AC-DC Power Supplies Medical Type

((||)

World wide

Power

electric Factor equipment Correction



LMA-series

Cost Effective Rugged PCB type Safety

Approvals

FMI



Inrush

current

Feature

For medical electric equipment Internal dual fuses Low leakage current High power & peak power (option) Small and compact PCB construction Built-in inrush current, overcurrent and overvoltage protection circuits Harmonic attenuator (Complies with IEC61000-3-2 class A) Universal input (AC85-264V) Power factor correction

Safety agency approvals

ANSI/AAMI ES60601, EN60601-1 3rd

EMI

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B

CE marking

Low Voltage Directive RoHS Directive

EMS Compliance : EN61204-3, EN61000-6-2

EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-6 EN61000-4-8 EN61000-4-11 IEC60601-1-2 (2014), EN60601-1-2 (2015)

5-year warranty



This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care. *Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL	LMA100F-24-Y	LMA100F-24-HY	
MAX OUTPUT WATTAGE[W]	103.2	103.2 (206.4) *2	
DC OUTPUT	24V 4.3A	24V 4.3A (8.6A) *2	

SPECIFICATIONS

	MODEL		LMA100F-24-Y	LMA100F-24-HY				
	VOLTAGE[V]		AC85 - 264 1 ¢ (Refer to "Derating", Instruction Manual 1	and 3)				
		ACIN 100V	1.4typ (lo=100%)					
	CURRENT[A]	ACIN 200V	0.7typ (lo=100%)					
	FREQUENCY[Hz]		50 / 60 (47 - 63)					
		ACIN 100V	84.0typ (lo=100%)	84.0typ (lo=100%)				
INPUT	EFFICIENCY[%]	ACIN 200V	86.0typ (lo=100%)	86.0typ (lo=100%)				
		ACIN 100V	0.99typ (lo=100%)					
	POWER FACTOR	ACIN 200V	0.95typ (lo=100%)					
		ACIN 100V	15typ (lo=100%) (At cold start) (Ta=25°C)					
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%) (At cold start) (Ta=25°C)					
	LEAKAGE CURREN	T[mA]	0.10 / 0.25max (ACIN 100V / 240V 60Hz, lo=100%, Acc	0.10 / 0.25max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC60601-1)				
	VOLTAGE[V]		24	24				
	CURRENT[A]		4.3	4.3 (Peak 8.6) *2				
	LINE REGULATION	mV] *7	96max	96max				
	LOAD REGULATION	[mV] *7	150max	150max				
		0 to +50℃	120max	120max				
	uirrecliiish-b] 🗤	-10 - 0 ℃	160max	160max				
		0 to +50℃	150max	150max				
OUTPUT		-10 - 0°C	180max	180max				
		0 to +50℃	240max	240max				
		-10 to +50℃	290max	290max				
	DRIFT[mV]	*4	96max	96max				
<u>:</u>	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)					
	HOLD-UP TIME[ms]		20typ (ACIN 100V, lo=100%)					
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	19.20 to 27.50	19.20 to 27.50				
	OUTPUT VOLTAGE SETTING[V]		24.00 to 24.96	24.00 to 24.96				
	OVERCURRENT PROT	ECTION	Works over 105% of rating (works over 101% of peak cur	rent at option -H) and recovers automatically				
PROTECTION	OVERVOLTAGE PROTE	CTION[V]	27.60 to 33.60	27.60 to 33.60				
CIRCUIT AND	OPERATING INDICATION		Not provided					
OTHERS	REMOTE SENSING		Not provided					
	REMOTE ON/OFF		Option (Required external power source.)					
	INPUT-OUTPUT-RC	*6	AC4,000V 1minute, Cutoff current = 10mA, DC500V 50N	Ω min (At Room Temperature) 2MOOP				
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 1MOOP					
100EAHOIT	OUTPUT·RC-FG	*6	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)					
	OUTPUT-RC	*6	AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature)					
	OPERATING TEMP., HUMID.AND	ALTITUDE *5	-10 to +70 C, 20 - 90%RH (Non condensing), (Refer to "Derating", Instruction Manual 3) 3,000m (10,000feet) max					
ENVIRONMENT	STORAGE TEMP., HUMID.AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max					
	VIBRATION		10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT		196.1m/s ² (20G), 11ms, once each X, Y and Z axis					
SAFETY AND	AGENCY APPROVALS (AT ON	IY AC input)	ANSI/AAMI ES60601-1, EN60601-1 3rd, Complies with IEC60601-1-2 4th Ed.					
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B					
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with IEC61000-3-2 (Class A) *8					
OTHERS	CASE SIZE/WEIGHT	-	62×33×155mm [2.44×1.30×6.10 inches] (W×H×D) / 290g max (with chassis & cover : 470g max)					
	COOLING METHOD		Convection (Refer to "Derating", Instruction Manual 3) *5					
 *1 Specification *2 Peak loading () means is damaged *3 This is the 22 µ F at 11 	on is changed at option, refer to ng for 10sec. And Duty 40% max peak current. There is a possibi d when the specification is excee value that measured on measur 50mm from output terminal	Instruction Ma c. lity that an in eded. ing board with	anual. *4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output. *5 Derating is required. a capacitor of *6 Applicable when remote control (optional) is added. *7 Please contact us about dynamic load and input response	 To meet the specifications. Do not operate over-loaded condition. Parallel operation is not possible. Derating is required when operated with chassis and cover. Sound noise may be generated by power supply in case of pulse load. 				

