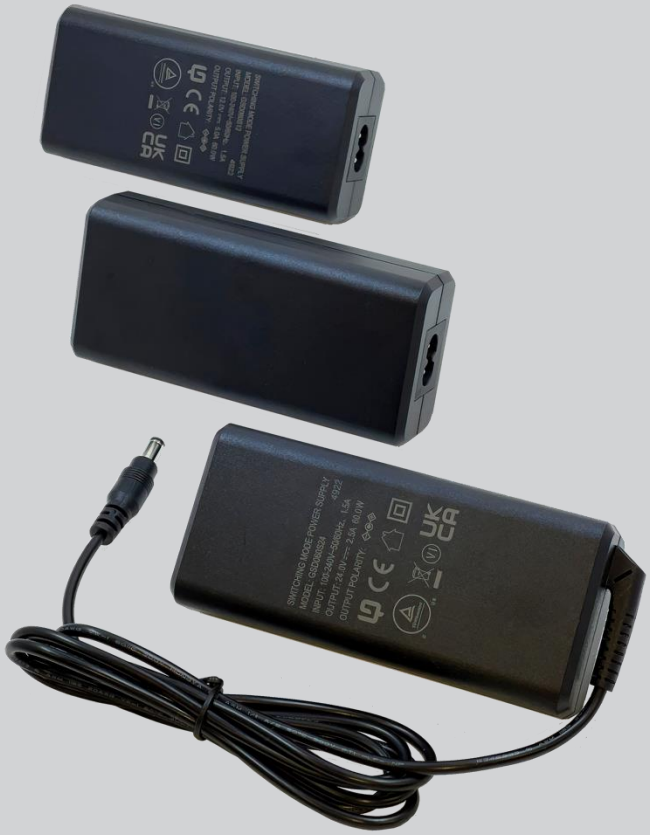
TECHNICAL SPECIFICATION

GSD Series

60W Isolated AC-DC External Power Adaptor for Computers, Test & Industrial Equipment



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OVERVIEW

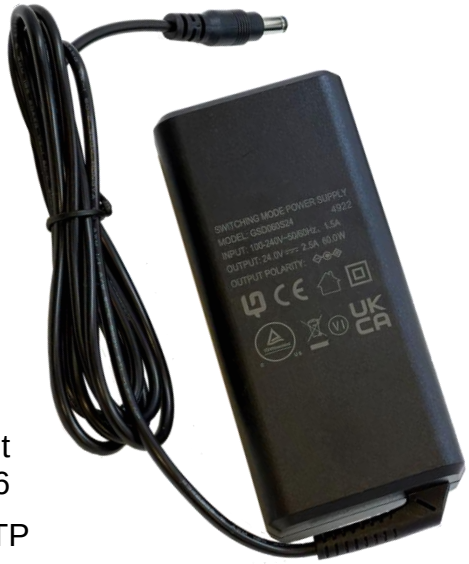
The GSD family of isolated AC/DC power adapters features 90% efficiency and meets the Department of Energy's Level VI requirement. The compact models deliver 60W of output power with a universal input of 90 to 264 Vac. The series includes four models featuring a precise regulated single-output voltage selection of 12, 19, 24 or 48 Vdc.

The use of low-power controllers, thermal management, quality electrolytic capacitors, patented magnetics, and layout contribute to the model's long life and high-reliability design. The power adapters operate from 0ºC to 40ºC and can operate at extended altitudes up to 5,000 meters. GSD models fully comply with IEC/EN62368-1 and RoHS directive, including 2015/863/EU REACH safety requirements

The series is ideal for use with laptop computers, portable devices, test instruments, and industrial equipment.

FEATURES

- Small form factor 4.67”L x 2.17"W x 1.26"H (118.5mm x 55mm x 32mm)
- Wide Universal AC Input Range
- Single Output
- 60W@12V/19V/24V/48V
- Level VI Energy Efficiency
- .13W Standby Power
- Higher Operating Altitude (up to 16,404ft/5000m)
- RoHS Directive 2011/65/EU including the amendment 2015/863/EU REACH Regulation (EC) No. 1907/2006
- Protected for Input UVP, Output OVP, OCP, SCP, OTP
- 3000Vac/1Min for Pri to Sec



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SCOPE

This document describes the specifications of GSD Isolated AC/DC adaptors.

MODEL SELECTION

Description	GSD060S12	GSD060S19	GSD060S24	GSD060S48
DC Output Current	12V/5.00A	19V/3.16A	24V/2.50A	48V/1.25A
Efficiency, normal input, typical	89.0%	89.5%	90.0%	90.0%

1. Unless otherwise indicated, specifications apply overall operating input voltage, resistive load, and room temperature 25ºC conditions.

