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Design Revision History

| Rev. | Mark | Release Date | Description of Change | | Revised By | Approved By |
|------|--------|---------------|-----------------------------------|-------|------------|-------------|
| | | | Before | After | | |
| 0 | / | Dec. 16, 2019 | Creation | | 张雄鑫 | 白德向 |
| 0 | / | Jul. 14, 2021 | Jun hu Cover Change Ten pao Cover | | 张雄鑫 | 白德向 |
| 0 | △ a | Dec. 13, 2023 | Add:Label、Instructions for use | | 钟巧飞 | 熊先宝 |
| | | | | | | |
| | | | | | | |

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Sample Delivery Information

1. Sample Background

Circuit Diagram Revision No: 0 PCB Layout Revision No: 0.1 BOM Revision No: 0 Transformer Revision No.: 0

2. Sample Purpose:

A. Function Sample B. Final sample C. Other Sample

3. Samples material instead of information

| No. | Position No | Original design materials | The sample use material | Change Reason |
|-----|-------------|---------------------------|-------------------------|---------------|
| 1 | none | none | none | none |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

4. The Change List Compare To Last Time Samples was:

The(**First**)Samples,This Time Samples' Tracking Number was:(**A01-A08**), Delivery Date:(**Dec.16,2019**).

| No. | What is At Last Time Samples | What Is At This Time Samples | Change Reason |
|-----|------------------------------|------------------------------|---------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

Remark: Final sample can be used to approve

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1. SCOPE

This document details the electrical, mechanical and environmental specifications of a switching power supply.

1.1 Description

- Wall Mount
 Desk-Top
 Open Frame
 Others

2. INPUT REQUIREMENTS

2.1 Input Voltage & Frequency

The range of input voltage is from 90Vac to 264Vac

| | Min. | Normal | Max. |
|-----------------|-------|------------|--------|
| Input Voltage | 90Vac | 100-240Vac | 264Vac |
| Input Frequency | 47Hz | 50/60Hz | 63Hz |

2.2 Input Current

The maximum input current is 400mA max. at 100-240Vac.

2.3 Inrush Current

The inrush current will not exceed 70A at 100-240Vac input and Max load for a cold start at 25°C.

2.4 Stand-By Power

The input power should be less than with No-Load.

3. OUTPUT FEATURES

3.1 Output Parameters

| | Output Data | Spec. Limit | | | Test Condition |
|-------|------------------|-------------|---------|------------|---|
| | | Min. Value | Typical | Max. Value | |
| 3.1.1 | 12.0Vdc | | | | |
| 3.1.2 | Output Voltage | 11.4Vdc | 12.0Vdc | 12.6Vdc | 0 A Loading |
| 3.1.3 | Output Voltage | 11.4Vdc | 12.0Vdc | 12.6Vdc | 1.0A Loading |
| 3.1.4 | Output Load | 0.0A | — | 1.0A | |
| 3.1.5 | Ripple and Noise | — | — | 300mVp-p | 20MHz Bandwidth 10uF Ele. Cap.0.1uF Cer. Cap. |

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3.2 Turn On Delay

During turn on and turn off, no output voltage shall exceed its nominal voltage by more than 10% and no output shall change its polarity with respect to its return line. All outputs shall reach their steady state values within 3 seconds of turn on.

3.3 Hold Up Time

10 ms minimum at 115Vac/60Hz input at maximum load, and 20 ms minimum at 230Vac/50Hz input at maximum load.

3.4 Typical Efficiency

The efficiency (watts out / watts in) shall be higher than typical while measuring at nominal line and maximum load condition, test in 1 minute after power on.

3.5 Output Transient Response

The power supply shall maintain output transient response time within 10ms with a loading current change from 20% to 80% of maximum current and 0.5A/ μ s rise up /drop down test at end of output terminal.

4. PROTECTION REQUIREMENT

4.1 Over-Voltage Protection

Over-voltage protection shall be included in the adaptor circuit. A single component failure must not cause an over voltage.

4.2 Over-Current Protection

The adaptor must have a current limiting function on the output voltage. in overload mode, the output must drop to a low voltage.

4.3 Short-Circuit Protection

The adaptor must withstand a continuous short circuit on the output without damage.

5. ENVIRONMENTAL CONDITIONS

5.1 Operating

The power supply shall be capable of operating normally in any mode without malfunction happens in the following environmental conditions.

5.1.1 Operating Temperature: 0°C ~40°C (Can operate normally)

Relative Humidity: 10% ~ 90%

Altitude: Sea level to 2,000 m.

5.1.2 Vibration: 1.0mm, 10 –55Hz, 15 minutes per cycle for each axis (X, Y, Z).

5.1.3 Cooling: Natural convection cooling

5.2 Non - Operating

The power supply shall be capable of withstanding the following environmental conditions extended periods of time, without sustaining electrical or mechanical damage and subsequent operational deficiencies.

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5.2.1 Storage Temperature: -30°C ~ 70°C

5.2.2 Relative Humidity: 10% ~ 90%

5.2.3 Altitude: Sea level to 2,000 m.

5.2.4 Vibration and Shock:

The power supply shall be designed to withstand normal transportation vibration per MIL-STD-810D, method 514 and procedures X, as it is mounted in the chassis assembly and packed for shipping.

6. RELIABILITY AND QUALITY CONTROL

6.1 MTBF

When the power supply is operating within the limits of this specification the MTBF shall be at least **50,000** hours at 25°C (MIL-HDBK-217F).

6.2 Burn-In

The power supply shall withstand a Burn-In test under full load at 35°C ~40°C room temperatures, after test, product shall operate normally.

6.3 Component Derating

Semiconductor junction temperatures shall not exceed the manufacturer's maximum thermal rating.

7. MECHANICAL CHARACTERISTICS

7.1 Physical Dimensions

The detail dimension of the power supply is drawn on APPENDIX A.

