

Delivering leading edge, innovative power solutions for more than **30** years....

Model:GTM961800PWWWVV.V-T2A

April 5, 2020

GTM961800PWWWVV.V-T2A

Information

Model Number	GTM961800PWWWVV.V-T2A
Description	GTM961800PWWWVV.V-T2A, Medical/ITE/Household use Power Supply, 60601-1-4th Ed. , Desktop/External, Regulated Switchmode AC-DC Power Supply AC Adaptor, , Input Rating: 100-240V~, 50-60 Hz, IEC 60320/C18 AC Inlet connector, Class II, Non-Earth Ground, Output Rating: 180 Watts, Power rating with convection cooling (W) , 12-54V in 0.1V increments, Approvals: CB 60335; CB 60950; CE; China RoHS; Double Insulation; EAC; PSE; PSE; PSE; Level VI; RoHS; Ukraine; VCCI; WEEE; IP41; cETLus; CB 60601-1-11; CB 60601-1; S-Mark IEC/EN 60601-1; cETLus; cETLus 60601-1 3rd; CCC; CB 62368; S-Mark 60950; ETL 62368;

Model Picture



Agency Documents	http://www.globtek.info/certs/GTM961800P/
CE EC-Declaration	https://www.globtek.com/pdf/ec_declaration/a000c00000QC1QBEA1
RoHS/RoHS2 Declaration	https://www.globtek.com/pdf/rohs_cert/a000c00000QC1QBEA1
REACH Declaration	https://www.globtek.com/pdf/iso_certificates/REACH.pdf
Conflict Minerals Declaration	https://www.globtek.com/pdf/conflict-minerals.pdf

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MODEL PARAMETERS

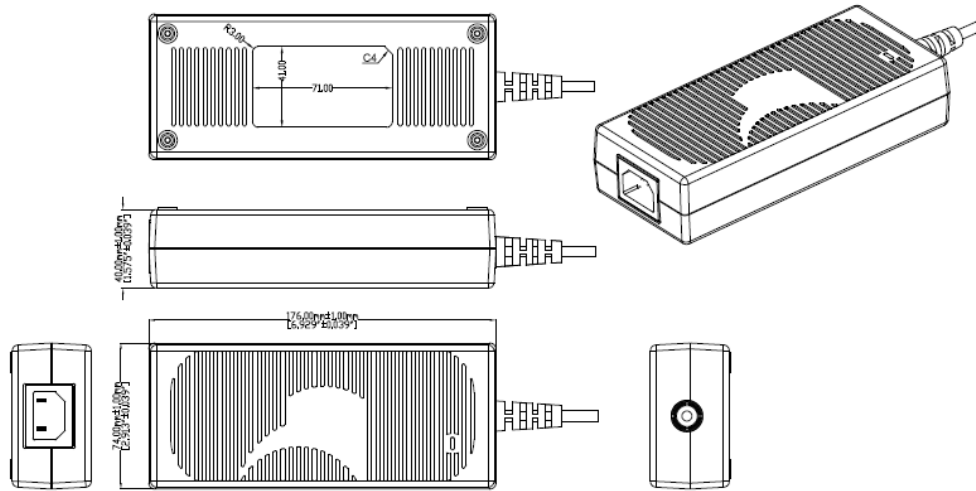
Type	Desktop/External
Technology	Regulated Switchmode AC-DC Power Supply AC Adaptor
Category	Medical/ITE/Household use Power Supply
Input Voltage	100-240V~, 50-60 Hz
I/P Amps (A)	2.2A
Wattage (W)	180.0
Vout Range (V)	12-54
Efficiency Level	USA DOE Level VI / Eco-design Directive 2009/125/EC, (EU) 2019/1782
Ingress Protection	IP41
Size (mm)	176.5*74*40

