



**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 120W open frame control system custom 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 120W 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-120A12   | KNW-120A24 | KNW-120A36 | KNW-120A48 | KNW-120A54 |
|------------------------|--|------------|------------|------------|------------|
| <b>Output</b>          |  |            |            |            |            |
| Output Voltage         | 12VDC  | 24VDC      | 36VDC      | 48VDC      | 54VDC      |
| Rated Current          | 10A  | 5A         | 3.33A      | 2.5A       | 2.22A      |
| Current Range          | 0 ~ 7.5A   | 0 ~ 4.160A | 0 ~ 3.33A  | 0 ~ 2.5A   | 0 ~ 2.22A  |
| Output Power           | 120W Max.  | 120W Max.  | 120W Max.  | 120W Max.  | 120W Max.  |
| Voltage Tolerance      | ±3%  | ±3%        | ±2%        | ±2%        | ±2%        |
| Ripple & Noise         | 200mVp-p   | 200mVp-p   | 250mVp-p   | 300mVp-p   | 300mVp-p   |
| <b>Input</b>           |  |            |            |            |            |
| Input voltage          | 90 - 264Vac or 120- 370Vdc   |            |            |            |            |
| Input Frequency        | 50-60Hz (When the input is AC)                                       |            |            |            |            |
| Input Current          | 2A 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   |            |            |            |            |
| <b>Protections</b>     |  |            |            |            |            |
| 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                        |            |            |            |            |
| <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     | ≤ 3000m @ 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 77.2.0 x 34.0mm (5.00 x 3.04 x 1.34 inch)                    |            |            |            |            |
| Unit Weight            | 260g±15 grams  |            |            |            |            |
| Packing Information    | 48pcs/ Carton, carton dimensions:47*37*20cm, 13.5kgs/ 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             | 172mVp-p                          | P       |
| 2  | VOLTAGE TOLERANCE | -3% ~ +3% (Max) | I/P:90VAC~264VAC<br>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<br>O/P:FULL LOAD / Ta:25°C     | -0.06% ~ +0.06% of output voltage | P       |
| 4  | LOAD REGULATION   | -1% ~ +1% (Max) | I/P:230VAC<br>O/P:FULL ~MIN LOAD / Ta:25°C       | -0.55% ~ +0.60% of output voltage | P       |
| 5  | OVER/UNDERSHOOT   | <±5%            | I/P: 230VAC<br>O/P:FULL LOAD / Ta:25°C           | 0.98%                             | P       |
| 6  | SET UP TIME       | 3000 mS (Max)   | I/P:230VAC<br>O/P:FULL LOAD / Ta:25°C            | 1510 mS                           | P       |
| 7  | RISE TIME         | 30 mS (Max)     | I/P: 230VAC<br>O/P:FULL LOAD / Ta:25°C           | 25 mS                             | P       |
| 8  | HOLD UP TIME      | 10 mS (Min)     | I/P: 115VAC<br>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<br>O/P:FULL LOAD / Ta:25°C               | 81V~264V                           | P       |
| 2  | FREQUENCY RANGE    | 50HZ - 60HZ (Typ)<br>NO DAMAGE OSC | I/P: 100VAC ~ 240VAC<br>O/P:FULL~MIN LOAD / Ta:25°C  | TEST: OK                           | P       |
| 3  | EFFICIENCY         | 88% (Typ)                          | I/P:230VAC<br>O/P:FULL LOAD / Ta:25°C                | 88.41%                             | P       |
| 4  | AVERAGE EFFICIENCY | >86%                               | I/P:115/230VAC & O/P:25%、50%、75%、100% LOAD & Ta:25°C | 86.45% (115VAC)<br>86.89% (230VAC) | P       |
| 5  | AC CURRENT         | 2A (Max)                           | I/P:100VAC & O/P:FULL LOAD Ta:25°C                   | 1.46A                              | P       |
| 6  | INRUSH CURRENT     | <70A<br>COLD START                 | I/P: 230VAC / O/P:FULL LOAD<br>Ta:25°C               | 51.8A                              | P       |
| 7  | LEAKAGE CURRENT    | < 1mA                              | I/P:240VAC & O/P:Min LOAD<br>Ta:25°C                 | L-FG:0.582mA<br>N-FG:0.567mA       | 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<br>Ta:25°C   | 129.6%<br>HICCUP MODE  | P       |
| 2  | OVER VOLTAGE PROTECTION | 115 ~ 135% (Typ)                 | I/P:230VAC<br>O/P:MIN LOAD & Ta:25°C  | Hiccup mode ,recovers automatically after fault condition is removed | P       |
| 3  | SHORT PROTECTION        | SHORT OUTPUT<br>1 HOUR NO DAMAGE | I/P:264VAC<br>O/P:FULL LOAD & Ta:25°C | NO DAMAGE<br>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<br>I/P- FG: 2KVAC/min<br>O/P-FG:0.5KVAC/min      | I/P-O/P: 3.6 KVAC/min<br>I/P-FG: 2.4KVAC/min<br>O/P-FG: 0.6KVAC/min<br>Ta:25°C | I/P-O/P:6.62mA<br>I/P-FG: NA<br>O/P-FG: NA<br>NO DAMAGE          | P       |
| 2  | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ<br>I/P-FG: 500VDC>100MΩ<br>O/P-FG:500VDC>100MΩ | I/P-O/P: 500 VDC<br>I/P-FG: 500 VDC<br>O/P-FG: 500 VDC<br>Ta:25°C              | I/P-O/P: 9999MΩ<br>I/P-FG: 9999MΩ<br>O/P-FG:9999 MΩ<br>NO DAMAGE | P       |
| 3  | CONDUCTION           | BS EN/EN55032(CISPR32),<br>FCC PART 15 / CISPR22<br>CAN             | I/P: 230 VAC (50HZ)<br>O/P: FULL/50% LOAD<br>Ta: 25°C                          | PASS<br>Test by certified Lab                                    | P       |
| 4  | RADIATION            | BS EN/EN55032(CISPR32),<br>FCC PART 15 / CISPR22<br>CAN             | I/P: 230 VAC (50HZ)<br>O/P: FULL LOAD<br>Ta: 25°C                              | PASS<br>Test by certified Lab                                    | P       |
| 5  | SURGE                | BS EN/EN61000-4-5<br>LIGHT INDUSTRY<br>L-N: 1KV                     | I/P: 230 VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C                                | CRITERIA B   | P       |
| 6  | E.S.D                | BS EN/EN61000-4-2<br>LIGHT INDUSTRY<br>AIR: 8KV / Contact: 4KV      | I/P: 230 VAC/50HZ<br>O/P: FULL LOAD<br>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> |