

Features

- 4"x2" compact size
• IT & Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1, IEC/BS EN/EN60601-1 and IEC/BS EN/EN/UL 62368-1
• Suitable for BF application with appropriate system consideration
• Cooling by free air convection
• EMI class B for class I configuration
• No load power consumption<0.75W
• Protections: Short circuit / Overload / Over voltage
• Operating altitude up to 3000 meters
• 3 years warranty

Applications

- Oral irrigator
• Hemodialysis machine
• Medical computer monitors
• Sleep apnea devices

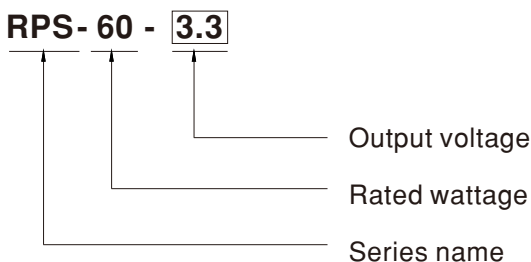
GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

RPS-60 is a 60W highly reliable green PCB type medical power supply with a high power density on the 4" by 2" footprint. It accepts 90~264VAC input and offers various output voltages between 3.3V and 48V. The working efficiency is up to 86% and the extremely low no load power consumption is down below 0.75W. RPS-60 is able to be used for Class I (with FG) system design. The extremely low leakage current is less than 150µA. In addition, it conforms to international IT and medical regulations (2*MOPP) and EMC BS EN/EN55022/BS EN/EN55011, perfectly fitting all kinds of BF rated "patient contact" medical system equipment.

