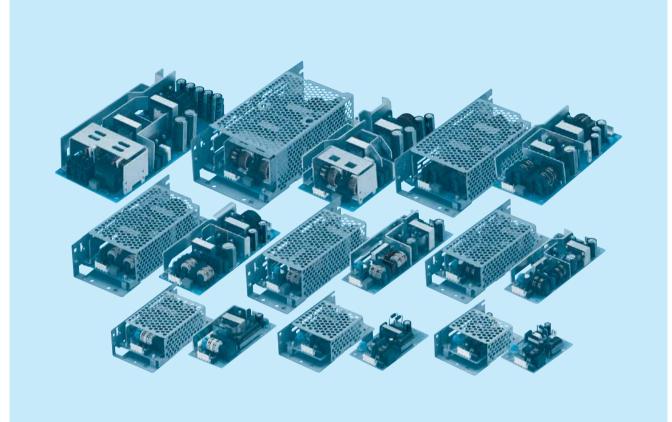
AC-DC Power Supplies Open Frame/ Enclosed Type





LFA-series



Feature

Small and compact PCB construction Built-in inrush current, overcurrent and overvoltage protection circuits Harmonic attenuator (Complies with IEC61000-3-2) Universal input (AC85-264V) Power factor correction (LFA50F-300F) Built-in reducing standby power circuit (LFA10F, 15F)

Safety agency approvals

UL60950-1, C-UL(CSA60950-1), EN62368-1 Complies with DEN-AN

EMI

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

5-year warranty (refer to Instruction Manual)

CE marking

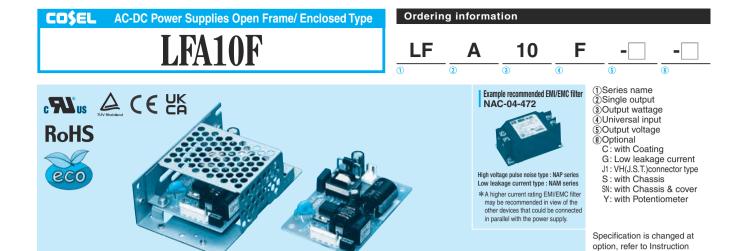
Low Voltage Directive RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations RoHS Regulations

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



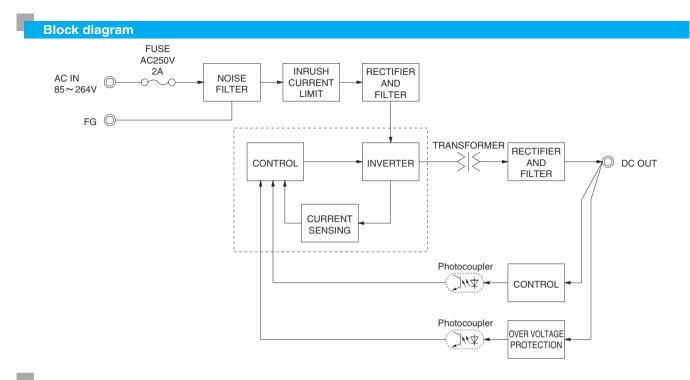
| MODEL | LFA10F-3R3-Y | LFA10F-5 | LFA10F-12 | LFA10F-15 | LFA10F-24 |
|-----------------------|--------------|----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 6.6 | 10 | 10.8 | 10.5 | 12 |
| DC OUTPUT | 3.3V 2A | 5V 2A | 12V 0.9A | 15V 0.7A | 24V 0.5A |
| | | | | | |

SPECIFICATIONS

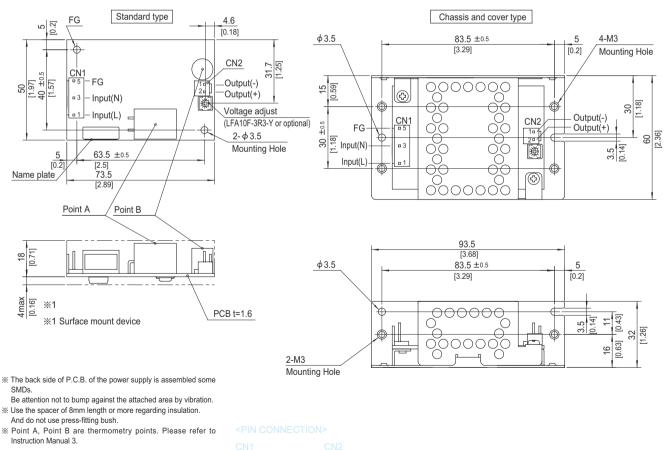
| | MODEL | | LFA10F-3R3-Y | LFA10F-5 | LFA10F-12 | LFA10F-15 | LFA10F-24 | | | |
|--|------------------------------------|--------------|---|--|--|--|---|--|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 ¢ (Refe | r to "Derating", Instru | ction Manual 1 and 3) *3 | · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · | | | |
| | | ACIN 100V | 0.18typ (lo=100%) | 0.26typ (lo=100% |) | | | | | |
| | CURRENT[A] | ACIN 200V | 0.11typ (lo=100%) | 0.16typ (lo=100% |) | | | | | |
| | FREQUENCY[Hz] | | 50 / 60 (47 - 440) | | | | | | | |
| NPUT | | 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 | | | |
| | | ACIN 100V | 15typ (lo=100%) | | | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 30typ (lo=100%) | 30typ (lo=100%) | | | | | | |
| | LEAKAGE CURRENT | [mA] | 0.15/0.30max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC62368-1 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[m | 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 | 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°C | 160max | 160max | 180max | 180max | 180max | | | |
| | *1 | lo=0 - 35% | 240max | 240max | 300max | 300max | 320max | | | |
| | | 0 to +50°C | 50max | 50max | 120max | 150max | 240max | | | |
| | TEMPERATURE REGULATION[mV] | -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=1 | 00%) *Start-up time is | 700ms typ for less than 1 mir | nute of applying input again | from turning off the input voltage | | | |
| OL | 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 o | utput voltage between ± | 10%) | | | |
| | OUTPUT VOLTAGE SETTING[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 rating and recovers automatically | | | | | | | |
| ROTECTION | 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 | | | |
| IRCUIT AND | OPERATING INDICAT | ION | Not provided | | | | | | | |
| THERS | REMOTE SENSING | | Not provided | | | | | | | |
| | REMOTE ON/OFF | | Not provided | | | | | | | |
| | INPUT-OUTPUT | | | | , DC500V 50M Ω min (At | / | | | | |
| SOLATION | INPUT-FG | | | | , DC500V 50M Ω min (At | | | | | |
| | OUTPUT-FG | | | | DC500V 50MΩ min (At F | | | | | |
| | OPERATING TEMP., HUMID.AND | | | | , , , , , , , , , , , , , , , , , , , | , | 00m (10,000 feet) max *3 | | | |
| INVIRONMENT | STORAGE TEMP., HUMID.AND A | LTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max | | | | | | | |
| | VIBRATION | | | | , 60minutes each along > | (, Y and Z axis | | | | |
| | IMPACT | | 196.1m/s² (20G), 11m | | | | | | | |
| SAFETY AND | AGENCY APPROVAL | s | | | 8-1 Complies with DEN-A | AN | | | | |
| NOISE | CONDUCTED NOISE | | | | EN55011-B, EN55022-B | | | | | |
| REGULATIONS | HARMONIC ATTENU | ATOR | | | (Not built-in to active filter | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | - | | es] (W×H×D) / 55g max | (with chassis & cover : 1 | 150g max) | | | |
| | COOLING METHOD | | Convection (Refer to " | Derating", Instruction | n Manual 3) *3 | | | | | |
| *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). A circuit reducing standby power is built in this unit. Therefore, the internal switch element is intermittent | | | Please r ter *2 Drift is ti a half-ho constan | =0-35% is different. refer to the Instruction Mar he change in DC output fo our warm-up at 25°C, with t at the rated input/output. is required. | r an eight hour period after the input voltage held | *6 Please contact us about a * To meet the specifications * Parallel operation is not performed and per | lynamic load and input response. Inother class. 5. Do not operate over-loaded conditi | | | |
| | I, and the Ripple/Ripple Noise | 147 | in load *4 When ty | | ting it may not comply with | Sound noise may be gene | erated by power supply in case of p | | | |

the IEC61000-3-2. December 27, 2022 Manual.





External view



| | 4 4400700 5 | Chain | 1123721-1 |
|--|-------------|-------|-----------|
| | 1-1123722-5 | Loose | 1318912-1 |
| | 4 4400700 0 | Chain | 1123721-1 |
| | 1-1123722-2 | Loose | 1318912-1 |
| | | | |

※ I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

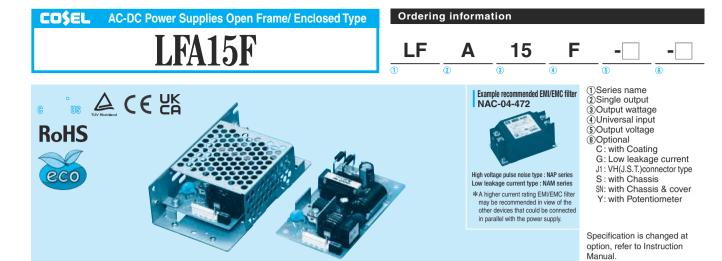
December 27, 2022

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

* Dimensions in mm, []=inches

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

※ Mounting torque (Mounting hole of chassis): 0.6N * m (6.3kgf * cm) max



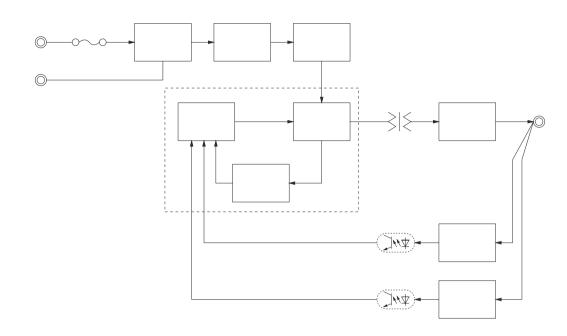
| MODEL | LFA15F-3R3-Y | LFA15F-5 | LFA15F-12 | LFA15F-15 | LFA15F-24 |
|-----------------------|--------------|----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 9.9 | 15 | 15.6 | 15 | 16.8 |
| DC OUTPUT | 3.3V 3A | 5V 3A | 12V 1.3A | 15V 1A | 24V 0.7A |
| | | | | | |

