LWT15H SERIES
INSTRUCTION MANUAL

SPECIFICATIONS

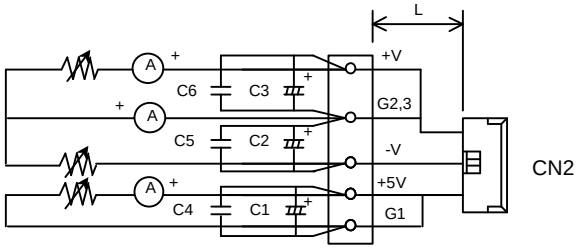
PA785-04-01A

	ITEMS / MODEL			LWT15H-5FF			LWT15H-522			LWT15H-525		
1	Nominal Output Voltage		V	+5±1%	+15	-15	+5±1%	+12	-12	+5±1%	+12	-5
2	Minimum Output Current		A	0.5	0	0	0.5	0	0	0.5	0	0
3	Maximum Output Current		A	3.0	0.6	0.4	3.0	0.6	0.4	3.0	0.6	0.4
4	Maximum Output Power /CH		W	15.0	9.0	6.0	15.0	7.2	4.8	15.0	7.2	2.0
5	Total Allowable Output Power		-	17W								
6	Efficiency (Typ)	(*1)	-	72%								
7	Input Voltage Range	(*8)	-	85-265VAC (47-440Hz) or 110-330VDC								
8	Input Current (Typ) 100/200V		-	0.40A / 0.22A								
9	In-rush Current (Typ)	(*2)	-	14A at 100VAC, 28A at 200VAC								
10	Output Voltage Range		-	CH1 : (+5%, -0% max); CH2, CH3 : FIXED (±5% max)								
11	Maximum Ripple & Noise	(*1)	mV	100	150	150	100	150	150	100	150	150
12	Maximum Line Regulation	(*3, 7)	mV	50	150	150	50	120	120	50	120	50
13	Maximum Load Regulation	(*4, 7)	mV	100	300	300	100	240	240	100	240	100
14	Over Current Protection	(*5)	-	More than 105% for each channel								
15	Over Voltage Protection	(*6)	-	CH1 Only … 5.75V ~ 6.75V								
16	Hold-Up Time (Typ)	(*1)	-	20ms at 100VAC								
17	Conducted EMI		-	Designed to meet VDE 0871B, FCC 20780B								
18	Safety Agency		-	Built to meet UL1950, CSA234, IEC950, EN60950, S.E.L.V.								
19	Parallel Operation		-	-								
20	Remote ON/OFF		-	-								
21	Remote Sensing		-	-								
22	Operating Temperature	(*9)	-	0 ~ 60°C Convection cooled : 0 ~ 40°C…17W, 50°C…14W, 60°C…10W								
23	Operating Humidity		-	30 ~ 90% RH								
24	Storage Temperature		-	-30 ~ 85°C								
25	Storage Humidity		-	10 ~ 95% RH								
26	Cooling		-	Convection Cooled								
27	Temperature Coefficient		-	CH1…Less than 1%, CH2,CH3…less than 2% at 0 ~ 60°C								
28	Withstand Voltage		-	Input - Chassis : 2kVAC, Input-Output : 3kVAC 1min (20mA)								
29	Isolation Resistance		-	More than 100MΩ at 25°C and 70%RH Output-Chassis ... 500VDC								
30	Vibration		-	10 ~ 55Hz (sweep 1 min) Less than 19.6m/s^2 X,Y,Z 1h each								
31	Shock		-	Less than 196.1m/s^2								
32	Weight		-	220g								
33	Size (WxHxD)		mm	60 x 26 x 128 (Refer to Outline Drawing)								

NOTES :

*1 : At 100VAC and Maximum Output Power (5V 2A, CH2,CH3 total 7W).
*2 : Typical value at cold start Ta = 25°C.
*3 : From 85-265VAC or 110-330VDC, constant load.
*4 : From Min output current - Max output current.
*5 : The operation of the OCP will be given priority by the output total power at more than 18W.
*6 : Inverter shutdown method, manual reset. (OVP circuit will shutdown all outputs).
*7 : Please refer to Fig. A for measurement determination of line & load regulation and output ripple voltage.
*8 : For cases where conformance to various safety specs (UL, CSA, VDE, etc.) are required, input voltage and frequency range will be 100-240VAC, 50/60Hz.
*9 : Applies to Std. Mounting position. For other mounting position, refer to Instruction Manual.

