

Features

- . Input 90V to 264VAC, 50~60Hz suitable for worldwide use
- . Output voltage optional from 3.3V to 48Vdc constant voltage
- . Protections: Short Circuit / Overload / Over Voltage Protection
- . 100% full load burn-in test for 2Hrs to make every unit reliable
- . Suitable for BF application with appropriate system consideration
- . Cooling by free air convection, operating temperature -20~50°C
- . Long life and high reliability design with 3 years warranty
- . Low standby consumption power <0.75W
- . No minimum load required and extremely low leakage current

Safety Standards

- . IEC60601-1 CB report for worldwide use
- . UL ANSI/AAMI ES60601-1/CAN/CSA-C22.2 for USA
- . TUV BS EN/EN 60601-1 for European Union



Product Description:

This is a highly reliable and small size AC/DC on board type 60W medical grade switching power supply solution with wide range 90-264Vac input and designed strictly according to the international medical safety standards. The design is with a very low no load power consumption less than 0.75W and ultra-low leakage current. The entire series supplies different models with output voltages ranging between 3.3Vdc and 48Vdc that can satisfy the demands for various types of medical equipment such as oral irrigator, hemodialysis machine, medical computer monitors, sleep apnea devices and so on. The 60W PCB type medical switching power supply is built-in full protections of over load / short circuit and over voltage with small and compact size of 101.6 x 50.8 x 29mm.

Technical Specification

Typ. Model	KRPS-60-3.3	KRPS-60-5	KRPS-60-12	KRPS-60-24	KRPS-60-48
Output					
Output Voltage	3.3VDC	5VDC	12VDC	24VDC	48VDC
Rated Current	10A	10A	5A	2.5A	1.25A
Current Range	0 ~ 10A	0 ~ 10A	0 ~ 5A	0 ~ 2.5A	0 ~ 1.25A
Output Power	33W Max.	50W Max.	60W Max.	60W Max.	60W Max.
Voltage Tolerance	±3%	±3%	±2%	±1%	±1%
Ripple & Noise	100mVp-p	100mVp-p	150mVp-p	200mVp-p	200mVp-p
Input					
Input voltage	90 - 264Vac or 120- 370Vdc				
Input Frequency	50-60Hz (When the input is AC)				
Input Current	1.8A Max. @ 100 ~240Vac 50/60Hz input				
Inrush Current	60A Max. @ 100 ~240Vac 50/60Hz input				
Efficiency (Typ.)	74%	79%	84%	87%	86%
Leakage Current	≤0.08mA @ full input range				
Protections					
Over current	115~150% rated output power. Auto-Recovery when the fault is removed				
Short Circuit	No damage. Auto-Recovery when the fault is removed				
Over temperature	Shut down o/p voltage, re-power on to recover				
Environmental					
Operation Temperature	-20°C to +50°C, 20%RH to 90%RH				
Storage Temp, Humidity	-45~ +85°C, 10%RH to 95%RH				
Operation Altitude	≤3000m @ full load and rated operating temperatures				
MTBF	≥50000Hrs @ full load and rated operating temperatures				
Mechanical					
Dimensions (L x W x H)	101.6 x 50.8 x 29.0mm (4.00 x 2.00 x 1.14 inch)				
Unit Weight	150g±10 grams				
Packing Information	96pcs/ Carton, carton dimensions:47*37*20cm, 15.4kgs/ Carton				

TEST REPORT

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	RIPPLE & NOISE	100mVp-p (Max)	I/P:230VAC / O/P:FULL LOAD / Ta:25°C	44mVp-p	P
2	VOLTAGE TOLERANCE	-3% ~ +3% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD / Ta:25°C	-1.0% ~ +1.0% of output voltage	P
3	LINE REGULATION	-0.3% ~ +0.3% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD / Ta:25°C	-0.09% ~ +0.08% of output voltage	P
4	LOAD REGULATION	-0.5% ~ +0.5% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD / Ta:25°C	-0.25% ~ +0.25% of output voltage	P
5	OVER/UNDERSHOOT	<±5%	I/P: 230VAC O/P:FULL LOAD / Ta:25°C	0.9%	P
6	SET UP TIME	500 mS (Max)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	421 mS	P
7	RISE TIME	30 mS (Max)	I/P: 230VAC O/P:FULL LOAD / Ta:25°C	25 mS	P
8	HOLD UP TIME	12 mS (Min)	I/P: 115VAC O/P:FULL LOAD / Ta:25°C	14 mS	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	VOLTAGE RANGE	90VAC~264VAC	I/P:TESTING O/P:FULL LOAD / Ta:25°C	79V~264V	P
2	FREQUENCY RANGE	50HZ - 60HZ (Typ) NO DAMAGE OSC	I/P: 100VAC ~ 240VAC O/P:FULL~MIN LOAD / Ta:25°C	TEST: OK	P
3	EFFICIENCY	87% (Typ)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	88.11%	P
4	AVERAGE EFFICIENCY	85%	I/P:115/230VAC & O/P:25%、50%、75%、100% LOAD & Ta:25°C	85.98% (115VAC) 86.12% (230VAC)	P
5	AC CURRENT	1.8A (Max)	I/P:100VAC & O/P:FULL LOAD Ta:25°C	1.63A	P
6	INRUSH CURRENT	<60A COLD START	I/P: 230VAC / O/P:FULL LOAD Ta:25°C	55.9A	P
7	LEAKAGE CURRENT	<0.13mA	I/P:240VAC & O/P:Min LOAD Ta:25°C	L-FG:0.099mA N-FG:0.099mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	OVER LOAD PROTECTION	115 ~ 150% (Typ)	I/P:230VAC & O/P:TESTING Ta:25°C	132.5% HICCUP MODE	P
2	OVER VOLTAGE PROTECTION	115 ~ 135% (Typ)	I/P:230VAC O/P:MIN LOAD & Ta:25°C	Hiccup mode ,recovers automatically after fault condition is removed	P
3	SHORT PROTECTION	SHORT OUTPUT 1 HOUR NO DAMAGE	I/P:264VAC O/P:FULL LOAD & Ta:25°C	NO DAMAGE HICCUP MODE	P

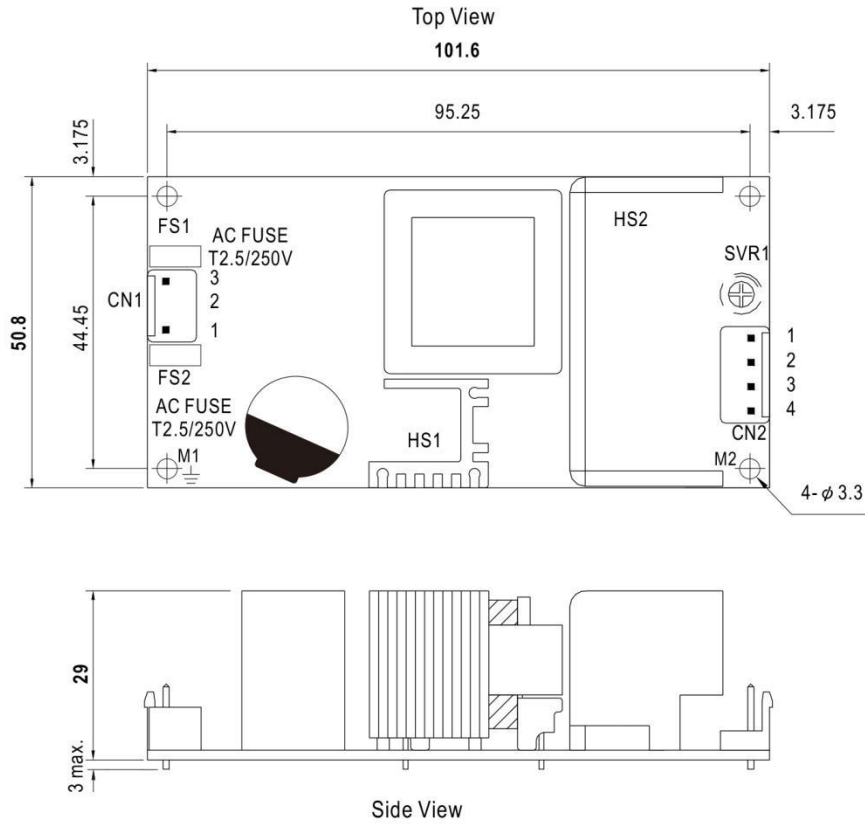
SAFETY TEST & E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 4KVAC/min I/P- FG: 2KVAC/min O/P-FG: 1.5KVAC/min	I/P-O/P: 4 KVAC/min I/P-FG: 2.4KVAC/min O/P-FG: 1.8KVAC/min Ta:25°C	I/P-O/P: 3.96mA I/P-FG: 4.25mA O/P-FG: 1.83mA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P: 9999MΩ I/P-FG: 9999MΩ O/P-FG: 9999MΩ NO DAMAGE	P
3	CONDUCTION	BS EN/EN55032(CISPR32), FCC PART 15 / CISPR22 CAN	I/P: 230 VAC (50HZ) O/P: FULL/50% LOAD Ta: 25°C	PASS Test by certified Lab	P
4	RADIATION	BS EN/EN55032(CISPR32), FCC PART 15 / CISPR22 CAN	I/P: 230 VAC (50HZ) O/P: FULL LOAD Ta: 25°C	PASS Test by certified Lab	P
5	SURGE	BS EN/EN61000-4-5 LIGHT INDUSTRY L-N: 1KV	I/P: 230 VAC/50HZ O/P: FULL LOAD Ta: 25°C	CRITERIA B	P
6	E.S.D	BS EN/EN61000-4-2 LIGHT INDUSTRY AIR: 8KV / Contact: 4KV	I/P: 230 VAC/50HZ O/P: FULL LOAD Ta: 25°C	CRITERIA B	P

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	ZHU LI	WANG LW	ZHANG DL

■ **Mechanical Specification**

Unit:mm



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.