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ENCLOSURE



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RATING TABLE

Model Number	Voltage	Amps(A)	Watts(W)	RFQ
GTM961800P16012-T2A	12 V	13.33	159.96	RFQ
GTM961800P17015-T2A	15 V	11.33	169.95	RFQ
GTM961800P17018-T2A	18 V	9.44	169.92	RFQ
GTM961800P18019-T2A	19 V	9.47	179.93	RFQ
GTM961800P18024-T2A	24 V	7.5	180.00	RFQ
GTM961800P18030-T2A	30 V	6	180.00	RFQ
GTM961800P18036-T2A	36 V	5	180.00	RFQ
GTM961800P18048-T2A	48 V	3.75	180.00	RFQ
GTM961800P18054-T2A	54 V	3.333	179.98	RFQ

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SPECIFICATIONS

A) ELECTRICAL SPECIFICATIONS:

01. Input Voltage: Specified 90-264 VAC, Nameplate rated: 100-240VAC
 - 90-264VAC range @ 100% of rated load current
 - 85-264 VAC range @ 90% of rated load current
02. Input Frequency: Specified 47-63Hz, Nameplate rated 50/60Hz
03. Power Factor: 0.90 (min.) @ 230VAC, 0.97 (min.) @ 115VAC
04. Output Regulation: $\pm 4\%$ measured at the output connector
05. Line Voltage Regulation: $\pm 0.5\%$ (typ.), measured at full load
06. Green Power-On Indicator LED
07. Output Ripple (Vp-p): 1% or 200 mV (whichever is greater), measured with a 0.1 μ F ceramic capacitor in parallel with a low-ESR 47 μ F electrolytic capacitor, connected at the output connector, with 20MHz bandwidth, at nominal line
08. Turn-On Delay: 1 second (typ.)
09. Turn-On Overshoot: 5% (max.)
10. Transient Response: 5% deviation, 1ms recovery, for 25% to 50% step load
11. Hold-Up Time: 20 ms (min.)
12. Inrush Current: 30A (max.) @ 115VAC, 60A (max.) @ 230VAC
13. Switching Frequency: Variable, 25KHz to 125KHz, depending on model and load condition
14. Efficiency: Compliant with DoE Efficiency Level VI and CoC Tier 2
15. No Load Standby Power: <0.15 W @ 230VAC

B) PROTECTION

01. Input Protection: Dual input line fusing and 300VAC rated MOV
02. Short Circuit/Overload: Electronically protected unit will auto recover upon removal of fault
 - Output Current Limit: Current limited to less than $(240W / V_{Nom})$ and 18A for low voltage models (V_{Nom} = nominal rated output voltage)
03. Over-Temperature: Latching electronic over-temperature protection, cycle AC on/off to reset.
04. Output Over-Voltage: 110% to 135% of nominal output voltage under full load condition, and less than 60V max. Latching protection, cycle AC on/off to reset.

C) SAFETY

01. Dielectric Withstand Voltage:
 - a) All models: 4000VAC or 5656VDC (from input to output)
 - b) Class I models: 3000VAC or 4242VDC (from input to earth)
 02. Earth Leakage Current: Class I models $< 300\mu$ A, N/A for Class II models
 03. Touch Current (Normal condition):
 - a) Standard models (No suffix):
Class I: $< 20\mu$ A
Class II: $< 70\mu$ A
Class II with FE: $< 20\mu$ A
 - b) Low-leakage models (-CF suffix):
Class II with FE: $< 10\mu$ A
- Note: Standard models are designed for use in Type-B/BF medical applications. Low-leakage models are designed for use in Type-CF medical applications. (See IEC60601-1, Clause 16.6.1)

04. Output Isolation Options:

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- a) C8 or C18 Inlet, Class II
- b) C6 or C14 Inlet, Class II with FE, Output isolated from earth contact
- c) C6 or C14 Inlet, Class I, Output negative directly attached to earth contact
- 05. Earth Continuity Test: $< 0.1\Omega$ between earth pin at AC input and PCB termination point (Class I models only)
- 06. Means of Protection: 2 x MOPP
- 07. Primary to Secondary Bridging Capacitance: Two IEC60384-14 certified Y1 type capacitors in series
- 08. Compliant Standards: See listings at end of this drawing for specifics

