/HD	24	19.2 - 28.8	27	31	144	96	150	30.0 - 34.8	82 / 85
HWS1000-24/HD	24	19.2 - 28.8	46	58.5	150	96	150	30.0 - 34.8	85 / 87
HWS1500-24/HD	24	19.2 - 28.8	65/70(3)	105	144	96	200	30.0 - 34.8	84 / 88
HWS1000-36/HD	36	28.8 - 43.2	30.7	39	150	144	200	45.0 - 49.7	85 / 88
HWS1500-36/HD	36	28.8 - 43.2	42/46.5(3)	70	150	144	200	45.0 - 49.7	84 / 88
HWS30A-48/HD	48	38.4 - 52.8	0.65	-	384	192	200	55.2 - 64.8	86 / 87
HWS50A-48/HD	48	38.4 - 52.8	1.1	-	384	192	200	55.2 - 64.8	84 / 86
HWS100A-48/HD	48	38.4 - 52.8	2.1	-	384	192	200	55.2 - 64.8	88 / 90
HWS150A-48/HD	48	38.4 - 52.8	3.3	-	384	192	200	55.2 - 64.8	89 / 91
HWS300-48/HD	48	38.4 - 52.8	7	-	288	192	200	55.2 - 64.8	82 / 85
HWS600-48/HD	48	38.4 - 52.8	13	-	288	192	200	55.2 - 64.8	83 / 86
HWS1000-48/HD	48	38.4 - 52.8	28	29.2	300	192	200	55.2 - 60.0	86 / 88
HWS1500-48/HD	48	38.4 - 52.8	32	-	288	192	200	55.2 - 64.8	86 / 90
HWS1000-60/HD	60	48.0 - 66.0	18.4	23.4	360	240	400	69.0 - 75.0	85 / 88

40-65W 90-305VAC AC-DC Power Supplies

Industrial Broadcast Test COMM

Full Datasheet
https://product.tdk.com/en/power/csw

Accepting a very wide 90 to 305Vac input, the CSW65 series can operate from 115V, 230V and 277V nominal inputs. These models are available in a U-channel construction and have cover and/or DIN rail mounting clip options. All models are certified to IEC/EN/UL/CSA 62368-1 and with less than 150mW off-load power consumption, these units also comply with DOE Efficiency Level VI requirements.

Features	Benefits
• Accepts 115/230/277VAC Nominal Inputs	• Suitable for US Building Wiring
• <150mW Off-Load Power Consumption	• Energy Saving
• DOE Efficiency Level VI, ErP Tier 2	• Meets US and EU Energy Saving Legislation
• Class 2 24V Model to UL1310	• Suitable for Building Automation Requiring NEC Class 2
• DIN Rail Mount Option	• Easy to Mount

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Overvoltage (V)	Average Efficiency (%)	*Ripple & Noise (mV)
CSW65-5	5	8.0	40	6 - 8	87.2	100
CSW65-12	12	5.42	65	13.2 - 15.6	89	120
CSW65-15	15	4.34	65	16.5 - 19.5	89	150
CSW65-18	18	3.62	65	19.8 - 23.4	89	180
CSW65-24	24	2.71	65	26.4 - 31.2	89	240
CSW65-28	28	2.33	65	30.8 - 36.4	89	280
CSW65-48	48	1.36	65	52.8 - 62.4	89	280
CSW65-54	54	1.21	65	59.4 - 64.8	89	280

*Ripple and noise are measured at oscilloscope 20MHz bandwidth by a 10uF electrolytic capacitor and a 0.1uF ceramic capacitor in parallel at output connector.

CSW	65	-24	/A

Output Power

5	5V Output Voltage
12	12V Output Voltage
15	15V Output Voltage
18	18V Output Voltage
24	24V Output Voltage
28	28V Output Voltage
48	48V Output Voltage
54	54V Output Voltage

Blank	U-Channel
/A	U-Channel & Cover
/D	U-Channel, Cover & DIN Rail Bracket

50W to 600W Single Output General Purpose Power Supplies

Industrial Test COMM LED Broadcast Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/rws-b

The RWS50B to RWS600B AC-DC power supplies are designed to provide solid performance at an economical price. 50, 100, 150, 300 and 600W ratings are available with output voltages from 5V to 48V. All models are certified to IEC62368-1 with UL508 on select models. These 7-year warranty (1) products meet both Class B radiated and conduction EMI standards. The 300W models have a remote on/off option and the 600W have options for remote on/off, parallel operation, DC Good and remote sense.

Features	Benefits
• Seven Year Warranty (1)	• Low Cost of Ownership
• Conservatively Rated Electrolytic Capacitors	• Long Field Life
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• UL508 Certified on Select Models	• Suitable for Industrial Control Equipment

Model Selector

Model	Voltage (V)	Adjustable Range (V)	Max Current (A)	Max Output Power (W)	Ripple & Noise (mV)	Input Current (A) 115/230Vac	Efficiency (typ)% 115/230Vac	UL508 Certification
RWS50B-5	5	4.5 - 5.75	10	50	120	1.0 / 0.65	78 / 79	Yes
RWS100B-5	5	4.5 - 5.75	14	70	120	0.9 / 0.45	77.5 / 79	Yes
RWS150B-5	5	4.5 - 5.75	21	105	120	1.3 / 0.7	77.5 / 79.5	Yes
RWS300B-5	5	4.5 - 5.75	50	250	120	3.1 / 1.6	75 / 78.5	-
RWS600B-5	5	4.5 - 5.75	100	500	120	6.2 / 3.2	74 / 77.5	-
RWS50B-12	12	10.8 - 13.8	4.3	51.6	150	1.0 / 0.65	83 / 84	Yes
RWS100B-12	12	10.8 - 13.8	8.5	102	150	1.2 / 0.6	83 / 84	Yes
RWS150B-12	12	10.8 - 13.8	13	156	150	1.8 / 0.9	84.5 / 87.5	Yes
RWS300B-12	12	10.8 - 13.8	25	300	150	3.6 / 1.9	79.5 / 82.5	Yes
RWS600B-12	12	10.8 - 13.8	50	600	150	6.6 / 3.6	82 / 84.5	-
RWS100B-15	15	13.5 - 17.25	6.8	102	150	1.2 / 0.6	84 / 85	-
RWS150B-15	15	13.5 - 17.25	10	150	150	1.8 / 0.9	84.5 / 87.5	-
RWS300B-15	15	13.5 - 17.25	20	300	150	3.6 / 1.9	81.5 / 84.5	Yes
RWS600B-15	15	13.5 - 17.25	40	600	150	6.6 / 3.6	82 / 84.5	-
RWS50B-24	24	21.6 - 27.6	2.2	52.8	150	1.0 / 0.65	86 / 87	Yes
RWS100B-24	24	21.6 - 27.6	4.5	108	150	1.2 / 0.6	86 / 87.5	Yes
RWS150B-24	24	21.6 - 27.6	6.5	156	150	1.8 / 0.9	86.5 / 89.5	Yes
RWS300B-24	24	21.6 - 27.6	12.5	300	150	3.6 / 1.9	85 / 88	Yes
RWS600B-24	24	21.6 - 27.6	25	600	150	6.6 / 3.6	85 / 88.5	Yes
RWS150B-28	28	25.2 - 32.2	5.4	151.2	180	1.8 / 0.9	86.5 / 89.5	-
RWS300B-36	36	32.4 - 414	8.4	302.4	200	3.6 / 1.9	85 / 88	Yes
RWS600B-36	36	32.4 - 414	16.7	601.2	200	6.6 / 3.6	85 / 88.5	-
RWS50B-48	48	43.2 - 52.8	1.1	52.8	200	1.0 / 0.65	87 / 88	-
RWS100B-48	48	43.2 - 52.8	2.1	100.8	200	1.2 / 0.6	86 / 87	-
RWS150B-48	48	43.2 - 52.8	3.3	158.4	200	1.8 / 0.9	86.5 / 89.5	-
RWS300B-48	48	43.2 - 52.8	6.3	302.4	200	3.6 / 1.9	85 / 88	Yes
RWS600B-48	48	43.2 - 52.8	12.5	600	200	6.6 / 3.6	85 / 88.5	-

CUS200LD Series

79-153W Single Output Power Supplies

Industrial Test LED Broadcast COMM

Full Datasheet
https://product.tdk.com/en/power/cus-ld

Designed for light industrial, LED signage, broadcast, IT, and test & measurement equipment, the CUS200LD can deliver up to 120W convection, 150W conduction cooled and 206W peak power. The series is available with nominal output voltages of 3.3V, 4.2V, 5V, 7.5V, 12V, 15V, 24V, 28V and 48Vdc. The 31mm height makes it suitable for mounting in low profile LED displays and enclosures.

Features	Benefits
• Convection or Conduction Cooled	• Quiet Operation
• Up to 206W Peak Power Capability	• Provides Short Term Current for Capacitive or Inductive Loads
• Low 31mm Height	• Suitable for Low Profile Enclosures
• -40°C Ambient Temperature Start Up	• Outdoor Enclosure Usage

Model Selector

Model	Output Voltage (V)	Output Adjustment (V)	Max Current Convection (A)	Max Power Convection (W)	Max Current Conduction (A)	Max Power Conduction (W)	Peak Current[1] (A)	Load Regulation (mv)	Line Regulation (mv)	Over Voltage (V)	Efficiency[2] (115/230Vac) (%)
CUS200LD-3	3.3	2.97 - 3.63	24	79.2	30.0	99.0	40.0	26	13	3.8 - 5.44	82 / 83
CUS200LD-4	4.2	3.78 - 4.62	24	100.8	30.0	126.0	40.0	33	16	4.83 - 6.51	85 / 87
CUS200LD-5	5	4.5 - 5.5	24	120	30.0	150.0	40.0	40	20	5.75 - 7.5	87 / 89
CUS200LD-7R5	7.5	6.375 - 8.25	16	120	20.0	150.0	26.6	60	30	8.63 - 10.87	88 / 90
CUS200LD-12	12	10.8 - 13.2	10	120	12.5	150.0	16.7	96	48	13.8 - 17.4	87 / 89
CUS200LD-15	15	13.5 - 16.5	8	120	10.0	150.0	13.4	120	60	17.25 - 21.75	87 / 89
CUS200LD-24	24	21.6 - 26.4	5	120	6.3	151.2	8.4	192	96	27.6 - 34.8	87 / 89
CUS200LD-28	28	25.2 - 30.8	4.3	120.4	5.4	151.2	7.2	224	112	32.2 - 40.6	87 / 90
CUS200LD-48	48	43.2 - 52.8	2.5	120	3.2	151.2	4.2	384	192	55.2 - 69.6	88 / 90

LS200 Series

150-200W Single Output General Purpose Power Supplies

Industrial Test COMM LED Broadcast

Full Datasheet
https://product.tdk.com/en/power/ls

The LS series offers economically priced 150 to 200W power supplies for general purpose light industrial use. With output voltages ranging from 3.3 to 48V, the products have a five-year warranty [1] and conservatively rated electrolytic capacitor temperatures for longer field life. Two case styles are available - enclosed with internal fan, or a U-channel construction which can be operated either with external airflow or convection cooled at a lower power level. These compact products have a wide -25 to +70°C temperature range and are capable of withstanding a 300Vac surge for up to five seconds.

Features	Benefits
• Compact Package Sizes	• Space Saving in End Equipment
• Low Cost	• Suitable for General Purpose Light Industrial Use
• Withstands 300Vac Input Surges	• Can Operate on Unstable Input Voltages
• Conservative Electrolytic Capacitor Temperatures	• Long Field Life
• Five Year Warranty [1]	• Lower Cost of Ownership

Model Selector

Model	Voltage (V)	Adjustable Range (V)	Max Current (A)[2]	Max Current Convection (A)[3]	Peak Current (A)[4]	Load Reg (mV)	Line Reg (mV)	Ripple Noise (mV)	Efficiency (typ) %[5]
LS200-3.3	3.3	3.0 - 3.6	40	N/A	-	40	16	80	67 / 68
LS200-3.3/L	3.3	3.0 - 3.6	40	26	-	40	16	80	67 / 68
LS200-5	5	4.75 - 5.5	40	N/A	-	40	20	80	72 / 75
LS200-5/L	5	4.75 - 5.5	40	26	-	40	20	80	72 / 75
LS200-7.5	7.5	6.8 - 8.2	26.7	N/A	-	40	20	80	74 / 77
LS200-7.5/L	7.5	6.8 - 8.2	26.7	17.3	-	40	20	80	74 / 77
LS200-12	12	10.8 - 14.4	16.7	N/A	-	96	48	120	76 / 79
LS200-12/L	12	10.8 - 14.4	16.7	11.6	-	96	48	120	76 / 79
LS200-15	15	13.5 - 16.5	13.4	N/A	-	120	60	120	80 / 83
LS200-15/L	15	13.5 - 16.5	13.4	9.3	-	120	60	120	80 / 83
LS200-24	24	22 - 28.8	8.4	N/A	10.4	192	96	120	82 / 84
LS200-24/L	24	22 - 28.8	8.4	5.8	10.4	192	96	120	82 / 84
LS200-36	36	32 - 40	5.6	N/A	6.9	288	144	150	82 / 85
LS200-36/L	36	32 - 40	5.6	3.9	6.9	288	144	150	82 / 85
LS200-48	48	42 - 57.6	4.2	N/A	-	384	192	200	82 / 85
LS200-48/L	48	42 - 57.6	4.2	2.9	-	384	192	200	82 / 85

LS200	-24	/L

3.3	3.3V Output Voltage	15	15V Output Voltage
5	5V Output Voltage	24	24V Output Voltage
7.5	7.5V Output Voltage	36	36V Output Voltage
12	12V Output Voltage	48	48V Output Voltage

Blank	Enclosed with internal fan
/L	U-Channel without internal fan

300-1500W Single Output Industrial Power Supplies

Industrial Test LED Broadcast COMM Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/hws

The ultra reliable, conservatively rated HWS series of 300W to 1500W AC-DC power supplies has a limited lifetime warranty (1), unique to the industry. The series accepts a widerange 85 to 265Vac input with output voltages from 3.3V to 48V. The products are certified to IEC 62368-1, UL 508 (select models) and are SEMI F47 compliant . They also meet conducted and radiated emission standards without additional filtering or shielding.

Features	Benefits
• Limited Lifetime Warranty (1)	• Low Cost of Ownership
• Very Conservative Electrolytic Capacitor Ratings	• Long Service Life
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• UL 508 Certified on Select Models	• Suitable For Industrial Control Equipment

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Peak Current (A) (2)	Load Reg (mV)	Line Reg (mV)	Ripple Noise (mV)	Overvoltage (V)	Efficiency (115/230Vac) (%)
HWS300-3	3.3	2.64 - 3.96	60	-	30	20	120	4.13 - 4.95	74 / 77
HWS600-3	3.3	2.64 - 3.96	120	-	30	20	120	4.13 - 4.95	75 / 78
HWS1000-3	3.3	2.64 - 3.96	200	-	40	20	120	4.13 - 4.95	71 / 73
HWS1500-3	3.3	2.64 - 3.96	300	-	60	36	150	4.12 - 4.95	72 / 75
HWS300-5	5	4.0 - 6.0	60	-	30	20	120	6.25 - 7.25	79 / 82
HWS600-5	5	4.0 - 6.0	120	-	30	20	120	6.25 - 7.25	80 / 83
HWS1000-5	5	4.0 - 6.0	200	-	40	20	120	6.25 - 7.0	76 / 78
HWS1500-5	5	4.0 - 6.0	300	-	60	36	150	6.25 - 7.0	77 / 81
HWS1000-6	6	4.8 - 7.2	167	-	60	36	150	7.5 - 8.4	79 / 81
HWS1500-6	6	4.8 - 7.2	250	300	60	36	150	7.5 - 8.4	79 / 82
HWS1000-7	7.5	6.0 - 9.0	134	160	60	36	150	9.38 - 10.5	80 / 82
HWS1500-7	7.5	6.0 - 9.0	200	240	60	40	150	9.37 - 10.5	81 / 83
HWS300-12	12	9.6 - 14.4	27	-	96	48	120	15.0 - 17.4	80 / 83
HWS600-12	12	9.6 - 14.4	53	-	96	48	120	15.0 - 17.4	80 / 83
HWS1000-12	12	9.6 - 14.4	88	100	100	48	150	15.0 - 17.4	83 / 85
HWS1500-12	12	9.6 - 14.4	125	-	72	48	150	15.0 - 17.4	82 / 85
HWS300-15	15	12.0 - 18.0	22	-	120	60	150	18.8 - 21.8	82 / 85
HWS600-15	15	12.0 - 18.0	43	-	120	60	150	18.8 - 21.8	82 / 85
HWS1000-15	15	12.0 - 18.0	70	80	120	60	150	18.8 - 21.8	83 / 85
HWS1500-15	15	12.0 - 18.0	100	-	90	60	150	18.7 - 21.8	83 / 87
HWS300-24	24	19.2 - 28.8	14	16.5	192	96	150	30.0 - 34.8	82 / 85
HWS600-24	24	19.2 - 28.8	27	31	192	96	150	30.0 - 34.8	82 / 85
HWS1000-24	24	19.2 - 28.8	44	50	150	96	150	30.0 - 34.8	85 / 87
HWS1500-24	24	19.2 - 28.8	65/70 (3)	105	144	96	200	30.0 - 34.8	84 / 88
HWS1000-36	36	28.8 - 43.2	29.3	33.3	150	144	200	45.0 - 49.7	85 / 88
HWS1500-36	36	28.8 - 43.2	42/46.5 (3)	70	150	144	200	45.0 - 49.7	84 / 88
HWS300-48	48	38.4 - 52.8	7	-	384	192	200	55.2 - 64.8	82 / 85
HWS600-48	48	38.4 - 52.8	13	-	384	192	200	55.2 - 64.8	82 / 85
HWS1000-48	48	38.4 - 52.8	22	25	300	192	200	55.2 - 64.8	86 / 88
HWS1500-48	48	38.4 - 52.8	32	-	288	192	200	55.2 - 64.8	86 / 90
HWS1000-60	60	48.0 - 66.0	17.6	20	360	240	400	69.0 - 75.0	85 / 88
HWS1500-60	60	48.0 - 66.0	25.6/28 (3)	42	360	240	400	69.0 - 75.0	86 / 90

Single Output 350W/420W Medical & ITE Power Supplies

Medical Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/cus-m

With efficiencies up to 94%, the medical and ITE certified CUS350M is rated at 350W with convection cooling and up to 420W with airflow. The CUS350M is ideal for applications where audible noise cannot be tolerated, including hospital, dental, broadcast and professional audio equipment. A 5V 0.5A standby output, Power Good signal, 12V 0.3A fan supply and remote on/off are provided as standard on the /F suffix models.

Features	Benefits
• 350W Convection Cooled	• Quiet Operation
• Up to 420W with Forced Air	• Can Utilize System Airflow
• Medical Certifications (2 x MOPP)	• Suitable for B and BF Rated Equipment
• Class B Conducted EMI	• Easier System EMC Compliance
• 5V Standby Voltage, DC Good Signal, 12V Fan Supply and Remote On/Off	• Provides Flexibility in the System
• Compact 7.5 x 3.4 x 1.6" Size	• Space Saving in End Equipment

Model Selector

Model	Voltage (V)	Adjustment Range (V)	Max Current (A) Convection	Max Power (W) Convection	Max Current (A) Forced Air	Max Power (W) Forced Air	Ripple Noise (mV)	Efficiency (typ)% 115/230Vac
CUS350M-12/F	12	11.4 - 12.6	29.0	348.0	34.5	414.0	120	91 / 93
CUS350M-18/F	18	17.1 - 18.9	19.4	349.2	23	414	180	91 / 94
CUS350M-24/F	24	22.8 - 25.2	14.7	352.8	17.5	420	240	91 / 94
CUS350M-36/F	36	34.2 - 37.8	9.7	349.2	11.5	414	240	91 / 94
CUS350M-48/F	48	45.6 - 50.4	7.3	350.4	8.7	417.6	480	91 / 94

CUS350M- 12 / F

- 12: Output voltage 12, 18, 24, 36, 48
- F: /F Fan supply and Power Good signal (preferred model); Blank No Fan supply and Power Good signal

GUS350–1000 Series

350W to 1000W Compact Single Output General Purpose Power Supplies

Industrial Test LED Broadcast COMM Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/gus

The compact 350W, 600W and 1000W rated GUS power supplies are designed to provide reliable performance at an economical price. The GUS models are available with 12, 24, 36 and 48V output voltages and have efficiencies up to 95%. All models are certified to IEC62368-1, designed to meet IEC61010-1 and meet Class B radiated and conducted EMI standards. Remote on/off is an option for all models, with the GUS350 having an optional output voltage adjustment function (standard on GUS600 and GUS1000). The GUS600 and GUS1000 models have an internal cooling fan with the GUS350 being convection cooled.

Features	Benefits
• Compact Size	• Saves Space in System
• Conservative Electrolytic Capacitor Ratings	• Long Field Life
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• IEC62368-1 Certification, Compliant to IEC61010-1	• Quicker System Compliance

Model Selector

Model	Voltage (V)	Output Adjustment (V) (Specify ADJ option suffix for GUS350, standard on the GUS600 and GUS1000)	Max Current (A)	Max Output Power (W)	Ripple & Noise (mV)	Ovevoltage (V)	Overcurrent (A)	Efficiency (typ) (115 / 230Vac) (%)
GUS350-12	12	11.7 - 12.9	29.2	350.4	240	13.80 - 16.20	>30.66	93 / 95
GUS600-12	12	11.7 - 12.9	50	600	240	13.80 - 16.20	>52.50	92 / 94
GUS1000-12	12	11.7 - 12.6	66.7 (83.4 peak)	800.4 (1000.8 peak)	240	13.80 - 16.20	>87.6	91 / 93
GUS350-24	24	23.4 - 25.9	14.6	350.4	360	27.60 - 32.40	>15.33	94 / 95.5
GUS600-24	24	23.4 - 25.9	25	600	360	27.60 - 32.40	>26.25	93 / 95
GUS1000-24	24	23.4 - 25.9	41.7	1000.8	360	27.60 - 32.40	<43.8	93 / 95
GUS350-36	36	35.1 - 38.8	9.8	352.8	480	41.40 - 48.60	>10.29	94 / 95.5
GUS600-36	36	35.1 - 38.8	16.7	601.2	480	41.40 - 48.60	>17.54	93 / 95
GUS1000-36	36	35.1 - 38.8	27.8	1000.8	480	41.40 - 48.60	>29.2	93.3 / 95.3
GUS350-48	48	46.8 - 51.8	7.4	355.2	480	55.20 - 64.80	>7.77	94 / 95.5
GUS600-48	48	46.8 - 51.8	12.6	604.8	480	55.20 - 64.80	>13.23	93 / 95
GUS1000-48	48	46.8 - 51.8	20.9	1003.2	480	55.20 - 64.80	22	93.5 / 95.5

GUS350 | **24** | **/** | **R**

- GUS350: Model and Output power
- 24: Output voltage 12, 24, 36, 48
- R:

Blank	No options
R	Remote On/Off
ADJ	Output voltage adjustment potentiometer (option for GUS350 only, standard on the GUS600 and GUS1000)
/D	DIN rail mounting bracket (GUS350-24 only)

Related Products

Type	Part Number(s)	Description
AC-DC power supplies	RWS-B	50 to 1500W, industrial 7-year warranty
AC-DC power supplies	CUS-M	30 to 1500W, industrial/medical 5-year warranty

LZSA Series

500-1500W Industrial Power supplies

Industrial COTS Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/lzsa

The LZSA series offers a unique feature set not commonly found with standard off-the-shelf supplies. Compliance to the MIL-STD-810E standards for shock and vibration and board coating make the LZSA power supplies ideal for use in a variety of harsh environment applications. They also comply with the tough ring wave lightning surge test per IEEE C62.41. Features include remote on/off, remote sense, frequency synchronization and a wide operating temperature range of -40°C to +71°C. The series also has a wide adjustment range which can be programmed using an external voltage or resistance.

Features	Benefits
• Rugged Mechanical Design With Coating on PCBs	• High Reliability in Harsh Environments
• Superior Thermal Design	• Long Life Even at 71°C Operation
• Wide Range, Programmable Output Adjustment	• Reduces The Need For custom Outputs
• Input Voltage Transient Protection	• Reduced System Filtering

Model Selector

Part Number for Ordering	Model Number*	Nominal Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)
LZSA-1000-2	LZS-A1000-2	12	10 - 15.75	84	1008
LZSA-500-3	LZS-A500-3	24	18 - 29.4	21	504
LZSA-1000-3	LZS-A1000-3	24	18 - 29.4	42	1008
LZSA-1500-3-001	LZS-A1500-3-001	24	18 - 29.4	63	1512 (3)
LZSA-1500-4	LZS-A1500-4	48	36 - 56	31.5	1512 (3)

* This part number is listed on the LZSA rating label and safety files

600-1200W Single Output Modular Power Supplies

Features
- Full Medical Isolation (MoPP)
- Suitable for B and BF Rated Equipment
- Low Speed, Low Audible Noise Fans
- Dual Fusing
- High Current 5V/2A Standby
- Class B Conducted & Radiated EMI
- PMBus™ Communications Option
- 7 Year Warranty

Medical Industrial Test COMM Broadcast Renewable PMBus RoHS

Full Datasheet
https://product.tdk.com/en/power/qs

Specifications

Model		QS
Input Voltage Range	VAC	90-264Vac. QS5H limited to 700W output power below 180Vac input
Input Frequency Range	Hz	47 - 63Hz (440Hz with reduced PFC)
Inrush Current	A	QS5 & QS5H <40A, QS7 <45A at 25°C and 264Vac (cold start)
Touch Current	µA	<100µA
Leakage Current (maximum)	µA	<300µA
Power Factor Correction	-	> 0.95 (at 100% load), Meets EN61000-3-2, Class A and Class C
Efficiency	-	Up to 91%, model dependent
Temperature Coefficient	%/°C	<0.016%/°C
Overcurrent Protection	-	Hiccup, auto recovery
Overvoltage Protection	-	Latching. Output shut down, cycle AC to reset
Overtemperature Protection	-	Converter: auto restart (fan off); Output modules: cycle AC to reset
Hold up time	ms	QS5: 10ms, QS7: 20ms minimum at full load
Ripple and Noise	%	1%. 0 - 70°C, > 20% load
Line regulation	%	<0.1%
Load Regulation	%	<1% (<3.5% for QS5H-1080-12 & QS7-1080-12)
Remote Sense Compensation	-	Yes, 0.5V compensation., not to exceed maximum output adjustment
Remote On/Off	-	Output: Via isolated opto-coupler diode, Converter: See optional standby/signals
AC Fail Signal	-	See optional standby/signals
DC Good Signal	-	Via isolated opto-coupler transistor
Remote on/off	-	Output only: Inhibit. Converter & Ouput: See options section
PMBus™ Interface	-	See optional standby/signals
Standby Voltage	-	See optional standby/signals
Operating Temperature	°C	-40°C start up; -20 to +70°C, derate linearly to 50% load from 50 to 70°C
Storage Temperature	°C	-30 to +70°C
Humidity (Non condensing)	%RH	5 - 95%RH
Cooling	-	QS5/QS5H: One variable, low speed internal fan. QS7: Two variable, low speed internal fans
Audible Noise	-	QS5/QS5H ("S" Input option): 40.3 dBA @ 25°C / 54.9 dBA @ 50°C. QS5/QS5H ("I" Input option): 36.9 dBA @ 25°C / 51 dBA @ 50°C. QS7: 43.6 dBA @ 25°C / 57.3 dBA @ 50°C, per BS ISO 3744:2010
Withstand Voltage	-	Input to Output: 4kVAC (production tested to 4.3kVDC) (2xMoPP), Input to Ground: 1.5kVAC (1xMoPP), Output to Ground: 1.5kVAC (1xMoPP). Output to Output / Signals 200Vdc
Vibration	-	Conforms to EN60068-2-6, IEC68-2-6, MIL-STD-810G, Method 514.6, Pro I
Shock	-	Conforms to EN60068-2-27, EN60068-2-47, IEC68-2-27, IEC68-2-47, JIS C0041-1987, MIL-STD-810G, Method 516.6, Pro I, IV
Safety Agency Certifications	-	IEC/UL/CSA/EN UL 60950-1, IEC/UL/CSA/EN 60601-1, ANSI/AAMI ES60601-1 & CE Mark. IEC/EN61010 included in 60950 report
Altitude	m	5,000m, operational and storage
Emissions	-	EN61000-6-3:2007, EN60601-1-2:2015 4th Edition, EN55011B, EN55032B, Class B radiated and conducted
Immunity	-	EN61000-6-2:2005, EN60601-1-2:2015
Size (W x H x D)	in, mm	QS5: 5 x 2.5 x 10.6", 127 x 63.3 x 270mm. QS7: 6.9 x 2.5 x x10.6", 176 x 63.3 x 270mm
Weight	g	See Installation Manual
Warranty	Yrs	Seven Years

(1) See website for detailed specifications

Single Output 600W Programmable Medical and Industrial Power Supplies

Medical Industrial Test Broadcast COMM

Full Datasheet
https://product.tdk.com/en/power/gxe

With efficiencies up to 95%, the medical and industrial certified GXE600 is rated at 600W with convection cooling for low audible noise. The output voltage and current can be programmed and set for constant current or constant voltage characteristics. The Modbus RTU serial protocol is used for data transmission due its high interference immunity within noisy industrial environments. The parameters for fault programming (protection level and recovery characteristics) and the slew rate timing can be changed. Remaining electrolytic capacitor life, operating hours and alarm history can be read through the RS-485 interface, aiding remote preventative maintenance. As standard the GXE600 has a 5V 1A standby voltage, isolated DC Good and AC Fail signals, remote on/off and paralleling capability for up to five units.

Features	Benefits
• Convection Cooled	• Quiet Operation
• Up to 95% Efficient	• Lower Operating Costs
• RS-485 Read-Write Communication (Modbus RTU protocol)	• Applicable for Communication in Industrial Applications
• Constant Voltage & Constant Current Modes	• Versatile Use
• Monitoring & Programming Functions	• Allows Remote Monitoring and Operation
• Digital or Analog Programming	• Easier System Integration
• Seven Year Warranty(1)	• Low Cost of Ownership

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment Manual (V)	Output Adjustment Programming(2) (V)	Maximum Current (A)	Maximum Power (W)	Efficiency (typ %) 115 / 230Vac
GXE600-24	24	19.2 - 28.8	4.8 - 28.8	25	600	92 / 95
GXE600-48	48	38.4 - 57.6	9.6 - 57.6	12.5	600	92 / 95

GXE600- | **24** | **/** | **A**

Output voltage 24, 48

blank	U channel chassis
/A	U channel chassis with cover
/HD	U channel chassis, ruggedized & pcb coating
/HDA	U channel chassis with cover, ruggedized & pcb coating

CUS600M and CUS600M1 Series

3 x 5” 600W AC-DC Power Supplies

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/cus-m

The compact CUS600M is packaged in the industry standard 3x5” footprint and can deliver 600W with forced air or 400W with a 600W peak power with convection cooling. With Medical & ITE certifications, the unit can used in both Class I & Class II (no ground wire) applications(1). A 5V 2A standby voltage, remote on/off, remote sense and a Power Good signal is standard on the CUS600M. Options include an internal fan and output adjustment. The CUS600M1 models offer a reduced feature set for cost optimization.

Features	Benefits
• 400W (600W Peak) Convection Cooled	• Quiet Operation
• 600W with Forced Air	• Can Utilize System Airflow or Integrated Fan
• Medical Certifications (2 x MOPP)	• Suitable for B and BF Type Medical Equipment
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Suitable for Class I and Class II installations (1)	• Flexible Utilization
• Compact 3 x 5 x 1.46” Size	• Space Saving in End Equipment
• Enclosure & Other Options	• Versatile Application

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (V) (Specify /ADJ option suffix*) (2)	Maximum Current Convection (A)	Maximum Current Forced Air (A)	Peak Current (A)	Maximum Power Convection (W)	Maximum Power Forced Air (W)
CUS600M-12	12	11.7 - 12.9	33.4	50.0	50.0	400.8	600.0
CUS600M-19	19	18.5 - 20.5	21.1	31.6	31.6	400.9	600.4
CUS600M-24	24	23.4 - 25.9	16.7	25.0	25.0	400.8	600.0
CUS600M-28	28	27.3 - 30.2	14.3	21.5	21.5	400.4	602.0
CUS600M-32	32	31.2 - 34.5	12.5	18.8	18.8	400.0	601.6
CUS600M-36	36	35.1 - 38.8	11.1	16.7	16.7	399.6	601.2
CUS600M-48	48	46.8 - 51.8	8.4	12.6	12.6	403.2	604.8

CUS600M- | 12 | / | EF

Features	CUS600M-	CUS600M1-
Standby Voltage	Yes	Not Available
Remote On/Off		
Remote Sense		
Power Good Signal		

Output voltage 12, 19, 24, 28, 32, 36, 48

blank	Open frame construction
/EF	Enclosed with end fan (exhaust air)*
/ADJ	Output adjustment potentiometer**
/SF	Single input fuse in line**

* /EF model has /ADJ included (CUS600M only)
** Not available for CUS600M1 models
Other options are available, please contact sales

CPFE1000F Series

720-1000W Conduction Cooled Power Supplies

Industrial COTS Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/cpfe

The CPFE1000F series of industrial AC-DC conduction cooled power supplies have an integral baseplate and offer output powers of up to 1008W. Features include voltage and current monitoring, remote on/off, remote sense, a standby supply, I²C monitoring and a wide operating temperature range of -40°C to +70°C. The CPFE1000F also complies with MIL-STD-810F vibration and MIL-STD-810E shock.

Features	Benefits
• Fanless	• Longer Field Life and No Fan Noise
• Integral Baseplate Cooling	• Conducts Heat Outside of the System Enclosure
• Wide Range AC Input	• Supports Global Use
• i²C Interface	• Allows Remote Monitoring

Model Selector

Model	Nominal Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Max Power (W) at 50°C
CPFE1000F-12	12	9.6 - 14.4	60	720
CPFE1000F-28	28	22.4 - 33.6	36	1008
CPFE1000F-48	48	38.4 - 57.6	21	1008

Derating Ambient Temperature (1)

Model	Input Voltage	Output Power (W) 50°C	60°C	70°C	85°C
CPFE1000F-12	85 - 170Vac	720	720	576	360
	170 - 265Vac	720	720	670	595
CPFE1000F-28	85 - 170Vac	1008	864	720	-
	170 - 265Vac	1008	1008	958	883
CPFE1000F-48	85 - 170Vac	1008	864	720	-
	170 - 265Vac	1008	1008	958	883

CPFE1000Fi Series

720-1000W Conduction Cooled Power Supplies

Industrial Test LED COMM Broadcast Renewable

Full Datasheet
https://product.tdk.com/en/power/cpfe

The CPFE1000FI series industrial AC-DC power supplies offer output power up to 1008W in a conduction cooled low profile package. Features include voltage and current programming, remote on/off, remote sense, a standby supply, I²C communication, and wide operating temperature range of -40°C to +70°C. The CPFE1000FI is designed to meet MIL-STD-810F vibration and shock.

Features	Benefits
• Smaller Size Than CPFE1000F	• Easier Integration For Industrial Systems
• Base Plate Cooled, No Fan Required	• Quiet Operation, Long Field Life
• Protective Coating Option	• Enables Use In Harsh Environments
• I²C Interface	• Allows Remote Monitoring

Model Selector

Model	Nominal Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Max Power (W) @ 45°C
CPFE1000FI-12	12	9.6 - 14.4	60	720
CPFE1000FI-28	28	22.4 - 33.6	36	1008
CPFE1000FI-48	48	38.4 - 57.6	21	1008

Part Numbering Scheme

CPFE1000FI	-	28	-

Series Name

12, 28, 48V

blank	U channel, no cover or coating
/C	U channel and cover, no coating
/P	Pcb only, no U channel or cover
/H	Pcb coating

Example: CPFE1000FI-28/CH

Output Power vs. Ambient Temperature (1)

Model	Input Voltage	Output Power (W) 30°C	40°C	45°C	50°C	60°C	70°C
CPFE1000FI-12/H, /P, /PH, /C, /CH	90V - 135Vac	720	720	720	720	720	720
	170V - 265Vac	720	720	720	720	720	720
CPFE1000FI-28/H, /P, /PH	90V - 135Vac	1008	1008	1008	1008	952	896
	170V - 265Vac	1008	1008	1008	1008	1008	1008
CPFE1000FI-28/C, /CH	90V - 135Vac	1008	952	952	896	840	784
	170V - 265Vac	1008	1008	1008	1008	1008	1008
CPFE1000FI-48/H, /P, /PH	90V - 135Vac	1008	1008	1008	1008	960	864
	70V - 265Vac	1008	1008	1008	1008	1008	1008
CPFE1000FI-48/C, /CH	90V - 135Vac	1008	960	960	912	864	816
	170V - 265Vac	1008	1008	1008	1008	1008	1008

CUS800M, 1000M and 1200M Series

1.67"High 800W to 1200W AC-DC Power Supplies

Medical Industrial Test LED Broadcast COMM

Full Datasheet
https://product.tdk.com/en/power/cus-m

The very compact CUS800M, CUS1000M and CUS1200M AC-DC power supplies have a low profile 1.67" (42.5mm) high package and can deliver 800W, 1000W or 1200W with efficiencies up to 95.5%. All models have medical (IEC 60601-1) and audio/video, information and communication technology equipment (IEC 62368-1) certifications. A variable speed fan, 5V 2A standby voltage, remote on/off, remote sense and a Power Good signal is standard.

Features	Benefits
• Medical Certifications (2 x MOPP)	• Generally required for B and BF Type Medical Equipment
• ≤0.250mA Leakage Current	• Simpler System Compliance
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Compact 1.67" Height	• Space Saving in End Equipment
• Variable Speed Cooling Fan	• Lower Audible Noise

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (V)	Maximum Current (A)	Peak Current (A)	Maximum Power (W)	Maximum Peak Power (W)	Efficiency 115 / 230Vac (%)
CUS800M-12	12	11.7 - 12.6	56.7	66.7	680.4	800.4	90.8 / 92.5
CUS1000M-12	12	11.7 - 12.6	66.7	83.4	800.4	1000.8	92 / 93.6
CUS800M-24	24	23.4 - 25.9	33.4	-	801.6	-	92 / 94
CUS1000M-24	24	23.4 - 25.9	41.7	-	1000.8	-	93 / 95
CUS1200M-24	24	23.4 - 25.2	50.0	-	1200	-	92.5 / 95
CUS800M-36	36	35.1 - 38.8	22.2	-	799.2	-	92.5 / 94.6
CUS1000M-36	36	35.1 - 38.8	27.8	-	1000.8	-	93.3 / 95.3
CUS1200M-36	36	35.1 - 37.8	33.3	-	1198.8	-	93 / 95.5
CUS800M-48	48	46.8 - 51.8	16.7	-	801.6	-	92.2 / 94
CUS1000M-48	48	46.8 - 51.8	20.9	-	1003.2	-	93.5 / 95.5
CUS1200M-48	48	46.8 - 50.4	25.0	-	1200	-	93 / 95.5

CUS1000M	-	12

CUS800M (680 to 800W)
CUS1000M (800 to 1000W)
CUS1200M (1200W)

Output voltage
12, 24, 36, 48
(1200W: 24, 36, 48)

RWS1000/1500–B Series

1000W to 1500W Single Output General Purpose Power Supplies

Industrial Test COMM LED Broadcast Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/rws-b

The RWS1000/1500-B are 1000W and 1500W rated AC-DC power supplies, designed to provide solid performance at an economical price. The series accepts a wide range 85 to 265Vac input with output voltages from 12V to 48V. They are certified to IEC62368-1 and EN62477-1 (OVC III). These 7-year warranty (1) products meet both class B radiated and conducted EMI standards. Option model features include an isolated 5V 1A standby voltage, remote on/off and an output-low/fan-fail isolated signal. Up to five units can be connected in parallel for additional power.

Features	Benefits
• Seven Year Warranty (1)	• Low Cost of Ownership
• Conservative Electrolytic Capacitor Ratings	• Long Service Life
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Configurable Output Screw Terminal Block Orientation	• Simplified Cable Connections
• Compact, Enclosed Construction	• Space Saving in End Equipment

Model Selector

Model	Voltage (V)	Adjustable Range (V)	Max Current (A)	Max Output Power (W)	Load Reg (mV)	Line Reg (mV)	Ripple Noise (mV)	Efficiency (typ at 115/230Vac) (%)
RWS1000B-12	12V	10.2-13.8V	84	1008	96	48	150	82 / 85
RWS1500B-12	12V	10.2-14.4V	125	1500	96	48	150	81 / 85
RWS1000B-15	15V	12.8-17.2V	67	1005	120	60	150	82 / 85
RWS1500B-15	15V	12.8-18.0V	100	1500	120	60	150	82 / 85
RWS1000B-24	24V	20.4-28.8V	42	1008	144	96	180	85 / 88
RWS1500B-24	24V	20.4-28.8V	63	1512	144	96	180	85 / 88
RWS1000B-36	36V	30.6-41.4V	28	1008	216	144	250	85 / 88
RWS1500B-36	36V	30.6-43.2V	42	1512	216	144	250	85 / 88
RWS1000B-48	48V	40.8-57.6V	21	1008	288	192	300	85 / 88
RWS1500B-48	48V	40.8-57.6V	32	1536	288	192	300	85 / 88

RWS1000B- | 12 | / | S

Output voltage 12, 15, 24, 36, 48

blank	Air enters over input/output terminals
/R	Remote On/Off
/FO	PF signal and parallel
/RFO	Remote ON/OFF, Power Fail signal and parallel operation
/RF	Reverse Fan, air exits over input/output terminals
/CO2	Conformal coating
/S	Standby 5V

RWS–B/ME Series

1000W to 1500W Single Output Medical Power Supplies

Medical

Full Datasheet
https://product.tdk.com/en/power/rws-b

The RWS1000/1500-B/ME are 1000W and 1500W rated AC-DC medical power supplies, designed to provide solid performance at an economical price. The series accepts a wide range 85 to 265Vac input with output voltages from 12V to 48V. These 7-year warranty(1) products are certified to the IEC60601-1 safety and IEC60601-1-2 Ed.4 immunity standards. The output to ground isolation (1x MOPP) is 1,500Vac, making the power supplies suitable for B and BF rated equipment.

Features	Benefits
• Seven Year Warranty(1)	• Low Cost of Ownership
• Conservative Electrolytic Capacitor Ratings	• Long Service Life
• Class A Conducted and Radiated EMI	• Easier System EMC Compliance
• Configurable Output Screw Terminal Block Orientation	• Simplified Cable Connections
• Medical Certifications (2 x MOPP)	• Suitable for B & BF Rated Equipment

Model Selector

Model	Voltage (V)	Adjustable Range (V)	Max Current (A)	Max Output Power (W)	Load Reg (mV)	Line Reg (mV)	Ripple & Noise (mV)	Efficiency (typ) % 115/230 Vac
RWS1000B-12/ME	12V	10.2-13.8V	84	1008	96	48	150	82 / 85
RWS1500B-12/ME	12V	10.2-14.4V	125	1500	96	48	150	81 / 85
RWS1000B-15/ME	15V	12.8-17.2V	67	1005	120	60	150	82 / 85
RWS1500B-15/ME	15V	12.8-18.0V	100	1500	120	60	150	82 / 85
RWS1000B-24/ME	24V	20.4-28.8V	42	1008	144	96	180	85 / 88
RWS1500B-24/ME	24V	20.4-28.8V	63	1512	144	96	180	85 / 88
RWS1000B-36/ME	36V	30.6-41.4V	28	1008	216	144	250	85 / 88
RWS1500B-36/ME	36V	30.6-43.2V	42	1512	216	144	250	85 / 88
RWS1000B-48/ME	48V	40.8-52.8V	21	1008	288	192	300	85 / 88
RWS1500B-48/ME	48V	40.8-52.8V	32	1536	288	192	300	85 / 88

RWS1000B- | 12 | / | ME

Output voltage 12, 15, 24, 36, 48

Medical

Option combinations are available, please contact your local sales office.

CUS1500M Series

1500W Medical and Industrial Power Supplies

Medical Industrial Test LED COMM Broadcast Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/cus-m

The CUS1500M are 1500W rated AC-DC power supplies with output voltages from 12V to 48V. They are certified to IEC60601-1 3rd edition (medical) and IEC62368-1 with compliance to the EN60601-1-2:2015 Edition 4 immunity requirements. The series is also certified to EN62477-1 (OVC III). These 7-year warranty(1) products feature low acoustic noise (<45dBA) and meet both class B radiated and conduction EMI standards. Features include an isolated 5V 1A standby voltage, remote on/off and an output-low/fan-fail isolated signal. Up to five units can be connected in parallel for additional power.

Features	Benefits
• Low Audible Noise Fan (<45dBA)	• Quiet Operation
• Medical Certification (2 x MoPP)	• Suitable for B and BF Rated Equipment
• Class B Conducted and Radiated EMI	• Easier System Compliance
• Compact 127 x 63 x 261mm (5 x 2.48 x 10.28") Package	• Space Saving in End Equipment
• Seven Year Warranty(1)	• Low Cost of Ownership

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)	Load Reg (mV)	Line Reg (mV)	Ripple & Noise (mV)	Efficiency (%) (115/230Vac)
CUS1500M-12	12	10.2 -14.4	125	1500	96	48	150	82 / 85
CUS1500M-15	15	12.8 - 18	100	1500	120	60	150	82 / 85
CUS1500M-24	24	20.4 - 28.8	63	1512	144	96	180	85 / 88
CUS1500M-36	36	30.6 - 43.2	42	1512	216	144	250	85 / 88
CUS1500M-48	48	40.8 - 52.8	32	1536	288	192	300	85 / 88

CUS1500M- 12 / RF

Output voltage 12, 15, 24, 36, 48

blank	Dual fuses, air enters over input/output terminals
/CO	Pcb coating
/SF	Single input fuse (Line)
/RF	Reverse fan, air exits over input/output terminals

Option combinations are available, please contact your local sales office

RFE1600 Series

1600W 1U Industrial Power Supplies

Industrial COTS Test COMM Broadcast PMBus

Full Datasheet
https://product.tdk.com/en/power/rfe

The RFE1600 AC-DC industrial power supplies are high efficiency and are 1U in height. They have internal ORing MOSFETs and current share for parallel operation. Communication is possible with the power supplies using the optional isolated PMBus™ (I²C) interface. AC fail, DC good, remote output adjust, remote on/off and a 12V auxiliary output are fitted as standard.

Features	Benefits
• Internal ORing MOSFET and Current Share	• Suitable For N+1 Redundancy
• Up to 1600W in 1U Height	• Utilizes Less System Space
• Full Array of Signals Available	• Easy Remote Monitoring
• PMBus™ (I²C)	• Industry Standard Communication Interface
• Analog Output Adjustment	• Simple External Resistance or Voltage Connection

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)(1)	Max Current (A) (100≤Vin≤132Vac)(2)	Max Power (W) (100≤Vin≤132Vac)(2)	Max Current (A) (Vin≥170Vac)(2)	Max Power (W) (Vin≥170Vac)(2)
RFE1600-12	12	9.6 - 13.2	92	1104	133	1596
RFE1600-24	24	19.2 - 29	46	1104	67	1608
RFE1600-32	32	25.6 - 38.4	34.5	1104	47	1504
RFE1600-48	48	38.4 - 58	23	1104	33	1584

RFE1600- 12 / S

Output voltage 12, 24, 32, 48

blank	No PMBus™ / I²C
S	PMBus™ / I²C interface

HWS1800T Series

1800W 208Vac 3-Phase Industrial Power Supplies

Industrial Test Broadcast COMM Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/hws

The ultra reliable, conservatively rated HWS1800T series of 1800W AC-DC power supplies has a limited lifetime warranty, unique to the industry. The series accepts a 3-phase 170 - 265Vac input with output voltages from 3.3V to 60V. The products are certified to IEC 62368-1 and are SEMI F47 compliant . They also meet conducted and radiated emission standards without additional filtering or shielding. Up to five units may be connected in parallel to support high power requirements. A remote programming function allows the output voltage to be adjusted by up to 20% to 120% of nominal using an external voltage or resistor. Peak power capability is available on output voltages 6V and higher.

Features	Benefits
• Limited Lifetime Warranty	• Low Cost of Ownership
• Very Conservative Electrolytic Capacitor Ratings	• Long Service Life
• Output Voltage Programming	• Enables Remote Voltage Adjustment
• Peak Power Capability	• Size and Cost Reductions Compared to Continuously Rated Products

Model Selector

Model	Voltage (V)	Adjustmet Range (V)[1]	Maximum Current (A)	Peak Current (A)[2]	Load Reg (mV)	Line Reg (mV)	Overvoltage (V)	Efficiency (200Vac) (%)
HWS1800T-3	3.3	2.64 - 3.96	300	-	60	36	4.12 - 4.62	75
HWS1800T-5	5	4.0 - 6.0	300	-	60	36	6.25 - 7.0	81
HWS1800T-6	6	4.8 - 7.2	250	300	60	36	7.5 - 8.4	82
HWS1800T-7	7.5	6.0 - 9.0	200	240	60	40	9.37 - 10.5	84
HWS1800T-12	12	9.6 - 14.4	125	150	72	48	15.0 - 17.4	84
HWS1800T-15	15	12.0 - 18.0	100	120	90	60	18.7 - 21.8	84
HWS1800T-24	24	19.2 - 28.8	75	105	144	96	30.0 - 34.8	88
HWS1800T-36	36	28.8 - 43.2	50	70	216	144	45.0 - 49.7	88
HWS1800T-48	48	38.4 - 52.8	37.5	52.5	288	192	55.2 - 60.0	90
HWS1800T-60	60	48.0 - 66.0	30	42	360	240	69.0 - 75.0	90

HWS1800T	-	3
Series		Output voltage 3 (3.3V), 5, 6, 7 (7.5V), 12, 15, 24, 36, 48, 60

RFE2500 Series

2500W 1U Industrial Power Supplies

Industrial COTS Test COMM Broadcast PMBus

Full Datasheet
https://product.tdk.com/en/power/rfe

The RFE2500 AC-DC industrial power supplies are high efficiency and 1U in height. They have internal ORing MOSFETs and current share for parallel operation. Communication is possible with the power supplies using the optional isolated PMBus™ (I²C) interface. AC fail, DC good, remote output adjust, remote on/off and a 12V auxiliary output are fitted as standard.

Features	Benefits
• Internal ORing FETs and Current Share	• Suitable For N+1 Redundancy
• Up to 2500W in 1U Height	• Utilizes Less System Space
• Full Array of Signals Available	• Easy Remote Monitoring
• PMBus™ (I²C)	• Industry Standard Communication Interface
• Analog Output Adjustment	• Simple External Resistance or Voltage Connection

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)[1]	Max Current (A) (100<Vin<132Vac)[2]	Max Power (W) (100<Vin<132Vac)[2]	Max Current (A) (170<Vin<180Vac)[2]	Max Power (W) (170<Vin<180Vac)[2]	Max Current (A) (Vin>180Vac)	Max Power (W) (Vin>180Vac)
RFE2500-12	12	9.6 - 13.2	125	1500	200	2400	200	2400
RFE2500-24	24	19.2 - 29	62.5	1500	96	2304	96	2304
RFE2500-48	48	38.4 - 58	31.25	1500	50	2400	52	2496

RFE2500-	12	/	S
	Output voltage 12, 24, 48		blank No PMBus™ / I²C S PMBus™ / I²C interface

HWS3000G Series

3,000W Programmable CVCC AC-DC Power Supplies

Industrial Test LED Broadcast COMM Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/hws-g

The compact HWS3000G AC-DC power supplies can deliver 1,500W with a low-line input voltage of 85 to 132Vac and 3,000W at high-line 170 to 265Vac. The nominal output voltages (24V, 48V, 60V or 130V) and output current are fully programmable (CV/CC) from zero up to their maximum rating. This can be achieved using a serial RS485 interface (MODBus protocol) or analog 1-5V or 4-20mA signal. Up to three units can be connected in series and / or ten units in parallel. The HWS3000G is packaged in a compact 270 x 150 x 61mm (10.6 x 5.9 x 2.4") footprint and has conservatively rated electrolytic capacitor temperatures for long field life. The warranty period is seven years(1).

Features	Benefits
• Serial or Analog Programming (CV/CC)	• Choice of Programming Interfaces
• Series and/or Parallel Operation	• Scalable Voltage and Current
• Compact 270 x 150 x 61mm (10.6 x 5.9 x 2.4") Footprint	• Space Saving in End Equipment
• Single and Three Phase Models (See Related Products)	• Global Use
• Seven Year Warranty(1)	• Low Cost of Ownership
• Optional Board Coating & Ruggedization	• Designed to meet MIL-STD-810G (Shock and Vibration) (HD Option Code)

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (Potentiometer) (V)	Output Adustment (Programming) (V)	Output Current (A) (85 - 132Vac Input) (Programming)	Output Current (A) (170 - 265Vac Input) (Programming)	Max Power (85 - 132Vac) (W)	Max Power (170 - 265Vac) (W)	Efficiency (115 / 230Vac) (%)
HWS3000G-24	24	19.2 - 28.8	0 - 28.8	0 - 62.5	0 - 125	1500	3000	89 / 91
HWS3000G-48	48	38.4 - 52.8	0 - 52.8	0 - 31.3	0 - 62.6	1502.4	3004.8	90 / 92
HWS3000G-60	60	48.0 - 66.0	0 - 66.0	0 - 25	0 - 50	1500	3000	90 / 92
HWS3000G-130	130	104.0 - 156.0	0 - 156.0	0 - 11.6	0 - 23.2	1508	3016	91 / 93

HWS3000G - 24 / HD

- HWS3000G: Series
- 24: Output voltage 24, 48, 60, 130
- HD: Option Code

Option Code	
Blank	No Options
HD	Board coating + MIL-STD-810
RF	Reverse Fan (Intake Airflow)

Related Products

Type	Part Number(s)	Description
EMC filter	RSMN-2030	High attenuation 30A 250Vac two stage filter
3kW Programmable Power Supplies	HWS3000GT	3 phase 170- 265Vac input
100-800W Programmable Power Supplies	Z+ Low Voltage	Z+ 10V to 100V Programmable Power Supplies
100-800W Programmable Power Supplies	Z+ High Voltage	Z+ 160V to 650V Programmable Power Supplies
Wiring harness	HA-15-C	See instruction manual for details
Wiring harness	HA-16-C	See instruction manual for details
Wiring harness	HA-17-C	See instruction manual for details
Wiring harness	HA-18-C	See instruction manual for details

HWS3000GT Series

Three phase input 3,000W Programmable CVCC AC-DC Power Supplies

Industrial Test LED Broadcast COMM Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/hws-g

The compact HWS3000GT AC-DC power supplies can deliver 3,000W with a 3-three phase input voltage of 170 - 265Vac. The nominal output voltages (24V, 48V, 60V, 80V, 130V or 250V) and output current are fully programmable from zero up to their maximum rating. This can be achieved using a serial RS485 interface (MODBus protocol) or analog 1-5V or 4-20mA signal. Up to three units can be connected in series and / or ten units in parallel. The HWS3000GT is packaged in a compact 270 x 150 x 61mm (10.6 x 5.9 x 2.4") footprint and has conservatively rated electrolytic capacitor temperatures for long field life. The /HD option code includes dual sided board coating and designed to meet shock and vibration for MIL-STD-810G. The warranty period is seven years(1).

Features	Benefits
• Serial or Analog Programming (CV/CC)	• Choice of Programming Interfaces
• Series and/or Parallel Operation	• Scalable Voltage and Current
• Compact 270 x 150 x 61mm (10.6 x 5.9 x 2.4") Footprint	• Space Saving in End Equipment
• Single and Three Phase Models (See Related Products)	• Global Use
• Seven Year Warranty(1)	• Low Cost of Ownership
• Optional Board Coating & Ruggedization	• Designed to meet MIL-STD-810G (Shock and Vibration) (HD Option Code)

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (Potentiometer) (V)	Output Adustment (Programming) (V)	Output Current (A) (3-phase 170 - 265Vac Input) (Programming)	Max Power (3-phase 170 - 265Vac Input) (W)	Efficiency (220 / 230Vac) (%)
HWS3000GT-24	24	19.2 - 28.8	0 - 28.8	0 - 125	3000	91
HWS3000GT-48	48	38.4 - 52.8	0 - 52.8	0 - 62.6	3004.8	92
HWS3000GT-60	60	48.0 - 66.0	0 - 66.0	0 - 50	3000	92
HWS3000GT-80	80	64.0 - 96.0	0 - 96.0	0 - 37.5	3000	92
HWS3000GT-130	130	104.0 - 156.0	0 - 156.0	0 - 23.2	3016	93
HWS3000GT-250	250	200.0 - 300.0	0 - 300.0	0 - 12.0	3000	93

HWS3000GT - 24 / HD

- HWS3000GT: Series
- 24: Output voltage 24, 48, 60, 80, 130, 250
- HD: Option Code

Option Code	
Blank	No Options
HD	Board coating + MIL-STD-810
RF	Reverse Fan (Intake Airflow)

Related Products

Type	Part Number(s)	Description
EMC filter	RTMN-5020	High attenuation 20A 500Vac two stage filter
3kW Programmable Power Supplies	HWS3000G	Single phase 85 - 265Vac input
100-800W Programmable Power Supplies	Z+ Low Voltage	Z+ 10V to 100V Programmable Power Supplies
100-800W Programmable Power Supplies	Z+ High Voltage	Z+ 160V to 650V Programmable Power Supplies

High Voltage 3-phase input 3,000W Programmable CVCC AC-DC Power Supplies

Industrial · Test · LED · Broadcast · COMM · Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/hws-g

The compact HWS3000GT4 AC-DC power supplies can deliver 3,000W with a 3-three phase input voltage of 340 - 528Vac. The nominal output voltages (24V, 48V, 60V, 80V, 130V and 250V) and output current are fully programmable from zero up to their maximum rating. This can be achieved using a serial RS485 interface (MODBus protocol) or analog 1-5V or 4-20mA signal. Up to three units can be connected in series and / or ten units in parallel. The HWS3000GT4 is packaged in a compact 270 x 150 x 61mm (10.6 x 5.9 x 2.4") footprint and has conservatively rated electrolytic capacitor temperatures for long field life. The warranty period is seven years(1).

Features	Benefits
• Serial or Analog Programming (CV/CC)	• Choice of Programming Interfaces
• Series and/or Parallel Operation	• Scalable Voltage and Current
• Compact 270 x 150 x 61mm (10.6 x 5.9 x 2.4") Footprint	• Space Saving in End Equipment
• Single and Three Phase Models (See Related Products)	• Global Use
• Seven Year Warranty(1)	• Low Cost of Ownership

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (Potentiometer) (V)	Output Adustment (Programming) (V)	Output Current (A) (3-phase 340 - 528Vac Input) (Programming)	Max Power (W) (3-phase 360 - 528Vac Input)*	Efficiency (%) 400 / 480Vac
HWS3000GT4-24	24	19.2 - 28.8	0 - 28.8	0 - 125	3000	91
HWS3000GT4-48	48	38.4 - 52.8	0 - 52.8	0 - 62.6	3004.8	92
HWS3000GT4-60	60	48.0 - 66.0	0 - 66.0	0 - 50	3000	92
HWS3000GT4-80	80	64.0 - 96.0	0 - 96.0	0 - 37.5	3000	92
HWS3000GT4-130	130	104.0 - 156.0	0 - 156.0	0 - 23.2	3016	93
HWS3000GT4-250	250	200.0 - 300.0	0 - 300.0	0 - 12.0	3000	93

*Derate output linearly below 360Vac input from 100% to 70% load
Ambient temperature 25°C, nominal output voltage, maximum output power

HWS3000GT4	-	24
Series		Output voltage 24, 48, 60, 80, 130, 250

Related Products

Type	Part Number(s)	Description
3kW Programmable Power Supplies	HWS3000G	Single phase 85 - 265Vac input
3kW Programmable Power Supplies	HWS3000GT	Three phase 170 - 265Vac input
Wiring harness	HA-15-C	See instruction manual for details
Wiring harness	HA-16-C	
Wiring harness	HA-17-C	
Wiring harness	HA-18-C	

3200W 3-Phase Input Industrial Power Supplies

Industrial · COTS · Test · COMM · Broadcast · PMBus

Full Datasheet
https://product.tdk.com/en/power/tps

The TPS3000 series industrial AC-DC power supplies offer output power up to 3,200W in a 2U high package with 3 phase supply input. Features include voltage and current programming, remote on/off, remote sense, a standby supply, PMBus™ communication, built in ORing FET and wide operating temperature range of -40°C to +70°C. The TPS3000 is also designed to meet MIL-STD-810F vibration and shock.

Features	Benefits
• 400/440/480Vac (Nominal) 3 Phase Delta or Wye	• Global Use
• Fully Regulated, Wide Range Voltage Adjustment	• Versatile Application
• Voltage and Current Programming	• Flexible Control and Adjustment
• -40°C (start up) to +70°C Operation	• Suitable for Rugged Environments
• 92% Typical Efficiency	• Less Energy Used
• PMBus™ Communication	• Remote Output Programming and Monitoring
• Built in ORing FET for Parallel Operation	• Suitable for N + 1 Redundancy

Model Selector

Model	Nominal Output Voltage (V)	Adjustment Range (V) (1)	Maximum Current (A)	Maximum Power (W)	Max Current (A) (2)	Maximum Power (W) (2)
TPS3000-24	24	19.2 - 28.5	125	3000	133.3	3200
TPS3000-48	48	38.4 - 56.5	66.7	3200	66.7	3200

*Wider range adjustment as stated on the UL safety files are possible, although some parameters might not meet some of the listed specifications.

Related Products

Type	Part Number	Description
EMC filter	RTMN-5020	High attenuation 20A 500Vac 3-phase input two stage filter

Specifications

Model		TPF3000
Input		
Input Voltage range	Vac	350 - 528, Delta or Wye 3 phase (Note: Safety certified for 400-480Vac only)
Input Frequency	Hz	47 - 63 (Note: Safety certified for 50 to 60Hz only)
Input Current (At nominal Vin)	A	6 per phase (steady state)
Inrush Current at 400-480Vac (Cold Start)	A	<15 per phase (excluding initial filter capacitor charging <2ms)
Dropped Phase Power	W	Output Power 1290; output power increases with input voltage
Leakage Current (RMS)	mA	<3
Power Factor (400-480Vac)	-	0.92 typical at rated load, nominal Vin
Harmonics	-	Not applicable
Hold Up Time (typ)	ms	>10 at 80% of rated current, nominal input/output voltage
Efficiency (Typical)	%	92
Conducted & Radiated EMI	-	EN55022 Class A, FCC part 15 Class-A
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark and UKCA
Voltage Dips	-	SEMI F47-0706

2000 to 4080W 3-Phase Input Industrial Power Supplies

COTS · Industrial · Test · COMM · Broadcast · PMBus

Full Datasheet
https://product.tdk.com/en/power/tps

The TPS series industrial AC-DC power supplies offer output power up to 4,080W in a 2U high package with 3 phase supply input. Features include voltage and current programming, remote on/off, remote sense, a standby supply, PMBus™ communication, built in ORing FET and wide operating temperature range of -40°C to +70°C. The TPS4000 is also designed to meet MIL-STD-461F/G RE102 EMI and MIL-STD-810F vibration and shock. Designed to meet MIL-STD 1399 section 300B (Electric Power Characteristics)

Features	Benefits
• 400/440/480Vac (Nominal) 3 Phase Delta or Wye	• Global Use
• Fully Regulated, Wide Range Voltage Adjustment	• Versatile Application
• Voltage and Current Programming	• Flexible Control and Adjustment
• -40°C (start up) to +70°C operation	• Suitable for Rugged Environments
• 92% Typical Efficiency	• Less Energy Used
• PMBus™ Communication	• Remote Output Programming and Monitoring
• Built in ORing FET for parallel operation	• Suitable for N + 1 Redundancy

Model Selector

Model	Nominal Output Voltage (V)	Adjustment Range (V)	Max Current (A)	Max Power (W)	Max Current at Nominal Voltage (A)	Max Power at Nominal Voltage (V)
TPS4000-12	12	9.6 - 14.1	166	2000	170	2040
TPS4000-24	24	19.2 - 28.5	166	4000	170	4080
TPS4000-48	48	38.4 - 58	83.3	4000	85	4080

*Wider range adjustment as stated on the UL safety files are possible, although some parameters might not meet some of the listed specifications.

