



### ■ Features

- Interchangeable AC plugs (plug kit sold separately)
- Medical safety approved (2 × MOPP between primary to secondary)
- Suitable for BF application with appropriate system consideration
- Low leakage current <math><100\mu A</math>
- No load power consumption <math>< 0.075W</math>
- Energy efficiency Level VI
- Comply with EISA 2007/DoE and EU ErP
- Class II power (without earth pin)
- Protections: Short circuit / Overload / Over voltage
- Fully enclosed plastic case
- Optional lock type DC plug
- 100% full load burn-in test
- 3 years warranty

### ■ Applications

- Blood glucose meter
- Blood pressure meter
- Nebulizer
- Inhaler
- Portable medical device
- Sleep apnea devices

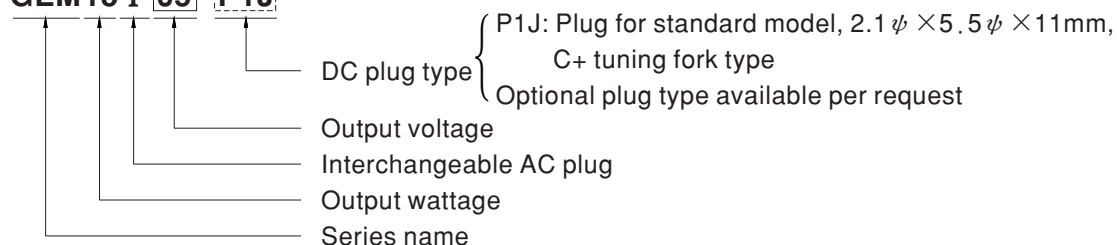
### ■ Description

GEM18I is a highly reliable, 18W wall-mounted style single-output green medical adaptor series, which is compact and convenient for carry. This product is equipped with an interchangeable AC plug (4 types, including European type, USA type, U.K. type and Australian type) that makes it very suitable for businessmen to use in the major countries around the globe. GEM18I is a class II power unit (without FG), accepting the input range from 80VAC to 264VAC that it 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 (<math><100\mu A</math>), fitting the medical devices in direct electrical contact with the patients.

With the working efficiency up to 87% and the extremely low no-load power consumption below 0.075W, GEM18I is compliant with the latest USA energy regulation EISA 2007/DoE (Level VI) and EU ErP. The supreme feature allows the adaptor to save the energy when it is under either the operating mode or the standby mode. The entire series is approved for international safety regulations; moreover, it adopts the 94V-0 flame retardant plastic case that it can effectively prevent users from electric hazard.

### ■ Model Encoding

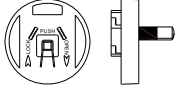
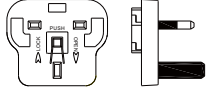
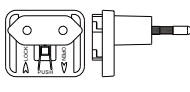
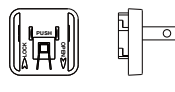
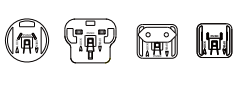
**GEM18 I 05 -P1J**





# 18W AC-DC High Reliability Interchangeable Medical Adaptor **GEM18I** series

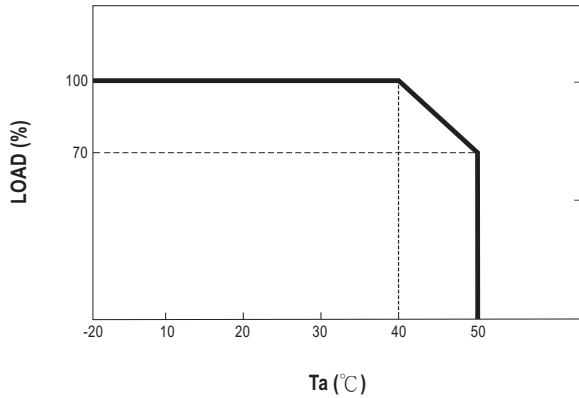
## Interchangeable AC plug Specifically for GEM18I

| TYPE      |  |  |  |  |  |
|-----------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|           | Australian type                                                                   | U.K type                                                                          | European type                                                                     | US type                                                                             | Mix four type                                                                       |
| ORDER NO. | AC plug-AU2                                                                       | AC plug-UK2                                                                       | AC plug-EU2                                                                       | AC plug-US2                                                                         | AC plug-MIX2                                                                        |

