

規 格 書  
**Electrical Specification**

***ILLO***

**Issued Date :** 2002/7/16 **Rev. 0.1**

**Model :** LSE9901B1870

**Description :** 18V/3.88A 70W AC to DC Adapter

**Customer Part No. :** \_\_\_\_\_

**LSE Part No. :** \_\_\_\_\_

**Customer Approval No. :** \_\_\_\_\_

力信興業股份有限公司  
**LI SHIN INTERNATIONAL ENTERPRISE CORP.**

桃園縣大園鄉三石村三和路 3 巷 7 號 ( 力信工業大樓 )  
7 Lane 3, San Ho Rd, San-Shin Village, Ta-Yuan Hsing, Taoyuan Hsien, Taiwan, R.O.C.  
Tel : ( 03 ) 3831513 ( Rep.) Fax : ( 03 ) 3835738

\* Please return one copy to us after approved. 煩請寄還一份待貴公司承認後。

**1.0 Description.**

This product is a AC to DC power transfer device, it can provide for a 70W single dc output with constant voltage source.

**2.0 Electrical.**

2.1 Input Voltage(AC~).

- a. From 100 - 240Vac Nominal.
- b. From 90 - 264Vac Maximum.

2.2 Input Frequency.

From 47- 63Hz.

2.3 Input Current.

- a. 1.50A max at 90Vac.
- b. 0.75A max at 265Vac.

2.4 Inrush Current.

90A max at cold-start and 25°C , dc output full-loading and 230Vac input.

2.5 Hold-Up time.

9 msec minimum at dc output full loading and 230Vac input.

2.6 Input wattage at output no-loading/minimum-load condition.

Less than 1.8Watt Pin 240Vac input voltage and frequency condition.

2.7 Efficiency.

80% minimum at dc output full loading and nominal AC input voltage range.

2.8 Safety Test.

- a. Leakage current less than 0.75mA at 254Vac, 50Hz.
- b. Hi-Pot test : 2000Vac, 10mA, 2 Sec between Primary to Secondary circuit and Chassic.
- c. Insulation : 500Vdc, 1 Sec between Primary to Secondary circuit, IR shall  $\geq 20M\Omega$ .
- d. Grounding test : AC 30A, 2 Sec between input safety ground and SELV output GND ,  
GR  $\leq 0.1\Omega$ .

2.9 Output Voltage and Current (DC).

Vout	18.00V	Iout	3.88A max
Range	17.40 - 18.60		

2.10 Ripple and Noise.

Less than 285mV of Ripple and 285mVp-p of Noise, tested by dc loading side parallel with a 10uF/EC and 0.1uF/CC and Measured band-width with DC-20MHz.

## Document Title : 18V 70W AC to DC Adapter Specification.

### 2.11 Over-Shoot and under-shoot.

Less than 7% of nominal voltage value.

### 2.12 Protection.

- a. SCP : For short circuited protection and with auto-recovery function.
- b. OVP : Over-voltage protection with dc output voltage shut down will be less than 26.0Vdc.  
( mid to full-load and nominal AC input. )
- c. OCP : Over-Current Protection, Range : 5.5A (max) on nominal AC input.

### 2.13 LED Indication.

Green light for Nominal operation.

Blank or Flash for SCP mode.

### 2.14 Rise time.

The output voltage should rise from 0 volt and settle within regulation in less than 20msec from apply of AC input voltage condition.

### 2.15 Output voltage Temperature Coeffience.

Less than 0.2%/C.

### 2.16 Output Transinet Response.

Dynamic loading condition.

dc output	I1(A)	I2(A)	dVmax(V)	Test-max	dI/dT
18.00	0.00	0.97	+/- 1.0V	10 msec	>=50mA/usec
18.00	0.97	1.94	+/- 1.0V	10 msec	>=50mA/usec
18.00	1.94	3.88	+/- 1.0V	10 msec	>=50mA/usec

## 3.0 Environment.

### 3.1 Temperature.

- a. Operation : 0 to 40 °C
- b. Storage : -20 to 60 °C

### 3.2 Humidity

- a. Operation : 10 to 90% Non-Condensing.
- b. Storage : 5 to 95% Non-Condensing.

