

MODEL : PLC-30-20

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1 : 2.6 Vp-p (Max)	I/P : 230VAC O/P : 100% LOAD Ta : 25°C	V1 : 1.35 Vp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1 : 19 V~ 22 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	17.76 V~ 22.45 V/ 230 VAC 17.76 V~ 22.45 V/ 115 VAC	P
3	OUTPUT CURRENT ADJUST RANGE	CH1 : 1.125A~1.545A	I/P : 230 VAC I/P : 115 VAC Ta : 25°C	0.92 A~ 1.77 A/ 230 VAC 0.92 A~ 1.77 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 : 0.2 %~ -0.2 %	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 : 0.2 %~ -0.2 %	P
7	SET UP TIME	230VAC : 5500 ms (Max) 115 VAC : 3000 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : 100% LOAD Ta : 25°C	230VAC/ 443.232 ms 115VAC/ 360.156 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	68 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) 0.95 / 115 VAC(TYP)	I/P : 230 VAC I/P : 115 VAC O/P : 100% LOAD Ta : 25°C	PF= 0.924 / 230 VAC PF= 0.983 / 115 VAC	P
4	EFFICIENCY	84% (TYP)	I/P : 230 VAC O/P : 100% LOAD Ta : 25°C	86 %	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 = 0.16 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 = 33 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 : 0.01 mA N-FG : 0.01 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 : 23 V~ 26 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	25.1 V/ 230 VAC 25.1 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 <table><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 24.7°C</th><th>HIGH AMBIENT Ta= 40.8°C</th></tr><tr><td>1</td><td>Q1</td><td>P9NK70ZFP 7.5A/700A</td><td>71.1°C</td><td>84.0°C</td></tr><tr><td>2</td><td>D2</td><td>1N4007 1A/1KV</td><td>81.7°C</td><td>94.3°C</td></tr><tr><td>3</td><td>LF1</td><td>TR-572</td><td>54.0°C</td><td>66.3°C</td></tr><tr><td>4</td><td>U1</td><td>TDA4863</td><td>63.8°C</td><td>76.3°C</td></tr><tr><td>5</td><td>BD1</td><td>UD2KB80</td><td>59.8°C</td><td>72.2°C</td></tr><tr><td>6</td><td>C48</td><td>47U/35V 105°C ZLH</td><td>65.9°C</td><td>78.0°C</td></tr><tr><td>7</td><td>C7</td><td>474/450V 105°C</td><td>64.5°C</td><td>77.0°C</td></tr><tr><td>8</td><td>T1 COIL</td><td>TF-1596</td><td>85.9°C</td><td>96.8°C</td></tr><tr><td>9</td><td>TSW1</td><td>NTC200K 5%</td><td>68.2°C</td><td>81.3°C</td></tr><tr><td>10</td><td>L1</td><td>TR-751</td><td>60.6°C</td><td>72.9°C</td></tr><tr><td>11</td><td>C106</td><td>560U/35V 105°C ZLH</td><td>69.1°C</td><td>80.7°C</td></tr><tr><td>12</td><td>D100</td><td>FMX-12SL 10A/200V</td><td>68.1°C</td><td>79.4°C</td></tr><tr><td>13</td><td>LF100</td><td>TR-574</td><td>51.5°C</td><td>63.2°C</td></tr></table>			NO	Position	P/N	ROOM AMBIENT Ta= 24.7°C	HIGH AMBIENT Ta= 40.8°C	1	Q1	P9NK70ZFP 7.5A/700A	71.1°C	84.0°C	2	D2	1N4007 1A/1KV	81.7°C	94.3°C	3	LF1	TR-572	54.0°C	66.3°C	4	U1	TDA4863	63.8°C	76.3°C	5	BD1	UD2KB80	59.8°C	72.2°C	6	C48	47U/35V 105°C ZLH	65.9°C	78.0°C	7	C7	474/450V 105°C	64.5°C	77.0°C	8	T1 COIL	TF-1596	85.9°C	96.8°C	9	TSW1	NTC200K 5%	68.2°C	81.3°C	10	L1	TR-751	60.6°C	72.9°C	11	C106	560U/35V 105°C ZLH	69.1°C	80.7°C	12	D100	FMX-12SL 10A/200V	68.1°C	79.4°C	13	LF100	TR-574	51.5°C	63.2°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 : 2.1 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 : 30 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) 652 V (2) 460 V	P
2	Diode Peak Voltage	D100 Rated FMX-12SL : 10A/200V	I/P : High-Line +3V = 267 V O/P : (1) 100% LOAD Turn on (2)Output Short Ta : 25°C	(1) 107 V (2) 88 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) 360 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) 14.6 V (2) 14.5 V (3) 14.6 V	P

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

2003/12/12 A50-F023