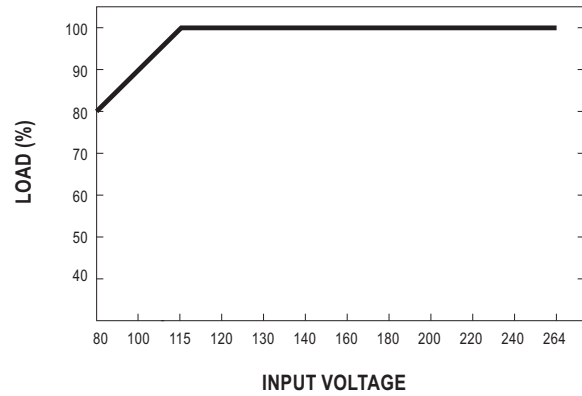
## SPECIFICATION

| ORDER NO.                             | GEM18I05-P1J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | GEM18I09-P1J                                                                                                            | GEM18I12-P1J | GEM18I15-P1J | GEM18I18-P1J | GEM18I24-P1J | GEM18I48-P1J |           |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|-----------|
| OUTPUT                                | SAFETY MODEL NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | GEM18I05                                                                                                                | GEM18I09     | GEM18I12     | GEM18I15     | GEM18I18     | GEM18I24     | GEM18I48  |
|                                       | DC VOLTAGE <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 5V                                                                                                                      | 9V           | 12V          | 15V          | 18V          | 24V          | 48V       |
|                                       | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3A                                                                                                                      | 2A           | 1.5A         | 1.2A         | 1A           | 0.75A        | 0.38A     |
|                                       | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0 ~ 3A                                                                                                                  | 0 ~ 2A       | 0 ~ 1.5A     | 0 ~ 1.2A     | 0 ~ 1A       | 0 ~ 0.75A    | 0 ~ 0.38A |
|                                       | RATED POWER (max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 15W                                                                                                                     | 18W          | 18W          | 18W          | 18W          | 18W          | 18W       |
|                                       | RIPPLE & NOISE (max.) <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 60mVp-p                                                                                                                 | 60mVp-p      | 80mVp-p      | 80mVp-p      | 80mVp-p      | 80mVp-p      | 80mVp-p   |
|                                       | VOLTAGE TOLERANCE <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ±5.0%                                                                                                                   | ±5.0%        | ±3.0%        | ±3.0%        | ±2.0%        | ±2.0%        | ±2.0%     |
|                                       | LINE REGULATION <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ±1.0%                                                                                                                   | ±1.0%        | ±1.0%        | ±1.0%        | ±1.0%        | ±1.0%        | ±1.0%     |
| LOAD REGULATION <small>Note.6</small> | ±5.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ±5.0%                                                                                                                   | ±3.0%        | ±3.0%        | ±2.0%        | ±2.0%        | ±2.0%        |           |
| SETUP, RISE, HOLD UP TIME             | 500ms, 30ms, 16ms/230VAC      500ms, 30ms, 16ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                         |              |              |              |              |              |           |
| INPUT                                 | VOLTAGE RANGE <small>Note.7</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 80 ~ 264VAC      113 ~ 370VDC                                                                                           |              |              |              |              |              |           |
|                                       | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 47 ~ 63Hz                                                                                                               |              |              |              |              |              |           |
|                                       | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 80%                                                                                                                     | 84%          | 84%          | 84%          | 84%          | 85%          | 87%       |
|                                       | AC CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.45A / 115VAC      0.25A / 230VAC                                                                                      |              |              |              |              |              |           |
|                                       | INRUSH CURRENT (max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 30A / 115VAC      60A / 230VAC                                                                                          |              |              |              |              |              |           |
| LEAKAGE CURRENT(max.)                 | Touch current < 100µA/264VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                         |              |              |              |              |              |           |
| PROTECTION                            | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 105 ~ 160% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed |              |              |              |              |              |           |
|                                       | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 110 ~ 140% rated output voltage<br>Protection type : Clamp by zener diode, output short                                 |              |              |              |              |              |           |
| ENVIRONMENT                           | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -20 ~ +50°C (Refer to "Derating Curve")                                                                                 |              |              |              |              |              |           |
|                                       | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 20% ~ 90% RH non-condensing                                                                                             |              |              |              |              |              |           |
|                                       | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -20 ~ +85°C, 10 ~ 95% RH                                                                                                |              |              |              |              |              |           |
|                                       | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±0.03% / °C (0 ~ 40°C)                                                                                                  |              |              |              |              |              |           |
| SAFETY & EMC <small>(Note. 8)</small> | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ANSI/AAMI ES60601-1 / 60601-1-11, TUV EN60601-1 / 60601-1-11 approved                                                   |              |              |              |              |              |           |
|                                       | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | I/P-O/P:5656VDC                                                                                                         |              |              |              |              |              |           |
|                                       | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH                                                                              |              |              |              |              |              |           |
|                                       | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Compliance to EN55011 class B, EN61000-3-2,3, FCC PART 15 / CISPR22 class B                                             |              |              |              |              |              |           |
|                                       | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Compliance to EN61000-4,-2,3,4,5,6,8,11, light industry level, criteria A                                               |              |              |              |              |              |           |
| OTHERS                                | LIFE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3 years : 100% load 40°C, 12hours / day                                                                                 |              |              |              |              |              |           |
|                                       | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 400Khrs min. MIL-HDBK-217F(25°C)                                                                                        |              |              |              |              |              |           |
|                                       | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 75.5*39.1*56.2mm (L*W*H)                                                                                                |              |              |              |              |              |           |
|                                       | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 140g ; 60pcs / 14kg / CARTON                                                                                            |              |              |              |              |              |           |
| CONNECTOR                             | 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>All parameters are specified at 230VAC input, rated load, 25°C 70% RH ambient.</li> <li>DC voltage: The output voltage set at point measure by plug terminal &amp; 50% load.</li> <li>Ripple &amp; noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf &amp; 47µf capacitor.</li> <li>Tolerance: includes set up tolerance, line regulation, load regulation.</li> <li>Line regulation is measured from low line to high line at rated load.</li> <li>Load regulation is measured from 10% to 100% rated load.</li> <li>Derating may be needed under low input voltage. Please check the derating curve for more details.</li> <li>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