7.2 Nameplate

The label of the power supply, please see APPENDIX B.

7.3 Drop test

Dropped freely from 1 m (for wall mount product) height onto the surface is consisted of hardwood 13 mm thick, mounted on two layers of plywood each 19-20 mm thick, all supported on concrete floor 1 time from 3 different surface, after test, it's no safety damage for product.

8. SAFETY

8.1 Safety Standard

The power supply shall be certified under the following international regulatory standards

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| Item | Country | Certified | Standard |
|------|---------|-----------|-----------|
| CE | Europe | Approved | EN62368-1 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

8.2 Insulation Resistance

Input to output: **10 MΩ** min. at **500 VDC**.

8.3 Dielectric Strength (Hi-Pot)

Primary to Secondary **DC4242V,3.5mA** 1 minute for type test,
DC4500V,3.5mA 2 seconds for product.

8.4 Leakage Current

The leakage current shall be less than **0.25mA** for **Class II** when the power supply is operated maximum input voltage and maximum frequency.

9. EMC STANDARDS

9.1 EMI Standards

The power supply shall meet the radiated and conducted emission requirements for **EN55032**.

9.2 EMS Standards(**EN55024**)

The power supply shall meet the following EMS standards

9.2.1 IEC61000-4-2 Electrostatic Discharge (ESD)

Static – discharge test by contact or air should be conducted with Static – discharge tester, energy storage capacitance of 150pF, and discharge resistance of 330Ω.
8KV air discharge, **4KV** contact discharge, Performance Criterion B.

9.2.2 IEC61000-4-3 Radiated Electromagnetic Fields(RS)

Radio- frequency Electromagnetic Field Susceptibility Test, RS, 80-1000MHz,3V/m, 80%AM(1KHz), Performance Criterion A.

9.2.3 IEC61000-4-4 Electrical Fast Transient / Burst (EFT)

Power Line to Line: **1KV**
Performance Criterion B.

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- 9.2.4 EN61000-4-5 Lightning Surge Attachment
Lightning Surge voltage of differential and common modes shall be applied across AC input lines and across input and frame ground.
Power Line to Line: **1KV**
Performance Criterion B.
- 9.2.5 IEC61000-4-6 Conducted Radio Frequency Disturbances (CS)
Conducted Radio Frequency Disturbances Test, CS, 0.15-80 MHz, 3V/m, 80%AM, 1KHz, Performance Criterion A.
- 9.2.6 IEC61000-4-11 Voltage Dips/Short Interruption/Variations
Voltage Dips, 30% reduction- 10ms, Performance Criterion B, 60% Reduction – 100ms, Performance Criterion C, Voltage Interruptions>95% Reduction- 5000ms, Performance Criterion C.

10. OTHER REQUIREMENTS

10.1 Hazardous Substances

The components and used materials shall be in compliance with

- EU Directive 2011/65/EU "RoHS"
 EU Directive 2012/19/EU "WEEE"
 Halogen Free
 REACH

10.2 Energy Efficiency

10.2.1 The No-Load power consumption shall be less than **0.10W** at input **115/230Vac50/60Hz.**

10.2.2 The average active mode efficiency shall be higher than **82.96%** at input **115/230Vac50/60Hz.**

Efficiency at 10% rated output current: **73.26%** at input **115/230Vac50/60Hz.**

10.2.3 International Efficiency Level **VI**.

Korea Energy Efficiency Label

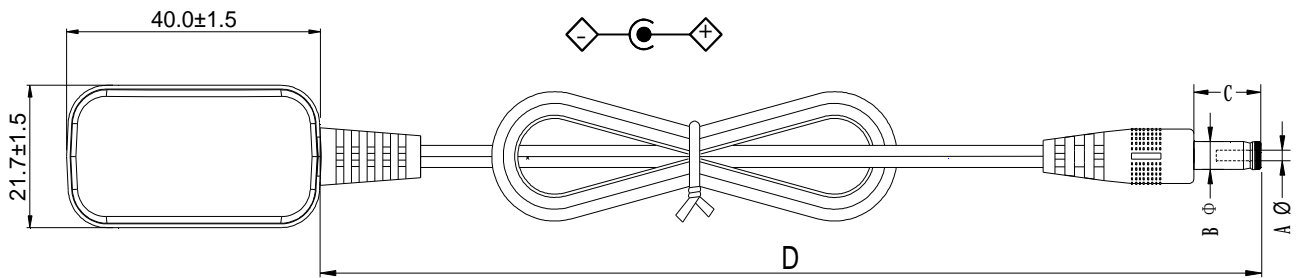
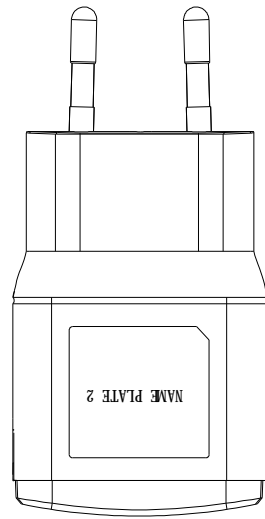
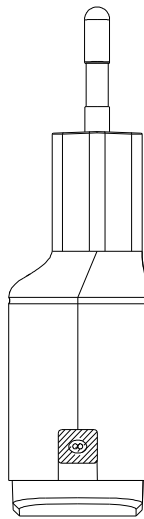
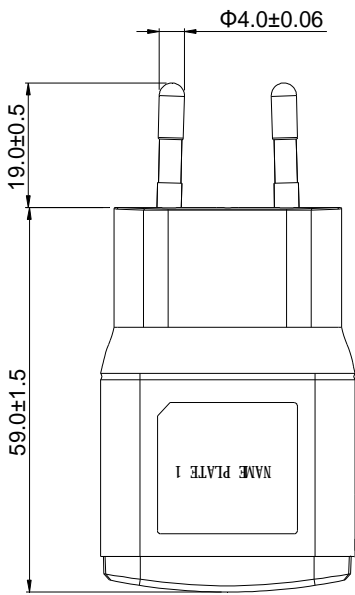
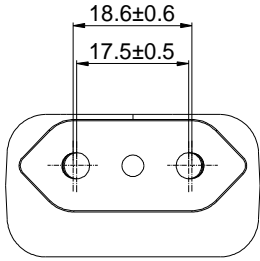
10.2.4 This power supply is therefore in compliance with the requirements of