D) EMC

EN 60601-1-2, 4th edition

Emissions, per EN 55032, EN 61000-6-3, EN 61000-6-4, CISPR11 and CISPR22

Conducted Emissions: Class B, FCC Part 15, Class B

Radiated Emissions: Class B, FCC Part 15, Class B

Line Frequency Harmonics EN61000-3-2, Class A

Voltage Fluctuations/Flicker EN61000-3-3

Immunity, per EN 55024, EN 61000-6-1, EN 61000-6-2

Static Discharge Immunity EN61000-4-2, 10KV Contact Discharge, 18KV air discharge

Radiated RF Immunity EN61000-4-3, 10V/m 80-2.7GHz, 80% 1KHz AM.

EFT/Burst Immunity EN61000-4-4, 4KV/100kHz.

Line Surge Immunity EN61000-4-5, 2KV differential, 4KV common-mode

Conducted RF Immunity EN61000-4-6, 3VRMS, 80% 1KHz AM

Power Frequency Magnetic Field Immunity EN61000-4-8, 3A/m

Voltage Dip Immunity EN61000-4-11, Criteria

E) OTHER:

- 01. MTBF: 1,000,000 Hours @ 40°C ambient temperature, full load
- 02. Operating Temperature: -10°C to 40°C ambient temperature, full load
 - Regarding Operating Temperature,
 - a- See below derating table for output power capability at alternate temperature
 - b- Extended low end temperature range down to -40°C available as a custom option
- 03. Humidity: 0% to 95% relative humidity, non-condensing
- 04. Storage Temperature: -30°C to 80°C
- 05. Cooling: Convection
- 06. RoHS: Compliant with latest regulations, see approvals section below
- 07. Operational Altitude: Up to 5000m

F) DESKTOP STYLE ENCLOSURE

- 01. Housing: High impact plastic, 94V0 polycarbonate, non-vented
- 02. Size: 176.5 x 74 x 40 +/-1.0 mm
- 03. Markings: Label or Laser printed
- 04. AC Input mechanical options: Desktop C6, C8, C14 or C18 IEC Inlet.

G) SPECIAL OPTIONS

- 01. Custom cordsets, various cordage types, and connector types
- 02. Custom markings
- 03. Short term output surge power capability, for motor applications, and short term intermittent high power need applications. 300W for 1 second is available as a special design variant.

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04. Reduced touch current, for IEC60601-1 Type-CF applications. (Available in models with –CF suffix.)
05. Tightened output voltage tolerance
06. Reduced output ripple level
08. Reduced output power marking/rating
09. Improved reliability PCB laminate with plated through-holes for IPC610 Class 2 compliance
10. Special housing colors and cordset colors
11. LED lighting applications, Class C line harmonics
12. Constant current output, for VNom to 0.75 x VNom. Add “-CC” suffix to model number. Current level is custom selectable.
13. Back EMF applications, custom solutions. For unusual motor load apps and other high inductance reverse energy flow requirements
14. Improved ingress protection rating

H) OUTPUT CONNECTORS

Several output connector options are available with various output current ratings.

GlobTek can supply 10A rated 2.1mm and 2.5mm style DC Power Jacks, to complement our

10A output rated 2.1mm and 2.5mm DC power plugs used on our output cordsets.