22 µ F at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). *7 Please contact us about another class.

Block diagram



External view





% 4 Mounting holes are existing.

% The back side of P.C.B. of the power supply is assembled some

SMDs.

Be attention not to bump against the attached area by vibration. % Use the spacer of 8mm length or more regarding insulation.

And do not use press-fitting bush.

* Point A, Point B are thermometry points.

I/O Connector Mating connector Terminal 1123721-1 Chain CN1 1-1123724-3 1-1123722-5 1318912-1 Loose 1123721-1 Chain CN2 1-1123723-8 1-1123722-8 Loose 1318912-1 (Mfr:Tyco Electronics)

※ I/O Connector is Mfr. Tyco Electronics

% Option:-J1:VH(J.S.T) connector type.

<PIN CONNECTION>

CN1		CN2	
Pin No.	Input	Pin No.	Output
1	AC(L)	1 40 4	N/
2		1 10 4	-v
3	AC(N)	5 to 0	11/
4		5106	÷ν
5	FG		

% Keep drawing current per pin below 5A for CN2.

% Tolerance : ±1 [±0.04]

Weight : 290g max (with chassis & cover : 470g max)
 PCB material : CEM3

% Optional chassis and cover material : Electric galvanizing steel board.

* Dimensions in mm, []=inches

% Mounting torque (Mounting hole of chassis) :1.5N · m (16kgf · cm) max

Connector type

CN4	Option	(Mfr:J.S.T)

PIN NO.	Contents
1	RC(+)
2	RC(-)

Barrier strip type Model B2B-XH-A Mating Connector (Terminal) XHP-2 BXH-001T-P0.6 or SXH-001T-P0.6



This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care. *Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL	LMA150F-24-Y	LMA150F-24-HY	
MAX OUTPUT WATTAGE[W]	151.2	151.2 (302.4) *2	
DC OUTPUT	24V 6.3A	24V 6.3A (12.6A) *2	