- California Energy Commission Energy Efficiency requirements for external power supplies (CEC)
 The Power Supply are in accordance with U.S. Department of Energy(DOE) 10 CFR Part 430 .
 Australian and New Zealand Energy Performance Requirements for external power supplies (MEPS,AS/NZS 4665.1,AS/NZS 4665.2)
 Korea regulation on Energy Efficiency Labeling and Standards for external power supplies (MKE's Notification 2008-99)
 COMMISSION REGULATION (EU) 2019/1782 of 1 October 2019 laying down ecodesign requirements for external power supplies pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulation (EC) No 278/2009

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APPENDIX A

Mechanical Dimensions(Unit: mm) Tolerance Of unspecified Parts:±1.5mm

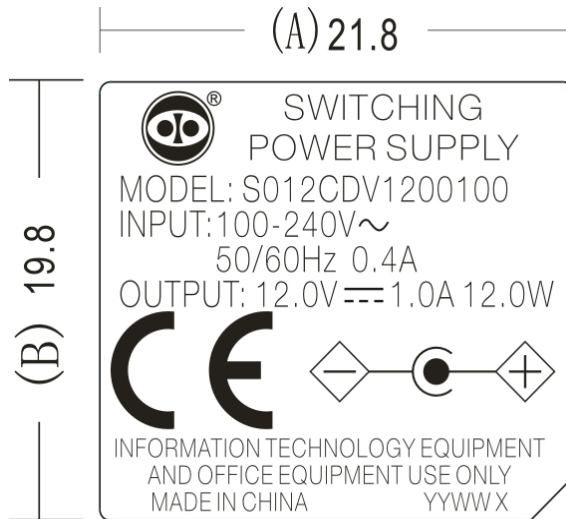


| | A | B | C | D |
|-----------|------------------------|------|------|------|
| DIMENSION | 2.1 | 5.5 | 10.0 | 1500 |
| TOLERANCE | +0.1/-0 | ±0.1 | ±0.5 | min |
| REMARK | AWG22#/2C UL2468 BLACK | | | |

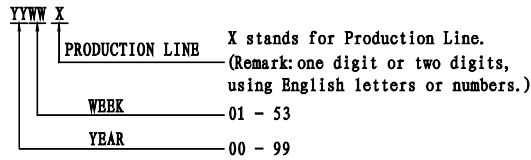
| TEN PAO P/N | REV. | DATE | SHEET |
|-------------|------|-------------|--------------|
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APPENDIX B

Name Plate 1:



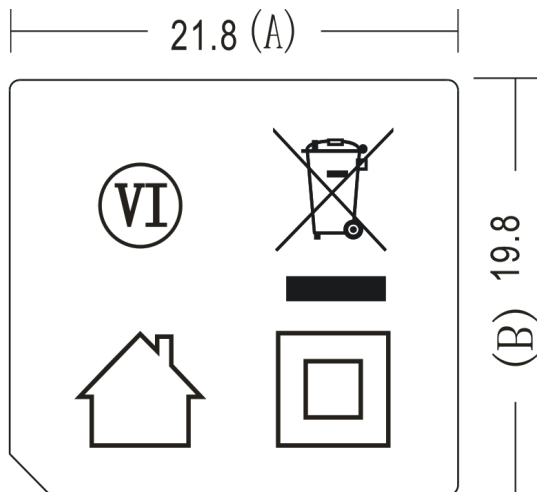
DATE CODE:



Unit: mm

Word Color: **Grey (Laser Print)**

Name Plate 2:




* Please Advise If Any Comments About The Name Plate Information.

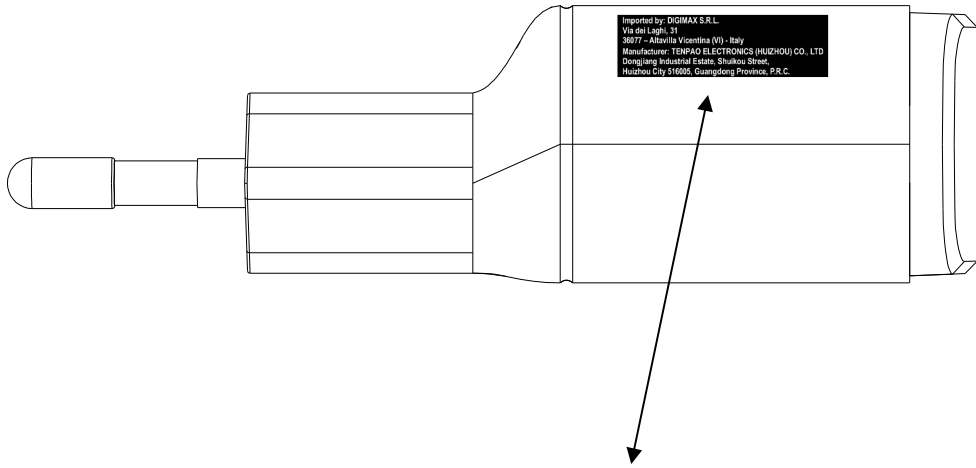
Otherwise, This Information Is Defaulted As Customer Approval, And Will Be Applied To Production .