SPECIFICATIONS

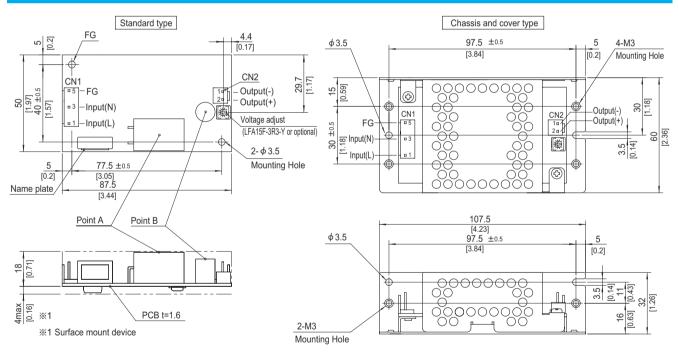
| REQUENCY[Hz] FFICIENCY[%] RUSH CURRENT[A] EAKAGE CURRENT OLTAGE[V] URRENT[A] INE REGULATION[M OAD REGULATION[M | ACIN 100V ACIN 200V ACIN 100V ACIN 200V ACIN 100V ACIN 200V [mA] | 30typ (lo=100%) (At co | 0.35typ (lo=100%) 0.20typ (lo=100%) 73.0typ 76.0typ Id start) (Ta=25°C) | 76.0typ 78.5typ | 77.0typ | | | | | |
|--|---|---|--|---|--|---|--|--|--|--|
| REQUENCY[Hz] FFICIENCY[%] RUSH CURRENT[A] EAKAGE CURRENT OLTAGE[V] URRENT[A] INE REGULATION[M OAD REGULATION[M | ACIN 200V ACIN 100V ACIN 200V ACIN 100V ACIN 200V | 0.15typ (lo=100%) 50 / 60 (47 - 440) 68.0typ 69.0typ 15typ (lo=100%) (At cc 30typ (lo=100%) (At cc | 0.20typ (lo=100%) 73.0typ 76.0typ Id start) (Ta=25°C) | | | | | | | |
| REQUENCY[Hz] FFICIENCY[%] IRUSH CURRENT[A] EAKAGE CURRENT[OLTAGE[V] CURRENT[A] INE REGULATION[M OAD REGULATION[M | ACIN 100V ACIN 200V ACIN 100V ACIN 200V | 50 / 60 (47 - 440) 68.0typ 69.0typ 15typ (Io=100%) (At cc 30typ (Io=100%) (At cc | 73.0typ 76.0typ Id start) (Ta=25°C) | | | | | | | |
| FFICIENCY[%] RUSH CURRENT[A] EAKAGE CURRENT[OLTAGE[V] URRENT[A] INE REGULATION[m OAD REGULATION[m | ACIN 200V ACIN 100V ACIN 200V | 68.0typ 69.0typ 15typ (Io=100%) (At cc 30typ (Io=100%) (At cc | 76.0typ old start) (Ta=25°C) | | | | | | | |
| FFICIENCY[%] IRUSH CURRENT[A] EAKAGE CURRENT[OLTAGE[V] URRENT[A] INE REGULATION[m OAD REGULATION[n | ACIN 200V ACIN 100V ACIN 200V | 69.0typ 15typ (lo=100%) (At cc 30typ (lo=100%) (At cc | 76.0typ old start) (Ta=25°C) | | | | | | | |
| NRUSH CURRENT[A] EAKAGE CURRENT OLTAGE[V] CURRENT[A] INE REGULATION[M OAD REGULATION[M | ACIN 100V ACIN 200V | 15typ (lo=100%) (At co 30typ (lo=100%) (At co | old start) (Ta=25℃) | 78.5typ | | 78.0typ | | | | |
| IRUSH CURRENT[A] EAKAGE CURRENT OLTAGE[V] CURRENT[A] INE REGULATION[m OAD REGULATION[n | ACIN 200V | 30typ (lo=100%) (At co | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | 80.0typ | 81.5typ | | | | |
| EAKAGE CURRENT OLTAGE[V] :URRENT[A] INE REGULATION[m OAD REGULATION[r | | 71 (7 (| (Int at a with (The 105°C)) | 15typ (lo=100%) (At cold start) (Ta=25°C) | | | | | | |
| OLTAGE[V] CURRENT[A] INE REGULATION[m OAD REGULATION[t | [mA] | 0.15/0.30max (ACIN 10 | 30typ (lo=100%) (At cold start) (Ta=25°C) | | | | | | | |
| URRENT[A] INE REGULATION[m OAD REGULATION[r | | | 0.15/0.30max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-AN) | | | | | | | |
| INE REGULATION[m OAD REGULATION[i | | 3.3 | 5 | 12 | 15 | 24 | | | | |
| INE REGULATION[m OAD REGULATION[i | | 3.0 | 3.0 | 1.3 | 1.0 | 0.7 | | | | |
| OAD REGULATION[| V1 *5 | 20max | 20max | 48max | 60max | 96max | | | | |
| - | | 40max | 40max | 100max | 120max | 150max | | | | |
| | 0 to +50℃ | 80max | 80max | 120max | 120max | 120max | | | | |
| lIPPLE[mVp-p] | -10 - 0°C | 140max | 140max | 160max | 160max | 160max | | | | |
| *1 | lo=0 - 35% | 190max | 160max | 240max | 240max | 280max | | | | |
| | 0 to +50°C | 120max | 120max | 150max | 150max | 150max | | | | |
| IPPLE NOISE[mVp-p] | -10 - 0°C | 160max | 160max | 180max | 180max | 180max | | | | |
| *1 | lo=0 - 35% | 240max | 240max | 300max | 300max | 320max | | | | |
| | 0 to +50℃ | 50max | 50max | 120max | 150max | 240max | | | | |
| EMPERATURE REGULATION[mV] | -10 to +50℃ | 60max | 60max | 150max | 180max | 290max | | | | |
| DRIFT[mV] *2 | | 20max | 20max | 48max | 60max | 96max | | | | |
| TART-UP TIME[ms] | ÷2 | | | Oms typ for less than 1 minute | | | | | | |
| HOLD-UP TIME[ms] | | | | uns typ for less than Thinut | e or applying input again in | on the input voltag | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | 20typ (ACIN 100V, lo= 2.85 to 3.63 | , , , , , , , , , , , , , , , , , , , | vailable for adjusting outs | | 00/) | | | | |
| | | | 4.90 to 5.30 | vailable for adjusting outp 11.50 to 12.50 | 14.40 to 15.60 | 23.00 to 25.00 | | | | |
| VERCURRENT PROTE | | 3.30 to 3.40 | 1 | | 14.40 10 15.60 | 23.00 10 25.00 | | | | |
| | | Works over 105% of rating and recovers automatically | | | | | | | | |
| VERVOLTAGE PROTEC | | 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 | | | | | | | | |
| | ION | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | , , | | | | | |
| , | | | | | | 0m (10,000 feet) max *3 | | | | |
| 1 | LTITUDE | | | | | | | | | |
| | | | <u> </u> | | and Z axis | | | | | |
| | | | | | | | | | | |
| | S | | | | | | | | | |
| | | | | | | | | | | |
| | TOR | <u> </u> | | / | | | | | | |
| | | - | | | ith chassis & cover : 19 | JOg max) | | | | |
| OOLING METHOD | | Convection (Refer to "E | Derating", Instruction N | Ianual 3) *3 | | | | | | |
| f 22 µ F at 150mm from outp | ut terminal. pple-Noise n 3). t in this unit. | Please re neter *2 Drift is th a half-hor constant | efer to the Instruction Manua e change in DC output for ar ur warm-up at 25°C, with the at the rated input/output. | eight hour period after *6 | Please contact us about and To meet the specifications. I Parallel operation is not pos | namic load and input response. other class. Do not operate over-loaded condit | | | | |
| | MOTE SENSING MOTE ON/OFF PUT-OUTPUT PUT-FG TPUT-FG RATING TEMP,HUMID.AND / ARGE TEMP,HUMID.AND / ARATION PACT ENCY APPROVALS NDUCTED NOISE RMONIC ATTENU/ SE SIZE/WEIGHT OLING METHOD Use that measured on meas 2 µ F at 150mm from outp 20MHz oscilloscope or Ri KEISOKU-GIKEN: RM10 ing standby power is buil | MOTE ON/OFF PUT-OUTPUT PUT-FG TPUT-FG RATING TEMP,HUMID.AND ALTITUDE RAGE TEMP,HUMID.AND ALTITUDE RATION PACT ENCY APPROVALS NDUCTED NOISE RMONIC ATTENUATOR SE SIZE/WEIGHT OLING METHOD ue that measured on measuring boars 2 µ F at 150mm from output terminal. 20MHz oscilloscope or Ripple-Noise n KEISOKU-GIKEN: RM103). ing standby power is built in this unit. | MOTE SENSING Not provided MOTE ON/OFF Not provided PUT-OUTPUT AC3,000V 1minute, Cut PUT-FG AC2,000V 1minute, Cut TPUT-FG AC500V 1minute, Cut RATING TEMP, HUMID.AND ALTITUDE -10 to +70°C, 20 - 90% RAGE TEMP, HUMID.AND ALTITUDE -20 to +75°C, 20 - 90% BRATION 10 - 55Hz, 19.6m/s² (20G), 11ms ENCY APPROVALS UL60950-1, C-UL (CS/ NDUCTED NOISE Complies with FCC-B, RMONIC ATTENUATOR S0×22×87.5mm [1.97 OLING METHOD Convection (Refer to "T PL et at 150mm from output terminal. Please re 20Hz oscilloscope or Ripple-Noise meter *2 PL et at 150mm from output terminal. Please re 20MHz oscilloscope or Ripple-Noise meter *2 REISOKU-GIKEN: RM103). and Horo ing standby power is built in this unit. constant | MOTE SENSING Not provided MOTE ON/OFF Not provided MOTE ON/OFF Not provided PUT-OUTPUT AC3,000V 1minute, Cutoff current = 10mA, D PUT-FG AC2,000V 1minute, Cutoff current = 25mA, DC RATINGTEMP,HUMID.AND ALTITUDE -10 to +70°C, 20 - 90%RH (Non condensing) RAGE TEMP,HUMID.AND ALTITUDE -20 to +75°C, 20 - 90%RH (Non condensing) RAGE TEMP,HUMID.AND ALTITUDE -20 to +75°C, 20 - 90%RH (Non condensing) RAGE TEMP,HUMID.AND ALTITUDE -20 to +75°C, 20 - 90%RH (Non condensing) RAGE TEMP,HUMID.AND ALTITUDE -20 to +75°C, 20 - 90%RH (Non condensing) BRACT 196.1m/s² (20G), 11ms, once each X, Y and 2 BRONIC ATTENUATOR Complies with FCC-B, VCCI-B, CISPR-B, EN RMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *6' (No SE SIZE/WEIGHT 50 ×22 × 87.5mm [1.97 × 0.87 × 3.44 inches] OLING METHOD Convection (Refer to "Derating", Instruction M Que that measured on measuring board with 24 F at 150mm from output terminal. *22 20Hz oscilloscope or Ripple-Noise meter *22 %EISOKU-GIKEN: RM103). Pater to the Instruction Manual Drift is the change in DC output for an a half-hour warm-up at 25°C, witht the constant at the r | MOTE SENSINGNot providedMOTE ON/OFFNot providedPUT-OUTPUTAC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At RoPUT-FGAC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At RoPUT-FGAC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At RoRATINGTEMP,HUMID.AND ALTITUDE-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", InstrRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maREALTON10 - 55Hz, 19.6m/s² (2GG), 11ms, once each X, Y and Z axisBINDUCTED NOISEComplexes with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-BRMONIC ATTENUATORComplexes with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-BS | MOTE SENSING Not provided MOTE ON/OFF Not provided MOTE ON/OFF Not provided PUT-OUTPUT AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) PUT-FG AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) TPUT-FG AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) RATINGTEMP,HUMID.AND ALTITUDE -10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000 RAGE TEMP,HUMID.AND ALTITUDE -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max IRATION 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis PACT 196.1m/s² (2G), 11ms, once each X, Y and Z axis ENCY APPROVALS UL60950-1, C-UL (CSA60950-1), EN62368-1 Complies with DEN-AN NDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B RMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *6 (Not built-in to active filter) *4 SE SIZE/WEIGHT 50 ×22 × 87.5mm [1.97 × 0.87 × 3.44 inches] (W × H × D) / 80g max (with chassis & cover : 19 OLING METHOD Convection (Refer to "Derating", Instruction Manual 3), *3 ue that measured on measuring board with KEISOKU-GIKEN: RM103). factor lo-0-35% is differe | | | | |

the IEC61000-3-2. December 27, 2022





External view



% 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.

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.