### 3.3 Altitude.

From sea level to 10,000Ft. (operation) and 40,000Ft (Non operation).

## 4.0 Safety & EMI requirement.

### 4.1 Safety

Included Limited Power Source.

Safety refering Standards		File Records
UL	1950	E193430
CUL	1950	E193430
PSE	J60950/J55022	JD 50008181

## Document Title : 18V 70W AC to DC Adapter Specification.

TUV/GS	EN 60950	AL 991137190002
CB TEST	IEC 60950	14004
Nemko	EN 60950	P01102290
Demko	EN 60950	309499
Fimko	EN 60950	FI 14490
Semko	IEC 60950 / EN 60950	0049083
IRAM	IEC 60950	DC-E-L27-001.2

### 4.2 EMS

Test Item	Test Specification	IEC Standards
ESD	Contact 8KV	61000-4-2
ESD	Air 15KV	61000-4-2
RF	FR:26MHz-1.0GHz, Field Strength : 3V/M	61000-4-3
EFT	2KV on AC power line.	61000-4-4
SURGE	1KV on differential & 2KV on common Mode	61000-4-5
CS	3V/M	61000-4-6
DIPS	0% 250Cy, 40% 5 Cy, 70% .5Cycle	61000-4-11
Harmonic	Class A	61000-3-2
Flicker		61000-3-3

### 4.3 EMI for both Conduction & Radiation.

Referring Standards	Specification
FCC	Part 15,class B
CISPR	Part 22,class B
VCCI	Level 2

## 5.0 Reliability.

### 5.1 Life.

12,000 hours (8 hours/day × 300 days/year × 5 years)

At dc output full-loading , AC 115Vac/230Vac input voltage and ambient temperature 25°C.

### 5.2 M.T.B.F.

80,000 Power On Hours at 25°C

### 5.3 Temperature Rise.

Less than 45°C at nominal AC input / DC output full loading and environment temperature 25+/-1°C on Top/Bottom of plastic case.

### 5.4 Burn-in.

100% Burn-In with 80-100% loading & 35~45°C Environment temperature , Initial sample verification for 72 hours , pilot run for 24 hours and mass production for 4 hours.

**Document Title : 18V 70W AC to DC Adapter Specification.**

5.5 Vibration Test.

- a. Non operation vibration with shipping container shall be 2G'S peak, 5-50Hz, 4G'S peak 50-500Hz, after test no abnormally to be found.
- b. Operation vibration shall be 0.5G'S peak, 10-60Hz, 3 plans, after test no abnormally to be noted.

5.6 Drop-Test.

Test height 110cm, after drop test no function abnormally to be noted.

**6.0 Mechanical.**




6.1 Plastic Case : Case with UL PC+ABS GE C2950 material

6.2 Physical Size : 110.00mm( L ) × 63.00mm ( W ) × 31.50mm ( H ).

6.3 Output cable with UL1185, 18AWG wires and two pins direct angle dc jack plug.

6.4 Weight about 330g.

END.....

