Ordering information

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Recommended EMI/EMC Filter NAC-04-472

High voltage pulse noise type : NAP series Low leakage current type : NAM series

*The EMI/EMC Filter is recommended to connect with several devices.

- 1) Series name 2) Single output 3) Output wattage 4) Universal input 5) Output voltage
- ⑥Optional
- C: with Coating
 G: Low leakage current
- J1: VH(J.S.T.)connector type S: with Chassis
- SN: with Chassis & cover Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

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.

MODEL	LFA10F-3R3-Y	LFA10F-5	LFA10F-12	LFA10F-15	LFA10F-24
MAX OUTPUT WATTAGE[W]	6.6	10	10.8	10.5	12
DC OUTPUT	3.3V 2A	5V 2A	12V 0.9A	15V 0.7A	24V 0.5A

SPECIFICATIONS

	MODEL		LFA10F-3R3-Y	LFA10F-5	LFA10F-12	LFA10F-15	LFA10F-24		
	VOLTAGE[V]		AC85 - 264 1 φ (Refer	to Instruction Manual 1.1	I and 3.2) *3				
	OUDDENITAL	ACIN 100V	0.18typ (lo=100%)	0.26typ (lo=100%)	,				
INPUT	CURRENT[A]	ACIN 200V	0.11typ (lo=100%)	0.16typ (lo=100%)					
	FREQUENCY[Hz]		50 / 60 (47 - 440)						
	EEEIOJENOVIO/I	ACIN 100V	68.0typ	74.0typ	76.5typ	77.5typ	79.5typ		
	EFFICIENCY[%]	ACIN 200V	68.5typ	76.0typ	79.0typ	80.0typ	83.0typ		
	INDUCUI CURRENTIAL	ACIN 100V	15typ (lo=100%)				,		
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%)						
	LEAKAGE CURRENT[mA]		0.15/0.30max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)						
	VOLTAGE[V]		3.3	5	12	15	24		
	CURRENT[A]		2.0	2.0	0.9	0.7	0.5		
	LINE REGULATION[n	nV] *5	20max	20max	48max	60max	96max		
	LOAD REGULATION[mV] *5	40max	40max	100max	120max	150max		
	DIDDLET V	0 to +50℃	80max	80max	120max	120max	120max		
	RIPPLE[mVp-p]	-10 - 0℃	140max	140max	160max	160max	160max		
	**	lo=0 - 35%	190max	160max	240max	240max	280max		
	DIDDLE MOIOEC V. 1	0 to +50°C	120max	120max	150max	150max	150max		
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0℃	160max	160max	180max	180max	180max		
		lo=0 - 35%	240max	240max	300max	300max	320max		
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max		
	TEMPERATURE REGULATION[IIIV]	-10 to +50°C	60max	60max	150max	180max	290max		
	DRIFT[mV] *2		20max	20max	48max	60max	96max		
	START-UP TIME[ms]		200typ (ACIN 100V, lo=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage						
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	2.85 to 3.63 Fixed ("Y"option is available for adjusting output voltage between ±10%)						
	OUTPUT VOLTAGE SETT	ING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00		
	OVERCURRENT PROTE	ECTION	Works over 105% of ra	ting and recovers autom	atically				
PROTECTION	OVERVOLTAGE PROTE	CTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60		
CIRCUIT AND	OPERATING INDICAT	ION	Not provided						
OTHERS	REMOTE SENSING		Not provided						
	REMOTE ON/OFF		Not provided						
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)						
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)						
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)						
	OPERATING TEMP., HUMID.AND	ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000 feet) max *3						
ENVIRONMENT	STORAGE TEMP.,HUMID.AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max						
LittintoniiiLiti	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis						
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis						
SAFETY AND	AGENCY APPROVAL	S	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN						
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B						
REGULATIONS	The state of the s								
OTHERS	CASE SIZE/WEIGHT				V×H×D) / 55g max (wit	h chassis & cover : 150g	max)		
	COOLING METHOD		Convection (Refer to In	struction Manual 3.1 and	d 3.2) *3				

This is the value that measured on measuring board with capacitor of 22 µF at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). A circuit reducing standby power is built in this unit. Therefore, the internal switch element is intermittent operated, and the Ripple/Ripple Noise specification in load

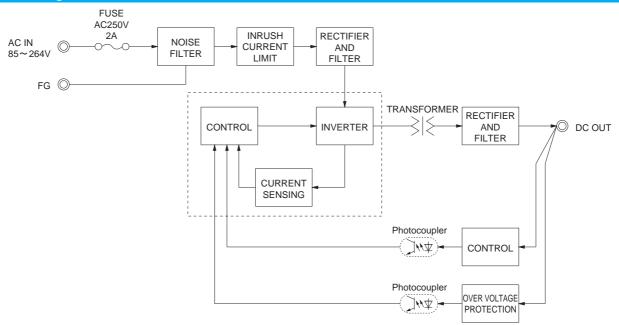
factor Io=0-35% is different. Please refer to the Instruction Manual 1.7.

- 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.
- Derating is required.
- When two or more units are operating it may not comply with the IEC61000-3-2.
- Please contact us for details.
- Please contact us about dynamic load and input response.
- Please contact us about another class.
- 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

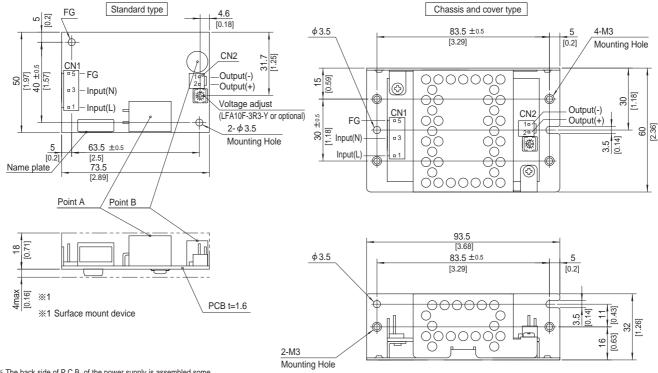
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Block diagram



External view



- $\ensuremath{\mathrm{\%}}$ 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.
- * Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/C) Connector	Mating connector	Т	erminal
CNIA	1-1123724-3	1-1123722-5	Chain	1123721-1
CN1	1-1123724-3	23/24-3 1-1123/22-5	Loose	1318912-1
CNIO	1 1100700 0	1-1123722-2	Chain	1123721-1
CN2 1-1123723-2		1-1123722-2	Loose	1318912-1
			(Mfr:Tv	co Electronics)

* I/O Connector is Mfr. Tyco Electronics

<PIN CONNECTION>

CN1		CN2	
Pin No.	Input	Pin No.	Outpu
1	AC(L)	1	-V
2		'	-v
3	AC(N)	2	+V
4			+v
5	FG		

- utput -V
 - X Tolerance: ±1 [±0.04]
 - Weight: 55g max (with chassis & cover: 150g max)
 - % PCB material / thickness : CEM3 / 1.6mm

 - % Optional chassis and cover material : Electric galvanizing steel board.
 - W Dimensions in mm, []=inches
 - \divideontimes Mounting torque (Mounting hole of chassis) : 0.6N $^{\circ}$ m (6.3kgf $^{\circ}$ cm) max

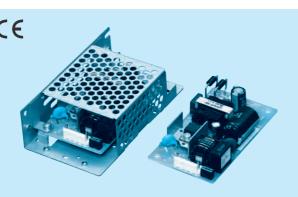
Ordering information

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Recommended EMI/EMC Filter NAC-04-472

High voltage pulse noise type : NAP series Low leakage current type : NAM series

*The EMI/EMC Filter is recommended to connect with several devices.

- ①Series name ②Single output
- 3 Output wattage 4 Universal input 5 Output voltage
- ⑥Optional
- C: with Coating
 G: Low leakage current

- J1: VH(J.S.T.)connector type S: with Chassis
- SN: with Chassis & cover Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

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.

MODEL	LFA15F-3R3-Y	LFA15F-5	LFA15F-12	LFA15F-15	LFA15F-24
MAX OUTPUT WATTAGE[W]	9.9	15	15.6	15	16.8
DC OUTPUT	3.3V 3A	5V 3A	12V 1.3A	15V 1A	24V 0.7A