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APPENDIX B

Label: 



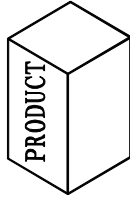
**Imported by: DIGIMAX S.R.L.
Via dei Laghi, 31
36077 – Altavilla Vicentina (VI) - Italy
Manufacturer: TENPAO ELECTRONICS (HUZHOU) CO., LTD
Dongjiang Industrial Estate, Shuikou Street,
Huizhou City 516005, Guangdong Province, P.R.C.**

Unit: mm
Tolerance: +0/-0.1
Dimension: 26.0x7.5
Back Color : **Black**
Word Color: **White**

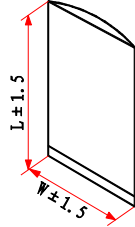
| TEN PAO P/N | REV. | DATE | SHEET |
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APPENDIX C

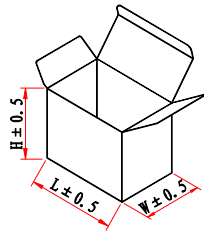
PRODUCT:



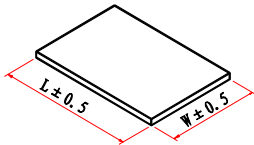
PLASTIC BAG:



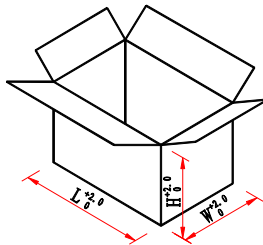
WHITE BOX:



PAPERBOARD:



CARTON:



DIMENSION (UNIT IN cm):

| | L | W | H |
|-------------|------|------|------|
| PLASTIC BAG | 18.0 | 12.0 | |
| WHITE BOX | 9.5 | 4.1 | 8.3 |
| PAPERBOARD | 48.0 | 34.0 | |
| CARTON | 49.5 | 35.5 | 19.5 |

PACKING METHOD:

| | |
|-----------------------------|---|
| PAPERBOARD PLACEMENT METHOD | PUT A PAPERBOARD OVER AND UNDER THE PRODUCTS OF EACH LAYER, TOTAL 2PCS. |
| PACKING METHOD | 40PCS/LAYER X 2 LAYERS |
| QTY | 80 PCS |
| N.W./PC | 62.6 g |
| G.W./CARTON | 7.5 Kg |

REMARK:

1. STORAGE CONDITION

TEMPERATURE: -10°C ~ +60°C

RELATIVE HUMIDITY: 30% ~ 80%

2. STORAGE PERIOD: 6 MONTHES

3. ANTISTATIC: NO REQUIREMENT

4. PLEASE ADVISE IF ANY COMMENTS ABOUT THE PACKING INFORMATION.

OTHERWISE, THIS INFORMATION IS DEFAULTED AS CUSTOMER APPROVAL,

AND WILL BE APPLIED TO PRODUCTION.

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APPENDIX D

SAMPLE PRIMARY TEST REPORT

| CUSTOMER | DIGIMAX | | | | | | | | | | | | |
|--|---------------------------|--------------------|-------------------------------|-------|-------|--------------------|-------|-------|---------------|-------|------------|-----|-----------|
| MODEL NO. | S012CDV1200100 | | | | | TEN PAO P/N | | | | | R032725L-V | | |
| Test Items. | Test Condition | Unit | Sample Number and Test Result | | | | | | | | | | Pass/Fail |
| | | | 1# | 2# | 3# | 4# | 5# | 6# | 7# | 8# | 9# | 10# | |
| Unload output voltage/ (0A) 11.4Vdc - 12.6Vdc | 90Vac | V | 12.03 | 12.16 | 11.92 | 12.20 | 12.12 | 12.01 | 12.15 | 12.12 | | | Pass |
| | 132Vac | V | 12.01 | 12.12 | 11.89 | 12.15 | 12.09 | 11.98 | 12.12 | 12.07 | | | Pass |
| | 180Vac | V | 12.00 | 12.06 | 11.86 | 12.11 | 12.03 | 11.94 | 12.08 | 12.02 | | | Pass |
| | 264Vac | V | 11.95 | 12.03 | 11.84 | 12.07 | 11.99 | 11.90 | 12.05 | 11.96 | | | Pass |
| Rated load output voltage/ (1.0A) 11.4Vdc - 12.6Vdc | 90Vac | V | 12.18 | 12.24 | 12.07 | 12.20 | 12.20 | 12.10 | 12.22 | 12.15 | | | Pass |
| | 132Vac | V | 12.20 | 12.25 | 12.09 | 12.23 | 12.22 | 12.12 | 12.24 | 12.18 | | | Pass |
| | 180Vac | V | 11.19 | 12.25 | 12.09 | 12.22 | 12.21 | 12.12 | 12.23 | 12.18 | | | Pass |
| | 264Vac | V | 12.22 | 12.28 | 12.12 | 12.25 | 12.24 | 12.15 | 12.26 | 12.20 | | | Pass |
| Output ripple & noise voltage ≤ 300mV (test at full loading) | 90Vac | mV | 126 | 120 | 117 | 130 | 123 | 122 | 122 | 123 | | | Pass |
| | 132Vac | mV | 88 | 77 | 77 | 85 | 93 | 82 | 78 | 80 | | | Pass |
| | 180Vac | mV | 98 | 93 | 91 | 98 | 80 | 98 | 90 | 94 | | | Pass |
| | 264Vac | mV | 80 | 82 | 82 | 80 | 78 | 82 | 85 | 83 | | | Pass |
| Short-circuit protection test (Short at end of DC plug) | 90Vac | W | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | | | - |
| | 264Vac | W | 0.18 | 0.20 | 0.29 | 0.28 | 0.24 | 0.26 | 0.25 | 0.27 | | | - |
| Over current protection (Ocp ≤ -A) | 90Vac | A | 1.44 | 1.48 | 1.46 | 1.44 | 1.46 | 1.46 | 1.44 | 1.44 | | | - |
| | 264Vac | A | 1.48 | 1.50 | 1.50 | 1.48 | 1.50 | 1.50 | 1.48 | 1.48 | | | - |
| Hi-pot test | 4242Vdc/3.5mA/ 1Minute | | OK | OK | OK | OK | OK | OK | OK | OK | | | Pass |
| | | | | | | | | | | | | | |
| TEST BY | CHECKED BY | APPROVED BY | DATE | | | REV. | | | SHEET | | | | |
| 张侠 | 张雄鑫 | 白德向 | Dec.16,2019 | | | 0 | | | Page 12 of 15 | | | | |

