



**Features**

- . Input voltage 176 ~ 264VAC 50/60Hz or 200~360VDC
- . Protections: Short Circuit / Overload / Over Voltage Protection
- . Output voltage from can be 24Vdc to 110Vdc for 1000W series
- . All using high quality 105°C long life electrolytic capacitors
- . Low cost solution and LED indicator for power on
- . Forced air cooling by built-in DC ball bearing fan
- . 100% full load burn-in test for 2Hrs to make every unit reliable.

**Safety Standards**

- . IEC62368-1 CB report for worldwide use
- . EN 62368-1:2014/A11:2017 for European Union
- . UL62368-1 + CAN/CSA 62368-1 for USA and Canada
- . 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 high reliable 36Vdc 28A 1000W single output constant voltage type switching mode power supply solution with 176 ~ 264VAC or 200 ~ 360VDC input. The switching power supply utilizes aluminum alloy housing with dimensions of 291\*133\*68mm built-in a on/off controllable DC fan for forced air cooling. It is designed and manufactured strictly according to the international safety standards and operating temperature is suitable from -10 °C to +60 °C. This 36Vdc 28A power supply is suitable for various types of industrial automation machinery, industrial control system, mechanical and electrical equipment, electronic instruments and so on.

**Technical Specification**

| Typ. Model             | TL-1000S-24  | TL-1000S-36 | TL-1000S-48 | TL-1000S-60 | TL-1000S-110 |
|------------------------|--|-------------|-------------|-------------|--------------|
| <b>Output</b>          |  |             |             |             |              |
| Output Voltage         | 24VDC  | 36VDC       | 48VDC       | 60VDC       | 110VDC       |
| Rated Current          | 42A Max.   | 28A Max.    | 21A Max.    | 16.6A Max.  | 9A Max.      |
| Current Range          | 0 ~ 42A  | 0 ~ 28A     | 0 ~ 21A     | 0 ~ 16.6A   | 0 ~ 9A       |
| Output Power           | 1000W Max.   | 1000W Max.  | 1000W Max.  | 1000W Max.  | 1000W Max.   |
| Voltage Tolerance      | ±5%  | ±5%         | ±5%         | ±5%         | ±5%          |
| Ripple & Noise         | 200mVp-p   | 300mVp-p    | 400mVp-p    | 500mVp-p    | 800mVp-p     |
| <b>Input</b>           |  |             |             |             |              |
| Input voltage          | 176 ~264 Vac or 200- 360Vdc  |             |             |             |              |
| Input Frequency        | 50-60Hz (When the input is AC)                                       |             |             |             |              |
| Input Current          | 9A Max. @ 100 ~240Vac 50/60Hz input                                  |             |             |             |              |
| Inrush Current         | 80A Max. @ 100 ~240Vac 50/60Hz input                                 |             |             |             |              |
| Efficiency (Typ.)      | 85%  | 86%         | 87%         | 88%         | 89%          |
| Leakage Current        | ≤0.5mA @ full input range  |             |             |             |              |
| <b>Protections</b>     |  |             |             |             |              |
| Over current           | 110~130% 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  | -10°C to +45°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 (W x L x H) | 291.0 x 133.0 x 68.0mm (11.46 x 5.24 x 2.68 inch)                    |             |             |             |              |
| Unit Weight            | 750g±40 grams  |             |             |             |              |
| Packing Information    | 20pcs/ Carton, carton dimensions:47*37*20cm, 16.2kgs/ Carton         |             |             |             |              |

