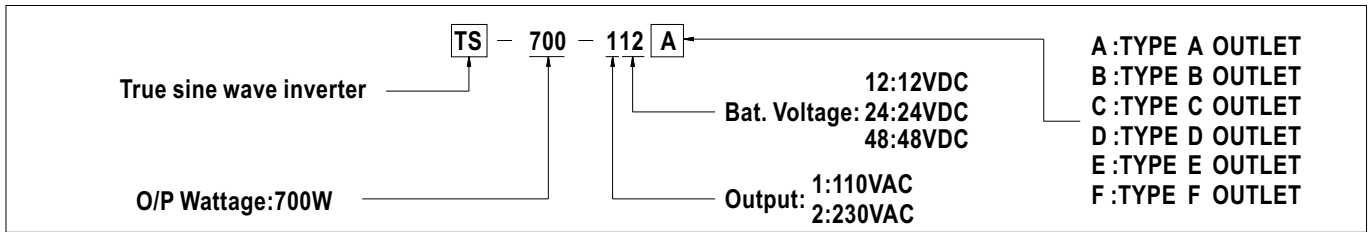


**■ Features :**

- True sine wave output (THD<3%)
- High surge power up to 1400W
- High efficiency up to 91%
- Power ON-OFF switch
- Standby saving mode can be selectable
- Front panel indicator for operation status
- Built-in fan ON-OFF control function
- Protections: Bat. low alarm / Bat. low shutdown / Over voltage / Over temp. / Output short / Reverse polarity / Overload
- Application : Home appliance, power tools, office and portable equipment, vehicle and yacht ...etc.
- 2 years warranty

**SPECIFICATION**

MODEL	TS-700-112□	TS-700-124□	TS-700-148□	TS-700-212□	TS-700-224□	TS-700-248□		
OUTPUT	RATED POWER (Typ.) 700W							
	MAXIMUM OUTPUT POWER (Typ.) 800W for 180 sec. / 1050W for 10 sec. / surge power 1400W for 30 cycles							
	AC VOLTAGE			AC VOLTAGE				
	Factory setting set at 110VAC			Factory setting set at 230VAC				
	100 / 110 / 115 / 120VAC selectable by setting button S.W			200 / 220 / 230 / 240VAC selectable by setting button S.W				
	FREQUENCY 60±0.1Hz 50/60Hz selectable by setting button S.W							
	WAVEFORM True sine wave (THD<3%) at rated input voltage							
	AC REGULATION (Typ.) ±3.0%							
SAVING MODE (Typ.) Load ≤5W will be changed to standby mode								
FRONT PANEL INDICATOR Battery voltage level, output load level, saving mode, fault and operation status								
INPUT	BAT. VOLTAGE		12V	24V	48V	12V	24V	48V
	VOLTAGE RANGE (Typ.)		10.5 ~ 15VDC	21 ~ 30VDC	42 ~ 60VDC	10.5 ~ 15VDC	21 ~ 30VDC	42 ~ 60VDC
	DC CURRENT (Typ.)		75A	38A	19A	75A	38A	19A
	NO LOAD DISSIPATION ≤6W @ standby saving mode							
	OFF MODE CURRENT DRAW ≤1mA							
	EFFICIENCY (Typ.)		Note.1 86%	88%	89%	89%	90%	91%
	BATTERY TYPES Open & sealed Lead Acid							
BATTERY INPUT PROTECTION	FUUSE		40A*3	30A*2	20A*2	40A*3	30A*2	20A*2
	BAT. LOW ALARM		11.3±4%	22.5±4%	45±4%	11.3±4%	22.5±4%	45±4%
	BAT. LOW SHUTDOWN		10.5±4%	21±4%	42±4%	10.5±4%	21±4%	42±4%
	BAT. POLARITY By internal fuse open							
OUTPUT PROTECTION	OVER TEMPERATURE			OVER TEMPERATURE				
	80°C ± 5°C			75°C ± 5°C				
	Protection type : Shut down o/p voltage, re-power on to recover; by internal RTH3 detect on heatsink of power diode							
	OUTPUT SHORT Protection type : Shut down o/p voltage, re-power on to recover							
OVER LOAD (Typ.) 105 ~ 115% load for 180 sec., 115% ~ 150% load for 10 sec.								
Protection type : Shut down o/p voltage, re-power on to recover								
GFCI PROTECTION				GFCI PROTECTION				
Optional (Only type F)				None				
ENVIRONMENT	WORKING TEMP. 0 ~ +40°C @ 100% load ; +60°C @ 50% load							
	WORKING HUMIDITY 20% ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY -30 ~ +70°C / -22 ~ +158°F, 10 ~ 95% RH							
	VIBRATION 10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS			SAFETY STANDARDS				
	Design refer to UL458			None				
	LVD			LVD				
	None			EN60950-1				
	WITHSTAND VOLTAGE Bat I/P - AC O/P:3.0KVAC AC O/P - FG:1.5KVAC							
	ISOLATION RESISTANCE AC O/P-FG , Bat I/P-FG:100M Ohms / 500VDC / 25°C / 70% RH							
EMI CONDUCTION&RADIATION				EMI CONDUCTION&RADIATION				
Compliance to FCC class A				Compliance to EN55022 class A, 72/ 245/ CEE, 95/ 54/ CE, E-Mark				
EMS IMMUNITY								
None								
Compliance to EN61000-4-2,3,8 ENV50204								
OTHERS	DIMENSION 295*184*70mm (L*W*H)							
	PACKING 3.8Kg; 2pcs/8.6Kg/1.02CUFT							
NOTE	1.Efficiency is tested by 530W, linear load at 13V, 26V, 52V input voltage. 2.All parameters not specified above are measured at rated load, 25°C of ambient temperature.							