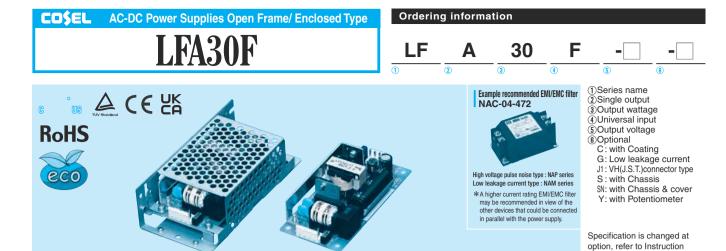
| 4 4400700 5 | Chain | 1123721-1 |
|-------------|-------|-----------|
| 1-1123722-5 | Loose | 1318912-1 |
| 1-1123722-2 | Chain | 1123721-1 |
| 1-1123722-2 | Loose | 1318912-1 |
| | | |

※ I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

% 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



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 | 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

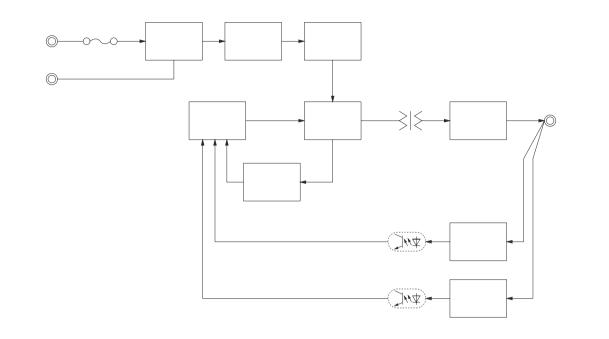
| | MODEL | | LFA30F-3R3-Y | LFA30F-5 | LFA30F-12 | LFA30F-15 | LFA30F-24 | | |
|------------|---|-------------|--|-----------------------|-------------------------------|--------------------------------|------------------------|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 ¢ (Re | er to "Derating", Ins | truction Manual 1 and 3 |) *3 | | | |
| | CURRENT[A] | ACIN 100V | 0.50typ (lo=100%) | 0.65typ (lo=100% | %) | | | | |
| | CONNENT[A] | ACIN 200V | 0.30typ (lo=100%) | 0.35typ (lo=100% | %) | | | | |
| | FREQUENCY[Hz] | | 50 / 60 (47 - 440) | | | | | | |
| NPUT | EFFICIENCY[%] | ACIN 100V | 73typ | 76typ | 79typ | 81typ | 82typ | | |
| | | ACIN 200V | 75typ | 79typ | 81typ | 83typ | 84typ | | |
| | | ACIN 100V | 15typ (Io=100%) (At cold start) (Ta=25°C) | | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 30typ (Io=100%) (At cold start) (Ta=25°C) | | | | | | |
| | LEAKAGE CURRENT[mA] | | 0.30 / 0.65max (ACI | N 100V / 240V 60H | Iz, Io=100%, According | to IEC62368-1 and DEM | N-AN) | | |
| | 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 | | |
| | | 0 to +50℃*1 | 80max | 80max | 120max | 120max | 120max | | |
| | RIPPLE[mVp-p] | -10-0°C *1 | 140max | 140max | 160max | 160max | 160max | | |
| | | 0 to +50℃*1 | 120max | 120max | 150max | 150max | 150max | | |
| OUTPUT | RIPPLE NOISE[mVp-p] | -10-0°C *1 | 160max | 160max | 180max | 180max | 180max | | |
| | | 0 to +50℃ | 50max | 50max | 120max | 150max | 240max | | |
| | TEMPERATURE REGULATION[mV] | -10 to +50℃ | 60max | 60max | 150max | 180max | 290max | | |
| | DRIFT[mV] | *2 | 20max | 20max | 48max | 60max | 96max | | |
| Н | START-UP TIME[ms] | | 150typ (ACIN 100V, | lo=100%) | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 100V, I | p=100%) | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | 2.85 to 3.63 | Fixed ("Y"option | is available for adjusting | output voltage betweer | 1 ±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 | | |
| | OVERCURRENT PROT | ECTION | Works over 105% of rating and recovers automatically | | | | | | |
| ROTECTION | 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 | | |
| IRCUIT AND | OPERATING INDICA | TION | Not provided | | | | | | |
| THERS | REMOTE SENSING | | Not provided | | | | | | |
| | REMOTE ON/OFF | | Not provided | | | | | | |
| | INPUT-OUTPUT | | AC3,000V 1minute, | Cutoff current = 10r | nA, DC500V 50M Ω min | (At Room Temperature |) | | |
| SOLATION | INPUT-FG | | AC2,000V 1minute, | Cutoff current = 10r | nA, 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 | O ALTITUDE | -10 to +70°C, 20 - 90 | %RH (Non condens | sing) (Refer to "Derating" | , Instruction Manual 3), | 3,000m (10,000feet) ma | | |
| NVIRONMENT | STORAGE TEMP., HUMID.AND | ALTITUDE | -20 to +75°C, 20 - 90 | %RH (Non conden | sing), 9,000m (30,000fe | et) max | | | |
| | VIBRATION | | 10 - 55Hz, 19.6m/s ² | (2G), 3minutes peri | od, 60minutes each alo | ng X, Y and Z axis | | | |
| | IMPACT | | 196.1m/s2 (20G), 11 | ms, once each X, Y | and Z axis | | | | |
| AFETY AND | AGENCY APPROVAL | LS | UL60950-1, C-UL (0 | SA60950-1), EN62 | 368-1 Complies with DE | N-AN | | | |
| OISE | CONDUCTED NOISE | | Complies with FCC- | B, VCCI-B, CISPR-I | B, EN55011-B, EN5502 | 2-B | | | |
| EGULATIONS | HARMONIC ATTENU | JATOR | Complies with IEC61 | 000-3-2 (Class A) *6 | (Not built-in to active filte | r) *4 | | | |
| DTHERS | CASE SIZE/WEIGHT | | 50×26.5×105mm | 1.97×1.04×4.13 ir | nches] (W×H×D) / 130 | g max (with chassis & c | over : 260g max) | | |
| ULLUS | COOLING METHOD | | Convection (Refer to | "Derating", Instruct | ion Manual 3) *3 | | | | |
| from ou | the value that measured or tput terminal. ed by 20MHz oscilloscope of | | | | Please contact us for | out dynamic load and input res | | | |

*2 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.

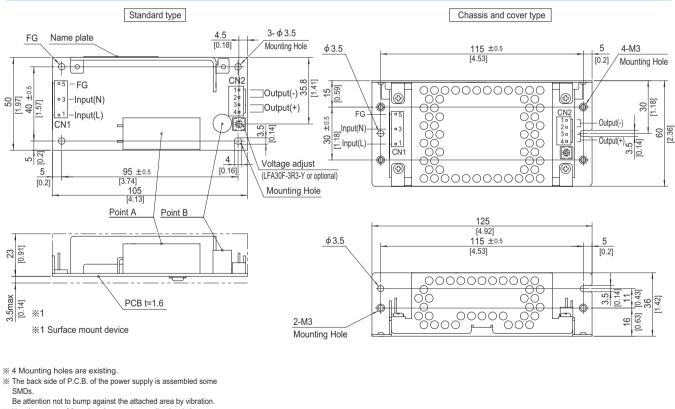
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
 Derating is required when operated with chassis and cover.
 - Derating is required when operated with chassis and cover. Sound noise may be generated by power supply in case of pulse load.

Manual.









- 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 | | | |
|------|-------------|------------------|---------|-----------------|--|
| 014 | 1-1123724-3 | 1-1123722-5 | Chain | 1123721-1 | |
| CINT | 1-1123724-3 | 1-1123722-5 | Loose | 1318912-1 | |
| 010 | 1-1123723-4 | 1-1123722-4 | Chain | 1123721-1 | |
| CINZ | 1-1123723-4 | 1-1123722-4 | Loose | 1318912-1 | |
| | | | (Mfr:Tv | co Electronics) | |

※ I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

| CN1 | | CN2 | |
|---------|-------|---------|--------|
| Pin No. | Input | Pin No. | Output |
| 1 | AC(L) | | -\/ |
| 2 | | 1, 2 | - V |
| 3 | AC(N) | | +\/ |
| 4 | | 3, 4 | ΨV |
| 5 | FG | | |

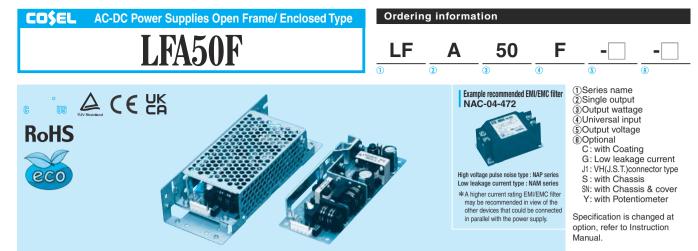
- % Tolerance : ±1 [±0.04] % Weight: 130g max (with chassis & cover : 260g max)
- % PCB material / thickness : CEM3 / 1.6mm

% 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

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

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| 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 "Derat | ing", Instruction | Manual 1 and 3) | *3 | | | |
| | | ACIN 100V | 0.47typ (lo=100%) | 0.67typ (lo=100 |)%) | | | | | |
| | CURRENT[A] | ACIN 200V | 0.27typ (lo=100%) | 0.36typ (lo=100 |)%) | | | | | |
| | FREQUENCY[Hz] | | 50 / 60 (47 - 63) | | | | | | | |
| | | ACIN 100V | 73.5typ | 77.5typ | 80.0typ | 80.5typ | 81.5typ | 82.0typ | 81.0typ | |
| IPUT | EFFICIENCY[%] | ACIN 200V | 74.0typ | 79.0typ | 81.5typ | 81.5typ | 83.0typ | 83.5typ | 82.5typ | |
| | | ACIN 100V | 0.96typ | 0.97typ | | | | | | |
| | POWER FACTOR (Io=100%) | ACIN 200V | 0.83typ 0.90typ | | | | | | | |
| | | 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 | | 0.40 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and 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 | | 40max | 40max | 100max | 120max | 150max | 240max | 240max | |
| | | 0 to +50℃*1 | 80max | 80max | 120max | 120max | 120max | 150max | 150max | |
| | RIPPLE[mVp-p] | -10-0°C *1 | 140max | 140max | 160max | 160max | 160max | 200max | 200max | |
| | | 0 to +50℃*1 | 120max | 120max | 150max | 150max | 150max | 250max | 250max | |
| UTPUT | RIPPLE NOISE[mVp-p] | -10-0°C *1 | 160max | 160max | 180max | 180max | 180max | 300max | 300max | |
| | | 0 to +50℃ | | 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 | |
| S | START-UP TIME[ms] | | 350typ (ACIN 100V, Io=100%) | | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 100V, lo=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 | tically | | | | |
| ROTECTION | 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 | 41.40 to 50.40 | 55.20 to 67.20 | |
| IRCUIT AND | OPERATING INDICA | TION | Not provided | | | | - | - | | |
| THERS | REMOTE SENSING | | Not provided | | | | | | | |
| | REMOTE ON/OFF | | Not provided | | | | | | | |
| | INPUT-OUTPUT | | AC3,000V 1mir | ute, Cutoff curre | nt = 10mA, DC5 | 00V 50M Ω min | At Room Tempe | erature) | | |
| SOLATION | INPUT-FG | | AC2,000V 1mir | ute, Cutoff curre | nt = 10mA, DC5 | 00V 50M Ω min | (At Room Tempe | erature) | | |
| | OUTPUT-FG | | AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature) | | | | | | | |
| | OPERATING TEMP., HUMID. AND | ALTITUDE | -10 to +70℃, 20 |) - 90%RH (Non | condensing) (Re | efer to "Derating", | Instruction Man | ual 3), 3,000m (1 | 0,000feet) max | |
| | STORAGE TEMP., HUMID. AND | ALTITUDE | -20 to +75℃, 2 | 0 - 90%RH (Non | condensing), 9, | 000m (30,000fee | t) max | | | |
| NVIRONMENT | VIBRATION | | 10 - 55Hz, 19.6 | m/s² (2G), 3minu | ites period, 60m | inutes each alon | g X, Y and Z axis | 3 | | |
| | IMPACT | | 196.1m/s² (20G |), 11ms, once ea | ach X, Y and Z a | xis | | | | |
| AFETY AND | AGENCY APPROVAL | s | UL60950-1, C-I | JL (CSA60950-1 |), EN62368-1 C | omplies with DEI | N-AN | | | |
| OISE | CONDUCTED NOISE | | Complies with F | CC-B, VCCI-B, | CISPR-B, EN55 | 011-B, EN55022 | -B | | | |
| EGULATIONS | HARMONIC ATTENU | ATOR | Complies with I | EC61000-3-2 (C | lass A) *5 | | | | | |
| | CASE SIZE/WEIGHT | | 50×26.5×132 | mm [1.97×1.04 | ×5.20 inches] (V | V×H×D) / 165g | max (with chase | sis & cover : 325 | g max) | |
| DTHERS | COOLING METHOD | | Convection (Re | fer to "Derating", | Instruction Man | ual 3) *3 | | | | |
| from ou | | Ripple-No | ise meter (Equivalen | | *4 Pl 1: *5 Pl * To | erating is required. ease contact us about ease contact us about meet the specification | it another class. ons. Do not operate c | input response. | | |