SPECIFICATIONS

			LFA15F-3R3-Y	LFA15F-5	LFA15F-12	LFA15F-15	LFA15F-24	
	ACIN 100V O 3		AC85 - 264 1 φ (Refer	to Instruction Manual 1.	1 and 3.2) *3			
	CURRENT[A]	ACIN 100V	0.24typ (lo=100%)	0.35typ (lo=100%)				
	CORRENT[A]	ACIN 200V	0.15typ (lo=100%)					
	FREQUENCY[Hz]		50 / 60 (47 - 440)					
INPUT	EEEIOIENOVIO/1	ACIN 100V	68.0typ	73.0typ	76.0typ	77.0typ	78.0typ	
01	EFFICIENCY[%]	ACIN 200V	69.0typ	76.0typ	78.5typ	80.0typ	81.5typ	
	INDUCTION OF DEPARTMENT	ACIN 100V	15typ (Io=100%) (At co	old start) (Ta=25°C)				
	INRUSH CURRENT[A]	ACIN 200V	30typ (Io=100%) (At co	old start) (Ta=25°C)				
	LEAKAGE CURRENT[mA]		0.15/0.30max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)					
	VOLTAGE[V]		3.3	5	12	15	24	
	CURRENT[A]		3.0	3.0	1.3	1.0	0.7	
	LINE REGULATION[n	nV] *5	20max	20max	48max	60max	96max	
	LOAD REGULATION[mV] *5	40max	40max	100max	120max	150max	
		0 to +50°C	80max	80max	120max	120max	120max	
	RIPPLE[mVp-p]	-10 - 0℃	140max	140max	160max	160max	160max	
	*1	lo=0 - 35%	190max	160max	240max	240max	280max	
		0 to +50°C	120max	120max	150max	150max	150max	
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0℃	160max	160max	180max	180max	180max	
	*1	lo=0 - 35%	240max	240max	300max	300max	320max	
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max	
		-10 to +50°C	60max	60max	150max	180max	290max	
	DRIFT[mV]	*2	20max	20max	48max	60max	96max	
	START-UP TIME[ms]		200typ (ACIN 100V, Io=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage					
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)					
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	2.85 to 3.63 Fixed ("Y"option is available for adjusting output voltage between ±10%)					
	OUTPUT VOLTAGE SETT	ING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	
	OVERCURRENT PROTE	CTION	Works over 105% of ra	ting and recovers autom	atically			
PROTECTION	OVERVOLTAGE PROTE	CTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	
CIRCUIT AND	OPERATING INDICAT	ION	Not provided					
OTHERS	REMOTE SENSING		Not provided					
	REMOTE ON/OFF		Not provided					
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)					
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)					
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)					
	OPERATING TEMP., HUMID.AND	ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000 feet) max *3					
ENVIRONMENT	STORAGE TEMP., HUMID. AND A	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max					
LIVINORMENT	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT			s, once each X, Y and Z a				
SAFETY AND								
NOISE	CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B							
REGULATIONS	HARMONIC ATTENU	ATOR		00-3-2 (Class A) *6 (Not				
OTHERS	CASE SIZE/WEIGHT		50×22×87.5mm [1.97	7×0.87×3.44 inches] (V	V×H×D) / 80g max (wit	th chassis & cover : 190g	g max)	
	COOLING METHOD		Convection (Refer to In	struction Manual 3.1 and	d 3.2) *3			
*1 This is th	ne value that measured on mea	asuring board	d with factor lo=	-0-35% is different.		Please contact us for details.		

This is the value that measured on measuring board with capacitor of 22 µF at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). A circuit reducing standby power is built in this unit.

Therefore, the internal switch element is intermittent operated, and the Ripple/Ripple Noise specification in load factor Io=0-35% is different.

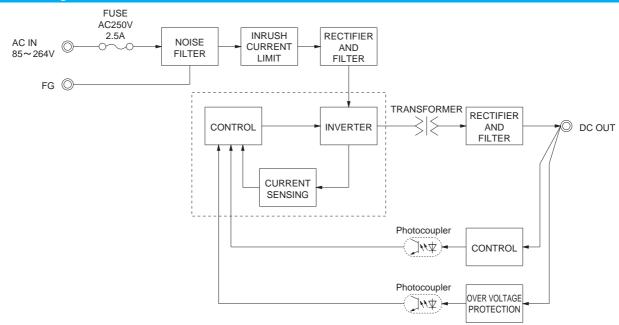
- Please refer to the Instruction Manual 1.7. Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held
- constant at the rated input/output. Derating is required.
- When two or more units are operating it may not comply with the IEC61000-3-2.
- Please contact us for details.
- Please contact us about dynamic load and input response.
- Please contact us about another class.
- 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

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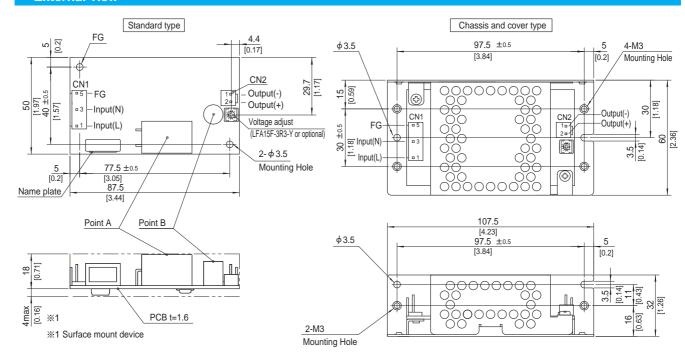
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Block diagram



External view



- $\ensuremath{\ensuremath{\%}}$ The back side of P.C.B. of the power supply is assembled some
- Be attention not to bump against the attached area by vibration. $\ensuremath{\mathbb{X}}$ Use the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- % Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector		I/O Connector Mating connector		erminal
CNI4	1-1123724-3	1-1123722-5	Chain	1123721-1
CIVI	1-1123724-3	1-1123722-5	Loose	1318912-1
CNO	1-1123723-2	1-1123722-2	Chain	1123721-1
CINZ	1-1123723-2	1-1123722-2	Loose	1318912-1

(Mfr:Tyco Electronics)

- ※ I/O Connector is Mfr. Tyco Electronics
- Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 5.

<PIN CONNECTION>

CN1						
Pin No.	Input					
1	AC(L)					
2						
3	AC(N)					
4						
5	FG					

- CN₂ Pin No. Output
- 2 +V
- * Tolerance : ±1 [±0.04]
- Weight: 80g max (with chassis & cover: 190g max)
- ※ PCB material / thickness : CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
 ※ Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis): 0.6N · m (6.3kgf · cm) max

Ordering information

1 EA 20E-12

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High voltage pulse noise type : NAP series Low leakage current type : NAM series

*The EMI/EMC Filter is recommended to connect with several devices.

1 EA20E-15

- 1) Series name 2) Single output 3) Output wattage 4) Universal input 5) Output voltage

- ® Optional
 C: with Coating
 G: Low leakage current

- J1: VH(J.S.T.)connector type S: with Chassis
- SN: with Chassis & cover Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

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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.

1 EA 20E-2D2-V | 1 EA 20E-5

MODEL	LFA30F-3R3-Y	LFA30F-5	LFA30F-12	LFA30F-15	LFA30F-24
MAX OUTPUT WATTAGE[W]	19.8	30.0	30.0	30.0	31.2
DC OUTPUT	3.3V 6A	5V 6A	12V 2.5A	15V 2A	24V 1.3A

SPECIFICATIONS

	MODEL		LFA30F-3R3-Y	LFA30F-5	LFA30F-12	LFA30F-15	LFA30F-24	
	VOLTAGE[V]		AC85 - 264 1 φ (Refer to Instruction Manual 1.1 and 3.2) *3					
	CUDDENTIAL	ACIN 100V	0.50typ (lo=100%)	0.65typ (lo=100%)				
	CURRENT[A]	ACIN 200V	0.30typ (lo=100%)	0%) 0.35typ (lo=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 440)					
INPUT	EFFICIENCY[0/1	ACIN 100V	73typ	76typ	79typ	81typ	82typ	
	EFFICIENCY[%]	ACIN 200V	75typ	79typ	81typ	83typ	84typ	
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%) (At c	old start) (Ta=25°C)				
	INKOSH COKKENT[A]	ACIN 200V	30typ (lo=100%) (At co	old start) (Ta=25℃)				
	LEAKAGE CURRENT[mA]		0.30 / 0.65max (ACIN	100V / 240V 60Hz, lo	=100%, According to IE	C60950-1 and DEN-A	N)	
	VOLTAGE[V]		3.3	5	12	15	24	
	CURRENT[A]		6.0	6.0	2.5	2.0	1.3	
	LINE REGULATION[mV] *5	20max	20max	48max	60max	96max	
	LOAD REGULATION	[mV] *5	40max	40max	100max	120max	150max	
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	
	Wit refilled-bl	-10 - 0°C *1	140max	140max	160max	160max	160max	
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max	
DUTPUT	EE HOIOE[III+p-p]	-10 - 0°C *1	160max	160max	180max	180max	180max	
	TEMPERATURE REGULATION[mV]	0 to +50℃		50max	120max	150max	240max	
	-10 to +50		60max	60max	150max	180max	290max	
:	DRIFT[mV] *2		20max	20max	48max	60max	96max	
	START-UP TIME[ms]		150typ (ACIN 100V, Io=100%)					
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 to 3.63		ailable for adjusting out	put voltage between ±		
	OUTPUT VOLTAGE SET		3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	
	OVERCURRENT PROT	ECTION	Works over 105% of rating and recovers automatically					
ROTECTION	OVERVOLTAGE PROTE		4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	
IRCUIT AND		TION	Not provided					
THERS	REMOTE SENSING	-	Not provided					
	REMOTE ON/OFF		Not provided					
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)					
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)					
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature) -10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max *3					
	OPERATING TEMP., HUMID.AND				,		,000feet) max *3	
NVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE		-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max				
	VIBRATION			- 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis				
	IMPACT		\ //	s, once each X, Y and		Occupii a mitta DEN AN	1	
SAFETY AND	AGENCY APPROVAL			A60950-1), EN60950-	· · · · · · · · · · · · · · · · · · ·	Complies with DEN-AN	N	
NOISE REGULATIONS	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B					
LGULATIONS			Complies with IEC61000-3-2 (Class A) *6 (Not built-in to active filter) *4 50×26.5×105mm [1.97×1.04×4.13 inches] (W×H×D) / 130g max (with chassis & cover : 260g max)					
OTHERS	CASE SIZE/WEIGHT					ax (with chassis & cove	er : 260g max)	
	COOLING METHOD		Convection (Refer to I	nstruction Manual 3.1 a	and 3.2) *3			

- This is the value that measured on measuring board with capacitor of 22 $\mu\,F$ at 150mm from output terminal.
- . Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: 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.
- *3 Derating is required.

- When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.
- Please contact us about dynamic load and input response. Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition. Parallel operation is not possible.

- Derating is required when operated with chassis and cover.