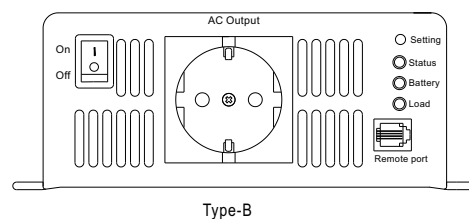
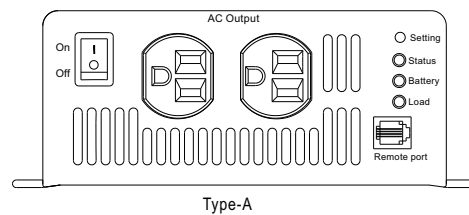
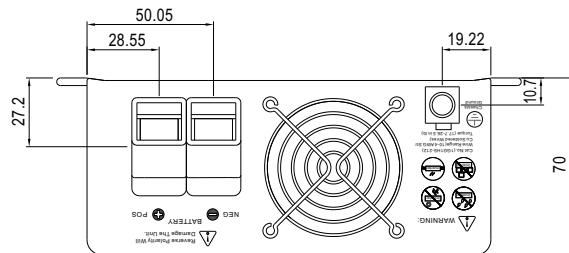
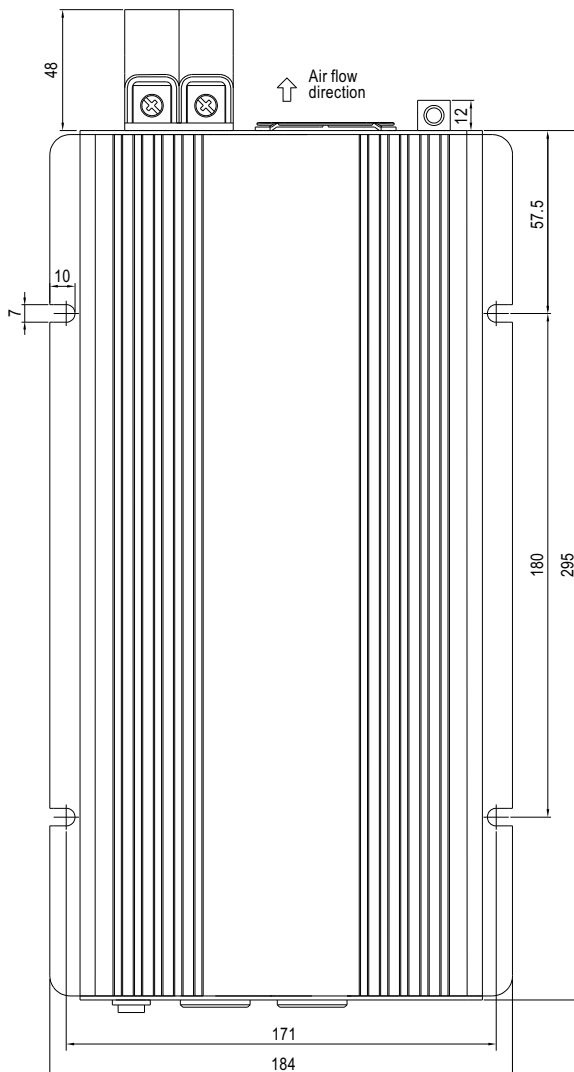