Related Products

Type	Part Number	Description
EMC filter	RTMN-5020	High attenuation 20A 500Vac 3-phase input two stage filter

Specification

Model		TPS4000-12	TPS4000-24	TPS4000-48
Input				
Input Voltage Range (Operating)	Vac	350 - 528, Delta or Wye 3 phase		
Nominal Input Voltage Range	Vac	400 - 480, Delta or Wye 3 phase (Note: Safety certified for 360-528Vac only)		
Input Frequency	Hz	47 - 63		
Input Current (At nominal Vin)	A	5	8	8
Inrush Current at 400-480Vac (Cold Start)	A	<25 per phase (excluding initial filter capacitor charging <2ms)		
Dropped Phase Power	W	12V: 1200, 24-48V: 1600 Not recommended for long term operation		
Leakage Current (RMS)	mA	<3		
Power Factor (400-480Vac, typ at full load)	-	0.88	0.92	
Harmonic Compliance	-	Not applicable		
Hold Up Time (typ)	ms	>10 at 80% of rated current, nominal input/output voltage		
Efficiency (Typical)	-	85	92	92
Conducted & Radiated EMI	-	EN55032-A Conducted and radiated (In end system)		
Immunity	-	EN61000, see immunity table. MIL-STD-461F/G CS101, CS114 (Army Ground), CS115, CS116		
Line Dip	-	SEMI F47-0706 at 480Vac nominal (Criteria B)		
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, 60950-1, CE and UKCA Marks		

4600W Single or Dual Output, 3Φ Input Industrial Power Supplies

Industrial · COTS · Test · COMM · Broadcast · PMBus

Full Datasheet
https://product.tdk.com/en/power/tps

The TPS4500 series of industrial AC-DC power supplies offer output power levels up to 4600W in a 2U high package with a 3 phase 360 - 528Vac supply input. The power supply can be used as a single or a dual output, sharing the loads in any proportion up to the rated output. Power Supplies can be connected in series, or in parallel, to increase the output voltage or power. Features include voltage and current programming (CV / CC operation), remote on/off, a standby supply, PMBus™ communication, and a wide operating temperature range of -40°C to +70°C. The TPS4500 is also designed to meet MIL-STD-810H vibration and shock.

Features	Benefits
• 400/440/480Vac (Nominal) 3 Phase Delta or Wye	• Global Use
• Wide Range Adjustable Dual Outputs	• Versatile Application
• Voltage and Current Programming (CV / CC mode)	• Flexible Control and Adjustment
• -40°C (start up) to +70°C operation	• Suitable for Rugged Environments
• 93% Typical Efficiency	• Less Energy Used
• PMBus Communication	• Remote Output Programming and Monitoring

Model Selector

Model	Nominal Output Voltage (V)	Voltage Adjust (V) Using Trim Potentiometer	Voltage Adjust (V) Using Voltage Programming	Voltage Adjust (V) Using PMBus	Rated Current (A)	Maximum Current [1] (A)	Rated Power (W)	Max Power (W) at Nominal Voltage
TPS4500-92/184	92	55 - 96.5	55 - 96.5	10 - 96.5	49	50	4500	4600
TPS4500-92/184	184	110 - 193	110 - 193	20 - 193	24.5	25	4500	4600
TPS4500-110/220	110	88 - 132	66 - 132	12 - 132	41	41.8	4500	4600
TPS4500-110/220	220	176 - 264	132 - 264	24 - 264	20	20.9	4500	4600

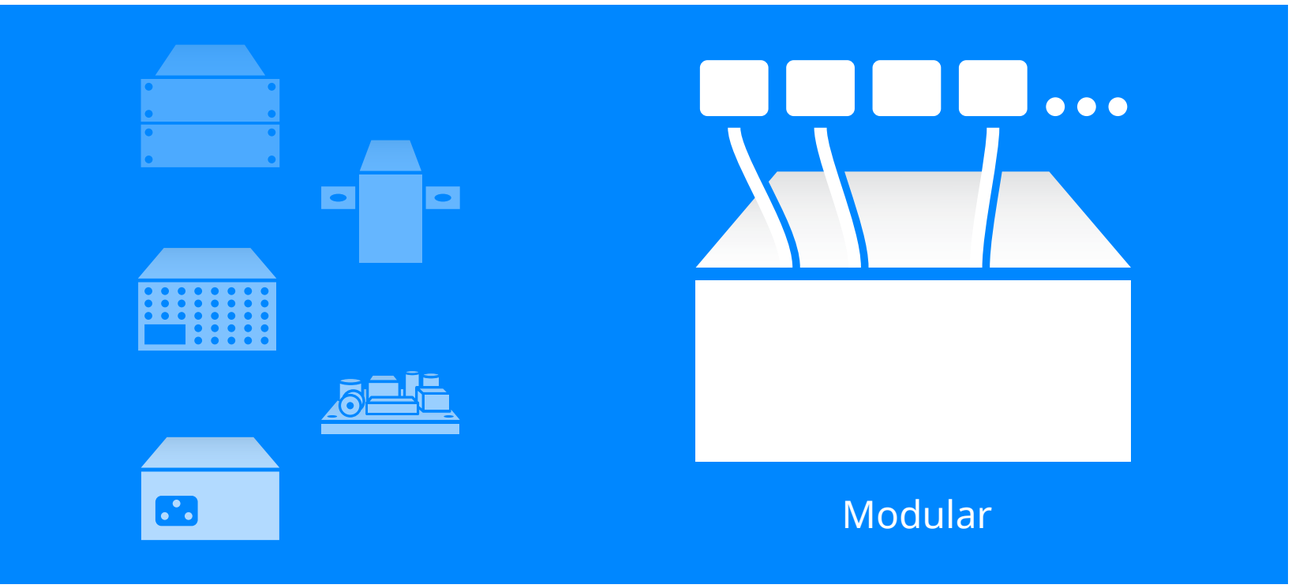
Related Products

Type	Part Number	Description
EMC filter	RTMN-5020	High attenuation 20A 500Vac 3-phase input two stage filter

Specifications

Model		TPS4500
Input		
Input Voltage Range (Operating)	Vac	360 - 528, Delta or Wye 3 phase
Nominal Input Voltage Range	Vac	400 - 480, Delta or Wye 3 phase (Note: Safety certified for 360-528Vac only)
Input Frequency	Hz	47 - 63 (Note: Safety certified for 50 to 60Hz only)
Input Current (At nominal Vin)	A	9 per phase (steady state)
Inrush Current at 400-480Vac (Cold Start)	A	<25 per phase (excluding initial filter capacitor charging <2ms)
Dropped Phase Power (400 / 480Vac)	W	2250 / 2925
Leakage Current (RMS)	mA	<3
Power Factor (400-480Vac)	-	0.92 typical at rated load, nominal Vin
Harmonics	-	Not applicable
Hold Up Time	ms	>10 at 80% of rated current, nominal input/output voltage
Efficiency (Typical)	%	93
Conducted & Radiated EMI	-	EN55032-A Conducted and radiated in end system
Immunity	-	EN61000-4, see immunity table.
Line Dip	-	SEMI F47-0706 at 480Vac nominal (Criteria B)
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, CE Mark and UKCA Mark

AC/DC Modular



Applications

- Equipment needing several different or uncommon output voltages
- Systems with different output voltage requirements in same package style

Features

- 350W to 2000W output power
- 1 to 18 separate output voltages
- Single-phase, wide-range input
- Broad range of output voltages from 0.5V to 105.6VDC
- Signal options on primary and secondary side
- Filter options with low leakage current for medical applications
- Cooling with integrated low noise fans or external airflow (customer air)
- Safety approvals for international use
- Fast time to market
- Easy to configure with Quick Product Finder on TDK-Lambda website
- Combining outputs in parallel (for increased current or N+1 redundancy) and series (for increased output voltage) is possible with many of the product ranges, contact technical support for details

In Everything, Better

AC/DC Modular Index by Wattage

Wattage	Number of Outputs	Series	Page
350-1150W	1-8	NV350/700	48
450-900W	1-10	Vega	49
550-900W	1-10	Vega-Lite	50
600-1500W	1-13	MU	51
550-2000W	1-18	QM	53-54

Listed by Wattage

350W-1150W Modular Power Supplies

Features
- 1U Form Factor
- Up to 90% Efficient
- Active Power Factor Correction
- Universal Input (90 - 264VAC)
- Up to 8 Outputs (6 for the NV350)
- No Minimum Loads
- Medical Certifications
- Peak power rating of up to 1450W

Medical Industrial Test COMM Broadcast Renewable RoHS

Full Datasheet
https://product.tdk.com/en/power/nv

Specifications

Model		NV3	NV7
Output Power	W	350W (660W >180VAC input)	700W (1150W >150VAC input)
Peak Power (Up to 10s)	W	520W (740W >180VAC input)	850W (1450W >150VAC input)
Input Voltage range	VAC	90 - 264VAC (47 - 63Hz, 440Hz with reduced PFC)	
Inrush Current (25°C, Cold Start)	A	<15	<40
Power Factor Harmonics	-	EN61000-3-2 Compliant	
Line Regulation	-	< 0.1% for 90-264VAC input change	
Load Regulation (0-100% change)	-	B, BH Modules: < 1%, DB modules output 2: <2%, DA Modules: <3%	
Cross Regulation	-	< 0.1% for 100% load change on any output, (DA module CH1<0.2%, CH2<3%)	
Ripple & Noise	mV	1% or 50mV, whichever is greater	
Efficiency	-	Up to 90%, configuration dependant	
Minimum Load	A	None	
Overcurrent Protection	-	110 - 150%, hiccup mode (Primary limited)	
Overvoltage Protection	V	Yes	
Overtemperature Protection	-	Yes, recycle AC to reset	
Hold Up Time (Typ at 90VAC Input)	ms	>16ms (12ms for NV700 with >700W output power)	
Leakage Current (1)	µA	130µA 120VAC, 60Hz, 260µA 240VAC 60Hz	
Remote Sense	-	Standard on single output modules and output 1 on DB module only	
Module Good	-	Open collector, on indicates output is good (N/A on DA modules)	
Module Inhibit	-	TTL logic level high inhibits the module (both outputs on DB outputs)(2)	
AC Fail (Specify as option)	-	High on fail	
Operating Temperature	-	0 to +70°C. Derate linearily to 50% load from 50°C to 70°C(3)	
Storage Temperature	-	-40 to +85°C	
Humidity (non condensing)	-	5 - 95% RH	
Cooling	-	Internal fan or 1m/s with system supplied air (NV3 only)	
Isolation	-	Input to Output 4.3kVAC, 5.7kVDC(5)(7), (2 x MOPPs (3rd edition 60601)), Input to Output 4.3kVDC(6), (2 x MOOPs (3rd edition 60601)), Input to Ground 2.3kVDC, Output to Ground 200VDC(8)	
Vibration (non operating)	-	2G, 10-500Hz (sweep & endurance at resonance) in all 3 planes	
Shock	-	30G per IEC68-2-27	
Safety Agency Certifications	-	UL/CSA/IEC/EN 60950-1, UL/CSA/IEC/EN 60601-1, ANSI/AAMI ES60601-1; IEC/EN 61010-1; CE Mark	
Immunity	-	EN50082-2: EN61000-4-2, -3, -4, -5, -6, -8, -11	
Conducted Emissions and Flicker	-	EN55011, EN55022 Class B (per CISPR.22), EN61000-3-3	
Radiated Emissions	-	EN55011, EN55022 Class B (per CISPR.22)(4)	
Weight (Typ)	g	800	1160
Size	in	1.6 x 3.75 x 10.8”	1.6 x 4.92 x 10.8
Warranty	yrs	Three Years	

(1) Worse case: <300µA 264VAC, 63Hz (normal condition, <500µA single fault condition)
(2) Output 2 remote on/off inhibits just Output 2 of DB module
(3) -20°C cold start, derate from 45C for NV7 when input voltage < 100VAC
(4) See application note for Class B
(5) C, CC, CM modules only
(6) Units with any other module or primary option fitted
(7) Type tested to 4kVAC (equivalent to 5.7VDC), production tested to 4.3 kVDC
(8) CM modules are rated 500VAC output to ground.

450-900W Multiple Output Modular Power Supply

Features
- Up to 11 Outputs
- Forward/Reverse/Low Noise/System Air Cooling
- Output Voltages From 0.5V - 62V
- 48VDC Input Option
- Medical Approval Options
- MIL-STD-810 Shock and Vibration
- PFC compliant to EN61000-3-2
- Safety Agency Approvals EN, cULus, BSI, CE

Medical Industrial Test COMM Broadcast Renewable RoHS

Full Datasheet
https://product.tdk.com/en/power/vega

Specifications

Model		VEGA 450	VEGA 650	VEGA 900
Input Voltage Range (47-440Hz with reduced PFC)	-	90 - 264VAC 47-63Hz(1) or 34-75VDC	90-264VAC 47-63Hz(1)	150-264VAC 47-63Hz
Input Current (Typ. at 90VAC)	A	7.7A	11A	9.2A at 150VAC
Efficiency (Typ.)	%	75% at 230VAC (or 48VDC) and full load, configuration dependent		
Nominal Output Voltages	VDC	0.5 - 62 (See configuration guide)		
Output Voltage Adjustment	-	Wide range, via potentiometer or remote adjust pin, module dependent		
Minimum Load	A	0A		
Max Output Power	W	450(2)	650	900
Max Ripple & Noise (pk-pk)	mV	<1% (or 50mV which ever is greater) using EIAJ test method & 20MHz bandwidth		
Regulation (load, line, cross)	%	Less than 0.5%		
Hold Up Time	ms	16ms min at 90VAC (150VAC for 900W, 10ms for 450WDC input)		
Over Voltage Protection	%	120 - 150% (See website for more details)		
Overload/Short Circuit	%	105-125%, constant current characteristic, 150% max short circuit current.		
Remote ON/OFF Control	-	A TTL compatible signal will turn ON/OFF all output modules (optional)		
Remote Sense	V	Compensates for total of 0.75V total line drop (optional on dual output modules)		
Isolation (3)	-	Input-Output 4.3kVDC(3); (2 x MOPPs (3rd edition 60601)), Input-Ground 2.3kVDC; Output-Ground 200VDC		
Conducted EMI	-	EN55022 Class B, (as per CISPR .22), Class A for 48V input		
Radiated EMI	-	EN55022 Class B, (as per CISPR .22)		
Operating Temperature	°C	0°C to 50°C, derate ea. output @ 2.5%/°C from 50°C to 65°C.(4) Consult factory for 70°C operation. -20°C startup requires a 30 min. warm-up period.		
Cooling	-	Forced Air Cooled		
Dynamic Load Response	-	<6% or 300mV of set voltage for 50% load change (above 25% load), recovery to within 1% of nominal within 500 µs		
Safety Agency Approvals (601-1 not available on 48V input)	-	UL/CSA/IEC/EN 60950-1, UL/CSA/IEC/EN62368-1, UL/CSA/IEC/EN 60601-1, ANSI/AAMI ES60601-1, IEC/EN 61010-1, CE Mark		
Vibration	G	MIL-STD-810E, Method 514.4,Pro I, Cat 1, 9 2G, 10-200Hz sweep for 1hr to search for resonant. 6G random, 6-Axis to IEC68-2-64		
Shock	G	MIL-STD-810F, Method 516.5, Pro I, IV, VI; 20G per IEC68-2-27		
Switching Frequency	kHz	200		
Weight (Typ.)	lbs	3.0 lbs. + 0.25 lbs. / used slot; maximum # of slots =5		
Size (L×W×H)	in(mm)	10.6” x 5” x 2.5” (270.65mm x 126.5mm x 62.8mm)		
Warranty	yrs	3 Years		

Consult datasheet and application notes for detailed specifications and test methods.
(1) Will operate with 130-330VDC, CE Mark safety approval only applies.
(2) DC Input <44V input 370W
(3) 4kVAC Type tested (non-production test). Refer to CB Report
(4) 450WDC 1.5%/°C

550-900W Multiple Output Modular Power Supply

Features
- Suitable for higher volume applications
- Up to 11 Outputs
- Output Voltages From 1.8 - 56V
- Medical Approval Options
- MIL-STD-810 Shock and Vibration
- PFC compliant to EN61000-3-2
- Safety Agency Approvals EN, cULus, BSI, CE

Medical Industrial Test COMM Broadcast Renewable RoHS

Full Datasheet
https://product.tdk.com/en/power/vega

Specifications

Model			VEGA Lite 550	VEGA Lite 750
IInput Voltage Range	(1)	-	85-264VAC 47-63Hz(2)	85-264VAC 47-63Hz(2)
Efficiency (Typ.)		%	75% at 230VAC and full load, configuration dependent	
Nominal Output Voltages		VDC	1.8 - 56V (See page 2)	
Output Voltage Adjustment		-	Wide range, via potentiometer or remote adjust pin, module dependent	
Minimum Load		A	0A	
Max Output Power	(3)	W	700(3)	900(3)
Max Ripple & Noise (pk-pk)		mV	<1% (or 50mV which ever is greater) using EIAJ test method & 20MHz bandwidth	
Regulation (load, line, cross)		%	Less than 0.5%	
Hold Up Time		ms	16ms min at 100VAC and full load	
Over Voltage Protection		%	120% - 150% (See website for more details)	
Overload/Short Circuit		%	105-125%, constant current characteristic, 150% max short circuit current	
Remote ON/OFF Control		-	A TTL compatible signal will turn ON/OFF all output modules (optional)	
Remote Sense		V	Compensates for total of 0.75 volts total line drop (optional on dual output modules)	
Isolation	(4)	-	Input-Output 4.3kVDC(4); (2 x MOPPs (3rd edition 60601)); Input-Ground 2.3kVDC; Output-Ground 200VDC	
Conducted EMI		-	EN55022 Class B, (as per CISPR .22)	
Radiated EMI		-	EN55022 Class B, (as per CISPR .22)	
Operating Temperature		°C	0°C to 50°C, derate ea. output @ 2.5%/°C from 50°C to 65°C. Consult factory for 70°C operation. -20°C startup requires a 30 min. warm-up period.	
Cooling		-	Internal fan	
Dynamic Load Response		- -	<6% or 300mV of set voltage for 50% load change (above 25% load), recovery to within 1% of nominal within 500 microseconds.	
Safety Agency Approvals		-	UL/CSA/IEC/EN 60950-1, UL/CSA/IEC/EN62368-1, UL/CSA/IEC/EN 60601-1, ANSI/AAMI ES60601-1, IEC/EN 61010-1, CE Mark	
Vibration		G	MIL-STD-810E, Method 514.4,Pro I, Cat 1, 9 2G, 10-200Hz sweep for 1hr to search for resonant. 6G random, 6-Axis to IEC68-2-64	
Shock		G	MIL-STD-810F, Method 516.5, Pro I, IV, VI; 20G per IEC68-2-27	
Switching Frequency		kHz	200	
Weight (Typ.)		lbs	3.0 lbs. + 0.25 lbs. / used slot; maximum # of slots =5	
Size (L×W×H)		in(mm)	10.6” x 5” x 2.5” (270.65mm x 126.5mm x 62.8mm)	
Warranty		yrs	3 Years	

Consult datasheet and application notes for detailed specifications and test methods.
(1) 440Hz with reduced PFC, consult factory
(2) Will operate with 130-330VDC, CE Mark safety approval only applies.
(3) See input derating curves
(4) 4kVAC type tested (non-production test). Refer to CB report

600W / 800W 1U Modular Power Supplies

Medical Industrial Test COMM Broadcast Renewable

Full Datasheet
https://product.tdk.com/en/power/mu

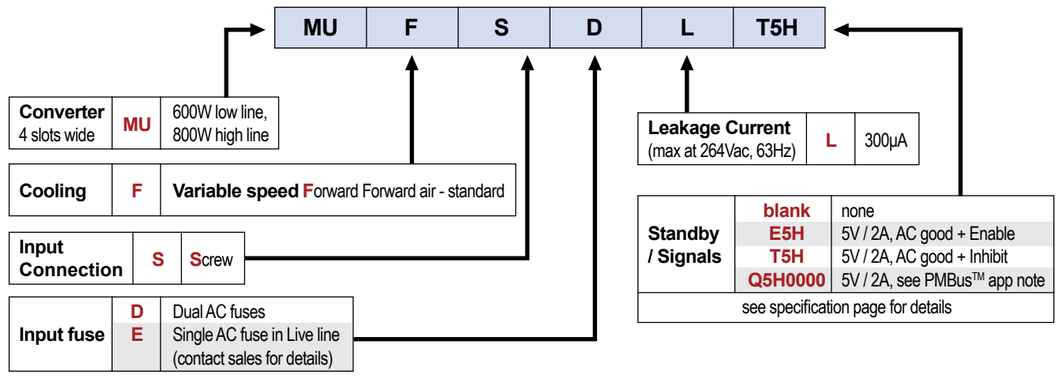
The 1U high modular MU Series AC-DC power supply measures 41 x 89 x 254mm, providing 600 to 800W and up to 5 outputs with a seamless 3.3 – 104V range, the MU employs a patent pending intelligent fan control circuit, rated down to 36dBA for low audible noise requirements. The series has 2 MOPP (4kVac) input to output, 1 MOPP (1.5kVac) input to ground, and 1 MOPP (1.5kVac) output to ground isolation, making it suitable for BF (body floating) rated equipment. Optional PMBus™ communication is available, while the modular construction allows for flexible non-standard output voltage combinations, omitting engineering charges and minimizing the risk of development delays. Creating MU products is very easy using the online configurator: https://config.emea.tdk-lambda.com/.
It provides an optimized module selection with your choice of remote on/off and AC fail signals. Entering your parameters of choice (voltages/currents/standby) will yield an eight character code for easy order placement.

Features	Benefits
• Extremely low audible noise fan	• Enhanced patient / user experience
• BF ready medical isolation (MOPP)	• Eases design into systems (including BF)
• Up to 5 outputs	• Eliminates need for additional supplies
• PMBus™ communication option	• Remote monitoring and control
• 7 year warranty	• Low cost of ownership

How To Create A Product Description

The extensive range of output modules and options make it possible to achieve almost any combination of Volts and Amps. You can create your own MU configuration online at https://config.emea.tdk-lambda.com/. This method checks your configuration and offers the optimum solution. Alternatively, you can do this manually by using the guide below.

1. Calculate total output power to select the appropriate converter, then select the required Cooling, Input Connection, Input Fuse, Leakage Current and Controls/Signals from the following table:
2. Select Output Modules using the output voltages tables and the module specifications.
3. Contact TDK-Lambda to validate configuration and issue a part number.

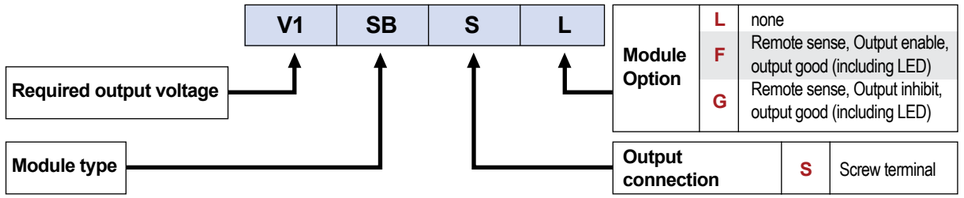


Possible Outputs - see individual module data for full specifications

Module Name	Slots Used	Output Voltage Range	Maximum Output Current	Maximum Output Power
SB	1	3.3V - 6V	30A	150W
ZC	2	3.3V - 6V	54A	260W
SB	1	6V - 15V	20A	240W
YC	2	6.6V - 12V	30A	300W
YC	2	12V - 30V	20A	480W
SB	1	15V - 30V	10A	240W
SB	1	30V - 52V	5A	240W
YC	2	30V - 60V	10A	480W
YC	2	60V - 104V	5A	480W

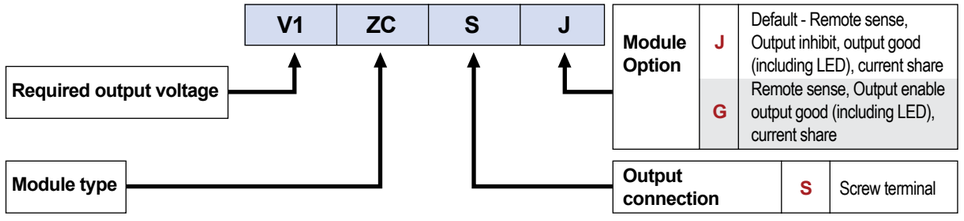
Choose your required output voltage (from the table above)

For example, if you need 12V / 20A with remote sense, you would choose **12 BSF** or **G** as your required module.



If you need 48V / 10A with remote sense, you would choose **48YCSG or F** as your required module.

If you need 3.3V / 54A with remote sense, as shown below you would choose **3.3ZCSJ** as your required module.



Full description example **MU4FSDLT5H 12SBSF 3.3ZCSJ 24SBSG** calls out the following:

600W low line / 800W high line converter, variable speed forward air fan, screw input terminals, dual AC fuses, 300uA leakage current, 5V/2A standby, AC good signal, Inhibit remote on/off

Outputs (screw terminals): 12V/20A with remote sense, enable remote on/off, output good ; 3.3V/54A with remote sense, inhibit remote on/off, output good, current share ;

24V/10A with remote sense, inhibit remote on/off, output good.

550-2000W Multiple Output Modular Power Supplies

Features
- Full Medical Isolation (MOPP)
- Low Speed, Low Audible Noise Fan
- Up to 18 Outputs
- Industry Leading Flexibility
- 7 Year Warranty
- Suitable for B and BF Rated Equipment
- PMBus™ Communication Option

Medical Industrial Test COMM Broadcast Renewable PMBus RoHS

Full Datasheet QM4
Full Datasheet QM5
https://product.tdk.com/en/power/qm

Specifications

Model		QM4	QM5	QM5H
Input Voltage Range	VAC	550W output: 90 - 264VAC 650W output: 180 - 264VAC	700W output: 90 - 264VAC 800W output: 180 - 264VAC	700W output: 90 - 264VAC 1200W output: 180 - 264VAC
Input Frequency Range	Hz	47 - 63Hz (440Hz with reduced PFC)		
Inrush Current	A	<40A at 25°C & 264VAC (cold start)		
Input Current (Max)	A	7.1A / 4.2A (90/180VAC)	9A / 5.2A (90/180VAC)	9A / 7.8A (90/180VAC)
Touch Current	µA	<100µA (with 4 or fewer modules) (1)		
Power Factor Correction	-	> 0.95 (at 100% load), Meets EN61000-3-2		
Efficiency	-	up to 91% , 240VAC & above 50% rated power, configuration dependent		
Overcurrent Protection	-	Hiccup/constant current style - Module dependent (1)		
Overvoltage Protection		Latching. Output shut down, cycle AC to reset (1)		
Overtemperature Protection	-	Converter: auto restart (fan off); Modules: individually protected		
Hold up time	ms	550W output: > 16ms 650W output: > 10ms	700W output: > 16ms 1200W output: > 10ms	
Leakage Current (maximum)	µA	L option: 212µA; R option: 77µA (264VAC, 63Hz) (2)		
Remote Sense Compensation	-	Module dependent (1)		
Remote On/Off	-	Module & Converter option dependent (1)		
AC Fail Signal	-	Available with all Signal Option Types		
DC Good Signal	-	Open collector, standard on all output modules		
Remote on/off	-	Converter: Inhibit or Enable (Signal Option Type dependent). Modules: Inhibit.		
PMBus™ Interface	-	Power supply on/off, fan speed/warning, temperature read back/warning, run time and manufacturing data		
Standby Output	-	5V/250mA / 5V/2A / 12V/1A (Standby Option Type dependent)		
Operating Temperature	°C	-20 to +70°C, derate linearly to 50% load from 50 to 70°C; -40°C start up.		
Storage Temperature	°C	-40°C to +70°C (max 12 months)		
Humidity (Non condensing)	%RH	5 - 95%RH		
Cooling	-	One variable, low speed internal fan		
Audible Noise	dBA	40.3 dBA @ 25°C / 54.9 dBA @ 50°C QM5I: 36.9 dBA @ 25°C / 51 dBA @ 50°C per BS ISO 3744:2010		
Withstand Voltage	-	Input to Output: 4kVAC (production tested to 4.3kVDC) (2xMoPP), Input to Ground: 1.5kVAC (1xMoPP), Output to Ground: 1.5kVAC (1xMoPP), Output to Output: 200VDC		
Vibration	-	Conforms to EN60068-2-6, IEC68-2-6, MIL-STD-810G, Method 514.6, Pro I		
Shock	-	Conforms to EN60068-2-27, EN60068-2-47, IEC68-2-27, IEC68-2-47, JIS C0041-1987, MIL-STD-810G, Method 516.6, Pro I, IV		
Safety Agency Certifications	-	IEC/EN/UL/CSA 62368-1, IEC/EN/UL/CSA 60950-1, IEC/EN/UL/CSA 60601-1 ANSI/AAMI ES60601-1 & CE Mark. IEC/EN61010 included in 60950 report		
Altitude	m	5,000m		
Emissions	-	EN61000-6-3:2007, EN60601-1-2:2015 4th Edition, EN55011B, EN55032B, Class B radiated & conducted		
Immunity	-	EN61000-6-2:2005, EN60601-1-2:2015		
Size (W x H x D)	in mm	4.3 x 2.5 x 10.6” 108 x 63.3 x 270mm	5 x 2.5 x 10.6” 127 x 63.3 x 270mm	5 x 2.5 x 10.6” 127 x 63.3 x 270mm
Weight	g	See Application Notes		
Warranty	yrs	Seven Years		

(1) See website for detailed specifications
(2) Must also add the leakage current from modules and options

550-2000W Multiple Output Modular Power Supplies

Features
- Full Medical Isolation (MOPP)
- Low Speed, Low Audible Noise Fan
- Up to 18 Outputs
- Industry Leading Flexibility
- 7 Year Warranty
- Suitable for B and BF Rated Equipment
- PMBusTM Communication Option

Medical Industrial Test COMM Broadcast Renewable PMBus RoHS

Full Datasheet QM7
Full Datasheet QM8
https://product.tdk.com/en/power/qm

Specifications

Model		QM7	QM8	QM8B
Input Voltage Range	VAC	1200W output 90 - 264 VAC 1500W output: 150 - 264VAC	1200W output 90 - 264 VAC 1500W output: 180 - 264VAC	1200W output 90 - 264 VAC 2000W output: 180 - 264VAC
Input Frequency Range	Hz	47 - 63Hz (440Hz with reduced PFC)		
Inrush Current	A	<45A at 25°C & 264VAC (cold start)		
Input Current (Max)	A	15.5A / 11.6A (90/150VAC)	15.5A / 9.6A (90/180VAC)	15.5A / 12.9A (90/180VAC)
Touch Current	µA	<100µA (with 4 or fewer modules) (1)		
Power Factor Correction	-	> 0.95 (at 100% load), Meets EN61000-3-2		
Efficiency	-	up to 91% , 240VAC & above 50% rated power, configuration dependent		
Overcurrent Protection	-	Hiccup/constant current style - Module dependent (1)		
Overvoltage Protection		Latching. Output shut down, cycle AC to reset (1)		
Overtemperature Protection	-	Converter: auto restart (fan off); Modules: individually protected		
Hold up time	ms	1200W output: > 20ms 1500W output: > 16ms	1200W output: > 20ms 1500W output: > 16ms	1200W output: > 20ms 2000W output: > 16ms
Leakage Current (maximum)	µA	L option: 214µA; R option: 77µA (264VAC, 63Hz) (2)		
Remote Sense Compensation	-	Module dependent (1)		
Remote On/Off	-	Module & Converter option dependent (1)		
AC Fail Signal	-	Available with all Signal Option Types		
DC Good Signal	-	Open collector, standard on all output modules		
Remote on/off	-	Converter: Inhibit or Enable (Signal Option Type dependent). Modules: Inhibit.		
PMBus™ Interface	-	Power supply on/off, fan speed/warning, temperature read back/warning, run time and manufacturing data		
Standby Output	-	5V/250mA / 5V/2A / 12V/1A (Standby Option Type dependent)		
Operating Temperature	°C	-20 to +70°C, derate linearly to 50% load from 50 to 70°C; -40°C start up.		
Storage Temperature	°C	-40°C to +70°C (max 12 months)		
Humidity (Non condensing)	%RH	5 - 95%RH		
Cooling	-	Two variable, low speed internal fans		
Audible Noise	dBA	43.6 dBA @ 25°C 57.3 dBA @ 50°C per BS ISO 3744:2010		
Withstand Voltage	-	Input to Output: 4kVAC (production tested to 4.3kVDC) (2xMoPP), Input to Ground: 1.5kVAC (1xMoPP), Output to Ground: 1.5kVAC (1xMoPP), Output to Output: 200VDC		
Vibration	-	Conforms to EN60068-2-6, IEC68-2-6, MIL-STD-810G, Method 514.6, Pro I		
Shock	-	Conforms to EN60068-2-27, EN60068-2-47, IEC68-2-27, IEC68-2-47, JIS C0041-1987, MIL-STD-810G, Method 516.6, Pro I, IV		
Safety Agency Certifications	-	IEC/EN/UL/CSA 62368-1, IEC/EN/UL/CSA 60950-1, IEC/EN/UL/CSA 60601-1 ANSI/AAMI ES60601-1 & CE Mark. IEC/EN61010 included in 60950 report		
Altitude	m	5,000m		
Emissions	-	EN61000-6-3:2007, EN60601-1-2:2015 4th Edition, EN55011B, EN55032B, Class B radiated & conducted		
Immunity	-	EN61000-6-2:2005, EN60601-1-2:2015		
Size (W x H x D)	in mm	6.9 x 2.5 x 10.6” 176 x 63.3 x 270mm	7.9 x 2.5 x 10.6” 200 x 63.3 x 270mm	
Weight	g	See Application Notes		
Warranty	yrs	Seven Years		

(1) See website for detailed specifications
(2) Must also add the leakage current from modular and options

Advantages of Modular Power Supplies

Modular power supplies represent a middle ground between standard off-the-shelf units and expensive, custom-engineered power solutions. The TDK-Lambda MU and QM series for example allow engineers to configure a power supply with multiple independent outputs using a single AC input.

Having extreme Flexibility and Customization, the modular architecture allows for a “mix and match” approach. Multiple Outputs can be Configured from 1 to 16+ independent outputs from a single chassis that can combine standard and non-standard voltages (e.g., 3.3V, 5V, 12V, 24V, and 48V) in one unit.

Modules can be factory linked in parallel for higher current requirements or in series for higher voltage requirements (up to 100V+).

Both the MU and QM series are designed for the stringent requirements of the medical industry offering Body Floating (BF) rating featuring low leakage current and high isolation, making them safe for equipment that comes into direct contact with a patient. They have IEC/EN/UL 60601-1 (medical) and IEC/EN/UL 62368-1 (industrial) safety certifications.

They offer space efficiency and consolidation, over mounting multiple individual power supplies inside a cabinet, using a single modular chassis to handle the entire load.

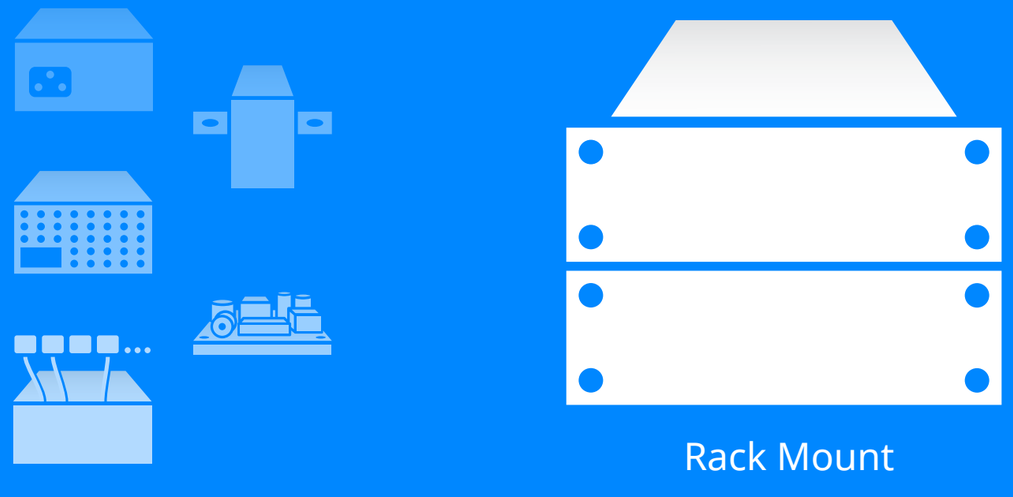
They enable rapid Time-to-Market as designing a custom power supply can take over a year. Modular power supplies are “Configurable on Demand” as they can be configured online, assembled from standard stock components, and ship quickly typically in days or weeks.

Standard options include Digital Control and Monitoring via PMBus™ communication allowing for :

- Real time monitoring of Fan Speed & Internal temperature
- Reading device runtime and power cycle count
- Monitoring of status – reading and clearing of fault and warning indicators
- Reading manufacturing related data – model name / serial number etc.
- Remote on/off control of the module outputs for sequencing

The TDK-Lambda MU and QM series are ideal for high-reliability applications where space is limited, industrial and medical safety is paramount, and a custom output configuration is required without the lead times of a fully custom design.

AC/DC Rack Mount



Rack Mount

Applications

- High Reliability applications with n+1 redundancy
- High Power applications for cabinet mounting
- Broadcast, RF-Amplifiers, Telecoms
- Distributed Power

Features

- 19” rack with hot-swap power modules – up to 10kW in 1U
- Modules have integrated ORing MOSFETs for redundant operation
- Individual IEC connectors or terminal blocks for mains input
- Parallel operation between racks with active current sharing for higher output power levels
- 12V, 24V, 32V, 48V and 385V supplies for bus-voltages in distributed power architecture and other applications

TDK
In Everything, Better

AC/DC Rack Mount Index by Wattage

Wattage	Number of Outputs	Series	Page
1600W	1	HFE1600	58
2500W	1	HFE2500	59
3500W	1	HFE3500	60
200-800W	1	Z+ Low Voltage	120
200-800W	1	Z+ High Voltage	121
600-15000	1	Genesys™	122-127
1000-15600	1	GENESYS+™	128-135
4000-50000	1	ALE-Rack Mount	104
4500-45000	1	TPF45000	61
300-1000	1	SFL Electronic Loads	138
2500	1	EZA2500 (DC/DC)	166
11000	1	EZA11K-320240 (DC/DC)	167
2000-3000	1	GENESYS™ AC and GENESYS™ AC PRO	136-137

Listed by Wattage

HFE1600 Series

1600W 1U Front End Power Supplies

Industrial COTS Test COMM Broadcast PMBus

Full Datasheet
https://product.tdk.com/en/power/hfe

The HFE1600 AC-DC industrial power supplies can be operated in a hot-swap redundant configuration, or used to provide up to 7,600W of bulk power. Up to five power supplies can be fitted in a variety of 19" 1U high racks, for configuration as a single or dual output. The HFE supplies have internal ORing MOSFETs and current share for automatic parallel operation. Communication is possible with the power supplies using the optional isolated PMBus™ (I^2C) interface or a plug-in LAN module. AC fail, DC good, remote output adjust, remote on/off and a 12V auxiliary output are fitted as standard.

Features	Benefits
• Internal ORing MOSFET and Current Share	• Suitable For N+1 Redundancy
• Up to 7600W in 1U Rack	• Utilizes Less System Space
• Full Array of Signals Available	• Easy Remote Monitoring
• PMBus™ (I^2C) and LAN options	• Industry Standard Communication Interfaces
• Analog Output Adjustment	• Simple External Resistance or Voltage Connection

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)[1]	Max Current (A) (100≤Vin≤132Vac)[2]	Max Power (W) (100≤Vin≤132Vac)[2]	Max Current (A) (Vin≥170Vac)[2]	Max Power (W) (Vin≥170Vac)[2]
HFE1600-12	12	9.6 - 13.2	100	1200	133	1596
HFE1600-24	24	19.2 - 29	50	1200	67	1608
HFE1600-32	32	25.6 - 38.4	37.5	1200	47	1504
HFE1600-48	48	38.4 - 58	25	1200	33	1584

HFE1600- **12** **/** **S**

- 12: Output voltage 12, 24, 32, 48
- S: blank — No PMBus™ / I^2C; S — PMBus™ / I^2C interface

Model Selector (Racks and LAN)

Model	Description	Maximum Rack Current
HFE1600-S1U	Five slot 19" rack, IEC320-C16 input connectors (5)	266A each side (532A total)
HFE1600-S1U-TB	Five slot 19" rack, terminal block input connectors (5)	266A each side (532A total)
HFE1600-BP	One slot blanking panel, four provided with each rack	-
HFE/C15-U	AC Power cord, 2.0m long, one per power supply required	-
HFE1600-D1U	Four slot (two isolated pairs), dual output 19" rack, IEC320 input	266A each side (532A total)
HFE1600-D1U-TB	Four slot (two isolated pairs), dual output 19" rack, terminal block input	266A each side (532A total)
HFE1600-LAN	Plug in LAN module. Takes up one rack slot. For use with /S power supplies only.	-

HFE2500 Series

2500W 1U Front End Power Supplies

Industrial COTS Test COMM Broadcast PMBus

Full Datasheet
https://product.tdk.com/en/power/hfe

The HFE2500 AC-DC industrial power supplies can be operated in a hot-swap redundant configuration, or used to provide up to 9,500W of bulk power. Up to four power supplies can be fitted in a variety of 19" 1U high racks, for configuration as a single output. The HFE supplies have internal ORing MOSFETs and current share for automatic parallel operation. Communication is possible with the power supplies using the optional isolated PMBus™ (I2C) interface or a plug-in LAN module. AC fail, DC good, remote output adjust, remote on/off and a 12V auxiliary output are fitted as standard.

Features	Benefits
• Internal ORing MOSFET and Current Share	• Suitable For N+1 Redundancy
• Up to 9500W in 1U Rack	• Utilizes Less System Space
• Full Array of Signals Available	• Easy Remote Monitoring
• PMBus™ (I^2C) and LAN options	• Industry Standard Communication Interfaces
• Analog Output Adjustment	• Simple External Resistance or Voltage Connection

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)[1]	Max Current (A) (100<Vin<132Vac)[2]	Max Power (W) (100<Vin<132Vac)[2]	Max Current (A) (170<Vin<180Vac)[2]	Max Power (W) (170<Vin<180Vac)[2]	Max Current (A) (Vin>180Vac)	Max Power (W) (Vin>180Vac)
HFE2500-12	12	9.6 - 13.2	125	1500	200	2400	200	2400
HFE2500-24	24	19.2 - 29	62.5	1500	100	2400	104	2496
HFE2500-48	48	38.4V - 58	31.25	1500	50	2400	52	2496

HFE2500- **12** **/** **S**

- 12: Output voltage 12, 24, 48
- S: blank — No PMBus™ / I^2C; S — PMBus™ / I^2C interface

Model Selector (Racks and LAN)

Model	Description	Maximum Rack Current
HFE2500-S1U	Four slot 19" rack, IEC320-C20 input connectors (4)	320A each side (640A total)
HFE2500-S1U-TB	Four slot 19" rack, Terminal Block input connectors (4)	320A each side (640A total)
HFE2500-BP	One slot blanking panel, three panels come with each rack	
HFE/C19-U-O	AC Power cord, 2.0m long, one per supply required	
HFE2500-LAN	Plug in LAN Module. Takes up one rack slot. For use with /S power supplies only.	

HFE3500 Series

3500W 1U Front End Power Supplies

Industrial COTS Test COMM Broadcast PMBus

Full Datasheet
https://product.tdk.com/en/power/hfe

The HFE3500 AC-DC industrial power supplies can be operated in a hot-swap redundant configuration, or used to provide up to 13,300W of bulk power in a single 1U rack. Up to four power supplies can be fitted in each 19" 1U high rack and three full racks can be paralleled for configuration as a single output. The HFE supplies have internal ORing MOSFETs and current share for automatic parallel operation. Communication is possible with the power supplies using the built in isolated PMBus™ (I2C) interface or LAN option* (integrated into rack backplane). AC fail, DC good, remote output adjust, remote on/off and a 5V or 12V auxiliary output are fitted as standard.

Features	Benefits
• Internal ORing MOSFET and Current Share	• Suitable For N+1 Redundancy
• Up to 13,300W in 1U Rack	• Uses Less System Space
• Full Array of Signals Available	• Easy Remote Monitoring
• PMBus (I2C) as standard, and LAN* rack options	• Industry Standard Communication Interfaces
• External Output Voltage Adjustment	• Simple External Resistance or Voltage Connection

Model Selector (Power Supplies)

Model	Output Voltage (V)	Adjustment Range (V)(1)	Max Current (A) (Vin>180Vac)	Max Power (W) (Vin>180Vac)	Max Current (A) (100<Vin<170Vac)(1)	Max Power (W)(1) (100<Vin<170Vac)
HFE3500-24	24	24.0 - 27.6	146	3504	84	2016
HFE3500-48	48	48.0 - 55.2	73	3504	42	2016

Model Selector (Power Supplies)

HFE3500- 24 / F S E

- 24: Output voltage 24, 48
- F: Standby Output Voltage — F 5V, 2A; T 12V, 1A
- S: Digital Interface — PMBus (Fitted as standard)
- E: Input Fuse Options — D Dual AC Fuses; E Single AC Fuse in the Live Line

Model Selector (Rack)

HFE3500- S1U / TB -LAN

- TB: Fitted with input terminal blocks
- -LAN: LAN Digital Interface — Blank Not fitted (note PMBus is provided as standard on rack); -LAN* LAN interface (integrated into rack backplane, connector on rack rear)

* contact factory for availability

TPF45000–385 Series

45kW 3-Phase Input Non-isolated 385Vdc Power Supplies

Industrial Test LED Semi-Fab PMBus

Full Datasheet
https://product.tdk.com/en/power/tpf

The TPF45000-385 non-isolated modular power supply offers output power levels up to 45kW and accepts 400/440/480Vac 3 phase delta or Wye inputs. Providing a regulated 385Vdc output, the product can be used to provide a high voltage source to power isolated DC-DC converters used in distributed power architecture systems. With an operating efficiency of 98%, waste heat is dramatically reduced, avoiding the need for water cooling. PMBus™ and USB interfaces are available for monitoring and control. Containing ten 4,500W modules, the TPF45000 can be scaled down for lower power requirements.

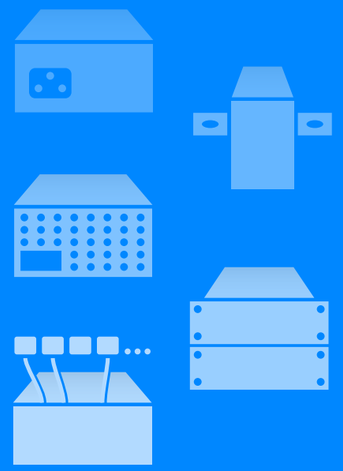
Features	Benefits
• 400/440/480 Vac (Nominal) 3 Phase Delta or Wye Inputs	• Global Use
• PMBus™ and USB Interfaces	• Flexible Control and Monitoring
• -20°C (Start-Up) to +50°C Operation	• Suitable for Industrial Environments
• 98% Efficient	• Less Energy Used
• Less than 30kg Weight	• Easier Handling

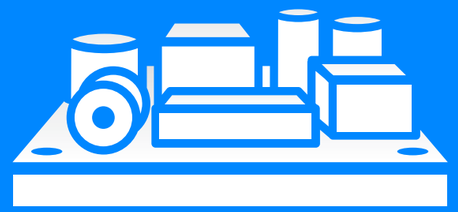
Model Selector

Model	Nominal Output Voltage (V)	Adjustment Range (V)	Rated Current (A)	Maximum Current (A)(1)	Rated Power (W)	Maximum Power (W)(1)
TPF45000-385	385	Fixed	110	117	42,000	45,000
Optional model configurations*						
TPF45000-385-1	385	Fixed	11	11.7	4,200	4,500
TPF45000-385-2	385	Fixed	22	23.4	8,400	9,000
TPF45000-385-3	385	Fixed	33	35.1	12,600	13,500
TPF45000-385-4	385	Fixed	44	46.8	16,800	18,000
TPF45000-385-5	385	Fixed	55	58.5	21,000	22,500
TPF45000-385-6	385	Fixed	66	70.2	25,200	27,000
TPF45000-385-7	385	Fixed	77	81.9	29,400	31,500
TPF45000-385-8	385	Fixed	88	93.6	33,600	36,000
TPF45000-385-9	385	Fixed	99	105.3	37,800	40,500

* Contact factory for availability. Minimum order quantities may apply

AC/DC Open Frame / PCB Mount





Open Frame / PCB Mount

Applications

Power Modules

- Industrial
- Medical
- Test & Measurement
- Communications
- Broadcast
- Lighting
- Distributed Power Architectures

Features

- 5 to 1000W output power
- Single-phase wide range input 85 – 265VAC
- Flexibility for different cooling concepts
- Single & Multiple Outputs
- ITE & Medical Safety Approvals

AC/DC Open Frame Index by Wattage

Wattage	Number of Outputs	Series	Page
10-30W	1	ZWS10-50C	64
30-60W	1	CUS30/60M	65
33-302W	1	ZWS-BAF	66
35W	3	CUT35	67
75W	2, 3	CUT75	68
100W	1	CUS100ME	69
150W	1	CUS150M	70
150-240W	1	ZWS-BP	71
175-200W	1-5	NV175	72
200-250W	1	CUS200M	73
240W	1	ZWS240RC-24	74
250W	1	CUS250M	75
350-1000W	1	CUS350MP-1000	76
400W	1	CUS400M	77
480W/380ms holdup	1	ZBM20 (Hold Up Module)	78
500W	1	CUS500M1	79
500W	1	XMS500A	80
600W	1	CUS600M	81

Listed by Wattage

AC/DC PCB Mount Index by Wattage

Wattage	Number of Outputs	Series	Page
4W	1	KAS	82
5-25W	1	KPSB	83
5-25W	1	KWS-A	84
15-60W	1	KMS-A	85
300-1000W	1	PFE300SA/500F/1000FA	86
1500-1800W	1	PFE1500FB / PFE1800FB	87

Listed by Wattage

ZWS10–50C Series

10 to 60W Single Output, High Reliability Power Supplies

Full Datasheet
https://product.tdk.com/en/power/zws-c

Industrial | Test | COMM | Broadcast

The ZWS-C industrial grade power supplies are used in a wide range of applications where equipment down-time cannot be tolerated during years of operation. Globally, process control, machinery, semiconductor fabrication and test and measurement equipment manufacturers depend upon the ZWS series to provide a reliable source of power. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of up to 15 years. Available in four power levels, 10W, 15W, 30W and 50W, the series provides a choice of 5V, 12V, 15V, 24V and 48V (50W only) outputs. These compact products meet class B conducted and radiated EMI in either a Class I or Class II (double insulated) construction, without the need for external filtering. In addition to a double sided board coating option, L bracket and cover configurations are available, or terminal pins for printed circuit board mounting.

Features	Benefits
• Up to 15 Year Electrolytic Capacitor Lifetimes	• Improved Field Life
• Curve B Radiated and Conducted EMI	• Easier System Compliance
• Enclosure, Board Coating and Connection Options	• Simplified Mounting and Installation
• Can be used in Class I and Class II installations	• Flexible Utilisation
• 5 year Warranty	• Low Cost of Ownership

Model Selector

Model	Output Voltage (V) (Fixed)	Maximum Current (A) (100 / 200Vac)	Maximum Output Power (W) (100 / 200Vac)	Load Regulation (mV)	Over Voltage Protection (V)	Efficiency (Typ) (%) (100 / 200Vac)
ZWS10C-5	5	2	10	40	>5.75	77 / 78
ZWS15C-5	5	3	15	40	>5.75	76 / 78
ZWS30C-5	5	4	20	120	>5.75	80 / 82
ZWS50C-5	5	6 / 7	30 / 35	120	>5.75	80 / 81
ZWS10C-12	12	0.9	10.8	96	>13.8	82 / 83
ZWS15C-12	12	1.3 / 1.7	15.6 / 20.4	96	>13.8	80 / 83
ZWS30C-12	12	2.5 / 2.92	30 / 35	120	>13.8	84 / 86
ZWS50C-12	12	4.3 / 5	51.6 / 60	288	>13.8	83 / 86
ZWS10C-15	15	0.7	10.5	120	>17.25	83 / 84
ZWS15C-15	15	1.0 / 1.35	15 / 20.3	120	>17.25	81 / 84
ZWS30C-15	15	2.0 / 2.33	30 / 35	120	>17.25	85 / 87
ZWS50C-15	15	3.5 / 4	52.5 / 60	150	>17.25	84 / 87
ZWS10C-24	24	0.5	12	151	>26.88	84 / 85
ZWS15C-24	24	0.7 / 0.85	16.8 / 20.4	151	>26.88	82 / 85
ZWS30C-24	24	1.25 / 1.46	30 / 35	192	>27.6	86 / 88
ZWS50C-24	24	2.1 / 2.5	50.4 / 60	192	>27.6	85 / 87
ZWS50C-48	48	1.1 / 1.25	52.8 / 60	384	>55.2	86 / 88

ZWS	50	C	-	5	/A
	Nominal power: 10, 15, 30, 50			Output voltage: 5, 12, 15, 24, 48	

Suffix	Description
Blank	Open frame
/A	L-bracket & cover
/L	L-bracket
/P	Open frame, Pcb mount
/CO2	Double sided Pcb coating

CUS30M AND CUS60M Series

Single Output 30 to 60W Medical & ITE Power Supplies

Full Datasheet
https://product.tdk.com/en/power/cus30_60m

Medical | Industrial | Test | COMM | Broadcast

The CUS30M and CUS60M are 2" x 3" footprint AC/DC power supplies with outputs ranging from 5V to 48V. They are certified to IEC60601-1 3rd edition (medical), IEC62368-1, EN60335-1 and EN61558-1 with compliance to EN60601-1-2:2015 Edition 4 immunity requirements. Rated at 30W and 60W, these compact products meet class B conducted and radiated EMI in either a Class I or Class II (double insulated) construction, without the need for external filtering.

Features	Benefits
• 30 to 60W Convection Cooled	• Quiet Operation
• Medical Certification (2 x MoPP)	• Suitable for B and BF Rated Equipment
• Class B Conducted and Radiated EMI	• Easier System Compliance
• Suitable for Class I and II Installations	• Flexible Utilisation
• Compact 2" x 3" Footprint	• Space Saving in End Equipment
• Enclosure, Mounting and Connection Options	• Versatile Application

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Load Reg (mV)	Line Reg (mV)	Ripple Noise (mV) (1)	Efficiency (typ) % (2)	Average Active Efficiency (typ) % (2)
CUS60M-5	5	6	30	100	20	120	81 / 81	81 / 79.5
CUS30M-12	12	2.5	30	120	48	120	87 / 88	87 / 87
CUS60M-12	12	5	60	120	48	120	87 / 88	87 / 86
CUS30M-15	15	2	30	120	60	150	87 / 88	87 / 87
CUS60M-15	15	4	60	120	60	150	87.5 / 87	87 / 86.5
CUS30M-18	18	1.7	30.6	144	72	150	87 / 88	87 / 87
CUS60M-18	18	3.35	60.3	144	72	150	88 / 88	87 / 87
CUS30M-24	24	1.25	30	192	96	150	88 / 90	87 / 87
CUS60M-24	24	2.5	60	192	96	150	89 / 90	88 / 87
CUS30M-36	36	0.84	30.24	288	144	200	88 / 90	88 / 89
CUS30M-48	48	0.63	30.24	384	192	200	88 / 90	88 / 89
CUS60M-48	48	1.25	60	384	192	200	90 / 91	90 / 89

Options

Suffix	Description
Blank	Open frame, JST connectors
/A	Cover, JST connectors. See website for derating
/CO	Open frame, JST connectors, pcb coating
/M	Open frame, Molex 5195-03 & -04 mating connectors
/P	Open frame, JST connectors, Pcb mount
/SF	Open frame, JST connectors, single fuse, (Line only)

Option combinations are available, please contact your local sales office

50W to 300W Single Output Power Supplies, Low Cost & High Reliability Worldwide Use

LED | Industrial | Test | COMM | Broadcast

Full Datasheet
https://product.tdk.com/en/power/zws-baf

Features	Benefits
• 10 Year e-cap Lifetime	• Better Field Reliability
• 5 Year Warranty	• Lower Cost of Ownership
• Convection Cooling	• Easier Use

Specification

MODEL		ZWS50-BAF	ZWS75-BAF	ZWS100-BAF	ZWS150-BAF	ZWS300-BAF
ITEMS						
AC Input Voltage range	-	85 - 265VAC (47-63Hz)				
DC Input Voltage range	-	120 - 370VDC				
Input Current (typical) (1)	A	3V model: 0.45/0.25 others: 0.65/0.35	3V model: 0.7/0.35 others: 0.95/0.5	3V model: 0.9/0.45 others:1.3/0.65	3V model: 1.3/0.65 others: 1.9/0.95	12 & 15V models: 3.7/1.9. others:3.6/1/8
Inrush Current - cold start (1)	A	15/28	14/28	28	14/28	15/ 30
PFHC	-	All models with Active Power Factor Correction - Designed to meet EN/IEC61000-3-2				
Power Factor (1)	-	3V model: 0.96/0.85 others: 0.97/0.91	3V model: 0.96/0.85 others: 0.97/0.91	3V model: 0.96/0.89 others:0.98/0.93		0.97/0.93
Temperature Coefficient	-	<0.02%/ °C				
Hold Up time (Typ) (1)	ms	20ms				18ms (typ) at 100Vac & full Load (20ms at 100Vac & 80% load)
Leakage Current (3)	mA	0.2 / 0.4 max.				
Remote On/Off	-	Option (see table next page)				
Cooling	-	All models are convection cooling				
Operating Temperature (2) (Convection)	-	-10°C to +70°C, derate linearly to 50% load from 50°C to 70°C				-10° to +70°C, derate linearly to 40% load from 45° to 70°C (from 40°C for 12 & 15V models)
Operating Temperature (2) (Forced Air)		Refer to output derating specifications				
E-cap lifetime (5)	-	Up to 10 years; 45°C ambient, 100% full load, 24 hours				
Storage Temperature	°C	-30°C to +75°C				
Humidity (non condensing)	-	Operating: 30 - 90% RH, Storage: 10 - 90% RH				
Withstand Voltage	-	I/P to Gnd 2kVAC (10mA), I/P to O/P: 3kVAC (10mA), O/P to Gnd: 500VAC (20mA) for 1mn				
Isolation Resistance	Ω	>100MΩ at 25°C & 70%RH, Output to Gnd: 500VDC				
Vibration (non operating)	-	10 - 55Hz (1 minute sweep), 19.6m/s² constant X, Y, Z 1 hour each				
Shock	-	<196.1 m/s				
Safety agency Certifications	-	IEC/EN/UL/CSA60950-1, IEC/EN/UL/CSA62368-1, EN50178 (OV II), CE Mark				
Conducted & Radiated EMI	-	EN55011 / EN55022-B, FCC-B, VCCI-B				
Immunity	-	IEC61000-6-2 ; IEC61000-4-2, -3, -4, -5, -6, -8, -11				
Weight (Typ)	g	165	230	290	390	540
Size (W x H x D) (4)	mm	50 x 26 x 132	50 x 33 x 150	62 x 33 x 155	75 x 37 x 160	84 x 42 x 180
Warranty	yrs	5				

Notes:
(1) 100 / 200VAC Input, nominal output voltage and max. output power
(2) Refer to Thermal Specifications & Application Notes
(3) 100 / 230VAC input
(4) Refer to Outline Drawing
(5) Refer to Reliability Data

Dual and Triple Output 35W Low Profile Power Supplies

Medical | Industrial | Test | Broadcast

Full Datasheet
https://product.tdk.com/en/power/cut

The triple output CUT35 power supplies have two independent, isolated, converters, one for the main 5V output, and one for the auxiliary outputs. This topology provides several benefits - no minimum loading, enhanced load & line regulation and the ability to connect the auxiliary outputs in series to generate either a 24V or 30V output. The series is certified to both the IEC60601-1 and IEC62368-1 safety standards. Several mechanical configurations are available - open frame, an attached baseplate or with a baseplate and cover enclosure.

Features	Benefits
• 2 x 4 Footprint With a Low 1.06" (27mm) Height	• Space Saving in End Equipment
• Output 1 Isolated From Outputs 2 & 3	• Flexible Utilization
• No Minimum Loading	• Reduced Load Regulation
• Open Frame, Baseplate or Enclosed Formats	• Versatile Mounting
• Three Year Warranty	• Low Cost of Ownership

Model Selector

Model		Voltage (V)	Adjustable Range (V)	Max Current (A)	Max Power (W)	Load Reg (mV)	Line Reg (mV) (1)	Ripple Noise (mV)(1)
CUT35-522	V1	5	5 - 5.25	3.0	15.0	100	50	120
	V2	+12	Fixed	1.2	20.4	600	240	150
	V3	-12	Fixed	0.9		600	240	150
CUT35-522	V1	5	5 - 5.25	3	15	100	50	120
	V2	24	Fixed	0.85	20.4	750	300	150
	(Leave common terminal unconnected)							
V1 CUT35-5FF	5	5 - 5.25	3	15	100	50	120	
	V2	+15	Fixed	1	19.5	750	300	150
	V3	-15	Fixed	0.65		750	300	150
CUT35-5FF	V1	5	5 - 5.25	3	15	100	50	120
	V2	30	Fixed	0.65	19.5	750	300	150
	(Leave common terminal unconnected)							

CUT35- **522** **/** **A**

Output voltage See model selector

blank	Open frame
/A	Cover and baseplate
/B	Baseplate with no cover

75W Dual or Triple Output Low Profile Power Supplies

Medical Industrial Test Broadcast

Full Datasheet
https://product.tdk.com/en/power/cut

The triple output CUT75 power supplies have two independent, isolated, converters, one for the main 5V output, and one for the auxiliary outputs. This topology provides several benefits - no minimum loading, enhanced load & line regulation and the ability to connect the auxiliary outputs in series to generate either a 24V or 30V output. The series is certified to both the IEC60601-1 and IEC62368-1 safety standards. Several mechanical configurations are available - open frame, an attached baseplate or with a baseplate and cover enclosure. Screw terminal blocks for the input and output connectors can also be selected.

Features	Benefits
• 3 x 5 Footprint With a Low 1.06" (27mm) Height	• Space Saving in End Equipment
• Output 1 Isolated From Outputs 2 & 3	• Flexible Utilization
• No Minimum Loading	• Reduced Load Regulation
• Open Frame, Baseplate or Enclosed Formats	• Versatile Mounting
• Three Year Warranty	• Low Cost of Ownership

Model Selector

Model		Voltage (V)	Adjustable Range (V)	Max Current (A)	Max Power (W)	Load Reg (mV)	Line Reg (mV) (1)	Ripple Noise (mV)(1)
CUT75-522	V1	5	5 - 5.25	8.0	40.0	100	50	120
	V2	+12	Fixed	3.0	36.0	600	240	150
	V3	-12	Fixed	1.0		600	240	150
CUT75-522	V1	5	5 - 5.25	8.0	40.0	100	50	120
	V2	24	Fixed	1.0	24.0	750	300	150
	(Leave common terminal unconnected)							
CUT75-5FF	V1	5	5 - 5.25	8.0	40.0	100	50	120
	V2	+15	Fixed	2.5	37.5	750	300	150
	V3	-15	Fixed	1.0		750	300	150
CUT75-5FF	V1	5	5 - 5.25	8.0	40	100	50	120
	V2	30	Fixed	1.0	30	750	300	150
	(Leave common terminal unconnected)							

CUT75- **522** **/** **A**

Output voltage see model selector

blank	Open frame with JST connectors
/A	Cover with JST connectors
/B	Baseplate with JST connectors
/T	Open frame with screw connections
/TA	Cover with screw connections
/TB	Baseplate with screw connections

Preferred model

2 x 4" 100W AC-DC Power Supplies

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/cus-m

The compact CUS100ME is packaged in the industry standard 2x4" footprint. The series can deliver 100W convection cooled at 50°C or up to 75W at 85°C with forced air. Conduction cooled, the CUS100M can deliver 100W at 70°C and 50W at 80°C. With Medical & ITE certifications, the unit can used in both Class I & Class II (no ground wire) applications, and meets Class B Conducted and Radiated EMI. Enclosure options include a baseplate, U channel or U channel with a cover.

Features	Benefits
• Up to 100W Utilizing Convection or Conduction Cooling	• Quiet Operation
• Operation in Ambient Temperatures of up to 85°C	• Suitable for High Ambient Temperature Environments
• Medical Certifications (2 x MOPP)	• Suitable for B and BF Type Medical Equipment
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Suitable for Class I and Class II installations	• Flexible Utilisation
• Compact 2 x 4 x 1.24" Size	• Space Saving in End Equipment
• Enclosure & Cooling Options	• Versatile Application

Model Selector

Model	Nominal Output Voltage (V)	Factory Set (1) Output Voltage Capability (V)	Maximum Current Convection (A)	Maximum Power Convection (W)
CUS100ME-12	12	12 - 13.2	8.33	100
CUS100ME-15	15	15 - 16.5	6.66	100
CUS100ME-18	18	18 - 19.8	5.55	100
CUS100ME-24	24	24 - 26.4	4.16	100
CUS100ME-28	28	28 - 30.8	3.57	100
CUS100ME-36	36	36 - 39.6	2.77	100
CUS100ME-48	48	48 - 50	2.08	100

CUS100ME- **12** **/** **U** **E** **M**

Output voltage 12, 15, 18, 24, 28, 36, 48

blank	open frame
U	U channel
A	U channel with cover
B	baseplate

blank	dual fuses
E (2)	single input fuse in line

blank	JST connectors
M (2)	Molex connectors

Examples: CUS100ME-24/UEM, CUS100ME-12V5/A

CUS150M Series

2 x 4” 150W AC-DC Power Supplies

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/cus-m

The compact CUS150M is packaged in the industry standard 2x4” footprint. The series can deliver 150W with forced air in ambient temperatures of up to 50ºC or 120W convection cooled at 40ºC. Conduction cooled, the CUS150M can deliver 150W at 50ºC, 100W at 70ºC and 50W at 80ºC. With Medical & ITE certifications, the unit can be used in both Class I & Class II (no ground wire) applications, and meets Class B Conducted and Radiated EMI. Enclosure options include baseplate, U channel, cover or top fan construction.