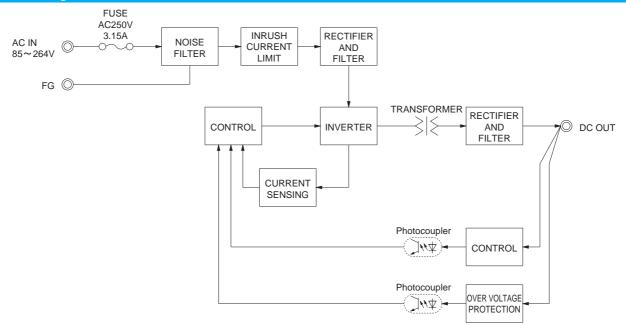
 Sound noise may be generated by power supply in case of pulse load.

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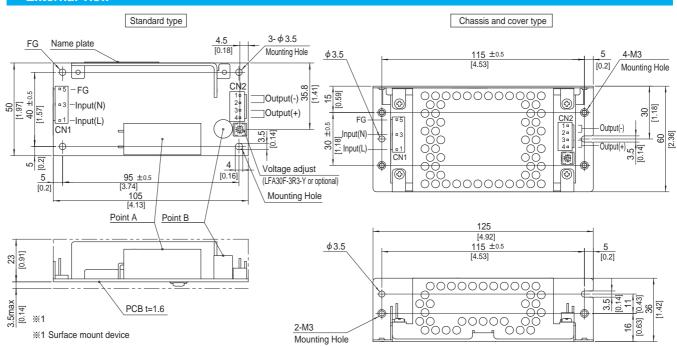
LFA30F | CO\$EL

LFA

Block diagram



External view



- % 4 Mounting holes are existing.
- $\ensuremath{\mathbb{X}}$ 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.
- W Use the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- ※ Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector		Mating connector	Terminal	
CNIA	1-1123724-3	1-1123722-5	Chain	1123721-1
CIVI	1-1123724-3	1-1123722-3	Loose	1318912-1
CNO	4 4400700 4	1-1123722-4	Chain	1123721-1
CN2 1-1123723-4		1-1123722-4	Loose	1318912-1
			(Mfr:Ty	co Electronics)

- ※ I/O Connector is Mfr. Tyco Electronics
- ** Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 5.

<PIN CONNECTION>

CN1	
Pin No.	Input
1	AC(L)
2	
3	AC(N)
4	
5	FG

CINZ	
Pin No.	Output
1, 2	-V
3, 4	+V

- % Tolerance : ±1 [±0.04]
- Weight: 130g max (with chassis & cover : 260g max)
- ※ PCB material / thickness : CEM3 / 1.6mm
- * Optional chassis and cover material : Electric galvanizing steel board.
- Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis): 0.6N · m (6.3kgf · cm) max

CNO

Ordering information

50







- High voltage pulse noise type : NAP series Low leakage current type : NAM series
- *The EMI/EMC Filter is recommended to connect with several devices.

- 1) Series name 2) Single output 3) Output wattage 4) Universal input 5) Output voltage

- Optional
 C: with Coating
 G: Low leakage current
- J1: VH(J.S.T.)connector type S: with Chassis
- SN: with Chassis & cover Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

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.

MODEL	LFA50F-3R3-Y	LFA50F-5	LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48
MAX OUTPUT WATTAGE[W]	33	50	51.6	52.5	50.4	50.4	52.8
DC OUTPUT	3.3V 10A	5V 10A	12V 4.3A	15V 3.5A	24V 2.1A	36V 1.4A	48V 1.1A

SPECIFICATIONS

	MODEL		LFA50F-3R3-Y	LFA50F-5	LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48		
	VOLTAGE[V]		AC85 - 264 1 φ	(Refer to Instruc	ction Manual 1.1	and 3.2) *3					
	CUDDENTIAL	ACIN 100V	0.47typ (lo=100%)	0.67typ (lo=100)%)						
	CURRENT[A]	ACIN 200V	0.27typ (lo=100%)	0.27typ (lo=100%)							
	FREQUENCY[Hz]		50 / 60 (47 - 63))							
	EEEIOJENOVIO/1	ACIN 100V	73.5typ	77.5typ	80.0typ	80.5typ	81.5typ	82.0typ	81.0typ		
INPUT	EFFICIENCY[%]	ACIN 200V	74.0typ	79.0typ	81.5typ	81.5typ	83.0typ	83.5typ	82.5typ		
	DOMED FACTOR (In 4000()	ACIN 100V	0.96typ	0.97typ			•	•			
	POWER FACTOR (Io=100%)	ACIN 200V	0.83typ	0.90typ							
	INDUCUI CUDDENTIAL	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]	0.40 / 0.75max	(ACIN 100V / 24	0V 60Hz, lo=10	00%, According t	o IEC60950-1 aı	nd DEN-AN)			
	VOLTAGE[V]		3.3	5	12	15	24	36	48		
	CURRENT[A]		10.0	10.0	4.3	3.5	2.1	1.4	1.1		
	LINE REGULATION[mV] *4	20max	20max	48max	60max	96max	144max	192max		
	LOAD REGULATION	[mV] *4	40max	40max	100max	120max	150max	240max	240max		
	DIDDI Franka al	0 to +50°C *1	80max	80max	120max	120max	120max	150max	150max		
	RIPPLE[mVp-p]	-10 - 0°C *1	140max	140max	160max	160max	160max	200max	200max		
	DIDDLE MOIOEL-V1	0 to +50°C *1	120max	120max	150max	150max	150max	250max	250max		
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0°C *1	160max	160max	180max	180max	180max	300max	300max		
		0 to +50℃	50max	50max	120max	150max	240max	360max	480max		
	TEMPERATURE REGULATION[mV]	-10 to +50°C	60max	60max	150max	180max	290max	450max	600max		
	DRIFT[mV] *2		20max	20max	48max	60max	96max	144max	192max		
	START-UP TIME[ms]	350typ (ACIN 100V, Io=100%)									
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)								
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 to 3.63 Fixed ("Y"option is available for adjusting output voltage between ±10%)								
	OUTPUT VOLTAGE SET	TING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00		
	OVERCURRENT PROT	ECTION	Works over 105	% of rating and	recovers automa	atically		•			
PROTECTION	OVERVOLTAGE PROTE	ECTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20		
CIRCUIT AND	OPERATING INDICA	TION	Not provided	•			•	•			
OTHERS	REMOTE SENSING		Not provided								
	REMOTE ON/OFF		Not provided								
	INPUT-OUTPUT		AC3,000V 1min	ute, Cutoff curre	nt = 10mA, DC5	$500V~50M\Omega~min$	(At Room Tempe	erature)			
ISOLATION	INPUT-FG		AC2,000V 1min	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)							
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)								
	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max *3								
ENVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max								
ENVIRONWENT	VIBRATION		10 - 55Hz, 19.6	0 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis								
SAFETY AND	AGENCY APPROVA	LS	UL60950-1, C-l	JL (CSA60950-1), EN60950-1, E	N60065, EN501	78 Complies wit	h DEN-AN			
NOISE	CONDUCTED NOISE	•	Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B								
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with I	EC61000-3-2 (C	lass A) *5						
OTHERS	CASE SIZE/WEIGHT		50×26.5×132i	mm [1.97×1.04	×5.20 inches] (\	N×H×D) / 165g	g max (with chas	sis & cover : 325	g max)		
OTHERS	COOLING METHOD			fer to Instruction							
			,	or of 22 U.F. at 150r		erating is required					

- *1 This is the value that measured on measuring board with capacitor of 22 μ F at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:
- RM103). 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.

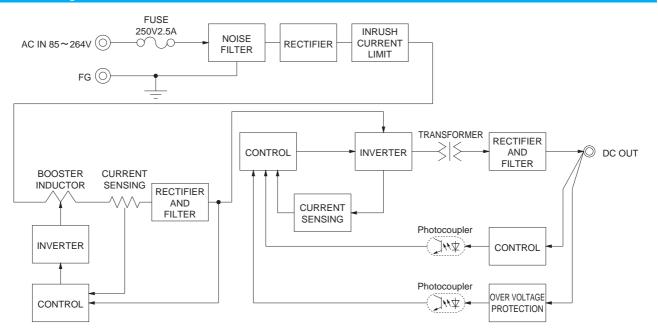
- Please contact us about dynamic load and input response.
 Please contact us about another class.
 To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover.

 Sound noise may be generated by power supply in case of pulse load.

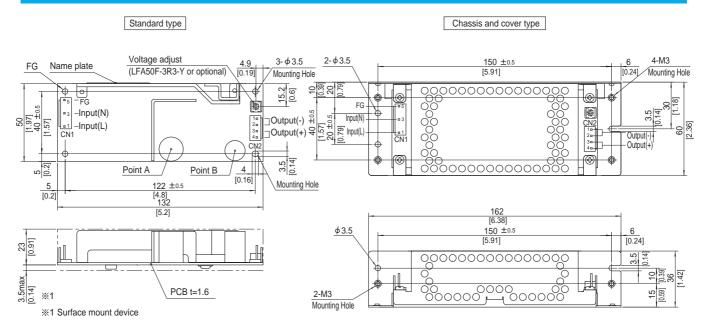
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Block diagram



External view



- * The back side of P.C.B. of the power supply is assembled some
- 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. Please refer to Instruction Manual 3.

I/O Connector		onnector Mating connector		erminal		
CNIA	CN1 1-1123724-3	1-1123722-5	Chain	1123721-1		
CIVI		1-1123722-5	Loose	1318912-1		
CNO	1-1123723-4	1-1123722-4	Chain	1123721-1		
CINZ	1-1123723-4	1-1123722-4	Loose	1318912-1		
(Mfr:Tyco Electronics)						

* I/O Connector is Mfr. Tyco Electronics

Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 5.