Fig.A

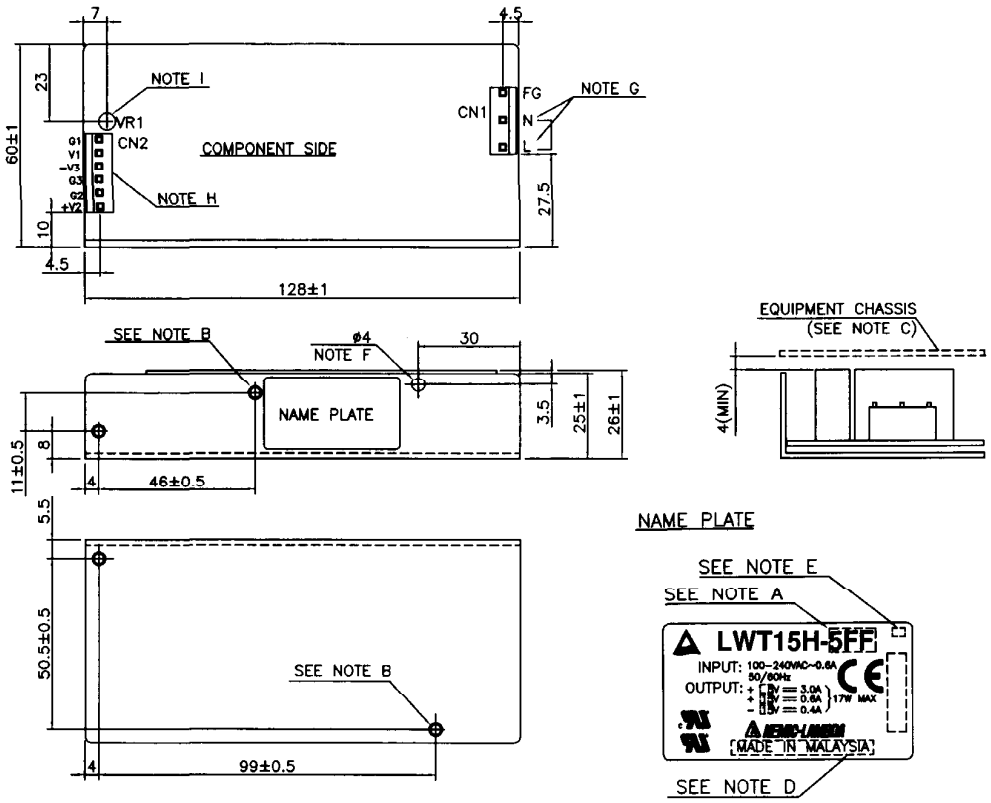


L : 150mm AWG #20 (Single Wire)
C1 : Elec. Cap 470µF
C2, 3 : Elec. Cap 47µF
C4, 5, 6 : Film Cap 0.1µF
Bandwidth of scope : 100MHz EIAJ Probe

LWT15H SERIES

Dwg No. PA785-04-02

OUTLINE AND CONNECTION



NAME PLATE

NOTES :

A : MODEL NAME OUTPUT VOLTAGE AND CURRENT WILL BE SHOWN HERE ACCORDING TO SPECIFICATIONS.

B : MOUNTING HOLES (2 X 2 PLACES) FOR M3 SCREWS. SHOULD NOT ENTER THE POWER SUPPLY SURFACE BY MORE THAN 4mm. RECOMMENDED TORQUE IS 5kg cm.

C : UNIT MUST BE INSTALLED WITH EQUIPMENT CHASSIS AT LEAST 4mm FROM MAXIMUM HEIGHT (27mm) OF THE UNIT. OTHERWISE BASIC INSULATION MATERIAL IS REQUIRED.

D : COUNTRY OF MANUFACTURE WILL BE SHOWN HERE.

E : FRONT SEAL MAKER'S IDENTIFICATION MARK.

F : THIS ø4 HOLE MARKED ⏚ IS FOR PROTECTIVE EARTH CONNECTION.
(REFER TO INSTALLATION, PAGE 3, 2.1)

G : INPUT TERMINALS

N – NEUTRAL
L – LIFE (CONNECTED TO INTERNAL FUSE)

H : OUTPUT TERMINALS

G1 : CH1 GROUND TERMINAL
V1 : CH1 OUTPUT TERMINAL
–V3 : CH3 OUTPUT TERMINAL
G3 : CH3 GROUND TERMINAL
G2 : CH2 GROUND TERMINAL
+V2 : CH2 OUTPUT TERMINAL

CONNECTORS USED:

PART DESCRIPTION	PART NAME	MFC.	QTY
PIN HEADER (INPUT SIDE CN1)	B3P5-VH	J.S.T	1
PIN HEADER (OUTPUT SIDE CN2)	B6P-VH	J.S.T	1

ACCESSORIES:

PART DESCRIPTION	PART NAME	MFC.	QTY
SOCKET HOUSING (CN1)	VHR-5N	J.S.T	1
SOCKET HOUSING (CN2)	VHR-6N	J.S.T	1
TERMINAL PINS (CN1,2)	SVH-21T-P1.1	J.S.T	9

HAND CRIMPING TOOL : YC-16 MANUFACTURER : J.S.T

I : VR1 IS THE VOLUME FOR ADJUSTING OUTPUT VOLTAGE +5% AND –0%. TURNING CLOCKWISE INCREASE THE VOLTAGE, DO NOT ADJUST UNNECESSARILY.