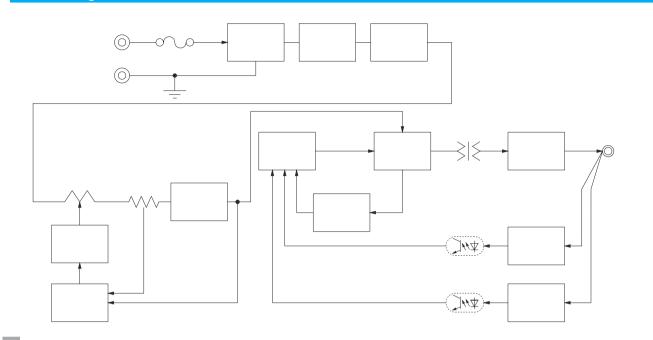
*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

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Parallel operation is not possible.

Derating is required when operated with chassis and cover

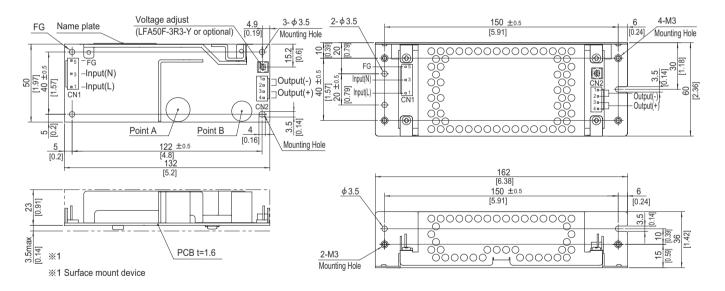




External view

Standard type

Chassis and cover type



% 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. Please refer to Instruction Manual 3.

| I/C | Connector | Mating connector | | | | | |
|------------------------|-----------------|------------------|-------|-----------|--|--|--|
| 0.14 | 4 4400704 0 | 1-1123722-5 | Chain | 1123721-1 | | | |
| CINT | CN1 1-1123724-3 | 1-1123722-5 | Loose | 1318912-1 | | | |
| CNID | CN2 1-1123723-4 | 1-1123722-4 | Chain | 1123721-1 | | | |
| CINZ | | 1-1123/22-4 | Loose | 1318912-1 | | | |
| (Mfr:Tyco Electronics) | | | | | | | |

<PIN CONNECTION>

| Pin No. | Input | | Pin No. | Output |
|---------|-------|---|---------|--------|
| 1 | AC(L) | | 1.2 | 1/ |
| | | | 1, 2 | - V |
| 3 | AC(N) | | 3, 4 | +\/ |
| | | | 3, 4 | ÷γ |
| 5 | FG | 1 | | |

% Tolerance : ±1 [±0.04]

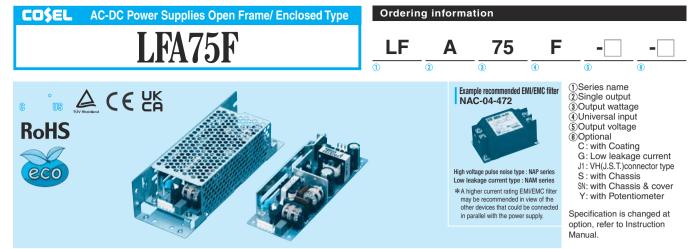
- * Weight : 165g max (with chassis & cover : 325g max)
- % PCB material / thickness : CEM3 / 1.6mm
- % Optional chassis and cover material : Electric galvanizing steel board.
 % Dimensions in mm, []=inches

% Mounting torque (Mounting hole of chassis) : 0.6N • m (6.3kgf • cm) max

% I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

% Keep drawing current per pin below 5A for CN2



| 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

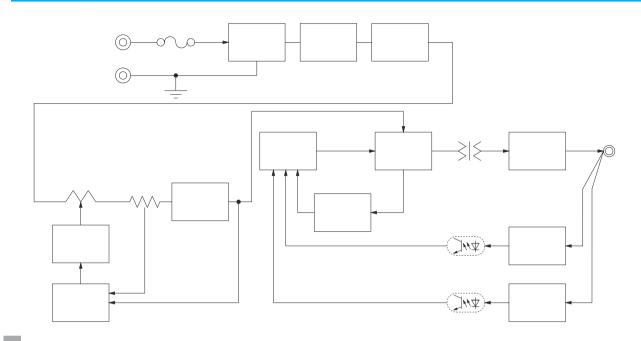
| | MODEL | | LFA75F-3R3-Y | LFA75F-5 | LFA75F-12 | LFA75F-15 | LFA75F-24 | LFA75F-36 | LFA75F-48 | | | |
|-------------------|--|------------------------------------|--|---|-------------------|-------------------|---------------------|----------------------|-----------------|--|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ | (Refer to "Derat | ing", Instruction | Manual 1 and 3) | *3 | | - Fe | | | |
| | | ACIN 100V | 0.70typ (lo=100%) | 1.00typ (lo=100 | 0%) | | | | | | | |
| | CURRENT[A] | ACIN 200V | 0.40typ (lo=100%) | 0.50typ (lo=100 | | | | | | | | |
| | FREQUENCY[Hz] | | 50 / 60 (47 - 63 |) | | | | | | | | |
| | | ACIN 100V | 73.5typ | 78.0typ | 81.5typ | 81.5typ | 82.5typ | 82.5typ | 82.5typ | | | |
| VPUT | EFFICIENCY[%] | ACIN 200V | 75.0typ | 80.0typ | 83.0typ | 83.0typ | 84.5typ | 84.5typ | 84.5typ | | | |
| | | ACIN 100V | 0.96typ | 0.97typ | | | 71 | | 71 | | | |
| | POWER FACTOR (lo=100%) | ACIN 200V | 0.83typ 0.90typ | | | | | | | | | |
| | | ACIN 100V | |) (At cold start) (| Ta=25℃) | | | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 71 (| b) (At cold start) (| / | | | | | | | |
| | LEAKAGE CURREN | | 31 (| , | , | 0% According t | o IEC62368-1 ar | nd DEN-AN) | | | | |
| | VOLTAGE[V] | . [] | 3.3 | 5 | 12 | 15 | 24 | 36 | 48 | | | |
| | CURRENT[A] | | 15.0 | 15.0 | 6.3 | 5.0 | 3.2 | 2.1 | 1.6 | | | |
| | LINE REGULATION | mV1 *4 | 20max | 20max | 48max | 60max | 96max | 144max | 1.0 192max | | | |
| | LOAD REGULATION | - | 40max | 40max | 100max | 120max | 150max | 240max | 240max | | | |
| | | 0 to +50℃*1 | 80max | 80max | 120max | 120max | 120max | 150max | 150max | | | |
| | RIPPLE[mVp-p] | -10-0°C *1 | | 140max | 160max | 160max | 160max | 200max | 200max | | | |
| | | 0 to +50℃*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 | 120max | 150max | 240max | 360max | 480max | | | |
| | TEMPERATURE REGULATION[mV] | -10 to +50℃ | | 60max | 150max | 180max | 290max | 450max | 600max | | | |
| | DRIFT[mV] | *2 | | 20max | 48max | 60max | 96max | 144max | 192max | | | |
| : | START-UP TIME[ms] | ~2 | 350typ (ACIN 1 | | 4011107 | oomax | Joinax | 14411187 | 1921118 | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 10 | | | | | | | | | |
| | | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | 2.85 to 3.63 Fixed ("Y"option is available for adjusting output voltage between ±10%) | | | | | | | | |
| | OUTPUT VOLTAGE SETTING[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 | | | % of rating and | | | 20.00 10 20.00 | 04.00 10 07.00 | 140.00 10 30.00 | | | |
| DOTECTION | | | 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 | | | |
| ROTECTION | | | Not provided | 5.75 10 7.00 | 13.00 10 10.00 | 17.25 to 21.00 | 27.00 10 33.00 | 1.40 10 30.40 | 35.20 10 07.20 | | | |
| THERS | REMOTE SENSING | TION | Not provided | | | | | | | | | |
| | REMOTE ON/OFF | | Not provided | | | | | | | | | |
| | INPUT-OUTPUT | | <u> </u> | uto Cutoff ourro | nt - 10mA DCE | 500V 50MQ min | (At Room Tempe | vraturo) | | | | |
| SOLATION | INPUT-FG | | | | | | (At Room Tempe | , | | | | |
| JOLATION | OUTPUT-FG | | , | , | , | | At Room Tempera | , | | | | |
| | OPERATING TEMP., HUMID.AND | | | | | | | ual 3), 3,000m (1 | 0 000foot) max | | | |
| | STORAGE TEMP.,HUMID.AND | | , | , | 0, (| 000m (30,000fee | , | uai 3), 3,00011 (1 | 0,00010001 1112 | | | |
| NVIRONMENT | VIBRATION | ALITIODE | | | 0, | | g X, Y and Z axis | | | | | |
| | IMPACT | | |), 11ms, once ea | | | y x, r and z axis | > | | | | |
| | | e | ```` | | , | omplies with DE | | | | | | |
| AFETY AND OISE | CONDUCTED NOISE | - | , | , | 1. | 1 | | | | | | |
| EGULATIONS | | | | ЕС61000-3-2 (С | | 011-B, EN55022 | -0 | | | | | |
| | CASE SIZE/WEIGHT | | | | , | XHXD) / 020~ | max (with abaasi | s & cover : 440g | max) | | | |
| OTHERS | CASE SIZE/WEIGHT | | | | | , , | max (with chassi | s a cover : 440g | iiidX) | | | |
| | | | | fer to "Derating", | | iuai 3) 🐴 | | | | | | |
| from ou | the value that measured on tput terminal. | | | | *4 PI | | ut dynamic load and | input response. | | | | |
| Moocur | ed by 20MHz oscilloscope or | Ripple-No | se meter (Equivalent to KEISOKU-GIKEN: *5 Please contact us about another class. | | | | | | | | | |
| RM103) | | | | | * To | most the specifi+ | one Do not coorsta | wor loaded condition | | | | |

*2 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.

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Derating is required when operated with chassis and cover

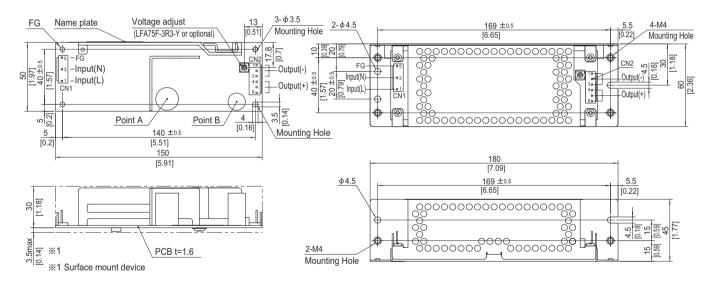




External view

Standard type

Chassis and cover type



% 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. Please refer to
- 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 | | | |
| CINT | 1-1123724-3 | 1-1123722-5 | Loose | 1318912-1 | | | |
| 010 | CN2 1-1123723-6 | 1-1123722-6 | Chain | 1123721-1 | | | |
| CINZ | | 1-1123722-6 | Loose | 1318912-1 | | | |
| (Mfr:Tyco Electronics) | | | | | | | |

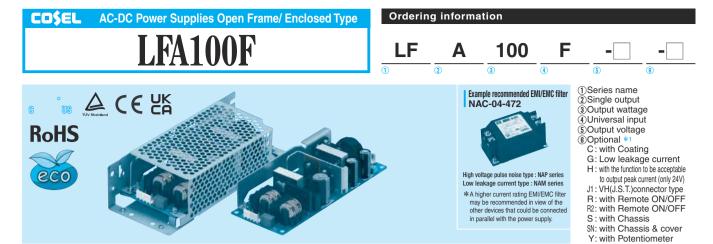
※ I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

PIN CONNECTION>

| Pin No. Input | Pin No. Output | % Tolerance : ±1 [±0.04] |
|---------------|----------------|---|
| 1 AC(L) | 1 to 3 -V | Weight : 230g max (with chassis & cover : 440g max) |
| 2 | 1 to 3 -V | ※ PCB material / thickness : CEM3 / 1.6mm |
| 3 AC(N) | 4 to 6 + 1/2 | % Optional chassis and cover material : Electric galvanizing steel board. |
| 4 | 4 to 6 +V | ※ Dimensions in mm, []=inches |
| 5 FG | · · · · · | ※ Mounting torque (Mounting hole of chassis) :1.5N • m (16kgf • cm) max |

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



| 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 | | | | | | | | | |
| MODEL | LFA100F-3B3-Y | LFA100F-5-Y | LFA100F-12 | LFA100F-15 | LFA100F-24 | LFA100F-24-H | LFA100F-36 | LFA100F-48 | |

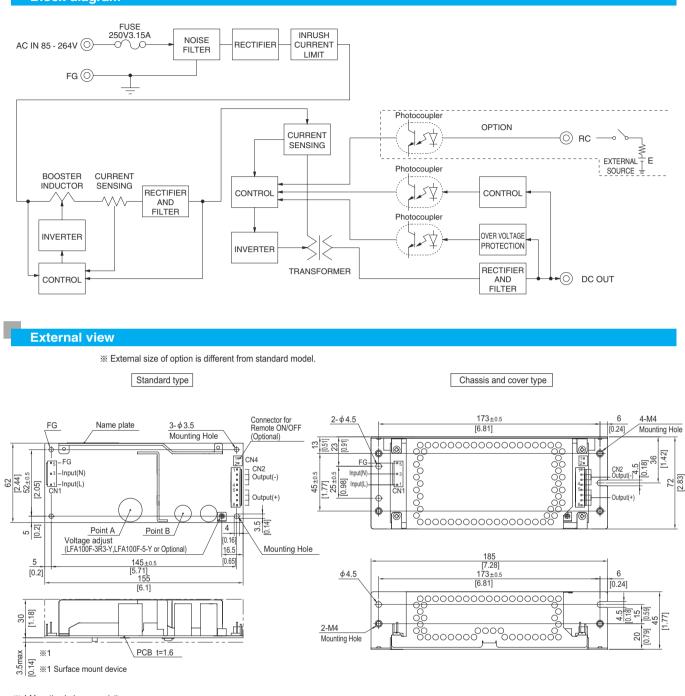
| | MODEL | | LFA100F-3R3-Y | LFA100F-5-Y | LFA100F-12 | LFA100F-15 | LFA100F-24 | LFA100F-24-H | LFA100F-36 | LFA100F-48 | | |
|-------------|--|-------------|--|----------------------|--|-----------------------|----------------------|------------------------------|----------------------|------------------|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 | φ (Refer to "D | Derating", Instru | ction Manual 1 | and 3) *4 | | · | · | | |
| | | ACIN 100V | 0.9typ (lo=100%) | 1.3typ (lo=10 | 00%) | | | | | - | | |
| | CURRENT[A] | ACIN 200V | 0.5typ (lo=100%) | 0.7typ (lo=10 | 0%) | | | | | | | |
| | FREQUENCY[Hz] | | 50 / 60 (47 - 0 | 63) | | | | | | | | |
| | | ACIN 100V | 77.0typ | 82.0typ | 82.0typ | 83.0typ | 84.0typ | 84.0typ | 84.0typ | 84.5typ | | |
| INPUT | EFFICIENCY[%] | ACIN 200V | 79.0typ | 84.0typ | 84.5typ | 85.5typ | 87.0typ | 87.0typ | 87.0typ | 87.0typ | | |
| | | ACIN 100V | 0.98typ | 0.99typ | | | | | | | | |
| | POWER FACTOR (lo=100%) | ACIN 200V | 0.92typ | 0.95typ | | | | | | | | |
| | | ACIN 100V | 15typ (Io=100%) (At cold start) (Ta=25°C) | | | | | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | | 0%) (At cold sta | | | | | | | | |
| | LEAKAGE CURREN | T[mA] | 0.40 / 0.75ma | ax (ACIN 100V | / 240V 60Hz, | lo=100%, Acc | ording to IEC6 | 2368-1 and D | EN-AN) | | | |
| | VOLTAGE[V] | | 3.3 | 5 | 12 | 15 | 24 | 24 | 36 | 48 | | |
| | CURRENT[A] | *5 | 20 | 20 | 8.5 | 6.7 | 4.3 | 4.3 (Peak 5.4) | 2.8 | 2.1 | | |
| | LINE REGULATION | mV] *7 | 20max | 20max | 48max | 60max | 96max | 96max | 144max | 192max | | |
| | LOAD REGULATION | [mV] *7 | 40max | 40max | 100max | 120max | 150max | 150max | 240max | 240max | | |
| | | 0 to +50℃*2 | 80max | 80max | 120max | 120max | 120max | 240max | 150max | 150max | | |
| | RIPPLE[mVp-p] | -10-0°C *2 | 140max | 140max | 160max | 160max | 160max | 320max | 200max | 200max | | |
| | | 0 to +50℃*2 | 120max | 120max | 150max | 150max | 150max | 300max | 250max | 250max | | |
| OUTPUT | RIPPLE NOISE[mVp-p] | -10-0°C *2 | 160max | 160max | 180max | 180max | 180max | 360max | 300max | 300max | | |
| | | 0 to +50℃ | 50max | 50max | 120max | 150max | 240max | 240max | 360max | 480max | | |
| | TEMPERATURE REGULATION[mV] | -10 to +50℃ | 60max | 60max | 150max | 180max | 290max | 290max | 450max | 600max | | |
| | DRIFT[mV] *3 | | 20max | 20max | 48max | 60max | 96max | 96max | 144max | 192max | | |
| | START-UP TIME[ms] | | 350typ (ACIN 100V, lo=100%) | | | | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN | 100V, lo=100% | 6) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | 2.85 to 3.63 | 4.50 to 5.50 | Fixed ("Y"opt | ion is available | for adjusting | output voltage) |) | | | |
| | OUTPUT VOLTAGE SETTING[V] | | | 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 | | |
| | OVERCURRENT PROT | ECTION | Works over 1 | 05% of rating (| (works over 10 | 1% of peak cur | rrent at option | -H) and recove | ers automatical | ly | | |
| PROTECTION | OVERVOLTAGE PROTE | | | 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 | | | Not provided | | 1 | | | 1 | 1 | | | |
| OTHERS | REMOTE SENSING | | Not provided | | | | | | | | | |
| | REMOTE ON/OFF | | Option (Refer to Instruction Manual) | | | | | | | | | |
| | INPUT-OUTPUT-RC | *6 | AC3,000V 1n | ninute, Cutoff c | current = 10mA | , DC500V 50N | 1Ω min (At Ro | om Temperatu | re) | | | |
| | INPUT-FG | | AC2,000V 1n | ninute, Cutoff c | current = 10mA | , DC500V 50N | 1Ω min (At Ro | om Temperatu | re) | | | |
| ISOLATION | OUTPUT·RC-FG | *6 | AC500V 1mir | nute, Cutoff cu | rrent = 25mA, I | DC500V 50M | 2 min (At Roor | n Temperature |) | | | |
| | OUTPUT-RC | *6 | | | | | | | | | | |
| | OPERATING TEMP., HUMID. AND | ALTITUDE *4 | -10 to +70℃, | 20 - 90%RH (| Non condensin | ng) (Refer to "D | erating", Instru | uction Manual | 3), 3,000m (10, | ,000feet) max | | |
| | STORAGE TEMP., HUMID. AND | ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | | | |
| ENVIRONMENT | VIBRATION | | 10 - 55Hz, 19 | 9.6m/s² (2G), 3 | minutes period | , 60minutes ea | ch along X, Y | and Z axis | | | | |
| | IMPACT | | 196.1m/s² (20 |)G), 11ms, ond | ce each X, Y ar | nd Z axis | | | | | | |
| SAFETY AND | AGENCY APPROVA | LS | UL60950-1, 0 | C-UL (CSA609 | 50-1), EN6236 | 8-1 Complies v | with DEN-AN | | | | | |
| NOISE | CONDUCTED NOISE | | Complies with | h FCC-B, VCC | I-B, CISPR-B, | EN55011-B, E | N55022-B | | | | | |
| REGULATIONS | HARMONIC ATTENU | JATOR | Complies with | h IEC61000-3- | 2 (Class A) *8 | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | • | 62×33.5×1 | 55mm [2.44×1 | 1.32×6.10 inch | nes] (W×H×D |) / 280g max (| with chassis & | cover : 480g n | nax) | | |
| OTHERS | COOLING METHOD | | Convection (I | Refer to "Deratin | ng", Instruction I | Manual 3) *4 | | | | | | |
| | on is changed at option, refer t | | | at the rated input/o | | | | se contact us about a | | | | |
| | e value that measured on i of 22µF at 150mm from output | | | Derating is require | ed. eurrent. There is a p | ossibility that an ir | | neet the specific lition. | ations. Do not op | erate over-loade | | |
| Measured | d by 20MHz oscilloscope o | r Ripple-No | | device is damage | d when the specific | | | llel operation is not | possible. | | | |
| | t to KEISOKU-GIKEN: RM103 | | 1. J. M | contact us about th | | | * Dera | ting is required whe | en operated with cha | | | |
| | e change in DC output for an e warm-up at 25°C, with the inpu | | | | Remote ON/OFF (opt about dynamic load | | | nd noise may be g e load. | generated by powe | supply in case | | |
| IEA 19 | | | | | | | Paid | | | | | |

LFA-12

Please refer to Instruction

manual 6.