<PIN CONNECTION>

CN1		CN2
Pin No.	Input	Pin No
1	AC(L)	4.0
2		1, 2
3	AC(N)	2.4
4		3, 4
5	FG	

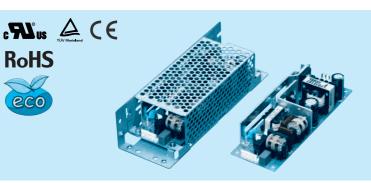
Pin N	o. Output
1, 2	-V
3, 4	+V

- % Tolerance : ± 1 [± 0.04] % Weight : 165g max (with chassis & cover : 325g max)
- ※ PCB material / thickness : CEM3 / 1.6mm
- $\ensuremath{\mathbb{X}}$ Optional chassis and cover material : Electric galvanizing steel board.
- ※ Dimensions in mm. []=inches.
- Mounting torque (Mounting hole of chassis): 0.6N · m (6.3kgf · cm) max

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

Ordering information







- High voltage pulse noise type : NAP series Low leakage current type : NAM series
- *The EMI/EMC Filter is recommended to connect with several devices.

- 1) Series name 2) Single output 3) Output wattage 4) Universal input 5) Output voltage

- Optional
 C: with Coating
 G: Low leakage current
- J1: VH(J.S.T.)connector type S: with Chassis
- SN: with Chassis & cover Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

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.

MODEL	LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48
MAX OUTPUT WATTAGE[W]	49.5	75	75.6	75	76.8	75.6	76.8
DC OUTPUT	3.3V 15A	5V 15A	12V 6.3A	15V 5A	24V 3.2A	36V 2.1A	48V 1.6A

SPECIFICATIONS

	MODEL		LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48		
	VOLTAGE[V]		AC85 - 264 1 φ	(Refer to Instruc	tion Manual 1.1	and 3.2) *3					
	CURRENT[A]	ACIN 100V	0.70typ (lo=100%)	7.70typ (lo=100%) 1.00typ (lo=100%)							
	CURRENT[A]	ACIN 200V	0.40typ (lo=100%)	0.50typ (lo=100)%)						
	FREQUENCY[Hz]		50 / 60 (47 - 63))							
	EEEIGIENGVI9/1	ACIN 100V	73.5typ	78.0typ	81.5typ	81.5typ	82.5typ	82.5typ	82.5typ		
INPUT	EFFICIENCY[%]	ACIN 200V	75.0typ	80.0typ	83.0typ	83.0typ	84.5typ	84.5typ	84.5typ		
	DOMED FACTOR (In 4000()	ACIN 100V	0.96typ	0.97typ				•			
	POWER FACTOR (Io=100%)	ACIN 200V	0.83typ	0.90typ							
	INDUCU CURRENTIAL	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)						
Ì	LEAKAGE CURREN		0.40 / 0.75max	(ACIN 100V / 24	0V 60Hz, lo=10	00%, According t	to IEC60950-1 ar	nd DEN-AN)			
	VOLTAGE[V]		3.3	5	12	15	24	36	48		
Ī	CURRENT[A]		15.0	15.0	6.3	5.0	3.2	2.1	1.6		
Ţ	LINE REGULATION[mV] *4	20max	20max	48max	60max	96max	144max	192max		
Ī	LOAD REGULATION	[mV] *4	40max	40max	100max	120max	150max	240max	240max		
Ţ	DIDDLET V	0 to +50°C *1	80max	80max	120max	120max	120max	150max	150max		
	RIPPLE[mVp-p]	-10 - 0°C *1	140max	140max	160max	160max	160max	200max	200max		
Ì		0 to +50°C *1	120max	120max	150max	150max	150max	250max	250max		
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0°C *1	160max	160max	180max	180max	180max	300max	300max		
		0 to +50℃	50max	50max	120max	150max	240max	360max	480max		
	TEMPERATURE REGULATION[mV]	-10 to +50°C	60max	60max	150max	180max	290max	450max	600max		
	DRIFT[mV]	*2	20max	20max	48max	60max	96max	144max	192max		
-	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)								
İ	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)								
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 to 3.63 Fixed ("Y"option is available for adjusting output voltage between ±10%)								
İ	OUTPUT VOLTAGE SET	TING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00		
	OVERCURRENT PROT		Works over 105	% of rating and	recovers automa	atically					
PROTECTION	OVERVOLTAGE PROTE	ECTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20		
F	OPERATING INDICA	TION	Not provided								
OTHERS	REMOTE SENSING		Not provided								
Ì	REMOTE ON/OFF		Not provided								
	INPUT-OUTPUT		AC3,000V 1min	ute, Cutoff curre	nt = 10mA, DC5	500V 50MΩ min	(At Room Tempe	erature)			
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)								
Ì	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)								
	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max *3								
ENIVED ON MENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max								
ENVIRONMENT	VIBRATION		10 - 55Hz, 19.6	0 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
ļ	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis								
SAFETY AND	AGENCY APPROVAL	_S	,	,			78 Complies with	h DEN-AN			
-	CONDUCTED NOISE			_ `		011-B, EN55022					
<u></u>	HARMONIC ATTENU			EC61000-3-2 (C							
	CASE SIZE/WEIGHT					/×H×D) / 230a	max (with chassi	s & cover : 440a	max)		
OTHERS +	COOLING METHOD			fer to Instruction			,	-9	,		
	he value that measured or		,			erating is required					

- *1 This is the value that measured on measuring board with capacitor of 22 μ F at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:
- RM103). 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.

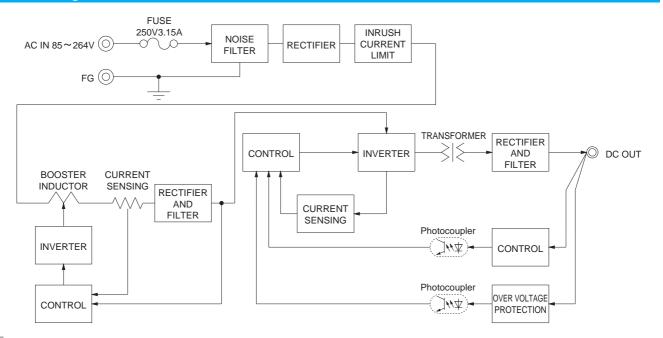
- Please contact us about dynamic load and input response.
 Please contact us about another class.
 To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover.

 Sound noise may be generated by power supply in case of pulse load.

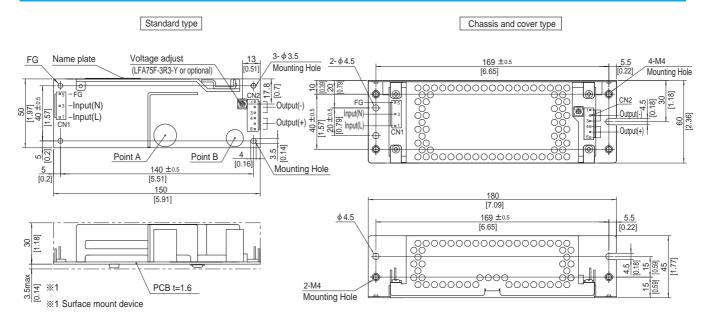
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Block diagram



External view



- ¾ 4 Mounting holes are existing.
- * The back side of P.C.B. of the power supply is assembled some
- Be attention not to bump against the attached area by vibration.

 We the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- % Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector		Connector Mating connector		erminal
014	1-1123724-3	1-1123722-5	Chain	1123721-1
CNT	1-1123724-3	1-1123722-5	Loose	1318912-1
CNIO	CN2 1-1123723-6	1-1123722-6	Chain	1123721-1
CNZ		1-1123722-0	Loose	1318912-1

(Mfr:Tyco Electronics)

- ※ I/O Connector is Mfr. Tyco Electronics
- Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 5.

<PIN CONNECTION>

CN1		
Pin No.	Input	
1	AC(L)	
2		
3	AC(N)	
4		
5	FG	

CINZ	
Pin No.	Output
1 to 3	-V
4 to 6	+V

- ※ Tolerance : ±1 [±0.04]
- Weight: 230g max (with chassis & cover: 440g max)
 PCB material / thickness: CEM3 / 1.6mm
- * 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

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

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LFA100F

Ordering information

100









This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit,

Recommended EMI/EMC Filter NAC-04-472



High voltage pulse noise type : NAP series Low leakage current type : NAM series

*The EMI/EMC Filter is recommended to connect with several devices.

1) Series name 2) Single output 3) Output wattage 4) Universal input 5) Output voltage

- Output voltage
 Optional *1
 C: with Coating
 - G: Low leakage current H: with the function to be acceptable to output peak current (only 24V)

 - J1: VH(J.S.T.)connector type R: with Remote ON/OFF R2: with Remote ON/OFF
- S: with Chassis

SN: with Chassis & cover Y: with Potentiometer

Please refer to Instruction manual 5.