APPENDIX D

SAMPLE TEST REPORT

| CUSTOMER: | | DIGI MAX | | | | | | | | | |
|------------------|--|---|---|--------------------|-------------|-------------|---------|-------------------|-------------------------------|---------------|------|
| MODEL NO: | | S012CDV1200100 | | | TEN PAO P/N | | | | R032725L-V | | |
| Items No. | Test Items | Unit | Test condition & result | | | | | | Spec. Limit | Pass/ Fail | |
| | | | 90Vac | 115Vac | 132Vac | 180Vac | 230Vac | 264Vac | | | |
| 1 | Unload input current | mA | 1.66 | 1.48 | 1.46 | 1.37 | 1.32 | 1.32 | - | - | |
| 2 | Unload input power | W | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 | ≤0.10W (115/230Vac) | Pass | |
| 3 | Rated load input current | mA | 269.10 | 226.90 | 208.00 | 172.50 | 151.10 | 137.90 | ≤400mA (100 - 240Vac) | Pass | |
| 4 | Rated load input power | W | 14.76 | 14.49 | 14.41 | 14.33 | 14.38 | 14.48 | - | - | |
| 5 | Unload output voltage(0.0A) | V | 11.77 | 11.75 | 11.78 | 11.78 | 11.78 | 11.76 | 11.4V -12.6V | Pass | |
| 6 | Rated load output voltage(1.0A) | V | 12.19 | 12.22 | 12.21 | 12.22 | 12.22 | 12.23 | 11.4V -12.6V | Pass | |
| 7 | Output ripple&noise voltage(1.0-0A) | mV | 120.0 | 82.0 | 88.0 | 78.0 | 70.0 | 86.0 | ≤300.0mVp-p | Pass | |
| 8 | Output transient response(20-80%) | mS | 7.2 | 6.5 | 6.1 | 6.5 | 6.1 | 6.7 | ≤10mS | Pass | |
| 9 | Short-circuit test (Pin&lout) | W | 0.00 | 0.01 | 0.09 | 0.07 | 0.09 | 0.10 | - | - | |
| | Over current protection | A | hiccup | hiccup | hiccup | hiccup | hiccup | hiccup | - | - | |
| 10 | | A | 1.47 | 1.48 | 1.49 | 1.50 | 1.50 | 1.49 | - | - | |
| 11 | Over voltage protection | V | 12.90 | 12.90 | 12.80 | 12.90 | 12.80 | 12.90 | - | - | |
| 12 | Turn on delay time | mS | 1500 | 840 | 648 | 480 | 360 | 200 | ≤3000.0mS | Pass | |
| 13 | Hold up time | mS | 23.5 | 32.1 | 41.7 | 60.5 | 69.9 | 93.0 | ≥ 10mS/(115Vac) | Pass | |
| 14 | Efficiency(Full load) | % | 82.59% | 84.33% | 84.73% | 85.28% | 84.98% | 84.46% | - | - | |
| 15 | Mech. Dimension | mm | 40.2 | | | 21.9 | | | L:40.0±1.5; W:21.7±1.5 | | Pass |
| | | | 59.5 | | | - | | | H:59.0±1.5 | | Pass |
| | | | 19.2 | | | - | | | AC PIN:19.0±0.5 | | Pass |
| 16 | DC cord and DC connector | mm | DC cord: AWG22#/2C UL2468 BLACK. 1510mm | | | | | | 1500mm | | Pass |
| | | | DC conn.:Inside(+) Outside(-),Dimension conform with spec. limit. | | | | | | | | Pass |
| 17 | Hi-pot test | Pri. to Sec:4242Vac,1Minute, Cut off current≤3.5mA(Test result: 0.25mA) | | | | | | | | Pass | |
| 18 | Drop test | Drop test 3 Times (High: 1000mm), The sample OK | | | | | | | | | |
| 19 | Max. and Light load change test | Max. load to Light load: OK Light load to max. load: OK (90-264Vac) | | | | | | | | | |
| 20 | Appe. label and fusion | Appearance: OK, Label: OK, Fusion: OK | | | | | | | | | |
| 21 | Mosfet(IC)/Vds(normal:95% ,other:100%) | V | 578.0 | 584.0 | 612.0 | 585.0 | 598.0 | Mosfet spec. 650V | Derating≤95% &100% Max. Volt. | Pass | |
| | | | normal | start up | short | ocp | max/min | | | | |
| 22 | Diode /Vrr(normal:90% ,other:100%) | V | 82.0 | 89.0 | 92.0 | 90.0 | 83.0 | Diode spec. 100V | Derating≤90% &100% Max. Volt. | Pass | |
| | | | normal | start up | short | ocp | max/min | | | | |
| TEST BY | | CHECKED BY | | APPROVED BY | | DATE | | REV | | SHEET | |
| 张侠 | | 张雄鑫 | | 白德向 | | Dec.16,2019 | | 0 | | Page 13 of 15 | |

APPENDIX D

SAMPLE TEST REPORT

| | | | |
|------------------|----------------|-------------|------------|
| CUSTOMER: | DIGIMAX | | |
| MODEL NO. | S012CDV1200100 | TEN PAO P/N | R032725L-V |

1. TEST STANDARD: COMMISSION REGULATION (EU) 2019/1782 of 1 October 2019 laying down

2. Product Specification:

Input voltage, frequency, current: 100-240VAC 50/60HZ 400mA Output voltage, current: 12.0VDC/1.0A

3. TEST METHOD:

3.1. Under input 230VAC / 50Hz, output normal load, the EUT continuous operating for 30 minutes.

3.2. Under input 115VAC / 60Hz and 230VAC / 50Hz, the EUT is measured at 100%, 75%, 50% and 25% of rated output current. Record values are output voltage, output current, input power, input current. Then calculating average efficiency at four active mode load conditions.

