



102A Series Data Sheet
High Voltage Power Supply
Capacitor Charging and DC
Output Voltage from 1kV - 40kV
Output Power 1kJ/sec or 1kW
Comprehensive remote control
Compact OEM Design



TDK-Lambda

www.us.tdk-lambda.com/hp

102A Series Specification

High Performance, cost effective, reliable, OEM style capacitor charging and DC power supply with average power rating of 1kJ/sec or 1kW DC.

- Power rating of 1kJ/sec, 1.1kJ/sec peak
- 1kW in continuous DC operation
- Output Voltages from 0-1kV to 0-40kV
- Compact air cooled OEM style package
- Medical safety approvals (EN60601-1)
- Patented parallel resonant inverter
- Excellent pulse to pulse repeatability
- Selectable 110 or 230VAC 1Ø input voltage⁽²⁾
- Reliable, cost effective design with reduced parts count
- Optional Active PFC (pf = 0.98)
- Full remote control interface
- Simple parallel operation for higher power

Average Capacitor Charging Power	1,000 Joules/sec ($\frac{1}{2}CV^2 \times \text{Rep Rate}$)
Peak Capacitor Charging Power	1,100 Joules/sec ($\frac{1}{2}CV^2/t_{\text{charge}}$)
Average Continuous DC Power	1,000 Watts
Output Voltage Range	1, 1.5, 2, 3, 4, 5, 6, 10, 15, 20, 30, 40kV, variable from 10-100% of rated
Polarity	Available as fixed Positive or Negative. Please specify at time of ordering
HV Output	1-6kV Models - Air Insulated with RG58/U Coaxial cable and MHV connector 7-40kV Models - Oil Insulated with DS2024 Silicone lead & proprietary HV connector
AC Input Voltage	110VAC (90-140) or 230VAC (180-254), 50-60Hz 1Ø, selectable on input terminal block
AC Input Current - non PFC ⁽¹⁾	20A/10A without Active PFC
AC Input Current - Active PFC ^(1,2)	6.6A with optional Active Electronic PFC
AC Connector	UL/CSA approved terminal block. User selectable position for 110 or 230VAC input
Power Factor	Non PFC pf = 0.65, Optional Active PFC - 0.98 at full load and nominal AC line
Efficiency	Better than 85% at full load
Stability	±0.2% per hour after 1 hour warmup
Temperature Coefficient	100ppm per °C typical
Stored Energy	Less than 0.3J all models
Pulse to Pulse Repeatability	±0.2% to 300Hz, consult factory for higher rep rates
Dimensions - inches (mm)	5.75 (146) W x 5.56 (141) H x 14.2 (361) D
Weight - lbs (kg) - 1-6kV Models	Non PFC - 8 (3.6), with optional PFC - 10 (4.5)
10-40kV Models	Non PFC - 12 (5.5), with optional PFC - 14 (6.5)
Ambient Temperature	Storage: -40 to +85°C. Operating: -20 to +45°C
Altitude	Storage: 40,000ft (12,000m), Operating: 9,900ft (3,000m)
Humidity	10-90%, non-condensing
Protection	Open/short circuits, Overloads, Arcs, Overtemp, Overvoltage
Agency Approvals	TUV Certified to EN60601-1, IEC60601-1
Remote Control (all models)	Via 15-pin D-sub connector on rear of unit, Signals include, Vprogram (0-10V), HV Enable/Reset, Inhibit, Summary Fault, Load Fault, Vanalog, Vpeak
Accessories	Mating HV cable, control connector, operating manual, mounting brackets
Options	PFC - Active Electronic PFC LH - Low Inhibit. Replaces standard high Inhibit EN - Low Enable. Replaces standard high enable 5V - 0-5V Analog programming. Replaces standard 0-10V programming LP - Latching Overload Protection, requires HV reset after overload fault DC - Continuous DC operation
Ordering Info	Model - XXkV - POS (or NEG) - PFC (blank for non PFC) - YY (options)
Ordering Examples	102A-10kV-POS, 102A-40kV-POS-PFC-LH, 102A-1kV-POS-PFC-DC

(1) Input current figure valid for repetition rates greater than 10Hz. For operation below 10Hz contact factory.

(2) 220VAC Input voltage only available with Active PFC option.