SPECIFICATIONS

	MODEL		LMA150F-24-Y	LMA150F-24-HY			
	VOLTAGE[V]		AC85 - 264 1 φ (Refer to "Derating" ,Instruction Manual 1	and 3)			
		ACIN 100V	2.0typ (lo=100%)				
	CURRENT[A]	ACIN 200V	1.0typ (lo=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
		ACIN 100V	85.0tvp (lo=100%)	85.0tvp (lo=100%)			
INPUT	EFFICIENCY[%]	ACIN 200V	87.0tvp (lo=100%)	87.0tvp (lo=100%)			
		ACIN 100V	0.99typ (lo=100%)				
	POWER FACTOR	ACIN 200V	0.95tvp (lo=100%)				
		ACIN 100V	15tvp (lo=100%) (At cold start) (Ta=25°C)				
	INRUSH CURRENT[A]	ACIN 200V	30tvp (lo=100%) (At cold start) (Ta=25°C)				
	LEAKAGE CURREN	T[mA]	0.10 / 0.25max (ACIN 100V / 240V 60Hz, lo=100%, Acc	ording to IEC60601-1)			
	VOLTAGE[V]		24	24			
	CURRENTIA		6.3	6.3 (Peak 12.6) *2			
	LINE REGULATION	mV1 *7	96max	96max			
	LOAD REGULATION	 [[mV] *7	150max	150max			
		0 to +50℃	120max	120max			
	RIPPLE[mvp-p] *3	-10 - 0°C	160max	160max			
		0 to +50℃	150max	150max			
OUTPUT	RIPPLE NOISE[mvp-p]*3	-10 - 0°C	180max	180max			
		0 to +50℃	240max	240max			
!	TEMPERATURE REGULATION[mV]	-10 to +50°C	290max	290max			
	DRIFT[mV]	*4	96max	96max			
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)				
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)				
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	19.20 to 27.50	19.20 to 27.50			
	OUTPUT VOLTAGE SETTING[V]		24.00 to 24.96	24.00 to 24.96			
	OVERCURRENT PROT	ECTION	Works over 105% of rating (works over 101% of peak cur	rent at option -H) and recovers automatically			
PROTECTION	OVERVOLTAGE PROTE	CTION[V]	27.60 to 33.60	27.60 to 33.60			
CIRCUIT AND	OPERATING INDICATION		Not provided				
OTHERS	REMOTE SENSING		Not provided				
	REMOTE ON/OFF		Option (Required external power source.)				
	INPUT-OUTPUT-RC	*6	AC4,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) 2MOOP				
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) 1MOOP				
ISOLATION	OUTPUT·RC-FG	*6	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)				
	OUTPUT-RC	*6	AC100V 1minute, Cutoff current = 25mA, DC100V 10M Ω min (At Room Temperature)				
	OPERATING TEMP., HUMID.AND	ALTITUDE *5	-10 to +70°C, 20 - 90%RH (Non condensing), (Refer to "Derating", Instruction Manual 3) 3,000m (10,000feet) max				
ENVIRONMENT	STORAGE TEMP., HUMID.AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max				
Envirionmenti	VIBRATION		10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes ea	ch along X, Y and Z axis			
	IMPACT		196.1m/s ² (20G), 11ms, once each X, Y and Z axis				
SAFETY AND	AGENCY APPROVALS (AT ON	IY AC input)	ANSI/AAMI ES60601-1, EN60601-1 3rd, Complies with IEC60601-1-2 4th Ed.				
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B,	EN55022-B			
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with IEC61000-3-2 (Class A) *8				
OTHERS	CASE SIZE/WEIGHT		75×36.5×160mm [2.95×1.44×6.30 inches] (W×H×D) / 370g max (with chassis & cover : 600g max)				
	COOLING METHOD		Convection (Refer to "Derating", Instruction Manual 3) *5				
 \$1 Specification is changed at option, refer to Instruction 1 \$2 Peak loading for 10sec. And Duty 40% max. () means peak current. There is a possibility that an is damaged when the specification is exceeded. \$3 This is the value that measured on measuring board w 22 UE at 150mm from output terminal. 			anual. *4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output. ternal device *5 Derating is required. n capacitor of *6 Applicable when remote control (optional) is added. *7 Please contact us about dynamic load and input response.	 To meet the specifications. Do not operate over-loaded condition. Parallel operation is not possible. Derating is required when operated with chassis and cover. Sound noise may be generated by power supply in case of pulse load. 			

22 µ F at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).

*8 Please contact us about another class.

