



# TEST REPORT

MODEL NAME : UP100S12WQ

1. DESIGN VERIFY TEST
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**1. DESIGN VERIFY TEST**

**1-1. INPUT FUNCTION TEST**

| TEST ITEM       | SPECIFICATION                          | TEST CONDITION  | RESULT                       | VERDICT |
|-----------------|--|---|------------------------------|---------|
| VOLTAGE RANGE   | 90~277VAC                              | I/P: testing<br>O/P:full load<br>Ta:25 °C             | test ok                      | P       |
| FREQUENCY RANGE | 47~63Hz<br>no damage osc               | I/P:90~277VAC<br>O/P:full~min. load<br>Ta:25 °C       | test ok                      | P       |
| EFFICIENCY      | 84% typ.                               | I/P:220VAC<br>O/P:full load<br>Ta:25 °C               | 85%                          | P       |
| AC CURRENT      | 1.80A/115VAC typ.<br>1.30A/230VAC typ. | I/P:115VAC<br>I/P:230VAC<br>O/P:full load<br>Ta:25 °C | 1.39A/115VAC<br>0.76A/230VAC | P       |
| INRUSH CURRENT  | 40A typ.<br>cold start                 | I/P:230VAC<br>O/P:full load<br>Ta:25 °C               | 35A                          | P       |
| LEAKAGE CURRENT | 2.5mA max.                             | I/P:230VAC<br>O/P:min. load<br>Ta:25 °C               | 0.62mA                       | P       |

**1-2. OUTPUT FUNCTION TEST**

| TEST ITEM         | SPECIFICATION | TEST CONDITION  | RESULT                           | VERDICT |
|-------------------|---------------|---|----------------------------------|---------|
| RIPPLE&NOISE      | 170mVp-p max. | I/P:115VAC<br>I/P:230VAC<br>O/P:full load<br>Ta:25 °C | 63mVp-p/115VAC<br>33mVp-p/230VAC | P       |
| VOLTAGE TOLERANCE | 12V± 3%       | I/P:200VAC/240VAC<br>O/P:full/min. load<br>Ta:25 °C   | ± 0.75%                          | P       |
| LINE REGULATION   | 12V± 1%       | I/P:200~240VAC<br>O/P:full load<br>Ta:25 °C           | ± 0%                             | P       |
| LOAD REGULATION   | 12V± 2%       | I/P:220VAC<br>O/P:full~min. load<br>Ta:25 °C          | ± 0.75%                          | P       |

|                     |  |   |                                |          |
|---------------------|--|---|--------------------------------|----------|
| <b>SETUP TIME</b>   | 3000ms/115VAC max.<br>3000ms/230VAC max. | I/P:115VAC<br>I/P:230VAC<br>O/P:full load<br>Ta:25 °C | 470ms/115VAC<br>660ms/230VAC   | <b>P</b> |
| <b>RISE TIME</b>    | 100ms/115VAC max.<br>100ms/230VAC max.   | I/P:115VAC<br>I/P:230VAC<br>O/P:full load<br>Ta:25    | 56ms/115VAC<br>52ms/230VAC     | <b>P</b> |
| <b>HOLD UP TIME</b> | 10ms/115VAC typ.<br>60ms/230VAC typ.     | I/P:115VAC<br>I/P:230VAC<br>O/P:full load<br>Ta:25    | 12.8ms/115VAC<br>61.6ms/230VAC | <b>P</b> |

**1-3. PROTECTION FUNCTION TEST**

| TEST ITEM                      | SPECIFICATION                          | TEST CONDITION  | RESULT   | VERDICT  |
|--------------------------------|--|---|--|----------|
| <b>SHORT PROTECTION</b>        | short every output 1 hour<br>no damage | I/P:277VAC<br>O/P:full load<br>Ta:25 °C               | no damage,<br>recovers<br>automatically after<br>fault removed                 | <b>P</b> |
| <b>OVER LOAD PROTECTION</b>    | 110% min.                              | I/P:115VAC<br>I/P:230VAC<br>O/P:testing<br>Ta:25 °C   | 139%/115VAC<br>133%/230VAC<br>recovers<br>automatically after<br>fault removed | <b>P</b> |
| <b>OVER VOLTAGE PROTECTION</b> | 115~140%                               | I/P:115VAC<br>I/P:230VAC<br>O/P:min. load<br>Ta:25 °C | 113%/115VAC<br>114%/230VAC<br>recovers<br>automatically after<br>fault removed | <b>P</b> |
| <b>OVER TEMP. PROTECTION</b>   | temp. sensor:95±10 °C<br>no damage     | I/P:100VAC<br>O/P:full load                           | O.T.P active,<br>recovers<br>automatically after<br>fault removed              | <b>P</b> |

**2. SAFETY TEST**

| TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|-----------|---------------|----------------|--------|---------|
|-----------|---------------|----------------|--------|---------|

|                             |   |  |  |          |
|-----------------------------|---|--|--|----------|
| <b>WITHSTAND VOLTAGE</b>    | I/P-O/P:3KVAC/1min<10mA<br>I/P-F/G:1.5KVAC/1min<10mA<br>O/P-F/G:0.5KVAC/1min<10mA | I/P-O/P:3KVAC/1min<br>I/P-F/G:1.5KVAC/1min<br>O/P-F/G:0.5KVAC/1min<br>Ta:25℃ | I/P-O/P:4.1mA<br>I/P-F/G:3.3mA<br>O/P-F/G:2.1mA<br>no damage | <b>P</b> |
| <b>ISOLATION RESISTANCE</b> | I/O-O/P:500VDC>100MΩ<br>I/O-F/G:500VDC>100MΩ<br>O/P-F/G:500VDC>100MΩ              | I/P-O/P:500VDC<br>I/P-F/G:500VDC<br>O/P-F/G:500VDC<br>Ta:25℃                 | I/P-O/P:∞<br>I/P-F/G:∞<br>O/P-F/G:∞<br>no damage             | <b>P</b> |

### 3. RELIABILITY TEST

| TEST ITEM                     | SPECIFICATION       | TEST CONDITION   | RESULT  | VERDICT  |
|-------------------------------|---------------------|--|---------|----------|
| <b>LOW TEMP. TURN ON TEST</b> | turn on after 2hour | I/P:220VAC<br>O/P:full load<br>Ta:-40℃   | test ok | <b>P</b> |
| <b>STORAGE TEMP. TEST</b>     | no damage           | 1.thermal shock temp.: -40~+75℃<br>2.test time<br>low & high temp.:30min/each<br>3.total cycle:5cycle<br>4.input/output condition:static   | test ok | <b>P</b> |
| <b>THERMAL SHOCK TEST</b>     | no damage           | 1.thermal shock temp.: -20~+50℃<br>2.test time<br>low & high temp.:30min/each<br>3.total cycle:10cycle<br>4.input/output condition:<br>220VAC 75% load,<br>AC on/off test<br>(turn on 58sec,turn off 2sec) | test ok | <b>P</b> |
| <b>VIBRATION TEST</b>         | no damage           | 1.CATON&1SET<br>1.wave form:sine wave<br>2.frequency:10~500Hz<br>3.sweep time:10min./sweep cycle<br>4.acceleration:2G<br>5.test time:60min. in each(X,Y,Z)<br>6.Ta:25℃                                     | test ok | <b>P</b> |