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MODEL	LFA100F-3R3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-48
MAX OUTPUT WATTAGE[W] *5	66	100	102	100.5	103.2	103.2 (129.6)	100.8	100.8
DC OUTPUT *5	3.3V 20A	5V 20A	12V 8.5A	15V 6.7A	24V 4.3A	24V 4.3 (5.4)A	36V 2.8A	48V 2.1A

SPECIFICATIONS

VOLTAGE(IV) AC88.5 - 264.1 \(\sigma \) (Refer to Instruction Manual 1.1 and 3.2) \(\sigma \) (VOLTAGE (IV) CURRENT[A]		MODEL		LFA100F-3R3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-48	
CURRENT A AENN 2009 0.59tylo=10078 0.71typ (10=10096)		VOLTAGE[V]		AC85 - 264 1	φ (Refer to In:	struction Manu	al 1.1 and 3.2)	*4				
PREQUENCY F4 50 (60 (47 - 63)		CURRENTIAL	ACIN 100V	0.9typ (lo=100%)	1.3typ (lo=10	0%)						
POWER FACTOR (0=100%) ACM 1809 77.0 yp 82.0 typ 84.0 typ 87.0 t		CURRENT[A]	ACIN 200V	0.5typ (lo=100%)								
POWER FACTOR (a-100)		FREQUENCY[Hz]	50 / 60 (47 - 63)									
ACM 2809 79.0 yp 84.0 yp 84.0 yp 84.5 yp 85.5 yp 87.0 yp 87.0 yp 87.0 yp 87.0 yp 87.0 yp		EEEIGIENGVI9/1	ACIN 100V	77.0typ	82.0typ	82.0typ	83.0typ	84.0typ	84.0typ	84.0typ	84.5typ	
POWER FACTOR (Ign-100%) ACM 2007 0.95typ 0.95ty	INPUT	EFFICIENCY[%]	ACIN 200V	79.0typ	84.0typ	84.5typ	85.5typ	87.0typ	87.0typ	87.0typ	87.0typ	
INRUSH CURRENT[A] ACM 100W 0.92typ 0.99typ 0.		DOWED FACTOR (In 4000/)	ACIN 100V	0.98typ	0.99typ							
INFORM CORRECTION		POWER FACTOR (10=100%)	ACIN 200V	0.92typ								
INFORM CORRECTION		INDUCUI CURRENTIAL	ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25°C)								
VOLTAGE[V] 3.3 5 12 15 24 24 36 48		INKUSH CUKKENI[A]	ACIN 200V									
CURRENT[A] # 20 20 8.5 6.7 4.3 4.3 (Peak 5.4) 2.8 2.1		LEAKAGE CURREN	T[mA]	0.40 / 0.75ma	ax (ACIN 100V	/ 240V 60Hz,	lo=100%, Acc	ording to IEC6	0950-1 and DE	N-AN)		
LINE REGULATION[mV] v7 20max 20max 48max 60max 96max 96max 144max 192max 120max	VOLTAGE[V]		3.3	5	12	15	24	24	36	48		
CADREGULATION		CURRENT[A]	*5	20	20	8.5	6.7	4.3	4.3 (Peak 5.4)	2.8	2.1	
Note		LINE REGULATION[mV] *7	20max	20max	48max	60max	96max	96max	144max	192max	
OUTPUT A A A A A A A A A		LOAD REGULATION	[mV] *7	40max	40max	100max	120max	150max	150max	240max	240max	
All-UL 3 4\Umax 1\Umax 1\Uma		DIDDI ElmVn nl	0 to +50°C *2	80max	80max	120max	120max	120max	240max	150max	150max	
OUTPUT TEMPERATURE REGULATION mV 10 + 0.0°C st 160 max 160 max 180 max 180 max 180 max 240 max 240 max 360 max 300 max 480 max 480 max 240 max		RIPPLE[mvp-p]	-10 - 0°C *2	140max	140max	160max	160max	160max	320max	200max	200max	
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10		DIDDLE NOICEIVa1	0 to +50°C *2	120max	120max	150max	150max	150max	300max	250max	250max	
TEMPERATURE REGULATION -10 t +50°C 60 max 60 max 150 max 180 max 290 max 290 max 290 max 450 max 600 max 190	OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0°C *2	160max	160max	180max	180max	180max	360max	300max	300max	
DRIFT[mV] \$3 20max 20max 150max 180max 290max 290max 450max 450max 192max 290max 30max 30		TEMPERATURE REGULATION(mV)	0 to +50℃	50max	50max	120max	150max	240max	240max	360max	480max	
START-UP TIME[ms] 350typ (ACIN 100V, Io=100%)		TEMPERATURE REGULATION[IIIV]	-10 to +50℃	60max	60max	150max	180max	290max	290max	450max	600max	
HOLD-UP TIME[ms] 20typ (ACIN 100V, Io=100%)		DRIFT[mV] *3		20max	20max	48max	60max	96max	96max	144max	192max	
OUTPUT VOLTAGE ADJUSTMENT RANGE[V] 2.85 to 3.63 4.50 to 5.50 Fixed ("Y"option is available for adjusting output voltage)		START-UP TIME[ms] 3										
OUTPUT VOLTAGE SETTING[V] 3.30 to 3.40 5.00 to 5.15 11.50 to 12.50 14.40 to 15.60 23.00 to 25.00 23.00 to 25.00 34.50 to 37.50 46.00 to 50.00		HOLD-UP TIME[ms]										
OVERCURRENT PROTECTION Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically		OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	2.85 to 3.63	4.50 to 5.50	Fixed ("Y"opti	on is available	for adjusting of	utput voltage)			
PROTECTION OVERVOLTAGE PROTECTION 4.00 to 5.25 5.75 to 7.00 13.80 to 16.80 17.25 to 21.00 27.60 to 33.60 27.60 to 33.60 41.40 to 50.40 55.20 to 67.20		OUTPUT VOLTAGE SET	TING[V]									
CIRCUIT AND OTHERSOPERATING INDICATIONNot providedREMOTE SENSING REMOTE ON/OFFNot providedINPUT-OUTPUT·RC%6AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)INPUT-OUTPUT·RC%6AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)INPUT-RC-FG%6AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)OUTPUT·RC%6AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature)OUTPUT-RC%6AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature)STORAGE TEMP,HUMID.AND ALTITUDE *4-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) maxSTORAGE TEMP,HUMID.AND ALTITUDE *4-10 to +70°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) maxVIBRATION10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axisSAFETY AND NOISEAGENCY APPROVALSUL60950-1, C-UL (CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-ANNOISECONDUCTED NOISEComplies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55012-BCASE SIZE/WEIGHT62 × 33.5 × 155mm [2.44 × 1.32 × 6.10 inches] (W × H × D) / 280g max (with chassis & cover : 480g max)		OVERCURRENT PROT	ECTION	Works over 1	05% of rating (works over 10	1% of peak cur	rent at option -	H) and recove	rs automaticall	у	
OTHERS REMOTE SENSING Not provided REMOTE ON/OFF Option (Refer to Instruction Manual) INPUT-OUTPUT-RC *6 AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) INPUT-FG AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) OUTPUT-RC *6 AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature) OUTPUT-RC *6 AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature) OUTPUT-RC *6 AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature) OUTPUT-RC *6 AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature) OUTPUT-RC *6 AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature) OUTPUT-RC *6 AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature) OUTPUT-RC *6 AC100V 10MΩ min (At Room Temperature) OUTPUT-RC	PROTECTION	OVERVOLTAGE PROTE	ECTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20	
REMOTE ON/OFF Option (Refer to Instruction Manual)		OPERATING INDICA	TION	Not provided								
INPUT-OUTPUT-RC \$6	OTHERS	REMOTE SENSING		Not provided								
INPUT-FG		REMOTE ON/OFF		Option (Refer to Instruction Manual)								
OUTPUT-RC-FG 46 AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)			*6	· ·	· · · · · · · · · · · · · · · · · · ·				<u> </u>	·		
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 *10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max STORAGE TEMP, HUMID.AND ALTITUDE *20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max VIBRATION 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis SAFETY AND NOISE CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN550178 Complies with DEN-AN OTHERS CASE SIZE/WEIGHT 62 × 33.5 × 155mm [2.44 × 1.32 × 6.10 inches] (W × H × D) / 280g max (with chassis & cover : 480g max)	ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)								
ENVIRONMENT OPERATING TEMP, HUMID.AND ALTITUDE \$4 -10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max STORAGE TEMP, HUMID.AND ALTITUDE	IOOLATION		*6									
## STORAGE TEMP,HUMID.AND ALTITUDE												
VIBRATION 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis SAFETY AND NOISE AGENCY APPROVALS UL60950-1, C-UL (CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *8 CASE SIZE/WEIGHT 62 × 33.5 × 155mm [2.44 × 1.32 × 6.10 inches] (W × H × D) / 280g max (with chassis & cover : 480g max)							<u> </u>			n (10,000feet) ı	max	
VIBRATION 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis	ENVIRONMENT	,	ALTITUDE									
SAFETY AND NOISE AGENCY APPROVALS UL60950-1, C-UL (CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN NOISE REGULATIONS CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *8 CASE SIZE/WEIGHT 62×33.5×155mm [2.44×1.32×6.10 inches] (W×H×D) / 280g max (with chassis & cover : 480g max)					0 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
NOISE CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B REGULATIONS HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *8 OTHERS CASE SIZE/WEIGHT 62×33.5×155mm [2.44×1.32×6.10 inches] (W×H×D) / 280g max (with chassis & cover : 480g max)		_	_									
REGULATIONS HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *8 OTHERS CASE SIZE/WEIGHT 62×33.5×155mm [2.44×1.32×6.10 inches] (W×H×D) / 280g max (with chassis & cover : 480g max)									nplies with DEI	N-AN		
OTHERS CASE SIZE/WEIGHT 62 × 33.5 × 155mm [2.44 × 1.32 × 6.10 inches] (W × H × D) / 280g max (with chassis & cover : 480g max)				-			EN55011-B, El	N55022-B				
OTHERS	REGULATIONS											
COOLING METHOD Convection (Refer to Instruction Manual 3.1 and 3.2) *4	OTHERS) / 280g max (with chassis &	cover : 480g m	nax)	
		COOLING METHOD		Convection (F	Refer to Instruct	ion Manual 3.1	and 3.2) *4					

- Specification is changed at option, refer to Instruction Manual.

 This is the value that measured on measuring board with
- capacitor of 22 µ F at 150mm from output terminal.

 Measured by 20MHz oscilloscope or Ripple-Noise meter
- (Equivalent to KEISOKU-GIKEN: RM103).

 *3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at $25\,^{\circ}\!\text{C}\,,$ with the input voltage held constant
- at the rated input/output. Derating is required.
- () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please
- contact us about the detail.