LMA150F | COŞEL

Chassis and cover type

Block diagram



External view



Standard type

<u>2-φ4.5</u> 176±0.5 6 4-M4 FG Name plate 3-φ3.5 Point A Point B [0.24] Mounting Hole [6.93] Mounting Hole 15 [0.59] 25 [0.98] 0 60 6 Ø ¢ 42 - FG FG 1° 5 ₽ CN3 Output(-) CN3 Output(-) -Input(N) Input(N) $\frac{75}{[2.95]}$ $\frac{65\pm0.5}{[2.6]}$ ŏŏ <u>-</u>Input(L) CN1 Input(L) 000 85 [3.35] CN1 55± 4.5 354 CN2 Output(+) à CN2 7 (*) 00 ¢ Ø Ø 3.5 0.14] 0.18] 5 4 Connector for RemoteON/OFF (optional) [0.16 Voltage adjust Mounting Hole 18 188 [7.4] 150±0.5 5 [0.2] [5.91] φ4.5 176±0.5 160 [6.3] [0.24] [6.93] റ്റ 4.5 [0.18] 15 [0.59] 47 [1.85] 33.5 1.32] 00 2-M4 Mounting Hole 0.79] 20 PCB t=1.6 3max ‰1 12 ò. %1 Surface mount device

% 4 Mounting holes are existing.

% The back side of P.C.B. of the power supply is assembled some

SMDs.

Be attention not to bump against the attached area by vibration.

% Use the spacer of 8mm length or more regarding insulation.

And do not use press-fitting bush.

% Point A, Point B are thermometry points.

I/C	Connector	Mating connector	Т	erminal
CNIA	4 4400704 0	1 1100700 5	Chain	1123721-1
CINT	1-1123724-3	1-1123722-5	Loose	1318912-1
CNID	4 4400700 0	4 4400700 0	Chain	1123721-1
CINZ	1-1123723-0	1-1123/22-0	Loose	1318912-1
0.10	4 4400700 7	4 4400700 7	Chain	1123721-1
CN3	1-1123723-7	1-1123722-7	Loose	1318912-1

(Mfr:Tyco Electronics)

% I/O Connector is Mfr. Tyco Electronics

% Option:-J1:VH(J.S.T) connector type

<PIN CONNECTION>



% Keep drawing current per pin below 5A for CN2,CN3.

% Tolerance : ±1 [±0.04]

* Weight : 370g max (with chassis & cover : 600g max)

※ PCB material : CEM3

% Optional chassis and cover material : Electric galvanizing steel board.

Optional chassis and cover material : Electric galvanizing steel board
 Dimensions in mm, []=inches

% Mounting torque (Mounting hole of chassis) :1.5N • m (16kgf • cm) max

Connector type

Contents

RC(+)

RC(-)

Barrier strip type

Model B2B-XH-A Mating Connector (Terminal) XHP-2

/ BXH-001T-P0.6

or SXH-001T-P0.6

CN4 Option (Mfr:J.S.T)

PIN No.

2



This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care. *Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL		LMA240F-24-Y	LMA240F-24-HY
MAX OUTPUT WATTAGE[W]		300	300 (480) *2
DC OUTPUT	Convection	24V 10A	24V 10A (20A) *2
	Forced air	24V 12.5A	24V 12.5A (20A) *2