Approve By	Check By	Prepared By
		

# CONTENTS

---

1

*Electrical Specification*

---

2

*Circuit Diagram*

---

3

*Mechanical Drawing*

---

4

*PCB Layout Diagram*

---

5

*Bill Of Materials*

---

6

*Safety License*

---

7

*Test Report*

---



# CONTENTS

---

1

*Electrical Specification*

---

2

*Circuit Diagram*

---

3

*Mechanical Drawing*

---

4

*PCB Layout Diagram*

---

5

*Bill Of Materials*

---

6

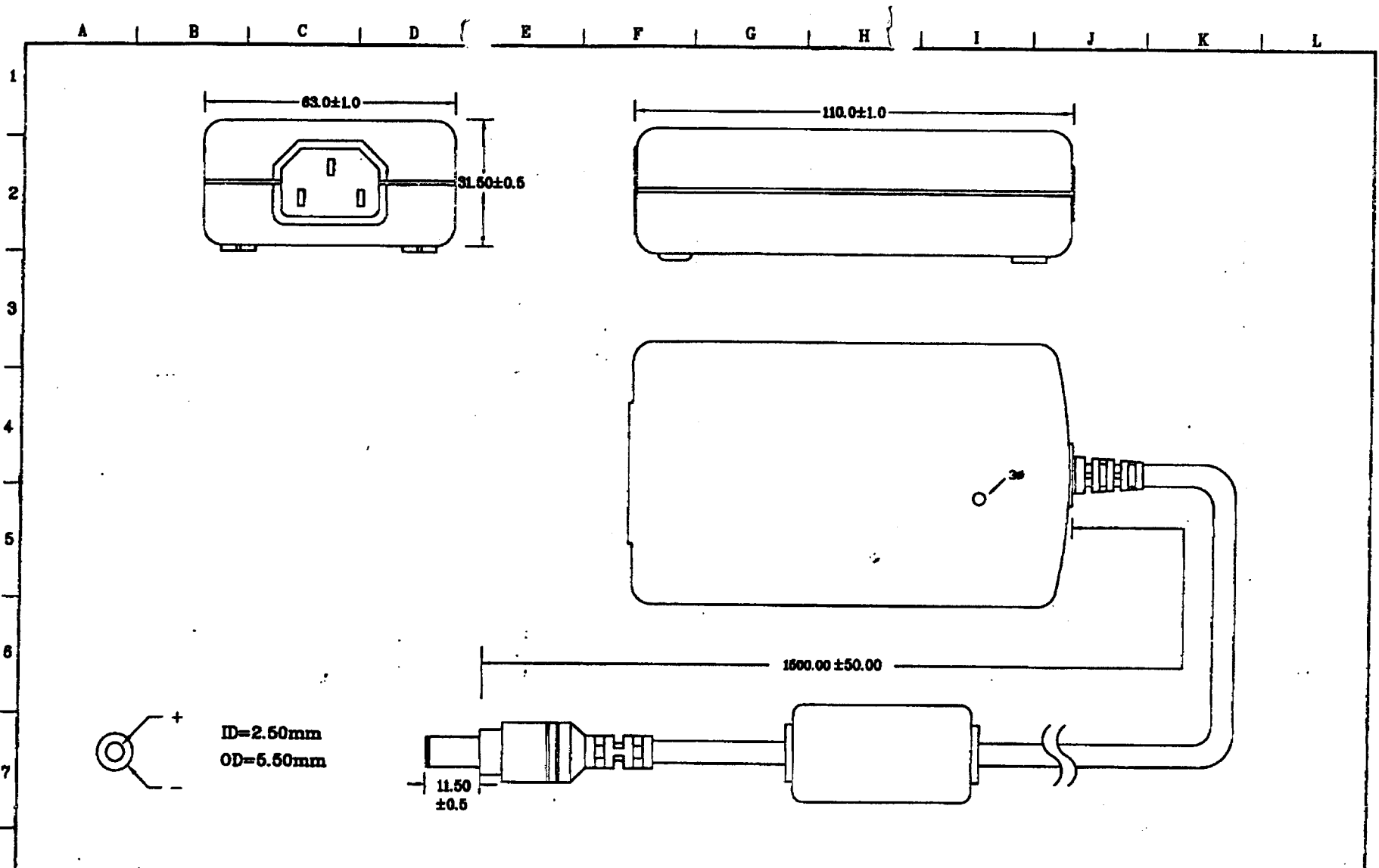
*Safety License*



---

7

*Test Report*

---



 力信興業股份有限公司				繪圖	設計	核準	
				VIVIAN	 梁充武		
機種	LSE9901B12	單位	mm	89/11/16			
料號		比例	1 : 0.75				
圖號	F0901B18	版本	0.1				
版本	日期	說明	核準	頁碼	1 - 1	公差	± 1.00

NOTES: UNLESS OTHERWISE SPECIFIED.