All specifications subject to change without notice

102A Mechanical Details

Front View

All Models



- 1 - Cooling Fan (Air exits this end)
- 2 - AC Input Connector
- 3 - 15pin D-sub Female Control Connector

Rear Views

Outputs Voltages from 1-6kV



- 4 - MHV Output Connector (1-6kV Models)

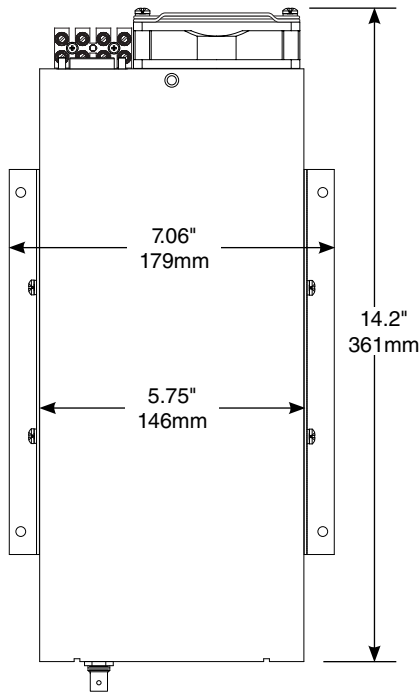
Output Voltages from 7-40kV



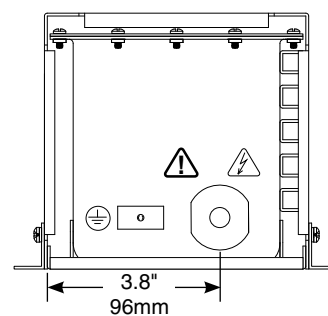
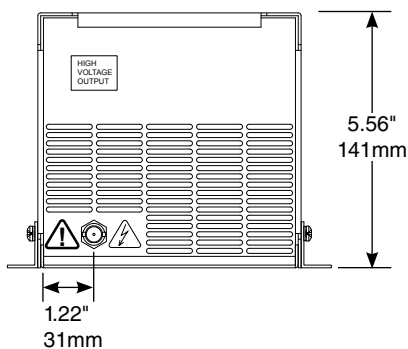
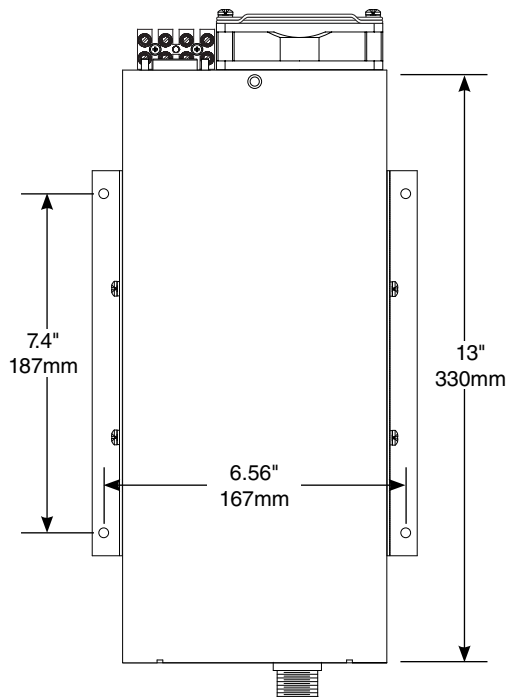
- 5 - Ground Stud (7-40kV Models)
- 6 - HV Output Connector (7-40kV Models)

Dimensional Outline Drawings

Outputs From 1kV to 6kV



Outputs From 7kV to 40kV



GLOBAL HIGH VOLTAGE NETWORK

NORTH AMERICA

TDK-Lambda Americas Inc., High Power Division
405 Essex Rd. Neptune, NJ 07753
Tel: +1-732-922-9300, Fax: +1-732-922-1441
E-mail: andy.tydeman@us.tdk-lambda.com
Web: www.us.tdk-lambda.com/hp

CANADA

TMetrix
5805 Kennedy Road Mississauga,
Ontario L4Z 2G3
Tel: +1-905-890-2010, Fax: +1-905-890-1959
E-mail: lambda@aca.ca, Web: tmetrix.com

UK

Pulse Power & Measurement Ltd.
65 Shrivenham Hundred Business Park
Watchfield, Swindon
Wiltshire, SN6 8TY
Tel: +44-1793-784389, Fax: +44-1793-784391
Email: sales@ppm.co.uk, Web: www.pmpower.co.uk

IRELAND

FRANCE

TDK-Lambda France
ZAC des Delaches CS 41077, 9 rue Thuillere
91978 Villebon Courtaboeuf
Tel: +33 1 60 12 71 65, Fax: +33 1 60 12 71 66
Email: france@fr.tdk-lambda.com
Web: www.fr.tdk-lambda.com

BELGIUM

SPAIN

NETHERLANDS

LUXEMBOURG

GERMANY

Guth GmbH
Spitzenbergstrasse 6
D – 73084 Salach
Tel: +49-7162-948930, Fax: +49-7162-9489399
Email: kontakt@guth-hv.de, Web: www.guth-hv.de

AUSTRIA

SWITZERLAND

ITALY

TDK-Lambda Italy
Via dei Lavoratori 128/130
IT 20092 Cinisello Balsamo (MI)
Tel: +39-02-6129-3863, Fax: +39-02-6129-0900
Email: info.italia@it.tdk-lambda.com
Web: www.it.tdk-lambda.com

SCANDINAVIA

BALTICS

Divisoft AB
Rallarvägen 41, SE-184 40 Åkersberga, Sweden
Tel: +46 8 540 248 09, Fax: +46 8 501 096 53
Email: iain@divisoft.se, Web: www.divisoft.se

ISRAEL

RUSSIA

UKRAINE

TDK-Lambda Israel Ltd.
Kibbutz Givat Hashlosa Tel-Aviv 48800
Tel: +972-3-9024-333, Fax: +972-3-9024-777
Email: info@tdk-lambda.co.il, Web: www.tdk-lambda.co.il

BRAZIL

Suplitec
Rua Sena Madureira 455, Belo Hte - 31340-000
Tel: +55-31-3498 1177, Fax: +55-31-3441 0841
Email: vendas@suplitec.com.br, Web: www.suplitec.com.br

MEXICO

AcMax De Mexico
Rosas 139 Col. Bugambilias. Puebla, Pue. C.P. 72580
Tel: +52-800-211-0060, Fax: +52-264-1445
Email: edaena@acmax.mx, Web: www.acmax.mx

JAPAN

KOREA

Electronics Optics Research, Ltd
4-26-19 Koenji-Minami
Suginami-ku, Tokyo 166-0003
Tel: +81-333-145699, Fax: +81-333-142333
Email: imamura@eor.jp, Web: www.eor.jp

CHINA

TDK-Lambda Shanghai Office
28F, Xingyuan Technology Building, No.418 Guiping Road
Shanghai, 200233 P.R. China
Tel: +86-21-64850777, Fax: +86-21-64850666
Email: sales-sh@cn.tdk-lambda.com
Web: www.cn.tdk-lambda.com

MALAYSIA

TDK-Lambda Malaysia
No.7.3, 7th Floor, Jaya Shopping Center,
Jalan Semangat Section 14, 46100
Petaling Jaya Selangor, D.E
Tel: +60-3-7957-8800 Fax: +60-3-7958-2400
Web: www.tdk-lambda.com.my

SINGAPORE

PHILIPPINES

THAILAND

TDK-Lambda Singapore
1008 Toa Payoh North # 06-01/08
Singapore 318996
Tel: +65-6251-7211 Fax: +65-6250-9171
Web: www.se.tdk-lambda.com

INDIA

TDK-Lambda India
#526, Ground Floor, 10th Main, 7th Cross,
Jeevanbhimnagar, Bangalore 560 075, Karnataka, India
Tel : +91-80-43550500, Fax :+91-80-43550501
Email: mathew.philip@in.tdk-lambda.com
Web www.in.tdk-lambda.com

SOUTH AFRICA

PaR Systems (Pty) Ltd.
Pretoria, South Africa
Tel: +27-12-5480370, Fax: +27-12-5480447
Email: ndupreez@par.com
Web: www.sdilasers.com



TDK-Lambda Americas Inc. 405 Essex Road, Neptune, NJ 07753 USA
Tel: +1 732 922 9300 Fax: +1 732 922 1441
www.us.tdk-lambda.com/hp

93 008 006 Rev D