Features	Benefits
• Up to 150W Utilizing Convection or Conduction Cooling	• Quiet Operation
• Operation in Ambient Temperatures of up to 85°C	• Suitable for High Ambient Temperature Environments
• Medical Certifications (2 x MOPP)	• Suitable for B and BF Type Medical Equipment
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Suitable for Class I and Class II installations	• Flexible Utilisation
• Compact 2 x 4 x 1.24” Size	• Space Saving in End Equipment
• Enclosure & Cooling Options	• Versatile Application

Model Selector

Model	Nominal Output Voltage (V)	Factory Set[1] Output Voltage Capability (V)	Fan Supply (V)	Maximum Current Convection (A)[2]	Maximum Current Forced Air (A)	Maximum Power Convection (W)[2]	Maximum Power Forced Air (W)
CUS150M-12 or /B	12	12 - 13.2	11.6	10	12.5	120	150
CUS150M-12/A or /U	12	12 - 13.2	11.6	12.5	12.5	150	150
CUS150M-12/F	12	-	11.6	12.5	Internal fan	150	Internal fan
CUS150M-15 or /B	15	15 - 16.5	9.8	8	10	120	150
CUS150M-15/A or /U	15	15 - 16.5	9.8	10	10	150	150
CUS150M-15/F	15	-	9.8	10	Internal fan	150	Internal fan
CUS150M-18 or /B	18	18 - 19.8	11.6	6.66	8.33	120	150
CUS150M-18/A or /U	18	18 - 19.8	11.6	8.33	8.33	150	150
CUS150M-18/F	18	-	11.6	8.33	Internal fan	150	Internal fan
CUS150M-24 or /B	24	24 - 26.4	11.6	5	6.25	120	150
CUS150M-24/A or /U	24	24 - 26.4	11.6	6.25	6.25	150	150
CUS150M-24/F	24	-	11.6	6.25	Internal fan	150	Internal fan
CUS150M-28 or /B	28	28 - 30.8	10.8	4.28	5.35	120	150
CUS150M-28/A or /U	28	28 - 30.8	10.8	5.35	5.35	150	150
CUS150M-28/F	28	-	10.8	5.35	Internal fan	150	Internal fan
CUS150M-36 or /B	36	36 - 39.6	11.6	3.33	4.16	120	150
CUS150M-36/A or /U	36	36 - 39.6	11.6	4.16	4.16	150	150
CUS150M-36/F	36	-	11.6	4.16	Internal fan	150	Internal fan
CUS150M-48 or /B	48	48 - 50	11.6	2.5	3.12	120	150
CUS150M-48/A or /U	48	48 - 50	11.6	3.12	3.12	150	150
CUS150M-48/F	48	-	11.6	3.12	Internal fan	150	Internal fan

ZWS–BP Series

150 to 240W High Reliability Power Supplies with 200% Peak Power

Industrial Test COMM

Full Datasheet
https://product.tdk.com/en/power/zws-bp

The ZWS-BP industrial grade power supplies are used in a wide range of applications where equipment down-time cannot be tolerated during years of operation. Globally, process control, test and measurement equipment, machinery, semiconductor fabrication, communications and printer manufacturers depend upon the ZWS-BP to provide a reliable source of power. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of up to 10 years. They are available in 150W or 240W power levels (each with a 200% peak power capability for up to 5 seconds with a 40% duty cycle) with a choice of 24V, 36V and 48V outputs. A variety of mechanical configurations are available, in addition to a double sided board coating option.

Features	Benefits
• Up to 200% Peak Power Capability	• Suitable for Powering Capacitive, Inductive and Thermal Printer Loads
• 10 Year Electrolytic Capacitor Lifetimes	• Improved Field Life
• Convection Cooled	• Reduced Dirt and Dust Contamination
• 5 year Warranty	• Low Cost of Ownership

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Output Power (W)	Peak Current (A)	Peak Power (W)[1]	Efficiency (Typ) (%) (100/200Vac)
ZWS150BP-24	24	21.6 - 26.4	6.3	151.2	12	288	87 / 90
ZWS240BP-24	24	21.6 - 26.4	10	240	20	480	88 / 91
ZWS150BP-36	36	32.4 - 39.6	4.2	151.2	8	288	87 / 90
ZWS240BP-36	36	32.4 - 39.6	6.7	241.2	13.4	482.4	88 / 91
ZWS150BP-48	48	39.6 - 52.8	3.2	153.6	6	288	87 / 90
ZWS240BP-48	48	39.6 - 52.8	5	240	10	480	88 / 91

ZWS	240	BP	-	24	/	
	Nominal power: 150, 240			Output voltage: 24, 36, 48		

Suffix	Description	Models
Blank	Open frame, JST connectors	ZWS150 - 240BP
/A	L-bracket, cover, JST connectors	ZWS150 - 240BP
/L	L-bracket, JST connectors	ZWS150 - 240BP
/CO2	Double sided PCB coating	ZWS150 - 240BP
/R	Remote on/off	ZWS150 - 240BP
/T	Screw terminal connections	ZWS240BP
/TA	Screw terminals, L bracket & cover	ZWS240BP

Preferred option

Option combinations are available, please contact your local sales office

175-200W, 3” x 5” Power Supplies

Features
- 1-5 Outputs
- Up to 90% Efficient
- Active Power Factor Correction
- Universal Input (90 - 264VAC)
- No Minimum Loads
- Medical Approvals (Basic Insulation Input-Output)

Medical Industrial Test COMM Broadcast RoHS

Full Datasheet
https://product.tdk.com/en/power/nv

Specifications

Model		NV175
Input Voltage range	-	90 - 264VAC (47 - 63Hz, 440Hz with reduced PFC)
Inrush Current	A	<40A at 25C and 230VAC input, Cold Start
Power Factor Harmonics	-	EN61000-3-2 Compliant (0.97 typical)
Regulation Total	-	1%; Including Line (for 90-264VAC input change), Load (for 0-100% load change) and Cross (for 0-100% load change on any other output) regulation
Ripple & Noise	mV	1% or 50mV (Which ever is greater)
Efficiency	-	Up to 90%, configuration dependant
Minimum Load	A	None
Overcurrent Protection	-	>105%
Overvoltage Protection	V	CH1 & CH2, 120-130%, Cycle AC line to reset
Overtemperature Protection	-	Yes
Hold Up Time (Typ)	ms	>16ms at 90VAC Input
Leakage Current (max)	µA	123µA 120VAC 60Hz, 257µA 240VAC 60Hz, <300µA 264VAC 63Hz (Type Test results)
Remote Sense	-	On Outputs CH1 & CH2, 0.5V compensation maximum
DC Good	-	CH1 Only, High on Fail (90% of nominal ±5%)
Remote On/Off (Specify N option)	-	-N1 or -N2 option: TTL level high = Off, -N3 or -N4 option: open circuit = Off (except standby)
Operating Temperature (1)(7)	-	0 to +70°C. Derate linearily to 50% load from 50°C to 70°C
Storage Temperature	-	-40 to +85°C
Humidity (non condensing)	-	5 - 95% RH
Cooling	-	Forced air, 2m/s from input to output (Approx 10 CFM)
Isolation (4)	-	Input to Ground 2.3kVDC, Input to Output 4.3kVDC, Output to Ground 200VDC
Vibration (non operating)	-	Conforms to MIL-STD-810E, Method 514.4, Pro I, Cat 1,9; EN60068-2-6, IEC68-2-6
Shock	-	Conforms to MIL-STD-810E/F, Method 516.5, Pro I, IV, VI; EN60068-2-27, EN60068-2-47, IEC68-2-47, IEC68-2-47, JIS C0041-1987
Safety Agency Approvals	-	UL/CSA/IEC/EN 60950-1, UL/CSA/IEC/EN 60601-1, ANSI/AAMI ES60601-1, IEC/EN 61010-1, CE Mark
Immunity	-	EN61000-6-2:2001, EN61000-4-2, -3, -4, -5, -6, -8, -11
Conducted Emissions and Flicker	-	EN55022 Class B (per CISPR.22), EN61000-3-3
Radiated Emissions (2)	-	EN55022 Class A (per CISPR.22)
Weight (Typ)	g	250g
Size (without cover) (3)	in	3” x 5” x 1.25”; N option version 3.7” x 5” x 1.25”
Warranty	yrs	Three Years

(1) -20°C cold start
(2) See application note for Class B
(3) Including underside component leads
(4) Input-Output: Reinforced IEC60950-1, Basic IEC 60601-1.
See NV175-M for reinforced medical insulation

Single Output 200 to 250W Medical & ITE Power Supplies

Medical Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/cus-m

With efficiencies up to 94%, the medical and ITE certified CUS200M is rated at 200W with convection cooling and up to 250W with airflow. The CUS200M is ideal for applications where audible noise cannot be tolerated, including hospital, dental, broadcast and professional audio equipment. A 5V 0.6A standby output, DC Good signal and remote on/off are provided as standard.

Features	Benefits
• 200W Convection Cooled	• Quiet Operation
• Up to 250W with Forced Air	• Can Utilize System Airflow
• Medical Certifications (2 x MOPP)	• Suitable for B and BF Rated Equipment
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• 5V Standby Voltage, DC Good Signal and Remote On/Off	• Provides Flexibility in the System
• Compact 3 x 5 x 1.5” size	• Industry Standard Size For Alternative Power Requirements
• Enclosure Options	• Versatile Application

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (V)	Maximum Current Convection (A)	Maximum Current Forced Air (A)	Maximum Power Convection (W)	Maximum Power Forced Air (W)
CUS200M-12	12	11.7 - 12.6	16.7	16.7	200.4	200.4
CUS200M-18	18	17.6 - 18.9	11.2	14	201.6	252.0
CUS200M-24	24	23.5 - 25.2	8.4	10.5	201.6	252.0
CUS200M-36	36	35.2 - 37.8	5.5	7	198.0	252.0
CUS200M-48	48	47 - 50.4	4.2	5.3	201.6	254.4

Options

Suffix	Description
Blank	Open frame
/A	Chassis and cover
/L	L bracket chassis

ZWS240RC–24 Series

240W 24V Output Power Supply with EN62477-1 OVC III

Industrial

Full Datasheet
https://product.tdk.com/en/power/zws-rc

The ZWS240RC industrial grade power supplies are used in applications where equipment down-time cannot be tolerated during years of operation. Developed for robotic and machine controllers, the ZWS240RC is certified to EN62477-1 Over Voltage Category (OVC) III. This enables direct connection to the incoming AC distribution panel, saving the cost and space of an isolation transformer. Conservatively rated electrolytic capacitor temperatures offer field life-times of up to 12 years.

Features	Benefits
• Certified to IEC/EN62477-1 OVC III	• Allows Direct Connection to the Distribution Panel
• 12 Year Electrolytic Capacitor Lifetimes	• Improved Field Life
• Convection Cooled	• Reduced Dirt and Dust Contamination
• Curve B Radiated and Conducted EMI	• Easier System Compliance
• 5 year Warranty	• Low Cost of Ownership

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Output Power (W)
ZWS240RC-24	24	21.6 - 26.4	10	240

ZWS	240RC	-	24	-

240RC = 240W

Output voltage: 24

Suffix	Description
Blank	Open frame, no remote on/off
/R	Remote on/off

CUS250M Series

2 x 4” 250W AC-DC Power Supplies

Medical Industrial Test LED Broadcast COMM

Full Datasheet
https://product.tdk.com/en/power/cus-m

The compact CUS250M is packaged in the industry standard 2x4” footprint. The series can deliver 250W with forced air or conduction cooling in ambient temperatures of up to 45°C. With Medical & ITE certifications, the unit can be used in both Class I & Class II (no ground wire) applications, and meets Class B Conducted and Radiated EMI with generous margins. Input voltage range includes operation down to 80Vac (see instruction manual for ratings). Other options include a 5V standby voltage, remote on/off, DC_OK and AC_Fail signals, with a U channel, cover or top fan mechanical construction.

Features	Benefits
• Up to 250W Utilizing Convection and Conduction Cooling	• Quiet Operation
• Operation in Ambient Temperatures of up to 85°C	• Suitable for High Ambient Temperature Environments
• Medical Certifications (2 x MOPP)	• Suitable for B and BF Type Medical Equipment
• Class B Conducted and Radiated EMI with Significant Margins	• Easier System EMC Compliance
• Certified for Class I and Class II installations	• Flexible Utilisation
• Compact 2 x 4 x 1.56” / 50.8 x 101.6 x 39.5mm Size	• Space Saving in End Equipment
• Enclosure & Cooling Options	• Versatile Application
• EN60335-1 Compliant	• Suitable for Household and Similar Electrical Appliances

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (1) (V)	Fan Supply (V)	Maximum Current Forced Air (A)	Maximum Power Forced Air (W)
CUS250M-12	12	12 - 13.2	11.4	20.83	250
CUS250M-15	15	15 - 16.5	11.4	16.66	250
CUS250M-18	18	18 - 19.8	11.4	13.88	250
CUS250M-24	24	24 - 26.4	11.4	10.41	250
CUS250M-28	28	28 - 30.8	11.4	8.92	250
CUS250M-36	36	36 - 39.6	11.4	6.94	250
CUS250M-48	48	48 - 52.8	11.4	5.2	250

CUS250M-	12	/	U	M	-	J

Output voltage 12, 15, 18, 24, 28, 36, 48

blank	JST connectors
M (2)	Molex type input connectors

blank	Open frame (with integral baseplate)
U	U channel
A	U channel with cover
F	U channel, cover and top mounted fan
C	M3 inserts for underside mounting

blank	Dual fuses
E (2)	Single input fuse in line

blank	No options
G	5V 0.1A standby supply, remote on/off (enable), DC_OK, AC_Fail
J	5V 0.1A standby supply, remote on/off (inhibit), DC_OK, AC_Fail

Notes:
See website for detailed specifications, test methods and installation manual.
Specification parameters apply at 25°C ambient temperature unless otherwise stated.
(1) Output voltage is user adjustable or can be factory set.
Non-standard output versions may be subject to minimum order quantities and variations to specification.
For all non-standard output voltage settings please consult Sales.
(2) Subject to Minimum Order Quantities. Please contact Sales

CUS350MP–1000 Series

350 / 500W Medical Power Supplies with a 1,000W Peak Capability

Medical Industrial Test

Full Datasheet
https://product.tdk.com/en/power/cus350mp

The CUS350MP-1000 AC-DC power supplies are rated up to 350W (1,000W peak) with convection cooling for applications requiring low audible noise, or up to 500W (1,000W peak) with external airflow. The series is certified to IEC60601-1 3rd edition (medical), IEC62368-1 and IEC62477-1 (OVCIII) with compliance to the EN60601-1-2:2015 Edition 4 immunity requirements. With efficiencies of up to 94%, waste heat is reduced allowing the power supply to operate reliably in a compact 88 x 183 x 44mm package size. A 5V 0.3A standby voltage and remote on/off are fitted as standard. The high peak power rating makes the CUS350MP-1000 suitable for use in printers and equipment utilizing DC motors.

Features	Benefits
• Up to 350W Convection Cooled or 500W With External Airflow	• Low Audible Noise
• High Peak Power Rating up to 800W for 5s or 1,000W for 1s	• Size and Cost Reductions Compared to Continuously Rated Products
• Medical Certification (2 x MoPP)	• Suitable for B and BF Rated Equipment
• Class B Conducted and Radiated EMI	• Easier System Compliance
• Compact 88 x 183 x 44mm (3.46 x 7.2 x 1.73") Package	• Space Saving in End Equipment
• Five Year Warranty	• Low Cost of Ownership

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Max Current Convection (A)	Max Power Convection (W)	Max Current Forced Air (A)	Max Power Forced Air (W)	Max Peak Current (A)	Max Peak Power (W)
CUS350MP-1000-24	24	24 - 26.4	14.6	350.4	20.8	499.2	41.7	1000.8
CUS350MP-1000-30	30	27 - 30	11.65	349.5	16.6	498.0	33.3	999.0
CUS350MP-1000-36	36	36 - 42	9.7	349.2	13.8	496.8	27.7	997.2
CUS350MP-1000-48	48	45 - 48	7.3	350.4	10.4	499.2	20.9	1003.2

CUS350MP-1000- | **24** | **/** | **TA**

Output voltage 24, 30, 36, 48

blank	Dual fuses, baseplate mounted
/A	With cover
/T	Screw terminals
/TA	With cover and screw terminals
/CO2	Pcb coating
/SF	Single input fuse (Line)

CUS400M Series

3 x 5" 400W AC-DC Power Supplies

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/cus-m

The compact CUS400M is packaged in the industry standard 3x5" footprint. The series can deliver 400W with forced air or 250W when convection cooled with a 400W peak power for extended periods of time (minutes). Cooling is also assisted via conduction through the base into the equipment chassis. With Medical & ITE certifications, the units can be used in both Class I & Class II (no ground wire) applications, and meets Class B Conducted and Radiated EMI. Options include a standby voltage, signals and multiple case options.

Features	Benefits
• 250W Convection / Conduction Cooled with 400W Peak for Extended Time Periods	• Quiet Operation
• 400W with Forced Air	• Can Utilise System Airflow or Integrated Fan
• Medical Certifications (2 x MOPP)	• Suitable for B and BF Type Medical Equipment
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Suitable for Class I and Class II installations	• Flexible Utilisation
• Compact 3 x 5 x 1.55" Size	• Space Saving in End Equipment
• Enclosure & Signal Options	• Versatile Application

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (V)	Maximum Current Convection (A)	Maximum Current Forced Air (A)	Peak Current (A) Convection cooled ≥115Vac input (See derating curve section)	Maximum Power Convection (W)	Maximum Power Forced Air (W)
CUS400M-12	12	12 - 13.2	20.83	33.33	33.33	250	400
CUS400M-15	15	15 - 16.5	16.67	26.67	26.67	250	400
CUS400M-19	19	19 - 20.9	13.16	21.05	21.05	250	400
CUS400M-24	24	24 - 26.4	10.42	16.67	16.67	250	400
CUS400M-28	28	28 - 30.8	8.93	14.29	14.29	250	400
CUS400M-36	36	36 - 39.6	6.94	11.11	11.11	250	400
CUS400M-48	48	48 - 49.9	5.21	8.33	8.33	250	400

CUS400M- | **12** | **/** | **U** | **M** | **E** | **X5** | **-**

Output voltage 12, 15, 19, 24, 28, 36, 48

blank	open frame with plastic baseplate
C	open frame with plastic baseplate and M3 threaded inserts for under side mounting
U	U channel chassis
B	open frame with metal baseplate
A	U channel chassis with cover
F	U channel chassis, cover and top fan

Blank	JST Connectors
M	Molex type input connector

blank	dual fuses
E	single input fuse in line (AC input only)

blank	Standard leakage current (<250uA)
R	Reduced leakage current <150uA (Contact Technical Sales)

blank	No options
X2	5V 2.0A standby supply, remote on/off (enable), remote sense, DC-OK, AC Fail
X3	12V 0.83A standby supply, remote on/off (enable), remote sense, DC-OK, AC Fail
X5	5V 2.0A standby supply, remote on/off (inhibit), remote sense, DC-OK, AC Fail
X6	12V 0.83A standby supply, remote on/off (inhibit), remote sense, DC-OK, AC Fail

Example: CUS400M-15V25/FEX5 = 15.25V factory output voltage set point, U chassis, cover and fan, single fuse, X5 standby and signals

12V, 15V and 24V 20A Buffer (Hold-Up) Modules

Industrial · Test · Semi-Fab · COMM · Broadcast

Full Datasheet
https://product.tdk.com/en/power/zbm

The ZBM20 20A buffer modules are ideal for providing short term hold-up or peak power for loads powered by 12V, 15V or 24Vdc output AC-DC power supplies. During normal operation, energy is stored in the ZBM20's electrolytic capacitors. When the AC power is interrupted for a short period of time, the ZBM20 continues to power the load, allowing equipment to shutdown in a safe and controlled manner. The ZBM20 can be set to fixed or variable buffer mode. In fixed mode it will provide power when the input voltage drops to below a preset level, in variable mode (24V model only) when the input decreases by 1V. Multiple buffer modules can be paralleled for additional hold-up time. Product status can be accessed remotely via a DC OK relay. The output voltage can also be inhibited to avoid an unsafe discharge of the stored energy.

Features	Benefits
• Provides 380ms Additional Hold-Up Time at Max Buffer Power	• Avoids Loss of Data During AC Power Interruptions
• Utilizes Electrolytic Capacitors to Store Energy	• No Batteries to Service or Maintain
• Five Year Warranty	• Lower Cost of Ownership
• Parallel Capable	• Hold-Up Time Can Be Extended
• Output Remote On/Off Function	• Avoids Unsafe Discharge of Stored Energy

Model Selector

Model	Output Voltage Fixed Mode (V) (1)	Output Voltage Dynamic Mode (V) (1)	Maximum Current (A)	Average Buffer Power (W)
ZBM20-12	11	-	20	220
ZBM20-15	13.8	-	20	276
ZBM20-24	22.4	Vin-1	20	448

3 x 5" 500W AC-DC Power Supplies

Medical · Industrial · Test · LED · COMM · Broadcast

Full Datasheet
https://product.tdk.com/en/power/cus-m

The compact CUS500M1 is packaged in the industry standard 3x5" footprint and can deliver 500W when forced air cooled or 300W convection cooled with a 500W peak. Certified to Medical & ITE safety standards, the CUS500M1 can used in both Class I & Class II (no ground wire) applications(1). An enclosed model (/EF suffix) is available with an internal fan.

Features	Benefits
• 300W (500W Peak) Convection Cooled	• Quiet Operation
• 500W with Forced Air	• Can Utilize System Airflow or Integrated Fan
• Medical Certifications (2 x MOPP)	• Suitable for B and BF Type Medical Equipment
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Suitable for Class I and Class II installations (1)	• Flexible Utilization
• Compact 3 x 5 x 1.46" Size	• Space Saving in End Equipment
• Enclosure and end fan models	• Versatile Application

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (V)	Maximum Current Convection (A)	Maximum Current Forced Air (A)	Peak Current (A)	Maximum Power Convection (W)	Maximum Power Forced Air (W)
CUS500M1-12	12	None	25.0	41.7	41.7	300	500.4
CUS500M1-19	19	None	15.8	26.4	26.4	300.2	501.6
CUS500M1-24	24	None	12.5	20.9	20.9	300	501.6
CUS500M1-28	28	None	10.7	17.9	17.9	299.6	501.2
CUS500M1-32	32	None	9.4	15.7	15.7	300.8	502.4
CUS500M1-36	36	None	8.3	13.9	13.9	298.8	500.4
CUS500M1-48	48	None	6.3	10.5	10.5	302.4	504.0

CUS500M1-	12	/	EF

Output voltage 12, 19, 24, 28, 32, 36, 48

blank	Open frame construction
/EF	Enclosed with end fan (exhaust air)

Other options are available, please contact sales

XMS500A Series

500W, Configurable AC-DC power supply

Medical Industrial Test COMM Broadcast Renewable

Full Datasheet
https://product.tdk.com/en/power/xms

The configurable XMS500A is packaged in a 4x7" footprint and can deliver 500W. With Medical & ITE certifications, the unit can used in both Class I & Class II (no ground wire) applications. A large number of options are available including mechanical construction, input fusing, cooling, standby voltage, fan supply voltage. low leakage current, AC Fail, Inhibit and Enable signals.

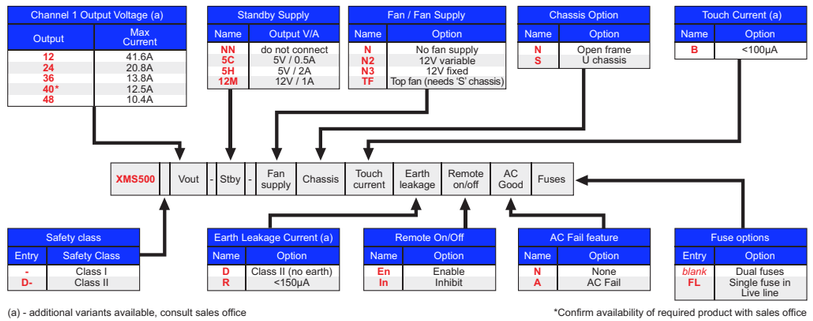
Features	Benefits
• 500W with Forced Air	• Can Utilize System Airflow or Integrated Fan
• BF Ready Medical isolation (MOPP)	• Suitable for B and BF Type Medical Equipment
• Class I / II with Level B EMI	• Easier System EMC Compliance
• Defibrillator Proof	• Suitable for BFD Applications
• Compact 4 x 7.1 x 1.46" Size	• Space Saving in End Equipment
• Enclosure & Other Options	• Versatile Application

Quick Selector (Standard models)*

Output		Cover / Chassis /	Class I		Class II	
Volts	Current	Fan type	Product Description	Order Code	Product Description	Order Code
12V	41.6A	Open Frame	XMS500-12-5H-N2NBRInA	XMS5001M	XMS500D-12-5H-N2NBDInA	XMS50024
		U chassis	XMS500-12-5H-N2SBRInA	XMS5003X	XMS500D-12-5H-N2SBDInA	XMS5004F
		Top fan	XMS500-12-5H-TFSBRInA	XMS5005Y	XMS500D-12-5H-TFSBDInA	XMS5006G
24V	20.8A	Open Frame	XMS500-24-5H-N2NBRInA	XMS50070	XMS500D-24-5H-N2NBDInA	XMS5008H
		U chassis	XMS500-24-5H-N2SBRInA	XMS50091	XMS500D-24-5H-N2SBDInA	XMS500BN
		Top fan	XMS500-24-5H-TFSBRInA	XMS500C6	XMS500D-24-5H-TFSBDInA	XMS500DP
36V	13.8A	Open Frame	XMS500-36-5H-N2NBRInA	XMS500FR	XMS500D-36-5H-N2NBDInA	XMS500G8
		U chassis	XMS500-36-5H-N2SBRInA	XMS500HS	XMS500D-36-5H-N2SBDInA	XMS500JT
		Top fan	XMS500-36-5H-TFSBRInA	XMS500KB	XMS500D-36-5H-TFSBDInA	XMS500LV
48V	10.4A	Open Frame	XMS500-48-5H-N2NBRInA	XMS500MC	XMS500D-48-5H-N2NBDInA	XMS500NW
		U chassis	XMS500-48-5H-N2SBRInA	XMS500PX	XMS500D-48-5H-N2SBDInA	XMS500RY
		Top fan	XMS500-48-5H-TFSBRInA	XMS500SG	XMS500D-48-5H-TFSBDInA	XMS500T0

*Note: Additional variants available - see 'How To Create A Product Description'
Standard models include: '5H' standby (5V / 2A), 'N2' fan supply (12V / 0.3A variable supply voltage) [except on Top fan variants], 'B' touch current (<100µA), 'In' remote on/off (inhibit) and 'A' AC Fail. Class I standard models include 'R' earth leakage (<150µA).

How To Create A Product Description



(a) - additional variants available, consult sales office

*Confirm availability of required product with sales office

CUS600M and CUS600M1 Series

3 x 5" 600W AC-DC Power Supplies

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/cus-m

The compact CUS600M is packaged in the industry standard 3x5" footprint and can deliver 600W with forced air or 400W with a 600W peak power with convection cooling. With Medical & ITE certifications, the unit can used in both Class I & Class II (no ground wire) applications(1). A 5V 2A standby voltage, remote on/off, remote sense and a Power Good signal is standard on the CUS600M. Options include an internal fan and output adjustment. The CUS600M1 models offer a reduced feature set for cost optimization.

Features	Benefits
• 400W (600W Peak) Convection Cooled	• Quiet Operation
• 600W with Forced Air	• Can Utilize System Airflow or Integrated Fan
• Medical Certifications (2 x MOPP)	• Suitable for B and BF Type Medical Equipment
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Suitable for Class I and Class II installations (1)	• Flexible Utilization
• Compact 3 x 5 x 1.46" Size	• Space Saving in End Equipment
• Enclosure & Other Options	• Versatile Application

Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment (V) (Specify /ADJ option suffix*) (2)	Maximum Current Convection (A)	Maximum Current Forced Air (A)	Peak Current (A)	Maximum Power Convection (W)	Maximum Power Forced Air (W)
CUS600M-12	12	11.7 - 12.9	33.4	50.0	50.0	400.8	600.0
CUS600M-19	19	18.5 - 20.5	21.1	31.6	31.6	400.9	600.4
CUS600M-24	24	23.4 - 25.9	16.7	25.0	25.0	400.8	600.0
CUS600M-28	28	27.3 - 30.2	14.3	21.5	21.5	400.4	602.0
CUS600M-32	32	31.2 - 34.5	12.5	18.8	18.8	400.0	601.6
CUS600M-36	36	35.1 - 38.8	11.1	16.7	16.7	399.6	601.2
CUS600M-48	48	46.8 - 51.8	8.4	12.6	12.6	403.2	604.8

CUS600M- | **12** | **/** | **EF**

Features	CUS600M-	CUS600M1-
Standby Voltage	Yes	Not Available
Remote On/Off		
Remote Sense		
Power Good Signal		

Output voltage 12, 19, 24, 28, 32, 36, 48

blank	Open frame construction
/EF	Enclosed with end fan (exhaust air)*
/ADJ	Output adjustment potentiometer**
/SF	Single input fuse in line**

* /EF model has /ADJ included (CUS600M only)
** Not available for CUS600M1 models
Other options are available, please contact sales

KAS Series

4W Wide Input AC-DC PCB-Mount Power Supplies

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/kas

The encapsulated KAS board mount power supplies are certified to IEC/CSA/UL/EN 62368-1, designed to meet IEC/EN 60335-1 and meet EN 55032 Class B for conducted and radiated emissions. With a wide input range of 90-305Vac requiring no earth ground (Class II), the KAS series is ideally suited for a wide range of applications including security systems, building automation, professional household appliances, portable equipment and products requiring a separate standby voltage.

Features	Benefits
• 90 - 305Vac Input	• Operates From 115V, 230V and 277Vac Nominal Inputs
• Wide Temperature Range (-40 to +70°C)	• Suitable For Industrial Applications
• Low No Load Power Consumption	• Energy Saving During System Standby
• Class II Double Insulated Input	• No Ground Connection Needed

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Ripple & Noise (mVpk-pk)	Line Regulation (mV)	Load Regulation (mV)	Efficiency (%)	Maximum Load Capacitance (uF)
KAS4-3P3	3.3	1.2	4	250	±16.5	±49.5	68	5,000
KAS4-5	5	0.8	4	250	±25	±75	72	4,200
KAS4-8	8	0.5	4	200	±40	±120	74	1,470
KAS4-9	9	0.444	4	200	±45	±135	75	1,330
KAS4-12	12	0.333	4	150	±24	±60	76	680
KAS4-14	14	0.286	4	150	±28	±70	76	470
KAS4-15	15	0.267	4	100	±30	±75	76	330
KAS4-24	24	0.167	4	100	±48	±120	77	120

KPSB6–25 Series

5-25W AC-DC Board Mount Power Supplies

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/kpsb

The cost effective, board mount KPSB series offers high efficiency levels in very compact 39.5 x 19.4mm (6W) and 50.8 x 28mm (25W) footprints. Featuring an open frame or encapsulated construction, these light weight converters are Class II double insulated, allowing operation without an earth ground connection. Optional JST plug in connectors are available.

Features	Benefits
• High Efficiency, Up to 87%	• Lower Operating Costs, Improved Thermal Performance
• Class B EMI	• No External Filter Components Required
• Low No Load Power Consumption	• Energy Saving
• Wide Operating Temperature	• Operation In Harsh Environments
• Class II, Wide Range Input (90-264Vac)	• Global Application, No Earth Required

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Overvoltage (V)	Efficiency (%) (230VAC)	Load Capacitance (uF)
KPSB6-3R3	3.3	1.5	5	6.45 - 7.14	75	1500
KPSB6-5	5	1.2	6	6.45 - 7.14	78	1200
KPSB6-9	9	0.67	6	10.5 - 12.1	81	670
KPSB6-12	12	0.5	6	14.3 - 15.8	81	500
KPSB6-15	15	0.4	6	17.1 - 19.5	81	400
KPSB6-24	24	0.25	6	28.5 - 31.5	83	250
KPSB25-5	5	4	20	6.8 (Typ)	81	81000
KPSB25-12	12	2.1	25	15 (Typ)	84	40900
KPSB25-15	15	1.67	25	18 (Typ)	85	19800
KPSB25-24	24	1.05	25	30 (Typ)	86	6600
KPSB25-36	36	0.7	25	47 (Typ)	87	4000
KPSB25-48	48	0.52	25	56 (Typ)	87	2170

KPSB	25	-24	- J
	Output power	Output voltage	

Blank	Pcb mount
-E	Encapsulated pcb mount
-J	JST plug-in connectors

KWS–A Series

Single output 5-25W AC-DC Board Mount Power Supplies

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/kws-a

The industrial grade KWS-A series of 5W, 10W, 15W and 25W board mount power supplies offer high efficiency levels of up to 88% in compact package sizes and footprints. The KWS-A has a wide operating temperature range of -40 (start up) to +85°C with derating above 45/55°C and less than 0.5W off-load power consumption. These converters are Class II double insulated, allowing operation without an earth ground connection.

Features	Benefits
• High Efficiency, Up to 88%	• Lower Operating Costs, Improved Thermal Performance
• Class B EMI with an External X Capacitor	• Minimal External Components Required
• Low No Load Power Consumption	• Energy Saving
• Wide Operating Temperature	• Operation In Harsh Environments
• Class II, Wide Range Input (85-265Vac)	• Global Application, No Earth Required

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Load Reg (mV)	Line Reg (mV)	Ripple /Noise (mV)	Efficiency (typ)% 115/230Vac
KWS5A-5	5	1	5	40	20	200	76 / 74
KWS10A-5	5	2	10	40	20	200	76 / 77
KWS15A-5	5	3	15	40	20	200	77 / 78
KWS25A-5	5	5	25	40	20	200	81 / 82
KWS5A-12	12	0.45	5.4	96	48	240	78 / 75
KWS10A-12	12	0.9	10.8	96	48	240	80 / 81
KWS15A-12	12	1.3	15.6	96	48	240	81 / 83
KWS25A-12	12	2.2	26.4	96	48	240	84 / 86
KWS5A-15	15	0.35	5.3	120	60	240	79 / 75
KWS10A-15	15	0.7	10.5	120	60	240	81 / 82
KWS15A-15	15	1	15	120	60	240	82 / 84
KWS25A-15	15	1.7	25.5	120	60	240	85 / 87
KWS5A-24	24	0.22	5.3	150	96	240	80 / 77
KWS10A-24	24	0.5	12	150	96	240	82 / 84
KWS15A-24	24	0.7	16.8	150	96	240	82 / 85
KWS25A-24	24	1.1	26.4	150	96	240	86 / 88

KWS25A | **-24**

Series Name and Output Power
KWS5A - 5W
KWS10A - 10W
KWS15A - 15W
KWS25A - 25W

Output Voltage
5, 12, 15 or 24V

KMS–A Series

15-60W Medical AC-DC PCB-Mount Power Supplies

Medical Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/kms-a

The encapsulated KMS-A PCB-Mount power supplies are certified to IEC/ES/EN 60601-1, IEC/EN 62368-1 and meet EN55011 Class B for conducted and radiated emissions. Requiring no earth ground, the KMS-A series is ideally suited for a wide range of medical and industrial applications, including dental, home healthcare and test and measurement.

Features	Benefits
• 4kVac Input to Output Isolation (2 x MoPP)	• Suitable for B & BF Applications Worldwide
• Wide Temperature Range (up to -40 to +80°C)	• Suitable for Harsh Environments
• Low No Load Power Consumption	• Energy Saving
• Class II Double Insulated Construction	• No Ground Connection Needed
• Epoxy Encapsulated	• Improved Shock and Vibration Performance

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Ripple & Noise (mVpk-pk)	Efficiency (at 230Vac) (%)	Maximum Load Capacitance (uF)
KMS15A-5	5	3	15	120	79	7,000
KMS30A-5	5	5	25	100	84	6,800
KMS60A-5	5.1	10	51	100	86	10,000
KMS15A-9	9	1.666	15	120	80	5,000
KMS60A-9	9	6.666	60	100	87	5,000
KMS15A-12	12	1.25	15	120	84	1,500
KMS30A-12	12	2.5	30	150	89	1,600
KMS60A-12	12	5	60	120	88	5,000
KMS15A-15	15	1	15	150	84	1,000
KMS30A-15	15	2	30	150	86	1,200
KMS60A-15	15	4	60	150	86	4,000
KMS15A-24	24	0.625	15	240	85	470
KMS30A-24	24	1.25	30	240	86	470
KMS60A-24	24	2.5	60	240	87	2,000

KMS | **15A** | **-24** | **/SC**

15A	15W Output Power
30A	30W Output Power
60A	60W Output Power

-5	5V Output (5.1V for 60W Model)
-9	9V Output (15W and 60W Models)
-12	12V Output
-15	15V Output
-24	24V Output

Blank	PCB mount standard model
/SC	Screw terminals (Not sold in the Americas)

300-1008W AC-DC Power Modules

Industrial COTS Test COMM LED Broadcast

Full Datasheet
https://product.tdk.com/en/power/pfe

The high efficiency PFE series of AC-DC 300W to 1008W power modules are for use in environments where convection or forced air cooling is not viable. Suitable for use in outdoor enclosures or liquid cooled applications, these pcb mounted power modules accept a wide range AC input and deliver an adjustable, regulated output. High ambient temperatures can be tolerated as the conduction cooled baseplate can withstand -40 up to 100°C temperatures. The fully featured PFE500F and PFE1000FA modules offer a parallel connection for increased power, a 12V auxiliary supply and remote on/off. The semi-regulated 48V output PFE700SA provides a very high power density and up to 92% efficiency.

Features	Benefits
• Compact Low Profile Package Sizes	• Space Saving in End Equipment
• High Efficiency	• Less Waste Heat to Manage and Reduced AC Power Consumption
• Up to 100°C Rated Baseplate Temperature	• Suitable for Rugged Environments
• Conduction Cooled Via Baseplate	• For Use in Convection Cooled or Sealed Enclosures

Model Selector

Model	Voltage (V)	Adjustable Range (V)	Max Current (A)	Max Output Power (W)	Ripple / Noise (mV)	Input Current (A) 115/230Vac	Efficiency (typ) % 115/230Vac
PFE300SA-12	12	9.6 - 14.4	25	300	120	3.3 / 1.6	84 / 86
PFE500SA-12	12	9.6 - 14.4	33	396	120	4.2 / 2.1	84 / 86
PFE500F-12	12	9.6 - 14.4	42	504	120	6.8 / 3.4(1)	81 / 83
PFE1000FA-12	12	9.6 - 14.4	60	720	120	8.0 / 3.9	84.5 / 89.5
PFE300SA-28	28	22.4 - 33.6	10.8	302	280	3.2 / 1.6	87.5 / 89.5
PFE500SA-28	28	22.4 - 33.6	18	504	280	5.2 / 2.5	88 / 90
PFE500F-28	28	22.4 - 33.6	18	504	280	6.4 / 3.2(1)	84 / 86
PFE1000FA-28	28	22.4 - 33.6	36	1008	280	10.8 / 5.3	87 / 89.5
PFE300SA-48	48	38.4 - 57.6	6.3	302	480	3.1 / 1.6	88 / 90.5
PFE500SA-48	48	38.4 - 57.6	10.5	504	480	5.1 / 2.5	90 / 91
PFE500F-48	48	38.4 - 57.6	10.5	504	480	6.4 / 3.2(1)	84 / 86
PFE1000FA-48	48	38.4 - 57.6	21	1008	480	10.6 / 5.2	88 / 90.5
PFE700SA-48	48	None	14	714	4000	7.0 / 3.4	90 / 92

PFE500SA-	12	/	T

Output voltage 12, 28, 48

blank	Threaded mounting hole
/T	non threaded mounting hole

1008 to 1512W Power Factor Correction Module

Industrial Test Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/pf-b

The full brick size PF1500B-360 converts AC to a regulated 360Vdc for use in distributed power systems utilizing isolated high voltage DC-DC converters, or loads requiring a high voltage source. Rated at 1512W for an input of 170 to 265V and 1008W from 85 to 265V, the module has a 0.98 power factor and an efficiency of up to 96.5%. The baseplate can be conduction cooled via a cold-plate or using an optional heatsink and external airflow. Modules can be connected in parallel for additional power. The remote on/off function can be used to enable DC-DC converters via the ENA (DC good) signal. An auxiliary output and inverter good signal are also provided for control and monitoring.

Features	Benefits
• Suitable For Developing Custom Supplies	• Module Solution Reduces Risk, Time and Cost
• Up to 96.5% Efficient	• Less Waste Heat to Manage and Reduced AC Power Consumption
• Compact Full Brick Package (116.8 x 61 x 12.7mm)	• Utilizes Less Space
• Up to 100°C Rated Baseplate Temperature	• Suitable for Rugged Environments
• Conduction Cooled Via Baseplate	• For Use in Convection Cooled or Sealed Enclosures

Model Selector

Model	Output Voltage (V)	Maximum Current (A) 85-265Vac Input	Maximum Power (W) 85-265Vac Input	Maximum Current (A) 170-265Vac Input	Maximum Power (W) 170-265Vac Input
PF1500B-360	360	2.8	1008	4.2	1512

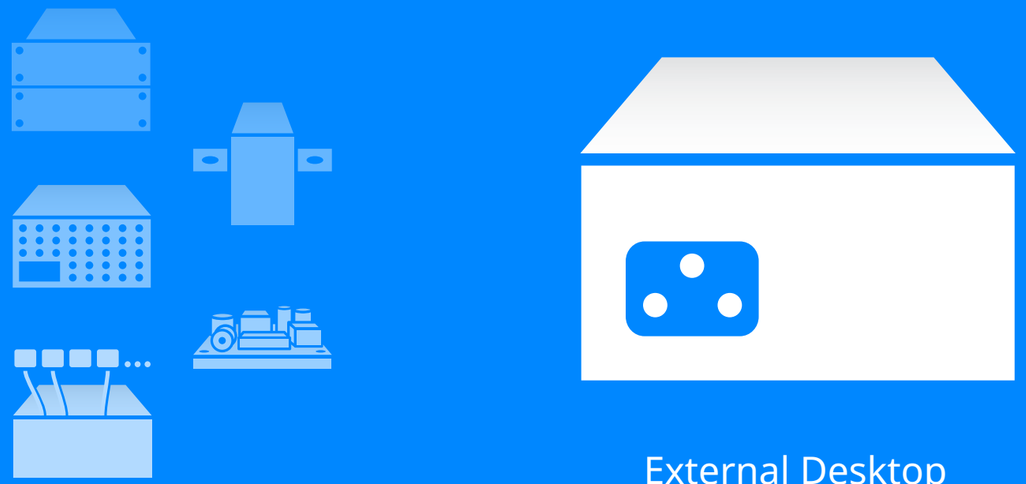
Options

Blank	M3 Threaded mounting hole
/T	Non threaded mounting holes

Related Products

Type	Part Number(s)	Size (mm) / Description
Heatsink	HAF-10L	116.8 x 25.4 x 61
Heatsink	HAF-15L	116.8 x 38.1 x 61
Heatsink	HAF-15T	116.8 x 38.1 x 61
DC-DC Converters	PH-A series	50 to 1200W, 200-425V input
Thermal Fuse Resistor for Inrush Circuit	DFN51120	5.1R 5W (For TRF1 and TRF2)

AC/DC External/Desktop/Wallmount



External Desktop

Applications

- External power supplies as accessory for end equipment
- Typically used for portable, Medical and ITE equipment

Features

- Fully enclosed plastic case
- Plug and play – no input range setting or output voltage adjustment required
- IEC AC input connection
- DC output cable and connector
- ErP, CEC, DOE and EISA compliant models
- Class I and Class II versions
- DTM series suitable for medical equipment
- WMM series wallmounts with international AC plugs

In Everything, Better

AC/DC External Index by Wattage

Wattage	Number of Outputs	Series	Page
25-30W	1	WMM30	90
25-36W	1	DTM36-C8	91
40-65W	1	DTM65-C8	92
40-65W	1	DTM65-D	93
40-80W	1	DT62-80D	94
70W	1	DTM70	95
100-150W	1	DT100-150-D	96
110W	1	DTM110-C8	97
150-160W	1	DTM160	98
250W	1	DTM250-D	99
300W	1	DTM300-D	100

Listed by Wattage

WMM30 Series

25 to 30W Medical Wall Mount Power Supplies

Medical Home Medical

Full Datasheet
https://product.tdk.com/en/power/wmm

The WMM30 Class II 25 to 30W wall mount power supplies are certified to IEC/ES/EN60601-1 and EN60601-1-11, are compliant to EN60601-1-2 (Ed4) and designed to meet IEC60335-1 (Household Appliances). Requiring no earth ground, the WMM30 series is ideally suited for Medical, Clinical and Home Healthcare applications. Four interchangeable AC plugs are available (sold separately) for use in North America, Europe, UK and Australia. Alternative output connectors and cable assemblies are available on request.

Features	Benefits
• Medical Safety Certifications and Immunity	• Suitable for Medical, Clinical and Home Healthcare Use
• Class II Input	• No Earth Ground Connection Needed
• Meets DoE Level VI and EU Tier 2 Efficiency, <0.075W Off-load Power Consumption	• Meets US and EU Energy Saving Legislation
• 4kV (2xMOPP) Input to Output Isolation	• Fully Isolated For Use With B and BF Rated Equipment
• Alternative Connectors and Cable Assemblies	• Flexible System Integration

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Overvoltage Protection (V) (Maximum)	Maximum Load Capacitance (uF)	Efficiency (%) (230Vac input, 75% Load)	Average Efficiency (%) (1)
WMM30CN050	5	5	25	7.44	5,000	84	>85
WMM30CN090	9	3.3	29.7	12.6	3,300	88	>87.7
WMM30CN120	12	2.5	30	15.5	2,500	88	>87.7
WMM30CN150	15	2	30	19.5	2,000	88	>87.7
WMM30CN180	18	1.67	30	23.5	1,670	88	>87.7
WMM30CN240	24	1.25	30	31.5	1,250	88	>87.7

WMM30CN	120	-	xxx
	Output voltage 5, 9, 12, 15, 18, 24		Connector/Cable Options* (When applicable)

* Options
When no option code is stated:
5V output model has a straight 5.5 x 2.1 x 12mm (OD x ID x L) connector, positive center pin and a 16 AWG 1220mm long cable
9V output model has a straight 5.5 x 2.1 x 12mm (OD x ID x L) connector, positive center pin and a 16 AWG 1800mm long cable
12V and 15V output models have a straight 5.5 x 2.1 x 12mm (OD x ID x L) connector, positive center pin and an 18 AWG 1800mm long cable
18V and 24V output models have a straight 5.5 x 2.1 x 12mm (OD x ID x L) connector, positive center pin and an 22 AWG 1800mm long cable

A variety of connector and output cable options are available, please contact your local sales office

Interchangeable AC Plugs (Sold separately)

Part Number	Region
ACC-WMM30-A	North America
ACC-WMM30-U	UK
ACC-WMM30-E	Europe
ACC-WMM30-S	Australia

DTM36–C8 Series

25 to 36W Medical External Power Supplies

Medical Home Medical

Full Datasheet
https://product.tdk.com/en/power/dtm

The DTM36-C8 Class II 25 to 36W external power supplies are certified to IEC/ES/EN60601-1 and EN60601-1-11, are compliant to EN60601-1-2 (Ed4) and designed to meet IEC60335-1 (Household Appliances). Requiring no earth ground, the DTM series is ideally suited for Medical, Clinical and Home Healthcare applications. Alternative connectors and cable assemblies are available on request.

Features	Benefits
• Medical Safety Certifications and Immunity	• Suitable for Medical, Clinical and Home Healthcare Use
• Class II Input	• No Earth Ground Connection Needed
• Meets DoE Level VI and EU Tier 2 Efficiency, <75mW Off-load Power Consumption	• Meets US and EU Energy Saving Legislation
• 4kV (2xMOPP) Input to Output Isolation	• Fully Isolated For Use With B and BF Rated Equipment
• Alternative Connectors and Cable Assemblies	• Flexible System Integration

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Overvoltage Protection (V) (Typical)	Maximum Load Capacitance (uF)	Efficiency (%) (230Vac input, 75% Load)	Average Efficiency (%) (1)
DTM36CN050-C8	5	5	25	7.44	5,000	85	85.0
DTM36CN090-C8	9	3.3	29.7	12.6	3,300	88	87.7
DTM36CN120-C8	12	2.5	30	15.9	2,500	89	87.7
DTM36CN135-C8	13.5	2.4	32.4	18.5	2,400	89	87.9
DTM36CN150-C8	15	2.4	36	21.5	2,400	89	88.3
DTM36CN180-C8	18	2	36	24.8	2,000	89	88.3
DTM36CN240-C8	24	1.5	36	31.5	1,500	89	88.3
DTM36CN360-C8	36	1	36	45.2	1,000	89	88.3
DTM36CN480-C8	48	0.75	36	59.6	750	89	88.3

DTM36CN	120	C8	-	xxx
	Output voltage 5, 9, 12, 13.5, 15, 18, 24, 36, 48	IEC C8 input connector		Connector/Cable Options* (When applicable)

* Options
When no option code is stated:
5V output model has a straight 5.5 x 2.1 x 12mm (OD x ID x L) connector, positive center pin and a 16 AWG 1220mm long cable
9V, 12V and 13.5V output models have a straight 5.5 x 2.1 x 12mm (OD x ID x L) connector, positive center pin and an 18 AWG 1800mm long cable
≥15 models have a straight 5.5 x 2.1 x 12mm (OD x ID x L) connector, positive center pin and an 20 AWG 1800mm long cable

40-65W Medical Class II
AC-DC External Power Supplies

Medical Home Medical

Full Datasheet
https://product.tdk.com/en/power/dtm

The DTM65-C8 Class II 40 to 65W external power supplies are certified to IEC/ES/EN60601-1, EN60601-1-11 and are compliant to EN60601-1-2 (Ed4). All models also meet EN55011-B, FCC Class B conducted & radiated emissions. Requiring no earth ground, the DTM65-C8 series is ideally suited for a variety of Medical, Clinical and Home Healthcare applications, including diagnostic and monitoring equipment.

Features	Benefits
• Medical Safety Certifications and Immunity	• Suitable for Medical, Clinical and Home Healthcare Use
• Meets DoE Level VI (Level V for 5V model)	• Meets US Energy Saving Legislation
• >88% Average Efficiency, <0.21W No Load Power	• Consumes Less Energy
• 4kV (2xMOPP) Input to Output Isolation	• Suitable for B and BF Rated Equipment
• Wide Range AC, Class II Input IEC320-C8	• Global Operation, No Earth Required

Model Selector

Model	Output Voltage (V)	Max Current (A)	Max Power (W)	Overvoltage Protection (V)	Output Regulation (%)	Ripple & Noise (mVpk-pk)	DoE Efficiency Level
DTM65PW050C8	5	8	40	5.5 - 7.5	±5	50	V
DTM65PW120C8	12	5	60	13.2 - 18.0	±5	120	VI
DTM65PW150C8	15	4	60	16.5 - 22.5	±5	150	VI
DTM65PW190C8	19	3.42	65	20.9 - 28.5	±3	190	VI
DTM65PW240C8	24	2.7	65	26.4 - 36.0	±3	240	VI
DTM65PW280C8	28	2.32	65	30.8 - 42.0	±3	280	VI
DTM65PW480C8	48	1.35	65	52.8 - 72.0	±3	480	VI

DTM65PW **190** **C8**

050	5V Output Voltage
120	12V Output Voltage
150	15V Output Voltage
190	19V Output Voltage
240	24V Output Voltage
280	28V Output Voltage
480	48V Output Voltage

IEC C8 input connector

40-65W Medical Class I
AC-DC External Power Supplies

Medical Home Medical

Full Datasheet
https://product.tdk.com/en/power/dtm

The DTM65-D Class I 40 to 65W external power supplies are certified to IEC/ES/EN/UL/CSA 60601-1 and are compliant to EN60601-1-2 (Ed4). With an average efficiency of greater than 89% and an off-load power consumption of less than 0.15W, this series also complies with DoE Level VI and EU Tier 2 v5 standards for efficiency and off-load power. The DTM65-D series is ideally suited for a variety of hospital, dental and healthcare applications, including diagnostic and monitoring equipment.

Features	Benefits
• Medical Safety Certifications and Immunity	• Suitable for Medical and Clinical Use
• Meets DoE Level VI & EU Tier 2 Efficiency	• Meets US and EU Energy Saving Legislation
• >89% Average Efficiency, <0.15W No Load Power	• Consumes Less Energy
• 4kV (2xMOPP) Input to Output Isolation	• Suitable for B and BF Rated Equipment
• Wide Range Input (90-264VAC)	• Global Operation

Model Selector

Model	Output Voltage (V)	Max Current (A)	Max Power (W)	Overvoltage Protection (V)	Ripple & Noise (mVpk-pk)
DTM65PW050D	5	8.0	40	5.5 - 8.5	120
DTM65PW120D	12	5.0	60	13.2 - 16.0	120
DTM65PW150D	15	4.0	60	16.5 - 30.0	120
DTM65PW190D	19	3.42	65	20.9 - 35.0	120
DTM65PW240D	24	2.70	65	26.4 - 35.0	150
DTM65PW280D	28	2.32	65	30.0 - 35.0	150
DTM65PW360D	36	1.81	65	41.0 - 50.0	150
DTM65PW480D	48	1.35	65	52.8 - 60.0	150

DTM65PW **240D**

050D	5V Output Voltage
120D	12V Output Voltage
150D	15V Output Voltage
190D	19V Output Voltage
240D	24V Output Voltage
280D	28V Output Voltage
360D	36V Output Voltage
480D	48V Output Voltage

40-80W AC-DC External Power Supplies

Industrial · Broadcast · Test · COMM

Full Datasheet
https://product.tdk.com/en/power/dt-d

Ranging from 40 to 80W, these DT62/80-D external power supplies are certified to UL/CSA/EN/IEC62368-1 and comply with DoE Level VI Efficiency. In addition to satisfying Energy Efficiency Level VI with an average efficiency of greater than 89% and an off-load power draw of less than 150mW, the products also meet EU CoC Tier 1 or Tier 2 requirements. All units meet EN 55032-B, FCC Class B conducted & radiated emissions and EN55024 immunity standards.

Features	Benefits
• EU CoC Tier 2 & DoE Level VI Compliant	• Meets US and EU Energy Saving Legislation
• Wide Range AC Input (90-264VAC)	• Global Operation
• >89% Average Efficiency	• Consumes Less Energy
• Rugged Non-Vented Enclosure	• Suitable for Harsh Industrial Environment
• Alternative Connectors and Cable Assemblies	• Flexible System Integration

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Overvoltage Protection (V)	DoE Level / EU CoC V.5	Ripple & Noise (mVpk-pk)
DT62PW050D	5	8.0	40	5.5 - 8.5	VI* / Tier 1*	50
DT62PW080D	8	5.0	40	8.8 - 13.0	VI* / Tier 1*	80
DT62PW120D	12	5.41	65	13.2 - 17.4	VI / Tier 2	120
DT62PW150D	15	4.33	65	16.5 - 21.0	VI / Tier 2	150
DT62PW190D	19	3.43	65	20.9 - 28.0	VI / Tier 2	190
DT62PW240D	24	2.71	65	26.4 - 31.2	VI / Tier 2	240
DT62PW360D	36	1.81	65	39.6 - 52.2	VI / Tier 2	240
DT62PW480D	48	1.36	65	52.8 - 67.5	VI / Tier 2	240
DT80PW090D	9	8.0	72	9.90 - 11.7	VI* / Tier 1*	240
DT80PW120D	12	6.67	80	13.2 - 15.6	VI / Tier 2	240
DT80PW150D	15	5.34	80	16.5 - 19.5	VI / Tier 2	240
DT80PW180D	18	4.45	80	19.8 - 23.4	VI / Tier 2	240
DT80PW240D	24	3.34	80	26.4 - 31.2	VI / Tier 2	240
DT80PW280D	28	2.86	80	30.8 - 36.4	VI / Tier 2	240
DT80PW480D	48	1.67	80	52.8 - 60.0	VI / Tier 2	240

*Product built after July 2016
DoE - Department of Energy
EU CoC V.5 - European Code of Conduct Version 5

DT	80PW	240	D

80PW	
62PW	40/65W Output Power
80PW	72/80W Output Power

240		240	
050	5V Output Voltage (DT62 only)	190	19V Output Voltage (DT62 only)
080	8V Output Voltage (DT62 only)	240	24V Output Voltage
090	9V Output Voltage (DT80 only)	280	28V Output Voltage (DT80 only)
120	12V Output Voltage	360	36V Output Voltage (DT62 only)
150	15V Output Voltage	480	48V Output Voltage
180	18V Output Voltage (DT80 only)		

70W Medical and ICT Class I and II External AC-DC Power Supplies

Medical · Industrial · Test · COMM · Broadcast

Full Datasheet
https://product.tdk.com/en/power/dtm

The DTM70 Class I and DTM70-C8 Class II (no ground connection) 70W external power supplies are certified to IEC/ES/CSA/EN60601-1, IEC60601-1-11 (DTM70-C8 model) and are compliant to IEC60601-1-2 (Ed4) and IEC/BS/EN62368-1. With an average efficiency of up to 91% and an off-load power consumption of less than 0.15W, this series also complies with DoE Level VI standards. The DTM70 series is suitable for a variety of medical, clinical, healthcare, industrial, test and measurement applications.

Features	Benefits
• Wide Range AC Input (Class I or Class II Input Options)	• Supports Medical and Industrial Applications Globally
• Locking Output Connector	• Avoids Accidental Disconnection
• DoE Level VI Efficiency	• Meets US Energy Saving Legislation
• 60601-1 Medical Certifications (2xMOPP)	• Suitable for B & BF Rated Equipment
• 62368-1 Compliant for ICT and Industrial Applications	• Suitable for Industrial Applications
• < 0.15W Off-load Power Draw	• Consumes Less Energy, ErP Compliant

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Overvoltage Protection (V)	Ripple & Noise (mV pk-pk)	Efficiency at 230Vac (%)	Max. Load Capacitance (µF)
DTM70CN120	12	5.8	70	13.5	120	89	5,800
DTM70CN150	15	4.65	70	16.5	150	89	4,650
DTM70CN180	18	3.9	70	19.5	180	89	3,900
DTM70CN240	24	3	70	26	240	90	3,000
DTM70CN360	36	1.9	70	40	360	90	1,900
DTM70CN480	48	1.5	70	53.5	480	91	1,500
DTM70CN120C8	12	5.8	70	13.5	120	89	5,800
DTM70CN150C8	15	4.65	70	16.5	150	89	4,650
DTM70CN180C8	18	3.9	70	19.5	180	89	3,900
DTM70CN240C8	24	3	70	26	240	90	3,000
DTM70CN360C8	36	1.9	70	40	360	90	1,900
DTM70CN480C8	48	1.5	70	53.5	480	91	1,500

DTM70CN	120	C8	-xxx

Series

120 = 12V Output Voltage
150 = 15V Output Voltage
180 = 18V Output Voltage
240 = 24V Output Voltage
360 = 36V Output Voltage
480 = 48V Output Voltage

Blank = Class I (IEC320/C14) inlet
C8 = Class II (IEC320/C8) inlet

Modified standard designator for alternative connectors, cables and other non-safety file impacting changes*

* Contact Sales, MOQs may apply

DT100/150–D Series

100-150W AC-DC External Power Supplies

Industrial Broadcast Test COMM

Full Datasheet
https://product.tdk.com/en/power/dt-d

Ranging from 100 to 150W, these DT100/150-D external power supplies are certified to UL/CSA/EN/IEC62368-1 and comply with DoE Level VI Efficiency. In addition to satisfying Energy Efficiency Level VI with an average efficiency of greater than 89% and an off-load power draw of less than 150mW, the products also meet EU Tier 2 requirements. All units meet EN55032-B, FCC Class B conducted & radiated emissions and EN55024 immunity standards.

Features	Benefits
• EU CoC Tier 2 & DoE Level VI Compliant	• Meets US and EU Energy Saving Legislation
• Wide Range AC Input (90-264VAC)	• Global Operation
• >89% Average Efficiency	• Consumes Less Energy
• Rugged Non-Vented Enclosure	• Suitable for Harsh Industrial Environment
• Alternative Connectors and Cable Assemblies	• Flexible System Integration

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Overvoltage Protection (V)	Output Regulation (%)	Ripple & Noise (mVpk-pk)
DT100PW120D	12	8.34	100	13.2 - 15.6	±5	240
DT100PW160D	16	6.25	100	17.6 - 20.8	±5	320
DT100PW190D	19	5.27	100	20.9 - 24.7	±5	380
DT100PW240D	24	4.17	100	26.4 - 31.2	±3	480
DT100PW360D	36	2.78	100	39.6 - 46.8	±3	480
DT100PW480D	48	2.09	100	52.8 - 62.4	±3	480
DT150PW120D	12	11.67	140	13.2 - 15.6	±5	240
DT150PW160D	16	9.38	150	17.6 - 20.8	±5	320
DT150PW190D	19	7.90	150	20.9 - 24.7	±5	380
DT150PW240D	24	6.25	150	26.4 - 31.2	±3	480
DT150PW360D	36	4.17	150	39.6 - 46.8	±3	480
DT150PW480D	48	3.13	150	52.8 - 62.4	±3	480

DT	100PW	240	D

100 100W Output Power
150 140/150W Output Power

120 12V Output Voltage
160 16V Output Voltage
190 19V Output Voltage
240 24V Output Voltage
360 36V Output Voltage
480 48V Output Voltage

DTM110–C8 Series

105-110W Medical/ITE Class II AC-DC External Power Supplies

Medical Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/dtm

The DTM110-C8 Class II 105 to 110W external power supplies are certified to IEC/ES/CSA/EN60601-1, IEC60601-1-11, IEC/UL/CSA/EN62368-1 and are compliant to IEC60601-1-2 (Ed4). With an average efficiency of greater than 89% and an off-load power consumption of less than 0.15W, this series also complies with DoE Level VI and EU Tier 2 v5 standards for efficiency and off-load power. Requiring no earth ground, the DTM110-C8 series is ideally suited for a variety of hospital and home healthcare applications, plus industrial test, measurement and portable equipment.

Features	Benefits
• Medical Safety Certifications and Immunity	• Suitable for Medical, Clinical and Home Healthcare Use
• Meets DoE Level VI & EU Tier 2 Efficiency	• Meets US and EU Energy Saving Legislation
• 4kVac (2xMOPP) Input to Output Isolation	• Suitable for B & BF Rated Equipment
• IP41 rated, Vent-free Enclosure	• Suitable for Industrial Environments
• Wide Range AC, Class II Input IEC320-C8	• Global Operation, No Earth Ground Required

Model Selector

Model	Output Voltage (V)	Max Current (A)	Max Power (W)	Overvoltage Protection (V)	Output Regulation (%)
DTM110PW120C8	12	8.75	105	13.2 - 15.6	±5
DTM110PW150C8	15	7.34	110	16.5 - 19.5	±5
DTM110PW190C8	19	5.79	110	20.9 - 24.7	±5
DTM110PW240C8	24	4.59	110	26.4 - 31.2	±3
DTM110PW280C8	28	3.93	110	30.8 - 36.4	±3
DTM110PW360C8	36	3.06	110	39.6 - 46.8	±3
DTM110PW480C8	48	2.29	110	52.8 - 62.4	±3

DTM110PW	190	C8

120 12V Output Voltage
150 15V Output Voltage
190 19V Output Voltage
240 24V Output Voltage
280 28V Output Voltage
360 36V Output Voltage
480 48V Output Voltage

IEC C8 input connector

DTM160 and DTM160–C8 Series

150-160W Medical and ICT Class I and II External AC-DC Power Supplies

Medical Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/dtm

The DTM160 Class I and DTM160-C8 Class II (no ground connection) 150-160W external power supplies are certified to IEC/UL/CSA/EN60601-1, IEC60601-1-11 (DTM160-C8 model) and are compliant to IEC60601-1-2 (Ed4) and IEC/BS/EN62368-1. With an average efficiency of up to 93% and an off-load power consumption of less than 0.15W, this series also complies with DoE Level VI standards. The DTM160 series is suitable for a variety of medical, clinical, healthcare, industrial, test and measurement applications.

