



**Features**

- . Input 90V to 264VAC, 50~60Hz suitable for worldwide use
- . Output voltage optional from 12V to 56Vdc constant voltage
- . Protections: Short Circuit / Overload / Over Voltage Protection
- . 100% full load burn-in test for 2Hrs to make every unit reliable
- . Small and compact size, built-in active PFC function
- . Cooling by free air convection, operating temperature -20~40°C
- . Long life and high reliability design with 3 years warranty
- . Low standby consumption power <0.5W
- . High efficiency up to 93% and 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 quality 200W medical grade open frame switching power supply solution with wide range 90-264Vac input and designed strictly according to the international safety standards. It's built-in PFC function with PF>0.95 and high efficiency up to 93%. as well as low standby consumption power no more than 0.5W. The entire series supplies different models with output voltages ranging between 12Vdc and 56Vdc that can satisfy the demands for various types of medical equipment such as oral irrigator, hemodialysis machine, medical monitors, sleep apnea devices, pumps machine and so on. The 200W 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 127.0 x 76.3 x 38.2mm.

**Technical Specification**

Typ. Model	KPM11801200	KPM12002400	KPM12003600	KPM12004800	KPM12005600
<b>Output</b>					
Output Voltage	12VDC	24VDC	36VDC	48VDC	56VDC
Rated Current	12.5A	8.33A	5.56A	4.16A	3.57A
Current Range	0 ~ 15A	0 ~ 8.33A	0 ~ 6.25A	0 ~ 5.55A	0 ~ 3.57A
Output Power	180W Max.	200W Max.	200W Max.	200W Max.	200W Max.
Voltage Tolerance	±3%	±3%	±2%	±2%	±2%
Ripple & Noise	200mVp-p	300mVp-p	400mVp-p	450mVp-p	450mVp-p
<b>Input</b>					
Input voltage	90 - 264Vac or 120- 370Vdc				
Input Frequency	50-60Hz (When the input is AC)				
Input Current	3A Max. @ 100 ~240Vac 50/60Hz input				
Inrush Current	120A Max. @ 100 ~240Vac 50/60Hz input				
Efficiency (Typ.)	90%	90%	91%	92%	93%
Leakage Current	≤0.25mA @ full input range				
<b>Protections</b>					
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				
<b>Environmental</b>					
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	≤2000m @ full load and rated operating temperatures				
MTBF	≥50000Hrs @ full load and rated operating temperatures				
<b>Mechanical</b>					
Dimensions (L x W x H)	127.0 x 76.3 x 38.2mm (5.00 x 3.00 x 1.50 inch)				
Unit Weight	250g±20 grams				
Packing Information	48pcs/ Carton, carton dimensions:47*37*20cm, 14kgs/ Carton				

## TEST REPORT

**OUTPUT FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	RIPPLE & NOISE	200mVp-p (Max)	I/P:230VAC / O/P:FULL LOAD / Ta:25°C	177mVp-p	P
2	VOLTAGE TOLERANCE	-3% ~ +3% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD / Ta:25°C	-1.0% ~ +1.2% of output voltage	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD / Ta:25°C	-0.07% ~ +0.07% of output voltage	P
4	LOAD REGULATION	-1% ~ +1% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD / Ta:25°C	-0.52% ~ +0.61% 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	4000 mS (Max)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	2250 mS	P
7	RISE TIME	50 mS (Max)	I/P: 230VAC O/P:FULL LOAD / Ta:25°C	33 mS	P
8	HOLD UP TIME	8 mS (Min)	I/P: 115VAC O/P:FULL LOAD / Ta:25°C	12 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	90% (Typ)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	91.20%	P
4	AVERAGE EFFICIENCY	87%	I/P:115/230VAC & O/P:25%、50%、75%、100% LOAD & Ta:25°C	89.23% (115VAC) 89.98% (230VAC)	P
5	AC CURRENT	3.0A (Max)	I/P:100VAC & O/P:FULL LOAD Ta:25°C	2.56A	P
6	INRUSH CURRENT	<120A COLD START	I/P: 230VAC / O/P:FULL LOAD Ta:25°C	66.32A	P
7	LEAKAGE CURRENT	<0.25mA	I/P:240VAC & O/P:Min LOAD Ta:25°C	L-FG:0.09mA N-FG:0.09mA	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	OVER LOAD PROTECTION	115 ~ 165% (Typ)	I/P:230VAC & O/P:TESTING Ta:25°C	135.5% 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: 3KVAC/min I/P- FG: 2KVAC/min O/P-FG:0.5KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 2.4KVAC/min O/P-FG: 0.6KVAC/min Ta:25°C	I/P-O/P:3.80mA I/P-FG: 2.98mA O/P-FG: 1.38mA 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
<b>PASS</b>	<b>ZHU LI</b>	<b>WANG LW</b>	<b>ZHANG DL</b>