## TEST REPORT

### OUTPUT FUNCTION TEST

| NO | TEST ITEM         | SPECIFICATION   | TEST CONDIDTION                                   | RESULT                            | VERDICT |
|----|-------------------|-----------------|---|-----------------------------------|---------|
| 1  | RIPPLE & NOISE    | 300mVp-p (Max)  | I/P:230VAC / O/P:FULL LOAD / Ta:25°C              | 212mVp-p                          | P       |
| 2  | VOLTAGE TOLERANCE | -5% ~ +5% (Max) | I/P:176VAC~264VAC<br>O/P:FULL~MIN. LOAD / Ta:25°C | -2% ~ +2% of output voltage       | P       |
| 3  | LINE REGULATION   | -1% ~ +1% (Max) | I/P:176VAC ~264VAC<br>O/P:FULL LOAD / Ta:25°C     | -0.09% ~ +0.09% of output voltage | P       |
| 4  | LOAD REGULATION   | -3% ~ +3% (Max) | I/P:230VAC<br>O/P:FULL ~MIN LOAD / Ta:25°C        | -1.12% ~ +1.15% of output voltage | P       |
| 5  | OVER/UNDERSHOOT   | <±5%            | I/P: 230VAC<br>O/P:FULL LOAD / Ta:25°C            | 0.94%                             | P       |
| 6  | SET UP TIME       | 2000 mS (Max)   | I/P:230VAC<br>O/P:FULL LOAD / Ta:25°C             | 1390 mS                           | P       |
| 7  | RISE TIME         | 50 mS (Max)     | I/P: 230VAC<br>O/P:FULL LOAD / Ta:25°C            | 40 mS                             | P       |
| 8  | HOLD UP TIME      | 10 mS (Min)     | I/P: 230VAC<br>O/P:FULL LOAD / Ta:25°C            | 13 mS                             | P       |

### INPUT FUNCTION TEST

| NO | TEST ITEM          | SPECIFICATION                      | TEST CONDIDTION                                     | RESULT                     | VERDICT |
|----|--------------------|------------------------------------|---|----------------------------|---------|
| 1  | VOLTAGE RANGE      | 176VAC~264VAC                      | I/P:TESTING<br>O/P:FULL LOAD / Ta:25°C              | 168V~264V                  | P       |
| 2  | FREQUENCY RANGE    | 50HZ - 60HZ (Typ)<br>NO DAMAGE OSC | I/P: 176VAC ~ 240VAC<br>O/P:FULL~MIN LOAD / Ta:25°C | TEST: OK                   | P       |
| 3  | EFFICIENCY         | >86% (Typ)                         | I/P:230VAC<br>O/P:FULL LOAD / Ta:25°C               | 87.25%                     | P       |
| 4  | AVERAGE EFFICIENCY | >84%                               | I/P:230VAC & O/P:25%、50%、75%、100%<br>LOAD & Ta:25°C | 85.54% (230VAC)            | P       |
| 5  | AC CURRENT         | 9.0A (Max)                         | I/P:230VAC & O/P:FULL LOAD Ta:25°C                  | 7.88A                      | P       |
| 6  | INRUSH CURRENT     | <80A<br>COLD START                 | I/P: 230VAC / O/P:FULL LOAD<br>Ta:25°C              | 58..33A                    | P       |
| 7  | LEAKAGE CURRENT    | < 0.5mA                            | I/P:230VAC & O/P:Min LOAD<br>Ta:25°C                | L-FG:0.39mA<br>N-FG:0.38mA | P       |

### PROTECTION FUNCTION TEST

| NO | TEST ITEM               | SPECIFICATION                    | TEST CONDIDTION                       | RESULT   | VERDICT |
|----|-------------------------|----------------------------------|---------------------------------------|--|---------|
| 1  | OVER LOAD PROTECTION    | 110 ~ 130% (Typ)                 | I/P:230VAC & O/P:TESTING<br>Ta:25°C   | 119.7%<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: 1.5KVAC/min<br>I/P- FG: 1.5KVAC/min<br>O/P-FG:0.5KVAC/min  | I/P-O/P: 1.8 KVAC/min<br>I/P-FG: 1.8 KVAC/min<br>O/P-FG:0.6 KVAC/min<br>Ta:25°C | I/P-O/P:6.91mA<br>I/P-FG: 6.92mA<br>O/P-FG: 5.22mA<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> |