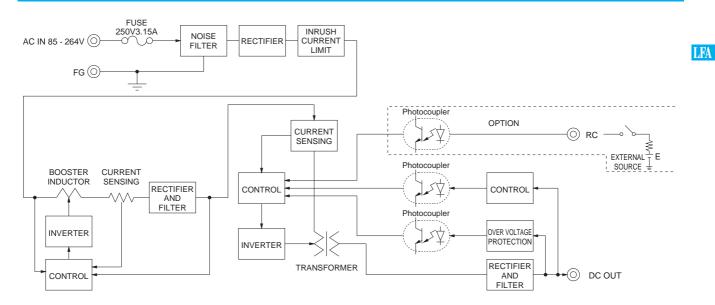
 Applicable when Remote ON/OFF (optional) is added.
- Please contact us about dynamic load and input response
- Please contact us about another class.

 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.

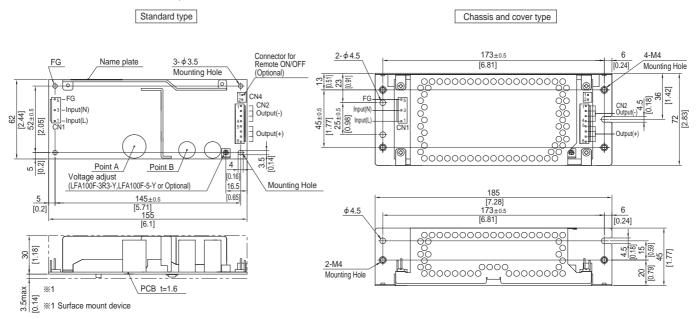
LFA100F | COSEL

Block diagram



External view

* External size of option is different from standard model.



- * 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. And do not use press-fitting bush.
- * Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/C	Connector	Mating connector			
CNIA	1-1123724-3	1-1123722-5	Chain	1123721-1	
CIVI	1-1123724-3	1-1123722-3	Loose	1318912-1	
CNO	1-1123723-8	1-1123722-8	Chain	1123721-1	
CINZ	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 1	-V
2		1 to 4	-v
3	AC(N)	5 to 8	+V
4		3106	+v
5	FG		

- * Keep drawing current per pin below 5A for CN2.
- % Tolerance : ±1 [±0.04]
- $\ensuremath{\text{\%}}$ Weight : 280g max (with chassis & cover : 480g max) $\ensuremath{\text{\%}}$ PCB material : CEM3

- % Optional chassis and cover material : Electric galvanizing steel board.
- $\ensuremath{\,\times\,}$ 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



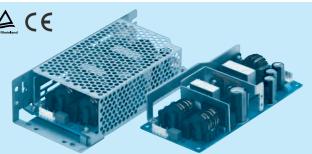
Ordering information

150









This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit,



High voltage pulse noise type: NAP series Low leakage current type: NAM series

*The EMI/EMC Filter is recommended

to connect with several devices

- ①Series name ②Single output
- 3 Output wattage
- 4 Universal input 5 Output voltage
- Optional *1
 C: with Coating
- G: Low leakage current
- H: with the function to be acceptable to output peak current (only 24V)
- J1: VH(J.S.T.)connector type R: with Remote ON/OFF R2: with Remote ON/OFF
- S: with Chassis
- SN: with Chassis & cover
- Y: with Potentiometer

Please refer to Instruction manual 5.

MODEL	LFA150F-3R3-Y	LFA150F-5-Y	LFA150F-12	LFA150F-15	LFA150F-24	LFA150F-24-H	LFA150F-36	LFA150F-48
MAX OUTPUT WATTAGE[W] *5	99	150	150	150	151.2	151.2 (189.6)	151.2	153.6
DC OUTPUT *5	3.3V 30A	5V 30A	12V 12.5A	15V 10A	24V 6.3A	24V 6.3 (7.9)A	36V 4.2A	48V 3.2A

SPECIFICATIONS

so handle the unit with care.

	MODEL		LFA150F-3R3-Y	LFA150F-5-Y	LFA150F-12	LFA150F-15	LFA150F-24	LFA150F-24-H	LFA150F-36	LFA150F-48	
	VOLTAGE[V]		AC85 - 264 1	φ (Refer to Ins	struction Manu	al 1.1 and 3.2)	*4				
	CUDDENTIAL	ACIN 100V	1.4typ (lo=100%)	2.0typ (lo=10	0%)						
	CURRENT[A]	ACIN 200V	0.7typ (lo=100%)								
	FREQUENCY[Hz]		50 / 60 (47 - 63)								
	EFFICIENCY[0/1	ACIN 100V	80.0typ	82.5typ	82.5typ	84.0typ	85.0typ	85.0typ	85.0typ	85.5typ	
NPUT	EFFICIENCY[%]	ACIN 200V	82.0typ	2.0typ 85.5typ 85.0typ 86.5typ 87.5typ 87.5typ 87.5typ 88.0typ							
	DOMED FACTOR (In 4000)	ACIN 100V	0.98typ	0.99typ							
	POWER FACTOR (Io=100%)	ACIN 200V	0.92typ	0.95typ							
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100	15typ (Io=100%) (At cold start) (Ta=25°C)							
	ACIN ACIN		30typ (lo=100	%) (At cold sta	rt) (Ta=25°C)						
	LEAKAGE CURREN	T[mA]	0.40 / 0.75ma	x (ACIN 100V	/ 240V 60Hz,	lo=100%, Acc	ording to IEC60	0950-1 and DE	N-AN)		
	VOLTAGE[V]		3.3	5	12	15	24	24	36	48	
	CURRENT[A]	*5	30	30	12.5	10	6.3	6.3 (Peak 7.9)	4.2	3.2	
	LINE REGULATION[mV] *7	20max	20max	48max	60max	96max	96max	144max	192max	
	LOAD REGULATION	[mV] *7	40max	40max	100max	120max	150max	150max	240max	240max	
	RIPPLE[mVp-p]	0 to +40°C *2	80max	80max	120max	120max	120max	240max	150max	150max	
OUTPUT	Kii i EE[iiivp p]	-10 - 0℃ *2	140max	140max	160max	160max	160max	320max	200max	200max	
	RIPPLE NOISE[mVp-p]	0 to +40°C *2	120max	120max	150max	150max	150max	300max	250max	250max	
	KII I EE NOIOE[IIIVP P]	-10 - 0°C *2	160max	160max	180max	180max	180max	360max	300max	300max	
	TEMPERATURE REGULATION[mV]		50max	50max	120max	150max	240max	240max	360max	480max	
			60max	60max	150max	180max	290max	290max	450max	600max	
	DRIFT[mV] *3 20max			20max	48max	60max	96max	96max	144max	192max	
			7	100V, Io=1009							
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%) 2.85 to 3.63 4.50 to 5.50 Fixed ("Y"option is available for adjusting output voltage)								
	OUTPUT VOLTAGE ADJUSTMENT		2.85 to 3.63		· ·		, , ,			1	
	OUTPUT VOLTAGE SET		3.30 to 3.40		11.50 to 12.50		23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00	
	OVERCURRENT PROT					· · · · · · · · · · · · · · · · · · ·	rent at option -			ř .	
PROTECTION	OVERVOLTAGE PROTE		4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20	
CIRCUIT AND OTHERS	OPERATING INDICA	IION	Not provided								
DINERS	REMOTE SENSING		Not provided								
	REMOTE ON/OFF		Option (Refer to Instruction Manual) AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)								
	INPUT-OUTPUT-RC INPUT-FG	*6	,			,	1Ω min (At Roc				
ISOLATION	OUTPUT-RC-FG	*6	· '			,	2 min (At Room				
	OUTPUT-RC	*6					2 min (At Room 2 min (At Room				
	OPERATING TEMP., HUMID. AND						struction Manu			may	
	STORAGE TEMP., HUMID. AND						0,000feet) max		. (10,0001661) 1	пал	
ENVIRONMENT	VIBRATION	, LIII ODL				0// /	ch along X, Y a				
	IMPACT				<u> </u>		along 7, 1 c	<u>L</u> UNIO			
SAFETY AND	AGENCY APPROVAL	LS	,	196.1m/s² (20G), 11ms, once each X, Y and Z axis JL60950-1, C-UL (CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN							
NOISE	CONDUCTED NOISE					EN55011-B, El					
REGULATIONS	HARMONIC ATTENU		·	1EC61000-3-2		, =,					
	CASE SIZE/WEIGHT					es] (W×H×D)	/ 390g max (w	ith chassis & c	over : 650a ma	ax)	
OTHERS	COOLING METHOD	-			tion Manual 3.					. ,	
	on is changed at entire refer							o contact us about			

- Specification is changeed at option, refer to Instruction Manual.

 This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal.

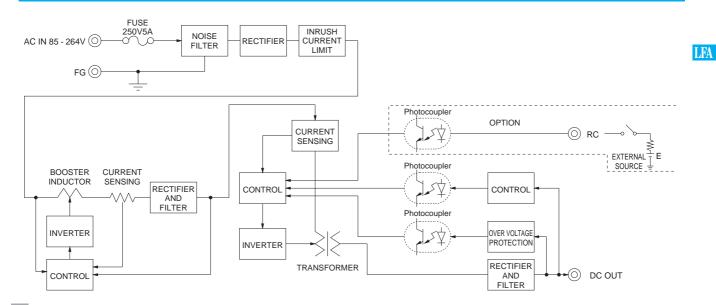
 Measured by 20MHz oscilloscope or Ripple-Noise meter
- (Equivalent to KEISOKU-GIKEN: RM103).