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- % 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. Please refer to Instruction Manual 3.

| I/C | Connector | Mating connector | T | erminal | | | | | | |
|-----------|-------------|------------------|-------|-----------|--|--|--|--|--|--|
| CN14 | 1-1123724-3 | 1-1123722-5 | Chain | 1123721-1 | | | | | | |
| CN1 | 1-1123724-3 | 1-1123722-5 | Loose | 1318912-1 | | | | | | |
| 010 4 440 | 1-1123723-8 | 1-1123722-8 | Chain | 1123721-1 | | | | | | |
| CINZ | 1-1123723-0 | 1-1123722-0 | Loose | 1318912-1 | | | | | | |
| | | | | | | | | | | |

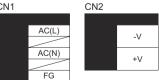
(Mfr:Tyco Electronics)

% I/O Connector is Mfr. Tyco Electronics

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

```
<PIN CONNECTION>
```

CN1



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

% Tolerance : ±1 [±0.04]

% Weight : 280g max (with chassis & cover : 480g max)

% PCB material : CEM3

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

X Dimensions in mm, []=inches

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

Connector type

RC(+)

RC(-)

Barrier strip type

Model B2B-XH-A Mating Connector (Terminal)

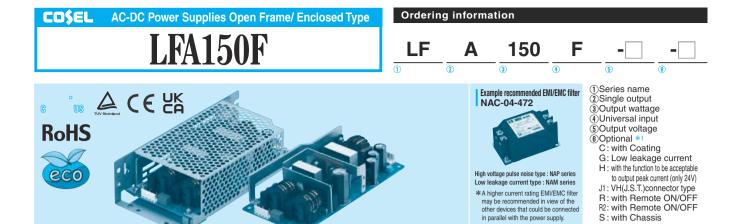
BXH-001T-P0.6

or SXH-001T-P0.6

XHP-2

CN4 Option (Mfr:J.S.T)

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| MODEL | | LFA150F-3R3-Y | LFA150F-5-Y | LFA150F-12 | LFA150F-15 | LFA150F-24 | LFA150F-24-H | LFA150F-36 | LFA150F-48 |
|----------------|------------------|---------------|-------------|------------|------------|------------|----------------|------------|------------|
| MAX OUTPL | JT 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 | | | | | | | | | |
| | MODEL | LFA150F-3R3-Y | LFA150F-5-Y | LFA150F-12 | LFA150F-15 | LFA150F-24 | LFA150F-24-H | LFA150F-36 | LFA150F-48 |

| | 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 "D | erating", Instru | ction Manual 1 | and 3) *4 | | | |
| | | ACIN 100V | 1.4typ (lo=100%) | 2.0typ (lo=10 | 0%) | | | | | |
| | CURRENT[A] | ACIN 200V | 0.7typ (lo=100%) | 1.0typ (lo=10 | 0%) | | | | | |
| | FREQUENCY[Hz] | | 50 / 60 (47 - 6 | 63) | | | | | | |
| | | ACIN 100V | 80.0typ | 82.5typ | 82.5typ | 84.0typ | 85.0typ | 85.0typ | 85.0typ | 85.5typ |
| INPUT | EFFICIENCY[%] | ACIN 200V | 82.0typ | 85.5typ | 85.0typ | 86.5typ | 87.5typ | 87.5typ | 87.5typ | 88.0typ |
| | | ACIN 100V | 0.98typ | 0.99typ | • | | | • | | |
| | POWER FACTOR (Io=100%) | ACIN 200V | 0.92typ | 0.95typ | | | | | | |
| | | ACIN 100V | 15typ (lo=100 |)%) (At cold sta | art) (Ta=25℃) | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 30typ (lo=100 | %) (At cold sta | art) (Ta=25℃) | | | | | |
| | LEAKAGE CURREN | T[mA] | 0.40 / 0.75ma | x (ACIN 100V | /240V 60Hz, | lo=100%, Acc | ording to IEC6 | 2368-1 and DE | EN-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 |
| | | 0 to +40℃ *2 | 80max | 80max | 120max | 120max | 120max | 240max | 150max | 150max |
| | RIPPLE[mVp-p] | -10-0°C *2 | 140max | 140max | 160max | 160max | 160max | 320max | 200max | 200max |
| | | 0 to +40℃*2 | 120max | 120max | 150max | 150max | 150max | 300max | 250max | 250max |
| OUTPUT | RIPPLE NOISE[mVp-p] | -10-0°C *2 | 160max | 160max | 180max | 180max | 180max | 360max | 300max | 300max |
| | | 0 to +40℃ | 50max | 50max | 120max | 150max | 240max | 240max | 360max | 480max |
| | TEMPERATURE REGULATION[mV] | -10 to +40℃ | 60max | 60max | 150max | 180max | 290max | 290max | 450max | 600max |
| | DRIFT[mV] | *3 | 20max | 20max | 48max | 60max | 96max | 96max | 144max | 192max |
| | START-UP TIME[ms] | | 350typ (ACIN | 100V, lo=100 | %) | ^ | ^ | | | · |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 1 | 100V, lo=100% |)) | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | RANGE[V] | 2.85 to 3.63 | 4.50 to 5.50 | Fixed ("Y"opti | on is available | for adjusting c | output voltage) | | |
| | 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 |
| | OVERCURRENT PROT | ECTION | Works over 10 | 05% of rating (| works over 10 | 1% of peak cur | rent at option | -H) and recove | rs automaticall | у |
| 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 |
| CIRCUIT AND | OPERATING INDICA | TION | Not provided | | | | | | | |
| OTHERS | REMOTE SENSING | | Not provided | | | | | | | |
| | REMOTE ON/OFF | | Option (Refer to Instruction Manual) | | | | | | | |
| | INPUT-OUTPUT-RC | *6 | AC3,000V 1m | ninute, Cutoff c | current = 10mA | , DC500V 50M | IΩ min (At Ro | om Temperatur | e) | |
| ISOLATION | INPUT-FG | | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) | | | | | | | |
| ISOLATION | OUTPUT·RC-FG | *6 | AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature) | | | | | | | |
| | OUTPUT-RC | *6 | | | rrent = 25mA, [| | | | | |
| | OPERATING TEMP., HUMID.AND | | | | | 0, (| | - | 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 | | | | minutes period | | ch along X, Y | and Z axis | | |
| | IMPACT | | <u> </u> | | e each X, Y an | | | | | |
| SAFETY AND | AGENCY APPROVAL | | | | 50-1), EN6236 | | | | | |
| NOISE | CONDUCTED NOISE | | · · · · · · · · · · · · · · · · · · · | | I-B, CISPR-B, I | EN55011-B, El | N55022-B | | | |
| REGULATIONS | HARMONIC ATTENU | | <u> </u> | 1EC61000-3-2 | . , | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | 75×37.0×16 | 60mm [2.95×1 | .46×6.30 inche | es] (W×H×D) | / 390g max (w | vith chassis & c | over : 650g ma | ax) |
| | COOLING METHOD | | · · · | | ing", Instructior | Manual 3) *4 | | | | |
| *2 This is th capacitor of Measured | on is changeed at option, refer e value that measured on r of 22 µ F at 150mm from output I by 20MHz oscilloscope o t to KEISOKU-GIKEN: RM103) | measuring b t terminal. r Ripple-No | ooard with *4 *5 | oard with *4 Derating is required. * To meet the specifications. Do not operate over-loaded *5 () means peak current. There is a possibility that an internal condition. | | | | | | |
| | change in DC output for an e varm-up at 25℃, with the inpu | | | | emote control (optior about dynamic load | | * Sour | nd noise may be g e load. | | |

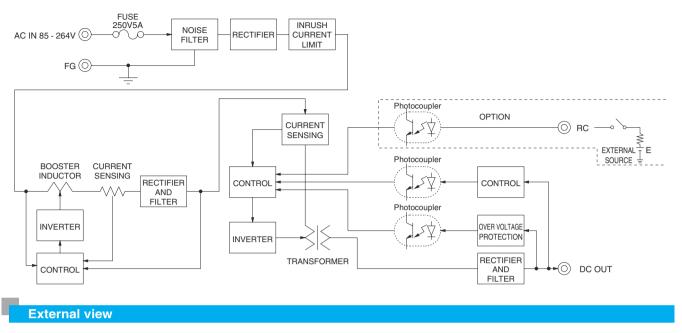
LFA-14

SN: with Chassis & cover Y: with Potentiometer Please refer to Instruction

manual 6.

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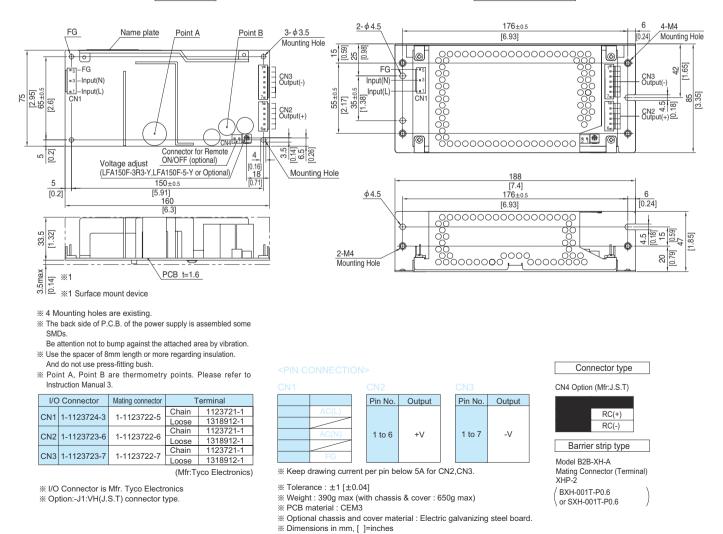




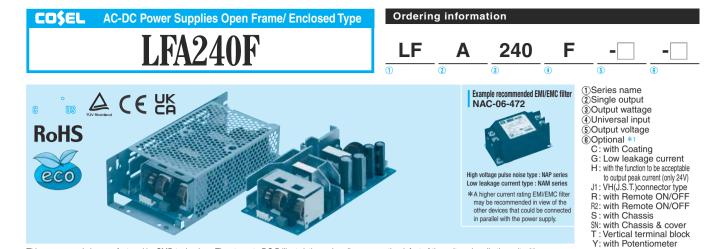
% External size of option is different from standard model.

Standard type

Chassis and cover type



% Mounting torque (Mounting hole of chassis) :1.5N • m (16kgf • cm) max December 27, 2022