AC INPUT SPECIFICATIONS

Description	GSD060S12	GSD060S19	GSD060S24	GSD060S48
AC Input Voltage Range / Frequency	90-264 Vac (name plate 115-230 Vac) / 47-63Hz			
Input Current	1.5 A, 100 VAC at max load.			
Inrush Current	70/120A, 115V/230Vin Cold Start			
Input Fuses (F1, F2)	T3.15A/250 VAC fuse in line			
No Load Input Power	0.13 W typical at 115Vac, 0.21W max at 230Vac Open Load condition.			
AC Input connector	PSU Side, input: IEC60320-C8			
Power Factor	EN 61000-3-2, Class A			
Earth Leakage Current	0.25 mA maximum, 264V at 60Hz			

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DC OUTPUT SPECIFICATIONS

Description	GSD060S12	GSD060S19	GSD060S24	GSD060S48
Total Output Wattage	60W			
DC Output Connector	PSU Side, output: DC jack 2.5 x 5.5 x 11mm with 1.5m DC cable			
Output Voltage, Vdc Typical (includes all regulation)	12	19	24	48
Vdc Minimum	11.40	18.05	23.04	46.56
Vdc Maximum	12.60	19.95	24.96	49.44
Output Current, Amps	5.00	3.16	2.50	1.25
Output Overshoot	+/-5% V_{out}			
Rise Time	<60 mS over AC input range of 115-230Vac, full load			
Transient Response	typical for return to +/- 5% of nominal, 115V/230Vin 50-100% load			
Switching Frequency	Variable 65 kHz typical			
DC Turn-On Delay Time	2S 115V/230Vin full load.			
Hold-up Time	20 mS High Line / Full Load, 10 mS Low Line / Full Load.			
Ripple and Noise- Vpp, Typical	150	120	120	160
Maximum	180	180	180	240
Conditions 20MHz 10µF+ 0.1µF Ceramic	115V/230Vin full load			
External Capacitive Load, µF, Typical 115/230Vin full load				
Maximum	10000	6000	6000	2000
Line/Load Regulation	< +/- 5%			

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MECHANICAL SPECIFICATIONS

Description	
Size - H x W x D mm / in	118.5 x 55 x 32 / 4.67 x 2.17 x 1.26
Weight g / oz	250 / 8.8, typical
Vibration	Operating: 0.75mm, 10Hz-55Hz, 30 Min
Dimensions	PSU Side: input: IEC60320-C8 output: DC jack 2.5x5.5x11mm with 1.5m DC cable; System Side: input: IEC60320-C7 output: compatible socket
Weight	250 g, typical
AC Input Connector	IEC 60320-C8
DC Output Connector	OD 5.5 mm ID 2.5 mm barrel connector standard, other options available. 12V & 19V: 18 AWG, 24V: 20 AWG, 48V: 22 AWG
DC Cable length	1.5m (59 inches)
DC Cable Strain Relief Linear Force	1 minute at 5kg (48Vdc version), 8.8kg (12/19/24Vdc) loading weight tension vertically at 150-300mm
DC Cable Flexure Cycles	3000 cycles, flex angle +/- 60°, 40 Cycles/minute
Drop Test	1 m (39.4 inches), 3 times, onto concrete floor

PROTECTION

Description	
Overload (OCP) on (Vmain)	OCP occurs at 130% Iout typically; Auto-recovery.
Short Circuit (SCP) on (Vmain)	Auto-recovery
Overvoltage (OVP) (Vmain)	OVP occurs at a maximum 130% Vout; Auto-recovery.
Over Temperature (OTP)	Auto-recovery

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ENVIRONMENTAL SPECIFICATIONS

Description	
Operating Temperature	0°C to +40°C
Storage Temperature	0°C to +60°C
Altitude	Operating: to 16,404 feet (5,000 m) above sea level, with a 0°C minimum ambient air temperature.
Operating Relative Humidity	0% to 95%, non-condensing
Storage Relative Humidity	0% to 95%, non-condensing
Cooling	Natural Convection

EMI & EMC

Description	
Conducted Emissions	FCC Part 15 Class B, Conducted, EN 55032 Class B
Radiated Emissions	FCC Part 15 Class B, Radiated, EN 55032 Class B
Power Factor Harmonics	EN IEC 61000-3-2, Class A
Voltage Flicker	EN IEC 61000-3-3
Electrostatic Discharge Immunity (ESD)	IEC 61000-4-2, Criteria B, ±8 kV Air, ±4 kV contact Discharge.
Radiated RF Immunity	IEC 61000-4-3, 3V/m, Criteria A
EFT/Burst Immunity	IEC 61000-4-4, Criteria B
Line Surge Immunity	IEC 61000-4-5, Criteria B, DM +/- 2KV
Conducted RF Common Mode Immunity	IEC 61000-4-6, 3Vrms/m, Criteria A
Dips, Interrupts, Sags	IEC 61000-4-11, Criteria B & C.

