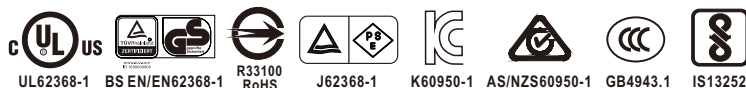




User's Manual



Features

- **Global certificates**
- Universal AC input / Full range
- 3 pole AC inlet IEC320-C14, Class I power unit
- No load power consumption < 0.075W
- **Energy efficiency Level VI**
- Comply with EISA 2007/DoE, NRCAN, Korea K-MEPS, AU/NZ MEPS, EU ErP and CoC Version 5
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Fully enclosed plastic case
- Pass LPS
- -30~+70°C wide range working temperature
- LED indicator for power on
- **Various DC plug quick adapter accessory available**
(Plug kit sold separately, please refer to : https://www.meanwell.com/upload/pdf/DC_plug.pdf)
- 3 years warranty

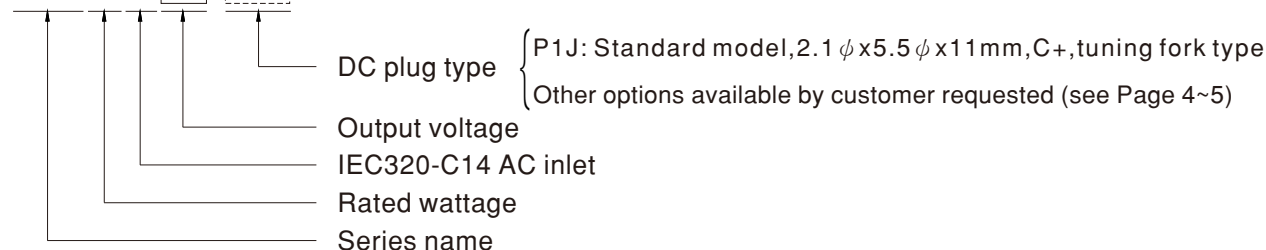
Description

GST60A is a highly reliable, 60W desktop style single-output green adaptor series. This product is a class I power unit (with FG), equipped with a standard IEC320-C14 AC inlet and adopting the input range from 90VAC to 264VAC. The entire series supplies different models with output voltages ranging between 5VDC and 48VDC that can satisfy the demands for various types of consumer electronic devices.

With the efficiency up to 92% and the extremely low no-load power consumption below 0.075W, GST60A is compliant with USA EISA 2007/DoE, Canada NRCAN, Australia and New Zealand MEPS, Korea K-MEPS, EU ErP and Code of Conduct (CoC) Version 5. The supreme feature allows the adaptor to save the energy when it is either under the operating mode or the standby mode. The entire series utilizes the 94V-0 flame retardant plastic case. GST60A is certified for the international safety regulations.

