



Features

- . Input 90V to 264VAC, 50~60Hz suitable for worldwide use
- . Output voltage optional from 12V to 54Vdc constant voltage
- . Protections: Short Circuit / Overload / Over Voltage Protection
- . 100% full load burn-in test for 2Hrs to make every unit reliable.
- . Cooling by free air convection, operating temperature -20~50°C
- . Long life and high reliability design with 2 years warranty

Safety Standards

- . IEC62368-1 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
- . J62368-1 for Japan and GB4943.1 for China market.



Product Description:

It is a highly reliable and quality 170W open frame boiler controller power supply solution with wide range 90-264Vac input and designed strictly according to the international safety standards. The entire series supplies different models with output voltages ranging between 12Vdc and 54Vdc that can satisfy the demands for various types of industrial automation machine, industrial control system, electronic instruments, equipments or apparatus, mechanical and electrical equipment and so on. The 170W open frame type switching power supply solution is built-in full protections of over load / short circuit and over voltage and PFC function PF no less than 0.94. The entire series can operate at the ambient temperature between -20 and 50°C without any derating under air convection.

Technical Specification

Typ. Model	KNW-170A12	KNW-170A24	KNW-170A36	KNW-170A48	KNW-170A54
Output					
Output Voltage	12VDC	24VDC	36VDC	48VDC	54VDC
Rated Current	12A	6A	4.7A	3.5A	3.15A
Current Range	0 ~ 12A	0 ~ 6A	0 ~ 4.7A	0 ~ 3.5A	0 ~ 3.15A
Output Power	144W Max.	144W Max.	170W Max.	170W Max.	170W Max.
Voltage Tolerance	±3%	±3%	±2%	±2%	±2%
Ripple & Noise	200mVp-p	200mVp-p	250mVp-p	300mVp-p	300mVp-p
Input					
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	70A Max. @ 100 ~240Vac 50/60Hz input				
Efficiency (Typ.)	88%	89%	89%	90%	90%
Leakage Current	≤ 1mA @ full input range				
Protections					
Over current	120~160% 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)	254.0 x 88.5 x 33.0mm (10.00 x 3.48 x 1.30 inch)				
Unit Weight	350g±15 grams				
Packing Information	30pcs/ Carton, carton dimensions:47*37*20cm, 11.5kgs/ 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°C	165mVp-p	P
2	VOLTAGE TOLERANCE	-3% ~ +3% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD / Ta:25°C	-1.0% ~ +1.6% of output voltage	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD / Ta:25°C	-0.06% ~ +0.06% of output voltage	P
4	LOAD REGULATION	-1% ~ +1% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD / Ta:25°C	-0.55% ~ +0.60% of output voltage	P
5	OVER/UNDERSHOOT	<±5%	I/P: 230VAC O/P:FULL LOAD / Ta:25°C	0.98%	P
6	SET UP TIME	3000 mS (Max)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	1880 mS	P
7	RISE TIME	30 mS (Max)	I/P: 230VAC O/P:FULL LOAD / Ta:25°C	27 mS	P
8	HOLD UP TIME	10 mS (Min)	I/P: 115VAC O/P:FULL LOAD / Ta:25°C	16 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	85V~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	88% (Typ)	I/P:230VAC O/P:FULL LOAD / Ta:25°C	88.44%	P
4	AVERAGE EFFICIENCY	>86%	I/P:115/230VAC & O/P:25%、50%、75%、100% LOAD & Ta:25°C	86.54% (115VAC) 86.98% (230VAC)	P
5	AC CURRENT	3A (Max)	I/P:100VAC & O/P:FULL LOAD Ta:25°C	2.08A	P
6	INRUSH CURRENT	<70A COLD START	I/P: 230VAC / O/P:FULL LOAD Ta:25°C	49.89A	P
7	LEAKAGE CURRENT	< 1mA	I/P:240VAC & O/P:Min LOAD Ta:25°C	L-FG:0.63mA N-FG:0.62mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDIDTION	RESULT	VERDICT
1	OVER LOAD PROTECTION	120 ~ 160% (Typ)	I/P:230VAC & O/P:TESTING Ta:25°C	133.6% 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:6.06mA 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°C	I/P-O/P: 9999MΩ I/P-FG: 9999MΩ O/P-FG:9999 MΩ 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