SPECIFICATIONS

	MODEL		LMA240F-24-Y	LMA240F-24-HY				
	VOLTAGE[V]		AC85 - 264 1 \phi (Refer to "Derating" Instruction Manual 1	and 3)				
		ACIN 100V	3 9tvp (lo=100%)					
	CURRENT[A]	ACIN 200V	1.8tvp (lo=100%)					
	FREQUENCY[Hz]	101112001	50 / 60 (47 - 63)					
		ACIN 100V	86 0tvp (lo=100%)	86 0tvp (lo=100%)				
	EFFICIENCY[%]	ACIN 200V	88 0tvp (lo=100%)	88 0tvp (lo=100%)				
		ACIN 100V	0.99typ(10-100%)	00.0000 (10-10070)				
	POWER FACTOR		0.95typ(10-100%)	0.05tp (10-100%)				
		ACIN 100V	15 / 30 hun (lo-100%) (Primary inruch current (Secondary inruch current) (More than 2 cost to re start)					
	INRUSH CURRENT[A]	ACIN 200V	30 / 30typ (Io=100%) (Primary inrush current /Secondary in	15 / Sotyp (to - 100 /s) (crimiary initiasi current / Secondary initiasi current) (white that is sec. to fe-start)				
			0.15 / 0.40max (ACIN 100V / 240V 60Hz lo-100% Acc	ording to IEC60601-1)				
	VOLTAGE[V]	1[11]	24	24				
	VOLINGL[V]	Convection	10	10 (Pook 20) *2				
	CURRENT[A]	Eoreod air	12.5	12.5 (Pook 20) *2				
		mV1 *7	12.5 06may	06max				
		[[m]/] *7	90111ax	150max				
	LOAD REGULATION		120mov	100max				
	RIPPLE[mVp-p] *3	10 00	120max	1201183				
		-10-00	160max	150max				
OUTPUT	RIPPLE NOISE[mVp-p]*3	10 000	190may	190max				
		-10-00		160max				
	TEMPERATURE REGULATION[mV]	10 to +50°C	2401118X	240111ax				
	-10 to +50 C		290111ax	2901118X				
		*4	JUIIIAA JUIIIAA ZEOhym (ACINI 1001/ Io-1009/) JUIIIAA					
H			20trg/(CON100%) (b=100%)					
		*9	20typ (ACIN 100V, 10=100%)	10 00 1- 07 50				
			19.20 to 27.50	19.20 to 27.50				
	OUTPUT VOLIAGE SET		24.00 to 24.96					
DEOTEOTION	OVERCORRENT PROT	ECTION	Works over 105% of rating (works over 101% of peak cul	rent at option -H) and recovers automatically				
PROTECTION	OVERVOLIAGE PROTE		27.00 to 30.00					
	OPERATING INDICA	TION	Not provided					
UTTENS	REMOTE SENSING		Ontion (Bequired external power source)					
			Option (nequired external power source.)					
		*0	AC4,000V Iminute, Cutoff current = 10mA, DC500V 50W	102 min (At Room Temperature) 2MOOP				
ISOLATION			AC2,000V Initiate, Cutoff current = TomA, DC500V 50W	min (At Room Temperature)				
		*0	AC100V Iminitate, Guidon current = 25mA, DC300V 10MQ min (At Room Temperature)					
			Actory minitule, culor current = 2511A, DC100V 10012 finitul (At Room Temperature)					
	CTODACE TEMP., HUMID AND		-10 to +70 C, 20 - 50/6HT (Non condensing), (Relet to Derating, Instruction Manual 3) 3,000m (10,000feet) max					
ENVIRONMENT		ALIITUDE	-20 to +/5 C, 20 - 90% HH (Non condensing), 9,000m (30,000/eet) max					
			10 - Sortz, 19.6m/s ² (20), sminutes period, buminutes each along X, Y and Z axis					
		V AC input)	196.1m/5' (2003), 11ms, once each X, Y and Z axis					
			ANSI/AAMI ESOUDUT-1, ENGOGUT-1 3rd, Complies with IECG0601-1-2 4th Ed.					
			Complies with ECC1000 2.2 (Class A) to	EN33022-B				
REGULATIONS		AIUN	Q4 X 46 X 190mm [2 21 X 1 91 X 7 00 inchool (W X H X D)	(E40g may (with changin & cover : 860g may)				
OTHERS	CASE SIZE/WEIGHT		Convection / Forged air (Pofer to "Dereting", Instruction					
*1 Specification *2 Peak loading	on is changed at option, refer to ng for 10sec. And Duty 40% may	Instruction Ma	anual. to KEISOKU-GIKEN: RM103). *4 Drift is the change in DC output for an eight hour period.	Prease contact us about another class. To meet the specifications. Do not operate over-loaded condition				
() means	peak current. There is a possibi	 lity that an in	ternal device after a half-hour warm-up at 25° C, with the input voltage	 Parallel operation is not possible. 				
is damaged	when the specification is excee	eded.	held constant at the rated input/output.	* Derating is required when operated with chassis and cover.				
*3 This is the	value that measured on measur	ing board with	n capacitor of *5 Derating is required.	* Sound noise may be generated by power supply in case of pulse load.				
∠2 µ ⊢ at 1	pommi irom output terminal.		Applicable when remote control (optional) is added.					

Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent *7 Please contact us about dynamic load and input response.

June 29, 2020

LMA240F | CO\$EL

Chassis and cover type

Block diagram



External view

% External size of option is different from standard model.

Standard type



% 5 Mounting holes are existing.

% The back side of P.C.B. of the power supply is assembled some

SMDs.

