



## Features

- Universal AC input / Full range
- 3 pole AC inlet IEC320-C14
- Medical safety approved (2 x MOPP between primary to secondary)
- Suitable for BF application with appropriate system consideration
- Low leakage current <100uA
- No load power consumption<0.1W
- Energy efficiency level VI(Except 5~9V for Level V)
- Comply with EISA 2007/DoE,NRCan, AU/NZ MEPS, EU ErP and meet CoC Version 5
- High efficiency up to 91%
- Fanless design with -30~+60°C working temperature
- Class I power (with earth pin)
- Protections: Short circuit / Overload / Over voltage
- Fully enclosed plastic case
- LED indicator for power on
- Optional lock type DC plug
- 100% full load burn-in test
- 3 years warranty

## Applications

- Mobile clinical workstation
- Oral irrigator
- Portable hemodialysis machine
- Breath Machine
- Medical computer monitor

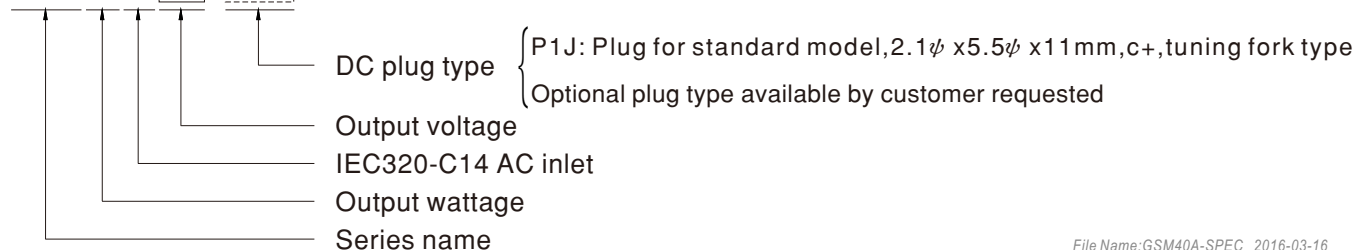
## Description

GSM40A is a highly reliable, 40W single-output green medical 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 80VAC to 264VAC. The entire series supplies different models with output voltages between 5VDC and 48VDC that can satisfy the demands for various types of medical electrical devices. The circuitry design meets the international medical standards (2\*MOPP), having an ultra low leakage current (<100uA), fitting the medical devices in direct electrical contact with the patients.

With the efficiency up to 91% and the extremely low no-load power consumption below 0.1W,GSM40A is compliant with USA EISA 2007/DoE ,Canada NRCan,Australia and New Zealand MEPS ,EU ErP,and meet 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.GSM40A is certified for the international medical safety regulations.

