

KLEA/KLNA120F

KL A 120 F - -

① ② ③ ④ ⑤ ⑥



Example recommended EMI/EMC filter
NAC-04-472-D



High voltage pulse noise type : NAP series
Low leakage current type : NAM series
*A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

- ① Series name
KLE : Euro Style I/O Terminals
KLN : Barrier Blocks Style I/O Terminals
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Option
C : with Coating
N2: Screw mounting

*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 | KLEA/KLNA120F-24 | KLEA/KLNA120F-48 |
|-----------------------|------------------|------------------|
| MAX OUTPUT WATTAGE[W] | 120 | 120 |
| DC OUTPUT | 24V 5A | 48V 2.5A |

SPECIFICATIONS

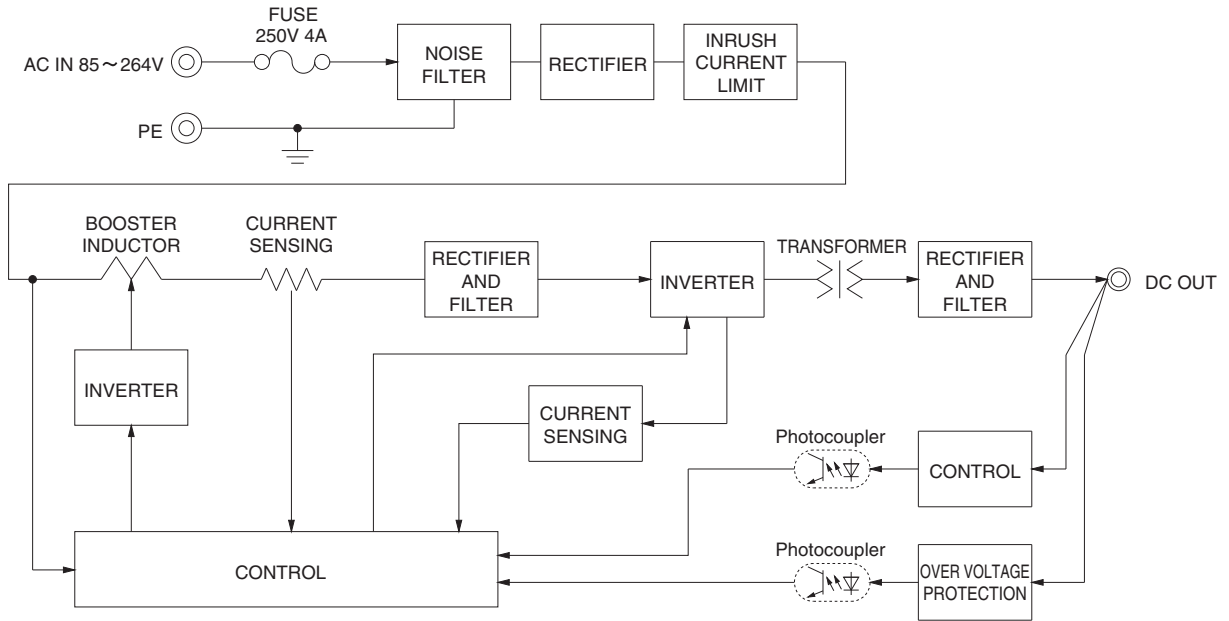
| | MODEL | KLEA/KLNA120F-24 | KLEA/KLNA120F-48 | |
|------------------------------------|---|---|------------------------|--------|
| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Output derating is required) *9 | | |
| | CURRENT[A] | ACIN 115V | 1.2typ | |
| | | ACIN 230V | 0.6typ | |
| | FREQUENCY[Hz] | 50 / 60 (45 - 66) | | |
| | EFFICIENCY[%] | ACIN 115V | 86.5typ | |
| | | ACIN 230V | 88.0typ | |
| | POWER FACTOR | ACIN 115V | 0.98typ | |
| | | ACIN 230V | 0.90typ | |
| INRUSH CURRENT[A] | ACIN 115V | 20typ (Io=100%)(at cold start Ta=25°C) | | |
| | *1 ACIN 230V | 40typ (Io=100%)(at cold start Ta=25°C) | | |
| LEAKAGE CURRENT[ma] | 0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) | | | |
| OUTPUT | VOLTAGE[V] | 24 | 48 | |
| | CURRENT[A] | 5 | 2.5 | |
| | LINE REGULATION[mV] *2 | 96max (Io=30-100%) *8 | 192max (Io=30-100%) *8 | |
| | LOAD REGULATION[mV] *2 | 150max (Io=30-100%) *8 | 300max (Io=30-100%) *8 | |
| | RIPPLE[mVp-p] *3 | 0 to +70°C | 150max | 150max |
| | | -20 - 0°C | 240max | 240max |
| | | Io=0 - 30% | 500max | 650max |
| | RIPPLE NOISE[mVp-p] *3 | 0 to +70°C | 180max | 180max |
| | | -20 - 0°C | 300max | 300max |
| | | Io=0 - 30% | 500max | 650max |
| | TEMPERATURE REGULATION[mV] | 0 to +70°C | 240max | 480max |
| | | -20 to +70°C | 290max | 600max |
| | DRIFT[mV] *4 | 96max | 192max | |
| | START-UP TIME[ms] | 500typ (ACIN 115V, Io=100%) | | |
| HOLD-UP TIME[ms] | 20typ (ACIN 115V, Io=100%) | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 21.60 to 26.40 | 43.20 to 52.80 | | |
| OUTPUT VOLTAGE SETTING[V] | 24.00 to 24.96 | 48.00 to 49.92 | | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | |
| | OVERVOLTAGE PROTECTION[V] | 27.60 to 33.60 | 54.00 to 67.20 | |
| | DC_OK LAMP | LED (Green) | | |
| ISOLATION | INPUT-OUTPUT | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) | | |
| | INPUT-PE | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) | | |
| | OUTPUT-PE | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature) | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -20 to +70°C, 20 - 90%RH (Non condensing), Type tested for -40°C start-up (Derating is required) | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -30 to +85°C, 20 - 90%RH (Non condensing) | | |
| | VIBRATION *7 | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis (Packing state) | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, Complies with DEN-AN | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | |
| | HARMONIC ATTENUATOR | Complies with IEC61000-3-2 (Class A) *5 | | |
| OTHERS | CASE SIZE *6 | 38 X 124 X 117mm (W X H X D) [1.5 X 4.88 X 4.61 inches] | | |
| | WEIGHT | 580g max | | |
| | COOLING METHOD | Convection | | |