Features	Benefits
• Wide Range AC Input (Class I or Class II Input Options)	• Supports Medical and Industrial Applications Globally
• Locking Output Connector	• Avoids Accidental Disconnection
• DoE Level VI Efficiency	• Meets US Energy Saving Legislation
• 60601-1 Medical Certifications (2xMOPP)	• Suitable for B & BF Rated Equipment
• 62368-1 Compliant for ICT and Industrial Applications	• Suitable for Industrial Applications
• < 0.15W Off-load Power Draw	• Consumes Less Energy, ErP Compliant

Model Selector

Model	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	Overvoltage Protection (V)	Ripple & Noise (mV pk-pk)	Efficiency at 230Vac (%)	Max. Load Capacitance (µF)
DTM160CN120	12	12.5	150	13.2	120	91	12,250
DTM160CN240	24	6.66	160	28.6	200	92	6,600
DTM160CN360	36	4.44	160	41.8	200	92	4,330
DTM160CN480	48	3.33	160	55.6	200	93	3,240
DTM160CN120C8	12	12.5	150	13.2	120	91	12,250
DTM160CN240C8	24	6.66	160	28.6	200	92	6,600
DTM160CN360C8	36	4.44	160	41.8	200	92	4,330
DTM160CN480C8	48	3.33	160	55.6	200	93	3,240

DTM160CN | **XXX** | **YY** | **-xxx**

- DTM160CN: Series
- XXX:
  - 120 = 12V Output Voltage
  - 240 = 24V Output Voltage
  - 360 = 36V Output Voltage
  - 480 = 48V Output Voltage
- YY:
  - Blank = Class I (IEC320/C14) inlet
  - C8 = Class II (IEC320/C8) inlet
- -xxx: Modified standard designator for alternative connectors, cables and other non-safety file impacting changes*

* Contact Sales, MOQs may apply

Related Products

Type	Part Number	Description
Power supply	DTM and WMM	30 to 300W external power supplies

DTM250–D Series

250W Medical/ITE AC-DC External Power Supplies

Medical Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/dtm

The DTM250-D 250W external power supplies are certified to IEC/ES/CSA/EN60601-1, IEC/UL/CSA/EN62368-1 and are compliant to IEC60601-1-2 (Ed4). With an average efficiency of greater than 89% and an off-load power consumption of less than 0.15W, this series also complies with DoE Level VI and EU Tier 2 v5 standards for efficiency and off-load power. The DTM250-D series is suitable for higher power medical, dental, test, measurement and industrial portable equipment.

Features	Benefits
• Wide Range AC Input	• Global Operation
• Meets DoE Level VI & EU Tier 2 Efficiency	• Meets US and EU Energy Saving Legislation
• 60601-1 Medical Certifications /2xMoPP	• Suitable for B & BF Rated Equipment
• 62368-1 ITE Certifications	• Suitable for Industrial Applications
• < 0.15W Off-load Power Draw	• Consumes Less Energy

Model Selector

Model	Output Voltage (V)	Max Current (A)	Max Power (W)	Overvoltage Protection (V)	Ripple & Noise (mVpk-pk)
DTM250PW120D	12	20.83	250	12.9 - 16.0	240
DTM250PW190D	19	13.157	250	20.20 - 25.46	300
DTM250PW240D	24	10.416	250	25.50 - 32.16	300
DTM250PW280D	28	8.928	250	29.6 - 33.2	300
DTM250PW360D	36	6.94	250	37.8 - 43.2	300
DTM250PW480D	48	5.208	250	50.0 - 57.2	300
DTM250PW540D	54	4.629	250	56.0 - 60.2	300

DTM250PW | **190D**

- 120D 12V Output Voltage
- 190D 19V Output Voltage
- 240D 24V Output Voltage
- 280D 28V Output Voltage
- 360D 36V Output Voltage
- 480D 48V Output Voltage
- 540D 54V Output Voltage

DTM300–D Series

300W Medical/ITE Class I and II AC-DC External Power Supplies

Medical Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/dtm

The DTM300-D Class I and Class II (no ground connection) 300W external power supplies are certified to IEC/ES/CSA/EN60601-1, IEC60601-1-11 (Class II), IEC/UL/CSA/EN62368-1 and are compliant to IEC60601-1-2 (Ed4). With an average efficiency of greater than 88% and an off-load power consumption of less than 0.5W, this series also complies with DoE Level VI standards for efficiency and off-load power. With options for Class I or Class II inputs, the DTM300-D series is suitable for a variety of power hungry medical, industrial, and test and measurement applications.

Features	Benefits
• Wide Range AC Input (Class I or Class II Input Options)	• Global Operation
• Meets DoE Level VI Efficiency	• Meets US Energy Saving Legislation
• 60601-1 Medical Certifications /2xMoPP	• Suitable for B & BF Rated Equipment
• 62368-1 ITE Certifications	• Suitable for Industrial Applications
• < 0.5W Off-load Power Draw	• Consumes Less Energy

Model Selector

Model	Output Voltage (V)	Max Current (A)	Max Power (W)	Overvoltage Protection (V)	Ripple & Noise (mVpk-pk)
DTM300PW120D1	12	25	300	12.9 - 16.0	240
DTM300PW150D1	15	20	300	16.0 - 20.0	300
DTM300PW190D1	19	15.79	300	20.20 - 25.46	300
DTM300PW240D1	24	12.50	300	25.50 - 32.16	300
DTM300PW280D1	28	10.71	300	29.6 - 33.2	300
DTM300PW480D1	48	6.25	300	50.0 - 57.2	300
DTM300PW540D1	54	5.56	300	56.0 - 60.2	300
DTM300PW120D2	12	25	300	12.9 - 16.0	240
DTM300PW150D2	15	20	300	16.0 - 20.0	300
DTM300PW190D2	19	15.79	300	20.20 - 25.46	300
DTM300PW240D2	24	12.5	300	25.50 - 32.16	300
DTM300PW280D2	28	10.71	300	29.6 - 33.2	300
DTM300PW480D2	48	6.25	300	50.0 - 57.2	300
DTM300PW540D2	54	5.56	300	56.0 - 60.2	300

DTM300PW **240** **D2**

120	12V Output Voltage
150	15V Output Voltage
190	19V Output Voltage
240	24V Output Voltage
280	28V Output Voltage
480	48V Output Voltage
540	54V Output Voltage

D1	Class I Input (IEC320-C14)
D2	Class II Input (IEC320-C18)

What is the difference between efficiency and average efficiency?

Efficiency

Power supply datasheets include product efficiency in a percentage format for each voltage and output power model, as a guidance to how much power is lost in wasted heat when the product is running. As the actual operating efficiency varies with input voltage, output load, ambient temperature and component tolerance, usually there is a test condition noted.

Phrases like “up to 95%” or “typically 93% at 230Vac input, 100% load and 25°C ambient” are widely used.

If the selection of the power supply is being made purely on efficiency, then the manufacturer’s evaluation data has to be studied in order to determine the measured efficiency at the user’s load condition. Figure 1 shows the efficiency vs. output current plot for TDK-Lambda’s 600W rated 24V output GXE600-24 for different input voltages. At 60% load, 230Vac input one could expect the efficiency to be 94%.

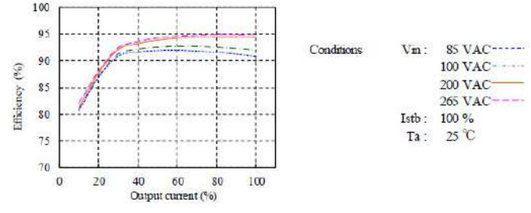


Figure 1: GXE600-24 Efficiency vs Output Current

Average Efficiency

External power supplies complying with the DoE (Department of Energy) and EU efficiency regulations will sometimes only state the standard (and its revision) with which they comply. TDK-Lambda’s DTM110PW240C8 datasheet for example, states compliance with the latest DoE Level VI & EU Tier 2 Efficiency standards and also includes that the average efficiency is >89%. The average efficiency for an external power supply rated between 49-250W has to be at least 89% to comply with the current and proposed standards.

Is “Average Efficiency” the same as “Efficiency”? No.

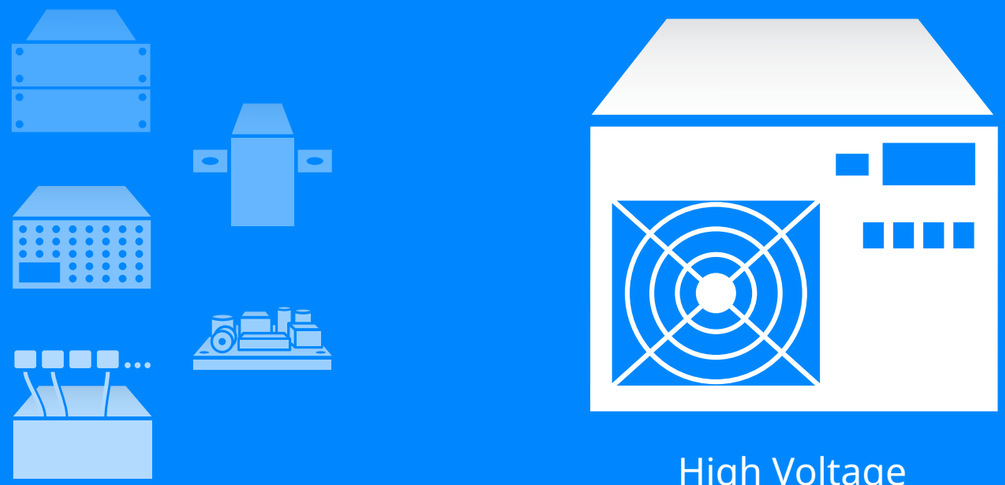
Average efficiency is calculated by measuring the efficiency at 25%, 50%, 75% and 100% loads. These four values are added together and the total is divided by four to obtain the average. Measurements are taken at 115Vac and 230Vac inputs.

Using the measurements from the table below for the DTM110PW240C8, the calculated average efficiency at 115Vac is 90% and 90.5% at 230Vac.

Load (%)	Input Power (W)	Output Voltage (Vdc)	Output Current (A)	Output Power (W)	Efficiency (%)
Vin: 115V/50Hz					
100	121.53	24.16	4.54	109.69	90
75	91.67	24.20	3.43	83.11	91
50	61.27	24.26	2.28	55.40	90
25	31.73	24.27	1.17	28.35	89
10	12.44	24.27	0.46	11.07	89
0	0.08	24.25	--	--	--
Vin: 230V/50Hz					
100	119.33	24.16	4.52	109.07	91
75	92.19	24.21	3.47	83.87	91
50	62.11	24.27	2.30	55.83	90
25	30.74	24.34	1.14	27.63	90
10	13.26	24.35	0.49	11.82	89
0	0.11	24.25	--	--	--

Efficiency readings are also taken at 10% to check compliance to the EU Tier 2 Efficiency standard. For a power supply rated at 49-250W it must have a minimum efficiency of 79%. At 10% load the DTM250-D has an efficiency of 89%.

AC/DC High Voltage



High Voltage

Applications

- Test & Measurement
- Industrial
- Medical
- Semiconductor
- Applied R&D
- Renewable Energy
- Oil & Gas
- Communications
- Automotive
- COTS
- Robotics

Features ALE Rack Mount

- Available as Rack mount - 4000W to 50000W
- Simple parallel operation for higher power
- Full remote control interface
- High EMI-RFI immunity

Features TPF45000

- Non-Isolated modular power supply - 4500W to 45,000W
- 385VDC Output
- Ideal for Distributed Power Architecture (DPA) with isolated DC/DC converters
- Up to 98% Efficient
- 400/440/480 3 phase Delta or WYE Input
- PMBus™ and USB Communication Interfaces

TDK
In Everything, Better

AC/DC High Voltage Index by Wattage

Wattage	Number of Outputs	Series	Description	Page
4000	1	ALE 402	Capacitor Charging Power Supply	104
8000	1	ALE 802	Capacitor Charging Power Supply	104
12000	1	ALE LC1202	Capacitor Charging Power Supply	104
30000	1	ALE 303	Capacitor Charging Power Supply	104
4500-45000	1	TPF45000	Front End Non-Isolated 385Vdc Power Supply	61

Listed by Wattage

Compact OEM and Rack Mount capacitor charging supplies

Medical Industrial Test COTS COMM Renewable Semi-Fab

https://www.us.lambda.tdk.com/products/high-voltage-power/

TDK-Lambda's ALE Series are compact, high performance, high voltage, constant current power supplies specifically designed to rapidly and efficiency charge capacitors and pulse forming networks in repetitive pulse dicharge circuits. Output powers are available from 1kJ/sec to 30kJ/sec with voltages up to 40kV or 50kV in a single package, and all models can be ealiy connected in parallel for higher power operation. All models feature standard remote analog control and programming, with the rack mount models available with local front panel controls.

Features	Benefits
• Compact air and water cooled OEM or rack mount packages	• Significant Space Saving in End Equipment
• Simple parallel operation for higher power	• Upgradable for increased power
• Constant current resonant inverter topology	• No need for series current limit resistor for optimum efficiency
• Excellent pulse to pulse repeatability	• Improved performance in load circuits
• Full remote control interface	• Simple and precise operation
• High EMI-RFI immunity	• Proven operation in noisy environments
• 230VAC inputs for 1Ø, 208, 400, 480VAC for 3Ø	• Worldwide operation

Model Selector

Model	102A	152A	202A	402	802	LC1202	303
Voltage Range	10kV	4kV	1.5, 3, 6, 20, 40kV	1, 2, 4, 5, 10, 15, 20, 30, 40, 50kV		30kV max	5,10,15,20,30,40,50kV
Charging Power (Av)	1kJ/s	1.5kJ/s	2kJ/s	4kJ/s	8kJ/s	12kJ/s	30kJ/s
Charging Power (Pk)	1.1kJ/s	1.65kJ/s	2.2kJ/s	5kJ/s	9kJ/s	13.5kJ/s	37.5kJ/s
CW DC Power	n/a			4kW	8kW	15kW	50kW
AC Input	230 1Ø			208/400 3Ø		208/400/480 3Ø	400/480 3Ø
Power factor	0.98	0.65	0.98	0.85		0.9	0.85
Polarity	Positive		Available as fixed Positive or Negative. Please specify at time of ordering				
Panel Options	OEM only		L - Controls & Meters, S - Status LEDs only, OEM - Blank				
Efficiency	85%		85%			90%	85%
Stored Energy	Less than 0.3J all models						
Repeatability	0.1% to 300Hz			2% to 1kHz		1% to 1kHz	2% to 100Hz
Mechanical	5.75 x 5.56 x 14.2"		14.8"	4U x 19" x 17"	5U x 19" x 17"		7U x 19" x 22.5"
Weight	14 lbs		16 lbs	60 lbs	85 lbs	90 lbs	185 lbs
Operating Temp	-20 to +45°C			-20 to +45°C		+5 to +45°C	
Storage Temp	-40 to +85°C						-40 to +70°C
Altitude	Storage - 40,000ft, Operating - 9.900ft						
Humidity	10-90%, non condensing						
Protection	Open/short circuits, Overloads, Arcs, Overtemp						
Remote Control	15-pin D-sub Analog/Digital Interface			25-pin D-sub Analog/Digital Interface			

Examples:
152A-4kV-POS, 202A-3kV-NEG-PFC, 402-OEM-50kV-POS-3P208, 802L-10kV-POS-3P400, LC1202S-1kV-NEG-DC-3P208, 303L-50kV-POS-3P480

Useful Equations

The equations presented below are just a small selection taken from our detailed collection of high voltage Application Notes. The latest versions of these Application Notes can be downloaded from the TDK product center at https://product.tdk.com/en/power/ale. Currently available titles are;

APP Note 500: Calculating Capacitor Charge Time
APP Note 502: Calculating AC Line Currents
APP Note 505: Charging units as Continuous Output DC Supplies
APP Note 507: Charging Large Load Capacitors
APP Note 509: What is Regulation and Repeatability?
APP Note 513: Power Factor Correction
APP Note 517: Protection Against Voltage Reversal

1. Calculating Capacitor Charge Time

$$T_C = \frac{0.5 \times C_{load} \times V_{rated} \times V_{charge}}{P_{peak}}$$

T_c - time to charge load
C_{LOAD} - load capacitance in Farads
V_{rated} - power supply rated output voltage in volts
V_{charge} - capacitor charge voltage in volts
P_{peak} - power supply peak charge rate in Joules per second

2. Average Power Rating Required

$$P_{av} = 0.5 \times C_{load} \times V_{rated} \times V_{charge} \times R$$

P_{av} - average power in watts
C_{load} - load capacitance in Farads
V_{rated} - power supply rated output voltage in volts
V_{charge} - capacitor charge voltage in volts
R - discharge repetition rate in Hz

3. AC line current draw

$$I_{1Ø} = \frac{P_{av}}{V_L \times PF \times Eff} \qquad I_{3Ø} = \frac{P_{av}}{\sqrt{3} \times VL \times PF \times Eff}$$

$I_{1Ø}$ - single phase RMS line current
$I_{3Ø}$ - three phase RMS line current per phase
P_{av} - average output power in watts
V_L - AC line voltage in volts
PF - Power Factor (see product data)
Eff - Efficiency (see product data)

4. Pulse to Pulse Repeatability

$$\delta V = \frac{1}{2 \times F_{switch} \times T_c}$$

δV - pulse to pulse repeatability (percentage)
Tc - time to charge load
F_{switch} - switching frequency of supply
~ 40kHz for 500A, 102A, 152A, 202A, and LC1202
~ 30kHz for 402, 802, 203, and 303

5. Continuous DC Operation

$$Ripple = \frac{I_{load}}{2 \times F_{switch} \times C}$$

$Ripple$ - output voltage peak to peak ripple
$Iload$ - current drawn by the load circuit
Cf - external filter capacitance across supply output
F_{switch} - switching frequency of supply
~ 40kHz for 500A, 102A, 152A, 202A, and LC1202
~ 30kHz for 402, 802, 203, and 303

6. Voltage Reversal Protection

Voltage reversal following load capacitor discharge can potentially damage the power supply. Any reverse current must be limited by a series resistor, or by a clamp diode and resistors to prevent the possibility of damage to the output diodes inside the supply. The degree of protection required is a function of reverse voltage, duration of reversal, and repetition rate of reversal. If the reverse current is greater than the rated current of the supply then a protection diode should be used.

Refer to our online Application Note 517 for details, and guidance in determining the protection component ratings.

DIN-Rail Products

DIN-Rail

Applications

- Factory Automation and Controls
- Facility & Hotel or Home Automation
- Food & Beverage Industry
- Robot Controls
- Paper Handling, Sorting, Delivery Systems
- Process Automation
- Conveyors, Elevators, Escalators
- Typical for DIN-Rail mounting in cabinets

Features

- Efficiency up to 94% – NEW DRF-Series
- Mainly with 24V output, but also other output voltages from 5V to 48V are available
- Power range from 10W to 960W with convection-cooling
- Single-phase and three-phase AC input (for 120-960W models) and DC input models
- Plastic cases for low-power units up to 480W, metal cases for higher output power
- Flat shape for wall mounted cabinets
- Slim shape for industrial cabinets
- UL 508 Listed
- Isolated and Non-Isolated DC Input 40W to 500W

In Everything, Better

DIN Rail Mount Index by Wattage

Wattage	Number of Outputs	Series	Page
10-100W	1	DRL10-100	108
15-100W	1	DRB15-100	109
120-480W	1	D1SE120 - D1SE480	110
120-480W	1	DRB120-480	111
120-960W	1	DRB120-960-3	112
40-60W	1	DPX40, DPX60 (DC Input)	113
40-65W	1	CSW65 (DIN mount option)	20
120-960W	1	DRF120-960	114
250-500W	1-2	DDA (DC Input)	115
250ms	1	DBM20 (Hold Up Module)	116
20-40A	1	DRM40 (Redundant Module)	117

Listed by Wattage

DRL10–100 Series

10-100W Low Profile
DIN Rail Mount Power Supplies

Industrial Test Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/drl

The low profile DRL DIN rail power supply series provides a reliable solution for many industrial and building automation applications. With double insulation and a safety Class II input, connection to earth is not required. The NEC Class 2 compliant output, in accordance with UL 1310, allows operation where output currents are to be limited under fault conditions. Available in four power ranges, the DRL series provide a choice of 12, 15 and 24 output voltages.

Features	Benefits
• High Efficiency, up to 90%	• Lower Operating Costs, Improved Thermal Performance
• UL1310 Class 2 Compliant	• Suitable for Building Automation requiring NEC Class 2
• Low No Load Power Consumption	• Energy Saving
• Long E-Capacitor Life (>8 years @ 40°C, 75% Load, 230VAC)	• Long Field Life
• Class II, Wide Range Input (85-264VAC)	• Global Application, No Earth Required

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)	Efficiency (115/230VAC) (%)	Overvoltage (V)	UL1310 Class 2
DRL10-12-1	12	-	0.84	10.08W	85 / 85	13.8 - 16.2	Yes
DRL30-12-1	12	12 - 15	2.1	25.2W	87 / 88	16 - 19	Yes
DRL60-12-1	12	12 - 15	4.5	54W	87 / 87	16 - 19	Yes
DRL30-15-1	15	12 - 15	1.68	25.2W	87 / 88	16 - 19	Yes
DRL60-15-1	15	12 - 15	3.6	54W	87 / 87	16 - 19	Yes
DRL10-24-1	24	-	0.42	10W	87 / 87	29 - 35	Yes
DRL30-24-1	24	24 - 28	1.25	30W	88 / 90	29 - 35	Yes
DRL60-24-1	24	24 - 28	2.5	60W	89 / 90	29 - 35	Yes
DRL100-24-1	24	24 - 28	4.2	100.8W	88 / 90	29 - 35	No
DRL100-24-1/C2	24	-	3.67	88W	88 / 90	26 - 30	Yes

DRB15–100 Series

15W - 100W DIN Rail Mount
Single Phase Power Supplies

Industrial Test Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/drb

The DRB series supports the growing trend for simple and economically priced DIN power supplies for industrial and process control applications. The series combines low cost, reliability and compact dimensions with energy saving efficiencies of up to 91%. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of up to 10 years. Available in four power levels, 15W, 30W, 50W, 100W, the series provides a choice of 5, 12, 15, 24 and 48V outputs. UL1310 Class 2 models and Class 1 Div 2 (ISA 12.12.01) certifications are available.

Features	Benefits
• High Efficiency, up to 91%	• Lowers Operating Costs and Improves Thermal Performance
• Narrow Case Widths	• Increases Available Space on the DIN Rail
• Curve B Radiated and Conducted EMI	• Reduced Electrical Noise in the System
• Low No Load Power Draw	• Saves Energy
• UL1310 Class 2 Compliant Models	• Suitable for Building Automation requiring NEC Class 2
• Class 1 Div 2 Compliance	• For Use in Explosive Atmospheres

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)	Ripple & Noise (mV)	Overvoltage Protection (V)	Efficiency (%) (115/230Vac)	UL1310 Class 2
DRB50-5-1	5	5 - 5.5	6	30	30	5.75 - 6.75	79 / 80	No
DRB30-12-1	12	12 - 15	2.5	30	40	15.96 - 18.72	86 /88	Yes
DRB50-12-1	12	12 - 15	3.4	51*	20	15.96 - 18.72	88 / 90	Yes
DRB50-15-1	15	12 - 15	3.4	51*	20	15.96 - 18.72	88 / 90	Yes
DRB15-24-1	24	24 - 28	0.63	15.1	20	30 - 33.6	87 / 90	Yes
DRB30-24-1	24	24 - 28	1.25	30	30	30 - 33.6	88 / 90	Yes
DRB50-24-1	24	24 - 28	2.1	50.4	30	30 - 33.6	88 / 90	Yes
DRB100-24-1	24	24 - 28	4.2	100.8	30	30 - 33.6	90 / 91	No
DRB50-48-1	48	48 - 52.8	1.05	50.4	40	53.76 - 68.16	90 / 91	Yes

* Maximum power is 51W at 15V output, 40.8W when set at 12V output

D1SE120 – D1SE480 Series

120W - 480W DIN Rail Mount Single Phase 24V Output Power Supplies

Industrial Test Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/d1se

The D1SE120, D1SE240, and D1SE480 series supports the growing trend for economical, single-phase or DC input DIN power supplies for residential, commercial and light-industrial applications. The series offers a balance between functionality and price, combining reliability and compact dimensions with energy saving efficiencies of up to 95.1%. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of over similar products on the market. Available in three power levels, 120, 240 and 480W the series provides a regulated 24V output. All models have boost (peak) power ratings to handle capacitive loading and reliable push-in wire terminations for lower assembly cost. An optional DC Good relay and protective board coating are also available.

Features	Benefits
• AC or DC Input Operation	• Useable in a Wide Range of Applications
• 130% Boost (Peak) Power Capability	• Supports Capacitive and Inductive Loading
• Efficiencies up to 95.1%	• Reduced Energy Consumption
• Low Peak Inrush Energy < 0.6A²s	• Prevents Input Circuit Breaker Nuisance Tripping

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)	Maximum Peak (Boost) Current (A)(1)	Maximum Peak (Boost) Power (W)(1)
D1SE120-24-A3	24	22.5-29	5	120	6.5 for 80s	156 for 80s
D1SE120-24-A4	24	22.5-29	5	120	6.5 for 80s	156 for 80s
D1SE120-24-A5	24	22.5-29	5	120	6.5 for 80s	156 for 80s
D1SE240-24-A3	24	22.5-29	10	240	13 for 10s	312 for 10s
D1SE240-24-A4	24	22.5-29	10	240	13 for 10s	312 for 10s
D1SE240-24-A5	24	22.5-29	10	240	13 for 10s	312 for 10s
D1SE480-24-A3	24	22.5-29	20	480	23 for 200s	552 for 200s
D1SE480-24-A4	24	22.5-29	20	480	23 for 200s	552 for 200s
D1SE480-24-A5	24	22.5-29	20	480	23 for 200s	552 for 200s

D1SE	120	- 24	- Option code
Series	Output Power 120, 240, 480	Output Voltage 24	A3 A3: No DC-OK status LED A4 A4: DC-OK status LED A5 A5: DC-OK status LED, board coating

Related Products

Type	Part Number	Description
Redundancy module	DRM40	20 to 40A DIN rail Redundancy module
Buffer DIN rail modules	DBM20	20A DIN rail Buffer (hold-up) modules
Mid power DIN rail power supplies	DRB120, 240, 480	120 to 480W AC-DC single phase DIN rail power supplies
Mid to high power premium DIN rail power supplies	DRF120, 240, 480, 960	120 to 960W AC-DC single phase DIN rail power supplies
Mid to high power 3-phase DIN rail power supplies	DRB120-3 - DRB960-3	120 to 960W AC-DC 3-phase DIN rail power supplies
DC-UPS	DUSH	960W DC-UPS DIN Rail Modules
DIN rail mount filters	RSEV	6A to 30A 250Vac single phase EMI filters

DRB120–480 Series

120W - 480W DIN Rail Mount Single Phase Power Supplies

Industrial Test Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/drb

The DRB series supports the growing trend for simple and economically priced DIN power supplies for industrial and process control applications. The series combines low cost, reliability and compact dimensions with energy saving efficiencies of up to 93%. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of up to 10 years. Available in three power levels, 120W, 240W and 480W, the series provides a choice of 12V, 24V and 48V outputs.
An opto-isolated DC OK signal is fitted for remote monitoring.

Features	Benefits
• High Efficiency, up to 93%	• Lowers Operating Costs and Improves Thermal Performance
• Narrow Case Widths	• Increases Available Space on the DIN Rail
• Curve B Radiated and Conducted EMI	• Reduced Electrical Noise in the System
• Long E-Capacitor Life (Up to 10 Years)	• Improved Field Life
• Low Off-Load Power Consumption	• Saves Energy

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Peak Current (A) 10s maximum, <35% duty cycle	Maximum Power (W)	Maximum Peak Power (W)	Overvoltage Protection (V)	Efficiency (%) (120/230Vac) (1)
DRB120-12-1	12	12 - 13.2	10	12	120	144	13.8 - 17.4	>90 / 91
DRB120-24-1	24	24 - 28	5	6	120	144	30 - 35	91 / 93 (Typ)
DRB240-24-1	24	24 - 28	10	12	240	288	30 - 35	91 / 93 (Typ)
DRB480-24-1	24	24 - 26.4	20	-	480	-	29.4 - 30.6	>90 / 92
DRB120-48-1	48	48 - 52.8	2.5	3	120	144	55.2 - 60	>90 / 91
DRB240-48-1	48	48 - 52.8	5	6	240	288	55.2 - 60	>90 / 92
DRB480-48-1	48	48 - 52.8	10	-	480	-	54.7 - 59.3	>90 / 92

Related Products

Type	Part Number(s)	Description
Redundancy module	DRM40	20 to 40A DIN Rail Redundancy Module
Low power DIN rail power supplies	DRB15, 30, 50, 100	15 to 100W AC-DC DIN rail power supplies
Mid to high power premium DIN rail power supplies	DRF120, 240, 480, 960	120 to 960W AC-DC DIN rail power supplies
DIN rail mount filters	RSMN	3A to 30A 250Vac 2 stage filters with pulse attenuation
DIN rail mount filters	RSEV	6A to 30A 250Vac 2 stage filters
RSEV DIN rail mounting kit	DIN-RSEV	RSEV DIN rail mounting kit

DRB120–3 – DRB960–3 Series

120W - 960W DIN Rail Mount Three Phase Power Supplies

Industrial Test Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/drb

The DRB120-3, DRB240-3, DRB480-3 and DRB960-3 series supports the growing trend for mid range 3-phase and DC input DIN power supplies for industrial and process control applications. The series offers an excellent balance between functionality and price, combining reliability and compact dimensions with energy saving efficiencies of up to 96.3%. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of typically 10 years. Now available in four power levels, 120, 240, 480 and 960W, the series provides a choice of 12V, 24V, 48 or 72V outputs. All models have boost (peak) power ratings to handle capacitive loading. A low energy inrush current level avoids nuisance tripping of circuit breakers. Units can be connected in parallel to provide more power or for redundant applications. A DC Good relay and remote on/off is fitted as standard. A choice of models with either screw or push-in wire terminals for automated and robotic wiring and pcb board coating for polluted environments.

Features	Benefits
• 380 to 500Vac and 450 to 810Vdc Nominal Inputs	• Supports a Wide Range of Applications
• 50% Boost (peak) Power Ratings for up to 600 Seconds	• Supports Capacitive and Inductive Loads
• Narrow Case Widths	• Occupies Less Space on the DIN rail
• High Efficiency up to 96.3%	• Reduced Energy Usage
• Long E-Capacitor Life (typically 10 Years)	• Improved Field Life
• Low Off-Load Power Consumption	• Saves Energy

Model Selector

Letter "x" indicates termination type and coating (See part numbering scheme section)	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Peak Current (A) [1]	Maximum Power (W)	Maximum Peak Power (W) [1]	Efficiency (%) (400/500Vac) [2]
DRB120-12-3-Ax	12	11.4 - 15	10	14.5 for 600s	120	174	89.4 / 89.1
DRB120-24-3-Ax	24	22.5 - 29	5	7.5 for 600s	120	180	91.3 / 91.2
DRB240-24-3-Ax	24	22.5 - 29	10	15 for 60s	240	360	93.1 / 93.2
DRB240-48-3-Ax	48	45 - 56	5	7.5 for 60s	480	360	93.8 / 94.0
DRB480-24-3-Ax	24	22.5 - 29	20	30 for 7s	480	720	95.1 / 94.9
DRB480-48-3-Ax	48	45 - 56	10	15 for 7s	480	720	95.3 / 95.1
DRB480-72-3-Ax	72	70 - 85	6.7	10 for 5s	480	720	95.8 / 95.6
DRB960-24-3-Ax	24	22.5 - 29	40	60 for 5s	960	1440	95.2 / 95.1
DRB960-48-3-Ax	48	45 - 56	20	30 for 5s	960	1440	95.9 / 95.8
DRB960-72-3-Ax	72	70 - 85	13.3	20 for 5s	960	1440	96.3 / 96.2

Related Products

Type	Part Number(s)	Description
Redundancy module	DRM40	20 to 40A DIN rail Redundancy module
Buffer DIN rail modules	DBM20	20A DIN rail Buffer (hold-up) modules
Low power DIN rail power supplies	DRB15, 30, 50, 100	15 to 100W AC-DC single phase DIN rail power supplies
Mid power DIN rail power supplies	DRB120, 240, 480	120 to 480W AC-DC single phase DIN rail power supplies
Mid to high power premium DIN rail power supplies	DRF120, 240, 480, 960	120 to 960W AC-DC single phase DIN rail power supplies
DIN rail mount filters	RTMN	6A to 60A 500Vac three phase 2 stage filters with pulse attenuation
Mid to low power DIN rail power supplies	D1SE	120 to 480W AC-DC single phase DIN rail power supplies
DC-UPS	DUSH	960W DC-UPS DIN Rail Modules

DPX40/60 Series

40-60W Single, Dual and Triple Output Isolated DIN-Rail Mount DC-DC Converters

Industrial COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/dpx

The DPX DIN rail mount DC-DC converters are an ideal all-in-one-package for generating additional isolated and regulated voltages from a 24Vdc DIN rail bus. Fully protected and with Class B EMC performance, the DPX40/60 series is available with single, dual or triple output models and power levels from 40 to 60W. All commonly requested voltages are covered by the series, and the units will operate from 12V, 24V or 48V nominal DC inputs with 2:1 or 4:1 ranges. These power supplies are convection cooled and operate over a wide temperature range from -40 to +85°C, with appropriate derating at high temperatures. The DPX is also designed to meet MIL-STD-810F shock & vibration standards.

Features	Benefits
• All In One Package	• Easy to Use and Mount
• Wide Range Input	• Less Parts to Inventory
• 1600Vdc Input to Output Isolation	• Output Voltages Can Be Isolated for Lower Noise
• CE and UKCA Marks	• Easier System Compliance

DPX-	40	-24	S	05	/N
	40 40W Output Power 60 60W Output Power	-12 9.5 - 18V input -24 18 - 36V input -48 36 - 75V input -24W 9.5 - 36V input -48W 18 - 75V input	S Single Output D Dual Output T Triple Output	Single Output 3P3 3.3V Output Voltage 05 5V Output Voltage 12 12V Output Voltage 15 15V Output Voltage Single and Dual Output 12 ±12V Output Voltage 15 ±15V Output Voltage Triple Output 3312 3.3V, ±12V Output Voltage 3315 3.3V, ±15V Output Voltage 0512 5V, ±12V Output Voltage 0515 5V, ±15V Output Voltage	Blank Positive Logic Remote On/Off /N Negative Logic Remote On/Off

Preferred model

*Not available for 60W models

120-960W Single Output Full Featured DIN Rail Mount Power Supplies

Industrial Test Semi-Fab HazLoc Renewable

Full Datasheet
https://product.tdk.com/en/power/drf

The DRF series provides full featured DIN Rail mount power supplies for industrial and process control applications. The series combines careful thermal design, reliability and compact dimensions with energy saving efficiencies of up to 95%. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of up to 10 years. Available in four power levels, 120W, 240W, 480W and 960W, the series provides 24V outputs with a peak loading capability of 150% for up to four seconds. The models can be operated in parallel, have remote on/off and remote voltage adjustment. For operation in hazardous locations, the /HL option can be selected on the DRF120 to DRF480 models, which includes coating of the circuit boards for added protection.

Features	Benefits
• High Efficiency, up to 95%	• Lowers Operating Costs and Improves Thermal Performance
• 150% Peak Power for Four Seconds	• Operates With Capacitive and Inductive Loads
• Long E-Capacitor Life (Up to 10 Years)	• Improved Field Life
• Low Off-Load Power Consumption	• Saves Energy
• Remote On/Off and Remote Output Control	• Supports Intelligent System Control
• Hazardous Location Option (/HL)	• Certified For Use in Explosive Atmospheres

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Max Current (A)	Max Power (W)	Peak Output Current (1) (A)	Peak Output Power (1) (W)
DRF120-24-1	24	24 - 28	5	120	7.5	180
DRF240-24-1	24	24 - 28	10	240	15	360
DRF480-24-1	24	24 - 28	20	480	30	720
DRF960-24-1	24	24 - 28	40	960	60	1440

DRF	240	-24	-1	/HL
Series	120, 240, 480, 960W	24V Output	Single phase	

Blank	No ATEX, IEC EX Certification or pcb coating
/HL	ATEX, IEC EX Certification (Including pcb coating). Not available for DRF960.

250-500W, Wide Range Input, Non-isolated, DIN Rail DC-DC Converters

Industrial Test Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/dda

The DDA DIN rail mount, non-isolated step-down converters are ideal for creating additional high current output voltages from a single output 12V, 24V or 48V AC-DC power supply. The highly efficient DDA series accepts a very wide DC input and has a wide output adjustment range, with a choice of single or dual output models.

Features	Benefits
• 250W Single Output, 325W and 500W Dual Output Power Levels	• High Power Density
• High Efficiency up to 95%	• Less Waste Heat
• Wide Input Range - 9 up to 53V	• One Part For Multiple Applications
• Wide 3.3 to 24V Output Adjustment	• Accommodates Non-Standard Voltages
• Narrow 36.5mm Width	• More Space Available For Other DIN Rail Devices
• Convection Cooled	• Easy To Cool In End System

Model Selector

Part Number	Output Voltage 1 Nominal (V)(1)	Output Voltage 1 Adjust Range (V)	Output Voltage 2 Nominal (V)(1)	Output Voltage 2 Adjust Range (V)	Maximum Output Current	Maximim Output Power
DDA250N-S1PX-12-001	12V	3.3 to 15V	NA	NA	20A / NA	250W / NA
DDA500N-D2PP-1205-001	12V	3.3 to 15V	5V	3.3 to 15V	20A / 20A	250W / 250W
DDA325N-D2PN-1212-001	12V	3.3 to 24V	-12V	-3.3 to -24V	14A / 8A	250W / 75W

Consult factory for other output voltage combinations.

24V 20A Buffer (Hold-Up) DIN Rail Module

Industrial Test Semi-Fab

Full Datasheet
https://product.tdk.com/en/power/dbm

The DBM20 20A buffer module is ideal for providing short term hold-up or peak power for loads powered by a 24Vdc output AC-DC power supply. During normal operation, energy is stored in the DBM20's electrolytic capacitors. When the AC power is interrupted for a short period of time, the DBM20 continues to power the load, allowing equipment to shutdown in a safe and controlled manner. The DBM20 can be set to fixed or variable buffer mode. In fixed mode it will provide power when the input voltage drops to 22.4V, in variable mode when the input decreases by 1V. Multiple buffer modules can be paralleled for additional hold-up time. Product status can be accessed remotely via a DC OK relay, or locally using the LED indicators. The output voltage can also be inhibited to avoid an unsafe discharge of the stored energy.

Features	Benefits
• Provides 250ms Additional Hold-Up Time at 448W	• Avoids Loss of Data During AC Power Interruptions
• Utilizes Electrolytic Capacitors to Store Energy	• No Batteries to Service or Maintain
• Narrow 49mm Width	• Increases Available Space on the DIN Rail
• Parallel Capable	• Hold-Up Time Can Be Extended
• Output Remote On/Off Function	• Avoids Unsafe Discharge of Stored Energy

Model Selector

Model	Output Voltage Fixed Mode (V) (1)	Output Voltage Dynamic Mode (V) (1)	Maximum Current (A)	Average Buffer Power (W)	Terminals
DBM20	22.4	Vin-1	20	448	Screw
DBM20/E	22.4	Vin-1	20	448	Spring Clamp

Related Products

Type	Part Number(s)	Description
Buffer DIN rail modules	DBM40	20 to 40A DIN rail Buffer (hold-up) modules
Low power DIN rail power supplies	DRB15, 30, 50, 100	15 to 100W AC-DC DIN rail power supplies (Class I, AC Ground required)
Mid to high power DIN rail power supplies	DRB120, 240, 480	120 to 480W AC-DC DIN rail power supplies
Mid to high power premium DIN rail power supplies	DRF120, 240, 480, 960	120 to 960W AC-DC DIN rail power supplies
DIN rail mount filters	RSMN	3A to 30A 250Vac 2 stage filters with pulse attenuation
DIN rail mount filters	RSEV	6A to 30A 250Vac 2 stage filters
RSEV DIN rail mounting kit	DIN-RSEV	RSEV DIN rail mounting kit

20-40A DIN Rail Redundancy Module

Industrial Test

Full Datasheet
https://product.tdk.com/en/power/drm40

The DRM40 series of DIN rail mount redundancy modules are ideal for connecting two 20A, 10V to 30Vdc output power supplies to produce a 20A N+1 redundant configuration. Alternatively, using the load balancing option, two 20A supplies can be paralleled to deliver a 40A output. For capacitive and inductive loads, the DRM40 will support an additional 50% peak load for four seconds. The use of low-loss MOSFET reverse current protection devices reduces the internal voltage drop to just 200mV.

Features	Benefits
• Compact Size	• Occupies Less Space on the DIN rail
• Low 200mV Voltage Drop	• Reduced Voltage Drop and Power Loss
• Current Balance Indicator Option	• Ensure and Monitor Power Supply Load Sharing
• Isolated Alarm Signals	• Simplified Remote Monitoring

Model Selector

Model	Input Voltage Range (V)	# of Inputs	Maximum Current (A)	Peak Current (A) (<4s, 35% Duty Cycle)	Monitoring Signals
DRM40	10-30	2	40	60	Input Good and Current Balance Indicators
DRM40B	10-30	2	40	60	None

Related Products

Type	Part Number(s)	Description
Buffer DIN rail modules	DBM20	20A DIN rail Buffer (hold-up) modules
Low power DIN rail power supplies	DRL10, 30, 60, 100	10 to 100W AC-DC DIN rail power supplies (Class II, No AC Ground required)
Low power DIN rail power supplies	DRB15, 30, 50, 100	15 to 100W AC-DC DIN rail power supplies (Class I, AC Ground required)
Mid to high power DIN rail power supplies	DRB120, 240, 480	120 to 480W AC-DC DIN rail power supplies
Mid to high power premium DIN rail power supplies	DRF120, 240, 480, 960	120 to 960W AC-DC DIN rail power supplies
DIN rail mount filters	RSMN	3A to 30A 250Vac 2 stage filters with pulse attenuation
DIN rail mount filters	RSEV	6A to 30A 250Vac 2 stage filters
RSEV DIN rail mounting kit	DIN-RSEV	RSEV DIN rail mounting kit

Programmable Power Supplies, Sources and Loads

Applications

- Test & Measurement ATE
- Battery Simulation
- Component Burn-in
- Plating and Etching
- Industrial
- Medical
- Semiconductor
- Automotive
- Renewable Energy
- Oil & Gas
- Communications
- Applied/Laboratory R&D

Features (Genesys ™)

- Output Voltage Ratings up to 1500V
- Output Current Ratings up to 1000A
- Output Power from 600W to 15kW
- World-wide single-phase/three-phase AC Inputs (w/ PFC)
- Constant Voltage (CV) or Constant Current (CC) operation w/ Auto-Crossover
- Built-In RS-232/RS-485 and Analog Program/Monitor (5V/10V) Interfaces
- Optional LAN, USB, IEEE and Isolated Analog (5V/10V or 4-20mA) Interfaces
- Parallel Operation (up to 60kW) / Series Operation
- Bench-Top, Rack-Mount or Chassis-Mount w/ Zero-Stacking
- Safety Agency Approvals & CE/UKCA Marks / 5Yr Warranty

Features (GENESYS+ ™ Rack–Mount and Rack Systems)

- Output Voltages up to 1500V (Rack-Mount), 600V (Rack Systems)
- Output Current Ratings up to 1500A (Rack-Mount), 4500A (Rack Systems)
- Output Power from 1kW to 15kW (Rack-Mount), 30kW to 60kW (Rack Systems)
- Worldwide single-phase/three-phase AC Inputs w/ PFC
- Constant Voltage (CV) or Constant Current (CC) operation w/ Auto-Crossover
- Advanced Features Built-In (Waveform Generator, Slew-Rate Control, CP Limit, etc.)
- Built-In RS-232/RS-485, LAN, USB and Isolated Analog (5V/10V) Interfaces
- Optional IEEE, EtherCAT and Modbus-TCP Interfaces
- Advanced Parallel Operation (up to 60kW) / Series Operation
- Bench-Top, Rack-Mount, or Chassis-Mount (Rack Mount) w/ Zero-Stacking
- Safety Agency Approvals & CE/UKCA Marks
- Five Year Warranty

Features (Genesys ™ AC and Genesys ™ AC PRO)

- High Power Density 2 and 3 kVA in 1U, and stackable to 27kVA
- AC and AC+DC models
- 0-350Vac operating range
- High peak current capability
- LAN, USB, RS232/485 and Analog interface standard
- Safety certified per IEC/UL/EN 61010-1 Ed. 3 (cTUVus, T-Mark, CE/UKCA)
- Five year warranty

Features (SFL Programmable DC Loads)

- 300W/1kW models (120V and 500V)
- Stable High Speed Current Control
- High Slew Rate (Up to 30A/us)
- Low Voltage Operation with No Turn-On Delay
- Seven Operating Modes (CC, CR, CP, CV, EXT, Short, CV+Climit)
- Four Operating Modes (Normal, Dynamic, Seuqence and Sweep)
- Built-In Memory Function (store/recall eight settings)
- Multi-Channel Triggering (up to ten units)
- Parallel Operation (up to ten units - up to 10kW)
- Bench-top or Rack-Mount w/ Zero-Stacking
- Built-In USB (2.0) Digital Programming Interface
- Optional IEEE (w/ DIDO) Interface and Ripple Measurement Interface
- Safety Agency Compliance & CE/UKCA Marks
- Two Year Warranty

TDK
In Everything, Better

Programmable DC Power Supply Index by Wattage

Wattage	Number of Outputs	Series	Description	Page
1200-800	1	Z+	Programmable DC Bench top or 2U Rack Mount Power supplies	120
200-800	1	Z+ High Voltage	Programmable DC Bench top or 2U Rack Mount Power supplies	121
600-15000	1	Genesys™	Programmable DC Bench top or Rack Mount Power supplies	122-127
1000-15600	1	GENESYS+™	Programmable DC Bench top or Rack Mount Power supplies	128-133
30,000-60,000	1	GENESYS+™	Programmable DC Bench top or Rack Mount Power supplies	134-135
300-1000		SFL	Programmable DC Electronic Loads	138

Listed by Wattage

Programmable AC Power Supply Index by Wattage

Wattage	Number of Outputs	Series	Description	Page
2000-3000	1	GENESYS™ AC	Programmable AC Bench top or 1U Rack Mount Power supplies	136-137
2000-3000	1	GENESYS™ AC PRO	Programmable AC Bench top or 1U Rack Mount Power supplies	136-137

Listed by Wattage

Z+ Low Voltage Series

200-800W, 10 to 100V Programmable Power Supplies

Industrial Test

Full Datasheet
https://product.tdk.com/en/power/zplus

Suitable for bench or 2U rack mounting, the Z+ is a very compact programmable power supply offering power levels from 200 to 800W, voltages of up to 100V and currents of up to 72A. Multiple remote programming methods are available including built-in USB, RS232 & RS485 and optional LAN, GPIB & isolated analogue interfaces. The units can operate in either constant current or constant voltage mode and accept a wide 85-265Vac input. The product is backed with a five year warranty.

Features	Benefits
• 2U high	• Low Profile
• Built-in USB, RS-232 & RS-485 Interface	• No Additional Cost
• Optional LAN, GPIB & Isolated Analog Programming	• Programmable Remote Operation
• Bench or Rack Mount	• Flexible Mounting
• Constant Current or Voltage Modes	• Seamless Transition (Auto Crossover)
• Five Year Warranty	• Low Cost of Ownership

Model Selector

Model (Note: Add appropriate suffix for the AC line cord)	Voltage Adjust Range (V)	Current Adjust Range (A)	Max Power (W)	Ripple 5Hz-1MHz (mV)	Noise 20MHz BW (mV)	Ripple 5Hz-1MHz (mA)	Efficiency (100-200Vac) (%)	Front Panel Output Jacks (Option)
Z10-20	0 - 10	0 - 20	200	5	50	25	80 / 82	Yes
Z10-40	0 - 10	0 - 40	400	5	50	70	80 / 82	Yes
Z10-60	0 - 10	0 - 60	600	5	50	150	80 / 82	Yes
Z10-72	0 - 10	0 - 72	720	5	50	180	80 / 82	Yes
Z20-10	0 - 20	0 - 10	200	6	50	15	82 / 84	Yes
Z20-20	0 - 20	0 - 20	400	6	50	40	81 / 83	Yes
Z20-30	0 - 20	0 - 30	600	5	50	75	82 / 84	Yes
Z20-40	0 - 20	0 - 40	800	5	50	100	82 / 84	Yes
Z36-6	0 - 36	0 - 6	216	6	50	8	83 / 85	Yes
Z36-12	0 - 36	0 - 12	432	6	50	15	83 / 85	Yes
Z36-18	0 - 36	0 - 18	648	5	50	25	84 / 85	Yes
Z36-24	0 - 36	0 - 24	864	5	50	31	84 / 85	Yes
Z60-3.5	0 - 60	0 - 3.5	210	7	50	4	83 / 85	Yes
Z60-7	0 - 60	0 - 7	420	7	50	8	83 / 85	Yes
Z60-10	0 - 60	0 - 10	600	12	50	8	83 / 85	Yes
Z60-14	0 - 60	0 - 14	840	12	60	28	83 / 85	Yes
Z100-2	0 - 100	0 - 2	200	8	80	3	83 / 85	No
Z100-4	0 - 100	0 - 4	400	8	80	3	84 / 86	No
Z100-6	0 - 100	0 - 6	600	15	80	5	84 / 86	No
Z100-8	0 - 100	0 - 8	800	15	80	12	84 / 86	No

Part Number Example

Z10 - 20 - LAN - L - U

Series & output voltage

Output current

blank	USB, RS-232/RS-485 (All models)
IEEE	GPIB Interface**
IS510	Voltage Programming Isolated Analog Interface**
IS420	Current Programming Isolated Analog Interface**
LAN	LAN Interface (Complies with "LXI" Class C)

blank	No front output jacks
-L	Output jacks*
-L2	Output jacks* (insulated)

	AC Line cord	Plug Type
Blank	No AC cord supplied	-
U	North America cord	NEMA 5-15P
E	European cord	CEE 7/VII
J	Japan cord	JIS C8303
I	Middle East cord	SI 32

* Requires wide body case (105mm wide), limited to 24A maximum
** Requires wide body case (105mm wide)

Notes: -U option line cord preferred in the Americas.
-E option supplied with unit in Europe

Z+ High Voltage Series

200-800W, 160 to 650V Programmable Power Supplies

Industrial Test

Full Datasheet
https://product.tdk.com/en/power/zplus

Suitable for bench or 2U rack mounting, the Z+ is a very compact programmable power supply offering power levels from 200 to 800W, voltages from 160 to 650V and currents of up to 5A. Multiple remote programming methods are available including built-in USB, RS232 & RS485 and optional LAN, GPIB & isolated analogue interfaces. The units can operate in either constant current or constant voltage mode and accept a wide 85-265Vac input. The product is backed with a five year warranty.

Features	Benefits
• 2U high	• Low Profile
• Built-in USB, RS-232 & RS-485 Interface	• No Additional Cost
• Optional LAN, GPIB & Isolated Analog Programming	• Programmable Remote Operation
• Bench or Rack Mount	• Flexible Mounting
• Constant Current or Voltage Modes	• Seamless Transition (Auto Crossover)
• Five Year Warranty	• Low Cost of Ownership

Model Selector

Model (Note: Add appropriate suffix for the AC line cord)	Voltage Adjust Range (V)	Current Adjust Range (A)	Maximum Power (W)	Ripple Voltage (RMS) 5Hz-1MHz (mV)	Noise Voltage 20MHz BW (mV)	Ripple Current (RMS) 5Hz-1MHz (mA)	Efficiency (100-200Vac) (%)	Front Panel Output Jacks (Option)
Z160-1.3	0 - 160	0 - 1.3	208	10	100	1.2	79 / 81	Yes
Z160-2.6	0 - 160	0 - 2.6	416	10	100	1.5	84 / 86	Yes
Z160-4	0 - 160	0 - 4	640	10	100	2	86.5 / 88.5	Yes
Z160-5	0 - 160	0 - 5	800	10	100	2	86.5 / 88.5	Yes
Z320-0.65	0 - 320	0 - 0.65	208	25	150	0.8	79 / 81	Yes
Z320-1.3	0 - 320	0 - 1.3	416	25	150	1	84 / 86	Yes
Z320-2	0 - 320	0 - 2	640	30	150	1.5	87 / 88.5	Yes
Z320-2.5	0 - 320	0 - 2.5	800	30	150	1.5	86.5 / 89	Yes
Z375-2.2	0 - 375	0 - 2.2	825	30	150	1.5	87.5 / 89.5	Yes
Z650-0.32	0 - 650	0 - 0.32	208	60	150	0.5	79 / 81	Yes
Z650-0.64	0 - 650	0 - 0.64	416	60	150	0.6	84 / 86	Yes
Z650-1	0 - 650	0 - 1	650	60	250	1	86.5 / 88.5	Yes
Z650-1.25	0 - 650	0 - 1.25	812	60	250	1	87 / 89	Yes

Part Number Example

Z160 - 1.3 - LAN - L2 - U

Series & output voltage

Output current

blank	USB, RS-232/RS-485 (All models)
IEEE	GPIB Interface*
IS510	Voltage Programming Isolated Analog Interface*
IS420	Current Programming Isolated Analog Interface*
LAN	LAN Interface (Complies with "LXI" Class C)

blank	No front output jacks
-L2	Output jacks* (insulated)

	AC Line cord	Plug Type
Blank	No AC cord supplied	-
U	North America cord	NEMA 5-15P
E	European cord	CEE 7/VII
J	Japan cord	JIS C8303
I	Middle East cord	SI 32

* Requires wide body case (105mm wide)

Notes: -U option line cord preferred in the Americas.
-E option supplied with unit in Europe

General-Purpose Programmable DC Power Supplies

(Single Output in 1U, 2U and 3U Profile)

Test Industrial Medical COTS Renewable LED COMM Broadcast

https://www.us.lambda.tdk.com/products/programmable-power/genesys.html

The ***Genesys***™ DC Programmable Power Supply Series is a general-purpose, solution that provides high power density from 600W to 15kW with a complete set of reliable and user-friendly front panel, Remote Analog programming and Remote Digital communication interfaces. This series offers Output voltages from 6V to 1500V and several AC Inputs (single-phase/three-phase) with Power-Factor Correction.

Remote interfaces include the built-in Analog (5V/10V) Program/Monitor/Control and Digital (RS-232/RS-485) Communication Interfaces along with the optional LAN (***LXI*** 1.5), IEEE (488.2), USB (2.0) and Isolated Analog (5V/10V or 4-20mA) Interfaces.

Features	Benefits
• Single Output: Models from **6V** to **1500V** (750W to 15kW)	• Flexibilty in model choice and AC Input
• Worlwide AC Inputs (single/three-phase) with Active Power Factor Correction	• Lightweight, high efficiency, reliable operation
• CV/CC operation with Auto-Crossover / 0°C to +50°C operation	• Flexibility in Digital/Isolated Analog Interface selection
• Built-In Interfaces: Front Panel, RS-232/RS-485, Remote Analog (5V/10V)	• Easy physical impementation (bench-top or rack-mount)
• Digital Interfaces (optional): **LAN (*LXI* 1.5)**, **USB** (2.0), **IEEE** (488.2)	• Higher power (parallel) or higher voltage (series) capability
• Isolated Analog Interfaces (optional): **IS510** (5V/10V), **IS420** (4-20mA)	• Simple and similar front panel/rear panel operation (750W - 15kW)
• Worldwide Safety Agency Approvals / CE Mark / **5Yr** Warranty	• Built-In Safety/EMC/RoHS compliance

750W Programmable DC Power Supplies

(Single Output in 1U Half-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (100VAC/200VAC) (%)
GENH6-100	0 - 6	0 - 100	600	60	20	76 / 78
GENH 8-90	0 - 8	0 - 90	720	60	180	78 / 81
GENH 12.5-60	0 - 12.5	0 - 60	750	60	120	81 / 84
GENH 20-38	0 - 20	0 - 38	760	60	76	82 / 85
GENH 30-25	0 - 30	0 - 25	750	60	63	82 / 85
GENH 40-19	0 - 40	0 - 19	760	60	48	83 / 87
GENH 60-12.5	0 - 60	0 - 12.5	750	60	38	83 / 87
GENH 80-9.5	0 - 80	0 - 9.5	760	80	29	83 / 87
GENH 100-7.5	0 - 100	0 - 7.5	750	80	23	83 / 87
GENH 150-5	0 - 150	0 - 5	750	100	18	83 / 87
GENH 300-2.5	0 - 300	0 - 2.5	750	150	13	83 / 87
GENH 600-1.3	0 - 600	0 - 1.3	780	300	8	83 / 87

GENH | **30** | **-** | **25** | **-** | **LAN** | **-** | **U**

- Product Series: **GENH** (Half-Rack 750W)
- Output voltage
- Output current
- LAN: LAN Interface; IEMD: IEEE (GPIB) Interface; USB: USB (2.0) Interface; IS510: Isolated Analog (5V/10V); IS420: Isolated Analog (4-20mA)
- U: North American Linecord

Examples: **GENH 30-25-U**, **GENH 60-12.5-LAN-U**, **GENH 100-7.5-IEEE-U**

750W Programmable DC Power Supplies

(Single Output in 1U Full-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (100VAC/200VAC) (%)
GEN 6-100	0 - 6	0 - 100	600	60	200	77 / 80
GEN 8-90	0 - 8	0 - 90	720	60	180	78 / 81
GEN 12.5-60	0 - 12.5	0 - 60	750	60	120	83 / 86
GEN 20-38	0 - 20	0 - 38	760	60	76	83 / 86
GEN 30-25	0 - 30	0 - 25	750	60	63	82 / 85
GEN 40-19	0 - 40	0 - 19	760	60	48	84 / 88
GEN 60-12.5	0 - 60	0 - 12.5	750	60	38	84/ 88
GEN 80-9.5	0 - 80	0 - 9.5	760	80	29	84 / 88
GEN 100-7.5	0 - 100	0 - 7.5	750	80	23	84 / 88
GEN 150-5	0 - 150	0 - 5	750	100	18	84 / 88
GEN 300-2.5	0 - 300	0 - 2.5	750	120	13	83 / 87
GEN 600-1.3	0 - 600	0 - 1.3	780	300	8	83 / 87

GEN | **60** | **-** | **12.5** | **-** | **USB** | **-** | **U**

- Product Series: **GEN** (Full-Rack 750W)
- Output voltage
- Output current
- LAN: LAN Interface; IEMD: IEEE (GPIB) Interface; USB: USB (2.0) Interface; IS510: Isolated Analog (5V/10V); IS420: Isolated Analog (4-20mA)
- U: North American Linecord

Examples: **GEN 60-12.5-U**, **GEN 600-1.6-USB-U**, **GEN 100-7.5-IEEE-U**

1500W Programmable DC Power Supplies

(Single Output in 1U Full-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (100VAC/200VAC) (%)
GEN 6-200	0 - 6	0 - 200	1200	60	400	77 / 80
GEN 8-180	0 - 8	0 - 180	1440	60	360	78 / 81
GEN 12.5-120	0 - 12.5	0 - 120	1500	60	240	83 / 86
GEN 20-76	0 - 20	0 - 76	1520	60	152	83 / 86
GEN 30-50	0 - 30	0 - 50	1500	60	125	82 / 85
GEN 40-38	0 - 40	0 - 38	1520	60	95	84 / 88
GEN 50-30	0 - 50	0 - 30	1500	60	85	84 / 88
GEN 60-25	0 - 60	0 - 25	1500	60	75	84/ 88
GEN 80-19	0 - 80	0 - 19	1520	80	57	84 / 88
GEN 100-15	0 - 100	0 - 15	1500	80	45	84 / 88
GEN 150-10	0 - 150	0 - 10	1500	100	35	84 / 88
GEN 300-5	0 - 300	0 - 5	1500	120	25	83 / 87
GEN 600-2.6	0 - 600	0 - 2.6	1560	300	12	83 / 87

GEN | **600** | **-** | **2.6** | **-** | **IEEE**

- Product Series: **GEN** (Half-Rack 750W)
- Output voltage
- Output current
- LAN: LAN Interface; IEMD: IEEE (GPIB) Interface; USB: USB (2.0) Interface; IS510: Isolated Analog (5V/10V); IS420: Isolated Analog (4-20mA)

Examples: **GEN 30-50-LAN**, **GEN 100-15**, **GEN 300-5-IEEE**

2400W Programmable DC Power Supplies
(Single Output in 1U Full-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (3P208) (%)
GEN 8-300	0 - 8	0 - 300	2400	60	1200	84
GEN 10-240	0 - 10	0 - 240	2400	60	960	84
GEN 16-150	0 - 16	0 - 150	2400	60	600	86
GEN 20-120	0 - 20	0 - 120	2400	60	480	86
GEN 30-80	0 - 30	0 - 80	2400	60	220	88
GEN 40-60	0 - 40	0 - 60	2400	60	120	88
GEN 60-40	0 - 60	0 - 40	2400	60	70	88
GEN 80-30	0 - 80	0 - 30	2400	80	50	88
GEN 100-24	0 - 100	0 - 24	2400	80	40	88
GEN 150-16	0 - 150	0 - 16	2400	100	30	88
GEN 300-8	0 - 300	0 - 8	2400	200	15	88
GEN 600-4	0 - 600	0 - 4	2400	300	7	87

GEN | 10 | - | 240 | - | USB | - | 1P230

Product Series: **GEN** (Full-Rack 2400W)

Output voltage

Output current

LAN:	LAN Interface
IEMD:	IEEE (GPIB) Interface
USB:	USB (2.0) Interface
IS510:	Isolated Analog (5V/10V)
IS420:	Isolated Analog (4-20mA)

1P230: Single-phase 230VAC
3P208: Three-phase 208VAC

Examples: **GEN 10-240-1P230**, **GEN 600-4-USB-3P208**, **GEN 60-40-LAN-1P230**

3300W Programmable DC Power Supplies
(Single Output in 2U Full-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (1P230/3P208/3P480) (%)
GEN 8-400	0 - 8	0 - 400	3200	60	1300	82
GEN 10-330	0 - 10	0 - 330	3300	60	1200	83
GEN 15-220	0 - 15	0 - 220	3300	60	880	83
GEN 20-165	0 - 20	0 - 165	3300	60	660	83
GEN 30-110	0 - 30	0 - 110	3300	60	300	86
GEN 40-85	0 - 40	0 - 85	3400	60	200	86
GEN 60-55	0 - 60	0 - 55	3300	60	100	88
GEN 80-42	0 - 80	0 - 42	3360	80	80	88
GEN 100-33	0 - 100	0 - 33	3300	100	70	88
GEN 150-22	0 - 150	0 - 22	3300	100	60	87
GEN 200-16.5	0 - 200	0 - 16.5	3300	275	40	87
GEN 300-11	0 - 300	0 - 11	3300	300	20	87
GEN 600-5.5	0 - 600	0 - 5.5	3300	500	10	87

GEN | 60 | - | 55 | - | LAN | 3P208

Product Series: **GEN** (Full-Rack 3.3kW)

Output voltage

Output current

LAN:	LAN Interface
IEMD:	IEEE (GPIB) Interface
USB:	USB (2.0) Interface
IS510:	Isolated Analog (5V/10V)
IS420:	Isolated Analog (4-20mA)

1P230: Single-phase 230VAC
3P208: Three-phase 208VAC
3P480: Three-phase 480VAC

Examples: **GEN 20-165-LAN-1P230**, **GEN 300-11-3P208**, **GEN 8-400-USB-3P208**

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Genesys™ Series

5000W Programmable DC Power Supplies
(Single Output in 2U Full-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (3P208/3P480) (%)
GEN 8-600	0 - 8	0 - 600	4800	75	1950	83
GEN 10-500	0 - 10	0 - 500	5000	75	1800	84
GEN 16-310	0 - 16	0 - 310	4960	75	1400	84
GEN 20-250	0 - 20	0 - 250	5000	75	1000	86
GEN 30-170	0 - 30	0 - 170	5100	75	460	86
GEN 40-125	0 - 40	0 - 125	5000	75	300	88
GEN 60-85	0 - 60	0 - 85	5100	75	150	88
GEN 80-65	0 - 80	0 - 65	5200	80	120	88
GEN 100-50	0 - 100	0 - 50	5000	100	100	88
GEN 150-34	0 - 150	0 - 34	5100	120	90	88
GEN 200-25	0 - 200	0 - 25	5000	220	60	88
GEN 300-17	0 - 300	0 - 17	5100	300	30	88
GEN 400-13	0 - 400	0 - 13	5200	350	25	88
GEN 500-10	0 - 500	0 - 10	5000	400	20	88
GEN 600-8.5	0 - 600	0 - 8.5	5100	500	15	88

GEN | 10 | - | 500 | - | LAN | - | 3P480

Product Series: **GEN** (Full-Rack 5kW)

Output voltage

Output current

LAN:	LAN Interface
IEMD:	IEEE (GPIB) Interface
USB:	USB (2.0) Interface
IS510:	Isolated Analog (5V/10V)
IS420:	Isolated Analog (4-20mA)

3P208: Three-phase 208VAC
3P480: Three-phase 480VAC

Examples: **GEN 600-8.5-3P208**, **GEN 10-500-LAN-3P480**, **GEN 60-85-USB-3P208**

10kW Programmable DC Power Supplies
(Single Output in 3U Full-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (3P208/3P480) (%)
GEN 7.5-1000	0 - 7.5	0 - 1000	7500	60	5300	77
GEN 10-1000	0 - 10	0 - 1000	10000	60	4000	83
GEN 12.5-800	0 - 12.5	0 - 800	10000	60	2560	83
GEN 20-500	0 - 20	0 - 500	10000	60	1000	83
GEN 25-400	0 - 25	0 - 400	10000	60	640	83
GEN 30-333	0 - 30	0 - 333	9990	60	444	83
GEN 40-250	0 - 40	0 - 250	10000	60	250	83
GEN 50-200	0 - 50	0 - 200	10000	75	160	83
GEN 60-167	0 - 60	0 - 167	10020	75	67	83

Continued on next page

GEN | 20 | - | 500 | - | USB | 3P480

Product Series: **GEN** (Full-Rack 10kW)

Output voltage

Output current

LAN:	LAN Interface
IEMD:	IEEE (GPIB) Interface
USB:	USB (2.0) Interface
IS510:	Isolated Analog (5V/10V)
IS420:	Isolated Analog (4-20mA)

3P208: Three-phase 208VAC
3P400: Three-phase 400VAC
3P480: Three-phase 480VAC

Examples: **GEN 40-250-LAN-3P208**, **GEN 10-1000-3P480**, **GEN 25-400-IEEE-3P208**

10kW Programmable DC Power Supplies
(Single Output in 3U Full-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (3P208/3P480) (%)
GEN 80-125	0 - 80	0 - 125	10000	100	50	83
GEN 100-100	0 - 100	0 - 100	10000	100	40	83
GEN 125-80	0 - 125	0 - 80	10000	125	32	83
GEN 150-66	0 - 150	0 - 66	9900	150	26	83
GEN 200-50	0 - 200	0 - 50	10000	175	20	83
GEN 250-40	0 - 250	0 - 40	10000	200	16	83
GEN 300-33	0 - 300	0 - 33	9900	200	13	83
GEN 400-25	0 - 400	0 - 25	10000	300	10	83
GEN 500-20	0 - 500	0 - 20	10000	350	8	83
GEN 600-17	0 - 600	0 - 17	10200	350	7	83
GEN 800-12.5	0 - 800	0 - 12.5	10000	700	15	93.5
GEN 1000-10	0 - 1000	0 - 10	10000	800	10	93.5
GEN 1250-8	0 - 1250	0 - 8	10000	1000	6	93.5
GEN 1500-6.7	0 - 1500	0 - 6.7	10050	1400	4	93.5

GEN | | **1000** | **-** | **10** | **-** | **LAN** | **-** | **3P208**

- Product Series: **GEN** (Full-Rack 10kW)
- Output voltage: **1000**
- Output current: **10**
- LAN: LAN Interface; IEMD: IEEE (GPIB) Interface; USB: USB (2.0) Interface; IS510: Isolated Analog (5V/10V); IS420: Isolated Analog (4-20mA)
- 3P208: Three-phase 208VAC; 3P400: Three-phase 400VAC; 3P480: Three-phase 480VAC

Examples: **GEN 100-100-3P480**, **GEN 800-12.5-USB-3P208**, **GEN 300-33-LAN-3P208**

15kW Programmable DC Power Supplies
(Single Output in 3U Full-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (3P208/3P480) (%)
GEN 30-500	0 - 30	0 - 500	15000	60	350	88
GEN 40-375	0 - 40	0 - 375	15000	60	200	88
GEN 50-300	0 - 50	0 - 300	15000	75	150	88
GEN 60-250	0 - 60	0 - 250	15000	75	100	88
GEN 80-187.5	0 - 80	0 - 187.5	15000	100	100	88
GEN100-150	0 - 100	0 - 150	15000	100	100	88
GEN 125-120	0 - 125	0 - 120	15000	125	50	88
GEN 150-100	0 - 150	0 - 100	15000	150	50	88
GEN 200-75	0 - 200	0 - 75	15000	175	20	88
GEN 250-60	0 - 250	0 - 60	15000	200	20	88

Continued on next page

GEN | | **40** | **-** | **375** | **-** | **USB** | | **3P480**

- Product Series: **GEN** (Full-Rack 5kW)
- Output voltage: **40**
- Output current: **375**
- LAN: LAN Interface; IEMD: IEEE (GPIB) Interface; USB: USB (2.0) Interface; IS510: Isolated Analog (5V/10V); IS420: Isolated Analog (4-20mA)
- 3P208: Three-phase 208VAC; 3P400: Three-phase 400VAC; 3P480: Three-phase 480VAC

Examples: **GEN 40-375-USB-3P208**, **GEN 150-100-3P480**, **GEN 300-50-LAN-3P208**

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Genesys™ Series

15kW Programmable DC Power Supplies
(Single Output in 3U Full-Rack Profile)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (3P208/3P480) (%)
GEN 300-50	0 - 300	0 - 50	15000	200	20	88
GEN 400-37.5	0 - 400	0 - 37.5	15000	300	10	88
GEN 500-30	0 - 500	0 - 30	10000	350	10	88
GEN 600-25	0 - 600	0 - 25	15000	350	10	88
GEN 800-18.8	0 - 800	0 - 18.8	15040	700	15	93.5
GEN 1000-15	0 - 1000	0 - 15	15000	800	10	93.5
GEN 1250-12	0 - 1250	0 - 12	15000	1000	6	93.5
GEN 1500-10	0 - 1500	0 - 10	15000	1400	4	93.5

GEN | | **1250** | **-** | **12** | **-** | **USB** | **-** | **3P480**

- Product Series: **GEN** (Full-Rack 10kW)
- Output voltage: **1250**
- Output current: **12**
- LAN: LAN Interface; IEMD: IEEE (GPIB) Interface; USB: USB (2.0) Interface; IS510: Isolated Analog (5V/10V); IS420: Isolated Analog (4-20mA)
- 3P208: Three-phase 208VAC; 3P400: Three-phase 400VAC; 3P480: Three-phase 480VAC

Examples: **GEN 600-100-3P480**, **GEN 1250-12.5-USB-3P208**, **GEN 300-33-LAN-3P208**

High Performance Programmable DC Power Supplies

(Single Output in 1U, 2U and 3U Profile)

Medical Industrial COTS Test LED COMM Broadcast Renewable

https://www.us.lambda.tdk.com/products/programmable-power/genesys-plus.html

The ***GENESYS+***™ DC Programmable Power Supply Series offers advanced features in a lightweight high power density profile (from 1kW to 15kW) with a complete set of user - friendly Analog programming and Digital communication interfaces.