Be attention not to bump against the attached area by vibration. % Use the spacer of 8mm length or more regarding insulation.

And do not use press-fitting bush.

% Point A, Point B, Point C are thermometry points.

I/O Connector		Mating connector	Т	erminal		
CNI	1 1100704 0	1 1100700 5	Chain	1123721-1		
CIVI	1-1123/24-3	1-1123/22-5	Loose	1318912-1		
0.10	10 4 4400700 0	1-1123722-6	Chain	1123721-1		
CINZ	1-1123723-0		Loose	1318912-1		
0.10	4 4400700 7	4 4400700 7	Chain	1123721-1		
CN3	1-1123723-7	1-1123/22-7	Loose	1318912-1		
(MiriTuco Floatronico)						

(Mfr:Tyco Electronics)

% I/O Connector is Mfr. Tyco Electronics

% Option:-J1:VH(J.S.T) connector type.

<PIN CONNECTION>



% Keep drawing current per pin below 5A for CN2,CN3.

- % Tolerance : ±1 [±0.04]
- % Weight : 540g max (with chassis & cover : 860g max)

* PCB material : CEM3

% Optional chassis and cover material : Electric galvanizing steel board.

※ Dimensions in mm, []=inches

% Mounting torque (Mounting hole of chassis) :1.5N • m (16kgf • cm) max

June 29, 2020

Connector type

CN4 Option (Mfr:J.S.T)



Barrier strip type Model B2B-XH-A

Model B2B-AH-A Mating Connector (Terminal) XHP-2 (BXH-001T-P0.6 or SXH-001T-P0.6

COŞEL | LMA-series

Assembling and Installation Method

Installation method

- This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.
- In case of metal chassis, keep the distance between d1 & d2 for to insulate between lead of component and metal chassis, use the spacer of 8mm or more between d1. If it is less than d1 & d2, insert the insulation sheet between power supply and metal chassis.

- There is a possibility that it is not possible to cool enough when the power supply is used by the sealing up space as showing in right figure.Please use it after confi rming the temperature of point A and point B of Instruction Manual 3.
- (F) mounting is not possible when unit is with case cover, but if need to operate unit by (F) positioning with case cover, temperature / load derating is necessary. For more details, please contact our sales or engineering departments.



Mounting screw

The mounting screw should be M3. The hatched area shows the allowance of metal parts for mounting.

LMA100F, LMA150F



LMA240F



If metallic fittings are used on the component side of the board, ensure there is no contact with surface mounted components.
 This product uses SMD technology. Please avoid the PCB installation method which includes the twisting stress or the bending stress.
 *Recommendation to electrically connect FG to metal chassis for reducing noise.

LMA-series | COSEL

Derating





LMA100F Ambient temperature derating curve (Reference value)

LMA150F Ambient temperature derating curve (Reference value)

50

60

①(A)mounting

70

(2) (A) ~ (F)

mounting



LMA240F Ambient temperature derating curve (Reference value)



The operative ambient temperature is different by with / without chassis cover or mounting position.

Note: In the hatched area, the specification of Ripple, Ripple Noise is different from other area.

Make sure the temperature at point A and point B is less than the temperatures shown in Instruction Manual 3.

The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.

COŞEL | LMA-series

Instruction Manual

◆ It is neccessary to read the "Instruction Manual" and "Before using our product" before you use our product.

Instruction Manual

https://en.cosel.co.jp/product/powersupply/LMA/ Before using our product https://en.cosel.co.jp/technical/caution/index.html



Basic Characteristics Data

Model Circuit	Circuit mothod	Switching	Input current * 1 [A]	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
	Circuit method	[kHz]			Material	Single sided	Double sided	Series operation	Parallel operation
	Active filter	60	1.4	Thormistor	stor CEM-3		Vac	Vac	No
LIVIATUUF	Forward converter	130		Thermistor			ies	ies	NO
LMA150F	Active filter	60	2.0	Thermistor	CEM-3		Vaa	Vaa	Na
	Forward converter	130					res	tes	NO
LMA240F	Active filter	60	20	SCR			Yes	Yes	No
	Forward converter	130	3.9		CEIVI-3				

*1 The value of input current is at ACIN 100V and rated load.

June 29, 2020