| 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

| | | | LFA240F-24 | LFA240F-24-H | LFA240F-36 | LFA240F-48 | | | | | | |
|--|--|--|---|---|--|---------------------------------------|--|--|--|--|--|--|
| VOLTAGE[V] | | | AC85 - 264 1 φ | AC85 - 264 1 ¢ (Refer to "Derating", Instruction Manual 1 and 3) *4 | | | | | | | | |
| ACIN 100V | | | | | | | | | | | | |
| CURRENT[A] | | ACIN 2 | | | | | | | | | | |
| EN | ENCY[Hz | | 50 / 60 (47 - 63) | · | | | | | | | | |
| EFFICIENCY[%] POWER FACTOR (Io=100%) | | ACIN 1 | | | | | | | | | | |
| | | ACIN 2 | | 87.5typ | 87.5typ | 87.5typ | | | | | | |
| | | ACIN 1 | 71 | 0.1003 | | | | | | | | |
| | | 0%) ACIN 2 | | | | | | | | | | |
| | | ACIN 1 | | 00%) (Primary inrush current /S | econdary inrush current) (Mor | e than 3 sec. to re-start) | | | | | | |
| | | | 21.1 | 00%) (Primary inrush current /S | | · · · · · · · · · · · · · · · · · · · | | | | | | |
| | GE CURR | | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | | | | | | |
| | GE CORR | | 24 | 0.40 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-AN) | | | | | | | | |
| | | | *5 10 | 10 (Peak12.5) | 6.7 | 5 | | | | | | |
| | NT[A] | | - | · · · · · | | | | | | | | |
| | | | *7 96max | 96max | 144max | 192max | | | | | | |
| iEC | REGULAT | | | 150max | 240max | 240max | | | | | | |
| [m | [mVp-p] | 0 to +4 | | 240max | 150max | 150max | | | | | | |
| | | -10 - 00 | | 320max | 200max | 200max | | | | | | |
| | OISE[mVp- | o1 0 to +4 | | 300max | 250max | 250max | | | | | | |
| | h | -10 - 0° | | 360max | 300max | 300max | | | | | | |
| RE RE | RE REGULATION | mV1 0 to + | | 240max | 360max | 480max | | | | | | |
| | | -10 to - | 40°C 290max | 290max | 450max | 600max | | | | | | |
| V] | IV] | | *3 96max | 96max | 144max | 192max | | | | | | |
| UP | UP TIME[| ns] | 350typ (ACIN 10 | 350typ (ACIN 100V, Io=100%) | | | | | | | | |
| HOLD-UP TIME[ms] | | | 20typ (ACIN 100 | 20typ (ACIN 100V, lo=100%) | | | | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | | [V] Fixed ("Y"option | Fixed ("Y"option is available for adjusting output voltage) | | | | | | | | |
| OUTPUT VOLTAGE SETTING[V] | | | /] 23.00 to 25.00 | 23.00 to 25.00 | 34.50 to 37.50 | 46.00 to 50.00 | | | | | | |
| OVERCURRENT PROTECTION | | | ON Works over 105 | Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically | | | | | | | | |
| OVERVOLTAGE PROTECTION | | | N 27.60 to 33.60 | | | | | | | | | |
| TIN | TING IND | CATION | Not provided | | | | | | | | | |
| ES | E SENSI | IG | Not provided | Not provided | | | | | | | | |
| REMOTE ON/OFF | | | Option (Refer to | Option (Refer to Instruction Manual) | | | | | | | | |
| DU. | | RC 31 | *6 AC3,000V 1min | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) | | | | | | | | |
| INPUT-FG | | | | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) | | | | | | | | |
| T·F | T-RC-FG | | | AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature) | | | | | | | | |
| | | | | AC100V 1minute, Cutoff current = 25mA, DC100V 10M Ω min (At Room Temperature) | | | | | | | | |
| | TEMP., HUMID. | AND ALTITUD | | | | | | | | | | |
| | TEMP.,HUMID | | , | -20 to $+75^{\circ}$ C, $20 - 90^{\circ}$ RH (Non condensing), 9,000m (30,000feet) max | | | | | | | | |
| | ION | | · · · · · | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | | |
| - | - | | | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | | | | |
| IMPACT AGENCY APPROVALS | | | | UL60950-1, C-UL (CSA60950-1), EN62368-1 Complies with DEN-AN | | | | | | | | |
| | | | , | Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B | | | | | | | | |
| CONDUCTED NOISE | | | | Complies with IEC61000-3-2 (Class A) *8 | | | | | | | | |
| HARMONIC ATTENUATOR CASE SIZE/WEIGHT | | | | 84×46.5×180mm [3.31×1.83×7.09 inches] (W×H×D) / 550g max (with chassis & cover : 880g max) | | | | | | | | |
| | | | | | / 0 (| 143515 4 60VEL . 6009 Max/ | | | | | | |
| COOLING METHOD | | | | | / | t us about another class | | | | | | |
| \$1 Specification is changeed at option, refer to Instructi This is the value that measured on measuring capacitor of 22 µF at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-N (Equivalent to KEISOKU-GIKEN: RM103). \$3 Drift is the change in DC output for an eight hour p | | | ing board with *4 De al. *5 () e-Noise meter de co | board with *4 Derating is required. * To meet the specifications. Do not operate over-loade *5 () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please contact us about the detail. * Derating is required when operated with chassis and cover. | | | | | | | | |
| eed a st m 50m z os U-G DC o | eed at option, at measured 150mm from c z oscillosco (U-GIKEN: RM DC output for | refer to Inst on measur utput termin de or Rippl 1103). an eight ho | uction Manual. at ing board with *4 De al. *5 () e-Noise meter de co ur period after a *6 Ap | means peak current. There is a possibili evice is damaged when the specification is | *8 Please cont * To meet th condition. exceeded. Please * Parallel oper * Derating is r dded. * Sound nois: | ra | | | | | | |

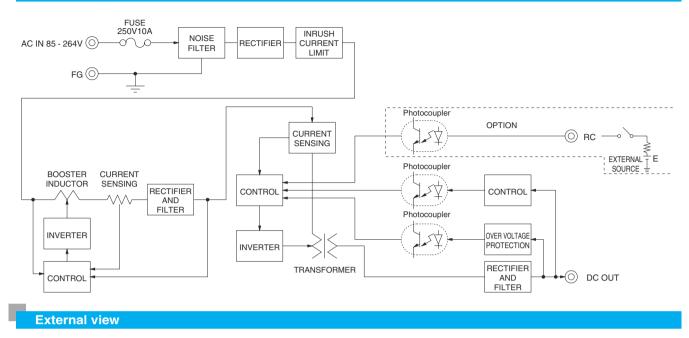
LFA-16

Please refer to Instruction

manual 6.

LFA240F | CO\$EL

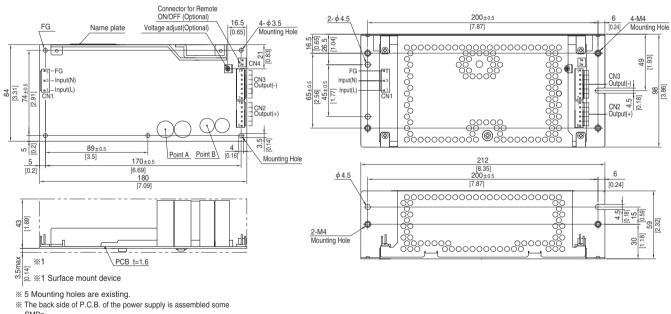
Block diagram



% External size of option is different from standard model.

Standard type

Chassis and cover type



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. Please refer to Instruction Manual 3.

| | I/C | Connector | Mating connector | Terminal | | | |
|--|-----|-------------|------------------|----------|-----------|--|--|
| | CN1 | 1-1123724-3 | 1-1123722-5 | Chain | 1123721-1 | | |
| | | 1-1123724-3 | 1-1123/22-5 | Loose | 1318912-1 | | |
| | CN2 | 4 4400700 0 | 1-1123722-6 | Chain | 1123721-1 | | |
| | | 1-1123723-6 | | Loose | 1318912-1 | | |
| | СN3 | 4 4400700 7 | 1-1123722-7 | Chain | 1123721-1 | | |
| | | 1-1123723-7 | 1-1123/22-7 | Loose | 1318912-1 | | |

(Mfr:Tyco Electronics)

% I/O Connector is Mfr. Tyco Electronics

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

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

% Tolerance : ±1 [±0.04]

Pin No.

1 to 6

- % Weight : 550g max (with chassis & cover : 880g max)
- * PCB material : CEM3

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

Output

+V

Pin No.

1 to 7

Output

-V

* Dimensions in mm, []=inches

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

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Connector type

RC(+) RC(-)

CN4 Option (Mfr:J.S.T)

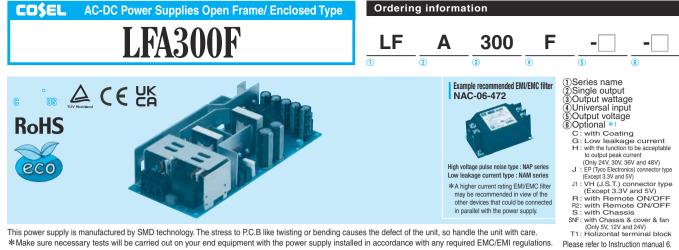
Barrier strip type Model B2B-XH-A

Mating Connector (Terminal) XHP-2

BXH-001T-P0.6

or SXH-001T-P0.6

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| * 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. Please refer to Instruction manual 6. | | | | | | | | | |
|--|----------------|--------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|
| 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 |
| 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 |