This series offers Output voltages from 10V to 1500V and worldwide AC inputs (wide-range 85-265VAC, single-phase 230VAC, three-phase 208VAC and wide-range three-phase 480VAC) for easy and flexible system inegration.

Remote interfaces include the built-in Isolated Analog (5V/10V) Program/Monitor/Control, LAN (***LXI*** 1.5), USB (2.0) and RS-232/RS-485 along with the optional IEEE (488.2), Modbus-TCP, EtherCAT and Isolated Analog (4-20mA) interfaces.

Features	Benefits
• Single Output: Models from 6V to 1500V (1U Half-Rack 1kW to 3U Full-Rack 15kW)	• Flexibility in model choice and AC Input
• Worldwide AC Inputs (single/three-phase) with Active Power-Factor-Correction	• Higher efficiency, lighter weight, reliable operation
• CV/CC/CP Limit operation with Auto-Crossover / 0°C to +50°C operation	• Multiple Digital Interface offering
• Advanced Features Built-In: Slew-Rate Control (V/I), Waveform Generator w/ Auto-Trigger and Internal Resistance Programming, Multi-Drop Operation	• Simple setup for advanced features • Easy parallel capability for high power systems
• Built-In Interfaces: Front Panel, LAN (LXI 1.5), USB (2.0), RS-232/RS-485, Isolated Analog	• Bench-top or rack-mount capability built-in
• Digital Interfaces (optional): IEEE (488.2), Modbus-TCP, EtherCAT	• Quiet operation (reduced audible noise)
• Analog Interfaces (optional): IS420 (4-20mA)	• Built-In Safety/EMC/RoHS compliance
• Worldwide Safety Agency Approvals / CE Mark / 5Yr Warranty	

1kW Programmable DC Power Supplies

Single Output in 1U Half-Rack Profile

Standard Front Panel (GH), Blank Front Panel (GHB)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (100VAC/200VAC) (%)
GH10-100	0 -10	0 -100	1000	50	≤ 420	86/88
GH20-50	0 - 20	0 - 50	1000	50	≤ 160	87/89
GH30-34	0 - 30	0 - 34	1020	50	≤ 100	87/89
GH40-25	0 - 40	0 - 25	1000	60	≤ 60	87/89
GH60-17	0 - 60	0 - 17	1020	60	≤ 50	87/89
GH80-12.5	0 - 80	0 - 12.5	1000	75	≤ 30	87/89
GH100-10	0 - 100	0 - 10	1000	75	≤ 20	88/90
GH150-7	0 - 150	0 - 7	1050	75	≤ 10	88/90
GH300-3.5	0 - 300	0 - 3.5	1050	200	≤ 8	88/90
GH600-1.7	0 - 600	0 - 1.7	1020	500	≤ 5	88/90

GH/GHB	30	-	34	-	IEEE	-	U

- 30: Output voltage
- 34: Output current
- IEEE: IEEE (GPIB) Inteface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface
- U: North American Linecord
- Product Series: **GH/GHB** (Half-Rack 1kW)

Examples: **GH30-34-U**, **GH60-17-IEEE-U**, **GHB100-10-IEEE-U**

**Follow link above for full datasheet*

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GENESYS™+ Series

1.5kW Programmable DC Power Supplies

Single Output in 1U Half-Rack Profile

Standard Front Panel (GH), Blank Front Panel (GHB)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (100VAC/200VAC) (%)
GH10-150	0 -10	0 -150	1500	50	≤ 250	86/88
GH20-75	0 - 20	0 - 75	1500	50	≤ 130	87/89
GH30-50	0 - 30	0 - 50	1500	50	≤ 100	87/89
GH40-38	0 - 40	0 - 38	1520	60	≤ 60	87/89
GH60-25	0 - 60	0 - 25	1500	60	≤ 50	87/89
GH80-19	0 - 80	0 - 19	1520	75	≤ 30	87/89
GH100-15	0 - 100	0 - 15	1500	130	≤ 40	88/90
GH150-10	0 - 150	0 - 10	1500	75	≤ 10	88/90
GH300-5	0 - 300	0 - 5	1500	180	≤ 8	88/90
GH600-2.6	0 - 600	0 - 2.6	1560	500	≤ 5	88/90

GH/GHB	60	-	25	-	MDBS

- 60: Output voltage
- 25: Output current
- MDBS: IEEE: IEEE (GPIB) Inteface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface
- Product Series: **GH/GHB** (Half-Rack 1.5kW)

Examples: **GH20-75, GH100-15-ECAT, GHB10-150**

1kW Programmable DC Power Supplies

Single Output in 1U Full-Rack Profile

Standard Front Panel (G), Blank Front Panel (GB)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (100VAC/200VAC) (%)
G10-100	0 -10	0 -100	1000	50	≤ 420	86/88
G20-50	0 - 20	0 - 50	1000	50	≤ 160	87/89
G30-34	0 - 30	0 - 34	1020	50	≤ 100	87/89
G40-25	0 - 40	0 - 25	1000	60	≤ 60	87/89
G60-17	0 - 60	0 - 17	1020	60	≤ 50	87/89
G80-12.5	0 - 80	0 - 12.5	1000	75	≤ 30	87/89
G100-10	0 - 100	0 - 10	1000	75	≤ 20	88/90
G150-7	0 - 150	0 - 7	1050	75	≤ 10	88/90
G300-3.5	0 - 300	0 - 3.5	1050	120	≤ 8	88/90
G600-1.7	0 - 600	0 - 1.7	1020	500	≤ 5	88/90

G/GB	10	-	100	-	ECAT	-	U

- 10: Output voltage
- 100: Output current
- ECAT: IEEE: IEEE (GPIB) Inteface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface
- U: North American Linecord
- Product Series: **G/GB** (Full-Rack 1kW)

Examples: **G60-17-U, G300-3.5-MDBS, GB40-25-U**

1.7kW Programmable DC Power Supplies

Single Output in 1U Full-Rack Profile

Standard Front Panel (G), Blank Front Panel (GB)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (100VAC/200VAC) (%)
G10-170	0 -10	0 -170	1700	50	≤ 420	86/88
G20-85	0 - 20	0 - 85	1700	50	≤ 160	87/89
G30-56	0 - 30	0 - 56	1680	50	≤ 100	87/89
G40-42	0 - 40	0 - 42	1680	60	≤ 60	87/89
G60-28	0 - 60	0 - 28	1680	60	≤ 50	87/89
G80-21	0 - 80	0 - 21	1680	75	≤ 30	87/89
G100-17	0 - 100	0 - 17	1700	75	≤ 20	88/90
G150-11.2	0 - 150	0 - 11.2	1680	75	≤ 10	88/90
G300-5.6	0 - 300	0 - 5.6	1680	120	≤ 8	88/90
G600-2.8	0 - 600	0 - 2.8	1680	500	≤ 5	88/90

G/GB	600	-	2.8	-	IEEE

- 600: Output voltage
- 2.8: Output current
- G/GB: Product Series: **G/GB** (Full-Rack 1.7kW)
- IEEE: IEEE (GPIB) Inteface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface

Examples: **G40-42, G80-21-IEEE, GB100-17**

2.7kW Programmable DC Power Supplies

Single Output in 1U Full-Rack Profile

Standard Front Panel (G), Blank Front Panel (GB)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (3-F, 1-F) (5Hz ~ 1MHz) (mArms)	Efficiency (100VAC/200VAC) (%)
G10-265	0 -10	0 -265	2650	75	≤ 800/1200	88
G20-135	0 - 20	0 - 135	2700	75	≤ 450/600	89
G30-90	0 - 30	0 - 90	2700	75	≤ 300/300	89.5
G40-68	0 - 40	0 - 68	2720	75	≤ 150/300	90
G60-45	0 - 60	0 - 45	2700	80	≤ 100/200	90
G80-34	0 - 80	0 - 34	2720	80	≤ 70/100	90.5
G100-27	0 - 100	0 - 27	2700	100	≤ 45/60	90.5
G150-18	0 - 150	0 - 18	2700	120	≤ 30/40	90.5
G300-9	0 - 300	0 - 9	2700	200	≤ 12/12	90.5
G600-4.5	0 - 600	0 - 4.5	2700	480	≤ 5/8	90.5

G/GB	100	-	2.7	-	ECAT	-	3P208

- 100: Output voltage
- 2.7: Output current
- G/GB: Product Series: **G/GB** (Full-Rack 2.7kW)
- IEEE: IEEE (GPIB) Inteface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface
- 1P208: Single-phase 230VAC; 3P208: Three-phase 208VAC; 3P480: Three-phase 480VAC

Examples: **G10-265-1P208, G60-45-ECAT-3P480, GB600-4.5-3P208**

3.4kW Programmable DC Power Supplies

Single Output in 1U Full-Rack Profile

Standard Front Panel (G), Blank Front Panel (GB)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (3-F, 1-F) (5Hz ~ 1MHz) (mArms)	Efficiency (100VAC/200VAC) (%)
G10-340	0 -10	0 -340	3400	75	< 800/1200	88
G20-170	0 - 20	0 - 170	3400	75	< 450/600	89
G30-112	0 - 30	0 - 112	3360	75	< 300/300	89.5
G40-85	0 - 40	0 - 85	3400	75	< 150/300	90
G60-56	0 - 60	0 - 56	3360	80	< 100/200	90
G80-42	0 - 80	0 - 42	3360	80	< 70/100	90.5
G100-34	0 - 100	0 - 34	3400	100	< 45/60	90.5
G150-22.5	0 - 150	0 - 22.5	3375	120	< 30/40	90.5
G300-11.5	0 - 300	0 - 11.5	3450	200	< 12/12	90.5
G600-5.6	0 - 600	0 - 5.6	3360	480	< 5/8	90.5

G/GB	60	-	56	-	MDBS	-	3P480

- 60: Output voltage
- 56: Output current
- G/GB: Product Series: **G/GB** (Full-Rack 3.4kW)
- IEEE: IEEE (GPIB) Inteface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface
- 1P208: Single-phase 230VAC; 3P208: Three-phase 208VAC; 3P480: Three-phase 480VAC

Examples: **G100-34-1P208, G40-85-MDBS-3P480, GB300-11.5-3P208**

5kW Programmable DC Power Supplies

Single Output in 1U Full-Rack Profile

Standard Front Panel (G), Blank Front Panel (GB)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (%)
G10-500	0 -10	0 -500	5000	75	≤ 1200	89
G20-250	0 - 20	0 - 250	5000	75	≤ 600	91
G30-170	0 - 30	0 - 170	5100	75	≤ 300	91
G40-125	0 - 40	0 - 125	5000	75	≤ 150	91
G50-100	0 - 50	0 - 100	5000	75	≤ 130	90
G60-85	0 - 60	0 - 85	5100	75	≤ 100	91
G80-65	0 - 80	0 - 65	5200	80	≤ 70	91
G100-50	0 - 100	0 - 50	5000	90	≤ 45	91
G150-34	0 - 150	0 - 34	5100	120	≤ 45	91
G200-25	0 - 200	0 - 25	5000	200	≤ 45	91
G300-17	0 - 300	0 - 17	5100	200	≤ 15	92
G400-13	0 - 400	0 - 13	5200	400	≤ 12	92
G500-10	0 - 500	0 - 10	5000	450	≤ 10	92
G600-8.5	0 - 600	0 - 8.5	5100	480	≤ 8	92

G/GB	100	-	50	-	ECAT	-	3P208

- 100: Output voltage
- 50: Output current
- G/GB: Product Series: **G/GB** (Full-Rack 5kW)
- IEEE: IEEE (GPIB) Inteface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface
- 3P208: Three-phase 208VAC; 3P480: Three-phase 480VAC

Examples: **G40-125-3P208, G20-250-IEEE-3P480, GB10-500-3P208**

7.5kW Programmable DC Power Supplies

Single Output in 1U Full-Rack Profile

Standard Front Panel (G), Blank Front Panel (GB)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (%)
G20-375	0 -20	0 -375	7500	80	≤ 900	91
G30-250*	0 - 30	0 - 250	7500	80*	≤ 900*	91*
G40-188	0 - 40	0 - 188	7520	80	≤ 300	91
G60-125*	0 - 60	0 - 125	7500	90*	≤ 300*	91*
G80-94*	0 - 80	0 - 94	7500	90*	≤ 300*	91*
G100-75	0 - 100	0 - 75	7500	90	≤ 70	91
G150-65	0 - 80	0 - 65	5200	150	≤ 45	91
G200-37.5*	0 - 200	0 - 37.5	7500	450*	≤ 45*	91*
G300-25*	0 - 300	0 - 25	7500	450*	≤ 45*	91*
G600-12.5	0 - 600	0 - 12.5	7500	450	≤ 14	92
G1000-7.5*	0 - 1000	0 - 7.5	7500	1300*	≤ 14*	92*
G1500-5	0 - 1500	0 - 5	7500	1300	≤ 5	92

G/GB | 1000 | - | 7.5 | - | IEEE | - | 3P480

- 1000: Output voltage
- 7.5: Output current
- IEEE | ECAT | MDBS: IEEE (GPIB) Inteface; EtherCAT Interface; Modbus-TCP Interface
- 3P480: 3P208: Three-phase 208VAC; 3P480: Three-phase 480VAC
- G/GB: Product Series: **G/GB** (Full-Rack 7.5kW)

Examples: **G1500-5-3P208, G300-25-IEEE-3P480, GB60-125-3P208** * = Contact factory

10kW Programmable DC Power Supplies

Single Output in 2U Full-Rack Profile

Standard Front Panel (GSP), Blank Front Panel (GBSP)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (%)
G10-1000	0 -10	0 -1000	10	75	≤ 1200	89
G20-500	0 - 20	0 - 500	10	75	≤ 700	90
G30-340	0 - 30	0 - 340	10.2	75	≤ 300	91
G40-250	0 - 40	0 - 250	10	75	≤ 150	91
G50-200	0 - 50	0 - 200	10	75	≤ 100	91
G60-170	0 - 60	0 - 170	10.2	75	≤ 75	91
G80-130	0 - 80	0 - 130	10.4	80	≤ 50	91
G100-100	0 - 100	0 - 100	10	90	≤ 35	91
G150-68	0 - 150	0 - 68	10.2	120	≤ 23	91
G200-50	0 - 200	0 - 50	10	200	≤ 23	91
G300-34	0 - 300	0 - 34	10.2	200	≤ 7.5	92
G400-26	0 - 400	0 - 26	10.4	400	≤ 7.5	92
G500-20	0 - 500	0 - 20	10	450	≤ 8	91
G600-17	0 - 600	0 - 17	10.2	480	≤ 6	92

GSP/GBSP | 60 | - | 170 | - | IEEE | - | 3P208

- 60: Output voltage
- 170: Output current
- IEEE | ECAT | MDBS: IEEE (GPIB) Inteface; EtherCAT Interface; Modbus-TCP Interface
- 3P208: 3P208: Three-phase 208VAC; 3P480: Three-phase 480VAC
- GSP/GBSP: Product Series: **GSP/GBSP** (Full-Rack 10kW)

Examples: **G150-68-3P208, G50-200-MDBS-3P480, GB300-34-3P480**

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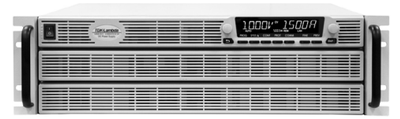
GENESYS™+ Series

15kW Programmable DC Power Supplies

Single Output in 3U Full-Rack Profile

Standard Front Panel (GSP), Blank Front Panel (GBSP)



Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Voltage Ripple (20MHz) (mVpp)	Current Ripple (5Hz ~ 1MHz) (mArms)	Efficiency (3P208) (%)
G10-1500	0 -10	0 -1500	15	75	< 1200	89
G20-750	0 - 20	0 - 750	15	75	< 700	90
G30-510	0 - 30	0 - 510	15.3	75	< 300	91
G40-375	0 - 40	0 - 375	15	75	< 150	91
G50-300	0 - 50	0 - 300	15	75	< 130	91
G60-255	0 - 60	0 - 255	15.3	75	< 90	91
G80-195	0 - 80	0 - 195	15.6	80	< 60	91
G100-150	0 - 100	0 - 150	15	90	< 35	91
G150-102	0 - 150	0 - 102	15.3	120	< 23	91
G200-75	0 - 200	0 - 75	15	200	< 23	91
G300-51	0 - 300	0 - 51	15.3	200	< 7.5	92
G400-39	0 - 400	0 - 39	15.6	400	< 7.5	92
G500-30	0 - 500	0 - 30	15	450	< 8	91
G600-25.5	0 - 600	0 - 25.5	15.3	480	< 6	92

GSP/GBSP | 10 | - | 1500 | - | IEEE | - | 3P208

- 10: Output voltage
- 1500: Output current
- IEEE | ECAT | MDBS: IEEE (GPIB) Inteface; EtherCAT Interface; Modbus-TCP Interface
- 3P208: 3P208: Three-phase 208VAC; 3P480: Three-phase 480VAC
- GSP/GBSP: Product Series: **GSP/GBSP** (Full-Rack 10kW)

Examples: **G150-68-3P208, G50-200-MDBS-3P480, GB300-34-3P480**

High Performance
Programmable Rack DC Power Systems
(Single Output in 23U Rack System Profile)

https://www.us.lambda.tdk.com/products/programmable-power/genplus-rack-dc-systems.html

Medical Industrial COTS Test LED COMM Broadcast Renewable

The ***GENESYS+***™ DC Programmable Rack DC Power System platform offers advanced features in a portable high power density profile (from 30kW to 60kW) with a complete set of user - friendly Analog programming and Digital communication interfaces. This series offers Output voltages from 10V to 600V and worldwide AC inputs (three-phase 208VAC and wide-range three-phase 480VAC) for easy and flexible system integration. Remote interfaces include the built-in Isolated Analog (5V/10V) Program/Monitor/Control, LAN (***LXI*** 1.5), USB (2.0) and RS-232/RS-485 along with the optional IEEE (488.2), Modbus-TCP, EtherCAT and Isolated Analog (4-20mA) interfaces.

Features	Benefits
• Single Output: Models from 6V to 600V (23U Stand-Alone Rack DC Power Systems)	• Flexibility in model choice and AC Input
• Worldwide AC Inputs (three-phase) with Active Power-Factor-Correction	• High efficiency, reliable operation (no additional fans in rack)
• CV/CC/CP Limit operation with Auto-Crossover / 0°C to +50°C operation	• Multiple Digital Interface offering
• Advanced Features Built-In: Slew-Rate Control (V/I), Waveform Generator w/ Auto-Trigger and Internal Resistance Programming, Multi-Drop Operation	• Simple setup for advanced features • Easy parallel capability for high power systems
• Built-In Interfaces: Front Panel, LAN (LXI 1.5), USB (2.0), RS-232/RS-485, Isolated Analog	• Portability (built-in casters)
• Digital Interfaces (optional): IEEE (488.2), Modbus-TCP, EtherCAT	• Uncomplicated AC Input / DC Output connections
• Analog Interfaces (optional): IS420 (4-20mA)	• Quiet operation (reduced audible noise)
• Worldwide Safety Agency Compliance / CE/UKCA Mark / 5Yr Warranty	• Built-In Safety/EMC/RoHS compliance

30kW Programmable DC Power Supplies
Single Output in 23U Rack System Profile
Standard Front Panel (GSPS), Blank Front Panel (GBSPS)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (W)	Line/Load Regulation (CV mode)	Line/Load Regulation (CC mode)	Efficiency (200VAC/380VAC) (%)
GSPS10-3000	0 -10	0 -3000	30	1mV / 6mV	1.5A / 2.4A	87
GSPS20-1500	0 - 20	0 - 1500	30	2mV / 7mV	0.75A / 1.20A	87
GSPS30-1020	0 - 30	0 - 1020	30	3mV / 8mV	0.51A / 0.82A	88
GSPS40-750	0 - 40	0 - 750	30	4mV / 9mV	0.375A / 0.600A	89
GSPS50-600	0 - 50	0 - 600	30	5mV / 10mV	0.30A / 0.48A	89
GSPS60-510	0 - 60	0 - 510	30.6	6mV / 11mV	0.26A / 0.41A	90
GSPS80-390	0 - 80	0 - 390	31.2	8mV / 13mV	0.20A / 0.31A	90
GSPS100-300	0 - 100	0 - 300	30	10mV / 15mV	0.15A / 0.24A	90
GSPS150-204	0 - 150	0 - 204	30.6	15mV / 20mV	0.102A / 0.163A	90
GSPS200-150	0 - 200	0 - 150	30	20mV/ 25mV	0.075A / 0.120A	90
GSPS300-102	0 - 300	0 - 102	30.6	30mV / 35mV	0.051A / 0.082A	90
GSPS400-78	0 - 400	0 - 78	31.2	40mV / 45mV	0.039A / 0.062A	90
GSPS500-60	0 - 500	0 - 60	30	50mV / 55mV	0.030A / 0.048A	90
GSPS600-51	0 - 600	0 - 51	30.6	60mV / 65mV	0.026A / 0.041A	90

GSPS/GBSPS	300	-	102	-	ECAT	-	3P480

- 300: Output voltage
- 102: Output current
- ECAT: IEEE: IEEE (GPIB) Inteface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface
- 3P480: 3P208: Three-phase 208VAC; 3P480: Three-phase 480VAC
- GSPS/GBSPS: Product Series: **GSPS/GBSPS** (23U Full-Rack 30kW)

Examples: **GSPS30-1020-3P480**, **GSPS400-78-IEEE-3P208**, **GBSPS100-300-IEEE-3P208**

TDK In Everything, Better

GENESYS™+ Series

45kW Programmable DC Power Supplies
Single Output in 23U Rack System Profile
Standard Front Panel (GSPS), Blank Front Panel (GBSPS)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (kW)	Line/Load Regulation (CV mode)	Line/Load Regulation (CC mode)	Efficiency (200VAC/380VAC) (%)
GSPS10-4500	0 -10	0 - 4500	45	1mV / 6mV	2.25A / 3.60A	87
GSPS20-2250	0 - 20	0 - 2250	45	2mV / 7mV	1.13A / 1.80A	87
GSPS30-1530	0 - 30	0 - 1530	45.9	3mV / 8mV	0.77A / 1.22A	88
GSPS40-1125	0 - 40	0 - 1125	45	4mV / 9mV	0.56A / 0.90A	89
GSPS50-900	0 - 50	0 - 900	45	5mV / 10mV	0.45A / 0.72A	89
GSPS60-765	0 - 60	0 - 765	45.9	6mV / 11mV	0.38A / 0.61A	90
GSPS80-585	0 - 80	0 - 585	46.8	8mV / 13mV	0.29A / 0.47A	90
GSPS100-450	0 - 100	0 - 450	45	10mV / 15mV	0.23A / 0.36A	90
GSPS150-306	0 - 150	0 - 306	45.9	15mV / 20mV	0.153A / 0.245A	90
GSPS200-225	0 - 200	0 - 225	45	20mV/ 25mV	0.113A / 0.180A	90
GSPS300-153	0 - 300	0 - 153	45.9	30mV / 35mV	0.077A / 0.122A	90
GSPS400-117	0 - 400	0 - 117	46.8	40mV / 45mV	0.059A / 0.094A	90
GSPS500-90	0 - 500	0 - 90	45	50mV / 55mV	0.045A / 0.072A	90
GSPS600-76.5	0 - 600	0 - 76.5	45.9	60mV / 65mV	0.038A / 0.061A	90

GSPS/GBSPS	600	-	76.5	-	MDBS	-	3P480

- 600: Output voltage
- 76.5: Output current
- MDBS: IEEE: IEEE (GPIB) Inteface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface
- 3P480: 3P208: Three-phase 208VAC; 3P480: Three-phase 480VAC
- GSPS/GBSPS: Product Series: **GSPS/GBSPS** (23U Full-Rack 45kW)

Examples: **GSPS300-153-3P208**, **GSPS60-765-ECAT-3P480**, **GBSPS10-4500-3P208**

60kW Programmable DC Power Supplies
Single Output in 23U Rack System Profile
Standard Front Panel (GSPS), Blank Front Panel (GBSPS)

Model Selector

Model Number	Voltage Adjust Range (V)	Current Adjust Range (A)	Rated Output Power (kW)	Line/Load Regulation (CV mode)	Line/Load Regulation (CC mode)	Efficiency (200VAC/380VAC) (%)
GSPS20-3000	0 - 20	0 - 3000	60	2mV / 7mV	1.50A / 2.40A	87
GSPS30-2040	0 - 30	0 - 2040	61.2	3mV / 8mV	1.20A / 1.64A	88
GSPS40-1500	0 - 40	0 - 1500	60	4mV / 9mV	0.76A / 1.20A	89
GSPS50-1200	0 - 50	0 - 1200	60	5mV / 10mV	0.60A / 0.96A	89
GSPS60-1020	0 - 60	0 - 1020	61.2	6mV / 11mV	0.51A / 0.82A	90
GSPS80-780	0 - 80	0 - 780	62.4	8mV / 13mV	0.390A / 0.624A	90
GSPS100-600	0 - 100	0 - 600	60	10mV / 15mV	0.300A / 0.480A	90
GSPS150-408	0 - 150	0 - 408	61.2	15mV / 20mV	0.204A / 0.326A	90
GSPS200-300	0 - 200	0 - 300	60	20mV/ 25mV	0.150A / 0.240A	90
GSPS300-204	0 - 300	0 - 204	61.2	30mV / 35mV	0.102A / 0.163A	90
GSPS400-156	0 - 400	0 - 156	62.4	40mV / 45mV	0.077A / 0.125A	90
GSPS500-120	0 - 500	0 - 120	60	50mV / 55mV	0.060A / 0.096A	90
GSPS600-102	0 - 600	0 - 102	61.2	60mV / 65mV	0.051A / 0.082A	90

GSPS/GBSPS	60	-	1020	-	IEEE	-	3P208

- 60: Output voltage
- 1020: Output current
- IEEE: IEEE: IEEE (GPIB) Interface; ECAT: EtherCAT Interface; MDBS: Modbus-TCP Interface
- 3P208: 3P208: Three-phase 208VAC; 3P480: Three-phase 480VAC
- GSPS/GBSPS: Product Series: **GSPS/GBSPS** (23U Full-Rack 60kW)

Examples: **GSPS100-600-3P208**, **GSPS500-120-MDBS-3P480**, **GBSPS20-3000-ECAT-3P480**

AC Programmable Power Sources from 2 to 45kVA

Medical · Industrial · Test · COTS · COMM · **Marine**

GENESYS™ AC

Full Datasheet
https://product.tdk.com/en/power/gac

Suitable for 1U high rack or bench mounting, the GENESYS™ AC (GAC) programmable power sources have a very high power density. The series currently offers power levels of 2kVA and 3kVA, with voltages adjustable from 0V to 350Vac and ±500Vdc (GAC-PRO models), currents from 0 to 30Arms and frequencies from 16Hz to 1200Hz, (5000Hz option on GAC-PRO). Multiple remote programming methods are available, including built-in LAN, USB, RS232 & RS485 and optional IEEE/GPIB interface. The GENESYS™ AC PRO models include real time analog control functionality necessary for more complex test scenarios.
The GENESYS™ AC series has a full colour LCD, multi-language, touch panel display for ease of use and a GUI interface.

Features	Benefits
• 1U high	• Less Rack Space Used
• Full Colour Touch Panel Display	• Easy to Read and Program
• Built-in USB, LAN, RS-232 & RS-485 (plus others) Interfaces	• No Additional Cost
• Parallelable to 9kW single and multi-phase	• Scalable for Larger Systems and Multiple Phase Operation
• Five Year Warranty	• Low Cost of Ownership

Part Numbering Scheme

An easy to use on-line part number configurator is available. Click here for EMEA region, click here for the Americas region.

GAC-PRO - 03 B A 1 A - 00 A 00 A

Series Name
GAC
GAC-PRO

Front Panel Type/Color
A - Full Panel (Grey)
B - Full Panel (Black)
C - Blank Panel (Grey)
D - Blank Panel (Black)

Communication Interface
1 - Built-in RS232, RS485, USB, LAN
2 - IEEE/GPIB + built-in RS232, RS485, USB, LAN

Frequency Limit
A - AC Mode, 1200Hz
B - AC + DC Mode, 1200Hz*
C - AC + DC Mode, 5000Hz*

Accessories
A - None

Additional Options
00 - None

Apparent Output Power
02 = 2kVA
03 = 3kVA
06 = 6kVA***
09 = 9kVA***

***Contact factory for availability

Input Voltage
A - 85-265Vac single phase **
B - 170-265Vac 3-phase
C - 342-528Vac 3-phase

** 2kVA, 3kVA only

Avionic Standards *(GAC-PRO Only)
00 - None
01 - RTCA/DO 160
02 - MIL-STD 704
03 - A350 (Airbus ABD100.1.8.1)
04 - RTCA/DO 160 & MIL-STD 704
05 - RTCA/DO 160 & A350 (Airbus ABD100.1.8.1)
06 - MIL-STD 704 & A350 (Airbus ABD100.1.8.1)
07 - RTCA/DO 160 & MIL-STD 704 & A350 (Airbus ABD100.1.8.1)

*(GAC-PRO Only)

IEC & Other Standards	
A - None	
B - IEC61000-4-11	GAC-PRO Only*
C - IEC61000-4-13	GAC-PRO Only*
D - MIL-STD-1399-300 PART 1	GAC-PRO Only*
E - IEC61000-4-11 & IEC61000-4-13	GAC-PRO Only*
F - IEC61000-4-11 & MIL-STD-1399-300 PART 1	GAC-PRO Only*
G - IEC61000-4-13 & MIL-STD-1399-300 PART 1	GAC-PRO Only*
H - IEC61000-4-11 & IEC61000-4-13 & MIL-STD-1399-300 PART 1	GAC-PRO Only*
I - Wave Generator & Harmonic Analysis	GAC ONLY
J - IEC61000-4-11 & Wave Generator & Harmonic Analysis	GAC ONLY
K - IEC61000-4-13 & Wave Generator & Harmonic Analysis	GAC ONLY
L - IEC61000-4-11 & IEC61000-4-13 & Wave Generator & Harmonic Analysis	GAC ONLY

TDK In Everything, Better

GENESYS™ AC Series

High ***Performance*** Programmable AC Power

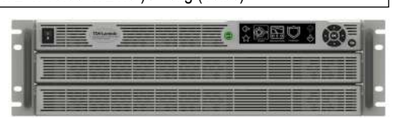
GENESYS™ AC

Common Ratings	Genesys™ AC	Genesys™ AC-PRO
Operating Modes	AC	AC, DC, AC+DC
AC Voltage Range	0-360 VAC L-N	
Output Frequency	16~1200 Hz 16-1200 Hz (16-5000Hz option)	
Load PF	0 - 1 Leading or Lagging	
DC Voltage Range	N/A	±510 VDC
Input Power Options	Single Phase (2&3kVA): 85-265VAC (Derate to 1.5kVA below 170VAC) / Three Phase: 170-265 or 342-528 VAC	

2 and 3kVA / 1U Models

OUTPUT RATINGS	Genesys™ AC Models		Genesys™ AC-PRO Models	
	GAC-02	GAC-03	GAC-PRO 02	GAC-PRO 03
AC Power	2000VA	3000VA	2000VA	3000VA
Phases	Single Phase per unit			
AC Current	0-20A	0-30A	0-20A	0-30A
Peak AC Current (Crest Factor)	120 A (6:1 CF)	120 A (4:1 CF)	120 A (6:1 CF)	120 A (4:1 CF)
DC Power	N/A		2000W	3000W
DC Current Range	N/A		0-20A DC	0-30A DC
Form Factor / Dimensions	1U / H: 44 x W: 423 x D: 544.5mm (1.72" x 16.65" x 21.5") / <8kg (18lbs)			

6 and 9kVA / 3 Phase / 3U Models



OUTPUT RATINGS	Genesys™ AC Models		Genesys™ ACModels	
	GAC-06	GAC-09	GAC-PRO 06	GAC-PRO 09
AC Power	6000VA	9000VA	6000VA	9000VA
Phases	Three, Split or Single Phase operation			
AC Voltage Range Per Phase	0-360 VAC L-N (0-623V L-L)			
AC Current per Phase (Single Phase)	0-20A (0-60A)	0-30A (0-90A)	0-20A (0-60A)	0-30A (0-90A)
Peak AC Current Per Phase (Single Phase)	120A (360A)	120A (360A)	120A (360A)	120A (360A)
DC Power	N/A		6000W	9000W
DC Current Range	N/A		0-60A DC	0-90A DC
Form Factor / Dimensions / Wt	3U / H: 134 x W: 423 x D: 570mm (5.25" x 16.65" x 22.5") / <25kg (56lbs)			

Up to 45kVA w/addition of 9kVA Power (Booster) Units

OUTPUT RATINGS (per Each Unit added to existing GAC)	Genesys™ AC Power Unit
	GAC-PWR-09
AC Power	9000VA
Phases	Three, Split or Single Phase
AC Current per Phase (Single Phase)	0-30A (0-90A)
Peak AC Current Per Phase (Single Phase)	120A (360A)
DC Power	9000W
DC Current Range	0-90A DC
Form Factor / Wt	3U / < 25kg (56lbs)

36kVA Power Example
GAC-36
One GAC-09 Main
Three GAC-PWR-09
12U Rack Space

Common Features and Options

Measurement and Analysis
AC / DC Voltage
RMS / DC Current
Peak Current
Power (Real & Apparent)
Harmonics Frequency (Harmonic #)

Programming and Readback
LAN / USB / RS232 / RS485
Analog Monitoring w/ Parametric Control
GAC-PRO : Real Time Analog
Optional : IEEE GPIB

AVAILABLE PRE-PROGRAMMED TEST STANDARDS
1. IEC 61000- 4-11 / 13 / 14 / 17 / 27 / 28 / 29 / 34
2. MIL-STD-1399-300 P1 & MIL-STD-704
3. RCTA/DO-160 & A350 (ABD100.1.8.1)

For more details visit : www.us.lambda.tdk.com/genesysac

D0013096 rev 03
5K25F

Programmable DC Electronic Loads
(300W: Single Input in 3U Half-Rack Profile)
(1kW: Single Input in 3U Full-Rack Profile)

Test | Industrial | Medical | COTS | Renewable | LED | COMM | Broadcast

https://www.us.lambda.tdk.com/products/programmable-loads/sfl.html

The SFL DC Programmable Electronic Load Series is a high performance multi-functional solution available in two voltage levels (120V/500V) over two power levels (300W/1kW) and offers the user flexible load current control to simulate different load conditions. A user-friendly front panel along with built-in and optional interfaces make it suitable for use in product Research, Design and Development.

Standard control Interfaces include a 3.5" color front panel LCD display along with the built-in **USB** and the **EXT-IN** Analog programming (0-10V) interfaces, an optional IEEE Interface (with built-in DIDO for remote PLC controller interfacing) and a Ripple Measurement Interface (for measuring Output ripple and noise).

Features	Benefits
• Stable high speed current control; High Slew Rate (up to 30A/us)	• Easy model choice (low/high voltage at 300W or 1kW)
• Seven load modes (CR, CC, CP, CV, EXT, Short, CV+Climit	• Similar front panel/rear panel operation (300W/1kW)
• Four operating modes (Normal, Dynamic-Time, Dynamic-Freq, Sequence, Sweep)	• Flexibility in load mode and operating mode conditions
• Parallel Operation (up to ten units)	• Front or rear panel power connections available
• Built-In Interfaces: 3.5" Front Panel LCD display, **USB** (2.0), **EXT-IN**	• Simple parallel capability (up to 10kW)
• Digital Interfaces (optional): **IEEE** (488.1) w/ **DIDO** (for PLC interfacing)	• Easy physical impementation (bench-top or rack-mount)
• Ripple Measurement Interface (optional)	• Built-In Safety/EMC/RoHS compliance
• Compliant to EN61010-1 / CE Mark / **2Yr** Warranty	

300W/1kW Programmable DC Electronic Load
(Single Input in 3U Half-Rack/Full-Rack Profile)

Model Selector

Model Number	Load Voltage Rating (V)	Load Current Rating (A)	Load Power Rating (W)	Slew Rate (mA/us or A/us)	Voltage Measurement Range (V)	Current Measurement Range (A)
SFL 120-60-300	120	60	300	5mA/us to 20A/us	0-20 / 0-120	0-0.6 / 0-6 / 0-60
SFL 500-12-300	500	12	300	0.25mA/us to 1A/us	0-85 / 0-500	0-0.12 / 0-1.2 / 0-12
SFL 120-180-1K	120	180	1000	7.5mA/us to 30A/us	0-20 / 0-120	0-1.8 / 0-18 / 0-180
SFL 500-36-1K	500	36	1000	0.75mA/us to 3A/us	0-85 / 0-500	0-0.36 / 0-3.6 / 0-36

SFL	120	-	60	-	300	-	IEEE	-	R

- 120: Rated voltage: 120, 500
- SFL: Product Series: **SFL** (3U Half-Rack/Full-Rack 300W/1kW)
- 60: Rated current: 60, 180; 12, 36
- 300: Rated power: 300, 1K
- IEEE: IEMD: IEEE Interface
- R: Ripple Measurement Interface

Examples: **SFL 120-60-300**, **SFL 500-36-1K-R**, **SFL 120-180-IEEE-R, SFL 500-12-300**

Programmable AC–DC and AC–AC Power Supplies

High-Precision, Programmable Power Solutions for Test, Validation, and Manufacturing

Product Overview

Programmable AC–DC and AC–AC power supplies deliver precise, repeatable power control to simulate real-world electrical conditions, support automation, and ensure global compliance across R&D, production, and certification environments.

Key Benefits

- High accuracy and output stability
- Programmable voltage, current, frequency, & waveform control
- Automation-ready remote interfaces
- Real-world power condition simulation
- Built-in safety and protection features
- Global power standard compatibility

Programmable AC–DC Features

- Wide-range DC voltage and current output
- Current limiting, foldback, and protection modes
- Fast transient response and programmable slew rates
- Sequence and profile generation
- LAN, USB, GPIB, or RS-232 control

Programmable AC–AC Features

- Adjustable AC voltage and current output
- Programmable frequency for global grid simulation
- Selectable waveform shapes and harmonic distortion
- Phase angle and power quality control
- Abnormal and fault condition testing support

Typical Applications

- R&D laboratories and design validation
- Automated production and end-of-line testing
- Compliance, safety, and EMC certification
- Automotive and electric vehicle systems
- Aerospace, defense, renewable energy, and power electronics

Use Case Examples

- Global AC line simulation for certification testing
- Battery and DC bus emulation
- Voltage sag, surge, and brownout testing
- Automated test equipment (ATE) support

DC–DC Isolated Converters

Isolated

Applications

- Distributed Power Architecture
- Battery powered devices
- Industrial
- Medical
- Communications
- Computing
- Data Storage
- Test & Measurement
- Transportation

Features

- Industry leading power density and efficiency
- Galvanic isolation between input and output
- Power range from 1.3W to 11,000W
- High useable power at elevated temperatures
- Open frame low profile construction
- Baseplate and conduction cooling options

Bidirectional DC/DC Converters

- Electrical Motor Energy Re-generation/storage (lifts, cranes, etc)
- Battery Tests Systems Energy Re-generation to avoid energy waste
- Smart-Grid, particularly “Micro-Grid” applications

TDK
In Everything, Better

DC–DC Isolated Converters Index by Wattage

Series	Total Power (W)	Outputs	Input Volts (VDC)	Output Volts (VDC)	Amps (A)	Size (Inches)	Type	Page
CCG1R5	1.32-1.56	1,2	4.5-76	3.3-30	up to .167	0.62 x 0.41 x 0.45	PCB Mount	142
CCG3	2.64-3.12	1,2	4.5-76	3.3-30	up to .317	0.62 x 0.41 x 0.45	PCB Mount	142
CCG6-10	5.28-10.5	1,2	4.5-76	3.3-30	up to 2.6	0.75 x 0.49 x 0.45	PCB Mount	142
PXC-M	3-10	1,2	9-75	3.3-24	up to 2.5	1.25 x 0.8 x 0.4	PCB Mount	143
PXG-M	15-20	1,2	9-75	5-24	up to 1.67	1.6 x 1 x 0.4	PCB Mount	144
CCG15-30	15-30	1, 2	9-76	3.3 - ±15	up to 7.5	1 x 1 x 0.39	PCB Mount	145
PYD20	20	1, 2	8.5-160	4 - ±24	up to 4	2 x 1 x 0.4	PCB Mount	146
PXD-M	30	1,2	9-75	5-24	up to 6	2 x 1.6 x0.4	PCB Mount	147
PYQ50	30-50	1	14-160	4-55.2	up to 6	2.28 x 1.45 x 0.5	Quarter Brick	148
PXD40	33-40	1,2	9-75	3.3-48	up to 12.2	2 x 1 x 0.4	PCB Mount	149
PXD60	39.6-60	1,2	9-75	3.3-24	up to 12	2 x 1 x 0.4	PCB Mount	150
iEA	48-78	1	18-75	5-28	up to 15	2.3 x 0.9 x 0.35	Eighth Brick	151
IQE	49-204	1	18-75	5,12,16	up to 30	2.28 x 1.45 x 0.41	Quarter Brick	152
CN-A24	50-100	1	14-36	5-24	up to 20	2.28 x 1.45 x 0.5	Quarter Brick	153
CN-B110	50-300	1	43-160	5-24	up to 20	2.4 x 2.28 x 0.5	Quarter/Half Brick	154
PH-A280	50-600	1	200-425	3.3-48	up to 60	1.46 x 0.5 x 2.3	Quarter/Half Brick	155
PH1200A280	1200	1	200-425	12-48	up to 100	4.6 x 2.4 x 0.5	Full Brick	156
IQL	72-308	1	18-75	1.2-28	up to 60	2.28 x 1.45 x 0.52	Quarter Brick	157
PYQ75	75	1	9-75	9.6-55.2	up to 6.25	2.28 x 1.45 x 0.5	Quarter Brick	158
HQA-85	85	1	9-40	3.3-28	up to 25	2.39 x 2.2 x 0.5	Quarter Brick	159
GQA120	120	1	9-36	5-48	up to 24	2.39 x 1.95 x 0.5	Quarter Brick	160
HQA120	120	1	9-40	5-48	up to 24	2.39 x 2.2 x 0.5	Quarter Brick	161
PYH200	200	1	14-160	9.6-55.2	up to 16.7	2.4 x 2.28 x 0.5	Half Brick	162
IEH	300	1	36-75	10.8, 12	up to 25	2.3 x 0.9 x 0.52	Eighth Brick	163
IQG	300-504	1	36-75	9.6-12	up to 47	2.28 x 1.45 x 0.52	Quarter Brick	164
IQK	1008	1	48-56	11.2	up to 90A	2.28 x 1.45 x 0.57	Quarter Brick	165
EZA2500	2,500	1	260-400	36-60	up to 52	16.65 x 15.75 x 1.72	1U rack Mount	166
EZA11K-320240	11,000	1	240-400	150-300	up to 51	16.65 x 20.87 x 1.72	1U rack Mount	167

Listed by Wattage

1.3 to 10.8W DC-DC Converters

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/ccg

The space saving CCG1R5 to CCG10 series of isolated DC-DC converters operate from wide range 4.5 to 18V, 9 to 36Vdc or 18 to 76V inputs with 1.3W to 10.8W power levels and output voltages from 3.3V to 30V (1). Single output models can be adjusted -5% to +10% by using the trim terminal. The CCG can operate in ambient temperatures of up to -40 to +100°C (model dependent) and have an input to output isolation of 1,500Vdc. The CCG series is available in through-hole or surface mount packages, with an option for a double sided board coating for rail applications and other harsh environments.

Features	Benefits
• Wide 4:1 Input Ranges	• Supports Dual 5/12V 12/24V or 24/48V System Voltages
• Space Saving Package Sizes	• Less Board Area Needed
• Certified to IEC62368-1	• Easier System Compliance
• Reduced Derating at High Ambient Temperatures	• More Useable Power
• No Silicone Potting	• Reduced Quality Risk During Surface Mount Reflow Process

Part Numbering Scheme

CCG	1R5	-12	-03	S	F	C	TR
Series Name CCG	Output Power 1R5 = 1.5W 3 = 3W 6 = 6W 10 = 10W	Input Voltage 12 = 4.5 - 18V 24 = 9 - 36V 48 = 18 - 76V	Output Voltage 03 = 3.3V 05 = 5V 12 = 12V 15 = 15V	Output S = Single D = Dual	Mounting Type F = Through hole R = Surface Mount	Board Coating Blank = No coating C = Coating	Tray Packaging Blank = 1 to 20 units TR = 40 units*

* Order multiples of 40, Surface Mount models only. Contact factory for the availability of tray packaging of models with board coating

Related Products

Type	Part Number	Description
Isolated DC-DC Converter	CCG15-30	15-30W, 9 up to 76Vin, Single or Dual Output, 1x1 inch
Evaluation Kit	CCG-EVK-D0	Evaluation board (no module) for CCG15 or CCG30
DC-DC Non-Isolated Buck-Boost Converter	i1C	200W, Input 9-36V or 18-75V, Output 9.6-28V 10A, 1x1 inch Footprint
Isolated DC-DC Converter	PXD40	40W, 9-36 or 18-75Vin, Single or Dual Outputs, 2x1 inch
DC-DC Non-isolated Buck Converter	i3A	100W, 9-53Vin, Output 5-30V 4.5A; 3.3-16.5V 8A, 1/32nd brick
DC-DC Non-isolated Buck Converter	i6A4W	250W, 9-53Vin, Output 3.3-40V 10A; 3.3-15V 20A, 16th brick
DC-DC Non-isolated Buck Converter	i7A	400-750W, 9 up to 60Vin, 0.8 up to 24Vout, 33A, 45A, 60A, 16th brick pinout
Ruggedized DC-DC Buck-Boost Converter	RGC	300W, 9-53Vin, Output 9.6-48V 8A; 5-28V 12.5A, 16th brick pinout
Isolated DC-DC Converter	PYD20	20W, 8.5-160Vin, Single or Dual Outputs, 2x1 inch
Isolated DC-DC Converter	PYQ50	30-50W, 14-160Vin, Single Output, Quarter brick

3-10W Medical DC-DC Converters

Medical COMM

Full Datasheet
https://product.tdk.com/en/power/pxc-m

The PXC-M series of medical DC-DC converters feature a wide 4:1 input range in a compact 1.25 x 0.8" (31.8 x 20.3mm) industry standard package.
With 5kV input to output isolation, 2uA touch current and a low off-load power draw, these encapsulated modules are ideal for fixed and portable applications.

Features	Benefits
• Wide 4:1 Input Range	• Supports Dual 12/24V or 24/48 System Voltages
• Compact 1.25" x 0.8" Industry Package	• Less Board Area Needed
• Certified to IEC60601-1 and ES60601-1	• Suitable For Medical Applications
• 2 x MOPP Isolation	• High Input to Output Isolation
• Low No Load Power Consumption	• Longer Battery Life

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	No Load Current (mA)	Efficiency (%)	Maximum Load Capacitance (uF)
Single Outputs							
PXC-M03-24WS3P3	9 - 36	3.3	1	3.3	6	82	1050
PXC-M06-24WS3P3	9 - 36	3.3	1.8	5.9	6	83	2100
PXC-M10-24WS3P3	9 - 36	3.3	2.5	8.3	6	83	3000
PXC-M03-24WS05	9 - 36	5	0.6	3	6	84.5	750
PXC-M06-24WS05	9 - 36	5	1.2	6	6	86	1500
PXC-M10-24WS05	9 - 36	5	2	10	6	86.5	2500
PXC-M03-24WS12	9 - 36	12	0.25	3	6	87	130
PXC-M06-24WS12	9 - 36	12	0.5	6	6	89	260
PXC-M10-24WS12	9 - 36	12	0.83	10	6	89	430
PXC-M03-24WS15	9 - 36	15	0.2	3	6	87	100
PXC-M06-24WS15	9 - 36	15	0.4	6	6	89	210
PXC-M10-24WS15	9 - 36	15	0.67	10.1	6	89	350
PXC-M03-24WS24	9 - 36	24	0.125	3	6	87	39
PXC-M06-24WS24	9 - 36	24	0.25	6	6	88.5	75
PXC-M10-24WS24	9 - 36	24	0.416	10	6	89	125
PXC-M03-48WS3P3	18 - 75	3.3	1	3.3	4	81	1050
PXC-M06-48WS3P3	18 - 75	3.3	1.8	5.9	4	82.5	2100
PXC-M10-48WS3P3	18 - 75	3.3	2.5	8.3	4	82.5	3000
PXC-M03-48WS05	18 - 75	5	0.6	3	4	84	750
PXC-M06-48WS05	18 - 75	5	1.2	6	4	86.5	1500
PXC-M10-48WS05	18 - 75	5	2	10	4	86.5	2500
PXC-M03-48WS12	18 - 75	12	0.25	3	4	87	130
PXC-M06-48WS12	18 - 75	12	0.5	6	4	88	260
PXC-M10-48WS12	18 - 75	12	0.83	10	4	89	430
PXC-M03-48WS15	18 - 75	15	0.2	3	4	86.5	100
PXC-M06-48WS15	18 - 75	15	0.4	6	4	88.5	210
PXC-M10-48WS15	18 - 75	15	0.67	10.1	4	89	350
PXC-M03-48WS24	18 - 75	24	0.125	3	4	86.5	39
PXC-M06-48WS24	18 - 75	24	0.25	6	4	88	75
PXC-M10-48WS24	18 - 75	24	0.416	10	4	88.5	125

15-20W Medical and Industrial DC-DC Converters

Medical Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/pxg-m

The PXG-M series of medical and industrial DC-DC converters feature a wide 4:1 input range in a compact 1.6 x 1" (41 x 25mm) industry standard package. With 5kV input to output isolation, 2.5uA touch current and a low off-load power draw, these encapsulated modules are ideal for fixed and portable applications.

Features	Benefits
• Wide 4:1 Input Range	• Supports Dual 12/24V or 24/48 System Voltages
• Compact 1.6" x 1" Industry Package	• Less Board Area Needed
• Certified to IEC 60601-1 and IEC 62368-1	• Suitable For Medical and Industrial Applications
• 2 x MOPP Isolation	• High Input to Output Isolation
• Low No Load Power Consumption	• Longer Battery Life

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	No Load Input Current (mA)	Efficiency (%)	Maximum Load Capacitance (uF)
Single Outputs							
PXG-M15-24WS05	9 - 36	5	3	15	9	88	3800
PXG-M20-24WS05	9 - 36	5	4	20	8	88.5	5000
PXG-M15-24WS12	9 - 36	12	1.25	15	10	88.5	650
PXG-M20-24WS12	9 - 36	12	1.67	20	11	88.5	850
PXG-M15-24WS15	9 - 36	15	1	15	11	89	530
PXG-M20-24WS15	9 - 36	15	1.33	20	10	89	700
PXG-M15-24WS24	9 - 36	24	0.625	15	10	88	190
PXG-M20-24WS24	9 - 36	24	0.833	20	10	88.5	220
PXG-M15-48WS05	18 - 75	5	3	15	9	89.5	3800
PXG-M20-48WS05	18 - 75	5	4	20	9	89.5	5000
PXG-M15-48WS12	18 - 75	12	1.25	15	9	88	650
PXG-M20-48WS12	18 - 75	12	1.67	20	9	88.5	850
PXG-M15-48WS15	18 - 75	15	1	15	9	89	530
PXG-M20-48WS15	18 - 75	15	1.33	20	9	89	700
PXG-M15-48WS24	18 - 75	24	0.625	15	9	88.5	190
PXG-M20-48WS24	18 - 75	24	0.833	20	9	88.5	220
Dual Outputs							
PXG-M15-24WD05	9 - 36	±5	±1.5	15	10	86	±1900
PXG-M20-24WD05	9 - 36	±5	±2.0	20	9	86	±2500
PXG-M15-24WD12	9 - 36	±12	±0.625	15	10	88	±380
PXG-M20-24WD12	9 - 36	±12	±0.833	20	10	88.5	±500
PXG-M15-24WD15	9 - 36	±15	±0.5	15	12	89	±270
PXG-M20-24WD15	9 - 36	±15	±0.677	20	11	89	±350
PXG-M15-48WD05	18 - 75	±5	±1.5	15	9	86	±1900
PXG-M20-48WD05	18 - 75	±5	±2.0	20	9	86	±2500
PXG-M15-48WD12	18 - 75	±12	±0.625	15	9	88.5	±380
PXG-M20-48WD12	18 - 75	±12	±0.833	20	9	88.5	±500
PXG-M15-48WD15	18 - 75	±15	±0.5	15	9	89	±270
PXG-M20-48WD15	18 - 75	±15	±0.677	20	9	89	±350

13.2 to 30W DC-DC Converters

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/ccg

The 1" x 1" footprint CCG15 and CCG30 series of isolated DC-DC converters operate from wide range 9 to 36Vdc or 18 to 76V inputs with 15W and 30W power levels and output voltages from 3.3V to 30V (1). Single output models can be adjusted -10% to +10% by using the trim terminal. The CCG can operate in ambient temperatures of -40 to 85°C and has an input to output isolation of 1,500Vdc. Six sided shielding reduces radiated and conducted EMI.

Features	Benefits
• Wide 4:1 Input Ranges	• Supports Dual 12/24V or 24/48V System Voltages
• Space Saving Package Sizes	• Less Board Area Needed
• Certified to IEC 62368-1	• Easier System Compliance
• Reduced Derating at High Ambient Temperatures	• More Useable Power

Model Selector

Model	Input Voltage (V)	Voltage (V)	Output Current (A)	Maximum Power (W)	Input Current at nominal input (A)	Efficiency (%) (100% load, nominal input)
CCG15-24-03S	9 - 36	3.3	4	13.2	0.65	85
CCG30-24-03S		3.3	7	23.1	1.12	86
CCG15-24-05S		5	3	15.0	0.72	87
CCG30-24-05S		5	6	30.0	1.4	89
CCG15-24-12S		12	1.3	15.6	0.74	88
CCG30-24-12S		12	2.5	30.0	1.4	89
CCG15-24-15S		15	1	15.0	0.71	88
CCG30-24-15S		15	2	30.0	1.4	89
CCG15-24-12D (1)		24	0.65	15.6	0.73	89
CCG30-24-12D (1)		24	1.25	30.0	1.4	89
CCG15-24-15D (1)		30	0.5	15.0	0.7	90
CCG30-24-15D (1)		30	1	30.0	0.38	91
CCG15-24-12D		±12	±0.65	15.6	0.73	89
CCG30-24-12D		±12	±1.25	30.0	1.4	89
CCG15-24-15D		±15	±0.5	15.0	0.7	90
CCG30-24-15D		±15	±1.0	30.0	0.38	91
CCG15-48-03S	18 - 76	3.3	4	13.2	0.32	85
CCG30-48-03S		3.3	7	23.1	0.55	87
CCG15-48-05S		5	3	15.0	0.36	87
CCG30-48-05S		5	6	30.0	0.69	90
CCG15-48-12S		12	1.3	15.6	0.37	88
CCG30-48-12S		12	2.5	30.0	0.69	90
CCG15-48-15S		15	1	15.0	0.36	88
CCG30-48-15S		15	2	30.0	0.69	91
CCG15-48-12D (1)		24	0.65	15.6	0.37	89
CCG30-48-12D (1)		24	1.25	30.0	0.69	91
CCG15-48-15D (1)		30	0.5	15.0	0.35	90
CCG30-48-15D (1)		30	1	30.0	0.68	92
CCG15-48-12D		±12	±0.65	15.6	0.37	89
CCG30-48-12D		±12	±1.25	30.0	0.69	91
CCG15-48-15D		±15	±0.5	15.0	0.35	90
CCG30-48-15D		±15	±1.0	30.0	0.68	92

(1) ±12V dual output models can provide a 24V single output by utilizing just the +Vout and -Vout pins, leaving the COM unconnected. Similarly ±15V dual output models can be used as a 30V single output.

PYD20 Series

20W Single and Dual Output DC-DC converters

Industrial · Test · COMM · Broadcast · Railway

Full Datasheet
https://product.tdk.com/en/power/py

The 20W 2 x 1" footprint PYD series of isolated DC-DC converters operate from an ultra wide range input of 8.5 to 160Vdc (18:1) with single and dual output voltages from 5V to 48V(1). Single output models can be adjusted -20% to +15% by using the trim terminal. The PYD20 models have efficiencies of up to 90% and can operate in ambient temperature of -40 to 105°C. The input to output isolation is 3,000Vac and the units are potted to provide a high resistance to shock and vibration. The converters are certified according to the 62368-1 safety standards and with additional circuits, the PYD20 series is also tested according to the EN 50155 railroad standard for electronic equipment in railroad vehicles.

Features	Benefits
• 2" x 1" Footprint	• Industry Standard Package Size
• 8.5 - 160Vdc Wide Input Range (18:1)	• Supports the Majority of Rail DC Input Voltages
• Certified to IEC 62368-1, Tested According to EN 50155	• Easier System Compliance
• Potted Plastic Case	• High Resistance to Shock and Vibration
• 3000Vac Input to Output Isolation	• Suitable For Railway and Industrial Applications

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	No Load Input Current (mA)	Efficiency (%) at 72 / 110Vdc	Maximum Load Capacitance (uF)
Single Outputs							
PYD20-72WS05	8.5 - 160	5	4	20	5	86 / 85	6800
PYD20-72WS12	8.5 - 160	12	1.67	20	8	89 / 88	3300
PYD20-72WS15	8.5 - 160	15	1.33	20	8	89 / 88	2200
Dual Outputs							
PYD20-72WD12(1)	8.5 - 160	±12	±0,833	20	8	89 / 88	820
PYD20-72WD15(1)	8.5 - 160	±15	±0,667	20	8	89 / 88	680
PYD20-72WD24(1)	8.5 - 160	±24	±0,417	20	8	90 / 89	330

Notes
(1) ±12V dual output models can provide a 24V single output by utilizing just the +Vout and -Vout pins, leaving the COM unconnected. Similarly ±15V models can be used as a 30V single output and ±24V models a single 48V output.

PYD	20	-72W	S	05	-
Series	Output Power 20W	-72W 8.5 - 160V Input Voltage	S Single Output D Dual Output	**Output Voltage** 05 = 5V 12 = 12V 15 = 15V 24 = 24V	Blank Positive Logic Remote On/Off -N Negative Logic Remote On/Off

Preferred option

Related Products

Type	Part Number	Description
DC-DC Converter	PYQ50	30-50W, Input 14-160V, quarter brick
DC-DC Converter	PYH200	200W, Input 14-160V, half brick
DC-DC Converter	CN-B	200-300W, Input 60-160V, half brick

PXD–M Series

30W Medical and Industrial DC-DC Converters

Medical · Industrial · Test · COMM · Broadcast

Full Datasheet
https://product.tdk.com/en/power/pxd-m

The PXD-M series of medical and industrial DC-DC converters feature a wide 4:1 input range in a compact 2 x 1" (50.8 x 25mm) industry standard package. With 5kV input to output isolation, 2.5uA touch current and a low off-load power draw, these encapsulated modules are ideal for fixed and portable applications.