NOTES

EMC Performance criteria are based are defined as following:

A. Normal performance during and after the test
B. Temporary degradation, self-recoverable
C. Temporary degradation, operator intervention required to recover the operation
D. Permanent damage

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SAFETY & ENERGY EFFICIENCY APPROVAL

Certification	Standard	Notes
CB report (issued by TUV Rh)+cTUVus	IEC 62368-1, UL 62368-1	TUV Rh
cTUVus (US and Canada)	UL 62368-1	TUV Rh (together with CB)
FCC	FCC Part 15B	EMC
ICES report (Canada)	ICES-003	EMC
US DOE Registration	10 CFR 430.32(W)	Energy Efficiency
US CEC Compliance	20 CCR 1605.2(U)	Energy Efficiency
Canada (NRCan)	CSA C381.1-17	Energy Efficiency
CE-LVD, UKCA-EER	EN 62368-1	TUV Rh
CE-EMC, UKCA-EMC	EN 55032, EN 55035, EN 61000-3-2, EN 61000-3-3	EMC
CE-ErP, UKCA-ErP	(EU)2019/1782	

SAFETY & RELIABILITY

Description	
Hi-pot	<10 mA, Pri-Sec: 3000Vrms, 10 mA 1min
Earth Leakage Current	<0.25mA, 264Vac / 60Hz
Isolation	3000 Vac/1 min for Primary to Secondary
Insulation Resistance	>100Mohm, Input to output at 500 VDC.
MTBFc	50K hours at 25°C, normal input, 80% load
RoHS	Directive 2011/65/EU including the amendment 2015/863/EU
REACH	Regulation (EC) No.1907/2006

All specifications are typical at nominal input, full load, at 25°C ambient unless noted. For additional technical data and support, please contact our Field Application Engineering office at 858-275-6423, or send us an email at info@brightworks-usa.com.

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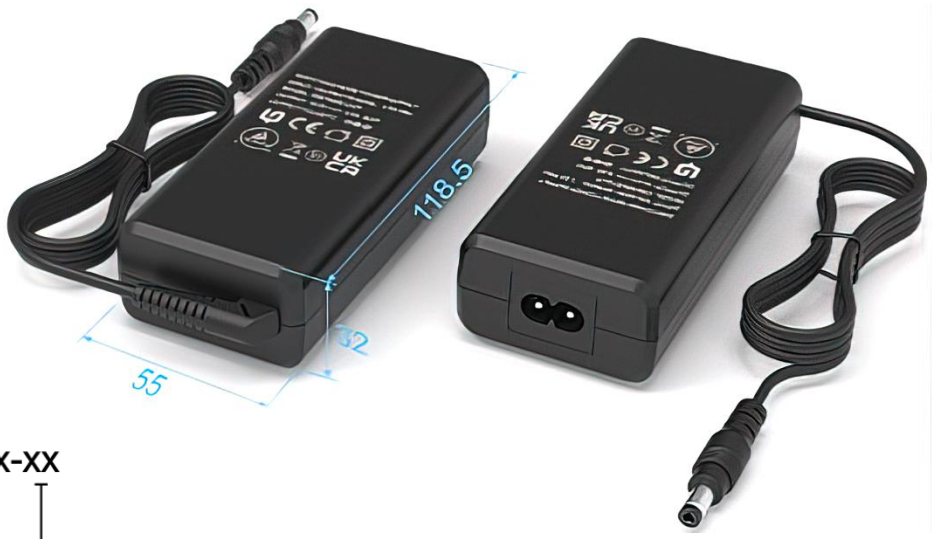
MECHANICAL PACKAGE



GSD060Sxx-xx

- Used for derivative models; i.e. different cable length, customer logo, etc.
- Voltage / V
- Single output
- Power / W
- Desktop
- Standard PSU
- Group Intellect Power Technology

NOTES

1. Dimensions shown in mm.
2. OD 5.5 mm ID 2.5 mm barrel connector standard, other options available.
3. PSU should not be covered or enclosed to protect against excessive case temperature rise.
4. DC Cable is 1500 mm (4.92 feet) standard

All specifications are typical at nominal input, full load, at 25°C ambient unless noted. Specifications subject to change without notice. Please consult our Applications Engineering office at 858-275-6423 for additional technical data and support, or email at info@brightworks-usa.com.

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