12V 27A

15V 22A

24V 14A

24V 14 (19)A 30V 11A

36V 9.4A

48V 7A

3.3V 60A

5V 60A

SPECIFICATIONS

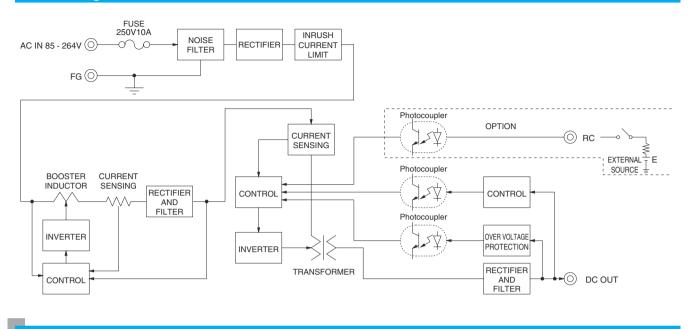
DC OUTPUT

| | 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-T | |
|---|--|--|---|---|---|--------------------|-----------------------------------|--|--|---|---------------|--|
| | VOLTAGE[V] | | AC85 - 264 | AC85 - 264 1 ¢ (Refer to "Derating", Instruction Manual 1 and 3) *4 | | | | | | | | |
| INPUT | ACIN 100 | | 2.7typ (lo=100%) 4.1typ (lo=100%) | | | | | | | | | |
| | CURRENT[A] | ACIN 200V | 1.4typ (lo=100%) 2.0typ (lo=100%) | | | | | | | | | |
| | FREQUENCY[Hz] | | 50 / 60 (47 - | | | | | | | | | |
| | | ACIN 100V | 75.0typ | 79.0typ | 80.0typ | 81.5typ | 85.0typ | 85.0typ | 85.5typ | 85.5typ | 85.5typ | |
| | EFFICIENCY[%] | 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 | | 1 71 | 1 71 | | 1 71 | 1 71 | 1 71 | |
| | POWER FACTOR (lo=100%) | ACIN 200V | 0.92typ | 0.95typ | | | | | | | | |
| | | ACIN 100V | | | imary inrush | current /Secor | ndary inrush c | urrent) (More | than 3 sec. to | re-start) | | |
| | INRUSH CURRENT[A] | ACIN 200V | | , (| | | | , , | | , | | |
| | LEAKAGE CURREN | | 30 / 30typ (lo=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start) 0.45 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-AN) | | | | | | | | | |
| | VOLTAGE[V] | .[] | 3.3 | 5 | 12 | 15 | 24 | 24 | 30 | 36 | 48 | |
| | TO LINGL[1] | Convection | | 40 | 17 | 14 | 12.5 | 12.5 (Peak19) | 10 | 8.4 | 6.3 | |
| | CURRENT[A] *5 | Forced air | 60 | 60 | 27 | 22 | 14 | 14 (Peak19) | 11 | 9.4 | 7 | |
| | LINE REGULATION | | 20max | 20max | 48max | 60max | 96max | 96max | 144max | 144max | 192max | |
| | LOAD REGULATION | - | 40max | 40max | 100max | 120max | 150max | 150max | 240max | 240max | 240max | |
| | LOAD REGULATION | 0 to +40°C *2 | | 40max | 120max | 120max | 120max | 240max | 150max | 150max | 150max | |
| | RIPPLE[mVp-p] | -10-0°C *2 | 140max | 140max | 120max 160max | 120max 160max | 120max 160max | 320max | 200max | 200max | 200max | |
| | | | | | | | | | | | | |
| DUTPUT | RIPPLE NOISE[mVp-p] | 0 to +40℃*2 | | 120max | 150max | 150max | 150max | 300max | 250max | 250max | 250max | |
| | | -10-0°C *2 | 160max | 160max | 180max | 180max | 180max | 360max | 300max | 300max | 300max | |
| | TEMPERATURE REGULATION[mV] | 0 to +40°C | | 50max | 120max | 150max | 240max | 240max | 360max | 360max | 480max | |
| | 10 to +40 | | | 60max | 150max | 180max | 290max | 290max | 450max | 450max | 600max | |
| | DRIFT[mV] *3 | | | | | | | | | | | |
| | START-UP TIME[ms] | | 350typ (ACIN 100V, Io=100%) | | | | | | | | | |
| | HOLD-UP TIME[ms] | | | 100V, lo=10 | · · · | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | 2.85 to 3.63 | 4.50 to 5.50 | 10.80 to 13.20 | | 21.60 to 27.50 | | | 32.40 to 39.60 | | |
| | OUTPUT VOLTAGE SETTING[V] | | 3.30 to 3.40 | 5.00 to 5.15 | 12.00 to 12.48 | | 24.00 to 24.96 | | | 36.00 to 37.44 | 48.00 to 49. | |
| | OVERCURRENT PROTECTION | | Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically | | | | | | | | | |
| ROTECTION | 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 34.50 to 42.00 41.40 to 50.40 55.20 to 67.20 | | | | | | | | | |
| IRCUIT AND | | | Not provided | | | | | | | | | |
| THERS | REMOTE SENSING | | Not provided | | | | | | | | | |
| | REMOTE ON/OFF | | Option (Refer to Instruction Manual) | | | | | | | | | |
| | INPUT-OUTPUT-RC *6 | | | | | | | | | | | |
| SOLATION | INPUT-FG | | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) | | | | | | | | | |
| DOLAHON | 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 | | | | | | | | | | | |
| NVIRONMENT | 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 | | | | | | | | | | |
| AFETY AND | AGENCY APPROVALS UL60950-1, C-UL (CSA60950-1), EN62368-1 Complies with DEN-AN | | | | | | | | | | | |
| IOISE | | | | | | | | | | | | |
| EGULATIONS | HARMONIC ATTENUATOR | | Complies with IEC61000-3-2 (Class A) *8 | | | | | | | | | |
| THERS | CASE SIZE/WEIGHT | • | 95×52.5×222mm [3.74×2.07×8.74 inches] (W×H×D) (without terminal block) / 810g max (with chassis & cover : 1,270g max | | | | | | | | | |
| THERS | COOLING METHOD | | Convection | / Forced air | (Refer to "De | rating", Instru | uction Manua | 3) *4 | | | | |
| *2 This is th capacitor of Measured (Equivalen | on is changeed at option, refer e value that measured on r of 22 µ F at 150mm from output d by 20MHz oscilloscope o t to KEISOKU-GIKEN: RM103) change in DC output for an e | measuring t terminal. r Ripple-No). | on Manual. board with ** bise meter | at the rated in Derating is rec () means pea device is dam contact us abo | put/output. quired. ak current. There aged when the s put the detail. | is a possibility t | hat an internal ceeded. Please | *8 Please cont * To meet th condition. * Parallel ope * Derating is | tact us about anot ne specification eration is not poss required when op se may be gener | is. Do not oper ible. erated with chass | is and cover. | |

*3 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
 *6 Applicable when remote control (optional) is added.
 *7 Please contact us about dynamic load and input response.

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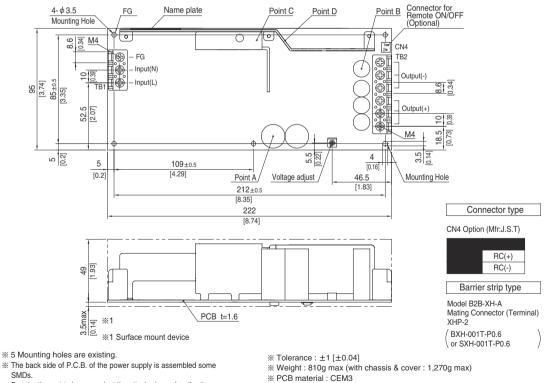




External view

* 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 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, Point D are thermometry points.
- Please refer to Instruction Manual 3.
- % Keep drawing current per pin below 20A for TB2.
- % Screw tightening torque : M4 1.6N * m (16.9kgf * cm) max

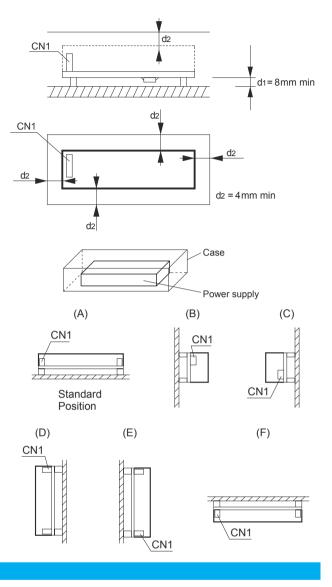
% Dimensions in mm, []=inches

COȘEL | LFA-series

Assembling and Installation Method

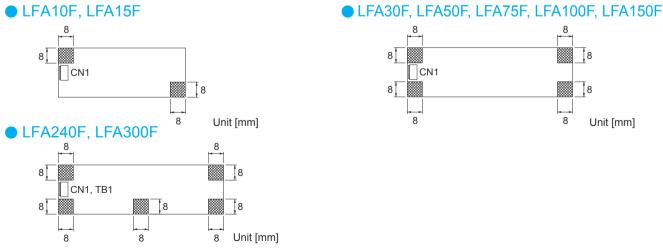
Installation method

- 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

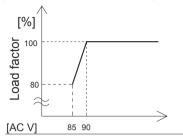
The mounting screw should be M3. The hatched area shows the allowance of metal parts for mounting.



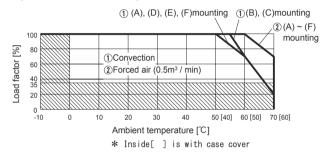
- If metallic fi ttings are used on the component side of the board, ensure there is no contact with surface mounted components.
- This product uses SMD technology.Please avoid the PCB installation method which includes the twisting stress or the bending stress. *Recommendation to electrically connect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

Derating

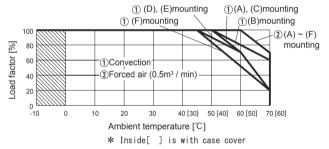




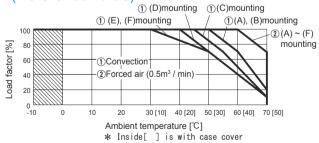
LFA10F Ambient temperature derating curve (Reference value)



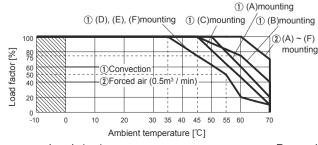
LFA30F Ambient temperature derating curve (Reference value)



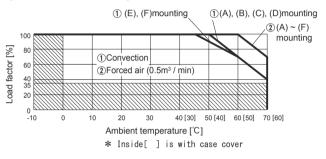
LFA75F Ambient temperature derating curve (Reference value)

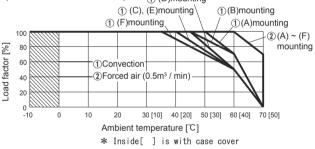


LFA100F Ambient temperature derating curve (Reference value)

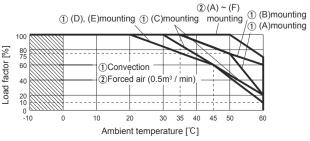


LFA15F Ambient temperature derating curve (Reference value)





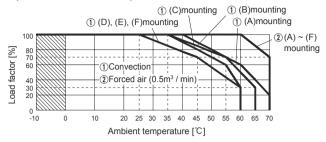
●LFA100F-□-SN Ambient temperature derating curve (Reference value)



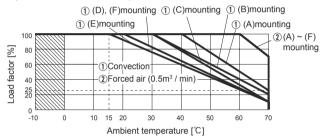
COŞEL | LFA-series

Derating

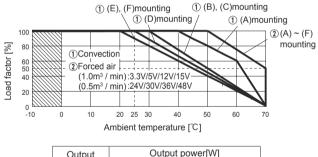
LFA150F Ambient temperature derating curve (Reference value)



LFA240F Ambient temperature derating curve (Reference value)



LFA300F Ambient temperature derating curve (Reference value)



| Output p | Ower[vv] | | | | |
|--------------------------------|---|--|--|--|--|
| Convection | ②Forced air | | | | |
| 132.0 | 198.0 | | | | |
| 200.0 | 300.0 324.0 | | | | |
| 204.0 | | | | | |
| 210.0 | 330.0 | | | | |
| 300.0 | 336.0 | | | | |
| 300.0 | 330.0 | | | | |
| 302.4 | 338.4 | | | | |
| 302.4 | 336.0 | | | | |
| | ①Convection 132.0 200.0 204.0 210.0 300.0 300.0 302.4 | | | | |

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.

Instruction Manual

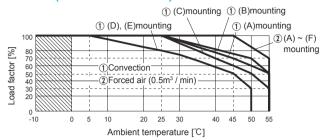
◆ It is neccessary to read the "Instruction Manual" and "Before using our product" before you use our product.

Instruction Manual http Before using our produc http

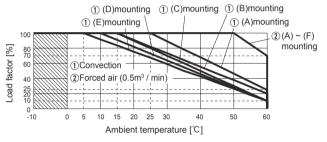
https://www.cosel.co.jp/redirect/catalog/en/LFA/ https://en.cosel.co.jp/technical/caution/index.html



●LFA150F-□-SN Ambient temperature derating curve (Reference value)



LFA240F--SN Ambient temperature derating curve (Reference value)



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| Basic | Characteristics Da | ata | | | | | | | |
|--------------|---------------------------|---------------------------------|-----------------------------------|-----------------------|-------------|-----------------|-----------------|--|-----------------------|
| Madal | Circuit method | Switching frequency [kHz] | Input current *1 [A] | Inrush | PCB/Pattern | | | Series/Parallel operation availability *2 | |
| Model | Circuit method | | | current protection | Material | Single sided | Double sided | Series operation | Parallel operation |
| LFA10F | Flyback converter | 100 | 0.26 | LF | CEM-3 | Yes | | Yes | No |
| LFA15F | Flyback converter | 100 | 0.35 | Thermistor | CEM-3 | Yes | | Yes | No |
| LFA30F | Flyback converter | 130 | 0.65 | Thermistor | CEM-3 | Yes | | Yes | No |
| | Active filter | 60-440 | 0.67 | Thermistor | CEM-3 | Yes | | Yes | No |
| LFA50F | Flyback converter | 130 | 0.67 | | | | | tes | INO |
| LFA75F | Active filter | 60-440 | 1.0 | Thermistor | CEM-3 | Yes | | Yes | No |
| LIA/JI | Flyback converter | 130 | 1.0 | | | | | 165 | INO |
| LFA100F | Active filter | 60 | 1.3 | Thermistor | CEM-3 | | Yes | Yes | No |
| LFATUUF | Forward converter | 140 | 1.5 | | CEIVI-3 | | | | |
| LFA150F | Active filter | 60 | 2.0 | Thermistor | CEM-3 | | Yes | Yes | No |
| LFAISUF | Forward converter | 140 | 2.0 | | CEIM-3 | | res | res | No |
| 1 54 6 4 6 5 | Active filter | 60 | | SCR | CEM-3 | | Vee | Yes | No |
| LFA240F | Forward converter | 140 | 3.3 | | GEIVI-3 | | Yes | res | No |
| | Active filter | 60 | 4.4 | SCR | CEM-3 | | Yes | Yes | |
| LFA300F | Forward converter | 140 | 4.1 | | | | | | No |

*1 The value of input current is at ACIN 100V and rated load.*2 Refer to Instruction Manual 2.