Features	Benefits
• Wide 4:1 Input Range	• Supports Dual 12/24V or 24/48V System Voltages
• Compact 2" x 1" Industry Package	• Less Board Area Needed
• Certified to IEC 60601-1 and IEC 62368-1	• Suitable For Medical and Industrial Applications
• 2 x MOPP Isolation	• High Input to Output Isolation
• Low No Load Power Consumption	• Longer Battery Life

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	No Load Input Current (mA)	Efficiency (%)	Maximum Load Capacitance (uF)
Single Outputs							
PXD-M30-24WS05	9 - 36	5	6	30	9	88.5	7200
PXD-M30-24WS12	9 - 36	12	2.5	30	10	89	1200
PXD-M30-24WS15	9 - 36	15	2	30	10	90.5	1000
PXD-M30-24WS24	9 - 36	24	1.25	30	10	89.5	375
PXD-M30-48WS05	18 - 75	5	6	30	8	89	7200
PXD-M30-48WS12	18 - 75	12	2.5	30	9	89	1200
PXD-M30-48WS15	18 - 75	15	2	30	8	90	1000
PXD-M30-48WS24	18 - 75	24	1.25	30	9	89	375
Dual Outputs							
PXD-M30-24WD05	9 - 36	±5	±3.0	30	10	86	±3600
PXD-M30-24WD12	9 - 36	±12	±1.25	30	10	89.5	±750
PXD-M30-24WD15	9 - 36	±15	±1.0	30	9	90	±500
PXD-M30-48WD05	18 - 75	±5	±3.0	30	9	86.5	±3600
PXD-M30-48WD12	18 - 75	±12	±1.25	30	9	90	±750
PXD-M30-48WD15	18 - 75	±15	±1.0	30	8	89.5	±500

PXD-M	30	-24W	S	05	-N
	30 30W Output Power	-24W 9 - 36V input -48W 18 - 75V input	S Single Output D Dual Output	05 5V Output Voltage 12 12V Output Voltage 15 15V Output Voltage 24 24V Output Voltage	Blank No Remote On/Off -N Negative Logic Remote On/Off -P Positive Logic Remote On/Off

Preferred model

30-50W Single Output DC-DC converters, 1/4 Brick

Industrial Test COMM Broadcast Railway

Full Datasheet
https://product.tdk.com/en/power/py

The 30-50W Quarter-brick footprint PYQ series of isolated DC-DC converters operate from an ultra wide range input of 14 to 160Vdc (12:1) with single output voltages from 5V to 48V. The output voltage can be adjusted between -20% to +10% by using the trim terminal. Sense lines for the output voltage ensure a stable output voltage even with changing loads. The PYQ50 models have efficiencies of up to 89% and can operate in ambient temperature of -40 to 100°C. The input to output isolation is 3,000Vdc and the units are potted to provide a high resistance to shock and vibration. The converters are certified according to the 62368-1 safety standards and with additional circuits, the PYQ50 series is also tested according to the EN 50155 railroad standard for electronic equipment in railroad vehicles.

Features	Benefits
• Quarter-Brick Footprint	• Industry Standard Package Size
• 14 - 160Vdc Wide Input Range (12:1)	• Supports the Majority of Railway DC Input Voltages
• Certified to IEC 62368-1, Tested According to EN 50155	• Easier System Compliance
• Potted Plastic Case	• High Resistance to Shock and Vibration
• 3000Vdc Input to Output Isolation	• Suitable For Railway and Industrial Applications

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	No Load Input Current (mA)	Efficiency (%) at 72 / 110Vdc	Maximum Load Capacitance (uF)
PYQ50-72WS05	14 - 160	5	6	30	5	83 / 81	10000
PYQ50-72WS12	14 - 160	12	4.2	50	5	87 / 86	6800
PYQ50-72WS24	14 - 160	24	2.1	50	5	89 / 87	3300
PYQ50-72WS48	14 - 160	48	1.05	50	8	88 / 85	680

PYQ | 50 | -72W | S | 05 | -

- **PYQ** — Series
- **50** — Output Power 50W (30W for 5V Version)
- **-72W** — -72W 14 - 160V Input Voltage
- **S** — S Single Output
- **Output Voltage**: 05 = 5V; 12 = 12V; 24 = 24V; 48 = 48V
- **-**: Blank Positive Logic Remote On/Off and M3 Thread; -N Negative Logic Remote On/Off and M3 Thread; -PD Positive Logic Remote On/Off and 3.2mm Hole; -ND Negative Logic Remote On/Off and 3.2mm Hole

Preferred option

40W Single and Dual Output DC-DC converters

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/pxd

The PXD40 industrial DC-DC converters feature wide 4:1 input ranges in a compact 2 x 1" (50.8 x 25.4mm) industry standard package. With efficiencies up to 93%, the PXD40 series typically draws a low 3mA input current when the remote on/off function is used, prolonging battery life for portable equipment. The modules have six-sided shielding to reduce radiated noise.

Features	Benefits
• Wide 4:1 Input Range	• Supports Dual 12/24V or 24/48V System Voltages
• Compact 2" x 1" Industry Package	• Less Board Area Needed
• Certified to IEC/UL/CSA/EN 62368-1	• Suitable For Industrial Applications
• Low No Load Power Consumption	• Longer Battery Life
• Six Sided Shielding	• Reduces Radiated Noise

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	No Load Input Current (mA)	Efficiency (%)	Maximum Load Capacitance (uF)
Single Outputs							
PXD40-24WS3P3	9 - 36	3.3	10	33	15	89.5	22,000
PXD40-48WS3P3	18 - 75	3.3	10	33	10	90	22,000
PXD40-24WS05	9 - 36	5	8	40	15	92	12,000
PXD40-48WS05	18 - 75	5	8	40	10	91	12,000
PXD40-24WS12	9 - 36	12	3.333	40	15	92	2,000
PXD40-48WS12	18 - 75	12	3.333	40	10	92	2,000
PXD40-24WS15	9 - 36	15	2.666	40	15	93	1,300
PXD40-48WS15	18 - 75	15	2.666	40	10	92	1,300
PXD40-24WS24	9 - 36	24	1.666	40	15	91	490
PXD40-48WS24	18 - 75	24	1.666	40	10	92	490
PXD40-24WS48	9 - 36	48	0.833	40	15	91	120
PXD40-48WS48	18 - 75	48	0.833	40	10	92	120
Dual Outputs							
PXD40-24WD12	9 - 36	±12	±1.666	40	15	91	±980
PXD40-48WD12	18 - 75	±12	±1.666	40	10	91	±980
PXD40-24WD15	9 - 36	±15	±1.333	40	15	91	±630
PXD40-48WD15	18 - 75	±15	±1.333	40	10	91	±630
PXD40-24WD24	9 - 36	±24	±0.833	40	15	91	±250
PXD40-48WD24	18 - 75	±24	±0.833	40	10	92	±250

PXD | 40 | -24W | S | 05 | - | -

- **PXD** — Series
- **40** — Output Power 40W
- **-24W** — -24W 9 - 36V input; -48W 18 - 75V input
- **S** — S Single Output; D Dual Output
- **Output Voltage**: 05 = 5V; 12 = 12V; 15 = 15V; 24 = 24V; 48 = 48V
- **-**: Blank Positive Logic Remote On/Off; -N Negative Logic Remote On/Off
- **-**: Blank No heatsink fitted; -HC1 Heatsink with 7.62mm fins; -HC2 Heatsink with 12.7mm fins; -HC3 Heatsink with 20.32mm fins

Preferred model

60W Single and Dual Output DC-DC converters

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/pxd

The PXD60 industrial DC-DC converters feature wide 4:1 input ranges in a compact 2 x 1" (50.8 x 25mm) industry standard package. With efficiencies up to 92%, the PXD60 series typically draws a low 3mA input current when the remote on/off function is used, prolonging battery life for portable equipment. The modules have six-sided shielding to reduce radiated noise.

Features	Benefits
• Wide 4:1 Input Range	• Supports Dual 12/24V or 24/48V System Voltages
• Compact 2" x 1" Industry Package	• Less Board Area Needed
• Certified to IEC/UL/CSA/EN 62368-1	• Suitable For Industrial Applications
• Low No Load Power Consumption	• Longer Battery Life
• Six Sided Shielding	• Reduces Radiated Noise

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	No Load Input Current (mA)	Efficiency (%)	Maximum Load Capacitance (uF)
Single Outputs							
PXD60-24WS3P3	9 - 36	3.3	12	39.6	10	90	32,000
PXD60-48WS3P3	18 - 75	3.3	12	39.6	10	90	32,000
PXD60-24WS05	9 - 36	5	12	60	10	92	30,000
PXD60-48WS05	18 - 75	5	12	60	10	92	30,000
PXD60-24WS12	9 - 36	12	5	60	10	92	5,850
PXD60-48WS12	18 - 75	12	5	60	10	92	5,850
PXD60-24WS15	9 - 36	15	4	60	10	92	3,900
PXD60-48WS15	18 - 75	15	4	60	10	92	3,900
PXD60-24WS24	9 - 36	24	2.5	60	10	92	2,000
PXD60-48WS24	18 - 75	24	2.5	60	10	91	2,000
Dual Outputs							
PXD60-24WD12	9 - 36	±12	±2.5	60	10	91	±3,900
PXD60-48WD12	18 - 75	±12	±2.5	60	10	91	±3,900
PXD60-24WD15	9 - 36	±15	±2	60	10	91	±2,400
PXD60-48WD15	18 - 75	±15	±2	60	10	91	±2,400
PXD60-24WD24	9 - 36	±24	±1.25	60	10	91	±1,000
PXD60-48WD24	18 - 75	±24	±1.25	60	10	91	±1,000

PXD	60	-24W	S	05	-N	-HC2
	60 60W Output Power	-24W 9 - 36V input -48W 18 - 75V input	S Single Output D Dual Output	3P3 3.3V Output Voltage 05 5V Output Voltage 12 12V Output Voltage 15 15V Output Voltage 24 24V Output Voltage	Blank Positive Logic Remote On/Off -N Negative Logic Remote On/Off	Blank No heatsink fitted -HC1 Factory installed heatsink with 7.62mm fins -HC2 Factory installed heatsink with 12.7mm fins -HC3 Factory installed heatsink with 20.32mm fins

Preferred model

Example: PXD60-24WS3P3-N-HC2

48-78W, 18 to 60V or 36 to 75V Input Isolated DC-DC Eighth Brick

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/iEA

The iEA series of isolated DC-DC converters deliver up to 78W in a compact industry eighth brick footprint. Available in 36-75V or 18-60V inputs with single outputs from 5V, 12V, 15V, 18V and 28V, these converters are designed primarily for use in 48V and 24V input bus architectures in communications, test and measurement, and industrial applications. Its single board open frame design allows the iEA series to achieve a low profile design of 8.81mm max to support tight board-to-board spacing and still provide high useable power at elevated ambient temperatures.

Features	Benefits
• High Operating Efficiency up to 90.5%	• Reduces Heat Losses/Dissipation in System
• Open Frame, Single Board Construction	• Low Profile for Tight Board to Board Spacing
• Constant Switching Frequency	• Predictable EMI
• -40 to 125 ˚C Operating Temperature With Minimal Derating	• High Useable Power At Elevated Ambient Temperature

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	On/Off Polarity	Efficiency, Full Load (typ)	Pin Length (inch)
IEA48003A280V-001-R	36 - 75	28	2.67	75	Neg	90%	0.145
IEA48003A280V-005-R	36 - 75	28	2.67	75	Neg	90%	0.200
IEA48004A180V-001-R	36 - 75	18	3.75	68	Neg	90.5%	0.145
IEA48005A150V-001-R	36 - 75	15	4.5	68	Neg	90%	0.145
IEA48007A120V-000-R	36 - 75	12	6.5	78	Pos	90.5%	0.145
IEA48007A120V-001-R	36 - 75	12	6.5	78	Neg	90.5%	0.145
IEA48007A120V-005-R	36 - 75	12	6.5	78	Neg	90.5%	0.200
IEA48015A050V-000-R	36 - 75	5	15	75	Pos	90%	0.145
IEA48015A050V-001-R	36 - 75	5	15	75	Neg	90%	0.145
IEA4W004A120V-003-R	18 - 60	12	4	48	Neg	91%	0.110

Related Products

Type	Part Number	Description
Isolated DC-DC Converter	iQL	300W, Input 36-75V or 18-36V, Isolated Quarter Brick
Isolated DC-DC Converter	iQG	300W~504W, Input 36-75V, Isolated Quarter Brick
Isolated DC-DC Converter	iEH	300W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Non-Isolated DC-DC Converter	iBH	80W/20A, 3.5-14Vin, 0.7 - 5.5Vout, DOSA Compatible
Non-Isolated DC-DC Converter	iCH	85W/12A, 4.5-14Vin, 0.7 - 8.5Vout, DOSA Compatible
Input Filter	iDQ	75V / 10A Filter
Evaluation Board	FQX-HQA-EVK-D0	Evaluation board (no modules) accepting standard Eighth or Quarter brick and FQx or iDQ input filters

132-204W, 18 to 36V or 36 to 75V Input Isolated DC-DC Quarter Brick

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/iQE

The iQE series of isolated DC-DC converters deliver up to 204W in a compact and high-performance industry standard open-frame quarter footprint. Capable of operating from nominal input voltages of 24V (18-36V) or 48V (36 to 75V), the converter provides fully regulated outputs from 5V up to 15V for demanding environments in telecom, datacom, computing and industrial applications. The output voltage can be adjusted from -10 to +10% of nominal using the trim connection to accommodate non-standard voltages.

Features	Benefits
• High Operating Efficiency up to 93%	• Reduces Heat Losses/Dissipation in System
• Openframe Construction	• Low profile for height constraint installations
• Available from 5V up to 15V outputs	• Flexible and wide output voltage coverage for various loads
• Constant Switching Frequency	• Predictable EMI
• Monotonic Start-Up Into a Pre-Bias Output	• Reliable and Stable Output in Multi-Load conditions

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Output Adjust Range (A)	Max Current (A)	Max Power (W)	Efficiency (%)	On/Off Share	Pin Length (inch)	Baseplate
iQE48030A050V-000-R	36 - 75	5	4.5 - 5.5	30	150	91.0	Pos	0.145	No
iQE48030A050V-001-R	36 - 75	5	4.5 - 5.5	30	150	91.0	Neg	0.145	No
iQE48017A120V-000-R	36 - 75	12	10.8 - 13.2	17	204	93.0	Pos	0.145	No
iQE48017A120V-001-R	36 - 75	12	10.8 - 13.2	17	204	93.0	Neg	0.145	No
iQE48017A120V-007-R	36 - 75	12	10.8 - 13.2	17	204	93.0	Neg	0.180	No
iQE4W011A120V-001-R	18 - 60	12	10.8 - 13.2	11	132	90.0	Neg	0.145	No
iQE48010A150V-001-R	36 - 75	15	13.5 - 16.5	10	150	91.0	Neg	0.145	No
iQE48010A150V-007-R	36 - 75	15	13.5 - 16.5	10	150	91.0	Neg	0.180	No

Related Products

Type	Part Number	Description
Isolated DC-DC Converter	iQG	300W-504W, Input 36-75V, Isolated Quarter Brick
Isolated DC-DC Converter	iEH	300W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	iEA	78W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Non-Isolated DC-DC Converter	iBH	80W/20A, 3.5-14Vin, 0.7 - 5.5Vout, DOSA Compatible
Non-Isolated DC-DC Converter	iCH	85W/12A, 4.5-14Vin, 0.7 - 8.5Vout, DOSA Compatible
Non-Isolated DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
Input Filter	iDQ	75V / 10A Filter
Evaluation Board	FQX-HQA-EVK-D0	Evaluation board (no modules) that fits standard Eighth or Quarter brick and FQx or iDQ input filters

50 & 100W, 14.4 to 36V Input DC-DC Converters

Industrial COTS Railway

Full Datasheet
https://product.tdk.com/en/power/cn-a

The rugged 50 and 100W quarter brick CN-A24 series of isolated DC-DC converters operate from a 14.4 to 36V (40Vdc peak) input. With an input to baseplate isolation of 2,000Vac and 3,000Vac input to output, the series is designed for use on 24V nominal input rail, vehicle and battery powered systems. In addition, the baseplate cooled modules meet the rolling stock IEC 61373 Category 1, Class B shock / vibration standards. As standard, the CN-A24 series features remote sense, remote on/off and output voltage adjustment. The board coating option provides assistance in complying with EN 50155 and IEC 60571.

Features	Benefits
• Wide Input Range	• Supports 24V Input Rail, Vehicle and Battery Powered Systems
• Quarter Brick Packages	• Less Board Area Needed
• Certified to IEC 62368-1, Designed to Meet IEC 61373	• Easier System Compliance
• Full Power at 100°C Baseplate Temperatures	• Greater Useable Power

Model Selector

Model	Output Voltage (V)	Output Voltage Adjustment (V)	Output Current (A)	Maximum Power (W)	Input Current (A) (24V input, 100% load)	Efficiency (%)[1]
CN50A24-5	5	4.5 - 6.0	10	50.0	2.48	85
CN100A24-5	5	4.5 - 6.0	20	100.0	4.91	86
CN50A24-12	12	10.8 - 13.2	4.2	50.4	2.47	86
CN100A24-12	12	10.8 - 13.2	8.4	100.8	4.83	88
CN50A24-24	24	21.6 - 26.4	2.1	50.4	2.47	86
CN100A24-24	24	21.6 - 26.4	4.2	100.8	4.83	88

Part Numbering Scheme

CN	50A	24	-12	-
Series name	Output Power: 50A = 50W, 100A = 100W	Input Voltage: 24 = 14.4 - 36V	Output Voltage: 5 = 5V, 12 = 12V, 24 = 24V	Options: Blank = Standard, /CO = Pcb coating for EN50155 & IEC60571 compliance

Related Products

Type	Part Number	Description
Heat Sink	HAQ-10T	25mm transverse fins

Specifications

Model		CN-A24
Input		
Input Voltage Range	Vdc	14.4 - 36 (40 for 3s)
Efficiency	-	See model selector table
Conducted & Radiated EMI	-	EN55011/EN55032-A, FCC Class A, VCCI-A (External components are required, consult Evaluation Data)
Immunity	-	See model immunity table below
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark and UKCA Mark

50-300W, 43 to 160V Input DC-DC Converters

Industrial Railway

Full Datasheet
https://product.tdk.com/en/power/cn-b

The rugged quarter and half brick 50 to 300W CN-B110 series of isolated DC-DC converters operate from a very wide 43 to 160V input. With an input to baseplate isolation of 2,500Vac and 3,000Vac input to output, the series is designed for use on 72V or 110V nominal input rail power systems. In addition, the baseplate cooled modules meet the rolling stock IEC 61373 Category 1, Class B shock / vibration standards. The series is also designed to meet EN 45545-2 (Fire protection on railway vehicles) and EN 50155[1] (Electronic equipment in railroad vehicles) in certified systems. As standard, the 200 and 300W models features active current share for parallel or redundant operation, remote sense, remote on/off, output voltage adjustment and a power good signal. Also available are optional auxiliary voltages, replacing the power good signal on the 200-300W models and the -sense on the 50-150W models.

Features	Benefits
• Wide Input Range	• Supports 72V and 110V Input Rail Systems
• Quarter and Half Brick Packages	• Less Board Area Needed
• Certified to IEC 62368-1 and IEC 61373 Cat. 1, Class B	• Easier System Compliance
• Designed to Meet EN 45545-2 and EN 50155-2017	• Simplified System Testing
• Current Share Function (CN200B110 and CN300B110 only)	• Can be Paralleled for Higher Power Applications
• Very Minimal Derating at High Ambient Temperatures	• Greater Useable Power

Model Selector

Model	Output Voltage (V)	Output Voltage Adjustment (V)	Output Current (A)	Maximum Power (W)	Load Reg (mV)	Line Reg (mV)	Input Current at 110Vdc input (A)	Efficiency (%) (100% load, nominal input)
CN50B110-5	5	4 - 6	10	50	10	10	0.51	89.5
CN100B110-5	5	4 - 6	20	100	10	10	1.01	91.0
CN150B110-5	5	4 - 6	30	150	10	10	1.52	90.5
CN50B110-12	12	9.6 - 14.4	4.2	50.4	24	24	0.53	88.0
CN100B110-12	12	9.6 - 14.4	8.4	100.8	24	24	1.01	92.0
CN150B110-12	12	9.6 - 14.4	12.5	150	24	24	1.51	91.5
CN200B110-12	12	9.6 - 14.4	16.7	200.4	96	48	2.00	90.0
CN300B110-12	12	9.6 - 14.4	25	300.0	96	48	3.10	89.5
CN200B110-13.8	13.8	9.66 - 14.35	14.5	200.1	96	48	2.00	91.0
CN300B110-13.8	13.8	9.66 - 14.35	21.7	299.5	96	48	3.00	90.5
CN50B110-15	15	12 - 18	3.4	51.0	30	30	0.54	87.5
CN100B110-15	15	12 - 18	6.7	100.5	30	30	1.01	91.5
CN150B110-15	15	12 - 18	10	150.0	30	30	1.51	91.5
CN200B110-15	15	12 - 18	13.4	201.0	120	60	2.10	90.0
CN300B110-15	15	12 - 18	20	300.0	120	60	3.10	90.0
CN50B110-24	24	19.2 - 28.8	2.1	50.4	48	48	0.52	89.0
CN100B110-24	24	19.2 - 28.8	4.2	100.8	48	48	1.02	90.5
CN150B110-24	24	19.2 - 28.8	6.3	151.2	48	48	1.54	90.5
CN200B110-24	24	19.2 - 26.4	8.4	201.6	192	96	2.10	90.0
CN300B110-24	24	19.2 - 26.4	12.5	300.0	192	96	3.10	90.0
CN50B110-48	48	38.4 - 57.6	1.1	52.8	96	96	0.56	87
CN100B110-48	48	38.4 - 57.6	2.1	100.8	96	96	1.02	90.5
CN150B110-48	48	38.4 - 57.6	3.2	153.6	96	96	1.55	91

50W to 600W, 200 to 425VDC Input DC-DC Converters

Industrial COTS COMM

Full Datasheet
https://product.tdk.com/en/power/ph-a

The PH-A280 series of isolated DC-DC converters operate from a wide range 200 to 425Vdc input and are available in multiple power levels from 50 to 600W. Output voltages cover 3.3V to 48V and can be adjusted using the trim terminal by up to -60% to +20%. All models feature remote sense and remote on/off and can be conduction cooled to a cold plate or mounted with an optional heatsink. The 300 and 600W models are certified to EN 62477-1 (OVC III) for use in industrial robots connected to an incoming distribution panel, avoiding the requirement for an isolation transformer. These efficient converters are also well suited for HVDC (High Voltage Direct Current) power transmission systems and renewable energy applications.

Features	Benefits
• Wide Range 200 to 425Vdc Input	• Suitable for HVDC Applications
• Baseplate Cooled	• Can be Conduction or Convection Cooled (With an Optional Heatsink)
• -40 to 100°C Baseplate Temperature	• Operates in Harsh Environments
• Certified to IEC/EN62477-1 (OVC III)	• No External Transformer Needed
• Up to 93% Efficient	• Easier To Cool In the End System

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)	Input Current (A) 280V input, 100% load	Efficiency (%) 280V input, 100% load	Overvoltage Protection (%) [2]
PH75A280-3.3	3.3	2.97 - 3.96	15	49.5	0.22	83	130 - 200
PH100A280-3.3	3.3	2.97 - 3.96	20	66	0.29	83	130 - 200
PH50A280-5	5	4 - 6	10	50.0	0.21	86	125 - 150
PH75A280-5	5	4 - 6	15	75.0	0.32	86	125 - 150
PH100A280-5	5	4 - 6	20	100.0	0.42	86	125 - 150
PH300A280-5	5	2.5 - 6	60	300.0	1.22	89	125 - 145
PH50A280-12	12	9.6 - 13.2	4.2	50.4	0.2	89	115 - 145
PH75A280-12	12	9.6 - 13.2	6.3	75.6	0.31	89	115 - 145
PH100A280-12	12	9.6 - 13.2	8.4	100.8	0.41	89	115 - 145
PH150A280-12	12	9.6 - 13.2	12.5	150.0	0.62	88	115 - 145
PH300A280-12	12	4.8 - 14.4	25	300.0	1.22	89	125 - 145
PH75A280-15	15	12 - 16.5	5	75.0	0.3	90	115 - 145
PH150A280-15	15	12 - 16.5	10	150.0	0.6	90	115 - 145
PH50A280-24	24	19.2 - 26.4	2.1	50.4	0.2	89	115 - 145
PH75A280-24	24	19.2 - 26.4	3.2	76.8	0.31	90	115 - 145
PH100A280-24	24	19.2 - 26.4	4.2	100.8	0.4	90	115 - 145
PH150A280-24	24	19.2 - 26.4	6.3	151.2	0.61	89	115 - 145
PH300A280-24	24	9.6 - 28.8	12.5	300.0	1.2	90.5	125 - 145
PH600A280-24	24	14.4 - 28.8	25	600.0	2.33	93	125 - 145
PH75A280-28	28	22.4 - 30.8	2.7	75.6	0.3	90	115 - 145
PH150A280-28	28	22.4 - 30.8	5.4	151.2	0.61	90	115 - 145
PH300A280-28	28	11.2 - 33.6	10.8	302.4	1.2	91	125 - 145
PH50A280-48	48	38.4 - 52.8	1.1	52.8	0.21	89	115 - 145
PH75A280-48	48	38.4 - 52.8	1.6	76.8	0.31	90	115 - 145
PH100A280-48	48	38.4 - 52.8	2.1	100.8	0.4	90	115 - 145
PH150A280-48	48	38.4 - 52.8	3.2	153.6	0.6	90	115 - 145
PH300A280-48	48	19.2 - 57.6	6.3	302.4	1.19	92	125 - 145

PH1200A280 Series

1200W, 200 to 425VDC Input DC-DC Converters

Industrial COTS Test COMM

Full Datasheet
https://product.tdk.com/en/power/ph-a

The PH1200A280 series of isolated DC-DC converters operate from a wide range 200 to 425Vdc input and are rated at 1200W. Output voltages cover 12V to 48V and can be adjusted using the trim terminal by up to -40% to +20%. All models feature a parallel function and ORing FET for higher power or N+1 redundant systems. Remote sense, remote on/off, inverter good signal and a 12V auxiliary voltage are also included as standard. The power modules can be conduction cooled to a cold plate or fitted with an optional heatsink. These 94% efficient converters are well suited for distributed power architectures, HVDC (High Voltage Direct Current) power transmission systems and renewable energy applications.

Features	Benefits
• Wide Range 200 to 425Vdc Input	• Suitable for HVDC Applications
• Baseplate Cooled	• Can be Conduction or Convection Cooled with a Heatsink
• -40 to 100°C Baseplate Temperature	• Operates in Harsh Environments
• Parallel Function with Internal ORing FET	• Suitable for Higher Power or N+1 Redundant Systems
• Up to 94% Efficient	• Easier To Cool In the End System

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)	Input Current (A) 280V input, 100% load	Efficiency (%) 280V input, 100% load	Overvoltage Protection (V)
PH1200A280-12	12	7.2 - 14.4	100	1200	4.61	94	15 - 17.4
PH1200A280-24	24	14.4 - 28.8	50	1200	4.61	94	30 - 34.8
PH1200A280-28	28	16.8 - 33.6	42.9	1201.2	4.61	94	35 - 40.6
PH1200A280-36	36	21.6 - 43.2	33.4	1202.4	4.62	94	45 - 52.2
PH1200A280-48	48	28.8 - 57.6	25	1200	4.61	94	60 - 69.6

PH	1200A	280	-12	/T
Series	Output Power	Nominal Input Voltage	Output Voltage: 12, 24, 28, 36, 48V	Options

Options	
Suffix	Description
Blank	M3 tapped mounting inserts
/T	3.3mm non-threaded inserts

Related Products

Type	Part Number(s)	Description
DC-DC Converters	PH-A series	50W to 600W, 200 to 425V Input DC-DC Converters
DC-DC Converters	CN200B110 to CN300B110	200 to 300W, 43 to 160V Input DC-DC Converters
Heatsink	HAF-10L	Full brick 25mm longitudinal fins
Heatsink	HAF-15L	Full brick 38.1mm longitudinal fins
Heatsink	HAF-15T	Full brick 38.1mm transverse fins

IQL Series

72-308W, 18 to 36V or 36 to 75V Input Isolated DC-DC Quarter Brick

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/iQL

The iQL series of isolated DC-DC converters deliver up to 308W in a compact and high-performance industry standard quarter footprint. Capable of operating from nominal input voltages of 24V (18-36V) or 48V (36 to 75V), the converter provides fully regulated outputs from 1.2V up to 28V for demanding environments in telecom, datacom, computing and industrial applications. The output voltage can be adjusted from -20 to +10% of nominal using the trim connection to accomodate non-standard voltages.

Features	Benefits
• High Operating Efficiency up to 94%	• Reduces Heat Losses/Dissipation in System
• Open frame or Baseplate Construction	• Mounting Flexibility for Low profile or Conduction Cooling
• Available from 1.2V up to 28V outputs	• Flexible and wide output voltage coverage for various loads
• Constant Switching Frequency	• Predictable EMI
• Monotonic Start-Up Into a Pre-Bias Output	• Reliable and Stable Output in Multi-Load conditions

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Output Adjust Range (V)	Max Current (A)	Max Power (W)	Efficiency	On/Off Polarity	Pin Length (inch)	Baseplate
iQL24021A120V-001-R	20 - 36	12	9.6 - 13.2	21	252	92.0%	Neg	0.145"	Yes
iQL24021A120V-009-R	20 - 36	12	9.6 - 13.2	21	252	92.0%	Neg	0.180"	Yes
iQL24040A050V-001-R	18 - 36	5	4.0 - 5.5	40	200	91.0%	Neg	0.145"	Yes
iQL24040A050V-009-R	18 - 36	5	4.0 - 5.5	40	200	91.0%	Neg	0.180"	Yes
iQL24050A033V-009-R	18 - 36	3.3	2.64 - 3.63	50	165	90.5%	Neg	0.180"	Yes
iQL48011A280V-008-R	36 - 75	28	22.4 - 30.8	11	308	92.5%	Pos	0.180"	Yes
iQL48011A280V-009-R	36 - 75	28	22.4 - 30.8	11	308	92.5%	Neg	0.180"	Yes
iQL48011A280V-0A9-R *	36 - 75	28	16.8 - 30.8	11	308	92.5%	Neg	0.180"	Yes
iQL48025A120V-001-R	36 - 75	12	9.6 - 13.2	25	300	94.0%	Neg	0.145"	Yes
iQL48025A120V-009-R	36 - 75	12	9.6 - 13.2	25	300	94.0%	Neg	0.180"	Yes
iQL48025A120V-0B9-R	36 - 75	12	9.6 - 13.2	25	300	94.0%	Neg	0.180"	No
iQL48045A050V-001-R	36 - 75	5	4.0 - 5.5	45	225	91.0%	Neg	0.145"	Yes
iQL48045A050V-009-R	36 - 75	5	4.0 - 5.5	45	225	91.0%	Neg	0.180"	Yes
iQL48045A050V-0B3-R **	36 - 75	5	4.0 - 5.5	45	225	91.0%	Neg	0.145"	No
iQL48045A050V-0B9-R	36 - 75	5	4.0 - 5.5	45	225	91.0%	Neg	0.180"	No
iQL48060A033V-003-R **	36 - 75	3.3	2.64 - 3.63	60	198	91.0%	Neg	0.145"	Yes
iQL48060A033V-009-R	39 - 75	3.3	2.64 - 3.63	60	198	91.0%	Neg	0.180"	Yes
iQL48060A033V-0B9-R	39 - 75	3.3	2.64 - 3.63	60	198	91.0%	Neg	0.180"	No
iQL48060A025V-008-R	36 - 75	2.5	2.0 - 2.75	60	150	89.0%	Pos	0.180"	Yes
iQL48060A025V-0B3-R **	36 - 75	2.5	2.0 - 2.75	60	150	89.0%	Neg	0.145"	No
iQL48060A025V-0B9-R	36 - 75	2.5	2.0 - 2.75	60	150	89.0%	Neg	0.180"	No
iQL48060A012V-0B3-R **	36 - 75	1.2	0.96 - 1.32	60	72	83.5%	Neg	0.145"	No

Notes
* With higher OCP limit up to 15A
** Non Latching OVP

75W Single Output DC-DC converters, 1/4 Brick

Industrial Test COMM Broadcast Railway

Full Datasheet
https://product.tdk.com/en/power/py

The 75W Quarter-brick footprint PYQ series of isolated DC-DC converters operate from an ultra wide range input of 9 to 75Vdc (8:1) with single output voltages from 12V to 48V. The output voltage can be adjusted between -20% to +15% by using the trim terminal. Sense lines for the output voltage ensure a stable output voltage even with changing loads. The PYQ75 models have efficiencies of up to 90% and can operate in ambient temperature of -40 to 105°C. The input to output isolation is 3,000Vac and the units are potted to provide a high resistance to shock and vibration. The converters are certified according to the 62368-1 safety standards and with additional circuits, the PYQ75 series is also tested according to the EN 50155 railroad standard for electronic equipment in railroad vehicles.

Features	Benefits
• Quarter-Brick Footprint	• Industry Standard Package Size
• 9 - 75Vdc Wide Input Range (8:1)	• Supports the Majority of Railway DC Input Voltages
• Certified to IEC 62368-1, Tested According to EN 50155	• Easier System Compliance
• Potted Plastic Case	• High Resistance to Shock and Vibration
• 3000Vac Input to Output Isolation	• Suitable For Railway and Industrial Applications

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Output Adjust (V)	Maximum Current (A)	Maximum Power (W)	No Load Input Current (mA)	Efficiency (%) at 36 / 48Vdc	Maximum Load Capacitance (uF)
PYQ75-36WS12	9 - 75	12	9.6 - 13.8	6.25	75	8	90 / 90	14000
PYQ75-36WS15	9 - 75	15	12 - 17.25	5	75	8	90 / 90	10000
PYQ75-36WS24	9 - 75	24	19.2 - 27.6	3.12	75	10	90 / 90	3900
PYQ75-36WS28	9 - 75	28	22.4 - 32.2	2.67	75	10	90 / 90	3200
PYQ75-36WS48	9 - 75	48	38.4 - 55.2	1.56	75	10	90 / 90	1100

PYQ | 75 | -36W | S | 12 | -

- **PYQ** — Series
- **75** — 75 Output Power 75W
- **-36W** — -36W 9 - 75V Input Voltage
- **S** — S Single Output
- **Output Voltage**: 12 = 12V; 15 = 15V; 24 = 24V; 28 = 28V; 48 = 48V
- **-** (Blank): Positive Logic Remote On/Off and M3 Thread
- -N: Negative Logic Remote On/Off and M3 Thread
- -PD: Positive Logic Remote On/Off and 3.2mm Hole
- -ND: Negative Logic Remote On/Off and 3.2mm Hole

Preferred option

85W MIL-COTS , 9 to 40V Input Isolated Quarter Brick

Industrial COTS COMM

Full Datasheet
https://product.tdk.com/en/power/hqa

The HQA series of isolated DC-DC converters bring a high performance quarter brick in a rugged-encapsulated package for MIL-COTS applications. With its high efficiency performance, magnetic feedback loop and wide operating baseplate temperatures of -40 to 115°C, it provides high useable power at elevated temperatures and altitude for demanding and harsh environments. Various MIL-STD compliance can be supported when paired with the FQA or FQB MIL-COTS input filters.

Features	Benefits
• Up to 85 W in an Industry Quarter Brick package	• High Power Density, Less Board Area Needed
• Encapsulated and Rugged design	• Operation in Harsh and Demanding Environments
• Maximum Baseplate Temperature of 115°C	• High Useable Power at Elevated Temperatures
• No Optocouplers used	• Increased Reliability in High Altitude
• Designed to meet MIL-STD-461; MIL-STD-1275; MIL-STD-704; RTCA/DO-160 Sec 16-18 with FQA / FQB Input Filters	• Facilitates Compliance to Various MIL-STD

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Remote Sense	Baseplate	Screening
HQA2W085W033V-007-S	9 - 40	3.3	25	85	Yes	Flanged	-S : Standard
HQA2W085W033V-N07-S	9 - 40	3.3	25	85	Yes	Non-Flanged	-S : Standard
HQA2W085W050V-007-S	9 - 40	5	17	85	Yes	Flanged	-S : Standard
HQA2W085W050V-N07-S	9 - 40	5	17	85	Yes	Non-Flanged	-S : Standard
HQA2W085W120V-007-S	9 - 40	12	7.1	85	Yes	Flanged	-S : Standard
HQA2W085W120V-N07-S	9 - 40	12	7.1	85	Yes	Non-Flanged	-S : Standard
HQA2W085W150V-007-S	9 - 40	15	5.7	85	Yes	Flanged	-S : Standard
HQA2W085W150V-N07-S	9 - 40	15	5.7	85	Yes	Non-Flanged	-S : Standard
HQA2W085W240V-007-S	9 - 40	24	3.5	85	NA	Flanged	-S : Standard
HQA2W085W240V-N07-S	9 - 40	24	3.5	85	NA	Non-Flanged	-S : Standard
HQA2W085W280V-007-S	9 - 40	28	3	85	NA	Flanged	-S : Standard
HQA2W085W280V-N07-S	9 - 40	28	3	85	NA	Non-Flanged	-S : Standard

Consult factory for other valid part number suffixes not shown on the table.

HQA | 2W | 085W | 240V | - | 007 | - | S

- **2W** — **Input Voltage** **2W**: 9 - 40 V
- **085W** — **Output Power** **085W**: 85 Watts
- **240V** — **Output Voltage** **280V**: 28 V; **050V**: 5 V
- **007** — **Baseplate Construction**: **007**: Flanged Baseplate; **N07**: Non-Flanged Baseplate
- **S** — **Screening Options**: **S**: Standard Screening; *See Screening Option Table below*

Screening Options

Operation	S-Grade (Standard Screeening)	M-Grade (Enhanced Sreeening)
Functional Test	Room and Hot Test	Please see HQA120 series
Burn-In	Yes	
Temperature Cycling	No	
Hi-Pot	2250 Vdc	
Visual Inspection	Yes	

GQA120 Series

120W, 9 to 36V Input Industrial Isolated Quarter Brick DC-DC Converter

Industrial COTS Test Robotics

Full Datasheet
https://product.tdk.com/en/power/gqa

The GQA series of isolated DC-DC converters deliver 120W in a compact and high performance quarter brick footprint. It operates from an input range of 9 to 36V and comes with a broad selection of output voltages. The mechanical packaging is available in multiple baseplate, enclosed and potted configurations, supporting convection and conduction cooling via external cold plate or heatsink. It's designed to deliver high useable power at elevated temperatures and withstand high shock and vibration exposure in rugged industrial and battery powered autonomous mobility applications.

Features	Benefits
• 120W in an Industry Quarter Brick Footprint	• High Power Density, Less Board Area Needed
• 9 to 36V Input Range	• Can Operate From Different Input DC Sources Including Battery
• Flanged and Non-Flanged Baseplate Design	• Conduction Cooling Mounting Flexibility for Cold Plate or Heatsink
• Maximum Baseplate Temperature of 105˚C	• High Useable Power at Elevated Temperatures
• Enclosed and Potted Options	• Operation in Harsh Environment With High Shock and Vibration Exposure

Model Selector (Full Systems)

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Remote Sense	Baseplate	Enclosed with Potting	Input to Output Isolation
GQA2W024A050V-007-R	9 - 36	5	24	120	Yes	Flanged	No	1500 Vdc
GQA2W024A050V-0P7-R	9 - 36	5	24	120	Yes	Flanged	Yes	3000 Vdc
GQA2W024A050V-N07-R	9 - 36	5	24	120	Yes	Non-Flanged	No	1500 Vdc
GQA2W024A050V-NP7-R	9 - 36	5	24	120	Yes	Non-Flanged	Yes	2250 Vdc
GQA2W010A120V-007-R	9 - 36	12	10	120	Yes	Flanged	No	1500 Vdc
GQA2W010A120V-0P7-R	9 - 36	12	10	120	Yes	Flanged	Yes	3000 Vdc
GQA2W010A120V-N07-R	9 - 36	12	10	120	Yes	Non-Flanged	No	1500 Vdc
GQA2W008A150V-007-R	9 - 36	15	8	120	Yes	Flanged	No	1500 Vdc
GQA2W008A150V-0P7-R	9 - 36	15	8	120	Yes	Flanged	Yes	3000 Vdc
GQA2W008A150V-N07-R	9 - 36	15	8	120	Yes	Non-Flanged	No	1500 Vdc
GQA2W005A240V-007-R	9 - 36	24	5	120	NA	Flanged	No	1500 Vdc
GQA2W005A240V-0P7-R	9 - 36	24	5	120	NA	Flanged	Yes	3000 Vdc
GQA2W005A240V-N07-R	9 - 36	24	5	120	NA	Non-Flanged	No	1500 Vdc
GQA2W005A240V-NP7-R	9 - 36	24	5	120	NA	Non-Flanged	Yes	2250 Vdc
GQA2W004A280V-007-R	9 - 36	28	4.28	120	NA	Flanged	No	1500 Vdc
GQA2W004A280V-0P7-R	9 - 36	28	4.28	120	NA	Flanged	Yes	3000 Vdc
GQA2W004A280V-N07-R	9 - 36	28	4.28	120	NA	Non-Flanged	No	1500 Vdc
GQA2W004A280V-NP7-R	9 - 36	28	4.28	120	NA	Non-Flanged	Yes	2250 Vdc
GQA24003A480V-007-R	18 - 36	48	2.5	120	NA	Flanged	No	1500 Vdc
GQA24003A480V-0P7-R	18 - 36	48	2.5	120	NA	Flanged	Yes	3000 Vdc
GQA24003A480V-N07-R	18 - 36	48	2.5	120	NA	Non-Flanged	No	1500 Vdc

GQA | 2W | 005A | 240V | - | 007 | - | R

- **2W** — Input Voltage: 2W: 9 - 36V; 24: 18 - 36V
- **005A** — Output Current: 005A: 5A; 010A: 10A
- **240V** — Output Voltage: 240V : 24V; 050V : 5V
- **007** — Baseplate Construction: 007 : Flanged Baseplate; 0P7 : Flanged Baseplate, Enclosed / Potted, 3kV Isolation; N07: Non-Flanged Baseplate; NP7: Non-Flanged Baseplate, Enclosed / Potted
- **R** — R : RoHS Compliant

HQA120 Series

120W MIL-COTS , 9 to 40V Input Isolated Quarter Brick

Industrial COTS COMM

Full Datasheet
https://product.tdk.com/en/power/hqa

The HQA series of isolated DC-DC converters bring a high performance quarter brick in a rugged-encapsulated package for MIL-COTS applications. With its high efficiency performance, magnetic feedback loop and wide operating baseplate temperatures of -55 to 115°C (-40°C for -S suffix), it provides high useable power at elevated temperatures and altitude for demanding and harsh environments. Various MIL-STD compliance can be supported when paired with the FQA or FQB MIL-COTS input filters.

Features	Benefits
• Up to 120 W in an Industry Quarter Brick package	• High Power Density, Less Board Area Needed
• Encapsulated and Rugged design	• Operation in Harsh and Demanding Environments
• Maximum Baseplate Temperature of 115°C	• High Useable Power at Elevated Temperatures
• No Optocouplers used	• Increased Reliability in High Altitude
• Enhanced Screening Option (-M Suffix)	• Reduces End System Test Screening Requirement
• Designed to meet MIL-STD-461; MIL-STD-1275; MIL-STD-704; RTCA/DO-160 Sec 16-18 with FQA / FQB Input Filters	• Facilitates Compliance to Various MIL-STD

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Remote Sense	Baseplate	Screening
HQA2W120W050V-007-S	9 - 40	5	24	120	Yes	Flanged	-S : Standard
HQA2W120W050V-N07-M	9 - 40	5	24	120	Yes	Non-Flanged	-M : Enhanced
HQA2W120W050V-N07-S	9 - 40	5	24	120	Yes	Non-Flanged	-S : Standard
HQA2W120W120V-007-M	9 - 40	12	10	120	Yes	Flanged	-M : Enhanced
HQA2W120W120V-007-S	9 - 40	12	10	120	Yes	Flanged	-S : Standard
HQA2W120W120V-N07-M	9 - 40	12	10	120	Yes	Non-Flanged	-M : Enhanced
HQA2W120W120V-N07-S	9 - 40	12	10	120	Yes	Non-Flanged	-S : Standard
HQA2W120W150V-007-M	9 - 40	15	8	120	Yes	Flanged	-M : Enhanced
HQA2W120W150V-007-S	9 - 40	15	8	120	Yes	Flanged	-S : Standard
HQA2W120W150V-N07-S	9 - 40	15	8	120	Yes	Non-Flanged	-S : Standard
HQA2W120W240V-007-M	9 - 40	24	5	120	NA	Flanged	-M : Enhanced
HQA2W120W240V-007-S	9 - 40	24	5	120	NA	Flanged	-S : Standard
HQA2W120W240V-N07-M	9 - 40	24	5	120	NA	Non-Flanged	-M : Enhanced
HQA2W120W240V-N07-S	9 - 40	24	5	120	NA	Non-Flanged	-S : Standard
HQA2W120W280V-007-M	9 - 40	28	4.2	120	NA	Flanged	-M : Enhanced
HQA2W120W280V-007-S	9 - 40	28	4.2	120	NA	Flanged	-S : Standard
HQA2W120W280V-N07-M	9 - 40	28	4.2	120	NA	Non-Flanged	-M : Enhanced
HQA2W120W280V-N07-S	9 - 40	28	4.2	120	NA	Non-Flanged	-S : Standard
HQA24120W480V-007-M	18 - 40	48	2.5	120	NA	Flanged	-M : Enhanced
HQA24120W480V-007-S	18 - 40	48	2.5	120	NA	Flanged	-S : Standard
HQA24120W480V-N07-S	18 - 40	48	2.5	120	NA	Non-Flanged	-S : Standard

Consult factory for other valid part number suffixes not shown on the table.

HQA | 2W | 120W | 240V | - | 007 | - | M

- **2W** — **Input Voltage**: **2W**: 9 - 40 V; **24**: 18 - 40 V
- **120W** — **Output Power**: **120W**: 120Watts
- **240V** — **Output Voltage**: **280V**: 28 V; **050V**: 5 V
- **007** — **Baseplate Construction**: **007**: Flanged Baseplate; **N07**: Non-Flanged Baseplate
- **M** — **Screening Options**: **M**: Enhanced Screening; **S**: Standard Screening; *See Screening Option Table below*

200W Single Output DC-DC converters, 1/2 Brick

Industrial Test COMM Broadcast Railway

Full Datasheet
https://product.tdk.com/en/power/py

The 200W Half-brick footprint PYH series of isolated DC-DC converters operate from an ultra wide range input of 14 to 160Vdc (12:1) with single output voltages from 12V to 48V. The output voltage can be adjusted between -20% to +15% by using the trim terminal. Sense lines for the output voltage ensure a stable output voltage even with changing loads. The PYH200 models have efficiencies of up to 90% and can operate in ambient temperature of -40 to 100°C. The input to output isolation is 3,000Vac and the units are potted to provide a high resistance to shock and vibration. The converters are certified according to the 62368-1 safety standards and with additional circuits, the PYH200 series is also tested according to the EN 50155 railroad standard for electronic equipment in railroad vehicles.

Features	Benefits
• Half-Brick Footprint	• Industry Standard Package Size
• 14 - 160Vdc Wide Input Range (12:1)	• Supports the Majority of Railway DC Input Voltages
• Certified to IEC 62368-1, Tested According to EN 50155	• Easier System Compliance
• Potted Plastic Case	• High Resistance to Shock and Vibration
• 3000Vac Input to Output Isolation	• Suitable For Railway and Industrial Applications

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	No Load Input Current (mA)	Efficiency (%) at 72 / 110Vdc	Maximum Load Capacitance (uF)
PYH200-72WS12	14 - 160	12	16.7	200	50	90 / 90	16,700
PYH200-72WS15	14 - 160	15	13.5	200	50	90 / 89	13,500
PYH200-72WS24	14 - 160	24	8.4	200	50	88 / 88	8,000
PYH200-72WS48	14 - 160	48	4.2	200	50	88 / 89	2,200

PYH	200	-72W	S	12	-N
Series	Output Power 200W	-72W 14 - 160V Input Voltage	S Single Output	Output Voltage: 12 = 12V; 15 = 15V; 24 = 24V; 48 = 48V	Blank Positive Logic Remote On/Off and M3 Thread; -N Negative Logic Remote On/Off and M3 Thread; -PD Positive Logic Remote On/Off and 3.2mm Hole; -ND Negative Logic Remote On/Off and 3.2mm Hole

Preferred option

300W, 36 to 75V Input Isolated DC-DC Eighth Brick

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/iEH

The iEH series of isolated DC-DC converters deliver up to 300W in a compact and high performance eighth brick footprint. Available in 10.8V or 12V outputs with efficiencies up to 94.6%, these fully regulated Intermediate Bus Converters (IBC) feature very high, true useable power in high ambient temperatures. This makes them ideal for driving Non-Isolated Point-Of-Load (POL) converters in Distributed Power Architectures (DPA), commonly deployed in data communications, computing and storage applications. The iEH is available in an open frame format or with an integral base-plate for conduction cooling.

Features	Benefits
• High Operating Efficiency up to 94.6%	• Reduces Heat Losses/Dissipation in System
• Open Frame or Baseplate Construction	• Mounting Flexibility for Low Profile or Conduction Cooling
• 10.8V or 12V Intermediate Bus Voltage	• Optimized Distributed Power Architecture (DPA) for Driving Point-Of-Loads (POL)
• Constant Switching Frequency	• Predictable EMI
• Monotonic Start-Up Into a Pre-Bias Output	• Reliable and Stable Output in Multi-Load Conditions

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	On/Off Polarity	Pin Length (inch)	Baseplate (-1xx-R Suffix)	Droop Load Share
iEH48028A108V-103-R *	36 - 75	10.8	28	300	Neg	0.145	Yes	No
iEH48028A108V-109-R	36 - 75	10.8	28	300	Neg	0.190	Yes	No
iEH48025A120V-003-R *	36 - 75	12	25	300	Neg	0.145	No	No
iEH48025A120V-103-R *	36 - 75	12	25	300	Neg	0.145	Yes	No
iEH48025A120V-107-R *	36 - 75	12	25	300	Neg	0.190	Yes	No
iEH48025A120V-109-R	36 - 75	12	25	300	Neg	0.190	Yes	No

* Non Latching OVP (Over Voltage Protection)

Preferred option

Related Products

Type	Part Number	Description
Isolated DC-DC Converter	iQL	300W, Input 36-75V or 18-36V, Isolated Quarter Brick
Isolated DC-DC Converter	iQG	300W~504W, Input 36-75V, Isolated Quarter Brick
Isolated DC-DC Converter	iEA	78W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Non-Isolated DC-DC Converter	iBH	80W/20A, 3.5-14Vin, 0.7 - 5.5Vout, DOSA Compatible
Non-Isolated DC-DC Converter	iCH	85W/12A, 4.5-14Vin, 0.7 - 8.5Vout, DOSA Compatible
Input Filter	iDQ	75V / 10A Filter
Evaluation Board	FQX-HQA-EVK-D0	Evaluation board (no modules) accepting standard Eighth or Quarter brick and FQx or iDQ input filters

300-504W, 36 to 75V Input Isolated DC-DC Quarter Brick

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/iQG

The iQG series of isolated DC-DC converters deliver up to 504W in a compact and high performance quarter brick footprint. Available in 9.6V or 12V outputs with efficiencies up to 96%, these fully regulated Intermediate Bus Converters (IBC) feature very high, true useable power in high ambient temperatures. This makes them ideal for driving Non-Isolated Point of Load (PoL) converters in Distributed Power Architectures (DPA), commonly deployed in data communications, computing and storage applications. The iQG is available in an open frame format or with an integral base-plate for conduction cooling.

Features	Benefits
• High Operating Efficiency up to 96%	• Reduces Heat Losses/Dissipation in System
• Open frame or Baseplate Construction	• Mounting Flexibility for Low profile or Conduction Cooling
• 9.6V or 12V Intermediate Bus Voltage	• Optimized Distributed Power Architecture (DPA) for Driving Point-Of-Loads (POL)
• Droop Mode Option for Parallel Operation	• Power Scalability or Redundancy
• Constant Switching Frequency	• Predictable EMI
• Monotonic Start-Up Into a Pre-Bias Output	• Reliable and Stable Output in Multi-Load conditions

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	On/Off Polarity	Pin Length	Baseplate (-1xx-R Suffix)	Droop Load Share
iQG48047A096V-1D1-R	36 - 75	9.6	47	450	Neg	0.145	Yes	Yes
iQG48025A120V-001-R	36 - 75	12	25	300	Neg	0.145	No	No
iQG48025A120V-009-R	36 - 75	12	25	300	Neg	0.145	No	No
iQG48025A120V-101-R	36 - 75	12	25	300	Neg	0.145	Yes	No
iQG48025A120V-109-R	36 - 75	12	25	300	Neg	0.180	Yes	No
iQG48033A120V-009-R	36 - 75	12	33	400	Neg	0.180	No	No
iQG48033A120V-101-R	36 - 75	12	33	400	Neg	0.145	Yes	No
iQG48033A120V-109-R	36 - 75	12	33	400	Neg	0.180	Yes	No
iQG48033A120V-1D1-R	36 - 75	12	33	400	Neg	0.145	Yes	Yes
iQG48033A120V-1D9-R	36 - 75	12	33	396	Neg	0.180	Yes	Yes
iQG48042A120V-109-R	39 - 75	12	42	504	Neg	0.180	Yes	No
iQG48042A120V-1U9-R	39 - 75	12	42	504	Neg	0.166	Yes	Yes

Related Products

Type	Part Number	Description
Isolated DC-DC Converter	iQL	300W, Input 36-75V or 18-36V, Isolated Quarter Brick
Isolated DC-DC Converter	iEH	300W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	iEA	78W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Non-Isolated DC-DC Converter	iBH	80W/20A, 3.5-14Vin, 0.7 - 5.5Vout, DOSA Compatible
Non-Isolated DC-DC Converter	iCH	85W/12A, 4.5-14Vin, 0.7 - 8.5Vout, DOSA Compatible
Input Filter	iDQ	75V / 10A Filter
Evaluation Board	FQX-HQA-EVK-D0	Evaluation board (no modules) accepting standard Eighth or Quarter brick and FQx or iDQ input filters

1008W Isolated Quarter Brick DC-DC Converter

Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/iQK

The iQK series of isolated DC-DC converters provide a fully regulated 11.2V output. Rated at 1008W, the quarter brick sized module can deliver up to 90A output current. Its 48 to 56Vdc input range is suitable for use with regulated 48V front end supplies, primarily employed in computing, server and data communications applications. Featuring a high efficiency of up to 97%, it is ideal for use in distributed power architectures.

Features	Benefits
• 1008W in a Quarter Brick Footprint	• High Power Density, Less Board Area Needed
• High Efficiency - Up to 97%	• Lower Dissipated Power
• Baseplate Cooled	• Suitable for Cold plate or Heatsink Mounting
• Constant Switching Frequency	• Simplified EMI Filtering
• Optional Droop Current Share	• Easier to Connect in Parallel

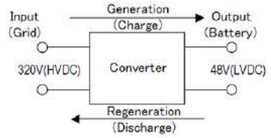
Model Selector

Model	Input Voltage(1) (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Efficiency (%)	Droop Load Share	Integrated Baseplate
iQK4N090A112V-1U9-R	48 - 56	11.2	90	1008	96%	Yes	Yes
iQK4N090A112V-1V9-R	48 - 56	11.2	90	1008	96%	No	Yes

Preferred Model

Notes
(1) Operation down to 45V input is possible. Output voltage will decrease as the load current increases.

2500W Bi-Directional Isolated DC-DC Converters



Renewable

Full Datasheet
https://product.tdk.com/en/power/eza

Designed for energy storage systems with rechargeable batteries, this 2500W digitally controlled, compact 1U power supply can automatically change conversion direction from high voltage dc sources, powered by solar or wind, to 48Vdc batteries and vice versa. Other applications include lithium-ion battery testing as well as the utilization of regenerated energy from robots, cranes, autonomous ground vehicles and elevators.

Features	Benefits
• 1U rackmount	• Utilizes Less Rack Space
• Seamless Transition Between Charge and Discharge	• No Interruption in Power
• > 92% Efficient	• Minimizes Losses and Heat in the System
• RS-485 Communications & Control	• Remote Programming and Monitoring Capabilities
• Input to Output Isolation	• Lower Electrical Noise

Model Selector

Model	Low Voltage DC (Battery Side) Voltage (V	High Voltage DC (Grid Side) Voltage (V)	Low Voltage DC (Battery Side) Current (A)	High Voltage DC (Grid Side) Current (A)	Maximum Power (W)
EZA2500-32048	36 - 60VDC (48V Nominal)	300 - 380VDC (320V Nominal)	±52A	±7.8A	±2,496W
EZA2500W-32048	36 - 65VDC (48V Nominal)	260 - 400VDC (320V Nominal)	±52A	±7.8A	±2,496W

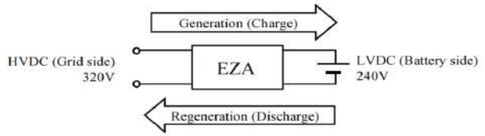
EZA2500-32048 Options

Suffix	Description
EZA2500-32048CO	Two sided pcb coating
EZA2500-32048FC	Two sided pcb coating -10 to +50°C temperature range Long life, dust proof fan

Specifications

Model		EZA2500	
Input		**Low Voltage DC (Battery Side)**	**High Voltage DC (Grid Side)**
Input / Output Voltage range	Vdc	See model selector	
Input / Output Current	A	See model selector	
Inrush Current (Typical)	5.5A	3.6A	
Pre-charge Voltage (Required)	Vdc	> 36V	EZA2500: >300V EZA2500W: >260V if LVDC is <58V >280V if LVDC is >58V)
Efficiency	%	92	
Conducted & Radiated EMI	-	EN55011-A, EN55032-A Conducted and radiated	
Safety Agency Certifications	-	IEC/EN/UL/CSA/EN60950-1, EC/EN/UL/CSA/EN62368-1, CE Mark (LVD, EMC and RoHS)	

11kW Bi-Directional Isolated DC-DC Converters



Renewable

Full Datasheet
https://product.tdk.com/en/power/eza

Designed for energy storage systems with rechargeable batteries, this 11kW digitally controlled, compact 1U power supply can automatically change conversion direction from high voltage dc sources, powered by solar or wind, to 240Vdc batteries and vice versa. Other applications include lithium-ion battery testing as well as the utilization of regenerated energy from robots, cranes, autonomous ground vehicles and elevators.

Features	Benefits
• 1U rackmount	• Utilizes Less Rack Space
• Seamless Transition Between Charge and Discharge	• No Interruption in Power
• > 95% Efficient	• Minimizes Losses and Heat in the System
• RS-485 Communications & Control	• Remote Programming and Monitoring Capabilities
• Input to Output Isolation	• Lower Electrical Noise

Model Selector

Model	Low Voltage DC (Battery Side) Voltage (V)	High Voltage DC (Grid Side) Voltage (V)	Low Voltage DC (Battery Side) Current (A)	High Voltage DC (Grid Side) Current (A)	Maximum Power (W)
EZA11K-320240	150 - 300Vdc (240V Nominal)	240 - 400Vdc (320V Nominal)	±45.8	±34.4	±11,000

EZA11K-320240 Options

Model	Options
EZA11K-320240FC	Two sided pcb coating; long life, dust proof fan

DC–DC Non–Isolated Converters

Non-Isolated

Applications

- Distributed Power Architecture
- Battery Powered Devices
- Industrial
- Medical
- Communications
- Computing
- Data Storage
- Test & Measurement
- Transportation
- Autonomous Mobile Robotics

Features

- No galvanic isolation
- Industry leading power density and efficiency
- Buck and buck-boost converters
- SMT or through hole mounting
- Wide input and wide output ranges
- Power good, synchronization, sequencing, OCP adjustment and current monitor
- Baseplate and heatsink options

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DC–DC Non–Isolated Converters Index by Wattage

Series	Total Power (W)	Outputs	Input Volts (VDC)	Output Volts (VDC)	Amps (A)	Size (Inches)	Type	Page
i1R	Or-ing	1	3.3-60	3.3-60	60-80	1.03 x 1.03 x 0.40	PCB Mount	170
CHVM	1.4-3	1	11-13	±2000	up to 5.6	Various	PCB Mount	171
i6AN	75	1	9-40	-3.3 to -30	up to 8	1.3 x 0.9 x 0.47	1/16 Brick	172
iBH	80	1	3.5-14	0.7-5.5	up to 20	0.8 x 0.53 x 0.39	PCB Mount	173
iCH	85	1	4.5-14	0.7-8.5	up to 12	0.48 x 0.48 x 0.335	PCB Mount	174
i3A	100	1	9-53	3.3-30	up to 8	0.75 x 0.92 x 0.38	1/32 Brick	175
iAH	150	1	3.5-17	0.7-5.5	up to 40	1.3 x 0.53 x 0.40	PCB Mount	176
i1C	200	1	9-75	9.6-28	up to 10	1.01 x 1.01 x 0.40	1 x 1	177
i6A	250	1	9-40	3.3-24	up to 14	1.3 x 0.9 x 0.47	1/16 Brick	178
i6A4W	250	1	9-53	3.3-40	up to 20	1.3 x 0.9 x 0.74/1.3 x 0.45 x 0.98	1/16 Brick or SIP	179
RGA	250	1	9-53	3.3-40	up to 20	1.40 x 1.01 x 0.51	PCB Mount	180
i7C	300	1	9-53	5-48	up to 20	1.34 x 1.45 x 0.5/1.34 x 1.45 x 0.98	1/16 Brick	181
RGC	300	1	9-53	5-48	up to 100	1.50 x 1.55 x 0.51	1/16 Brick	182
i7A	750	1	9-60	0.8-32	up to 60	1.34 x 1.45 x 0.45/1.34 x 1.45 x 0.98	1/16 Brick	183-184
RGB	750	1	9-60	0.8-24	up to 60	1.50 x 1.55 x 0.51	1/16 Brick	185
i9C	1500	1	9-80	9.6-60	up to 30	2.28 x 2.20 x 0.60	1/4 Brick	186

Listed by Wattage

60A, 5-60V or 80A, 3.3-30V ORing MOSFET Module

Industrial Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/i1r

The i1R Series ORing FET Modules are high-efficiency, low-loss power devices designed to replace traditional diodes in applications that require OR-ing functionality for redundancy and parallel operation. Utilizing advanced MOSFET-based circuitry, the i1R series minimizes reverse current transients and conduction losses, achieving up to 99.5% efficiency. This addresses critical challenges in thermal management and power density, especially in high-current systems. The compact, shielded form factor (26.3mm × 26.3mm × 10.1mm, ≤20g) supports up to 80A output current with minimal derating, enabling reliable performance in space-constrained environments. Features such as wide input voltage range, fast turn-off during fault conditions, and industry-standard packaging ensure seamless integration into demanding power designs.

Features	Benefits
• Integrated MOSFET-Based ORing Module	• Simplifies Design, No External Components or Biasing Required
• 500 ns (typ) Fast Turn-Off Response	• Blocks Reverse Current Transients During Faults For Better Protection
• Low On Resistance, High Efficiency	• Reduces Power Loss and Heat, Easing Thermal Design
• Compact 1" x 1" Shielded Metal Package	• Saves Board Space, Supports Efficient Cooling
• Wide Input Voltage Range	• Works Across Varied Power Systems
• Supports Up to 80A Output	• Reliable in High-Current, Space Limited Designs

Model Selector

Type	Input Voltage (V)	Max O/P Current (A)	Max O/P Power (W)	Efficiency	Pin Length (mm/in)
i1R60060A-000-R	5 - 60	60	3600	99.5%	3.68 / 0.145
i1R60060A-004-R	5 - 60	60	3600	99.5%	5.59 / 0.220
i1R30080A-000-R	3.3 - 30	80	2400	99.5%	3.68 / 0.145
i1R30080A-004-R	3.3 - 30	80	2400	99.5%	5.59 / 0.220

Preferred Model

Related Products

Type	Part Number	Description
DC-DC Buck Converter	i3A	100W, Input 9-53V, Output 5-30V 4.5A or 3.3-16.5V 8A
DC-DC Buck Converter	i6A4W	250W, Input 9-53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck Converter	i7A	400-1000W, Input 9 to 18V or 18 up to 60V, Output 0.8 to 8V or 3.3 up to 32V
DC-DC Buck-Boost Converter	i1C	200W, Input 9-36V or 18-75V, Output 9.6-28V, 1x1 inch Footprint
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
DC-DC Buck Converter	RGA	250W, Input 9 up to 53V, Output 3.3 up to 40V, Rugged Modules
DC-DC Buck Converter	RGB	400-750W, Input 9 to 18V or 18 up to 60V, Output 0.8 tp 8V or 3.3 up to 24V, Rugged Modules
DC-DC Buck-Boost Converter	RGC	300W, Input 9-53V, Output 9.6-48V 8A or 5-28V 12.5A, Rugged Modules
Isolated DC-DC	GQA	120W, Input 9-36V, Single Output from 5V to 48V, Quarter Brick
EMI Filter Module	RGF	80V, 20A or 40A Differential Mode Filter Module

1.4-3W, 12V Input, 180-2000V Output DC-DC Converters

Medical Industrial Test

Full Datasheet
https://product.tdk.com/en/power/chvm

The CHVM series of non-isolated DC-DC converters feature very compact sizes and have a metal case to provide five-sided shielding for lower ripple and noise. Three package sizes cover power levels from 1.4W to 3W and output voltages of 180V to 2kV. The output can be adjusted from 0.5% to 100% of the rated voltage using either an external voltage or resistance.