3.3. Input 115VAC / 60Hz and 230VAC / 50Hz, test the input power, input current, output voltage in the no-load condition.

4. TEST DATA: (Room temperature: 25-30°C, relative humidity : 10-90%).

4.1 Input voltage, frequency 115V,60Hz:

| Sample No. | Item | Unload | 10%*I _L | 25%*I _L | 50%*I _L | 75%*I _L | 100%*I _L | Average | |
|----------------|--------|----------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------|---|
| 1# | Output | Current(mA) | 0 | 100 | 250 | 500 | 750 | 1000 | / |
| | | Voltage(V) | 11.81 | 11.98 | 12.11 | 12.17 | 12.35 | 12.31 | / |
| | | Power(W) | / | / | / | / | / | / | / |
| | Input | Power(W) | 0.03 | 1.5 | 3.59 | 7.16 | 10.95 | 14.75 | / |
| | | THD _V (%) | / | / | / | / | / | / | / |
| | | True PF | 0.26 | 0.38 | 0.45 | 0.49 | 0.53 | 0.56 | / |
| | | Current(mA) | 1.11 | 34.78 | 68.98 | 124.22 | 176.56 | 224.47 | / |
| Efficiency(%) | | / | 79.87% | 84.33% | 84.99% | 84.59% | 83.46% | 84.34% | |
| 2# | Output | Current(mA) | 0 | 100 | 250 | 500 | 750 | 1000 | / |
| | | Voltage(V) | 11.78 | 12.02 | 12.05 | 12.04 | 12.15 | 12.11 | / |
| | | Power(W) | / | / | / | / | / | / | / |
| | Input | Power(W) | 0.03 | 1.5 | 3.56 | 7.07 | 10.75 | 14.48 | / |
| | | THD _V (%) | / | / | / | / | / | / | / |
| | | True PF | 0.22 | 0.38 | 0.42 | 0.48 | 0.52 | 0.55 | / |
| | | Current(mA) | 1.23 | 34.78 | 72.37 | 127.42 | 178.20 | 227.66 | / |
| Efficiency(%) | | / | 80.13% | 84.62% | 85.15% | 84.77% | 83.63% | 84.54% | |
| 3# | Output | Current(mA) | 0 | 100 | 250 | 500 | 750 | 1000 | / |
| | | Voltage(V) | 11.99 | 12.01 | 12.16 | 12.18 | 12.32 | 12.24 | / |
| | | Power(W) | / | / | / | / | / | / | / |
| | Input | Power(W) | 0.03 | 1.51 | 3.6 | 7.15 | 10.9 | 14.63 | / |
| | | THD _V (%) | / | / | / | / | / | / | / |
| | | True PF | 0.21 | 0.38 | 0.43 | 0.49 | 0.52 | 0.55 | / |
| | | Current(mA) | 1.32 | 34.55 | 71.54 | 126.29 | 178.67 | 227.38 | / |
| Efficiency (%) | | / | 79.54% | 84.44% | 85.17% | 84.77% | 83.66% | 84.51% | |

| | | | | |
|-----------------------------------|-----------------------------|-----------|-----------|------|
| Energy Efficiency (Min.) : 84.34% | Efficient Level VI :82.96 % | JUDGEMENT | Pass/Fail | Pass |
|-----------------------------------|-----------------------------|-----------|-----------|------|

| | | | | |
|-----------------------------------|--|-----------|-----------|------|
| Energy Efficiency (Min.) : 79.54% | Efficiency at 10% rated output current: : 73.26% | JUDGEMENT | Pass/Fail | Pass |
|-----------------------------------|--|-----------|-----------|------|

| TEST BY | CHECKED BY | APPROVED BY | DATE | REV. | SHEET |
|---------|------------|-------------|-------------|------|---------------|
| 张侠 | 张雄鑫 | 白德向 | Dec.16,2019 | 0 | Page 14 of 15 |

APPENDIX D

SAMPLE TEST REPORT

| | | | |
|------------------|-----------------------|--------------------|-------------------|
| CUSTOMER: | DIGIMAX | | |
| MODEL NO. | S012CDV1200100 | TEN PAO P/N | R032725L-V |

