



# Test Report : GEM18I05

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AC-DC High Reliability Interchangeable Medical Adaptor

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

## ■ SAFETY TEST

Safety Test

## ■ RELIABILITY TEST

Environment Test

Other test

## DESIGN VERIFY TEST

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	60 mVp-p (Max)	I/P:230VAC O/P:FULL LOAD Ta:25°C	43 mVp-p	P
2	VOLTAGE TOLERANCE	-5% ~ +5% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD Ta:25°C	-3.91% ~ +3.89%	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD Ta:25°C	-0% ~ +0%	P
4	LOAD REGULATION	-5% ~ +5% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD Ta:25°C	-3.91% ~ +3.89%	P
5	SET UP TIME	500 mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	161.9mS	P
6	RISE TIME	30 mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	3.64 mS	P
7	HOLD UP TIME	16 mS (Min)	I/P:115VAC O/P:FULL LOAD Ta:25°C	23.7 mS	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE RANGE	90VAC ~ 264VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	60V ~ 264V	P
2	FREQUENCY RANGE	50HZ - 60HZ (Typ) NO DAMAGE OSC	I/P: 100VAC ~ 240VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	80% (Typ)	I/P:230VAC O/P:FULL LOAD Ta:25°C	81.07%	P
4	AVERAGE EFFICIENCY	81.50% ( LEVEL VI)	I/P:115/230VAC O/P:25% 、 50% 、 75% 、 100% LOAD Ta:25°C	81.77% (115VAC) 81.50% (230VAC)	P
5	AC CURRENT	0.45A (Max)	I/P: 100VAC O/P:FULL LOAD Ta:25°C	0.342A	P
6	NO LOAD POWER CONSUMPTION	< 0.075W (Max)	I/P:230VAC O/P: NO LOAD Ta:25°C	0.074W	P

7	INRUSH CURRENT	< 60A COLD START	I/P:230VAC O/P:FULL LOAD Ta:25°C	48.4A	P
8	LEAKAGE CURRENT	< 100μA	I/P:264VAC O/P:Min LOAD Ta:25°C	L-FG: 20μA N-FG: 20μA	P

## PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105% ~ 160%	I/P:230VAC O/P:TESTING Ta:25°C	134% HICCUP MODE RESET : AUTO RECOVER	P
2	OVER VOLTAGE PROTECTION	110% ~ 140%	I/P:230VAC O/P:MIN LOAD Ta:25°C	136% (1N4736A) Clamp by ZENER diode	P
3	SHORT PROTECTION	SHORT OUTPUT 1 HOUR NO DAMAGE	I/P:264VAC O/P:FULL LOAD Ta:25°C	NO DAMAGE HICCUP MODE RESET AUTO RECOVER	P

## ■ SAFETY TEST

### SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:5656 VDC/min	I/P-O/P:5656 VDC/min Ta:25°C	I/P-O/P: 0.03uA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P:500 VDC Ta:25°C	I/P-O/P>100MΩ NO DAMAGE	P

## ■ RELIABILITY TEST

### ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	1. ROOM AMBIENT BURN-IN : 4HRS I/P:230VAC O/P:100% LOAD Ta=25°C 2. HI AMBIENT BURN-IN : 4HRS I/P:230VAC O/P:100% LOAD Ta=40°C			P
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOURS	I/P : 230VAC O/P : 100% LOAD Ta= -20°C	TEST : OK	P

### OTHER

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C9 IS THE MOST CRITICAL COMPONENT I/P:230 VAC O/P:100% LOAD Ta=25°C LIFE TIME=35628HRS I/P:230 VAC O/P:100% LOAD Ta=40°C LIFE TIME=16853HRS			P
2	MTBF	MIL-KDBK-217F NOTICES 2 PARTS COUNT TOTAL FAILURE RATE : 2.205426 M.T.B.F : 453427 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	PETER CHENG	VINCENT TSENG