Features	Benefits
• Programmable Output Voltage (Voltage or Resistance)	• Remote Adjustment
• Compact Size	• Less Board Area Needed
• Five-Sided Shielding	• Reduced Radiated and Conducted Noise
• Low Output Ripple	• Less External Filtering Required
• Safety Certified	• Simplified System Compliance

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (mA)	Maximum Power (W)	Input Current (mA) (Typical)	Typical Ripple & Noise (mV)	Maximum Ripple & Noise (mV)
CHVM1R5-12-1000P	11.0 - 13.0	0 to +1000	1.5	1.5	220	5	15
CHVM1R5-12-1000N	11.0 - 13.0	0 to -1000	1.5	1.5	220	5	15
CHVM1R5-12-1500P	11.0 - 13.0	0 to +1500	1	1.5	230	7	25
CHVM1R5-12-1500N	11.0 - 13.0	0 to -1500	1	1.5	230	7	25
CHVM1R5-12-2000P	11.0 - 13.0	0 to +2000	0.7	1.4	280	10	30
CHVM1R5-12-2000N	11.0 - 13.0	0 to -2000	0.7	1.4	280	10	30
CHVM2R7-12-0180PW	10.8 - 13.2	0 to +180	15	2.7	350	30	100
CHVM2R7-12-0180NW	10.8 - 13.2	0 to -180	15	2.7	350	30	100
CHVM3-12-0300PW	10.8 - 13.2	0 to +300	10	3	395	30	100
CHVM3-12-0300NW	10.8 - 13.2	0 to -300	10	3	395	30	100
CHVM2R5-12-0350PW	10.8 - 13.2	0 to +350	7	2.45	330	30	100
CHVM2R5-12-0350NW	10.8 - 13.2	0 to -350	7	2.45	330	30	100
CHVM2R6-12-0470PW	10.8 - 13.2	0 to +470	5.6	2.63	390	40	150
CHVM2R6-12-0470NW	10.8 - 13.2	0 to -470	5.6	2.63	390	40	150
CHVM2-12-1000PW	10.8 - 16.5	0 to +1000	2	2	280	30	100
CHVM2-12-1000NW	10.8 - 16.5	0 to -1000	2	2	280	30	100
CHVM2-12-1500PW	10.8 - 16.5	0 to +1500	1.3	1.95	290	30	100
CHVM2-12-1500NW	10.8 - 16.5	0 to -1500	1.3	1.95	290	30	100
CHVM2-12-2000PW	10.8 - 16.5	0 to +2000	1	2	340	50	150
CHVM2-12-2000NW	10.8 - 16.5	0 to -2000	1	2	340	50	150

CHVM	1R5	-12	1000	P	W
	Output power 1R5: 1.4 to 1.5W 2: 2W 2R5: 2.45W 2R6: 2.63W 2R7: 2.7W	Nominal input voltage	Max. output voltage	P Positive polarity N Negative polarity	Blank: standard input W: wide range input

75W, 9 to 40V Input Non-Isolated DC-DC Buck Converter with Negative Output

Industrial COTS Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/i6a

The i6A -Nxx series is part of the i6A family of non-isolated DC-DC converters designed to provide a negative output. It is ideal for creating additional negative output voltage rails from a single output 12V or 24V AC-DC or DC-DC power supply. The highly efficient i6A-Nxx series accepts a wide positive DC input and has a wide negative output adjustment range from -3.3V to -30V. It comes with negative or positive logic remote On-Off, remote sense and output trim in a compact 1/16th brick package.

Features	Benefits
• Up to 75W in a 1/16th Brick Pin-Out	• High Power Density, Less Board Area Needed
• Efficiency - Up to 94%	• Longer Battery Life / Less Power Consumed
• Wide -3.3 to -30 V Output Adjustment	• One Part Supports Multiple System Voltages
• Wide 9 to 40V Input Range	• Can Operate From Different DC Source Voltages
• Low Component Count With Minimal External Components	• Low Cost

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Negative Logic On/Off	Positive Logic On/Off
i6A24008A033V-N00-R	9 - 40	-3.3 to - 30	8	75	-	Yes
i6A24008A033V-N01-R	9 - 40	-3.3 to - 30	8	75	Yes	-

Preferred model

Related Products

Type	Part Number	Description
DC-DC Buck Converter	i3A	100W, Input 9-53V, Output 5-30V 4.5A or 3.3-16.5V 8A
DC-DC Buck Converter	i6A4W	250W, Input 9-53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck Converter	i6A24	250W, Input 9-40V, Output 3.3-24V 14A
DC-DC Buck Converter	i7A	500-750W, Input 18-60V or 18-32V, Output 3.3-24V 33A or 3.3-18V 45A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
Evaluation Kit	i6A14A-001-EVK-D2PN	Evaluation kit with i6A24014A033V-001-R and i6A24008A033V-N01-R modules

80W, 20A Non-Isolated SMT Point-Of-Load

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/iBH

The iBH series of non-isolated Point-Of-Load (POL) converters provide localized voltage conversion from either a 5V or 12V bus. With its wide input and wide output voltage adjustment range, this compact-size and surface-mountable DC-DC module can deliver up to 80W making it a versatile solution for various board mount power requirements.

Features	Benefits
• DOSA Compatible Footprint	• Established Industry Footprint / Multisource
• Surface Mountable and Reflow Solder Compatible	• Ease of Manufacturing and Assembly
• Constant Switching Frequency	• Predictable EMI
• No External Loop Tuning Components Needed	• Simplifies Deployment and Saves Board Space
• Excellent Transient Response	• Stable / Reliable Output During Dynamic Load

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	On/Off Polarity	Efficiency Full Load (typ)
iBH12020A007V-006-R	3.5 - 14	0.7 - 5.5	20	80	Pos	96%
iBH12020A007V-007-R	3.5 - 14	0.7 - 5.5	20	80	Neg	96%

Preferred Model

Related Products

Type	Part Number	Description
Isolated DC-DC Converter	iQL	300W, Input 36-75V or 18-36V, Isolated Quarter Brick
Isolated DC-DC Converter	iQG	300W~504W, Input 36-75V, Isolated Quarter Brick
Isolated DC-DC Converter	iEH	300W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Non-Isolated DC-DC Converter	iAH	150W/40A, 3.5-17Vin, 0.7 - 5.0Vout, DOSA Compatible
Non-Isolated DC-DC Converter	iCH	85W/12A, 4.5-14Vin, 0.7 - 8.5Vout, DOSA Compatible
Input Filter	iDQ	75V / 10A Filter
DC-DC Buck Converter	i6A24	250W, Input 9-40V, Output 3.3-24V 14A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-49V 8A, 5-28V @ 12.5A or 8-24V 20A

85W, 12A Non-Isolated SMT Point-Of-Load

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/iCH

The iCH series of non-isolated Point-Of-Load (POL) converters provide localized voltage conversion from either a 5V or 12V bus. With its wide input and wide output voltage adjustment range, this compact-size and surface-mountable DC-DC module can deliver up to 85W making it a versatile solution for various board mount power requirements.

Features	Benefits
• DOSA Compatible Footprint	• Established Industry Footprint / Multisource
• Surface Mountable and Reflow Solder Compatible	• Ease of Manufacturing and Assembly
• Constant Switching Frequency	• Predictable EMI
• No External Loop Tuning Components Needed	• Simplifies Deployment and Saves Board Space
• Excellent Transient Response	• Stable / Reliable Output During Dynamic Load

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	On/Off Polarity	Efficiency Full Load (typ)
iCH12012A007V-006-R	4.5 - 14	0.7 - 8.5	12	85	Pos	97%
iCH12012A007V-007-R	4.5 - 14	0.7 - 8.5	12	85	Neg	97%

Preferred Model

Related Products

Type	Part Number	Description
Isolated DC-DC Converter	iQL	300W, Input 36-75V or 18-36V, Isolated Quarter Brick
Isolated DC-DC Converter	iQG	300W~504W, Input 36-75V, Isolated Quarter Brick
Isolated DC-DC Converter	iEH	300W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Non-Isolated DC-DC Converter	iAH	150W/40A, 3.5-17Vin, 0.7 - 5.0Vout, DOSA Compatible
Non-Isolated DC-DC Converter	iBH	80W/20A, 3.5-14Vin, 0.7 - 5.5Vout, DOSA Compatible
Non-Isolated DC-DC Converter	i3A	100W, Input 9-53V, Output 5-30V 4.5A or 3.3-16.5V 8A
Input Filter	iDQ	75V / 10A Filter

100W, 9 to 53V Input Non-Isolated Step-Down DC-DC Buck Converter

Industrial COTS Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/i3a

The i3A series of non-isolated DC-DC step-down converters are ideal for creating additional output voltage rails from a single output 12V, 24V or 48V AC-DC or DC-DC power supply including battery sources. The highly efficient i3A series accepts a wide DC input and has a wide output adjustment range in a compact 1/32nd brick footprint. Standard features include output trim, remote sense and negative logic remote On/Off, with an optional power good feature available.

Features	Benefits
• Up to 100 W in a 1/32nd brick package	• High Power Density, Less Board Area Needed
• High Efficiency Up to 98%	• Longer Battery Life / Less Power Consumed
• Wide 3.3 to 16.5V or 5 to 30V Output Adjustment	• One Part Supports Multiple System Voltages
• 9 to 53V Input Range	• Can Operate From Different DC Source Voltages Including Batteries
• Low Component Count With Minimal External Components	• Low Cost
• Minimal Derating Requirements in Low Airflow Environments	• Easy to Cool in End System

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Negative Logic On/Off	Power Good
i3A4W008A033V-001-R	9 - 53	3.3 - 16.5	8	100	Yes	-
i3A4W005A150V-001-R	9 - 53	5 - 30	4.5	100	Yes	-
i3A4W008A033V-003-R	9 - 53	3.3 - 16.5	8	100	Yes	Yes
i3A4W005A150V-003-R	9 - 53	5 - 30	4.5	100	Yes	Yes

Related Products

Type	Part Number	Description
DC-DC Buck-Boost Converter	i1C	200W, Input 9-36V or 18-75V, Output 9.6-28V, 1x1 inch Footprint
DC-DC Buck Converter	i6A4W	250W, Input 9-53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck Converter	i6A24	250W, Input 9-40V, Output 3.3-24V 14A
DC-DC Buck Converter	i6AN	75W, Input 9-40V, Negative Output -3.3 to -30V, 8A
Ruggedized DC-DC Buck Converter	RGA	250W, Input 9-40V or 9-53V, Output 3.3-24V or 3.3 up to 40V
Ruggedized DC-DC Buck Converter	RGB	400-750W, 9-18Vin, 0.8-8Vo 60A, 18-32Vin, 3.3-18Vo 45A, 18-60Vin, 3.3-24Vo 33A
Ruggedized DC-DC Buck-Boost Converter	RGC	300W, Input 9-53V, Output 9.6-48V, 8A; or 5-28V, 12.5A
DC-DC Buck Converter	i7A	500-750W, Input 18-60V or 18-32V, Output 3.3-24V 33A or 3.3-18V 45A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
Evaluation Kit	i3A05A-C01-EVK-S1	Compact Evaluation kit with i3A4W005A150V-001-R module
Evaluation Kit	i3A08A-C01-EVK-S1	Compact Evaluation kit with i3A4W008A033V-001-R module
Evaluation Kit	i3A5A8A-001-VK-D2PP	Evaluation kit with i3A4W005A150V-001-R and i3A4W008A033V-001-R modules

150W, 40A Non-Isolated SMT Point-Of-Load

Industrial Test COMM Broadcast

Full Datasheet
https://product.tdk.com/en/power/iAH

The iAH series of non-isolated Point-Of-Load (POL) converters provide localized voltage conversion from either a 5V or 12V bus. With its wide input and wide output voltage adjustment range, this compact-sized DC-DC module can deliver up to 150W making it a versatile solution for various board mount power requirements.

Features	Benefits
• DOSA Compatible Footprint	• Established Industry Footprint / Multisource
• Surface Mountable and Reflow Solder Compatible	• Ease of Manufacturing and Assembly
• Constant Switching Frequency	• Predictable EMI
• No External Loop Tuning Components Needed	• Simplifies Deployment and Saves Board Space
• Excellent Transient Response	• Stable / Reliable Output During Dynamic Load

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	On/Off Polarity	Efficiency, Full Load (typ)
iAH12040A007V-006-R	3.5 - 17	0.7 - 5.0	40	150	Pos	96%
iAH12040A007V-007-R	3.5 - 17	0.7 - 5.0	40	150	Neg	96%

Related Products

Type	Part Number	Description
Isolated DC-DC Converter	iQL	300W, Input 36-75V or 18-36V, Isolated Quarter Brick
Isolated DC-DC Converter	iQG	300W~504W, Input 36-75V, Isolated Quarter Brick
Isolated DC-DC Converter	iEH	300W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Non-Isolated DC-DC Converter	iBH	80W/20A, 3.5-14Vin, 0.7 - 5.5Vout, DOSA Compatible
Non-Isolated DC-DC Converter	iCH	85W/12A, 4.5-14Vin, 0.7 - 8.5Vout, DOSA Compatible
Input Filter	iDQ	75V / 10A Filter
Evaluation Board	FQX-HQA-EVK-D0	Evaluation board (no modules) accepting standard Eighth or Quarter brick and FQx or iDQ input filters

200W, 9 to 36V or 18 to 75 V Input Non-Isolated 1 x 1” DC-DC Buck-Boost Converters

Industrial COTS Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/i1c

The i1C series are non-isolated buck-boost DC-DC converters that delivers up to 200W in a compact and familiar industry standard 1 x 1 inch footprint. Operating from either a 9-36V or 18-75V input, it comes with a wide adjustable output of 9.6 to 28V that can support multiple system load voltages, minimizing part number variations. Encased in a 5-sided metal case that supports -40 to 120°C case temperature operation along with its remarkable 98% efficiency, the i1C series provides a higher power migration path in applications where space is at a premium.

Features	Benefits
• Up to 200W in a 1 x 1 inch Industry Footprint	• High Power Density, Less Board Area Needed
• Encapsulated in a 5-sided metal case	• Improves EMI
• 120°C maximum case temperature	• Rugged deployment in harsh environment with high shock & vibration exposure
• Efficiency - Up to 98%	• Longer Battery Life / Low Power Consumed
• Wide Output Adjustment from 9.6 up to 28V	• One Part Supports Multiple System Voltages
• Wide Input Range	• Can Operate from Different DC Input Source Voltages

Model Selector

Model	Input Voltage (V)	Nominal Output Voltage (V)	Output Voltage Adjustment Range (V)	Max Current (A)	Max Power (W)	Remote On/Off Logic	Pin Length
i1C2W010A120V-000-R	9 - 36	12	9.6 - 28	10	200	Positive	0.145”
i1C2W010A120V-001-R	9 - 36	12	9.6 - 28	10	200	Negative	0.145”
i1C2W010A120V-004-R	9 - 36	12	9.6 - 28	10	200	Positive	0.220”
i1C2W010A120V-005-R	9 - 36	12	9.6 - 28	10	200	Negative	0.220”
i1C4W010A120V-000-R	18 - 75	12	9.6 - 28	10	200	Positive	0.145”
i1C4W010A120V-001-R	18 - 75	12	9.6 - 28	10	200	Negative	0.145”
i1C4W010A120V-004-R	18 - 75	12	9.6 - 28	10	200	Positive	0.220”
i1C4W010A120V-005-R	18 - 75	12	9.6 - 28	10	200	Negative	0.220”

Related Products

Type	Part Number	Description
Isolated DC-DC Converter	CCG	15-30W 1 x 1 inch Footprint, Input 9-36V or 18-76V, 3.3 to 30V single or dual outputs
Ruggedized DC-DC Buck Converter	RGA	250W, Input 9-40V and Output 3.3-24V or, 9-53V Input and 3.3V up to 40V Output
Ruggedized DC-DC Buck Converter	RGB	400-750W, Input 9-18V, 18-32V, 18-60V; Output 0.8-8V 60A, 3.3-18V 45A, 3.3-24V 33A
Ruggedized DC-DC Buck-Boost Converter	RGC	300W, Input 9-53V, Output 9.6-48V 8A or 5-28V 12.5A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
DC-DC Buck Converter	i7A	400-750W, Input 9-18V, 18-32V, 18-60V, 28-60V; Output 0.8-8V 60A, 3.3-18V 45A, 3.3-24V 33A, 3.3-32V 20A
DC-DC Buck Converter	i6A4W	250W, Input 9 -53V, Output 3.3-40V 10A or 3.3-15V 20A
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Evaluation Board	i1C2W10A-C01-EVK-S1	Evaluation board with i1C2W010A120V-001-R
Evaluation Board	i1C4W10A-C01-EVK-S1	Evaluation board with i1C4W010A120V-001-R

250W, 9 to 40V Input Non-Isolated Step-Down DC-DC Buck Converter

Industrial COTS Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/i6a

The i6A series of non-isolated DC-DC step-down converters are ideal for creating additional high current output voltage rails from a single output 12V or 24V AC-DC or DC-DC power supply. The highly efficient i6A series accepts a wide DC input and has a wide output adjustment range in compact 1/16th brick package. Output trim, remote sense, negative or positive logic remote On-Off comes as standard features. Power good, frequency synchronization and output sequencing are optional features.

Features	Benefits
• Up to 250 W in a 1/16th brick package	• High Power Density, Less Board Area Needed
• High Efficiency Up to 98%	• Longer Battery Life / Less Power Consumed
• Wide Output Adjustment 3.3 to 24 V	• One Part Supports Multiple System Voltages
• 9 to 40V Input Range	• Can Operate From Different DC Source Voltages Including Batteries
• Low Component Count With Minimal External Components	• Low Cost
• Minimal Derating Requirements in Low Airflow Environments	• Easy to Cool in End System

Model Selector

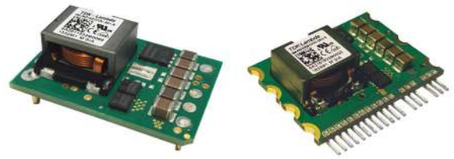
Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Negative Logic On/Off	Positive Logic On/Off	Full Feature
i6A24014A033V-000-R	9 - 40	3.3 - 24	14	250	-	Yes	-
i6A24014A033V-001-R	9 - 40	3.3 - 24	14	250	Yes	-	-
i6A24014A033V-002-R	9 - 40	3.3 - 24	14	250	-	Yes	Yes
i6A24014A033V-003-R	9 - 40	3.3 - 24	14	250	Yes	-	Yes

Preferred model

Related Products

Type	Part Number	Description
DC-DC Buck Converter	i3A	100W, Input 9-53V, Output 5-30V 4.5A or 3.3-16.5V 8A
DC-DC Buck Converter	i6A4W	250W, Input 9-53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck Converter	i6AN	75W, Input 9-40V, Negative Output -3.3 to -30V, 8A
Ruggedized DC-DC Buck Converter	RGA	250W, Input 9-40V or 9-53V, Output 3.3-24V or 3.3 up to 40V
DC-DC Buck Converter	i7A	500-750W, Input 18-60V or 18-32V, Output 3.3-24V 33A or 3.3-18V 45A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
Evaluation Kit	i6A14A-C01-EVK-S1	Compact Evaluation kit with i6A24014A033V-001-R module
Evaluation Kit	i6A14A-001-EVK-S1PX	Evaluation kit with i6A24014A033V-001-R module
Evaluation Kit	i6A14A-001-EVK-D2PN	Evaluation kit with i6A24014A033V-001-R module and i6A24008A033V-N01-R modules

250W, 9 to 53V Input Non-Isolated Step Down DC-DC Converter



Industrial Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/i6a

The i6A4W series of non-isolated DC-DC step-down converters are ideal for creating additional high current output voltage rails from a single output 12V, 24V or 48V AC-DC or DC-DC power supply. The highly efficient i6A4W series accepts a very wide DC input and has a wide output adjustment range, with a choice of 1/16th brick footprint or SIP package. Output trim, remote sense, negative or positive logic remote On-Off comes as standard features. Power good, frequency synchronization and output sequencing are optional features.

Features	Benefits
• Up to 250W in a 1/16th brick or SIP package	• Very High Power Density
• Very high Efficiency up to 97%	• Easier Thermal Management
• Wide Output Adjustment 3.3 to 15V & 3.3 to 40V	• One Part For Multiple Applications
• Minimal External Components Needed	• Less Board Area Required
• Low Airflow With Minimal Derating Requirements	• Easier To Cool In End System

Model Selector

Model	Output Voltage (V)[1]	Max Current (A)	Max Power (W)	Positive Logic On/Off	Negative Logic On/Off	Full Feature	Package
i6A4W010A033V-001-R	3.3 to 40	10	250	-	Yes	-	DIP
i6A4W010A033V-0S1-R	3.3 to 40	10	250	-	Yes	-	SIP
i6A4W020A033V-000-R	3.3 to 15	20	250	Yes	-	-	DIP
i6A4W020A033V-001-R	3.3 to 15	20	250	-	Yes	-	DIP
i6A4W020A033V-0S1-R	3.3 to 15	20	250	-	Yes	-	SIP
i6A4W020A033V-002-R	3.3 to 15	20	250	Yes	-	Yes	DIP
i6A4W020A033V-003-R	3.3 to 15	20	250	-	Yes	Yes	DIP
i6A4W020A033V-0S3-R	3.3 to 15	20	250	-	Yes	Yes	SIP
i6A4W020A033V-005-R	3.3 to 15	20	250	-	Yes	Yes[2]	DIP

Preferred model

Related Products

Type	Part Number	Description
DC-DC Buck Converter	i3A	100W, Input 9-53V, Output 5-30V 4.5A or 3.3-16.5V 8A
DC-DC Buck Converter	i6AN	75W, Input 9-40V, Negative Output -3.3 to -30V, 8A
DC-DC Buck Converter	i6A24	250W, Input 9-40V, Output 3.3-24V 14A
Ruggedized DC-DC Buck Converter	RGA	250W, Input 9-40V or 9-53V, Output 3.3-24V or 3.3 up to 40V
DC-DC Buck Converter	i7A	500-750W, Input 18-60V or 18-32V, Output 3.3-24V 33A or 3.3-18V 45A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
Evaluation Kit	i6A10A-C01-EVK-S1	Compact Evaluation kit with i6A4W010A033V-001-R module
	i6A20A-001-EVK-S1CC	Evaluation kit with i6A4W020A033V-001-R modules set for constant current operation
	i6A20A-C01-EVK-S1	Compact Evaluation kit with i6A4W020A033V-001-R module
	i6A10A-001-EVK-S1CC	Evaluation kit with i6A4W010A033V-001-R modules set for constant current operation

250W, 9 to 40V, or 9 to 53V Input Non-Isolated Ruggedized DC-DC Buck Converters

Industrial COTS Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/rga

The rugged RGA non-isolated DC-DC step-down converters are encapsulated in a five-sided aluminum case and rated for up to 110˚C operation. The modules have the industry standard 1/16th brick pin-out, are qualified to MIL-STD-810G (shock and vibration) and designed for fan-less, conduction cooled applications. The series accepts a wide input range to support multiple DC bus and battery voltages. Standard and optional features include remote on/off, remote sense, power good, frequency synchronization and output sequencing, making the modules a truly versatile power solution. The wide output adjustment range allows one model to be used in multiple positions, assisting inventory and part number reduction.

Features	Benefits
• Up to 250W in a 1/16th Brick Pin-Out	• High Power Density, Less Board Area Needed
• Encapsulated in a 5-sided Aluminum case	• Improves EMI
• 110 ˚C maximum case temperature	• Ruggedized deployment in harsh environment with high shock & vibration exposure
• Efficiency - Up to 98%	• Longer Battery Life / Low Power Consumed
• Wide 3.3 to 15V, 3.3 to 24V or 3.3 to 40V Output Adjustment	• One Part Supports Multiple System Voltages
• Wide 9 to 40V or 9 to 53V Input Range	• Can Operate From Different DC Source Voltages
• Low Component Count With Minimal External Components	• Low Cost

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Negative Logic On/Off	Full Feature*
RGA24250W014A-001	9 - 40	3.3 - 24	14	250	Yes	No
RGA24250W014A-003	9 - 40	3.3 - 24	14	250	Yes	Yes
RGA4W250W010A-001	9 - 53	3.3 - 40	10	250	Yes	No
RGA4W250W010A-003	9 - 53	3.3 - 40	10	250	Yes	Yes
RGA4W250W020A-001	9 - 53	3.3 - 15	20	250	Yes	No
RGA4W250W020A-003	9 - 53	3.3 - 15	20	250	Yes	Yes

Preferred model

* Full feature includes Power Good signal, Frequency Synchronization, Output Sequencing

Related Products

Type	Part Number	Description
Ruggedized DC-DC Buck Converter	RGB	400-750W, Input 9 to 18V or 18 up to 60V, Output 0.8-8V or 3.3V up to 24V
Ruggedized DC-DC Buck-Boost Converter	RGC	300W, Input 9-53V or 9-36V, Output 9.6-48V, 8A; 5-28V, 12.5A; or 8-24V, 20A
DC-DC Buck Converter	i7A	400-750W, Input 9-18V, 18 up to 60V, Output 0.8-8V, 3.3 up to 32V, 20A up to 60A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V, 8A; 5-28V, 12.5A; or 8-24V, 20A
DC-DC Buck Converter	i6A4W	250W, Input 9-53V, Output 3.3-40V, 10A; 3.3-15V, 20A
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Isolated DC-DC Converter	HQA	120W MIL-COTS, Input 9-40V, Isolated Quarter Brick
Evaluation Board	i367X-C01-EVK-S0	Evaluation Board with no module. Order required RGA part number separately.

300W, 9 to 53V or 9 to 36V Input Non-Isolated Buck-Boost DC-DC Converter

Industrial Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/i7c

The i7C series of non-isolated step-up / step-down converters are ideal for generating additional DC output voltage rails up to 300 W from a single output 12V, 24V or 48V AC-DC power supply. The highly efficient i7C series accepts a very wide DC input and has a wide output adjustment range. Three mechanical configurations are available; low profile open frame, baseplate construction for conduction cooling, or integral heat sink for convection or forced air cooling. Full feature(*) options are available including output current monitoring (Imon), switching frequency synchronization (Sync) and power good (PG) or output current limit adjust (Itrim).

Features	Benefits
• Up to 300W in a 1/16th Brick Pin-Out	• High Power Density, Less Board Area Needed
• High Efficiency - Up to 97%	• Longer Battery Life / Low Power Consumed
• Wide 5 to 28V, 8 to 24V or 9.6 to 48V Output Adjustment	• One Part Supports Multiple System Voltages
• Wide 9 to 36V or 9 to 53V Input Range	• Compatible With a Wide Range of DC Source Voltages
• Low Component Count With Minimal External Components	• Low Cost
• Low Airflow With Minimal Derating Requirements	• Easy To Cool In End System

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Remote ON/OFF Logic	Full Feature(*) Imon, Sync	Full Feature(*) PG or Itrim	Integrated Heatsink	Integrated Baseplate
i7C4W008A120V-001-R	9 - 53	9.6 - 48	8	300	Negative	-	-	-	-
i7C4W008A120V-002-R	9 - 53	9.6 - 48	8	300	Positive	Yes	PG	-	-
i7C4W008A120V-003-R	9 - 53	9.6 - 48	8	300	Negative	Yes	PG	-	-
i7C4W008A120V-0C1-R	9 - 53	9.6 - 48	8	300	Negative	-	-	-	Yes
i7C4W008A120V-0C3-R	9 - 53	9.6 - 48	8	300	Negative	Yes	PG	-	Yes
i7C4W008A120V-0F1-R	9 - 53	9.6 - 48	8	300	Negative	-	-	Yes	-
i7C4W008A120V-0F3-R	9 - 53	9.6 - 48	8	300	Negative	Yes	PG	Yes	-
i7C4W008A120V-P03-R	9 - 53	9.6 - 48	8	300	Negative	Yes	Itrim	-	-
i7C4W008A120V-PC3-R	9 - 53	9.6 - 48	8	300	Negative	Yes	Itrim	-	Yes
i7C4W008A120V-PF3-R	9 - 53	9.6 - 48	8	300	Negative	Yes	Itrim	Yes	-
i7C4W012A050V-001-R	9 - 53	5 - 28	12.5	300	Negative	-	-	-	-
i7C4W012A050V-002-R	9 - 53	5 - 28	12.5	300	Positive	Yes	PG	-	-
i7C4W012A050V-003-R	9 - 53	5 - 28	12.5	300	Negative	Yes	PG	-	-
i7C4W012A050V-0C1-R	9 - 53	5 - 28	12.5	300	Negative	-	-	-	Yes
i7C4W012A050V-0C3-R	9 - 53	5 - 28	12.5	300	Negative	Yes	PG	-	Yes
i7C4W012A050V-0F1-R	9 - 53	5 - 28	12.5	300	Negative	-	-	Yes	-
i7C4W012A050V-0F3-R	9 - 53	5 - 28	12.5	300	Negative	Yes	PG	Yes	-
i7C4W012A050V-P03-R	9 - 53	5 - 28	12.5	300	Negative	Yes	Itrim	-	-
i7C4W012A050V-PC3-R	9 - 53	5 - 28	12.5	300	Negative	Yes	Itrim	-	Yes
i7C4W012A050V-PF3-R	9 - 53	5 - 28	12.5	300	Negative	Yes	Itrim	Yes	-
i7C2W020A120V-001-R	9 - 36	8 - 24	20	300	Negative	-	-	-	-
i7C2W020A120V-002-R	9 - 36	8 - 24	20	300	Positive	Yes	PG	-	-
i7C2W020A120V-003-R	9 - 36	8 - 24	20	300	Negative	Yes	PG	-	-
i7C2W020A120V-0C1-R	9 - 36	8 - 24	20	300	Negative	-	-	-	Yes
i7C2W020A120V-0C3-R	9 - 36	8 - 24	20	300	Negative	Yes	PG	-	Yes
i7C2W020A120V-0F1-R	9 - 36	8 - 24	20	300	Negative	-	-	Yes	-
i7C2W020A120V-0F3-R	9 - 36	8 - 24	20	300	Negative	Yes	PG	Yes	-
i7C2W020A120V-P03-R	9 - 36	8 - 24	20	300	Negative	Yes	Itrim	-	-
i7C2W020A120V-PC3-R	9 - 36	8 - 24	20	300	Negative	Yes	Itrim	-	Yes
i7C2W020A120V-PF3-R	9 - 36	8 - 24	20	300	Negative	Yes	Itrim	Yes	-

Preferred model * Contact Technical Support for other part number suffix and feature combinations.

300W, 9 to 53V Input Non-Isolated Ruggedized DC-DC Buck-Boost Converters

Industrial COTS Test COMM Broadcast Robotics

Full Datasheet
http://product.tdk.com/en/power/rgc

The rugged RGC non-isolated DC-DC step-up and step-down converters are encapsulated in a five-sided aluminum case and rated for up to 115°C operation. The modules have the industry standard 1/16th brick pin-out, are qualified to MIL-STD-810G (shock and vibration) and designed for fan-less, conduction cooled applications. The series accepts a wide input range to support multiple DC bus and battery voltages. Standard features include remote on/off, remote sense and output trim while a full feature adds power good, frequency synchronization and output current monitoring, making the modules a truly versatile board mount power solution. The wide output adjustment range allows one model to be used in multiple positions, assisting inventory and part number reduction.

Features	Benefits
• Up to 300W in a 1/16th Brick-Pin-Out	• High Power Density, Less Board Area Needed
• Encapsulated in a 5-sided Aluminum case	• Improves EMI
• 115°C maximum case temperature	• Rugged deployment in harsh environment with high shock & vibration exposure
• Efficiency - Up to 97%	• Longer Battery Life / Low Power Consumed
• Wide Output Adjustment from 5 up to 48V	• One Part Supports Multiple System Voltages
• Wide Input Range from 9 to 53V	• Can Operate from Different DC Input Source Voltages
• Buck-Boost - maintains output regulation even when input varies	• Extends run times on battery-powered equipment

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Typical Efficiency	Negative Logic On/Off	Feature Set
RGC4W300W008A-001	9 - 53	9.6 - 48	8	300	97%	Yes	Standard
RGC4W300W008A-003	9 - 53	9.6 - 48	8	300	97%	Yes	Full
RGC4W300W012A-001	9 - 53	5.0 - 28	12.5	300	97%	Yes	Standard
RGC4W300W012A-003	9 - 53	5.0 - 28	12.5	300	97%	Yes	Full

Contact factory for other upcoming part number suffix options.

Related Products

Type	Part Number(s)	Size (mm) / Description
Ruggedized DC-DC Buck Converter	RGA	250W, Input 9-40V or 9-53V, Output 3.3-24V or 3.3 up to 40V
Ruggedized DC-DC Buck Converter	RGB	400-750W, Input 9-18V or 18 up to 60V, Output 0.8 to 8V or 3.3 up to 24V
DC-DC Buck Converter	I3A	100W, Input 9-53V, Output 5-30V 4.5A or 3.3-16.5V 8A
DC-DC Buck Converter	I6A4W	250W, Input 9-53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck Converter	I7A	500-750W, Input 18-60V or 18-32V, Output 3.3-24V 33A or 3.3-18V 45A
DC-DC Buck-Boost Converter	I1C	200W, Input 9-36V or 18-75V, Output 9.6-28V, 1x1 inch Footprint
DC-DC Buck-Boost Converter	I7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
Filter Module	RGF	80V, 20A or 40A Differential Mode Filter Module
ORing FET Module	I1R	60V/60A; 30V/80A ORring FET (Ideal Diode) Modules
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Quarter Brick
Evaluation Board	i7X-C01-EVK-S0	Evaluation board with no module. Order required RGC part number separately.

400W-1000W, 9-18V, 18-32V, 18-50V or 28-60V Input Non-Isolated Step Down DC-DC Converter

Industrial Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/i7a

The i7A series of high-efficiency, non-isolated buck converters delivers scalable power solutions up to 1000W in a compact 1/16th brick pinout, addressing key design challenges such as limited board space, inefficient power delivery, and complex thermal management. With output currents up to 100A and wide input/output voltage ranges, it simplifies various power distribution architectures and part number management while reducing the need to parallel multiple converters. Its fast transient response and low ripple ensure stable performance, while three thermal configurations—open frame, baseplate, and heatsink—offer flexible cooling options tailored to system requirements. Available with positive or negative logic remote on/off and an optional adjustable OCP current limit threshold, the i7A is ideal for industrial, communications, test and measurement, and battery-powered applications, including mobile robotics.

Features	Benefits
• Up to 1000W in a 1/16th Brick Pin-Out	• High Power Density, Less Board Area Needed
• High Efficiency - Up to 99%	• Reduced Energy Consumption / Longer Battery Life
• Wide 0.8 to 8V or 3.3V up to 32V Output Adjustment	• One Part Supports Multiple System Voltages
• 9 to 18V, 18 to 32V, 18 to 60V or 28 to 60V Input	• Can Operate From Different DC Source Voltages Including Batteries
• Adjustable OCP, Current Limit Threshold	• Reduces Overload and Thermal Stress Without Additional Circuitry
• Minimal Derating Requirements in Low Airflow Environments	• Easy To Cool In End System

Related Products

Type	Part Number	Description
DC-DC Buck Converter	i3A	100W, Input 9-53V, Output 5-30V 4.5A or 3.3-16.5V 8A
DC-DC Buck Converter	i6A4W	250W, Input 9-53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck-Boost Converter	i1C	200W, Input 9-36V or 18-75V, Output 9.6-28V, 1x1 inch Footprint
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
DC-DC Buck Converter	RGA	250W, Input 9 up to 53V, Output 3.3 up to 40V, Rugged Modules
DC-DC Buck Converter	RGB	400-750W, Input 9 to 18V or 18 up to 60V, Output 0.8 tp 8V or 3.3 up to 24V, Rugged Modules
DC-DC Buck-Boost Converter	RGC	300W, Input 9-53V, Output 9.6-48V 8A or 5-28V 12.5A, Rugged Modules
EMI Filter Module	RGF	80V, 20A or 40A Differential Mode Filter Module
ORing FET Module	i1R	60V/60A; 30V/80A ORring FET (Ideal Diode) Modules
Evaluation Kit	i7A20A-C01-EVK-S1	Evaluation kit with I7A48020A033V-001-R Module
Evaluation Kit	i7A33A-C01-EVK-S1	Evaluation kit with I7A4W033A033V-001-R Module
Evaluation Kit	i7A45A-C01-EVK-S1	Evaluation kit with I7A24045A033V-001-R Module
Evaluation Kit	i7A60A-C01-EVK-S1	Evaluation kit with I7A12060A008V-001-R Module
Evaluation Kit	i7AS60A-C03-EVK-S1	Evaluation kit with high power I7A4W060A033V-0C3-R Module
Evaluation Kit	i7AS80A-C03-EVK-S1	Evaluation kit with high power I7A24080A033V-0C3-R Module
Evaluation Kit	i7AS100A-C03-EVK-S1	Evaluation kit with high power I7A12100A008V-0C3-R Module
Evaluation Kit	i7ASX-C03-EVK-S0	Evaluation kit for I7A series with no DC-DC module mounted

Model Selector

Model	Max O/P Power (W)	Input Voltage (V)	Output Voltage (V)	Max O/P Current (A)	Typical Efficiency	Remote ON/OFF Logic	Adjustable (OCP) Current Limit	Construction	Height / Profile mm (inch)
General Purpose Wide Input Range									
i7A4W033A033V-000-R	500	18 - 60	3.3 - 24	33	97%	Positive	-	Openframe	11.5 [0.45]
i7A4W033A033V-001-R #	500	18 - 60	3.3 - 24	33	97%	Negative	-	Openframe	11.5 [0.45]
i7A4W033A033V-003-R #	500	18 - 60	3.3 - 24	33	97%	Negative	Yes / Pin 5	Openframe	11.5 [0.45]
i7A4W033A033V-0C1-R #	500	18 - 60	3.3 - 24	33	97%	Negative	-	Baseplate	12.7 [0.50]
i7A4W033A033V-0C3-R	500	18 - 60	3.3 - 24	33	97%	Negative	Yes / Pin 5	Baseplate	12.7 [0.50]
i7A4W033A033V-0F1-R #	500	18 - 60	3.3 - 24	33	97%	Negative	-	Heatsink	24.9 [0.98]
i7A4W033A033V-0F3-R	500	18 - 60	3.3 - 24	33	97%	Negative	Yes / Pin 5	Heatsink	24.9 [0.98]
i7A4W060A033V-0C0-R	720	18 - 60	3.3 - 28	60	99%	Positive	-	Enhanced Baseplate	19.8 [0.78]
i7A4W060A033V-0C1-R #	720	18 - 60	3.3 - 28	60	99%	Negative	-		19.8 [0.78]
i7A4W060A033V-0C3-R	720	18 - 60	3.3 - 28	60	99%	Negative	Yes / Pin 5		19.8 [0.78]
24V Input Optimized									
i7A24045A033V-000-R	750	18 - 32	3.3 - 18	45	97%	Positive	-	Openframe	11.5 [0.45]
i7A24045A033V-001-R #	750	18 - 32	3.3 - 18	45	97%	Negative	-	Openframe	11.5 [0.45]
i7A24045A033V-003-R #	750	18 - 32	3.3 - 18	45	97%	Negative	Yes / Pin 5	Openframe	11.5 [0.45]
i7A24045A033V-0C1-R #	750	18 - 32	3.3 - 18	45	97%	Negative	-	Baseplate	12.7 [0.50]
i7A24045A033V-0C3-R	750	18 - 32	3.3 - 18	45	97%	Negative	Yes / Pin 5	Baseplate	12.7 [0.50]
i7A24045A033V-0F1-R #	750	18 - 32	3.3 - 18	45	97%	Negative	-	Heatsink	24.9 [0.98]
i7A24045A033V-0F3-R	750	18 - 32	3.3 - 18	45	97%	Negative	Yes / Pin 5	Heatsink	24.9 [0.98]
i7A24080A033V-0C0-R	1000	18 - 32	3.3 - 18	80	98%	Positive	-	Enhanced Baseplate	19.8 [0.78]
i7A24080A033V-0C1-R #	1000	18 - 32	3.3 - 18	80	98%	Negative	-		19.8 [0.78]
i7A24080A033V-0C3-R	1000	18 - 32	3.3 - 18	80	98%	Negative	Yes / Pin 5		19.8 [0.78]
48V Input Optimized									
i7A48020A033V-000-R	500	28 - 60	3.3 -32	20	97%	Positive	-	Openframe	11.5 [0.45]
i7A48020A033V-001-R #	500	28 - 60	3.3 -32	20	97%	Negative	-	Openframe	11.5 [0.45]
i7A48020A033V-003-R #	500	28 - 60	3.3 -32	20	97%	Negative	Yes / Pin 5	Openframe	11.5 [0.45]
i7A48020A033V-0C1-R #	500	28 - 60	3.3 -32	20	97%	Negative	-	Baseplate	12.7 [0.50]
i7A48020A033V-0C3-R	500	28 - 60	3.3 -32	20	97%	Negative	Yes / Pin 5	Baseplate	12.7 [0.50]
i7A48020A033V-0F1-R #	500	28 - 60	3.3 -32	20	97%	Negative	-	Heatsink	24.9 [0.98]
i7A48020A033V-0F3-R	500	28 - 60	3.3 -32	20	97%	Negative	Yes / Pin 5	Heatsink	24.9 [0.98]
12V Input Optimized									
i7A12060A008V-000-R	400	9 - 18	0.8 - 8	60	97%	Positive	-	Openframe	11.5 [0.45]
i7A12060A008V-001-R #	400	9 - 18	0.8 - 8	60	97%	Negative	-	Openframe	11.5 [0.45]
i7A12060A008V-003-R #	400	9 - 18	0.8 - 8	60	97%	Negative	Yes / Pin 5	Openframe	11.5 [0.45]
i7A12060A008V-0C1-R #	400	9 - 18	0.8 - 8	60	97%	Negative	-	Baseplate	12.7 [0.50]
i7A12060A008V-0C3-R	400	9 - 18	0.8 - 8	60	97%	Negative	Yes / Pin 5	Baseplate	12.7 [0.50]
i7A12060A008V-0F1-R #	400	9 - 18	0.8 - 8	60	97%	Negative	-	Heatsink	24.9 [0.98]
i7A12060A008V-0F3-R	400	9 - 18	0.8 - 8	60	97%	Negative	Yes / Pin 5	Heatsink	24.9 [0.98]
i7A12100A008V-0C0-R **	550	9 - 18	0.8 - 8	100	96%	Positive	-	Enhanced Baseplate	19.8 [0.78]
i7A12100A008V-0C1-R #**	550	9 - 18	0.8 - 8	100	96%	Negative	-		19.8 [0.78]
i7A12100A008V-0C3-R **	550	9 - 18	0.8 - 8	100	96%	Negative	Yes / Pin 5		19.8 [0.78]

High Power i7A Series with enhanced baseplate design includes redundant input and output pins. Please refer to the PIN assignment table on page 7.

i7A modules with rated I_{OUT} ≥ 45A includes redundant input pins. Please refer to the PIN assignment table on page 7.

Preferred Models

** Consult Technical Support for availability.

400W-750W, 9 to 18V, 18 to 32V or 18 to 60V Input
Non-Isolated Ruggedized Step-Down DC-DC Buck Converter

Industrial COTS Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/rgb

The rugged RGB non-isolated DC-DC step-down converters are encapsulated in a five-sided aluminum case that's rated for up to 115˚C operation. These modules have the industry standard 1/16th brick pin-out, are qualified to MIL-STD-810G for shock and vibration, and are designed for fan-less, conduction-cooled applications. The series accepts a wide input range to accommodate various DC bus and battery voltages. The RGB modules come with standard features like remote On/Off, remote sense, output trim, and optional adjustable output current limit, making the modules a truly versatile power solution. The wide output adjustment range allows one model to be used in multiple DC output voltage positions, assisting inventory and part number reduction.

Features	Benefits
• Up to 750W in a 1/16th Brick-Pin-Out	• High Power Density, Less Board Area Needed
• Encapsulated in a 5-sided metal case	• Improves EMI
• 115°C Maximum Case Temperature	• Rugged deployment in harsh environment with high shock & vibration exposure
• Efficiency - Up to 98.5%	• Longer Battery Life / Low Power Consumed
• Wide Output Adjustment from 0.8 up to 24V	• One Part Supports Multiple System Voltages
• Wide Input Range	• Can Operate from Different DC Input Source Voltages
• Adjustable Current Limit	• Reduces stress on the input source, converter and load due to overloading

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Negative Logic On/Off	Full Feature
RGB4W500W033A-001	18 - 60	3.3 - 24	33	500	Yes	-
RGB4W500W033A-003	18 - 60	3.3 - 24	33	500	Yes	Yes
RGB24750W045A-001	18 - 32	3.3 - 18	45	750	Yes	-
RGB24750W045A-003	18 - 32	3.3 - 18	45	750	Yes	Yes
RGB12400W060A-001	9 - 18	0.8 - 8	60	400	Yes	-
RGB12400W060A-003	9 - 18	0.8 - 8	60	400	Yes	Yes

Related Products

Type	Part Number	Description
Ruggedized DC-DC Buck Converter	RGA	250W, Input 9-40V and Output 3.3-24V or, 9-53V Input and 3.3V up to 40V Output
Ruggedized DC-DC Buck-Boost Converter	RGC	300W, Input 9-53V, Output 9.6-48V 8A or 5-28V 12.5A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
DC-DC Buck Converter	i7A	500-750W, Input 18-60V or 18-32V, Output 3.3-24V 33A or 3.3-18V 45A
DC-DC Buck Converter	i6A4W	250W, Input 9 -53V, Output 3.3-40V 10A or 3.3-15V 20A
Non-Isolated DC-DC Converter	iCH	85W/12A, 4.5-14Vin, 0.7 - 8.5Vout, DOSA Compatible
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Evaluation Board	i7X-C01-EVK-S0	Evaluation board with no module. Order required RGB part number separately.

1500W, 9 to 80V Input Non-Isolated DC-DC Buck-Boost Converter with PHEPT*

**Programmable High Efficiency Pass-Through*

Industrial | Test | COMM | Broadcast | Robotics

Full Datasheet
https://product.tdk.com/en/power/i9c

The I9C Series DC-DC buck-boost converter highlights its key innovation: Programmable High-Efficiency Pass-Through (PHEPT) mode. Using patented technology, PHEPT allows designers to define an input-voltage window in which the module bypasses regulation and directly connects input to output, eliminating switching and conversion losses. This improves efficiency, reduces thermal stress, and extends battery runtime. The converter supports 9–80 V or 9–40 V inputs and 9.6–60 V or 5–36 V outputs, delivering up to 1500 W for 12 V, 24 V, 48 V, and 60 V bus architectures. Its compact wide quarter-brick package with baseplate enables flexible cooling options. Features include wide output adjustment, negative logic On/Off control, power good, remote sense, user-adjustable overcurrent protection, low-power sleep mode, and full auto-recovery protection. Designed for high-ambient, low-airflow environments, it is ideal for industrial, telecom, test and measurement, and battery-powered applications, including AGVs, AMRs, and drones.

Features	Benefits
• Up to 1500W in a Compact, Wide Quarter Brick Package	• High Power Density, Less Board Area Needed
• User Programmable PHEPT Window, Up to 99% Efficiency	• Reduces Energy Consumption, Extends Battery Runtimes
• Wide Operating Input Voltage Range	• Operates From Multiple DC Sources, Including Batteries
• Wide Output Voltage Adjustment Range	• One Part Supports Multiple System Voltages
• User Configurable Sleep Mode	• Puts Module in Low Power Dissipation State During Idle or Light-Load Conditions
• Adjustable Overcurrent Protection	• Reduces Device Stress and Helps Eliminate External Circuits

Model Selector

Model	Max O/P Power (W)	Input Voltage (V)	Output Voltage (V)	Max O/P Current (A)	Typical Efficiency		Baseplate Design	Adjustable OCP	SLEEP Mode Function
					Fully Regulated Mode	PHEPT Mode			
I9C4W030A480V-0C3-R #	1500	9 - 80	9.6 - 60	30	97%	99%	Flanged	Yes	Yes
I9C4W030A480V-NC3-R	1500	9 - 80	9.6 - 60	30	97%	99%	Non-Flanged	Yes	Yes
I9C2W050A240V-0C3-R #	1500	9 - 40	5 - 36	50	95%	97.5%	Flanged	Yes	Yes
I9C2W050A240V-NC3-R	1500	9 - 40	5 - 36	50	95%	97.5%	Non-Flanged	Yes	Yes

Contact Technical Support for availability.

Preferred model

Related Products

Type	Part Number	Description
DC-DC Buck Converter	I3A	100W, Input 9-53V, Output 5-30V 4.5A or 3.3-16.5V 8A
DC-DC Buck Converter	I6A4W	250W, Input 9-53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck-Boost Converter	I1C	200W, Input 9-36V or 18-75V, Output 9.6-28V, 1x1 inch Footprint
DC-DC Buck-Boost Converter	I7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
DC-DC Buck Converter	RGA	250W, Input 9 up to 53V, Output 3.3 up to 40V, Rugged Modules
DC-DC Buck Converter	RGB	400-750W, Input 9 to 18V or 18 up to 60V, Output 0.8 tp 8V or 3.3 up to 24V, Rugged Modules
DC-DC Buck-Boost Converter	RGC	300W, Input 9-53V, Output 9.6-48V 8A or 5-28V 12.5A, Rugged Modules
AC-DC Power Module	PFE-FB	1500-1800W, 85-305Vac, 50/60/400Hz, 48V, 60V, 28V output, Digital Control/PMBus
Filter Module	RGF	80V, 20A or 40A Differential Mode Filter Module
ORing FET Module	I1R	60V/60A; 30V/80A ORring FET (Ideal Diode) Modules
Evaluation Kit	I9C30A-C03-EVK-S1	Evaluation kit with I9C4W030A480V-0C3-R Module
Evaluation Kit	I9C50A-C03-EVK-S1	Evaluation kit with I9C2W050A240V-0C3-R Module

TDK In Everything, Better

Extending Runtime of Your Battery Powered Equipment

Accelerate Your Design with TDK-Lambda's Buck and Buck-Boost DC-DC Converters.

Wide Input Range:

Operates seamlessly with various DC input sources

Scalable Power Solutions:

Common pin-out provided 100W to 1000W of power coverage

Flexible Output Adjustment:

Supports multiple system load voltages

Lightweight Design:

Ideal for payload-sensitive applications

High Efficiency / Density:

Reduced energy consumption; compact sizes

Adaptable Cooling Options:

Heatsink, baseplate, and ruggedized for specific cooling and deployment needs

i6A

- 9 up to 80V I/P
- 0.8 to 60V O/P
- 100 to 1500 W
- ~99% Efficiency
- High Usable Power @ High Temp

i1C

- -40 up to 115 °C
- MIL-STD-810G Shock & Vib
- 5-Sided Metal Case
- Encapsulation
- Conduction Cool

i7C

- Industry Footprint
- Remote On/Off, Trim, Sync, Sense, PGood, Seq, Imon, OCP Adjust
- Parallel
- Prgm High Eff Passthrough (PHEPT)

RGB

i7A High Power

i9C

EMC/EMI Filters

Applications

- Improve EMC performance in complex equipment
- Improve EMC performance with long mains wires

Features

- Single-phase, three-phase and three-phase with Neutral
- 0.5A to 300A line current
- Single-stage and two-stage filters with high attenuation over a wide frequency range
- With surge protection
- Medical versions with reduced leakage currents
- Models for DIN-Rail mounting

TDK
In Everything, Better

EMC/EMI Filter Index by Wattage

Listed by Wattage

Single phase 250Vac 3 to 10A Power Entry Module EMC Filters

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rpa
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rpe

The RPA and RPE single-phase power entry module EMC filters are enclosed in a potted metal case and can be chassis mounted to accept an IEC320 line cord. They are rated for 250Vac with current ratings of 3A, 6A and 10A. The RPA series uses TDK's amorphous core material to provide both pulse and noise attenuation whereas the RPE uses the amorphous core for enhanced differential and common model noise. Amorphous materials offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps. Connection to the filters are made via faston terminals #250 (t=0.8mm). Models with combinations of lower leakage current and an internal discharge resistor are also available.

Features	Benefits
• Panel Mount with IEC320 Inlet	• Combines a Filter and Input Connector
• 3A to 10A Current Ratings	• Improved Noise Attenuation on Lower Current Models
• Low Leakage and/or Discharge Resistor Options	• System Flexibility
• Amorphous Core Technology	• Reduces High Voltage Pulse Core Saturation
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	HV Pulse Protection	Discharge Resistor	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) Common mode at 25dB	Attenuation frequency range (MHz) Differential mode at 25dB
RPA-2003	3	Y	N	0.5	150	2 to 30	3 to 30
RPA-2006	6	Y	N	0.5	100	3 to 30	5 to 30
RPA-2003R	3	Y	Y	0.5	150	2 to 30	3 to 30
RPA-2006R	6	Y	Y	0.5	100	3 to 30	5 to 30

Model	Rated Current (A)	HV Pulse Protection	Discharge Resistor	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) Common mode at 10dB	Attenuation frequency range (MHz) Differential mode at 15dB
RPA-2003L	3	Y	N	0.01	150	0.4 to 10	1 to 30
RPA-2006L	6	Y	N	0.01	100	0.5 to 8	2 to 30
RPA-2003RL	3	Y	Y	0.01	150	0.4 to 10	1 to 30
RPA-2006RL	6	Y	Y	0.01	100	0.5 to 8	2 to 30

Model	Rated Current (A)	HV Pulse Protection	Discharge Resistor	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) Common mode at 25dB	Attenuation frequency range (MHz) Differential mode at 25dB
RPE-2003	3	N	N	0.5	150	1 to 30	3 to 30
RPE-2006	6	N	N	0.5	100	2 to 30	5 to 30
RPE-2010	10	N	N	0.5	30	5 to 30	10 to 30
RPE-2003R	3	N	Y	0.5	150	1 to 30	3 to 30
RPE-2006R	6	N	Y	0.5	100	2 to 30	5 to 30
RPE-2010R	10	N	Y	0.5	30	5 to 30	10 to 30

Model	Rated Current (A)	HV Pulse Protection	Discharge Resistor	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) Common mode at 10dB	Attenuation frequency range (MHz) Differential mode at 15dB
RPE-2003L	3	N	N	0.01	150	0.3 to 5	1 to 30
RPE-2006L	6	N	N	0.01	100	0.4 to 5	2 to 30
RPE-2010L	10	N	N	0.01	30	1 to 5	3 to 30
RPE-2003RL	3	N	Y	0.01	150	0.3 to 5	1 to 30
RPE-2006RL	6	N	Y	0.01	100	0.4 to 5	2 to 30
RPE-2010RL	10	N	Y	0.01	30	1 to 5	3 to 30

Single phase 250Vac 3 to 6A Fused Power Entry Module EMC Filters

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rpe_f

The RPE-F single-phase fused power entry module EMC filters are enclosed in a potted metal case and can be chassis mounted to accept an IEC320 line cord. They are rated for 250Vac with current ratings of 3A and 6A. The RPE-F series uses an amorphous core for enhanced differential and common model noise. Amorphous materials offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps. Connection to the filters are made via faston terminals #250 (t=0.8mm). Models are available with single (line) or dual fuses (line and neutral) and a low leakage current option for medical applications.

Features	Benefits
• Panel Mount with IEC320 Inlet	• Combines a Fuse, Filter and Input Connector
• 3A and 6A Current Ratings	• Improved Noise Attenuation on Lower Current Models
• Low Leakage Current Option	• System Flexibility
• Amorphous Core Technology	• Reduces High Voltage Pulse Core Saturation
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	HV Pulse Protection	Fuse	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) Common mode at 25dB	Attenuation frequency range (MHz) Differential mode at 25dB
RPE-2003F01	3	N	Single	0.5	150	0.5 to 10	2 to 10
RPE-2006F01	6	N	Dual	0.5	100	2 to 10	3 to 10
RPE-2003F02	3	N	Single	0.5	150	0.5 to 10	2 to 10
RPE-2006F02	6	N	Dual	0.5	100	2 to 10	3 to 10

Model	Rated Current (A)	HV Pulse Protection	Fuse	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) Common mode at 10dB	Attenuation frequency range (MHz) Differential mode at 15dB
RPE-2003F01L	3	N	Single	0.01	150	0.2 to 10	1 to 10
RPE-2006F01L	6	N	Dual	0.01	100	0.3 to 10	2 to 10
RPE-2003F02L	3	N	Single	0.01	150	0.2 to 10	1 to 10
RPE-2006F02L	6	N	Dual	0.01	100	0.3 to 10	2 to 10

Part Numbering Scheme

RPE	-	2	003	F02	L
Series Name RPE		Rated Voltage 2 = 250Vac	Rated Current 003 = 3A 006 = 6A	Fuse F01 = single F02 = dual	Low Leakage Current

RSEG / RSAG Series

Single phase 250Vac 0.5 to 6A EMC Filters

Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rseg
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rsag

The RSEG and RSAG single-phase EMC filters are enclosed in a compact plastic case and can be mounted directly on a printed circuit board. This enables the filter to be placed closer to noise generating components and can reduce interference radiating from internal system wiring to the AC supply. The filters are lightweight making them ideal for portable equipment. They are rated for 250Vac with current ratings of 0.5 to 6A, enabling the best attenuation with low current requirements. The RSEG series utilize TDK's ferrite core technology for noise attenuation. The RSAG series uses TDK's amorphous core material to provide both pulse and noise attenuation. Amorphous materials offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps.

Features	Benefits
• Compact Size	• Less Board Space Utilized
• 0.5 to 6A Current Ratings	• Optimizes the Attenuation for Lower Current Requirements
• Lightweight	• Ideal for Portable Equipment
• Amorphous Core Technology (RSAG series)	• Reduces High Voltage Pulse Core Saturation
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	HV Pulse Protection	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) at 20dB	
				Common Mode	Differential Mode
RSEG-20R5	0.5	N	400	0.3 to 10	1.5 to 30
RSAG-20R5	0.5	Y	400	0.5 to 10	1.5 to 30
RSEG-2001	1	N	350	0.3 to 10	1.5 to 30
RSAG-2001	1	Y	350	0.5 to 10	1.5 to 30
RSEG-2002	2	N	310	0.5 to 20	1.5 to 30
RSAG-2002	2	Y	310	1 to 20	1.5 to 30
RSEG-2003	3	N	150	0.5 to 20	1.5 to 30
RSAG-2003	3	Y	150	1 to 20	1.5 to 30
RSEG-2004	4	N	130	1 to 20	1.5 to 30
RSAG-2004	4	Y	130	2 to 20	1.5 to 30
RSEG-2006	6	N	100	1 to 20	1.5 to 30
RSAG-2006	6	Y	100	2 to 20	1.5 to 30

RSAG	-	2	0R5
Series Name: RSAG, RSEG		Rated Voltage: 2 = 250Vac	Rated Current: 0R5 = 0.5A, 001 = 1A, 006 = 6A

RSAN Series

Single phase 250Vac 3 to 60A EMC Filters with DIN rail option

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rsan

The RSAN single-phase EMC filters are enclosed in a compact case and part numbers up to 30A can be either chassis or DIN rail mounted (up to 30A) with low leakage current options. They are rated for 250Vac with nine current ratings of 3 to 60A enabling the optimum attenuation to match the current rating. The series uses TDK's amorphous core material to provide both pulse and noise attenuation. Amorphous materials offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps. The connection terminals are integrated into the case with both the screws and terminal covers captive. This avoids dropped or lost hardware. The RSAN 3A to 30A models are UL certified for a short circuit current rating of up to 14kA and the 40, 50 and 60A models 35kA with the appropriate breaker.

Features	Benefits
• 3 to 60A Current Ratings	• Optimizes the Attenuation for the Current Rating
• DIN Rail Bracket Option	• Flexible Mounting
• Amorphous Core Technology	• Reduces High Voltage Pulse Core Saturation
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)(1)	HV Pulse Protection	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		
						Common mode at 25dB	Common mode at 20dB	Differential mode at 25dB
RSAN-2003	3	14	Y	1.0	250	0.1 to 10	-	0.1 to 30
RSAN-2006	6	14	Y	1.0	110	0.1 to 10	-	0.1 to 30
RSAN-2010	10	14	Y	1.0	40	0.3 to 10	-	0.2 to 30
RSAN-2016	16	14	Y	1.0	20	0.8 to 10	-	0.3 to 30
RSAN-2020	20	14	Y	1.0	10	1 to 10	-	0.3 to 30
RSAN-2030	30	14	Y	1.0	6	2 to 10	-	0.4 to 30
RSAN-2040	40	35	Y	1.0	6	0.8 to 10	-	0.1 to 30
RSAN-2050	50	35	Y	1.0	4	-	1 to 10	0.1 to 30
RSAN-2060	60	35	Y	1.0	3	2 to 10	-	0.2 to 30

Model Selector

Model	Rated Current (A)	SCCR (kA)(1)	HV Pulse Protection	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		
						Common mode at 20dB	Common mode at 10dB	Differential mode at 25dB
RSAN-2003L	6	14	Y	0.01	250	0.1 to 3	-	0.1 to 30
RSAN-2006L	6	14	Y	0.01	110	0.1 to 3	-	0.1 to 30
RSAN-2010L	10	14	Y	0.01	40	0.5 to 6	-	0.2 to 30
RSAN-2016L	16	14	Y	0.01	20	-	0.3 to 10	0.3 to 30
RSAN-2020L	20	14	Y	0.01	10	-	0.5 to 8	0.3 to 30
RSAN-2030L	30	14	Y	0.01	6	-	3 to 20	0.4 to 30

Single phase 250Vac 0.5 to 6A EMC Filters

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rsal

The RSAL single-phase EMC filters are enclosed in a compact case and rated at 250Vac with current levels of 0.5 to 6A, enabling the best attenuation for low current requirements. The RSAL series utilize TDK's amorphous core material to provide both pulse and noise attenuation. Amorphous materials offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps. A choice of models with either wire leads or Faston terminals #110 are available and low leakage current versions.

Features	Benefits
• Compact Size	• Less Space Utilized
• 0.5 to 6A Current Ratings	• Optimizes the Attenuation for Lower Current Requirements
• Lightweight	• Ideal for Portable Equipment
• Amorphous Core Technology	• Reduces High Voltage Pulse Core Saturation
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	HV Pulse Protection	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		Weight (g)
				Common mode at 25dB	Differential mode at 25dB	
RSAL-20R5W	0.5	Y	700	0.3 to 8	0.4 to 30	58
RSAL-2001W	1	Y	600	0.3 to 8	0.5 to 30	58
RSAL-2002W	2	Y	250	0.5 to 8	0.7 to 30	61
RSAL-2003W	3	Y	150	1 to 7	0.8 to 30	61
RSAL-2006W	6	Y	80	3 to 7	1 to 30	61
RSAL-20R5A	0.5	Y	700	0.3 to 8	0.4 to 30	43
RSAL-2001A	1	Y	600	0.3 to 8	0.5 to 30	43
RSAL-2002A	2	Y	250	0.5 to 8	0.7 to 30	46
RSAL-2003A	3	Y	150	1 to 7	0.8 to 30	46
RSAL-2006A	6	Y	80	3 to 7	1 to 30	46

Model Selector

Model	Rated Current (A)	HV Pulse Protection	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		Weight (g)
				Common mode at 15dB	Differential mode at 25dB	
RSAL-20R5WL	0.5	Y	700	0.1 to 5	0.4 to 30	56
RSAL-2001WL	1	Y	600	0.1 to 5	0.5 to 30	56
RSAL-2002WL	2	Y	250	0.1 to 5	0.7 to 30	59
RSAL-2003WL	3	Y	150	0.2 to 5	0.8 to 30	59
RSAL-2006WL	6	Y	80	1 to 30	1 to 30	59
RSAL-20R5AL	0.5	Y	700	0.1 to 5	0.4 to 30	41
RSAL-2001AL	1	Y	600	0.1 to 5	0.5 to 30	41
RSAL-2002AL	2	Y	250	0.1 to 5	0.7 to 30	44
RSAL-2003AL	3	Y	150	0.2 to 5	0.8 to 30	44
RSAL-2006AL	6	Y	80	1 to 30	1 to 30	44

Single phase 250Vac 0.5 to 6A EMC Filters

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rsel

The RSEL single-phase EMC filters are enclosed in a compact case and rated at 250Vac with current levels of 0.5 to 6A, enabling the best attenuation for low current requirements. The RSEL series utilize TDK's ferrite core material to provide noise attenuation. A choice of models with either wire leads or Faston terminals #110 are available and low leakage current versions.