## Model Encoding

**GSM40A 05 - P1J**

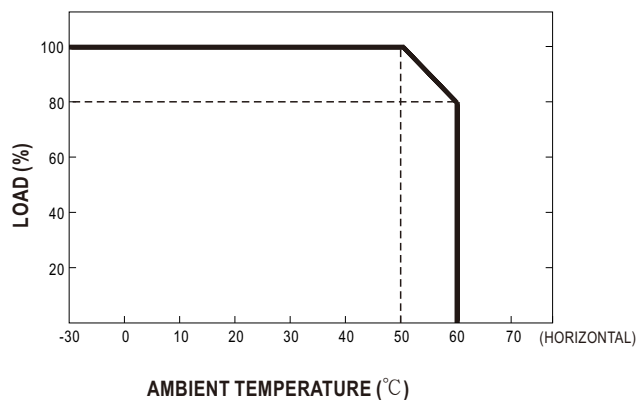




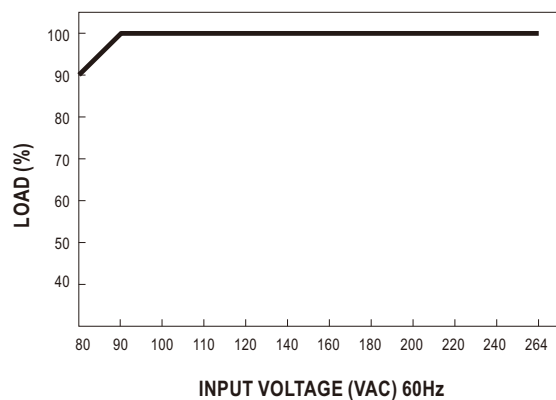
## SPECIFICATION

| ORDER NO.                 |                                             | GSM40A05-P1J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | GSM40A07-P1J  | GSM40A09-P1J  | GSM40A12-P1J | GSM40A15-P1J   | GSM40A18-P1J | GSM40A24-P1J | GSM40A48-P1J |
|---------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--------------|----------------|--------------|--------------|--------------|
| OUTPUT                    | SAFETY MODEL NO.                            | GSM40A05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | GSM40A07      | GSM40A09      | GSM40A12     | GSM40A15       | GSM40A18     | GSM40A24     | GSM40A48     |
|                           | DC VOLTAGE <small>Note.2</small>            | 5V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 7.5V          | 9V            | 12V          | 15V            | 18V          | 24V          | 48V          |
|                           | RATED CURRENT                               | 5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5.34A         | 4.45A         | 3.34A        | 2.67A          | 2.22A        | 1.67A        | 0.84A        |
|                           | CURRENT RANGE                               | 0.1 ~ 5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.1 ~ 5.34A   | 0.1 ~ 4.45A   | 0.1 ~ 3.34A  | 0.1 ~ 2.67A    | 0.1 ~ 2.22A  | 0.1 ~ 1.67A  | 0.1 ~ 0.84A  |
|                           | RATED POWER (max.)                          | 25W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 40W           | 40W           | 40W          | 40W            | 40W          | 40W          | 40W          |
|                           | RIPPLE & NOISE (max.) <small>Note.3</small> | 100mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 100mVp-p      | 100mVp-p      | 100mVp-p     | 100mVp-p       | 150mVp-p     | 180mVp-p     | 240mVp-p     |
|                           | VOLTAGE TOLERANCE <small>Note.4</small>     | ±5.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ±5.0%         | ±5.0%         | ±3.0%        | ±3.0%          | ±3.0%        | ±2.5%        | ±2.5%        |
|                           | LINE REGULATION <small>Note.5</small>       | ±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%        | ±2.5%        | ±2.5%        |
|                           | SETUP, RISE TIME <small>Note.6</small>      | 1000ms, 30ms / 230VAC    1500ms, 30ms / 115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |               |              |                |              |              |              |
| INPUT                     | HOLD UP TIME (Typ.)                         | 50ms / 230VAC    15ms / 115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |               |              |                |              |              |              |
|                           | VOLTAGE RANGE <small>Note.7</small>         | 80 ~ 264VAC    113 ~ 370VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |               |              |                |              |              |              |
|                           | FREQUENCY RANGE                             | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |               |              |                |              |              |              |
|                           | EFFICIENCY (Typ.)                           | 81%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 85.5%         | 86%           | 88%          | 88.5%          | 89.5%        | 90%          | 91%          |
|                           | AC CURRENT (Typ.)                           | 1A / 115VAC    0.5A / 230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |               |              |                |              |              |              |
|                           | INRUSH CURRENT (Typ.)                       | 65A / 230VAC    30A/115VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |               |              |                |              |              |              |
| PROTECTION                | OVERLOAD                                    | 105 ~ 160% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |               |              |                |              |              |              |
|                           | OVER VOLTAGE                                | 5.25 ~ 6.75V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7.88 ~ 10.13V | 9.45 ~ 12.15V | 12.6 ~ 16.2V | 15.75 ~ 20.25V | 18.9 ~ 24.3V | 25.2 ~ 32.4V | 50.4 ~ 64.8V |
|                           |                                             | Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |               |              |                |              |              |              |
| ENVIRONMENT               | WORKING TEMP.                               | -30 ~ +60°C (Refer to "Derating Curve")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |               |              |                |              |              |              |
|                           | WORKING HUMIDITY                            | 20% ~ 90% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |               |              |                |              |              |              |
|                           | STORAGE TEMP., HUMIDITY                     | -40 ~ +85°C, 10 ~ 95% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |               |              |                |              |              |              |
|                           | TEMP. COEFFICIENT                           | ±0.03% / °C (0~50°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |               |              |                |              |              |              |
|                           | VIBRATION                                   | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |               |              |                |              |              |              |
| SAFETY & EMC<br>(Note. 8) | SAFETY STANDARDS                            | ANSI/AAMI ES60601-1, TUV EN60601-1 approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |               |              |                |              |              |              |
|                           | ISOLATION LEVEL                             | Primary-Secondary: 2xMOPP, Primary-Earth:1xMOPP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |               |              |                |              |              |              |
|                           | WITHSTAND VOLTAGE                           | I/P-O/P:4KVAC    I/P-FG:2KVAC    O/P-FG:SHORT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |               |              |                |              |              |              |
|                           | ISOLATION RESISTANCE                        | I/P-O/P, I/P-FG:100M Ohms / 500VDC / 25°C / 70% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |               |              |                |              |              |              |
|                           | EMC EMISSION                                | Compliance to EN55011(CISPR11) class B, EN61000-3-2,3, FCC PART 15 class B,CAN ICES-3(B)/NMB-3(B)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |               |              |                |              |              |              |
| OTHERS                    | EMC IMMUNITY                                | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN60601-1-2, EN61204-3 medical level, criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |               |              |                |              |              |              |
|                           | MTBF                                        | 740K hrs min. MIL-HDBK-217F(25°C )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |               |              |                |              |              |              |
|                           | DIMENSION                                   | 125*50*31.5mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |               |              |                |              |              |              |
| CONNECTOR                 | PACKING                                     | 0.29Kg; 40pcs/ 12.6 Kg/1.05CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |               |              |                |              |              |              |
|                           | PLUG                                        | See page 3 ; Other type available by customer requested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |               |              |                |              |              |              |
|                           | CABLE                                       | See page 3 ; Other type available by customer requested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |               |              |                |              |              |              |
| NOTE                      |                                             | <ol style="list-style-type: none"><li>1. All parameters are specified at 230VAC input, rated load, 25°C 70% RH ambient.</li><li>2. DC voltage: The output voltage set at point measure by plug terminal &amp; 50% load.</li><li>3. Ripple &amp; noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf &amp; 47uf capacitor.</li><li>4. Tolerance: includes set up tolerance, line regulation, load regulation.</li><li>5. Line regulation is measured from low line to high line at rated load.</li><li>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.</li><li>7. Derating may be needed under low input voltages. Please check the derating curve for more details.</li><li>8. 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."<br/>(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a>)</li></ol> |               |               |              |                |              |              |              |