AC Output Receptacles (optional)

Receptacle type						
	TYPE-A	TYPE-B	TYPE-C	TYPE-D	TYPE-E	TYPE-F
Country	USA	EUROPE	AUSTRALIA	U.K	JAPAN	GFCI
Certificate						

Mechanical Specification

Unit:mm



MODEL : TS-700-124

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RATED POWER (TYP)	700W	IP: 24VDC Ta:25°C	700 W	P
2	WAVEFORM	True sine wave (THD<3%)	IP: 24VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 1.03 % NO LOAD: 0.32 %	P
3	FREQUENCY	60HZ ± 0.1HZ	IP: 24VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 60 HZ NO LOAD: 59.98 HZ	P
4	AC REGULATION (TYP)	3%~3%	IP: 24VDC OP: FULL LOAD/NO LOAD Ta:25°C	0.3% ~ -0.3 %	P
5	SAVING MODE TO NORMAL	≤6S (5W-25W)	IP: 24VDC OP: TESTING Ta:25°C	≥ <u>13</u> W <u>5</u> SEC	P
6	NORMAL TO SAVING MODE	≤6S (5W-15W)	IP: 24VDC OP: TESTING Ta:25°C	< <u>10</u> W <u>5</u> SEC	P
7	MAXIMUM OUTPUT POWER (TYP)	800W/180sec 1050w/10sec 1400W / 30cycle	IP: 24VDC OP:TESTING Ta:25°C	<u>800</u> W <u>180</u> SEC <u>1000</u> W <u>10</u> SEC <u>1372</u> W <u>32</u> cycle Shut down o/p voltage , re-power on to recover	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC CURRENT (TYP)	38A	IP: 24VDC OP:FULL LOAD Ta:25°C	32.4A	P
2	NO LOAD DISSIPATION	≤ 6W @ saving mode	IP: 24VDC OP:NO LOAD Ta:25°C	5.3W	P
3	OFF MODE DRAW CURRENT	≤1mA	IP: SW OFF OP:NO LOAD Ta:25°C	05.8mA	P
4	VOLTAGE RANGE (TYP)	21VDC~30VDC	IP: TESTING OP:NO LOAD Ta:25°C	21.1VDC~ 30.2 VDC	P
5	EFFICIENCY (TYP)	88%	IP: 26VDC OP: 530W Ta:25°C	90%	P

INPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	BAT LOW ALARM	22.5VDC \pm 4%	IP: TESTING OP: NO LOAD SW:ON Ta:25°C	22.4V	P
2	BAT LOW SHUT DOWN	21VDC \pm 4%	IP: TESTING OP: NO LOAD SW:ON Ta:25°C	21.1V Shut down Recovery	P
3	BAT. RECOVERY VOLTAGE	24VDC-30VDC	IP: TESTING OP: NO LOAD SW:ON Ta:25°C	26V	P
4	BAT POLARITY	BY INTERNAL FUSE	IP: 24VDC OP: NO LOAD SW:ON Ta:25°C	OK	P

OUTPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER TEMPERATURE	80 °C \pm 5 °C (RTH3) detect on heatsink of power transistor	IP: 24VDC OP: FULL LOAD SW:ON Ta:25°C	O.T.P Active Shut down o/p voltage , re-power on to recover	P
2	OUTPUT SHORT	Shut-off :Shut down o/p voltage , re-power onto recover	IP: 24VDC OP: FULL LOAD SW:ON Ta:25°C	Shut down o/p voltage , re-power on to recover	P
3	OVER LOAD (TYP)	105%-115% LOAD for 180sec 115%-150% LOAD for 10sec	IP: 24VDC OP:TESTING Ta:25°C	<u>800 W 180_SEC</u> <u>1000 W 10SEC</u> Shut down o/p voltage , re-power on to recover	P