4.2 Input voltage, frequency 230V,50Hz:

| Sample No. | Item | Unload | 10%*I _L | 25%*I _L | 50%*I _L | 75%*I _L | 100%*I _L | Average | |
|---------------------------|--------|----------------------|--|--------------------|--------------------|--------------------|---------------------|---------|---|
| 1# | Output | Current(mA) | 0 | 100 | 250 | 500 | 750 | 1000 | / |
| | | Voltage(V) | 11.81 | 11.95 | 12.06 | 12.20 | 12.40 | 12.31 | / |
| | | Power(W) | / | / | / | / | / | / | / |
| | Input | Power(W) | 0.06 | 1.57 | 3.62 | 7.21 | 10.96 | 14.55 | / |
| | | THD _v (%) | / | / | / | / | / | / | / |
| | | True PF | 0.19 | 0.3 | 0.36 | 0.4 | 0.4300 | 0.4500 | / |
| | | Current(mA) | 1.19 | 22.65 | 46.16 | 83.64 | 116.81 | 150.96 | / |
| Efficiency(%) | | / | 76.11% | 83.29% | 84.60% | 84.85% | 84.60% | 84.34% | |
| 2# | Output | Current(mA) | 0 | 100 | 250 | 500 | 750 | 1000 | / |
| | | Voltage(V) | 11.78 | 11.99 | 11.94 | 12.04 | 12.11 | 12.11 | / |
| | | Power(W) | / | / | / | / | / | / | / |
| | Input | Power(W) | 0.05 | 1.57 | 3.59 | 7.13 | 10.64 | 14.33 | / |
| | | THD _v (%) | / | / | / | / | / | / | / |
| | | True PF | 0.18 | 0.29 | 0.35 | 0.39 | 0.4100 | 0.4200 | / |
| | | Current(mA) | 1.06 | 23.62 | 42.8 | 78.98 | 111.88 | 146.69 | / |
| Efficiency(%) | | / | 76.37% | 83.15% | 84.43% | 85.36% | 84.51% | 84.36% | |
| 3# | Output | Current(mA) | 0 | 100 | 250 | 500 | 750 | 1000 | / |
| | | Voltage(V) | 11.96 | 11.98 | 12.09 | 12.20 | 12.30 | 12.22 | / |
| | | Power(W) | / | / | / | / | / | / | / |
| | Input | Power(W) | 0.06 | 1.63 | 3.63 | 7.21 | 10.8 | 14.50 | / |
| | | THD _v (%) | / | / | / | / | / | / | / |
| | | True PF | 0.17 | 0.29 | 0.35 | 0.38 | 0.41 | 0.42 | / |
| | | Current(mA) | 1.39 | 23.8 | 44.7 | 80.82 | 112.62 | 148.34 | / |
| Efficiency (%) | | / | 73.50% | 83.26% | 84.60% | 85.42% | 84.28% | 84.39% | |
| Energy Efficiency (Min.): | | 84.34% | Efficient Level VI :82.96 % | | | JUDGEMENT | Pass/Fail | Pass | |
| Energy Efficiency (Min.): | | 73.50% | Efficiency at 10% rated output current: : 73.26% | | | JUDGEMENT | Pass/Fail | Pass | |

5.EQUIPMENTS LIST:

Power meter: WT210 AC source: AFC-500W Electronic load: Prodigit 3311F

6.REMARK:

First Function Sample

| | | | | | |
|---------|------------|-------------|-------------|------|---------------|
| TEST BY | CHECKED BY | APPROVED BY | DATE | REV. | SHEET |
| 张侠 | 张雄鑫 | 白德向 | Dec.16,2019 | 0 | Page 15 of 15 |



CERTIFICATE

of Conformity

EC Council Directive 2014/30/EU

Electromagnetic Compatibility

Registration No.: AE 50411124 0001

Report No.: 50094885 002

Holder: Ten Pao Industrial Co., Ltd.
Rm. 10-11, 6/F.
Kwong Sang Hong Centre
151-153 Hoi Bun Road
Kwun Tong, Kowloon
Hong Kong

Product: Power Supply
(Switching Power Supply)

Identification: Type Designation: S012CDzxxxxyyy
('Z'=V, B, U, C, S, A, K, T, D, F, I or E;
'xxx'=050-120; 'yyy'=0010-0240)
Serial No. : n.a.
Remark: Refer to above-listed test report for details.

Tested acc. to: EN 55032:2015
EN 61000-3-2:2014
EN 61000-3-3:2013
EN 55024:2010+A1

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical Report and documentation are at the Licence Holder's disposal. This is to certify that the tested sample is in conformity with all provisions of Annex I of Council Directive 2014/30/EU. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to the a.m. Directive.



Certification Body

Date 22.06.2018


Dipl.-Ing. Driv. S. O. Steinke

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CE The CE marking may only be used if all relevant and effective EC Directives are complied with. CE

Ten Pao Industrial Co., Ltd.

Date : 22.06.2018

Our ref. : Xiaocal 02

Your ref.:

Rm. 10-11, 6/F.
Kwong Sang Hong Centre
151-153 Hoi Bun Road
Kwun Tong, Kowloon
Hong Kong

Ref : AE Certificate of Conformity EMC

Type of Equipment : Switching Power Supply

Model Designation : See Certificate

Certificate No. : AE 50411124 0001

Report No. : 50094885 002

Dear Ladies and Gentlemen,

We herewith confirm that a sample of the above mentioned technical equipment has been tested and was found to be in accordance with the relevant requirements.

Enclosed please find your Certificate of Conformity.

We appreciate your kind support and would like to offer our assistance and continuous services in the future.

With kind regards,

Certification Body

Dipl.-Ing. Univ. S. O. Steinke

Enclosure

证书的详细资料请登陆www.certipedia.com查阅,或拨打我司客服热线800 999 3668 / 400 883 1300咨询

C E R T I F I C A T E



of Conformity
Low Voltage Directive 2014/35/EU

Registration No.: AN 50412000 0001

Report No.: 50091011 002

Holder: Ten Pao Industrial Co., Ltd.
Rm. 10-11, 6/F.
Kwong Sang Hong Centre
151-153 Hoi Bun Road
Kwun Tong, Kowloon
Hong Kong

Product: Power Supply
(SWITCHING POWER SUPPLY)

Identification: Type Designation: S012CDzxxxyyyy
(Trademarks of Ten Pao Industrial Co., Ltd.)
Serial No.: n.a.
Remark: For detail of the variables z, xxx and yyyy refer to
test report 50091011 002.

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical Report and documentation are at the Licence Holder's disposal. This is to certify that the tested sample is in conformity with Annex I of Council Directive 2014/35/EU, referred to as the Low Voltage Directive. This certificate does not imply assessment of the series-production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to Annex IV of the Directive.