 *3 Drift is the change in DC output for an eight hour period after a
- half-hour warm-up at $25\,^{\circ}\!\text{C}\,,$ with the input voltage held constant
- at the rated input/output Derating is required.
- () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please
- contact us about the detail.

 Applicable when remote control (optional) is added.
- Please contact us about dynamic load and input response
- *8 Please contact us about another class
- 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.

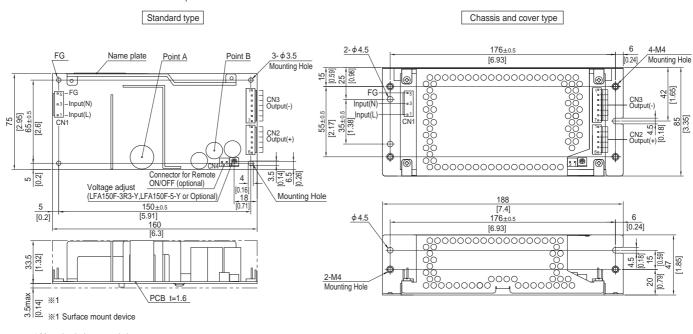
LFA150F | COSEL

Block diagram



External view

* External size of option is different from standard model.



- $\ensuremath{\,\times\,}$ 4 Mounting holes are existing.
- ** The back side of P.C.B. of the power supply is assembled some SMDs.
- W Use the spacer of 8mm length or more regarding insulation And do not use press-fitting bush.
- ※ Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

	I/C	Connector	Mating connector	Terminal		
	CN1 1-1123724-3		1-1123722-5	Chain	1123721-1	
			1-1123722-5	Loose	1318912-1	
	CN2 1-1123723-6	1-1123722-6	Chain	1123721-1		
	CINZ	1-1123723-6	1-1123722-6	Loose	1318912-1	
	CN3 1-1123723-7 1-	1-1123722-7	Chain	1123721-1		
		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>

CN1		CN2		CN3	
Pin No.	Input	Pin No.	Output	Pin No.	Output
1	AC(L)				
2					
3	AC(N)	1 to 6	+V	1 to 7	-V
4					
5	FG				

- * Keep drawing current per pin below 5A for CN2,CN3.
- % Tolerance : ±1 [±0.04]
- * Weight : 390g max (with chassis & cover : 650g 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)

Contents
RC(+)
RC(-)

Barrier strip type

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

BXH-001T-P0.6 or SXH-001T-P0.6

LFA-15

ne Ifaindd IFA-15

Ordering information

240







LFA



Recommended EMI/EMC Filter NAC-06-472

High voltage pulse noise type: NAP series Low leakage current type: NAM series

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit,

- ①Series name ②Single output
- 3 Output wattage 4 Universal input 5 Output voltage

- Optional *1
 C: with Coating
 G: Low leakage current
- H: with the function to be acceptable to output peak current (only 24V)
 J1: VH(J.S.T.)connector type
 R: with Remote ON/OFF
 R2: with Remote ON/OFF

- S: with Chassis SN: with Chassis & cover
- T : Vertical terminal block Y: with Potentiometer

Please refer to Instruction manual 5.

MODEL	LFA240F-24	LFA240F-24-H	LFA240F-36	LFA240F-48
MAX OUTPUT WATTAGE[W] *5	240	240 (300)	241.2	240
DC OUTPUT *5	24V 10A	24V 10 (12.5)A	36V 6.7A	48V 5A

SPECIFICATIONS

so handle the unit with care.

	MODEL		LFA240F-24	LFA240F-24-H	LFA240F-36	LFA240F-48			
	VOLTAGE[V]		AC85 - 264 1 φ (Refer to Ins	struction Manual 1.1 and 3.2)	\$4				
	CURRENTIAL	ACIN 100V	3.3typ (lo=100%)						
	CURRENT[A]	ACIN 200V	71 ()						
	FREQUENCY[Hz]		50 / 60 (47 - 63)						
	EFFICIENCY[%]	ACIN 100V	84.5typ	84.5typ	84.5typ	84.5typ			
INPUT	EFFICIENCY[%]	ACIN 200V	87.5typ	87.5typ	87.5typ	87.5typ			
	POWER FACTOR (Io=100%)	ACIN 100V	0.99typ						
	POWER PACTOR (10=100%)	ACIN 200V	0.95typ						
	INRUSH CURRENT[A] ACIN								
	INITOON CONNENT[A]	ACIN 200V	71 \ / \		y inrush current) (More then 3				
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max (ACIN 100V	/ 240V 60Hz, Io=100%, Acc	cording to IEC60950-1 and DE	EN-AN)			
	VOLTAGE[V]		24	24	36	48			
	CURRENT[A]	*5	-	10 (Peak12.5)	6.7	5			
	LINE REGULATION[96max	144max	192max			
	LOAD REGULATION			150max	240max	240max			
	RIPPLE[mVp-p]	0 to +40°C *2		240max	150max	150max			
	 [-10 - 0°C *2	160max	320max	200max	200max			
ОИТРИТ	RIPPLE NOISE[mVp-p]	0 to +40°C *2		300max	250max	250max			
	Kii i EE NOIOE[iiivp p]	-10 - 0°C *2	180max	360max	300max	300max			
	TEMPERATURE REGULATION[mV]		240max	240max	360max	480max			
		-10 to +40℃		290max	450max	600max			
	DRIFT[mV]	*3	96max	96max	144max	192max			
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)						
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMENT		Fixed ("Y"option is available for adjusting output voltage)						
	OUTPUT VOLTAGE SET		23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00			
	OVERCURRENT PROT			`	rrent at option -H) and recove	· · · · · · · · · · · · · · · · · · ·			
PROTECTION	OVERVOLTAGE PROTI		27.60 to 33.60	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20			
CIRCUIT AND	OPERATING INDICA	IION	Not provided						
JIIILNO	REMOTE SENSING	-	Not provided	Manual					
	REMOTE ON/OFF		Option (Refer to Instruction		10 min (At Doom Tom				
	INPUT-OUTPUT-RC INPUT-FG	*6	,		MΩ min (At Room Temperatur	/			
SOLATION	OUTPUT-RC-FG	*6	AC2,000V 1minute, Cutoff current = 10mA, DC500V $50M\Omega$ min (At Room Temperature) AC500V 1minute, Cutoff current = 25mA, DC500V $50M\Omega$ min (At Room Temperature)						
	OUTPUT-RC	*6	·	· · · · · · · · · · · · · · · · · · ·	2 min (At Room Temperature				
	OPERATING TEMP., HUMID.AND				estruction Manual 3.2), 3,000n				
	STORAGE TEMP., HUMID. AND		i e	Non condensing), 9,000m (3		ii (10,000ieet) iiiax			
ENVIRONMENT	VIBRATION		,						
	IMPACT		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis 196.1m/s² (20G), 11ms, once each X, Y and Z axis						
SAFETY AND	AGENCY APPROVAL	LS	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN						
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B						
REGULATIONS	HARMONIC ATTENU		Complies with IEC61000-3-						
	CASE SIZE/WEIGHT				D) / 550g max (with chassis &	cover : 880g max)			
OTHERS	COOLING METHOD	-	-	ction Manual 3.1 and 3.2) *4	,				
			n Manual at the rated input/		*9 Please contact us about				

- *1 Specification is changeed at option, refer to Instruction Manual.
 *2 This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal.

 Measured by 20MHz oscilloscope or Ripple-Noise meter
- (Equivalent to KEISOKU-GIKEN: RM103).

 *3 Drift is the change in DC output for an eight hour period after a
- half-hour warm-up at $25\,^{\circ}\!\text{C}\,,$ with the input voltage held constant
- at the rated input/output. Derating is required.
- () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please
- contact us about the detail.

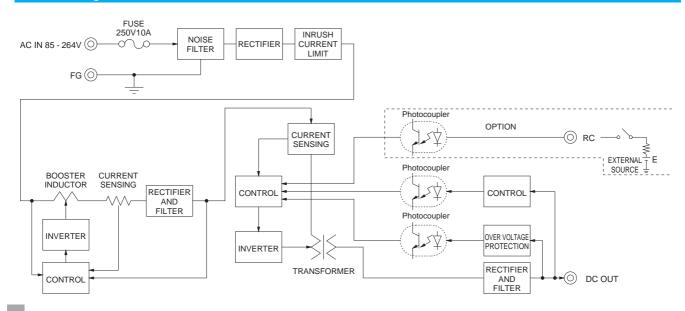
 Applicable when remote control (optional) is added.
- Please contact us about dynamic load and input response
- *8 Please contact us about another class
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover.

 Sound noise may be generated by power supply in case of
- pulse load.

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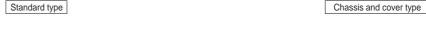
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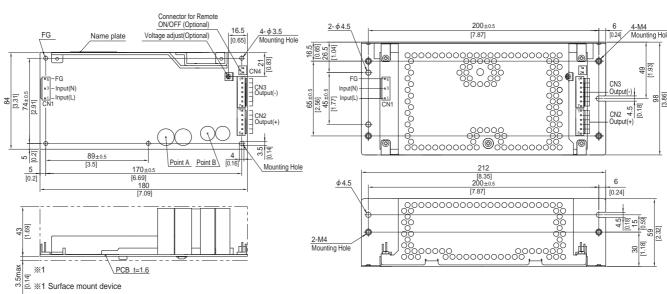
Block diagram



External view

* External size of option is different from standard model.





- % 5 Mounting holes are existing.
- * The back side of P.C.B. of the power supply is assembled some
- 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. Please refer to Instruction Manual 3.