APPLICATION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INDUCTION MOTOR	0.5HP	IP: 24VDC OP:0.5HP SW:ON Ta:25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P
2	INCANDESCENT LAMPS	700W	IP: 24VDC OP: 700W SW:ON Ta:25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P
3	ELECTRONIC HOT BLOWERS	700W	IP:24VDC OP: 700W SW:ON Ta:25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P

LED CONTROL TEST

LED IS TREECOLOR LIGHT (●●●)	PANEL
● ● ●	Status Battery Load

Status LIGHT	CONDITION	RESULT
●	Inverter Ok	P
★ flash per second	Saving mode	P

Battery LIGHT	CONDITION	RESULT
●	Vin < 22.2V	<23.3V
●	---	23.75V-24. 2V
●	Vin >25.2V	>24.4

Load LIGHT	CONDITION	RESULT
●	LOAD > 595W	>578W
●	LOAD=385W-525W	357W-571W
●	LOAD < 315W	<374W

VOLTAGE AND SAVING MODE SETTING CODES

★ flash per second. ● Light on. ○ Light off.

	100V (200V)	110V (220V)	115V (230V)	120V (240V)
50Hz	● ○ ○	● ○ ●	● ● ○	● ● ●
RESULT	OK	OK	OK	OK
60Hz	★ ○ ○	★ ○ ●	★ ● ○	★ ● ●
RESULT	OK	OK	OK	OK

Saving Status	LIGHT	RESULT
Enable	★ ★ ●	OK
Disable	★ ★ ○	OK

ERROR CODE LED

Error Code	LIGHT	EXTRAORDINARY	RESULT
001	○ ○ ★	OLP 105±5%~115±5% error code	P
010	○ ★ ○	OLP 115%±5%~ 150±10% error code	P
011	○ ★ ★	OLP 150%±10% error code	P
100	★ ○ ○	OTP error code	P
110	★ ★ ○	INV fault error code (Output short)	P
111	★ ★ ★	Battery Shut Down (Low: No Alarm)	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT					
1	TEMPERATURE RISE TEST	MODEL : TS-700-112	I/P: 12 VDC O/P: FULL LOAD Ta=27.1 °C		P					
		1. ROOM AMBIENT BURN-IN : 1.5 HRS								
		2. HIGH AMBIENT BURN-IN : 1 HRS	I/P: 12 VDC O/P: FULL LOAD Ta=52.9 °C							
			NO	Position		P/N		ROOM AMBIENT Ta=27.1 °C	HIGH AMBIENT Ta=52.9 °C	
			6	C302		3300U/16V 105°C KY		57.2°C	84.3°C	
			7	L301		TF-1750		93.7°C	123.4°C	
			8	C308		565/250V		72.3°C	99.3°C	
			9	T301		TF-1753		78.3°C	105.5°C	
			10	D403		SF20LC30 20A/300V		55.7°C	80.8°C	
			11	C416		330U/250V 105°C MXG		48.9°C	75.5°C	
			12	L13		TR-792		63.3°C	90.2°C	
			13	L1		TR-794		41.9°C	69.3°C	
			14	C7		7u/250Vac		33.2°C	60.1°C	
			15	Q309		IRFZ44V 55A/60V		50.9°C	80.2°C	
			16	Q307		IXT160N075T		42.6°C	71.5°C	
			17	U307		TL3845P		60.1°C	89.3°C	
			18	C328		100U/25V 105°C YXG		41.1°C	69.1°C	
			19	D308		HER203 2A/200V		50.9°C	79.9°C	
			20	Q13		HGTG12N60A4D 12A/600V		59.4°C	86.7°C	
			21	U501		PIC18F65J10		36.0°C	63.3°C	
			22	RTH3		10KΩ 1%		54.1°C	80.1°C	
			23	RG300		LM317T 1.5A		35.5°C	63.9°C	
			24	Q601		IRF540N 27A/100V		41.4°C	71.2°C	
			25	RG601		LM317T 1.5A		39.4°C	68.5°C	
			26	D630		21DQ10 2A/100V		39.5°C	68.0°C	
			27	INTERNAL TA		2 cm above C416		48.4°C	75.2°C	
			28	CASE		Attach CASE		47.1°C	73.3°C	
		2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR		IP: 12VDC OP:FULL LOAD Ta= -5°C		TEST : OK	P	
3	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 40°C NO DAMAGE	IP: 14.6VDC OP:FULL LOAD Ta:= 40°C HUMIDITY= 95 %R.H	TEST : OK	P					
4	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (3) Sweep Time:10min/sweep cycle (5) Test Time:1 hour in each axis (X.Y.Z)	(2) Frequency:10~500Hz (4) Acceleration:3G (6) Ta:25°C	TEST : OK	P					