Model Encoding

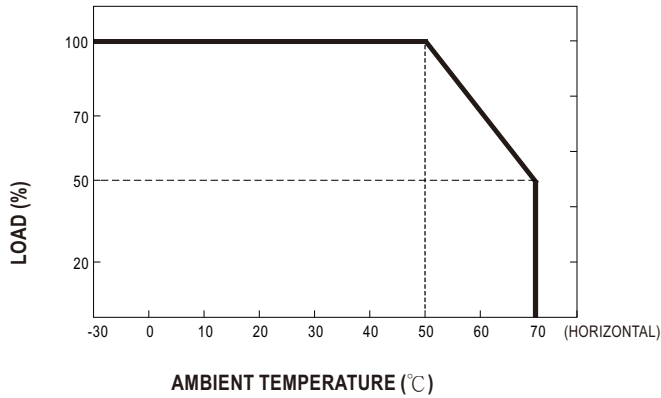
GST 60 A 05 -P1J



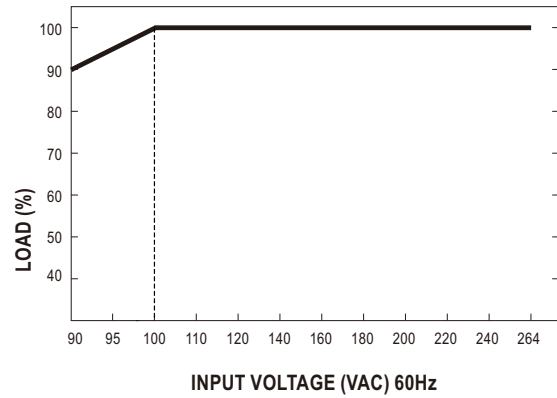
SPECIFICATION

| ORDER NO. | | GST60A05-P1J | GST60A07-P1J | GST60A09-P1J | GST60A12-P1J | GST60A15-P1J | GST60A18-P1J | GST60A24-P1J | GST60A48-P1J |
|-----------------------------|---|--|--|--------------|--------------|--|---|--------------|--------------|
| OUTPUT | SAFETY MODEL NO. | GST60A05 | GST60A07 | GST60A09 | GST60A12 | GST60A15 | GST60A18 | GST60A24 | GST60A48 |
| | DC VOLTAGE Note.2 | 5V | 7.5V | 9V | 12V | 15V | 18V | 24V | 48V |
| | RATED CURRENT | 6A | 6A | 6A | 5A | 4A | 3.33A | 2.5A | 1.25A |
| | CURRENT RANGE | 0 ~ 6A | 0 ~ 6A | 0 ~ 6A | 0 ~ 5A | 0 ~ 4A | 0 ~ 3.33A | 0 ~ 2.5A | 0 ~ 1.25A |
| | RATED POWER (max.) | 30W | 45W | 54W | 60W | 60W | 60W | 60W | 60W |
| | RIPPLE & NOISE (max.) Note.3 | 120mVp-p | 120mVp-p | 120mVp-p | 120mVp-p | 120mVp-p | 150mVp-p | 150mVp-p | 200mVp-p |
| | VOLTAGE TOLERANCE Note.4 | ± 5.0% | ± 5.0% | ± 5.0% | ± 3.0% | ± 3.0% | ± 3.0% | ± 3.0% | ± 2.5% |
| | LINE REGULATION Note.5 | ± 1.0% | ± 1.0% | ± 1.0% | ± 1.0% | ± 1.0% | ± 1.0% | ± 1.0% | ± 1.0% |
| | LOAD REGULATION | ± 5.0% | ± 5.0% | ± 5.0% | ± 3.0% | ± 3.0% | ± 3.0% | ± 3.0% | ± 2.5% |
| | SETUP, RISE TIME Note.6 | 1000ms, 50ms / 230VAC 1000ms, 50ms / 115VAC at full load | | | | | | | |
| HOLD UP TIME (Typ.) | 50ms / 230VAC 15ms / 115VAC at full load | | | | | | | | |
| INPUT | VOLTAGE RANGE Note.7 | 90 ~ 264VAC 135 ~ 370VDC | | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | |
| | EFFICIENCY (Typ.) | 85.5% | 88.5% | 89% | 89.5% | 89.5% | 89.5% | 90.5% | 92% |
| | AC CURRENT (Typ.) | 1.4A / 115VAC 1A / 230VAC | | | | | | | |
| | INRUSH CURRENT (max.) | Cold start 35A / 115AC 65A / 230VAC | | | | | | | |
| | LEAKAGE CURRENT(max.) | 0.75mA / 240VAC | | | | | | | |
| PROTECTION | OVERLOAD | 105 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | | | | |
| | OVER VOLTAGE | 5.2 ~ 6.8V | 7.8 ~ 10.2V | 9.4 ~ 12.2V | 12.6 ~ 16.2V | 15.7 ~ 20.3V | 18.9 ~ 24.3V | 25.2 ~ 32.4V | 50.4 ~ 64.8V |
| | | Protection type : Shut down o/p voltage, re-power on to recover | | | | | | | |
| | OVER TEMPERATURE | Shut down o/p voltage, re-power on to recover | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -30 ~ +70℃ (Refer to "Derating Curve") | | | | | | | |
| | WORKING HUMIDITY | 20% ~ 90% RH non-condensing | | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85℃, 10 ~ 95% RH non-condensing | | | | | | | |
| | TEMP. COEFFICIENT | ± 0.03% / °C (0 ~ 50℃) | | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | | | | | | |
| SAFETY & EMC (Note. 9) | SAFETY STANDARDS Note. 8 | UL62368-1, CSA C22.2 No.62368-1, TUV BS EN/EN62368-1, BSMI CNS 14336-1, CCC GB4943.1, PSE J62368-1, AS/NZS 60950.1, BIS IS13252, KC K60950-1, EAC TP TC 004 approved; SIRIM MS IEC62368-1 (optional) approved | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC | | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH | | | | | | | |
| | EMC EMISSION | Parameter | Standard | | | | Test Level / Note | | |
| | | Conducted emission | BS EN/EN55032(CISPR32),FCC PART 15 / CISPR22 CAN ICES-3(B)/NMB-3(B),CNS13438,GB17625.1 EAC TP TC 020,MSIP KN32 | | | | Class B | | |
| | | Radiated emission | BS EN/EN55032(CISPR32),FCC PART 15 / CISPR22 CAN ICES-3(B)/NMB-3(B),CNS13438,GB17625.1 EAC TP TC 020,MSIP KN32 | | | | Class B | | |
| | | Harmonic current | BS EN/EN61000-3-2,GB9254 | | | | Class A | | |
| | | Voltage flicker | BS EN/EN61000-3-3 | | | | ----- | | |
| | EMC IMMUNITY | Parameter | Standard | | | | Test Level /Note | | |
| | | ESD | BS EN/EN61000-4-2 | | | | Level 4, 15KV air; Level 4, 8KV contact | | |
| | | RF field susceptibility | BS EN/EN61000-4-3 | | | | Level 2, 3V/m | | |
| | | EFT bursts | BS EN/EN61000-4-4 | | | | Level 2, 1KV | | |
| | | Surge susceptibility | BS EN/EN61000-4-5 | | | | Level 3, 1KV/Line-Line , 2KV/Line-FG | | |
| | | Conducted susceptibility | BS EN/EN61000-4-6 | | | | Level 2, 3V | | |
| | | Magnetic field immunity | BS EN/EN61000-4-8 | | | | Level 2, 3A/m | | |
| Voltage dips , interruption | | BS EN/EN61000-4-11 | | | | >95% dip 0. 5 periods, 30% dip 25 periods, >95% interruptions 250 periods | | | |
| OTHERS | MTBF | 709.7K hrs min. MIL-HDBK-217F(25℃) | | | | | | | |
| | DIMENSION | 125*50*31.5mm (L*W*H) | | | | | | | |
| | PACKING | 0.305Kg; 40pcs/13.02Kg/1.04CUFT | | | | | | | |
| CONNECTOR | PLUG | See page 4~5 ; Other type available by customer requested | | | | | | | |
| | CABLE | See page 4~5 ; Other type available by customer requested | | | | | | | |
| NOTE | | 1. All parameters are specified at 230VAC input, rated load, 25℃ 70% RH ambient. 2. DC voltage: The output voltage set at point measure by plug terminal & 50% load. 3. Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1μf & 47μf capacitor. 4. Tolerance: includes set up tolerance, line regulation, load regulation. 5. Line regulation is measured from low line to high line at rated load. 6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time. 7. Derating may be needed under low input voltages. Pleas check the derating curve for more details. 8. The demand for Malaysia safety is processed with the order no. GST60A □ -SIRIM by request. Please contact MEAN WELL for details. 9. The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com) ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx | | | | | | | |

Derating Curve

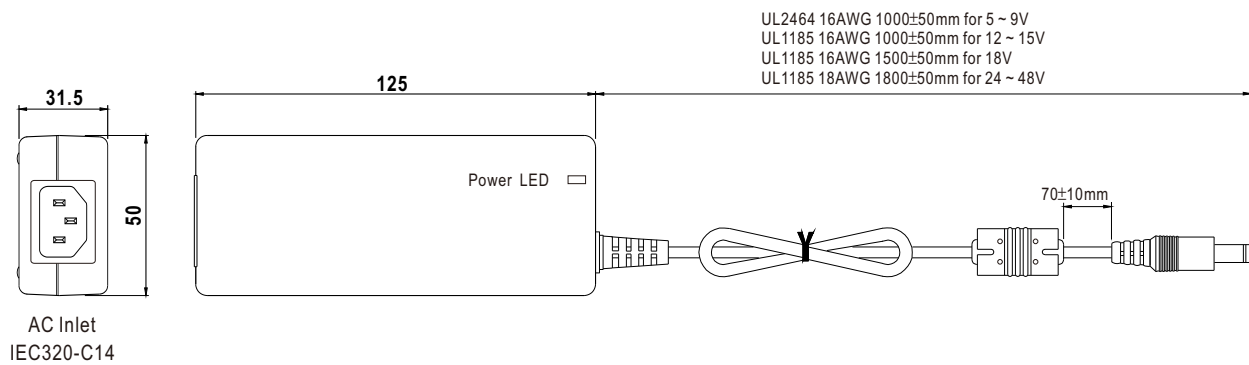


Static Characteristics



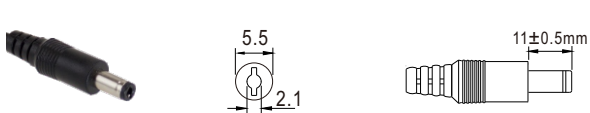



Mechanical Specification

Case No. GS60A Unit:mm



DC output plug

Standard plug: P1J

| P1J | Pin Assignment |
|---|---|
|  |  |
| | Outside   Inside -V not connected to AC FG |

◎ DC plug changeable through:



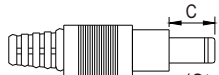
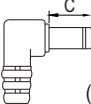


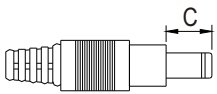



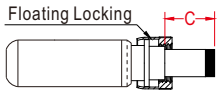


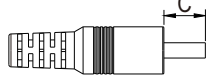

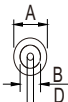
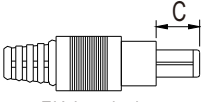
- (1) Customization of the standard part with an optional DC plug according to the table (MOQ applicable)
- (2) Quick adapter accessory (sold separately without MOQ)


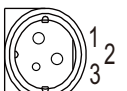
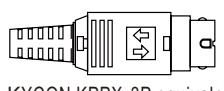

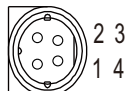
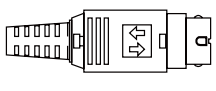


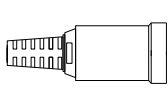


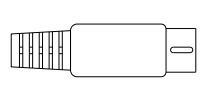

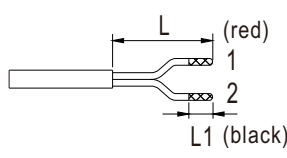
Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

Example quick adapter accessory:



◎ Optional DC plug: (Available in customized cable or quick adapter)

| Tuning Fork Style | | Type No. | A OD | B ID | C L | Quick Adapter Accessory | |
|--|---|------------|---------|---------|--------|--|--|
|   |  (Straight) | P1I | 5.5 | 2.1 | 9.5 | Available (Current rating: 7.5A max.) | |
| | | P1L | 5.5 | 2.5 | 9.5 | | |
| | | P1M | 5.5 | 2.5 | 11.0 | | |
| |  (Right-angled) | P1IR | 5.5 | 2.1 | 9.5 | | |
| | | P1JR | 5.5 | 2.1 | 11.0 | | |
| | | P1LR | 5.5 | 2.5 | 9.5 | | |
| | | P1MR | 5.5 | 2.5 | 11.0 | | |
| Barrel Style | | Type No. | A OD | B ID | C L | None | |
|   |  (Straight) | P2I | 5.5 | 2.1 | 9.5 | | |
| | | P2J | 5.5 | 2.1 | 11.0 | | |
| | | P2L | 5.5 | 2.5 | 9.5 | | |
| |  (Right-angled) | P2M | 5.5 | 2.5 | 11.0 | | |
| | | P2IR | 5.5 | 2.1 | 9.5 | | |
| | | P2JR | 5.5 | 2.1 | 11.0 | | |
| | | P2LR | 5.5 | 2.5 | 9.5 | | |
| | | P2MR | 5.5 | 2.5 | 11.0 | | |
| Lock Style | | Type No. | A OD | B ID | C L | None | |
|   |  Floating Locking SWITCHCRAFT original or equivalent | P2S(S761K) | 5.53 | 2.03 | 12.06 | | |
| | | P2K(761K) | 5.53 | 2.54 | 12.06 | | |
| | | P2C(S760K) | 5.53 | 2.03 | 9.52 | | |
| | | P2D(760K) | 5.53 | 2.54 | 9.52 | | |
| Min. Pin Style | | Type No. | A OD | B ID | C L | Available (Current rating: 5A max.) | |
|   |  EIAJ equivalent | P3A | 2.35 | 0.7 | 11.0 | | |
| | | P3B | 4.0 | 1.7 | 11.0 | | |
| | | P3C | 4.75 | 1.7 | 11.0 | | |
| Center Pin Style | | Type No. | A OD | B ID | C L | D Center Pin | Available (Current rating: 7.5A max.) |
|   |  EIAJ equivalent | P4A | 5.5 | 3.4 | 11.0 | 1.0 | |
| | | P4B | 6.5 | 4.4 | 11.0 | 1.4 | |
| | | P4C | 7.4 | 5.1 | 11.0 | 0.6 | |

| Min. DIN 3 Pin with Lock (male) | Type No. | Pin Assignment | | Quick Adapter Accessory |
|--|-------------|----------------|--------|--|
| | | PIN No. | Output | |
|    KYCON KPPX-3P equivalent | R6B | 1 | +Vo | Available (Current rating: 7.5A max.) |
| | | 2 | -Vo | |
| | | 3 | +Vo | |
| Min. DIN 4 Pin with Lock (male) | Type No. | Pin Assignment | | |
| | | PIN No. | Output | |
|    KYCON KPPX-4P equivalent | R7B | 1 | +Vo | Available (Current rating: 7.5A max.) |
| | | 2 | -Vo | |
| | | 3 | -Vo | |
| | | 4 | +Vo | |
| Min. DIN 4 Pin with Lock (female) | Type No. | Pin Assignment | | |
| | | PIN No. | Output | |
|    KYCON KPJX-CM-4S equivalent | R7BF | 1 | +Vo | None |
| | | 2 | -Vo | |
| | | 3 | -Vo | |
| | | 4 | +Vo | |
| DIN 5 Pin (male) | Type No. | Pin Assignment | | |
| | | PIN No. | Output | |
|    | R1B | 1 | -Vo | Available (Current rating: 7.5A max.) |
| | | 2 | -Vo | |
| | | 3 | +Vo | |
| | | 4 | -Vo | |
| | | 5 | +Vo | |
| Stripped and tinned leads | Type No. | Pin Assignment | | |
| | | PIN No. | Output | |
|   Length of Land L1 by request (MW's standard length, L: <u>25</u> mm, L1: <u>5</u> mm) | by customer | 1 | +Vo | None |
| | | 2 | -Vo | |

■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>