KINRI® INNOVATE

INTERCHANGEABLE POWER ADAPTER 48W SERIES

Features

. Wide input 90V to 264VAC, 50~60Hz suitable for worldwide
. Output voltage available from 5V to 36Vdc constant voltage
. Class B Conducted and Radiated EMI for information devices
. Meet ErP & DoE efficiency level VI requirements
. No load power consumption < 0.1 W
. High Efficiency up to 87.76% and high reliable design
. Over-Voltage/Load/Temperature & Short Circuit protections
. Interchangeable AC plugs design available for USA/EU/UK/AU

Safety Standards

. IEC62368-1/IEC61558-1 CB report for worldwide use
. UL62368-1 + CAN/CSA 62368-1 for USA and Canada
. EN 62368-1:2014/A11:2017 for European Union
. AS/NZS 62368.1:2018 for Australia and New Zealand

UL62368-1 BS EN/EN62368-1 R33100 RoHS J62368-1 K60950-1 AS/NZS60950-1 GB4943.1

Product Description:

It is a 48W single output interchangeable type switching power adapter solution with wide range 90-264Vac input and designed strictly according to the international safety standards with UL/CE/UKCA/SAA approved under IEC62368-1. The entire series supplies different models with output voltages ranging between 5Vdc and 36Vdc that can satisfy the demands for various types of consumer electronic devices, office facilities, telecommunication devices, industrial equipments and so on. With the efficiency up to 87.76% and no load consumption power <0.1W, this 48W power adapter is equipped with an interchangeable AC plug (4 types including European type, USA type, UK and Australian type). It adopts the 94V-0 flame retardant plastic housing and the temperature resistance is up to 120 degrees.

Technical Specification

Typ. Model	ICP48-050-6000	ICP48-090-5000	ICP48-120-4000	ICP48-150-2400	ICP48-240-2000
Output					
Output Voltage	5VDC	9VDC	12VDC	15VDC	24VDC
Output Current	6.0A Max.	5.0A Max.	3.0A Max.	3.2A Max.	2.0A Max.
Output Power	30.0W Max.	45W Max.	36W Max.	48W Max.	48W Max.
Voltage Tolerance	±5%	±5%	±5%	±5%	±5%
Ripple & Noise	200mVp-p	200mVp-p	200mVp-p	200mVp-p	250mVp-p
Standby Power	≤0.1W	≤0.1W	≤0.1W	≤0.1W	≤0.1W
Input					
Input voltage	90 - 264Vac or 127- 374Vdc				
Input Frequency	50-60Hz (When the input is AC)				
Input Current	1.3A Max. @ 100 ~240Vac 50/60Hz input				
Inrush Current	60A Max. @ 100 ~240Vac 50/60Hz input				
Power Factor	>0.5 @ 120Vac 60Hz input; >0.5 @230Vac 50Hz input				
Efficiency (Typ.)	85.06%	87.76%	87.76%	87.76%	87.76%
Leakage Current	≤0.25mA @ full input range				
Protections					
Over current	120~200% 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	0℃ to +40℃, 10%RH to 90%RH				
Operation Altitude	≤2000m @ full load and rated operating temperatures				
MTBF	≥50000Hrs @ full load and rated operating temperatures				
Mechanical					
Dimensions (L x W x H)	97.0 x 45.0 x 34.6mm (3.82 x 1.77 x 1.36 inch)				
Unit Weight	220g±10 grams				
Packing Information	50pcs/ Carton, carton dimensions:47*37*20cm, 12.5kgs/ 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℃	118mVp-p	P
2	VOLTAGE TOLERANCE	-5% ~ +5% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD / Ta:25℃	-2% ~ +2% of output voltage	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD / Ta:25℃	-0.06% ~ +0.06% of output voltage	P
4	LOAD REGULATION	-3% ~ +3% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD / Ta:25℃	-0.98% ~ +1.28% of output voltage	P
5	SET UP TIME	4000 mS (Max)	I/P:230VAC O/P:FULL LOAD / Ta:25℃	2450 mS	P
6	RISE TIME	100 mS (Max)	I/P: 230VAC O/P:FULL LOAD / Ta:25℃	48 mS	P
7	HOLD UP TIME	10 mS (Min)	I/P: 115VAC O/P:FULL LOAD / Ta:25℃	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℃	82~264V	P
2	FREQUENCY RANGE	50HZ - 60HZ (Typ) NO DAMAGE OSC	I/P: 100VAC ~ 240VAC O/P:FULL~MIN LOAD / Ta:25℃	TEST: OK	P
3	EFFICIENCY	87.76% (Typ)	I/P:230VAC O/P:FULL LOAD / Ta:25℃	88.85%	P
4	AVERAGE EFFICIENCY	>87.4% (LEVEL VI)	I/P:115/230VAC &O/P:25%、50%、75%、100% LOAD & Ta:25℃	87.95% (115VAC) 88.21% (230VAC)	P
5	AC CURRENT	1.3A (Max)	I/P:100VAC & O/P:FULL LOAD Ta:25℃	0.92A	P
6	NO LOAD POWER CONSUMPTION	<0.1W	I/P: 230VAC /O/P:NO LOAD Ta:25℃	0.069W	P
7	INRUSH CURRENT	<60A COLD START	I/P: 230VAC / O/P:FULL LOAD Ta:25℃	39.91A	P
8	LEAKAGE CURRENT	< 0.25mA	I/P:240VAC & O/P:Min LOAD Ta:25℃	L-FG:0.19mA N-FG:0.18mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	OVER LOAD PROTECTION	120 ~ 200% (Typ)	I/P:230VAC & O/P:TESTING Ta:25℃	155.3% HICCUP MODE	P
2	OVER VOLTAGE PROTECTION	CLAMP BY ZENER DIODE 115 ~ 135% (Typ)	I/P:230VAC O/P:MIN LOAD & Ta:25℃	CLAMP BY ZENER DIODE	P
3	SHORT PROTECTION	SHORT OUTPUT 1 HOUR NO DAMAGE	I/P:264VAC O/P:FULL LOAD & Ta:25℃	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: 2.4 KVAC/min O/P-FG:0.6 KVAC/min Ta:25℃	I/P-O/P:3.96mA I/P-FG: NA O/P-FG:NA 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℃	I/P-O/P: 9999MΩ I/P-FG: NA O/P-FG:NA 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℃	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℃	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℃	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℃	CRITERIA B	P

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	LINDA	JUDY	ZHANG DL