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	BAT I/P-AC O/P: 3 KVAC/min AC O/P-FG: 1.5 KVAC/min	BAT I/P-AC O/P: 3.6 KVAC/min AC O/P-FG: 1.8 KVAC/min Ta:25°C	BAT I/P-AC O/P: 6.05 mA AC O/P-FG: 4.54 mA NO DAMAGE	P
2	ISOLATION RESISTANCE	BAT I/P-AC O/P:500VDC>100MΩ BAT I/P-FG: 500VDC>100MΩ	BAT I/P-AC O/P: 500 VDC BAT I/P-FG: 500 VDC Ta:25°C	BAT I/P-AC O/P: 4.19GΩ BAT I/P-FG: 9.49GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	14 mΩ	P
4	APPROVAL	TUV: Certificate NO : UL: File NO :			N

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RADIATION	EN 55022 CLASS B	I/P:24 VDC O/P: :FULL/50% LOAD Ta:25°C	PASS	P
2	E.S.D	EN 61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV	I/P: 24VDC O/P:100 %LOAD Ta:25°C	CRITERIA A	P
3	E.F.T	EN 61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 24VDC O/P: 100 %LOAD Ta:25°C	CRITERIA A	P
4	SURGE	EN 61000-4-5 LIGHT INDUSTRY L-N :1KV L,N-PE:1KV	I/P: 24 VDC O/P: 100 %LOAD Ta:25°C	CRITERIA A	P
5	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	TS-700-112 : SUPPOSE C302 IS THE MOST CRITICAL COMPONENT I/P: 12VDC O/P:FULL LOAD Ta= 25°C LIFE TIME=274897 HRS I/P: 12VDC O/P:FULL LOAD Ta= 40°C LIFE TIME=88835 HRS			P



COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC TO DC Power Transistor (D to S) or (C to E) Peak Voltage	Q 300 Rated STP80NF12 80A/120V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 83 V (2) 63 V	P
2	DCTO DC Diode Peak Voltage	D 400 Rated SF20LC30 20A/300V	I/P:29 VC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 226 V (2) 224 V	P
3	DC BUS Capacitor Voltage	C415 Rated 330u/250V 105°C	I/P:29VDC O/P: (1)Full Load Turn SW On /Off (2) Min load Turn SW On /Off Ta:25°C	(1) 215 V (2) 222 V	P
4	DC TO AC Power Transistor (D to S) or (C to E) Peak Voltage	Q 11 Rated HGTG12N60A4D 12A/600V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 404 V (2) 382 V	P
7	DC TO FAN Power Transistor (D to S) or (C to E) Peak Voltage	Q 309 Rated IRF540N 27A/100V	I/P:29VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 91 V (2) 686 V	P
8	DCTO FAN Diode Peak Voltage	D 450 Rated HER303 3A/200V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 62 V (2) 42 V	P
9	FAN TO CPU Power Transistor (D to S) or (C to E) Peak Voltage	Q601 Rated IRF540N 27A/100V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 46 V (2) 30 V	P
10	FAN TO CPU Diode Peak Voltage	D 630 Rated 21DQ10 2A/100V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 35 V (2) 29 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2008/4/29	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2008/8/7	PRODUCT SAMPLE W0804C23	PASS	SANFORD SU	VINCENT TSENG
2008/9/16	PRODUCT SAMPLE W0808C64	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023