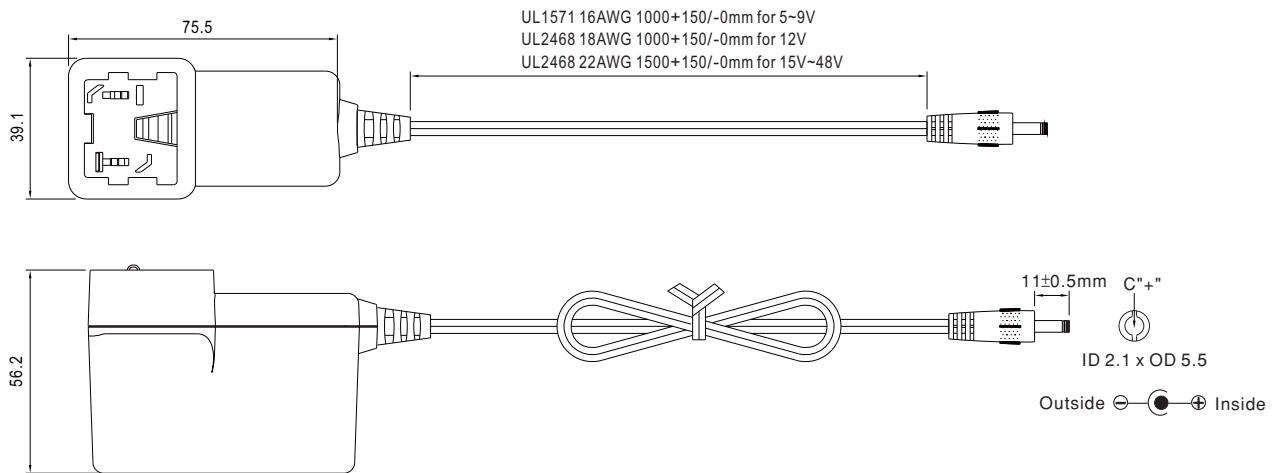
### Static Characteristics



### Mechanical Specification

Unit:mm

| TYPE |                 |          |               |         |
|------|-----------------|----------|---------------|---------|
|      | Australian type | U.K type | European type | US type |



### 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/manual.html>