Features	Benefits
• Compact Size	• Less Space Utilized
• 0.5 to 6A Current Ratings	• Optimizes the Attenuation for Lower Current Requirements
• Lightweight	• Ideal for Portable Equipment
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	HV Pulse Protection	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		Weight (g)
				Common mode at 25dB	Differential mode at 25dB	
RSEL-20R5W	0.5	N	700	0.2 to 10	0.3 to 30	58
RSEL-2001W	1	N	600	0.3 to 10	0.5 to 30	58
RSEL-2002W	2	N	250	0.5 to 10	0.5 to 30	61
RSEL-2003W	3	N	150	0.5 to 10	0.5 to 30	61
RSEL-2006W	6	N	80	1 to 10	1 to 30	61
RSEL-20R5A	0.5	N	700	0.2 to 10	0.3 to 30	43
RSEL-2001A	1	N	600	0.3 to 10	0.5 to 30	43
RSEL-2002A	2	N	250	0.5 to 10	0.5 to 30	46
RSEL-2003A	3	N	150	0.5 to 10	0.5 to 30	46
RSEL-2006A	6	N	80	1 to 10	1 to 30	46

Model Selector

Model	Rated Current (A)	HV Pulse Protection	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		Weight (g)
				Common mode at 15dB	Differential mode at 25dB	
RSEL-20R5WL	0.5	N	700	0.1 to 5	0.3 to 30	56
RSEL-2001WL	1	N	600	0.1 to 5	0.5 to 30	56
RSEL-2002WL	2	N	250	0.1 to 5	0.5 to 30	59
RSEL-2003WL	3	N	150	0.1 to 5	0.5 to 30	59
RSEL-2006WL	6	N	80	1 to 30	1 to 30	59
RSEL-20R5AL	0.5	N	700	0.1 to 5	0.3 to 30	41
RSEL-2001AL	1	N	600	0.1 to 5	0.5 to 30	41
RSEL-2002AL	2	N	250	0.1 to 5	0.5 to 30	44
RSEL-2003AL	3	N	150	0.1 to 5	0.5 to 30	44
RSEL-2006AL	6	N	80	1 to 30	1 to 30	44

RSEN Series

Single phase 250Vac 3 to 300A EMC Filters with DIN rail option

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rsen

The RSEN single-phase EMC filters are enclosed in a compact case and part numbers up to 30A can be either chassis or DIN rail mounted (up to 30A) with low leakage current options. They are rated for 250Vac with fifteen current ratings of 3 to 300A enabling the optimum attenuation to match the current rating. The series uses TDK's ferrite core material to provide noise attenuation. The connection terminals are integrated into the case with both the screws and terminal covers captive. This avoids dropped or lost hardware. The RSEN 3A to 30A models are UL certified for a short circuit current rating of up to 14kA and the 40, 50 and 60A models 35kA with the appropriate breaker.

Features	Benefits
• 3 to 300A Current Ratings	• Optimizes the Attenuation for the Current Rating
• DIN Rail Bracket Option	• Flexible Mounting
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)[1]	HV Pulse Protection	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		
						Common mode at 25dB	Common mode at 10dB	Differential mode at 25dB
RSEN-2003	3	14	N	1.0	250	0.1 to 20	-	0.2 to 30
RSEN-2006	6	14	N	1.0	110	0.1 to 10	-	0.2 to 30
RSEN-2010	10	14	N	1.0	40	0.2 to 20	-	0.2 to 30
RSEN-2016	16	14	N	1.0	20	0.3 to 20	-	0.3 to 30
RSEN-2020	20	14	N	1.0	10	0.4 to 20	-	0.3 to 30
RSEN-2030	30	14	N	1.0	6	2 to 30	-	0.4 to 30
RSEN-2040	40	35	N	1.0	6	2 to 10	-	0.2 to 30
RSEN-2050	50	35	N	1.0	4	2 to 10	-	0.2 to 30
RSEN-2060	60	35	N	1.0	3	2 to 10	-	0.2 to 30
RSEN-2080	80	-	N	1.0	3.4	2 to 10	-	0.1 to 30
RSEN-2100	100	-	N	1.0	2.7	2 to 10	-	0.1 to 30
RSEN-2150	150	-	N	1.0	2	2 to 10	-	0.1 to 30
RSEN-2200	200	-	N	1.0	1.4	-	0.4 to 30	0.1 to 30
RSEN-2250	250	-	N	1.0	1	-	1 to 20	0.1 to 30
RSEN-2300	300	-	N	1.0	0.7	-	2 to 20	0.1 to 30

Model Selector

Model	Rated Current (A)	SCCR (kA)[1]	HV Pulse Protection	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		
						Common mode at 25dB	Common mode at 10dB	Differential mode at 25dB
RSEN-2003L	3	14	N	0.01	250	0.1 to 3	-	0.2 to 30
RSEN-2006L	6	14	N	0.01	110	0.1 to 3	-	0.2 to 30
RSEN-2010L	10	14	N	0.01	40	-	0.1 to 10	0.2 to 30
RSEN-2016L	16	14	N	0.01	20	-	0.1 to 10	0.2 to 30
RSEN-2020L	20	14	N	0.01	10	-	0.2 to 10	0.3 to 30
RSEN-2030L	30	14	N	0.01	6	-	0.3 to 5	0.3 to 30

RSEV Series

Single phase 250Vac 6 to 30A EMC Filters with DIN rail option

Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rsev

The RSEV single-phase EMC filters are enclosed in a compact plastic case and can be either chassis or DIN mounted with an optional bracket. They are rated for 250Vac with five current ratings of 6 to 30A in one package size, enabling the optimum attenuation to match the current rating. The connection terminals are integrated into the case and the screws recessed and captive. This avoids dropped or lost hardware. The RSEV series is UL certified for a short circuit current rating of 14,000A with the appropriate breaker.

Features	Benefits
• Compact Size	• Less System Space Utilized
• 6 to 30A Current Ratings	• Optimizes the Attenuation for the Current Rating
• DIN Rail Bracket Option	• Flexible Mounting
• Recessed Captive Screws	• No Lost Hardware
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)[1]	HV Pulse Protection	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) at 25dB	
					Common Mode	Differential Mode
RSEV-2006	6	14	N	110	0.1 to 30	0.2 to 30
RSEV-2010	10	14	N	40	0.2 to 30	0.2 to 30
RSEV-2016	16	14	N	20	0.6 to 30	0.3 to 30
RSEV-2020	20	14	N	10	0.8 to 30	0.4 to 30
RSEV-2030	30	14	N	6	2 to 30	0.5 to 30
DIN-RSEV (DIN Bracket)	-	-	-	-	-	-

Part Numbering Scheme

RSEV	-	2	06
Series Name		Rated Voltage 2 = 250Vac	Rated Current 006 = 6A 030 = 30A

Single phase 250Vac 3 to 300A EMC Filters with DIN rail mount and low leakage options

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_rshn.html

The RSHN single-phase high attenuation EMC filters are enclosed in compact cases and part numbers up to 30A have DIN rail mount and low leakage current options. They are rated for 250Vac with multiple current ratings of 3 to 300A enabling the optimum attenuation to match the current rating. The series uses TDK's ferrite core material to provide noise attenuation. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware. The RSHN 3A to 30A models are UL certified for a short circuit current rating of up to 14kA, the 40, 50 and 60A 35kA with the appropriate breaker.

Features	Benefits
• 3 to 300A Current Ratings	• Optimizes the Attenuation for the Current Rating
• DIN Rail Mount Option	• Flexible Mounting
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified (up to 60A)	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)[1]	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)			Weight (g)
					Common mode at 25dB	Common mode at 10dB	Differential mode at 25dB	
RSHN-2003	3	14	1.0	350	0.1 to 10	-	0.2 to 30	190
RSHN-2006	6	14	1.0	140	0.1 to 10	-	0.2 to 30	240
RSHN-2010	10	14	1.0	60	0.1 to 30	-	0.3 to 30	240
RSHN-2016	16	14	1.0	35	0.2 to 30	-	0.3 to 30	350
RSHN-2020	20	14	1.0	22	0.2 to 30	-	0.4 to 30	350
RSHN-2030	30	14	1.0	12	0.3 to 30	-	0.6 to 30	350
RSHN-2040	40	35	1.0	10	0.2 to 30	-	0.1 to 30	1500
RSHN-2050	50	35	1.0	8	0.3 to 30	-	0.2 to 30	1400
RSHN-2060	60	35	1.0	6	0.3 to 30	-	0.3 to 30	1400
RSHN-2080	80	-	1.0	7	0.2 to 8	-	0.1 to 30	5500
RSHN-2100	100	-	1.0	6	0.2 to 8	-	0.1 to 30	6000
RSHN-2150	150	-	1.0	4	0.2 to 7	-	0.1 to 30	9000
RSHN-2200	200	-	1.0	3	0.4 to 7	-	0.1 to 30	13000
RSHN-2250	250	-	1.0	2	-	0.4 to 10	0.1 to 30	13000
RSHN-2300	300	-	1.0	1.5	-	1 to 7	0.1 to 30	13000

Model Selector

Model	Rated Current (A)	SCCR (kA)[1]	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		Weight (g)
					Common mode at 25dB	Common mode at 25dB	
RSHN-2003L	3	14	0.10	350	0.2 to 10	0.2 to 30	190
RSHN-2006L	6	14	0.10	140	0.2 to 10	0.2 to 30	240
RSHN-2010L	10	14	0.10	60	0.3 to 10	0.3 to 30	240
RSHN-2016L	16	14	0.10	35	0.3 to 30	0.3 to 30	350
RSHN-2020L	20	14	0.10	22	0.4 to 30	0.4 to 30	350
RSHN-2030L	30	14	0.10	12	0.6 to 30	0.6 to 30	350

Single phase 250Vac 6 to 30A EMC Filters

Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_rskn.html

The RSKN single-phase, wide band, two stage high attenuation EMC filters are enclosed in a low profile metal case and are rated for 250Vac. Four current ratings of 6 to 30A enables the optimum attenuation to match the current rating. The RSKN series uses a nano crystal core for enhanced performance. The connection terminals are integrated into the case and a terminal cover provided for safety protection to avoid lost hardware. The RSKN series is UL certified for a short circuit current rating of 5,000A with the appropriate breaker.

Features	Benefits
• Wide Band, High Attenuation	• Improved Performance
• 6 to 30A Current Ratings	• Optimizes the Attenuation for the Current Rating
• Integrated Terminal Block	• No Lost Hardware
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)	HV Pulse Protection	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)	
					Common mode at 30dB	Differential mode at 25dB
RSKN-2006	6	5	Y	300	0.2 to 30	0.4 to 30
RSKN-2010	10	5	Y	100	0.2 to 30	0.5 to 30
RSKN-2020	20	5	Y	20	0.3 to 30	0.4 to 30
RSKN-2030	30	5	Y	10	0.4 to 30	0.4 to 30

RSKN	-	2	06
Series Name		Rated Voltage 2 = 250Vac	Rated Current 006 = 6A 030 = 30A

Related Single Phase Filter Products

Type	Options								
	Current Raiting (A)	Series	Low Leakage	Faston on terminals	Wire leads	DIN Rail Mount	Fused	Discharge Resistor	Metal case
Board mount line filter, HV Pulse	0.5 - 6	RSAG							
Board mount line filter	0.5 - 6	RSEG							
General purpose with faston terminals	6	RSEC							
General purpose	0.5 - 6	RSEL	Y	Y	Y				Y
HV pulse protection	0.5 - 6	RSAL	Y	Y	Y				
Power Entry Module with line filter	3, 6, 10	RPE	Y				Y	Y	
Power Entry Module with line filter, HV Pulse	3, 6, 10	RPA	Y					Y	
Multipurpose	3 - 300	RSEN	Y (Up to 30A)			Y (Up to 30A)			
Multipurpose with HV pulse protection	3 - 60	RSAN	Y (Up to 30A)			Y (Up to 30A)			
High attenuation	3 - 300	RSHN	Y (Up to 30A)			Y (Up to 30A)			
High attenuation with pulse protection	3 - 300	RSMN	Y (Up to 30A)			Y (Up to 30A)			
Wide band, high attenuation	6 - 30	RSKN							

* Separate mounting bracket Click here for TDK-Lambda three phase filters

Single phase 250Vac 3 to 60A EMC Filters with DIN rail mount option

Medical Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_rsmn.html

The RSMN single-phase EMC filters are enclosed in a compact case and part numbers up to 30A can be either be chassis or DIN rail mounted with low leakage current options. They are rated for 250Vac with nine current ratings of 3 to 60A enabling the optimum attenuation to match the current rating. The series uses TDK's amorphous core materials in a two-stage configuration to provide excellent pulse and noise attenuation. Amorphous cores offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware. The RSMN 3A to 30A models are UL certified for a short circuit current rating of up to 14kA and the 40, 50 and 60A models 35kA with the appropriate breaker.

Features	Benefits
• 3 to 60A Current Ratings	• Optimizes the Attenuation for the Current Rating
• DIN Rail Mount Option	• Flexible Mounting
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)[1]	HV Pulse Protection	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		
						Common mode at 25dB	Common mode at 20dB	Differential mode at 25dB
RSMN-2003	3	14	Y	1.0	350	0.1 to 30	-	0.1 to 30
RSMN-2006	6	14	Y	1.0	140	-	0.1 to 30	0.2 to 30
RSMN-2010	10	14	Y	1.0	60	0.2 to 30	-	0.2 to 30
RSMN-2016	16	14	Y	1.0	35	0.2 to 30	-	0.3 to 30
RSMN-2020	20	14	Y	1.0	22	0.3 to 30	-	0.4 to 30
RSMN-2030	30	14	Y	1.0	12	0.4 to 20	-	0.6 to 30
RSMN-2040	40	35	Y	1.0	10	0.3 to 30	-	0.1 to 30
RSMN-2050	50	35	Y	1.0	8	0.4 to 30	-	0.3 to 30
RSMN-2060	60	35	Y	1.0	6	0.5 to 30	-	0.3 to 30

Model Selector

Model	Rated Current (A)	SCCR (kA)[1]	HV Pulse Protection	Leakage Current 250V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		
						Common mode at 25dB	Common mode at 10dB	Differential mode at 25dB
RSMN-2003L	3	14	Y	0.10	350	0.3 to 30	-	0.2 to 30
RSMN-2006L	6	14	Y	0.10	140	0.4 to 20	-	0.2 to 30
RSMN-2010L	10	14	Y	0.10	60	0.7 to 20	-	0.3 to 30
RSMN-2016L	16	14	Y	0.10	35	0.7 to 20	-	0.3 to 30
RSMN-2020L	20	14	Y	0.10	22	-	0.6 to 20	0.3 to 30
RSMN-2030L	30	14	Y	0.10	12	-	1 to 20	0.4 to 30

Three phase 500Vac 6 to 60A EMC Filters with DIN rail mount option

Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_rtan.html

The RTAN three-phase EMC filters are enclosed in compact cases and part numbers up to 30A have a DIN rail mount option. They are rated for 500Vac with seven current ratings of 6 to 60A enabling the optimum attenuation to match the current rating. The series uses TDK's amorphous core material to provide pulse and noise attenuation. Amorphous cores offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware. The RTAN 6A to 30A models are UL certified for a short circuit current rating of up to 14kA, the 40, 50 and 60A models 10kVA with the appropriate breaker.

Features	Benefits
• 6 to 60A Current Ratings	• Optimizes the Attenuation for the Current Rating
• Amorphous Core Technology	• Reduces High Voltage Pulse Core Saturation
• DIN Rail Mount Option	• Flexible Mounting
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)[1]	HV Pulse Protection	Leakage Current 500V/60Hz* (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)	
						Common mode at 25dB	Common mode at 25dB
RTAN-5006	6	14	Y	5.0	145	0.2 to 10	0.2 to 30
RTAN-5010	10	14	Y	5.0	60	0.3 to 10	0.2 to 30
RTAN-5020	20	14	Y	5.0	25	0.4 to 10	0.2 to 30
RTAN-5030	30	14	Y	5.0	13	0.6 to 10	0.3 to 30
RTAN-5040	40	10	Y	5.0	10	0.5 to 8	0.2 to 30
RTAN-5050	50	10	Y	5.0	7	0.6 to 10	0.3 to 30
RTAN-5060	60	10	Y	5.0	5	0.7 to 10	0.3 to 30

*2.5mA at 250V/60Hz

RTAN	-	5	006	D
Series Name		Rated Voltage 5 = 500Vac	Rated Current 006 = 6A 060 = 60A	DIN Rail Mount 6A to 30A models

Three phase 500Vac 6 to 300A Filters for Secondary Side Inverters

Industrial

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_rtcn.html

The RTCN three-phase filters are purpose designed for secondary side inverters and have a low profile package. They are rated for 500Vac with thirteen current ratings from 6 to 300A enabling the optimum attenuation to match the current rating. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware. The RTCN 6A to 150A models are UL certified for a short circuit current ratings of between 10kA and 35kA with the appropriate breaker. (See model selector).

Features	Benefits
• 6 to 300A Current Ratings	• Optimizes the Attenuation for the Current Rating
• Low Profile Package	• Space Saving for Cabinets
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)(1)	Leakage Current 500V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		Weight (g)
					Common mode at 10dB	Common mode at 5dB	
RTCN-5006	6	14	Not Applicable	145	0.1 to 5	-	300
RTCN-5010	10	14	Not Applicable	60	0.1 to 5	-	300
RTCN-5020	20	14	Not Applicable	25	0.1 to 5	-	490
RTCN-5030	30	14	Not Applicable	13	0.2 to 4	-	490
RTCN-5040	40	10	Not Applicable	10	0.2 to 3	-	960
RTCN-5050	50	10	Not Applicable	7	-	0.2 to 3	900
RTCN-5060	60	10	Not Applicable	5	-	0.2 to 3	900
RTCN-5080	80	35	Not Applicable	5	-	0.1 to 3	3600
RTCN-5100	100	35	Not Applicable	4	-	0.1 to 3	3900
RTCN-5150	150	10	Not Applicable	3	-	0.1 to 3	6200
RTCN-5200	200	-	Not Applicable	4	-	-	8900
RTCN-5250	250	-	Not Applicable	3	-	-	8400
RTCN-5300	300	-	Not Applicable	2	-	-	8000

RTCN	-	5	006
Series Name		Rated Voltage 5 = 500Vac	Rated Current 006 = 6A … 300 = 300A

Three phase 500Vac 6 to 300A EMC Filters with DIN rail mount option

Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_rten.html

The RTEN three-phase EMC filters are enclosed in compact cases and part numbers up to 30A have a DIN rail mount option. They are rated for 500Vac with multiple current ratings of 6 to 300A enabling the optimum attenuation to match the current rating. The series uses TDK's ferrite core material to provide noise attenuation. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware. The RTEN 6A to 30A models are UL certified for a short circuit current rating of up to 14kA, the 40, 50, 60A and 150A 10kA and 35kA for the 80 and 100A models the with the appropriate breaker.

Features	Benefits
• 6 to 300A Current Ratings	• Optimizes the Attenuation for the Current Rating
• Low Profile	• Space Saving for Cabinets
• DIN Rail Mount Option	• Flexible Mounting
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)(1)	Leakage Current 500V/60Hz* (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)			Weight (g)
					Common mode at 25dB	Common mode at 10dB	Differential mode at 25dB	
RTEN-5006	6	14	5.0	145	0.2 to 10	-	0.2 to 30	360
RTEN-5010	10	14	5.0	60	0.2 to 10	-	0.2 to 30	360
RTEN-5020	20	14	5.0	25	0.3 to 8	-	0.2 to 30	560
RTEN-5030	30	14	5.0	13	0.5 to 8	-	0.2 to 30	560
RTEN-5040	40	10	5.0	10	0.3 to 7	-	0.2 to 30	1100
RTEN-5050	50	10	5.0	7	0.5 to 7	-	0.2 to 30	1100
RTEN-5060	60	10	5.0	5	0.7 to 5	-	0.2 to 30	1100
RTEN-5080	80	35	5.0	5	0.3 to 5	-	0.2 to 5	3900
RTEN-5100	100	35	5.0	4	0.3 to 5	-	0.2 to 5	4200
RTEN-5150	150	10	5.0	3	0.3 to 5	-	0.2 to 5	6500
RTEN-5200	200	-	5.0	2	0.5 to 5	-	0.2 to 5	9200
RTEN-5250	250	-	5.0	1.5	-	0.5 to 10	0.2 to 5	8700
RTEN-5300	300	-	5.0	1	-	0.5 to 10	0.2 to 5	8300

*2.5mA at 250V/60Hz

RTEN	-	5	006	D
Series Name		Rated Voltage 5 = 500Vac	Rated Current 006 = 6A … 300 = 300A	DIN Rail Mount 6A to 30A models

RTHB Series

Three phase 500Vac 6 to 150A EMC Filters with high attenuation

Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_rthb.html

The RTHB three-phase EMC filters are enclosed in compact cases with a narrow package size. They are rated for 500Vac with multiple current ratings of 6 to 150A enabling the optimum attenuation to match the current rating. The series uses TDK's ferrite core material to provide high noise attenuation. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware. The RTHB models are UL certified for a short circuit current rating of up to 5kA with the appropriate breaker.

Features	Benefits
• 6 to 150A Current Ratings	• Optimizes the Attenuation for the Current Rating
• Narrow Profile	• Space Saving for Cabinets
• Two Stage Filter	• Greater Attentuation
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)[1]	Leakage Current 500V/60Hz* (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) Common mode at 25dB	Attenuation frequency range (MHz) Differential mode at 25dB	Weight (g)
RTHB-5006	6	5	5.0	290	0.1 to 30	0.1 to 30	750
RTHB-5010	10	5	5.0	120	0.1 to 20	0.2 to 30	780
RTHB-5020	20	5	5.0	50	0.1 to 20	0.2 to 30	1100
RTHB-5030	30	5	5.0	26	0.2 to 20	0.2 to 30	1100
RTHB-5040	40	5	5.0	20	0.2 to 20	0.1 to 30	2240
RTHB-5050	50	5	5.0	14	0.2 to 20	0.2 to 30	2240
RTHB-5060	60	5	5.0	10	0.2 to 20	0.2 to 10	2240
RTHB-5080	80	5	5.0	10	0.1 to 10	0.2 to 30	7700
RTHB-5100	100	5	5.0	8	0.1 to 10	0.2 to 30	8200
RTHB-5150	150	5	5.0	6	0.1 to 10	0.2 to 30	12500

*2.5mA at 250V/60Hz

RTHB	-	5	006
Series Name		Rated Voltage 5 = 500Vac	Rated Current 006 = 6A, 150 = 150A

RTHC Series

Three phase 500Vac 6 to 300A EMC Filters with high attenuation

Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_rthc.html

The RTHC three-phase EMC filters are enclosed in compact cubic case formats. They are rated for 500Vac with multiple current ratings of 6 to 300A enabling the optimum attenuation to match the current rating. The series uses TDK's ferrite core material to in a two stage configuration to provide excellent noise attenuation. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware.

Features	Benefits
• 6 to 300A Current Ratings	• Optimizes the Attenuation for the Wide Range Current Rating
• Cubic Profile	• Space Saving
• High Noise Attenuation	• Reduces EMI and Voltage Surge Levels
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)	Leakage Current 500V/60Hz (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz) Common mode at 25dB	Attenuation frequency range (MHz) Differential mode at 25dB	Weight (g)
RTHC-5006	6	5	5.0	290	0.1 to 10	0.2 to 30	800
RTHC-5010	10	5	5.0	120	0.1 to 10	0.2 to 30	820
RTHC-5020	20	5	5.0	50	0.1 to 10	0.2 to 30	1200
RTHC-5030	30	5	5.0	26	0.2 to 10	0.2 to 30	1200
RTHC-5040	40	5	5.0	20	0.2 to 10	0.2 to 30	2260
RTHC-5050	50	5	5.0	14	0.2 to 10	0.2 to 30	2260
RTHC-5060	60	5	5.0	10	0.2 to 10	0.2 to 30	2260
RTHC-5080	80	5	5.0	10	0.1 to 10	0.2 to 30	7400
RTHC-5100	100	5	5.0	8	0.1 to 10	0.2 to 30	7800
RTHC-5150	150	10	5.0	6	0.1 to 10	0.2 to 30	12000
RTHC-5200	200	10	5.0	4	0.3 to 10	0.2 to 30	16300
RTHC-5250	250	10	5.0	3	0.3 to 10	0.2 to 30	15600
RTHC-5300	300	10	5.0	2	0.5 to 6	0.2 to 30	14800

RTHC	-	5	006
Series Name		Rated Voltage 5 = 500Vac	Rated Current 006 = 6A, 060 = 60A

Three phase 500Vac 6 to 300A EMC Filters with high attenuation

Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_RTHN.html

The RTHN three-phase EMC filters are enclosed in low profile cases. They are rated for 500Vac with multiple current ratings of 6 to 300A enabling the optimum attenuation to match the current rating. The series uses TDK's ferrite core material in a two stage configuration to provide excellent noise attenuation. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware. The RTHN 6A to 30A models are UL certified for a short circuit current rating of up to 14kA, the 40A to 100A for 35kA and 10kA for the 150A models with the appropriate breaker.

Features	Benefits
• 6 to 300A Current Ratings	• Optimizes the Attenuation for the Current Rating
• Low Profile Case Sizes	• Space Saving for Cabinets
• Two Stage, High Attenuation	• Lower Noise
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)(1)	Leakage Current 500V/60Hz* (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		
					Common mode at 25dB	Differential mode at 25dB	Weight (g)
RTHN-5006	6	14	5.0	290	0.1 to 10	0.2 to 30	700
RTHN-5010	10	14	5.0	120	0.1 to 10	0.2 to 30	700
RTHN-5020	20	14	5.0	50	0.1 to 10	0.2 to 30	1000
RTHN-5030	30	14	5.0	26	0.2 to 10	0.2 to 30	1000
RTHN-5040	40	35	5.0	20	0.2 to 10	0.2 to 30	2100
RTHN-5050	50	35	5.0	14	0.2 to 10	0.2 to 30	2000
RTHN-5060	60	35	5.0	10	0.2 to 10	0.2 to 30	2000
RTHN-5080	80	35	5.0	10	0.1 to 10	0.2 to 30	7000
RTHN-5100	100	35	5.0	8	0.1 to 10	0.2 to 30	7500
RTHN-5150	150	10	5.0	6	0.1 to 10	0.2 to 30	11600
RTHN-5200	200	-	5.0	4	0.3 to 10	0.2 to 30	15800
RTHN-5250	250	-	5.0	3	0.3 to 10	0.2 to 30	15000
RTHN-5300	300	-	5.0	2	0.5 to 6	0.2 to 30	14300

*2.5mA at 250V/60Hz

RTHN	-	5	006
Series Name		Rated Voltage 5 = 500Vac	Rated Current 006 = 6A 300 = 300A

Three phase 500Vac 6 to 60A EMC Filters with high attenuation and surge protection

Industrial Test LED COMM Broadcast

Full Datasheet
https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_rtmn.html

The RTMN three-phase EMC filters are enclosed in compact cases with a low profile package size. They are rated for 500Vac with multiple current ratings of 6 to 60A enabling the optimum attenuation to match the current rating. The series uses TDK's amorphous core materials in a two-stage configuration to provide excellent pulse and noise attenuation. Amorphous cores offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware. The RTMN 6A to 30A models are UL certified for a short circuit current rating of 14kA and 35kA for the 40 to 60A models with the appropriate breaker.

Features	Benefits
• 6 to 60A Current Ratings	• Optimizes the Attenuation for the Current Rating
• Low Profile	• Space Saving for Cabinets
• High Noise and Pulse Attenuation	• Reduces EMI and Voltage Surge Levels
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	SCCR (kA)(1)	HV Pulse Protection	Leakage Current 500V/60Hz* (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		
						Common mode at 25dB	Differential mode at 25dB	Weight (g)
RTMN-5006	6	14	Y	5.0	290	0.1 to 20	0.1 to 30	670
RTMN-5010	10	14	Y	5.0	120	0.1 to 20	0.2 to 30	700
RTMN-5020	20	14	Y	5.0	50	0.2 to 20	0.2 to 30	1000
RTMN-5030	30	14	Y	5.0	26	0.2 to 20	0.3 to 30	1000
RTMN-5040	40	35	Y	5.0	20	0.2 to 20	0.1 to 30	2050
RTMN-5050	50	35	Y	5.0	14	0.3 to 20	0.2 to 30	2050
RTMN-5060	60	35	Y	5.0	10	0.3 to 20	0.3 to 10	2050

*2.5mA at 250V/60Hz

RTMN	-	5	006
Series Name		Rated Voltage 5 = 500Vac	Rated Current 006 = 6A 060 = 60A

10A 75VDC Board Mount EMI Filter

Industrial | Test | LED | COMM | Broadcast

Full Datasheet
https://product.tdk.com/en/power/idq

The board mount iDQ filter modules are designed to reduce emissions from high frequency DC-DC converters. The high on-board capacitance minimizes the need for additional external components and provides exceptional differential mode filtering. The iDQ filter is rated at 75Vdc, 10A and will operate at full current with natural convection or forced air cooling in ambient temperatures between -40 to +85°C. Differential mode attenuation at 300kHz is 63dB with a 50Ω source & load impedance. The package size is just 50mm long, 15mm wide and 10.8mm high. The filters have 1500Vdc input/output to ground isolation, allowing them to be used with either positive or negative grounded systems. A pin is provided to connect additional capacitance to increase common mode attenuation.

Features	Benefits
• Rated at 75Vdc	• Can be used with 24V or 48V Nominal Inputs
• High On-board Capacitance	• Greater Noise Reduction
• Compact Size	• Less Board Space Used
• Pin for Additional Capacitance	• Easy to Increase Common Mode Attenuation

Model Selector

Model	Rated Current (A)	Maximum DC Resistance (mΩ)	Differential Mode Attenuation at 300 kHz	Common Mode Attenuation at 300MHz
iDQ48010A480V-002-R	10	Positive leg 11.5 Negative leg 6.5	63dB	36dB

Part Numbering Scheme

iDQ480	10A	480V	002-R
Series Name	10A rated	Nominal Voltage 480V = 48Vdc	Option Code

Specification

Model		
Input		
Rated Voltage	Vdc	75 maximum
Safety Certifications and Markings	-	CE, UKCA Mark
Environmental		
Operating Temperature	°C	-40 to 120 (see detailed specification)
Storage Temperature	°C	-55 to 125
Cooling	-	Convection
Withstand Voltage	Vdc	1,500 input ground to other terminals
Other		
Weight (Typ)	g	11.3
Size (LxWxH)	mm	50 x 15 x 10.8
Size (LxWxH)	Inches	1.97 x 0.59 x 0.43
Connections	Pins	
MTBF Telcordia SR332 (40°C)	Hours	40,000,000
Warranty	Years	5

*Notes
See website for detailed specifications

MIL-COTS 20A, 40Vdc Passive EMC Filters

COTS

Full Datasheet
https://product.tdk.com/en/power/fqa

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

Features	Benefits
• Filtering for Compliance to MIL-STD-461G	• Simplifies the system EMC filter
• Input Spike suppression per MIL-STD-1275D and RTCA/DO-160G	• Suitable for vehicle and airborne use
• High Differential and Common Mode Noise Attenuation	• Reduces system EMI
• -55 to 115°C Temperature Range (M-Grade)	• For operation in harsh environments
• Standard (S-Grade) or Enhanced Screening (M-Grade) Options	• Reduces cost for COTS applications
• Quarter Brick Size	• Industry standard mounting and heatsinks

Model Selector

Model	Input Voltage (Vdc)	Maximum Current (A)	Flanged Baseplate	Non-Flanged Baseplate	Standard Screening (-S)	Enhanced Screening (-M)
FQA020ADC-007-S	-40 to +40	20	X		X	
FQA020ADC-N07-S	-40 to +40	20		X	X	
FQA020ADC-007-M	-40 to +40	20	X			X
FQA020ADC-N07-M	-40 to +40	20		X		X

Screening Options

Operation	S-Grade (Standard Screening)	M-Grade (Enhanced Screening)
Functional Test	Room and Hot Test	Cold, Room, and Hot Test
Burn in	Yes	Extended, 96 hour
Temperature Cycling	No	10 Cycles
Hi-Pot	2250VDC	2250VDC
Visual Inspection	Yes	Yes

Evaluation Kit

Type	Part Number	Description
Evaluation Kit	FQX-HQA-EVK-D0	Evaluation board for FQA or FQB filter plus two (2) HQA DC-DC quarter brick modules. Fitler and DC-DC modules are not included.

MIL-COTS 20A, 40Vdc Active EMC Filters

COTS

Full Datasheet
http://product.tdk.com/en/power/fqb

The FQB filter modules have been designed to reduce differential and common mode conducted emissions from dc-dc switching converters. In addition, the series contains active suppression circuitry to block input voltage surges and transients. The FQB takes advantage of TDK technologies to simplify 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 modules suitable for use in a wide variety of harsh and demanding environments, including MIL-COTS.

Features	Benefits
• Filtering for Compliance to MIL-STD-461(F,G)	• Simplifies the system EMC filter
• Input Spike and Surge Suppression per MIL-STD-1275(D,E), MIL-STD-704(A-F) and RTCA/DO-160G (Sec 16-18)	• Suitable for vehicle and airborne use
• High Differential and Common Mode Noise Attenuation	• Reduces system EMI
• -55 to 115°C Temperature Range (M-Grade)	• For operation in harsh environments
• Standard (S-Grade) or Enhanced Screening (M-Grade) Options	• Reduces cost for COTS applications
• Quarter Brick Size	• Industry standard mounting and heatsinks

Model Selector

Model	Operating Input Voltage (Vdc)	Maximum Current (A)	Flanged Baseplate	Non-Flanged Baseplate	Standard Screening (-S)	Enhanced Screening (-M)
FQB020ADC-007-S	8.5 to 40	20	X		X	
FQB020ADC-N07-S	8.5 to 40	20		X	X	
FQB020ADC-007-M	8.5 to 40	20	X			X
FQB020ADC-N07-M	8.5 to 40	20		X		X

Screening Options

Operation	S-Grade (Standard Screening)	M-Grade (Enhanced Screening)
Functional Test	Room and Hot Test	Cold, Room, and Hot Test
Burn in	Yes	Extended, 96 hour
Temperature Cycling	No	10 Cycles
Hi-Pot	2250VDC	2250VDC
Visual Inspection	Yes	Yes

Related Products

Evaluation Kit	FQX-HQA-EVK-D0	Evaluation board for FQA or FQB filter plus two (2) HQA DC-DC quarter brick modules. Filter and DC-DC modules are not included.
Filter Module	FQA	MIL-COTS 20A, 40 V Passive EMC Filter
Filter Module	RGF	80V, 20A or 40A Differential Mode Filter Module
Isolated DC-DC Converter	HQA120	120W MIL-COTS, Input 9-40V, Isolated Quarter Brick with M-Grade screening available
Isolated DC-DC Converter	HQA85	85W MIL-COTS, Input 9-40V, Isolated Quarter Brick
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Ruggedized DC-DC Buck Converter	RGA	250W, 9-40V or 9-53V Input, 3.3V up to 40V Output
Ruggedized DC-DC Buck Converter	RGB	400-750W, 9 up to 60V Inpuit, 0.8V up to 32V Output
Ruggedized DC-DC Buck-Boost Converter	RGC	300W, 9-53V Input, 9.6 up to 48V Output

20A and 40A, 80VDC Input Board Mount EMC Filters

Industrial COTS Test COMM Broadcast Robotics

Full Datasheet
https://product.tdk.com/en/power/rgf

RGF filter modules are designed to help reduce differential mode conducted emissions in switching power supplies with high input current requirements. Leveraging advanced TDK component technology, these modules streamline system-level compliance to CISPR and other compliance standards. Encapsulated for protection in harsh environments, RGF filter modules feature a robust 5-sided metal case. This design includes two threaded and two non-threaded mounting holes, ensuring easy installation and enhanced cooling in both conduction and convection-cooled systems. Additionally, the RGF filter modules pair exceptionally well with TDK-Lambda's industrial non-isolated DC-DC converters, enhancing overall system performance and compatibility.

Features	Benefits
• Exceptional differential mode filtering	• Simplifies end-system compliance
• Encapsulated in 5-sided metal case	• Suitable for harsh environment
• Low Power Loss	• Improves system-level efficiency and eases thermal management
• Compact 2 x 1 inch package	• Saves space and offers flexible deployment

Model Selector

Model	Input Voltage (V)	Maximum Current (A)	Resistance, Positive Leg (typical, mΩ)	Resistance, Negative Leg (typical, mΩ)	Differential Mode Attenuation @ 300 kHz (dB)
RGF48020A-001	0 - 80V	20	5.4	0.7	45
RGF48040A-001	0 - 80V	40	2.3	0.7	40

Related Products

Type	Part Number(s)	Size (mm) / Description
MIL-COTS Active Filter Module	FQB	MIL-COTS 20A, 40V Active EMC Filter
MIL-COTS Passive Filter Module	FQA	MIL-COTS 20A, 40V Passive EMC Filter
Filter Module	iDQ	10A, 75V EMC Filter
Ruggedized DC-DC Buck Converter	RGA	250W, Input 9-40V and Output 3.3-24V or, 9-53V Input and 3.3V up to 40V Output
Ruggedized DC-DC Buck Converter	RGB	400-750W, Input 9-18V, 18-32V, 18-60V; Output 0.8-8V 60A, 3.3-18V 45A, 3.3-24V 33A
Ruggedized DC-DC Buck-Boost Converter	RGC	300W, Input 9-53V, Output 9.6-48V 8A or 5-28V 12.5A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
DC-DC Buck Converter	i7A	400-750W, Input 9-18V, 18-32V, 18-60V, 28-60V; Output 0.8-8V 60A, 3.3-18V 45A, 3.3-24V 33A, 3.3-32V 20A
DC-DC Buck Converter	i6A4W	250W, Input 9 -53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck-Boost Converter	i1C	200W, Input 9-36V or 18-75V, Output 9.6-28V, 10A max

RDEN Series

48Vdc 50A EMC Filter

Industrial | Test | LED | COMM | Broadcast

Full Datasheet
https://product.tdk.com/en/search/emc/emc/power-line/info?part_no=RDEN-048050

The cost effective RDEN EMC filter is enclosed in a compact, low profile metal case and is rated at up to 76Vdc at 50A. The filter uses TDK's ferrite core material to provide high noise attenuation over a wide frequency range. Major applications for the filter are ITE (Information Technology Equipment) and telecommunications. Terminations are made via the product's large studs for easy connection. The filter is certified to EN60939 -1/-2.

Features	Benefits
• Wide Frequency Range	• Assists Compliance to Common Standards
• High Noise Attenuation	• Greater Noise Reduction
• Large Termination Studs	• Easier Connection
• Low Profile	• Space Saving in Cabinets

Model Selector

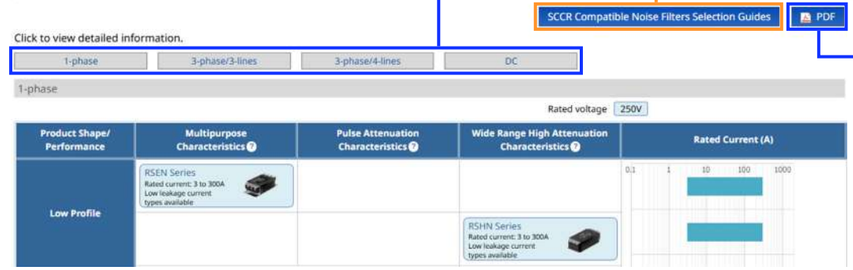
Model	Rated Current (A)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)	
			Common mode at 30dB	Differential mode at 25dB
RDEN-048050	50	3	0.2 to 10	0.7 to 30

RDEN	-	048	050
Series Name		Rated Voltage 048 = 48Vdc	Rated Current 050 = 50A

Noise Filters — Selector Guides and Tech. Data

Selector Guide by Input Type (1-phase, 3-phase, DC)

Selection Guide | Power Line EMC Filters | TDK Product Center



Select by Input Type

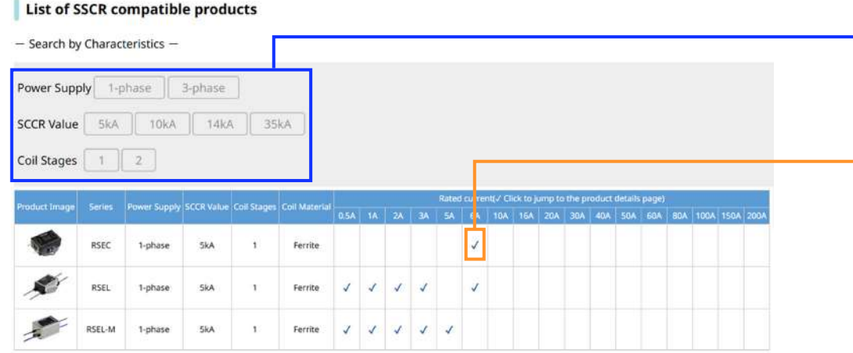
Select by SCCR Compatibility

Download Guide as PDF

- Basic Contact Info. Needed
- Name, E-mail, Company and Country

Selector Guide by SCCR (Short Circuit Current Rating)

Selection Guides | SCCR Compatible Noise Filters | TDK



Search by Characteristics

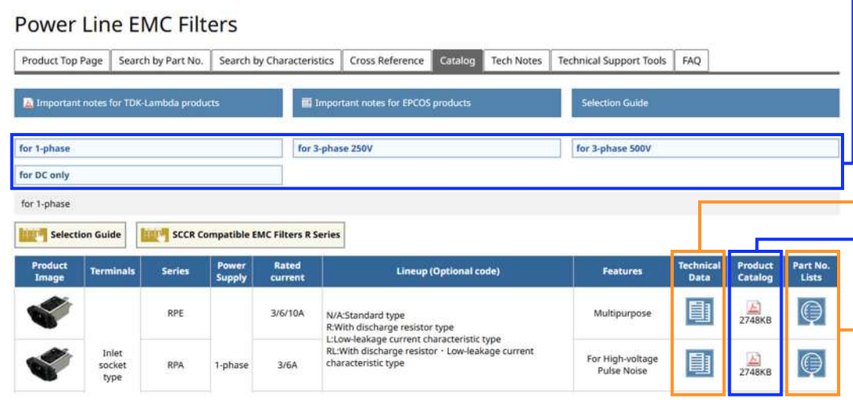
- Input Type, SCCR Value and Stages

Links to Additional Info

- Parts list for different models
- Product webpages with detailed info:
  - Specifications
  - Drawings (2D/3D)
  - Reliability Data
  - Safety Certificates
  - And more

TDK Catalog Page for Technical Data (Specs and drawings)

Catalog | EMC Components - Power Line EMC Filters | TDK Product Center



Select by Input Type

Technical Data

- Specifications
- Drawings (2D/3D)
- Reliability Data
- Instruction Manuals
- Safety Certificates

Links to Datasheet

List of All Models

Power+ Solutions

Features

- Technical draft
- Field-proven technology from our standard products
- Careful component selection
- Design Verification Test (DVT)
- Approvals (Safety, EMC, Environment and etc…)

TDK
In Everything, Better

Power +

What if a standard power supply does not meet your requirements?

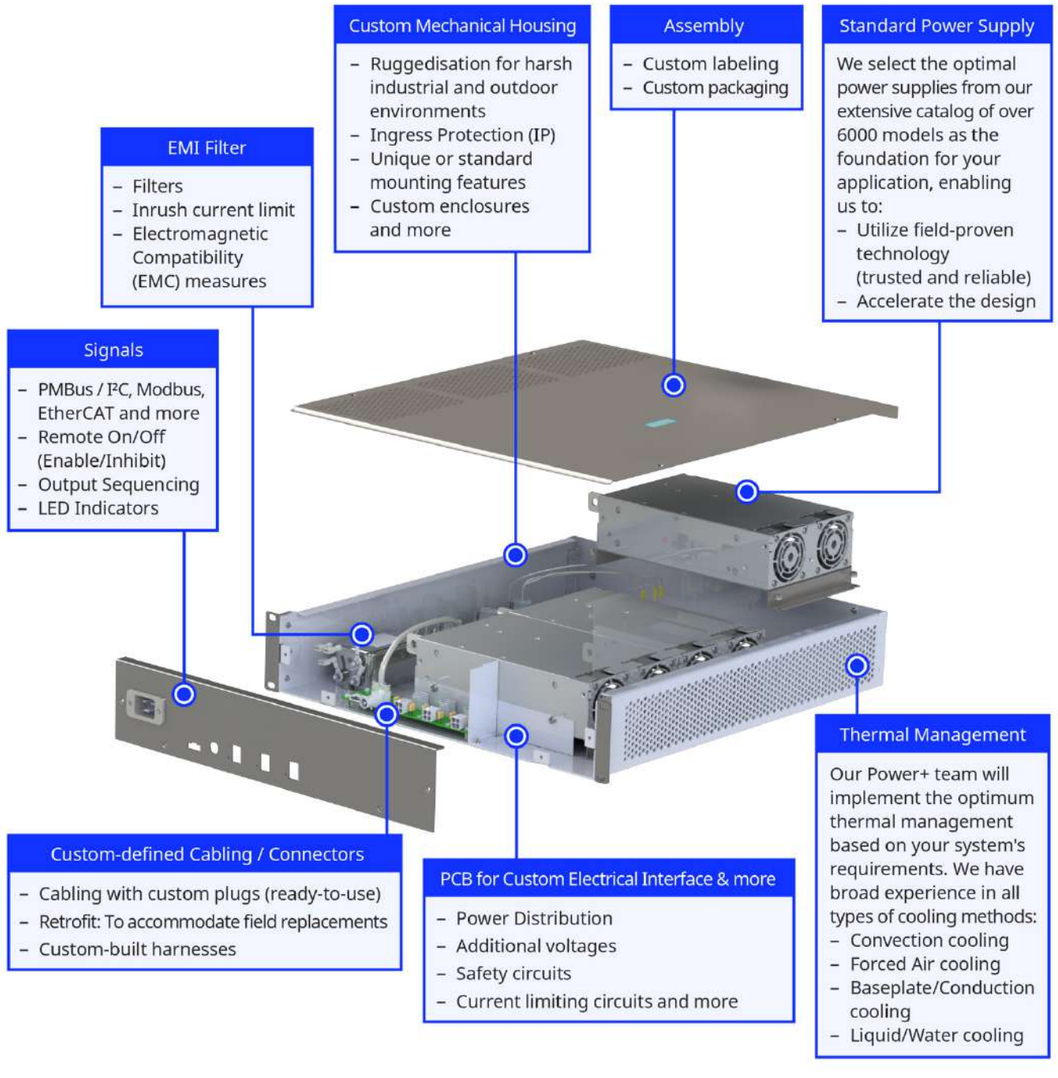
Explore TDK-Lambda's **Power+** program to support your requirements.

As a leading global supplier of standard and configurable power products for over 60 years, TDK-Lambda can capitalize on our extensive Advanced Technology research and over 700 patents to provide innovative leading edge power solutions with high power density, high efficiency and digital control.

https://www.us.lambda.tdk.com/products/value-add/

See what Power+ can do for you

(Innovation + Solutions + Support) x Reliability = Lowest Cost of Ownership



TDK
In Everything, Better

Power+

Even if a standard power supply can meet your requirements, Power+ is still important, but why?

Most power supplies are installed in a sub-assembly within your system that contains:

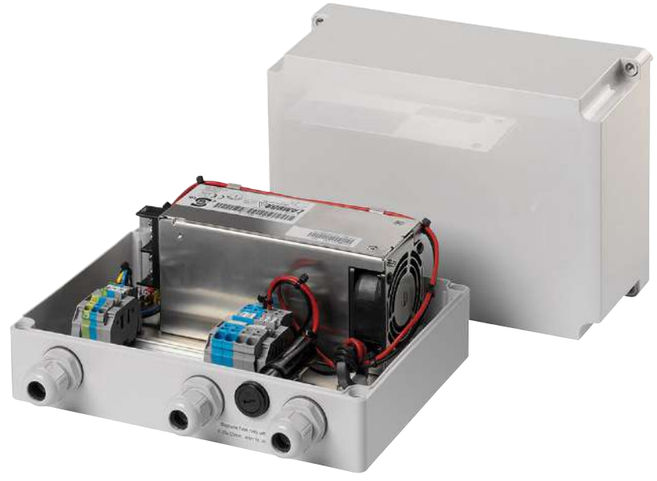
- Harnesses for the power supply's input, output and signals
- Customized mounting brackets or enclosures (with or without circuit breakers)
- EMC/EMI filter(s)

These sub-assemblies create additional overhead:

- Having more parts to manage in purchasing, part obsolescence and environmental compliance
- Additional time and labor needed to design and build the sub-assembly before integrating into end-system

Power+ enables TDK-Lambda to be your **Partner** in removing this additional overhead and **reducing the overall cost** of your system by manufacturing this sub-assembly for power and shipping a **turnkey** solution to **streamline** your production.

As an **extension** of your **Engineering team**, we can also help to **design** this sub-assembly based on your system's **unique requirements**.



This system needed an IP54 enclosure built around our power solution, the HWS300. This enclosure also protects the operating personnel and additionally matched specific functional requirements in a harsh environment with wide operating temperate range.

Project Management

Empowered with TDK-Lambda, the leader in developing Advanced Technologies.

Our engineering team is an extension of your engineering team.

Technical Proposal

- Detailed proposal to support your requirements
- SPICE circuit simulation

Design Verification Testing

- Electrical performance for all operating conditions
- Thermal characteristics for all operating conditions
- EMC compliance verified in-house
- Immunity – surge, burst, ESD, ring wave
- Mechanical stability with vibration, shock resistance
- Highly Accelerated Life Test (HALT)
- Ingress protection (IP) testing

Field–Proven Standard Technology

- Resonant and Multi-Resonant
- Synchronous Rectifier
- Digital Control and Monitoring
- High Efficiency and Low Audible Noise

Safety Approvals

- Certified in-house lab for safety testing
- IECEE SMT program under UL for IEC/EN62368-1, IEC/EN60601-1, IEC/EN61010-1 and CB
- CTDP (Client Test Data Program) for UL/CSA62368-1, UL/CSA60601-1, UL/CSA61010-1
- Other certifications on request

Component Selection

- Optimized cost with standard components
- In-house lab for component evaluation
- Rigid component Approved Vendor List (AVL) selection and management process
- RoHS/REACH certification labs

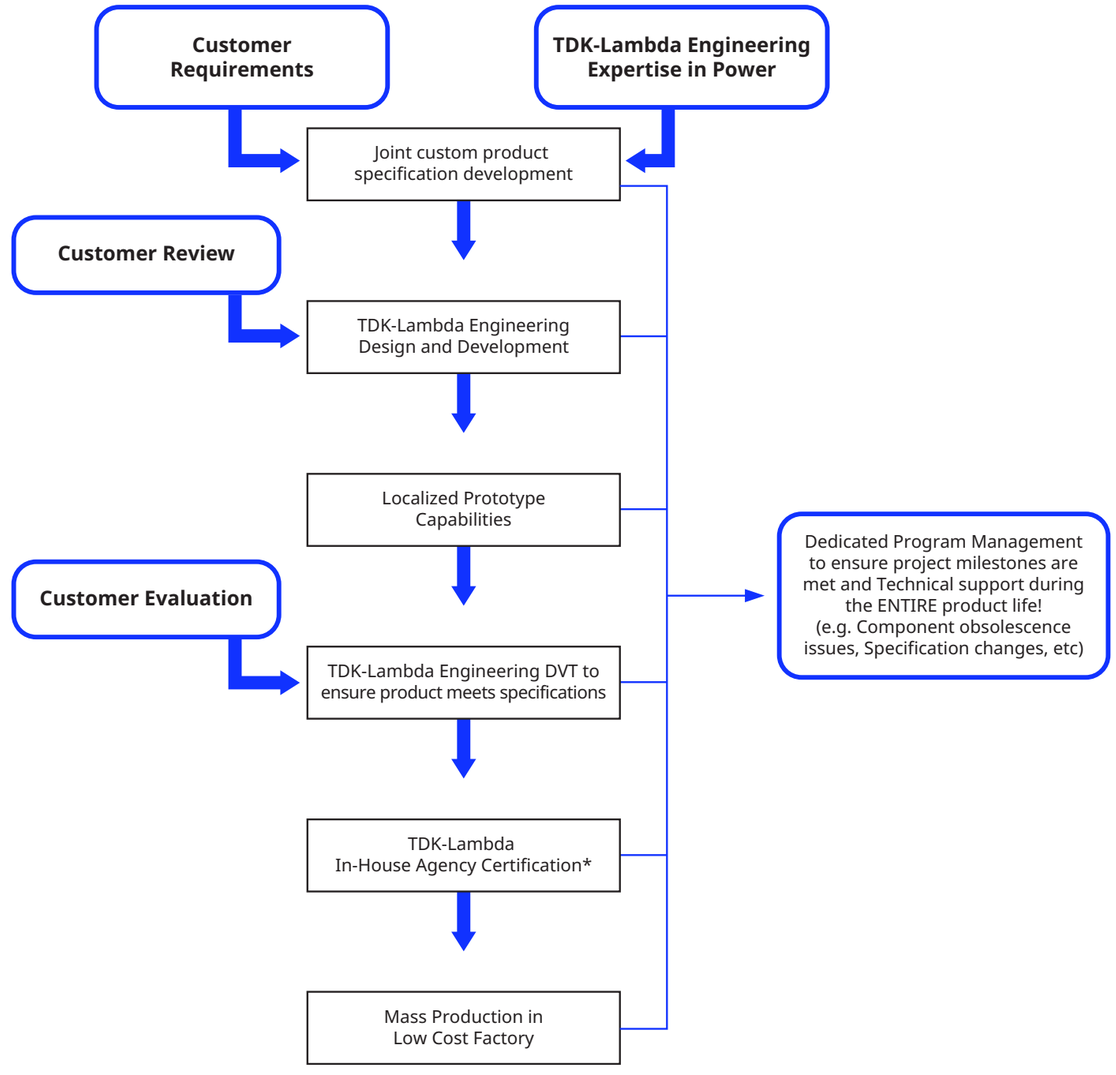
Special Requirements

- Production Part Approval Process (PPAP)
- Medical Part Approval Process (MPAP)
- Copy Exact
- Special Packaging
- Special Labeling/Barcoding
- First Article Inspection

EMC: Electromagnetic Compatibility
ESD: Electrostatic Discharge

SMT: Supervised Manufacturer's Testing
CTDP: Client Test Data Program
IECEE: International Electrotechnical Commission for Electrical Equipment

Process Flow

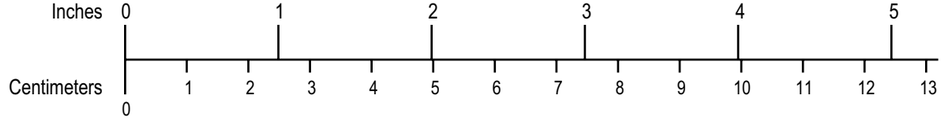


* For Modified Standard Products. New designs will be tested by external agencies.

Conversion Factors and Equations

English & Metric Conversions			
English to Metric	Multiply English Unit by:	Metric to English	Multiply Metric Unit by:
inch to millimeter (mm)	25.4	millimeter (mm) to inch	0.03937
inch to centimeter (cm)	2.54	centimeter (cm) to inch	0.3937
foot to meter (m)	0.3048	Meter (m) to foot (ft)	3.2808
ounce (oz) to gram (gm)	28.35	gram (gm) to ounce (oz)	0.0353
pound (lb) to kilogram (kg)	0.45	kilogram (kg) to pound (lb)	2.2

Inches to Centimeters (cm) Conversion



Air Flow Conversions

1m/s (meters per second)= 3.28 feet per second = 196.85 LFM (linear feet per minute)

Weight Conversions

453.6 grams = 16 ounces = 1 pound

Rack Height Units

1U = 1.75 inch = 44.45mm

2U = 3.50 inch = 88.90mm

Fahrenheit - Celsius Temperature Conversions

$°C = \frac{°F - 32°}{1.8}$ $°F = (1.8 \times °C) + 32°$

Conversion Formulas

°F	-40°	-22°	-4°	14°	32°	50°	68°	86°	104°	122°	140°	158°	176°	194°	212°
°C	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°

DC Circuit Equations

$V = IR$ $I = \frac{V}{R}$ $R = \frac{V}{I}$ $P = IV$ $P = \frac{V^2}{R}$ $P = I^2R$

V = Voltage (in volts)
I = Current (in amperes)
R = Resistance (in ohms)
P = Power (in watts)

Global Facilities

Neptune (USA)
Manufacturing and R&D
Programmable and High Voltage Power Supplies

Ilfracombe Plant (U.K.)
Manufacturing and R&D
Modular (Vega, Alpha, NV) & DC-DC power supplies

Nagaoka (Japan)
Manufacturing & R&D
AC-DC, DC-DC & custom power supplies

Senai Plant (Malaysia)
Manufacturing
AC-DC, DC-DC power modules & custom products

Wuxi Plant (China)
Manufacturing and R&D
AC-DC Converters, filters & custom products

Kuantan Plant (Malaysia)
Manufacturing
AC-DC Converters & custom products

Karmiel Plant (Israel)
Manufacturing & R&D
AC-DC & programable products

[Cick here to learn more about our manufacturing locations.]

Design Tools / Product Collaterals

Written by Engineers, for Engineers. Find the part you need and get to market faster!
Download our Brochures at https://www.us.lambda.tdk.com/resources/catalogs/

Power Plus

Healthcare Products

Convection/Conduction Cooled Products

EMI Filters

DIN Rail

Configurable

CUS-M Series

Board Mount

Building the Specification

Let TDK-Lambda help you specify your custom power supply requirements.

Attach your specifications to our Sales Support form at the link below or provide it to your local sales representative for TDK-Lambda. https://www.us.lambda.tdk.com/contact/#support

Request for Modified Standard

TDK-Lambda Model(s):

Modification Request: (Custom harnesses and connectors, output voltage adjustments, etc.)

Additional Comments:

Commercial
Est. Annual Usage:
Target Price:

Schedule
Prototypes Due:
Mass Prod. Date:

Request for Power+ Solutions

AC-DC or DC-DC:
Single-Phase or 3-Phase:

Electrical
# of Inputs:
Input Voltage(s):
# of Outputs:
Output Requirement(s): (DC Volts/Amps)

#1	#2	#3	#4	#5	#6

Total Output Power:
Conducted/Radiated EMI:
Immunity:

Safety Approvals
UL/CSA/IEC/EN60601-1:
UL/CSA/IEC/EN61010-1:
UL/CSA/IEC/EN62368-1:
CE Mark / UKCA Mark:
Other:

TDK-Lambda Model(s): (if applicable)

Additional Comments:

Mechanical
Dimensions:
Shock/Vibration:
Form Factor: (Enclosed, PCB Mount, Open-Frame, DIN Rail, Rack Mount)
Other (please specify):
Cooling: (Fan, Convection, Conduction, Liquid)
Other (please specify):

Commercial
Est. Annual Usage:
Target Price:

Schedule
Prototypes Due:
Mass Production Date:

Contact Us

Our team of experts will be happy to help you find the best power supply for your application.

TDK-Lambda France SAS
Tel: +33 1 60 12 71 65
tlf.fr-powersolutions@tdk.com
www.emea.lambda.tdk.com/fr

TDK-Lambda Americas
Tel: +1 800-LAMBDA-4 or 1-800-526-2324
tla.powersolutions@tdk.com
www.us.lambda.tdk.com

Italy Sales Office
Tel +39 02 61 29 38 63
tlf.it-powersolutions@tdk.com
www.emea.lambda.tdk.com/it

TDK Electronics do Brasil Ltda
Tel: +55 11 3289-9599
sales.br@tdk-electronics.tdk.com
www.tdk-electronics.tdk.com/en

Netherlands
tlf.nl-powersolutions@tdk.com
www.emea.lambda.tdk.com/nl

TDK-Lambda Corporation
Tel: +81-3-6778-1113
www.jp.lambda.tdk.com

TDK-Lambda Europe GmbH
Tel: +49 7841 666 0
tlg.powersolutions@tdk.com
www.emea.lambda.tdk.com/de

TDK-Lambda (China) Electronics Co. Ltd.
Tel: +86 21 6485-0777
tlc.powersolutions@tdk.com
www.lambda.tdk.com.cn

Austria Sales Office
Tel: +43 2256 655 84
tlg.at-powersolutions@tdk.com
www.emea.lambda.tdk.com/at

TDK-Lambda Singapore Pte Ltd.
Tel: +65 6251 7211
tls.marketing@tdk.com
www.sg.lambda.tdk.com

Switzerland Sales Office
Tel: +41 44 850 53 53
tlg.ch-powersolutions@tdk.com
www.emea.lambda.tdk.com/ch

TDK India Private Limited, Power Supply Division
Tel: +91 80 4039-0660
mathew.philip@tdk.com
www.sg.lambda.tdk.com

TDK-Lambda Europe GmbH
Tel: Tel. +45 3222 8086
tlg.dk-powersolutions@tdk.com
www.emea.lambda.tdk.com/dk

TDK-Lambda UK Ltd.
Tel: +44 (0) 12 71 85 66 66
tlu.powersolutions@tdk.com
www.emea.lambda.tdk.com/uk

TDK-Lambda Ltd.
Tel: +9 723 902 4333
tli.powersolutions@tdk.com
www.emea.lambda.tdk.com/il-en

For Additional Information, please visit
https://product.tdk.com/en/power/

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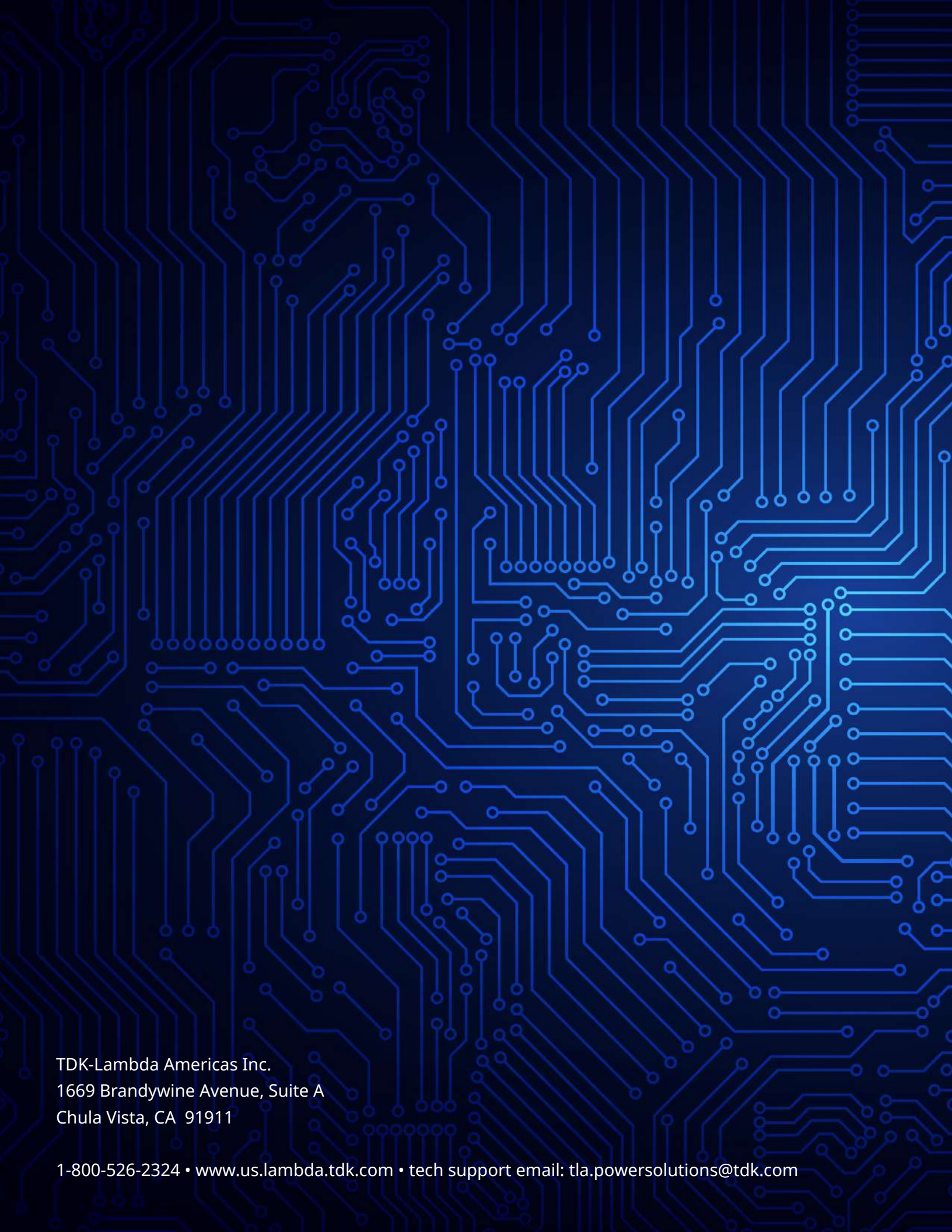

TDK-Lambda Americas Inc.
1669 Brandywine Avenue, Suite A
Chula Vista, CA 91911

1-800-526-2324 • www.us.lambda.tdk.com • tech support email: tla.powersolutions@tdk.com