### Derating Curve

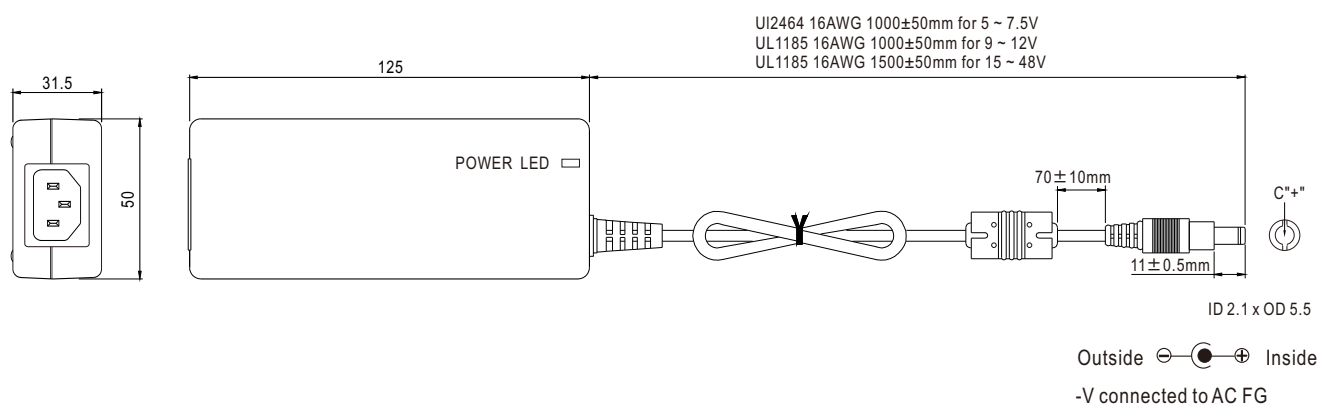


### Static Characteristics



### Mechanical Specification

Case No. GS60A Unit:mm



### Plug Assignment

- Standard plug: P1J

| P1J    |        |
|--------|--------|
| P/N    | OUTPUT |
| CENTER | +      |

- Optional lock type plug: P2S  
SWITCHCRAFT S761K plug equivalent

### Installation Manual

Please refer to : <http://www.meanwell.com/webnet/search/InstallationSearch.html>