

MODEL : PLC-30-48

OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|--|--|---|---------|
| 1 | RIPPLE & NOISE | V1 : 3.7 Vp-p (Max) | I/P : 230VAC O/P : 100% LOAD Ta : 25°C | V1 : 1.98 Vp-p (Max) | P |
| 2 | OUTPUT VOLTAGE ADJUST RANGE | CH1 : 45.6 V- 52.8 V | I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C | 42.71V- 53.72 V/ 230 VAC 42.71 V- 53.72 V/ 115 VAC | P |
| 3 | OUTPUT CURRENT ADJUST RANGE | CH1 : 0.473A-0.649A | I/P : 230 VAC I/P : 115 VAC Ta : 25°C | 0.43 A- 0.77 A/ 230 VAC 0.43 A- 0.77 A/ 115 VAC | P |
| 4 | OUTPUT VOLTAGE TOLERANCE | V1 : 10 %- -10% (Max) | I/P : 100 VAC / 264 VAC O/P : 100% LOAD / MIN LOAD Ta : 25°C | V1 : 1.6 %- -1.6 % | P |
| 5 | LINE REGULATION | V1 : 3 %- -3 % (Max) | I/P : 100VAC ~ 264 VAC O/P : 100% LOAD Ta : 25°C | V1 : 0.03 %- -0.03 % | P |
| 6 | LOAD REGULATION | V1 : 5 %- -5 % (Max) | I/P : 230 VAC O/P : 100% LOAD ~MIN LOAD Ta : 25°C | V1 : 0.05 %- -0.05 % | P |
| 7 | SET UP TIME | 230VAC : 500 ms (Max) 115 VAC : 3000 ms (Max) | I/P : 230 VAC I/P : 115 VAC O/P : 100% LOAD Ta : 25°C | 230VAC/ 459.179 ms 115VAC/ 523.182 ms | P |
| 8 | OVER/UNDERSHOOT TEST | < ±10% | I/P : 230 VAC O/P : 100% LOAD Ta : 25°C | TEST : <10 % | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------|--|---|--|---------|
| 1 | INPUT VOLTAGE RANGE | 90VAC-264 VAC | I/P : TESTING O/P : 100% LOAD Ta : 25°C | 61 V-264V | P |
| | | | I/P : LOW-LINE-3V= 87V HIGH-LINE+15%= 300 V O/P : 100% LOAD /MIN LOAD ON : 30 Sec . OFF : 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE) | TEST : OK | |
| 2 | INPUT FREQUENCY RANGE | 47HZ -63 HZ NO DAMAGE OSC | I/P : 90 VAC ~ 264 VAC O/P : 100% LOAD -MIN LOAD Ta : 25°C | TEST : OK | P |
| 3 | POWER FACTOR | 0.90 / 230 VAC(TYP) 0.90 / 115 VAC(TYP) | I/P : 230 VAC I/P : 115 VAC O/P : 100% LOAD Ta : 25°C | PF= 0.93 / 230 VAC PF= 0.96 / 115 VAC | P |
| 4 | EFFICIENCY | 85.5% (TYP) | I/P : 230 VAC O/P : 100% LOAD Ta : 25°C | 88.3 % | P |
| 5 | INPUT CURRENT | 230V/ 0.2 A (TYP) 115V/ 0.4 A (TYP) | I/P : 230 VAC I/P : 115 VAC O/P : 100% LOAD Ta : 25°C | I = 0.17 A/ 230 VAC I = 0.31 A/ 115 VAC | P |
| 6 | INRUSH CURRENT | 230V/ 35 A (TYP) COLD START | I/P : 230 VAC O/P : 100% LOAD Ta : 25°C | I = 29 A/ 230 VAC | P |
| 7 | LEAKAGE CURRENT | < 0.5 mA / 240 VAC | I/P : 264 VAC O/P : Min LOAD Ta : 25°C | L-FG : 0.001 mA N-FG : 0.001 mA | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|---|---|---|---------|
| 1 | OVER LOAD PROTECTION | 100 %~ 110 % | I/P : 230 VAC I/P : 115 VAC O/P : TESTING Ta : 25°C | 105 %/ 230 VAC 105 %/ 115 VAC Constant Current Limiting | P |
| 2 | OVER VOLTAGE PROTECTION | CH1 : 53 V- 63 V | I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C | 56V/ 230 VAC 56 V/ 115 VAC Shunt down Re- power ON | P |
| 3 | OVER TEMPERATURE PROTECTION | SPEC : TSW1 : 95 ± 10°C O.T.P NO DAMAGE | I/P : 230 VAC O/P : 100% LOAD | O.T.P Active Shunt down Re-power ON | P |
| 4 | SHORT PROTECTION | SHORT EVERY OUTPUT 1 HOUR NO DAMAGE | I/P : 264 VAC O/P : 100% LOAD Ta : 25°C | NO DAMAGE Hiccup Mode | P |