Certification Body

Date 04.07.2018



A handwritten signature in blue ink that reads 'Tommy Chen'.
Sommy Chen





TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CE The CE marking may be used if all relevant and effective EC Directives are complied with. CE

Instructions for use

Obverse



| | | | | | |
|--|---|---|---|---|--|
|  <p>USER MANUAL</p> <p>Switching Power Supply</p> <p>Before operating the unit, please read this manual thoroughly and keep it for future reference.</p> | <p> WARNING</p> <p>To reduce the risk of fire or electric shock, do not expose this switching power supply to dripping or splashing.</p> <p>Do not place objects filled with liquids such as vases on the apparatus.</p> <p>Do not install the switching power supply in a confined space such as built-in cabinet or bookcase.</p> <p>Connect the switching power supply to an easily accessible AC outlet. In case of any abnormality in it, disconnect it from the mains immediately.</p> | <p>Precautions</p> <p>Safety Instruction</p> <ul style="list-style-type: none"> • Keep the switching power supply and its individual parts away from the children. • Only use the switching power supply indoors. Never operate it in damp rooms or in the rain. • Never use the switching power supply in the areas where there is a risk of explosion. • Keep the switching power supply away from the flames and hot surfaces. • If the switching power supply moves from a cold to a warm environment, condensation may form which can damage the electronic. Do not connect the switching power supply until it is reached the room temperature. • Never pull the switching power supply out of the AC outlet by the main cables or USB cable. • Read carefully the safety and operating instructions of the consumer devices that are connected to the switching power supply. • Do not expose the switching power supply to | <p>extreme temperatures, direct sunlight, strong vibrations, mechanical pressure, moisture, flammable vapours or solvents.</p> <ul style="list-style-type: none"> • Do not operate the switching power supply if there is any damage or defective being found. • Do not disassemble or modify the switching power supply. | <p>Operation</p> <ul style="list-style-type: none"> • Make sure the current and voltage of the unit matches that of the outlet. • Disconnect the unit from the wall outlet and the equipment after using. • Disconnect the unit from the AC outlet by pulling on the unit. • Do not drop or otherwise cause a mechanical shock to the unit in order to prevent damage. • Do not allow the terminal of the unit to touch any foreign metal object in order to avoid short-circuit. | <p>Imported by: DIGIMAX S.R.L. Via dei Laghi, 31 38077 – Altavilla Vicentina (VI) - Italy</p> <p>Manufacturer: TEN PAO ELECTRONICS (HUIZHOU) CO., LTD. Dongjiang Industrial Estate, Shuikou Street, Huizhou City 516005, Guangdong Province, P.R.C.</p> |
|  <p>MANUALE</p> <p>Alimentatore switching</p> <p>Prima di utilizzare l'unità, leggere attentamente questo manuale e conservarlo per riferimento futuro.</p> | <p> AVVERTIMENTO</p> <p>Per ridurre il rischio di incendio o scosse elettriche, non esporre questo alimentatore a gocciolamenti o schizzi di acqua o altri liquidi.</p> <p>Non immergere l'alimentatore in acqua o in altri liquidi. Non utilizzare mai l'alimentatore in modo che possa cadere in una vasca, o in un contenitore con acqua o altri liquidi. Non posizionare oggetti pieni di liquidi come vasi sull'apparecchio.</p> <p>Non installare l'alimentatore in uno spazio ristretto come un armadio chiuso o una libreria.</p> <p>Collegare l'alimentatore switching a una presa elettrica facilmente accessibile. In caso di anomalie, scollegarlo immediatamente dalla rete elettrica.</p> | <p>Precauzioni</p> <p>Istruzioni di sicurezza</p> <ul style="list-style-type: none"> • Tenere l'alimentatore, tutte le sue singole parti e il materiale di imballaggio, lontano dalla portata dei bambini. • Utilizzare l'alimentatore solo in ambienti chiusi. Non utilizzarlo mai in ambienti umidi o sotto la pioggia. • Non utilizzare mai l'alimentatore nelle aree in cui esiste il rischio di esplosione. • Tenere l'alimentatore lontano da fiamme e superfici calde. • Se l'alimentatore passa da un ambiente freddo a uno caldo, può formarsi condensa che può danneggiare l'elettronica. Non collegare l'alimentatore fino a quando non viene raggiunta | <p>la temperatura ambiente.</p> <ul style="list-style-type: none"> • Non estrarre mai l'alimentatore dalla presa elettrica tirandolo dai cavi principali o dal cavo USB. • Leggere attentamente le istruzioni di sicurezza e di funzionamento dei dispositivi collegati all'alimentatore. • Non esporre l'alimentatore a temperature estreme, luce solare diretta, forti vibrazioni, pressione meccanica, umidità, vapori infiammabili o solventi. • Non utilizzare l'alimentatore in caso di danni, difetti rilevati o se visibilmente danneggiato. • Non smontare o modificare l'alimentatore. | <p>Operazione</p> <ul style="list-style-type: none"> • Prima di collegare l'alimentatore alla rete elettrica assicurarsi che la corrente e la tensione indicate sulla targhetta corrispondano a quelle fornite dalla presa elettrica. • Scollegare l'unità dalla presa elettrica di alimentazione dopo l'uso. • Scollegare l'unità dalla presa elettrica di alimentazione afferrando il corpo dell'unità o afferrando il corpo della spina. • Per non danneggiare l'alimentatore evitare cadute accidentali e shock meccanici. • Per evitare cortocircuiti impedire il contatto dei terminali dell'alimentatore con oggetti metallici estranei. | <p>Importato da: DIGIMAX S.R.L. Via dei Laghi, 31 38077 – Altavilla Vicentina (VI) - Italia</p> <p>Fabbricante: TEN PAO ELECTRONICS (HUIZHOU) CO., LTD. Dongjiang Industrial Estate, Shuikou Street, Huizhou City 516005, Guangdong Province, P.R.C.</p> |

Reverse