CAUTION :

INCREASING THE VOLTAGE EXCESSIVELY. i.e
MORE THAN +10% MAY CAUSE THE OVER-VOLTAGE PROTECTION (OVP) DEVICE TO OPERATE.

INSTALLATION

1. TO MEET SAFETY REQUIREMENTS, THE POWER SUPPLY TERMINALS MUST NOT BE USED DIRECTLY AS THE EXTERNAL TERMINATIONS OF ANY EQUIPMENT.
   Recommended screw torque is 5kg.cm

2. PROTECTIVE EARTHING :

   2.1 For safety as well as improved noise , ensure secure connection of the FG terminal marked ⏚ (Ø4 hole on the chassis) to the ground terminal of the equipment internally as the protective earth connection.

   2.2 For connection use an M3.5 or M4 screws with spring washer and flat washer. Screws and washers used must be of suitable material as in Annex J in EN60950 standard.

3. MOUNTING

   3.1 Refer to page 4 for different mounting positions and ambient temperatures and the corresponding output derating.

   3.2 M3 mounting screws (refer to page 2, note B) must not penetrate into power supply more than 4mm from the external surface of the chassis.

   3.3 Recommended screw torque is 5kg.cm.

   3.4 If a few units are used side-by-side, a minimum 15mm spacing is between required for sufficient ventilation.

   3.5 The power supply must be installed where equipment ventilation allows free convection cooling.

4. SERIES OPERATION :

   All 3 channels can be connected for series operation as shown in figures B and C. For Fig. B the by-pass diodes should be selected with forward current greater than the load current and reverse voltage greater than the output voltage.

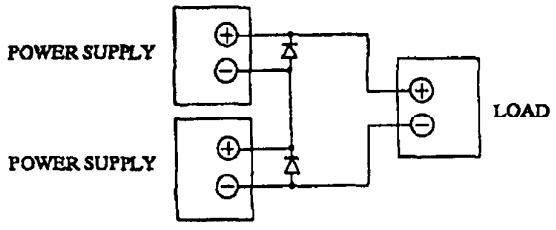


Fig. B

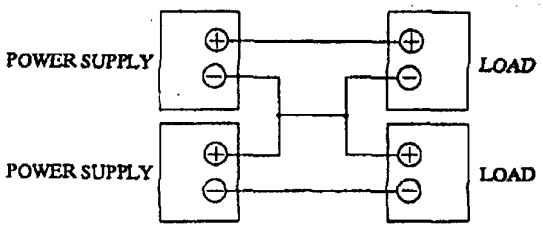
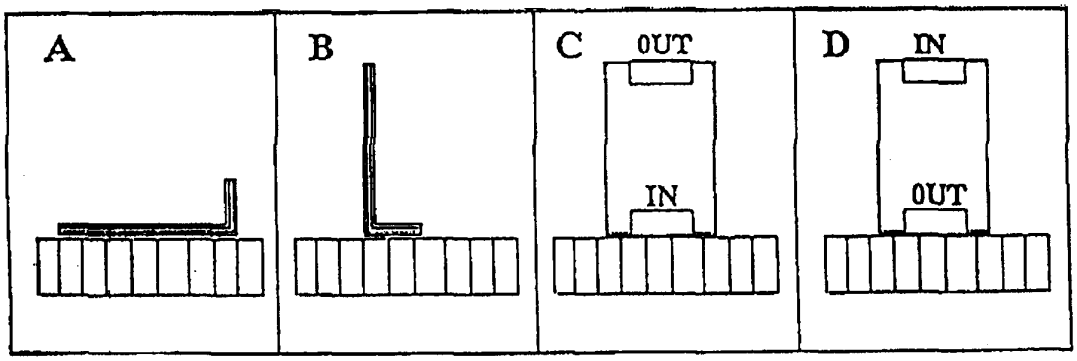


Fig. C

MOUNTING POSITIONS AND OUTPUT DERATING



OUTPUT DERATING

	LOAD (%)			
Ta (°C)	MOUNTING A	MOUNTING B	MOUNTING C	MOUNTING D
30°C	100	100	100	100
40°C	100	100	80	100
50°C	80	80	60	60
60°C	60	60	–	–

FUSE :

RATING : 250V 2.5A
TYPE : TIME-LAG
AVOID USING FAST-BLOW TYPE.

CAUTION : CHANGE OF FUSE IS TO BE DONE BY AUTHORISED SERVICE PERSONNEL ONLY.

VORSICHT : UBERLASSEN SIE WARTUNGSARBEITEN STETS DEM VON ZUGELASSENEN FACHMANN.

Ⓐ CE MARKING :

CE MARKING WHEN APPLIED TO THE UNIT, INDICATES COMPLIANCE WITH THE LOW VOLTAGE DIRECTIVE (73/23/EEC) AS MODIFIED BY THE CE MARKING DIRECTIVE (93/68/EEC) IN THAT IT COMPLIES WITH EN60950.