Model Encoding

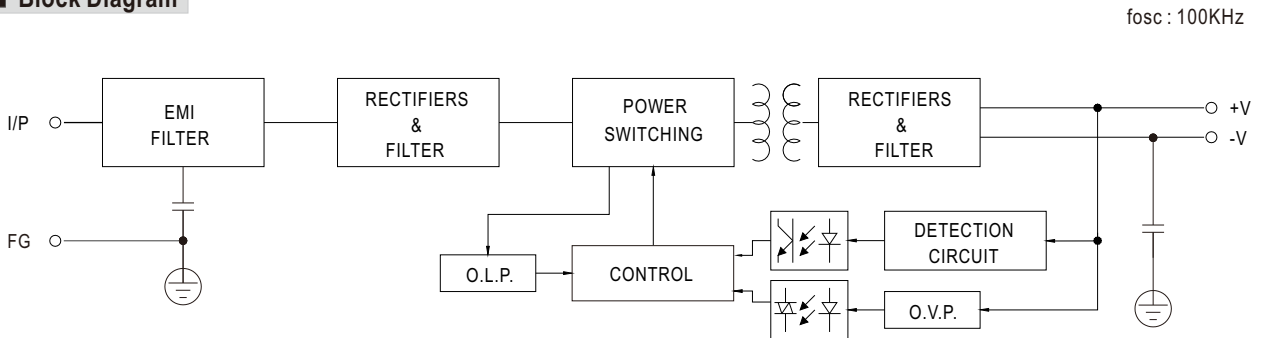




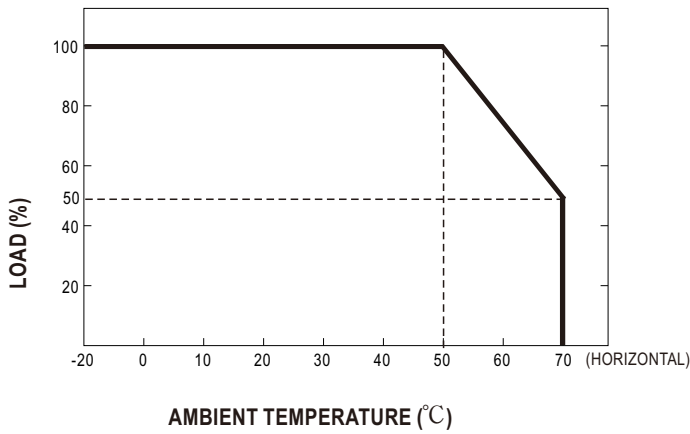
SPECIFICATION

| MODEL | RPS-60-3.3 | RPS-60-5 | RPS-60-12 | RPS-60-15 | RPS-60-24 | RPS-60-48 | | |
|---------------------------|---|--|-------------------------|--------------|---|--|-------------------|--|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 12V | 15V | 24V | 48V | |
| | RATED CURRENT | 10A | 10A | 5A | 4A | 2.5A | 1.25A | |
| | CURRENT RANGE | 0 ~ 11A | 0 ~ 11A | 0 ~ 5.5A | 0 ~ 4.4A | 0 ~ 2.75A | 0 ~ 1.375A | |
| | RATED POWER | 33W | 50W | 60W | 60W | 60W | 60W | |
| | PEAK LOAD(10sec.) Note.2 | 36.3W | 55W | 66W | 66W | 66W | 66W | |
| | RIPPLE & NOISE (max.) Note.3 | 60mVp-p | 60mVp-p | 60mVp-p | 100mVp-p | 100mVp-p | 100mVp-p | |
| | VOLTAGE ADJ. RANGE | 3.1 ~ 3.6V | 4.75 ~ 5.5V | 11.4 ~ 13.2V | 13.5 ~ 16.5V | 22.8 ~ 27.6V | 45.6 ~ 52.8V | |
| | VOLTAGE TOLERANCE Note.4 | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±1.0% | ±1.0% | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | LOAD REGULATION | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | |
| | SETUP, RISE TIME | 500ms, 30ms/230VAC 500ms, 30ms/115VAC at full load | | | | | | |
| HOLD UP TIME (Typ.) | 60ms/230VAC 12ms/115VAC at full load | | | | | | | |
| INPUT | VOLTAGE RANGE | 90 ~ 264VAC 127 ~ 370VDC | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | |
| | EFFICIENCY (Typ.) | 74% | 79% | 84% | 85% | 87% | 86% | |
| | AC CURRENT (Typ.) | 1.8A/115VAC 1 A/230VAC | | | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 60A/230VAC 30A/115VAC | | | | | | |
| | LEAKAGE CURRENT(max.) Note.5 | Earth leakage current < 150µA/264VAC , Touch current < 100µA/264VAC | | | | | | |
| PROTECTION | OVER LOAD | 115 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | | | |
| | OVER VOLTAGE | 3.8 ~ 5V | 5.7 ~ 6.8V | 13.8 ~ 16.2V | 17.2 ~ 20.3V | 28.4 ~ 32.4V | 55.2 ~ 64.8V | |
| ENVIRONMENT | WORKING TEMP. | -20 ~ +70°C (Refer to "Derating Curve") | | | | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 10 ~ 95% RH non-condensing | | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 50°C) | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | | | | | |
| | OPERATING ALTITUDE Note.6 | 3000 meters | | | | | | |
| SAFETY & EMC (Note 8) | SAFETY STANDARDS | IEC 60601-1:2005+A1+A2, TUV BS EN/ EN 60601-1:2006+A1+A12+A2, ANSI/AAMI ES60601-1:2005+A2, CAN/CSA C22.2 No. 60601-1:2014+A2, IEC 62368-1:2014, UL 62368-1, 2nd Ed, CSA C22.2 No. 62368-1-14, 2nd Ed, TUV BS EN/ EN 62368-1:2014+A11, EAC TP TC 004 approved | | | | | | |
| | ISOLATION LEVEL | Primary-Secondary: 2xMOPP, Primary-Earth:1xMOPP, Secondary-Earth:1xMOPP | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC/ 25°C/ 70% RH | | | | | | |
| | EMC EMISSION | Parameter | Standard | | | | Test Level / Note | |
| | | Conducted emission | BS EN/EN55011 (CISPR11) | | | | Class B | |
| | | Radiated emission | BS EN/EN55011 (CISPR11) | | | | Class B | |
| | | Harmonic current | BS EN/EN61000-3-2 | | | | Class A | |
| | Voltage flicker | BS EN/EN61000-3-3 | | | | ----- | | |
| | EMC IMMUNITY | BS EN/EN55035 , BS EN/EN60601-1-2 | | | | | | |
| Parameter | | Standard | | | | Test Level / Note | | |
| ESD | | BS EN/EN61000-4-2 | | | | Level 4, 15KV air ; Level 4, 8KV contact | | |
| RF field susceptibility | | BS EN/EN61000-4-3 | | | | Level 3, 10V/m(80MHz~2.7GHz) Table 9, 9~28V/m(385MHz~5.78GHz) | | |
| EFT bursts | | BS EN/EN61000-4-4 | | | | Level 3, 2KV | | |
| Surge susceptibility | | BS EN/EN61000-4-5 | | | | Level 4, 4KV/Line-FG; 2KV/Line-Line | | |
| Conducted susceptibility | | BS EN/EN61000-4-6 | | | | Level 3, 10V | | |
| Magnetic field immunity | | BS EN/EN61000-4-8 | | | | Level 4, 30A/m | | |
| Voltage dip, interruption | BS EN/EN61000-4-11 | | | | 100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods | | | |
| OTHERS | MTBF | 5153.0K hrs min. Telcordia SR-332 (Bellcore) ; 353.6K hrs min. MIL-HDBK-217F (25°C) | | | | | | |
| | DIMENSION (L*W*H) | 101.6*50.8*29mm or 4" * 2" * 1.141" inch | | | | | | |
| | PACKING | 0.15Kg; 96pcs/15.4Kg/0.89CUFT | | | | | | |
| NOTE | <ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 µ F & 47 µ F parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Touch current was measured from primary input to DC output. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). Heat Sink HS1,HS2 can not be shorted. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf) <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | | | |

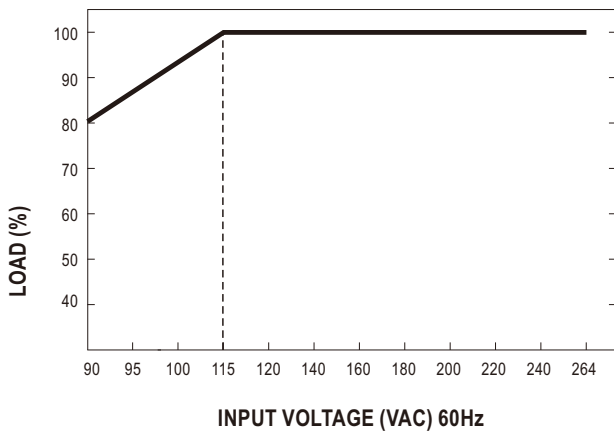
■ Block Diagram



■ Output Derating

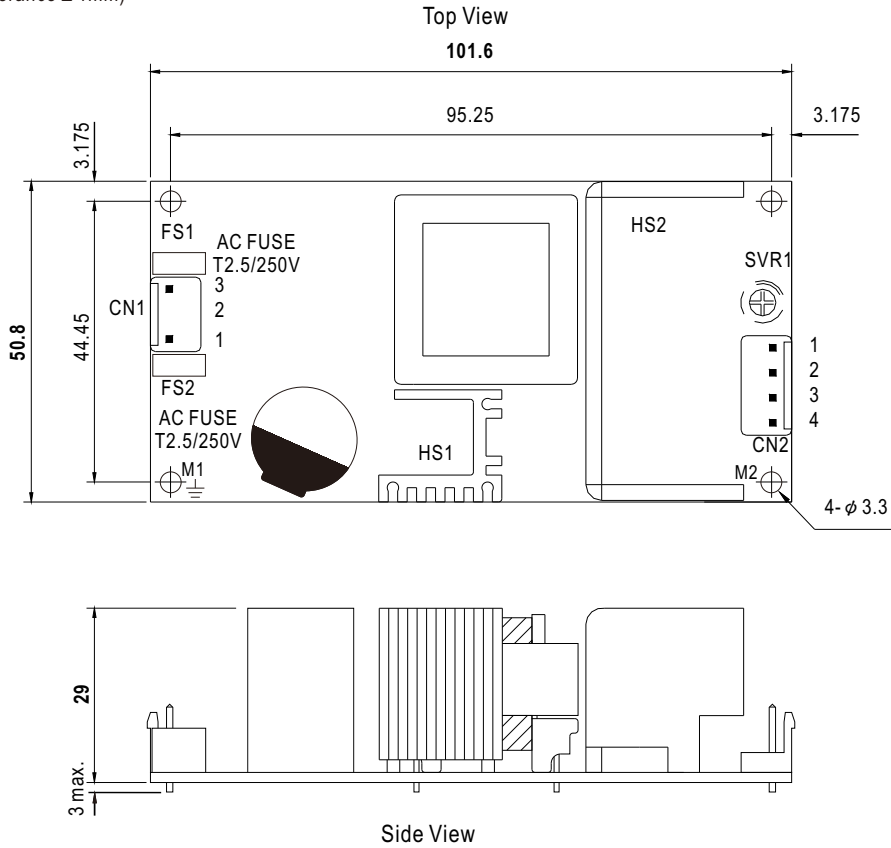


■ Output Derating VS Input Voltage



Mechanical Specification

(Unit: mm , tolerance ± 1mm)



AC Input Connector (CN1) : JST B3P-VH or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|--------------------------|-----------------------------------|
| 1 | AC/N | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 2 | No Pin | | |
| 3 | AC/L | | |

DC Output Connector (CN2) : JST B4P-VH or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|--------------------------|-----------------------------------|
| 1,2 | +V | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 3,4 | -V | | |

⊕ : Grounding Required

- ⚠ 1.HS1,HS2 cannot be shorted.
- 2.M1 is safety ground. For better EMC performance,
Please secure an electrical connection between
M1,M2 and chassis grounding.

Installation Manual

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