I/C	Connector	Mating connector	Terminal		
014	1-1123724-3	1-1123722-5	Chain	1123721-1	
CNT	1-1123724-3	1-1123/22-5	Loose	1318912-1	
CNO	1-1123723-6	1-1123722-6	Chain	1123721-1	
CINZ	1-1123723-0	1-1123/22-0	Loose	1318912-1	
CNO	1-1123723-7	1-1123722-7	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 C	ONNECTI	UN:	>				
N1			CN2			CN3	
Pin No.	Input		Pin No.	Output		Pin No.	Output
1	AC(L)						
2							
3	AC(N)		1 to 6	+V		1 to 7	-V
4							
5	FG						
	N1 Pin No. 1 2 3 4	N1 Pin No. Input 1 AC(L) 2 3 AC(N) 4	N1 Pin No. Input 1 AC(L) 2 AC(N) 4	Pin No. Input 1 AC(L) 2 3 AC(N) 4 1 to 6	N1 CN2 Pin No. Input 1 AC(L) 2 3 AC(N) 4 1 to 6 +V	N1 CN2 Pin No. Input 1 AC(L) 2 3 AC(N) 4 1 to 6 +V	N1 CN2 CN3 Pin No. Input 1 AC(L) 2 3 AC(N) 4 1 to 6 +V 1 to 7

- % Keep drawing current per pin below 5A for CN2,CN3.
- % Tolerance : ±1 [±0.04]
- Weight: 550g max (with chassis & cover: 880g 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

Ordering information

300









1) Series name
2) Single output
3) Output wattage
4) Universal input
5) Output voltage
6) Optional *1

- Optional *1

 C: with Coating
 G: Low leakage current
 H: with the function to be acceptable
 to output peak current
 (Only 24V, 30V, 36V and 48V)
 J: EP (Fox Detertonics) connector type
 (Except 3.3V and 5V)
 J: VH (J.S.T.) connector type
 (Except 3.3V and 5V)
 R: with Remote ON/OFF
 S: with Remote ON/OFF
 S: with Chassis & Cover & Ian
 (Only 5V, 12V and 24V)
 T: Holizontal terminal block
 Please refer to Instruction manual 5.

ase refer to Instruction manual 5

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MODEL		LFA300F-3R3-TY	LFA300F-5-TY	LFA300F-12-TY	LFA300F-15-TY	LFA300F-24-TY	LFA300F-24-HTY	LFA300F-30-TY	LFA300F-36-TY	LFA300F-48-TY	
MAX OUTPUT WATTAGE[W] *5		198	300	324	330	336	336 (456)	330	338.4	336	
	DC OUTDUT	Convection	3.3V 40A	5V 40A	12V 17A	15V 14A	24V 12.5A	24V 12.5 (19)A	30V 10A	36V 8.4A	48V 6.3A
DC OUTPUT *5	Forced air	3.3V 60A	5V 60A	12V 27A	15V 22A	24V 14A	24V 14 (19)A	30V 11A	36V 9.4A	48V 7A	

SPECIFICATIONS

	MODEL		LFA300F-3R3-TY	LFA300F-5-TY	LFA300F-12-TY	LFA300F-15-TY	LFA300F-24-TY	LFA300F-24-HTY	LFA300F-30-TY	LFA300F-36-TY	LFA300F-48-TY	
	VOLTAGE[V]		AC85 - 264 1 ϕ (Refer to Instruction Manual 1.1 and 3.2) *4									
INPUT	CURRENT[A] ACIN 100V ACIN 200V		2.7typ (lo=100%) 4.1typ (lo=100%)									
	FREQUENCY[Hz]		50 / 60 (47 - 63)									
	POWER FACTOR (Io=100%)	ACIN 100V	75.0typ	79.0typ	80.0typ	81.5typ	85.0typ	85.0typ	85.5typ	85.5typ	85.5typ	
		ACIN 200V	77.0typ	82.5typ	83.0typ	84.5typ	88.0typ	88.0typ	88.0typ	88.0typ	88.0typ	
		ACIN 100V	0.98typ	0.99typ								
		ACIN 200V	0.92typ	0.95typ								
	INRUSH CURRENT[A]	ACIN 100V										
		ACIN 200V										
	LEAKAGE CURRENT[mA]		0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)									
	VOLTAGE[V]		3.3	5	12	15	24	24	30	36	48	
	CURRENT[A] *5	Convection	40	40	17	14	12.5	12.5 (Peak19)	10	8.4	6.3	
		Forced air	60	60	27	22	14	14 (Peak19)	11	9.4	7	
	LINE REGULATION[20max	48max	60max	96max	96max	144max	144max	192max	
	LOAD REGULATION		40max	40max	100max	120max	150max	150max	240max	240max	240max	
	RIPPLE[mVp-p]	0 to +40°C *2		80max	120max	120max	120max	240max	150max	150max	150max	
		-10 - 0°C *2	140max	140max	160max	160max	160max	320max	200max	200max	200max	
OUTPUT	RIPPLE NOISE[mVp-p]	0 to +40°C *2		120max	150max	150max	150max	300max	250max	250max	250max	
		-10 - 0°C *2		160max	180max	180max	180max	360max	300max	300max	300max	
	TEMPERATURE REGULATION[mV]	-10 to +40 ℃	50max	50max	120max	150max	240max 290max	240max	360max	360max	480max 600max	
	DDIET/\/I		60max 20max	60max 20max	150max 48max	180max		290max	450max 144max	450max 144max	192max	
	DRIFT[mV] *3 START-UP TIME[ms]					60max	96max	96max	144max	144max	192max	
	HOLD-UP TIME[ms]		350typ (ACIN 100V, Io=100%) 20typ (ACIN 100V, Io=100%)									
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]			4.50 to 5.50	10.80 to 13.20	13.50 to 16.50	21 60 to 27 50	21.60 to 27.50	27 00 to 33 00	32.40 to 39.60	39.60 to 52.80	
	OUTPUT VOLTAGE SETTING[V]		3.30 to 3.40	5.00 to 5.15	12.00 to 13.48	15.00 to 15.60			30.00 to 31.20	36.00 to 37.44	48.00 to 49.92	
	OVERCURRENT PROTECTION		Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically									
PROTECTION	OVERVOLTAGE PROTECTION		4.00 to 5.25	5.75 to 7.00				,		41.40 to 50.40	55.20 to 67.20	
CIRCUIT AND			4.00 to 5.25 5.75 to 7.00 13.80 to 16.80 17.25 to 21.00 27.60 to 33.60 27.60 to 33.60 34.50 to 42.00 41.40 to 50.40 55.20 to 67.20 Not provided									
OTHERS	REMOTE SENSING		Not provided									
	REMOTE ON/OFF		Option (Refer to Instruction Manual)									
	INPUT-OUTPUT-RC *6											
ICOL ATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)									
ISOLATION	OUTPUT-RC-FG *6		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)									
	OUTPUT-RC *6		AC100V 1minute, Cutoff current = 25mA, DC100V 10M Ω min (At Room Temperature)									
	OPERATING TEMP.,HUMID.AND ALTITUDE *4		7 7 7									
ENVIRONMENT	STORAGE TEMP., HUMID. AND ALTITUDE		3//									
ENVIRUNIVIENI	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis									
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis									
SAFETY AND	AGENCY APPROVALS		UL60950-1, C-UL (CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN									
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B									
REGULATIONS	HARMONIC ATTENU			ith IEC61000								
OTHERS	CASE SIZE/WEIGHT								g max (with ch	assis & cover :	1,270g max)	
	COOLING METHOD	Convection	/ Forced air	(Refer to Inst	truction Manu	al 3.1 and 3.	2) *4					

- *1 Specification is changeed at option, refer to Instruction Manual.*2 This is the value that measured on measuring board with
- capacitor of 22 µ F at 150mm from output terminal.

 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).

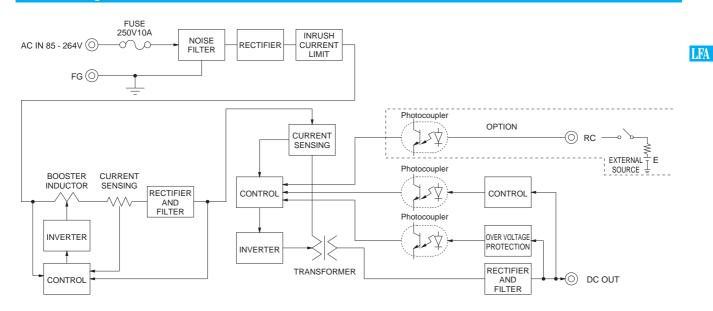
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- () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please
- contact us about the detail.

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- Please contact us about dynamic load and input response
- *8 Please contact us about another class
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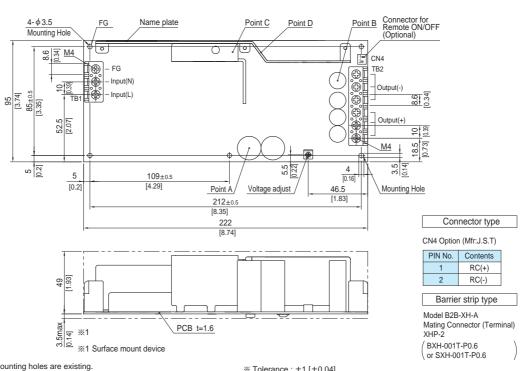
Block diagram



External view

* External size of option is different from standard model.

Standard type



- ** The back side of P.C.B. of the power supply is assembled some
- Be attention not to bump against the attached area by vibration.
- W Use the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- * Point A, Point B, Point C, Point D are thermometry points. Please refer to Instruction Manual 3.
- X Tolerance: ±1 [±0.04]
- Weight: 810g max (with chassis & cover: 1,270g max)
- * PCB material : CEM3
- ※ Dimensions in mm, []=inches
- Screw tightening torque: M4 1.6N · m (16.9kgf · cm) max

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