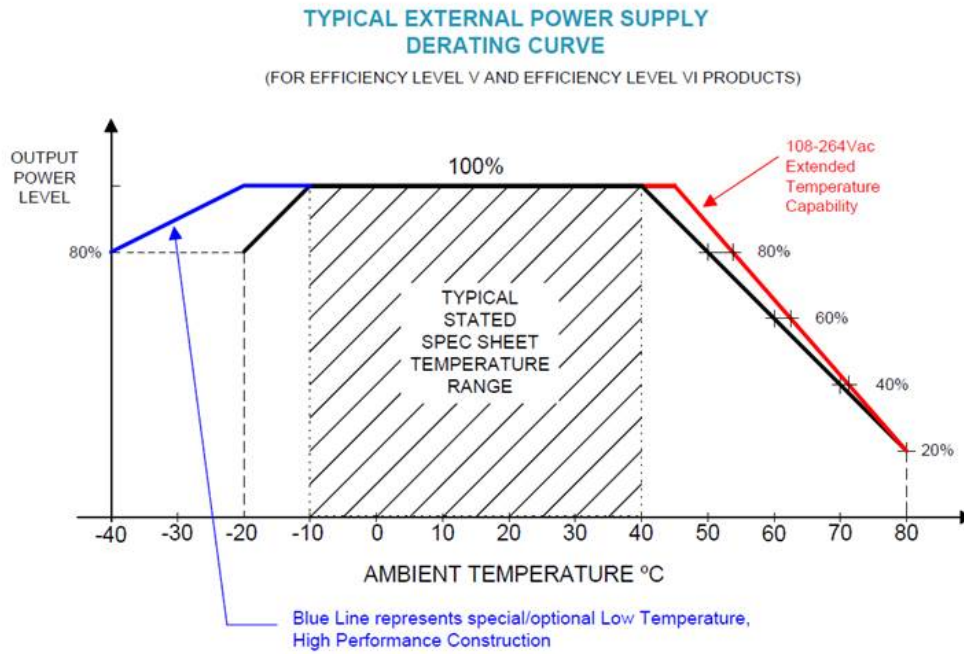
Please visit <https://en.globtek.com/news/high-current-coaxial-barrel-plug-jacks-for-high-wattage-power-supplies> for a real time product offering of mating connectors.

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DERATING CURVE



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INPUT CONFIGURATION

Description IEC 60320/C18 AC Inlet connector, Class II, Non-Earth Ground

Mates with IEC 60320/C17 Plug


[Standard International IEC 320/C17 Cordsets](#)

Below are standard cordsets which are "not included" (unless stated above); these may be purchased separately or packaged with the power supply. Please contact your Sales Engineer if the style required is not shown below. Many more available in different lengths, colors or cable material.

Part Number/ Link	Country	Plug	Termination	Length (mm)	Length (F)
209A4062M071(R)	Argentina (Type I)	IRAM 2063	IEC320/C17	2000	6.6
5014112M071A(R)	Australia (Type I)	AS3112	IEC 320/C17	2000	6
204B4062M071(R)	Brazil (Type N)	NRR 14136	IEC320/C17	2000	6.6
4533502M071A(R)	China (Type A)	GB 2099.1	IEC320/C17	2000	6.6
2074232M071C(R)	Europe (2.5A, Type C)	CEE 7/7	IEC 320/C17	2000	6.6
489C4232M071A(R)	Europe (10A)	CEE 7/17	IEC320/C17	2000	6.6

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208A41111M8071A(R)	India (Type D)	IS 1293	IEC 320/C17	1800	6
451J3322M071A(R)	Japan (Type A)	JIS 8303	IEC320/C17	2000	6.6
401P1086F071A(R) 401P1086F071C(R)	North America (Type A)	NEMA 1-15P	IEC 320/C17	1828	6
401P1219F71A	North America (Type A)	NEMA 1-15P	IEC 320/C17	2743	9
4033321M8071(R)	Taiwan (Type A)	CNS10917	IEC 320/C17	1800	6
6104232M071A(R)	UK, Hong Kong, Singapore, Gulf States (Type G)	BS1363 (Fuse 3A)	IEC 320/C17	2000	6.6

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OUTPUT CONFIGURATION

Common output connector options:


 L Type (Coaxial
5.5x2.5mm plug)

 C Type (Coaxial
5.5x2.1mm plug)

 K Type (Coaxial
3.5x1.3mm plug)

 LL Type (5.5x2.5mm
Locking 760k type)

 CL Type (5.5x2.1mm
Locking S761k type)

 ML2 Type (Molex
housing 43025-0200)

 YL3 Type
(KPPX-3P)


YL4 Type (KPPX-4P)


 EJ1/2/3/4/5 (EIAJ
RC-5320A type
connectors)

 MSB Type (Micro
USB)

 USBC Type (USB
Type C)

 Inquire for custom
design

 For a comprehensive list of options, [click here](#)





Contact GlobTek for your specific requirements or custom solutions.