1. ALL DIMENSIONS ARE IN mm.  
TOLERANCES TO BE  $\pm 0.25$  mm.
2. THE ARRANGEMENT OF LAMINATE WITH MATERIAL THICKNESS AS FOLLOWS:
  - ① OPP FILM(MAT) 0.025  $\pm 10\%$
  - ② ACRYLIC ADHESIVE 0.018  $\pm 10\%$
  - ③ POLYESTER(#75) 0.075  $\pm 10\%$
  - ④ ACRYLIC ADHESIVE 0.028  $\pm 10\%$

GRAND TOTAL THK. 0.146  $\pm 10\%$

3. THE LINES ARE 0.5 mm WIDE.
4. COLOR: CHARACTERS, LOGOS AND LINES SHALL BE SILVER, BASE TO BE BLACK (GE #701).
5. APPROVED VENDOR MUST BE UL RECOGNIZED AND CSA CERTIFIED.
6. THE LABEL SHALL BE MARKED WITH THE CSA VENDOR IDENTIFICATION MARK AS SPECIFIED IN THE CSA LIST (CM, CM-1, ...).
7. SAFETY STANDARD ORGANIZATION IN SYMBOLS ARE 7.62MM TO 5.0MM HIGH.
8. LETTERING SHOULD BE CLEAR-CUT, SURFACE TO BE FREE OF DEFECT.

9. BAR CODE(CODE128) SPECIFIED AS FOLLOWS:(PRINTED BY LI SHIN)

1--FACTORY CODE, CHINA SU ZHOU(Kowloon)-->A2

2--A.D. THE END NUMBER OF PRODUCE YEAR.  
1995-->95, 1996-->96, 1997-->97, ..., 2000-->2K, ..., 3000-->3K

3--WEEK, PRODUCE WEEK. 01, 02, 03, ..., 52, ...

4--PRODUCE NO. SERIAL NO. (MONTH RESET FROM 000001 TO 999999)



- (1 CHARACTER) 1
- (2 CHARACTERS) 2
- (2 CHARACTERS) 3
- (6 CHARACTERS) 4

*Cody Chen 7-23-02*



LI SHIN INTERNATIONAL ENTERPRISE CORP.  
AC ADAPTER

MODEL: LSE9901B1870

INPUT: 100-240V~ ,50/60Hz 1.5A

OUTPUT: 18.0V  $\equiv$  3.88A 70W MAX



**WARNING:**

RISK OF ELECTRIC SHOCK DO NOT OPEN



For Indoor Use Only



LISTED  
E193430  
LEVEL 3  
I.T.E. POWER SUPPLY

"Apparatet må kun tilkoples jordet stikkontakt"  
"Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk"  
"Endast för kontorsmaskin"  
"For IEC 60950 products only"



MADE IN CHINA

CM-1

LABEL SIZE:  
65.0(L) x 44.5(W),  
R3(3X), C4.3

CM-1, SEE NOTE [6]

TOLERANCES +/-		
ANGULAR	LINEAR	
0.5°	0-6	0.10
	6-30	0.20
	30-80	0.25
	80-180	0.30
	180-315	0.50
	315-800	0.8

LI SHIN INTERNATIONAL ENTERPRISE CORPORATION 力信興業股份有限公司	Approved: <i>Cody Chen 7-23-02</i>	DESCRIPTION:	PART NO.:	USED ON:								
	Designed: 余柏慶	LIB-ID:	LSE9901B1870									
DO NOT SCALE	Drawn: VIVIAN	Material:	SHEET: 1 OF 1	3D FILE:								
THIRD ANGLE PROJECTION	UNITS: mm	A3 SIZE	DATE: Jul-12-2002	Treatment:	DWG NO.:	CP9901B1870A	REV.:	0.1	REV.:	DESCRIPTION:	DATE:	APP: