



Features

- . Input 90V to 264VAC, 50~60Hz suitable for worldwide use
- . Output voltage optional from 5V/12V/-5V and 5V/12V/-12VDC
- . 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 -20~40°C
- . Long life and high reliability design with 3 years warranty
- . 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:

It is a highly reliable triple output 160W medical grade open frame switching power supply solution with wide range 90-264Vac input and designed strictly according to the medical safety standards. The entire series supplies two models with output voltages 5V/12V/-5V & 5V/12V/-12V & 5V/15V/-15 and 5V/12V/24V. The product is suitable for various types of medical devices such as hemodialysis machine, medical computer monitors, sleep apnea devices and so on. The 160W triple output medical power supply solution is built-in full protections of over load / short circuit and over voltage. The design is in low leakage current <0.16mA and long life >140K hours.

Technical Specification

Typ. Model	KRPT-160A			KRPT-160B		
Output						
Output Number	CH1	CH2	CH3	CH1	CH2	CH3
Output Voltage	5VDC	12VDC	-5VDC	5VDC	12VDC	-12VDC
Rated Current	9A	3.8A	0.6A	9A	3.4A	0.8A
Current Range	0.6 ~96A	0.2 ~ 3.8A	0.1 ~ 0.6A	0.6 ~ 9A	0.2 ~ 3.4A	0.1 ~ 0.8A
Output Power	98.6W Max.			98.4W Max.		
Voltage Tolerance	±2%	±5%	±7%	±2%	±5%	±5%
Ripple & Noise	100mVp-p	100mVp-p	150mVp-p	100mVp-p	100mVp-p	150mVp-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	50A Max. @ 100 ~240Vac 50/60Hz input					
Efficiency (Typ.)	84%			84%		
Leakage Current	≤0.16mA @ full input range					
Protections						
Over current	105 ~ 135% rated output power. Hiccup mode, 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 +40°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)	127.0 x 76.2 x 34.6mm (5.00 x 3.00 x 1.36 inch)					
Unit Weight	330g±10 grams					
Packing Information	36pcs/ Carton, carton dimensions:47*37*20cm, 12.9kgs/ Carton					

TEST REPORT

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	RIPPLE & NOISE	CH1:100/ CH2:100/ CH3:150mVp-p	I/P:230VAC / O/P:FULL LOAD / Ta:25°C	44mVp-p /51mVp-p /97mVp-p	P
2	VOLTAGE TOLERANCE	CH1: ±2% CH2: ±5% CH3: ±7%	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD / Ta:25°C	CH1: -0.76% ~+1.36% CH2: -2.96% ~+3.56% CH3: -1.97% ~+4.95%	P
3	LINE REGULATION	CH1: -0.5% ~ +0.5% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD / Ta:25°C	-0.22% ~ +0.23% of output voltage	P
4	LOAD REGULATION	CH1: -1.5% ~ +1.5% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD / Ta:25°C	-0.65% ~ +0.86% of output voltage	P
5	OVER/UNDERSHOOT	<±5%	I/P: 230VAC O/P:FULL LOAD / Ta:25°C	0.85%	P
6	SET UP TIME	3500 mS (Max)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	1130 mS	P
7	RISE TIME	30 mS (Max)	I/P: 230VAC O/P:FULL LOAD / Ta:25°C	26 mS	P
8	HOLD UP TIME	20 mS (Min)	I/P: 115VAC O/P:FULL LOAD / Ta:25°C	23 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	84V~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	84% (Typ)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	84.957%	P
4	AVERAGE EFFICIENCY	>82%	I/P:115/230VAC & O/P:25%、50%、75%、 100% LOAD & Ta:25°C	83.325% (115VAC) 83.958% (230VAC)	P
5	AC CURRENT	1.8A (Max)	I/P:100VAC & O/P:FULL LOAD Ta:25°C	1.29A	P
6	INRUSH CURRENT	<70A COLD START	I/P: 230VAC / O/P:FULL LOAD Ta:25°C	49.5A	P
7	LEAKAGE CURRENT	< 0.16mA	I/P:240VAC & O/P:Min LOAD Ta:25°C	L-FG:0.112mA N-FG:0.110mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 ~ 150% (Typ)	I/P:230VAC & O/P:TESTING Ta:25°C	121.1% 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:6.11mA I/P-FG: 5.62mA O/P-FG: 3.43mA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100M Ω I/P-FG: 500VDC>100M Ω O/P-FG:500VDC>100M Ω	I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P: 9999M Ω I/P-FG: 9999M Ω O/P-FG:9999 M Ω 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