ENVIRONMENT TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|---|---|-------------------|---------|
| 1 | TEMPERATURE RISE TEST | MODEL : PLC-30-24 1. ROOM AMBIENT BURN-IN : 17 HRS I/P : 230VAC O/P : 100% LOAD Ta= 24.7 °C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : 100% LOAD Ta= 40.8 °C | | | P |
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| 2 | OVER LOAD BURN-IN TEST | NO DAMAGE 1 HOUR (MIN) | I/P : 230 VAC O/P : 115 % LOAD Ta : 25°C | TEST : OK | P |
| 3 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 2 HOUR | I/P : 230 VAC O/P : 100 % LOAD Ta= -30 °C | TEST : OK | P |
| 4 | HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST | AFTER 12 HOURS IN CHAMBER ON CONTROL 40°C NO DAMAGE | I/P : 272 VAC O/P : 100% LOAD Ta= 40°C HUMIDITY= 95 %R.H | TEST : OK | P |
| 5 | TEMPERATURE COEFFICIENT | ± 0.06 %(0-50°C) | I/P : 230 VAC O/P : 100% LOAD | ± 0.027 %(0-50°C) | P |
| 6 | VIBRATION TEST | 1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10-500Hz (3) Time : 72min (4) Acceleration : 2G (5) Test Time : 1 hour in each axis (X.Y.Z) (6) Ta : 25°C | | TEST : OK | P |

SAFETY TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------------|--|---------------------------------------|------------------------------------|---------|
| 1 | WITHSTAND VOLTAGE | I/P-O/P : 3.75KVAC/min | I/P-O/P : 4.2KVAC/min Ta : 25°C | I/P-O/P : 2.24 mA NO DAMAGE | P |
| 2 | ISOLATION RESISTANCE | I/P-O/P : 500VDC>100MΩ | I/P-O/P : 500 VDC Ta : 25°C/70% RH | I/P-O/P : 13 GΩ NO DAMAGE | P |
| 3 | APPROVAL | TUV : Certificate NO : R50103804 UL : File NO : E186843 | | | P |

E.M.C TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|--|--|-------------------------------|---------|
| 1 | HARMONIC | EN61000-3-2 CLASS A CLASS C CLASS D | I/P : 230 VAC/50HZ O/P : 100% LOAD/70%LOAD Ta : 25°C | PASS | P |
| 2 | CONDUCTION | EN55015 CLASS B | I/P : 230 VAC (50HZ) O/P : 100% LOAD /50% LOAD Ta : 25°C | PASS Test by certified Lab | P |
| 3 | RADIATION | EN55015 CLASS B | I/P : 230 VAC (50HZ) O/P : 100% LOAD Ta : 25°C | PASS Test by certified Lab | P |
| 4 | E.S.D | EN61000-4-2 LIGHT INDUSTRY AIR : 8KV / Contact : 4KV | I/P : 230 VAC/50HZ O/P : 100% LOAD Ta : 25°C | CRITERIA A | P |
| 5 | E.F.T | EN61000-4-4 LIGHT INDUSTRY INPUT : 1KV | I/P : 230 VAC/50HZ O/P : 100% LOAD Ta : 25°C | CRITERIA A | P |
| 6 | SURGE | IEC61000-4-5 LIGHT INDUSTRY L-N : 1KV | I/P : 230 VAC/50HZ O/P : 100% LOAD Ta : 25°C | CRITERIA A | P |
| 7 | Test by certified Lab & Test Report Prepare | | | | |

M.T.B.F & LIFE CYCLE CALCULATION

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|--|----------------|--------|---------|
| 1 | CAPACITOR LIFE CYCLE | PLC-30-24 : SUPPOSE C106 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : 100% LOAD Ta= 25 °C LIFE TIME= 144427 HRS I/P : 230VAC O/P : 100% LOAD Ta= 50 °C LIFE TIME= 69825 HRS | | | P |
| 2 | MTBF | MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE : 621.4K HRS | | | P |
| 3 | DMTBF/Accelerated Life Test | Demonstration Mean Time Between Failure(Expected Life) : 20,000 hours @ Tcase 80°C; 50,000 hours @ Tcase 65°C | | | P |

COMPONENT STRESS TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|--|-------------------------------------|--|--|---------|
| 1 | Power Transistor (D to S) or (C to E) Peak Voltage | Q1 Rated STP9NK70ZFP : 700V 7.5A | I/P : High-Line +3V = 267 V O/P : (1) 100% LOAD Turn on (2) Output Short Ta : 25°C | (1) 546 V (2) 500 V | P |
| 2 | Diode Peak Voltage | D100 Rated FCF10A40 : 10A/400V | I/P : High-Line +3V = 267 V O/P : (1) 100% LOAD Turn on (2)Output Short Ta : 25°C | (1) 265 V (2) 260 V | P |
| 3 | Clamp Diode Peak Voltage | D2 Rated IN4007 : 1000V 1A | I/P : High-Line +3V = 267 V O/P : (1) Dynamic Load 90%Duty/1KHz Ta : 25°C | (1) 346 V | P |
| 4 | Control IC Voltage Test | U1 Rated TDA4863G : 22V | I/P : High-Line +3V = 267 V O/P : (1) 100% LOAD Turn on /Off (2) Min load Turn on /Off (3) 100% /Min load Change Ta : 25°C | (1) 14.5 V (2) 14.5 V (3) 14.5 V | P |

| DATE | SAMPLE | TEST RESULT | TESTER | APPROVAL |
|-----------|----------|-------------|------------|---------------|
| 2009/6/16 | W0905C35 | PASS | SANFORD SU | VINCENT TSENG |

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