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Approvals

Logo	Description
No Logo Applicable	IEC 60601-1-11:2015
No Logo Applicable	IEC 60601-1: 2005 + C1 + C2 + A1
No Logo Applicable	CB for 60335-1:2010/COR1:2010/COR2:2010 /AMD1:2013/COR1:2014/AMD2:2016/COR1:2016
No Logo Applicable	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
No Logo Applicable	CB for IEC 62368-1:2014 (Second Edition)
	CCC Altitude up to 5000 m GB17625.1-2012, GB4943.1-2011, GB/T9254-2008
	CE Certification
	Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements [UL 62368-1:2014 Ed.2] Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements [CSA C22.2#62368-1:2014 Ed.2]
Conforms to ANSI/UL Std. 60950-1 Cert. to CAN/CSA Std. C22.2 NO. 60950-1	Conforms to ANSI/UL Std. 60950-1 2nd Edition Cert. to CAN/CSA Std.C22.2 NO.60950-1 2nd Edition
	cETLus-Cert-4007497 ANSI/AAMI ES60601-1:2005 with AMD C1: 2009, AMD C2: 2010 and CAN/CSA-C22.2 No. 60601-1 2008 with COR 2:2011+ANSI/AAMI HA60601-1-11 Ed:1

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	cETLus-Cert-60950-1 4007497 Listed
	CHINA SJ/T 11364-2014, China RoHS Chart: http://en.globtek.com/globtek-rohs.php
	Declaration ДС № EAЭC N RU Д-US.KA01.B.10453_19 Custom Union of Russia, Belarus and Kazakhstan http://www.globtek.com/redirect/?loc=gost-certificate-eac-declaration
	Indoor Use Only - Mark is on the label or Molded in the case
IP41	Ingress Protection: ?IP41 to IEC60529:2001 Protection against granular foreign bodies - Protected against vertically falling drops of water
 GlobTek, Inc.	JAPAN TUV R-PSE, Cert. No. JD 50313287, to J60950-1(H26) , J55022(H22),J3000(H25)[15V or less]. Please reference the following website for guidelines on PSE regulations: http://en.globtek.com/importing-ite-and-medical-power-supplies-ac-adaptors-to-japan/
 GlobTek, Inc.	JAPAN TUV R-PSE, Cert. No. JD 50313287, to J60950-1(H26) , J55022(H22),J3000(H25)[DC15?30V]. Please reference the following website for guidelines on PSE regulations: http://en.globtek.com/importing-ite-and-medical-power-supplies-ac-adaptors-to-japan/
 GlobTek, Inc.	JAPAN TUV R-PSE, Cert. No. JD 50313287, to J60950-1(H26) , J55022(H22),J3000(H25)[DC30?60V]. Please reference the following website for guidelines on PSE regulations: http://en.globtek.com/importing-ite-and-medical-power-supplies-ac-adaptors-to-japan/
EFFICIENCY LEVEL 	Efficiency: complies to section 301 of Energy Independence and Security Act (EISA) complies with Energy Star tier 2 (North America), ECP tier 2 (China), MEPS tier 2 (Australia), Code of Conduct (Europe)
	Morocco SDoC declaration http://www.globtek.info/certs/Morocco%20SDoC%20Declaration/

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RoHS	Specifications of directive 2011/65/EU Annex VI (ROHS-2) with amendment 2015/863-EU (ROHS-3) http://www.ce-mark.com/Rohs%20final.pdf
	EN 60601-1:2006 + A1:2013 + A12:2014 EN 60601-1-11:2015
	S-Mark Certificate EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+A2:2013 (http://www.intertek.com/marks/s/)
 10276	Ukraine UKRSepro (Document: www.globtek.com/html/iso_certificates/GT_Ukraine.pdf)
	Japan: Voluntary Control Council for Interference (VCCI)
	WEEE: Complies with EU 2012/19/EU (http://ec.europa.eu/environment/waste/wEEE/index_en.htm) Mark is on the label or Molded in the case