*1 The value is primary surge. The current of input surge to a built-in EMI/EMC Filter (0.2ms or less) is excluded.
*2 Please contact us about dynamic load and input response.
*3 This is the value that measured on measuring board with capacitor of 22 μF and 0.1 μF at 150mm from output terminal.
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
Please refer to the instruction manual 2.5.

*4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
*5 Please contact us about another class.
*6 Case size contains neither the umbo.
*7 Only as standard mounting orientation (A). Refer to the instruction manual 4.1. If install other than standard mounting orientation (A), please fix the power supply for withstand the vibration and impact.

*8 Burst operation at 30% load or less.
*9 Please contact us about DC input voltage.
* To meet the specifications. Do not operate over-loaded condition.
* A sound may occur from power supply at light or peak loading.

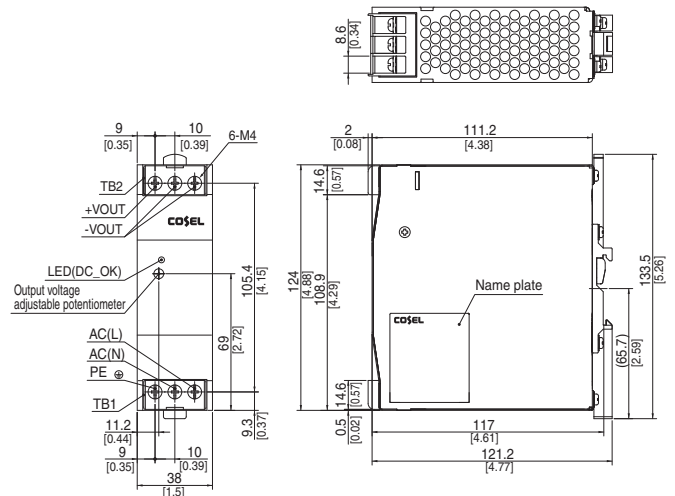
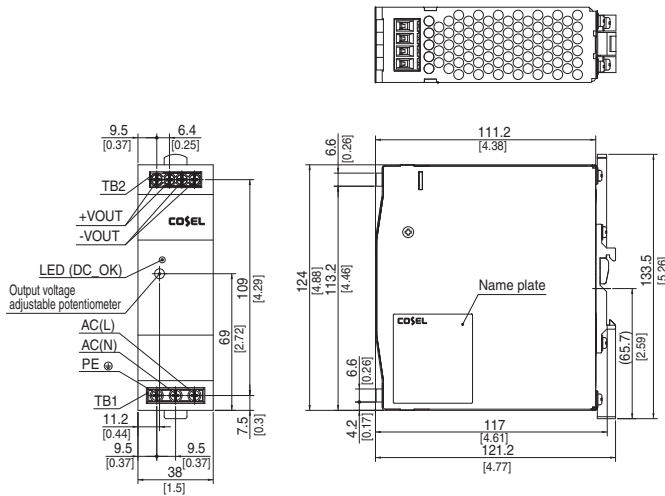
Block diagram



External view

<KLEA120F(Euro Style I/O Terminals)>

<KLNA120F(Barrier Blocks Style I/O Terminals)>



- ※ Tolerance : ±1.5 [±0.06]
- ※ Weight : 580g max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Case material : Stainless steel
- ※ Din rail attachment material : Aluminum, Stainless steel, Nylon
- ※ Dimensions in mm, [] = inches
- ※ Screw tightening torque : 1N · m max

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- ※ Dimensions in mm, [] = inches
- ※ Screw tightening torque : 1.6N · m max

KLEA/KLNA240F

KL A 240 F - -

① ② ③ ④ ⑤ ⑥



Example recommended EMI/EMC filter
NAC-06-472-D



High voltage pulse noise type : NAP series
Low leakage current type : NAM series
*A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

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| | | |
|-----------------------|------------------|------------------|
| MODEL | KLEA/KLNA240F-24 | KLEA/KLNA240F-48 |
| MAX OUTPUT WATTAGE[W] | 240 | 240 |
| DC OUTPUT | 24V 10A | 48V 5A |

SPECIFICATIONS

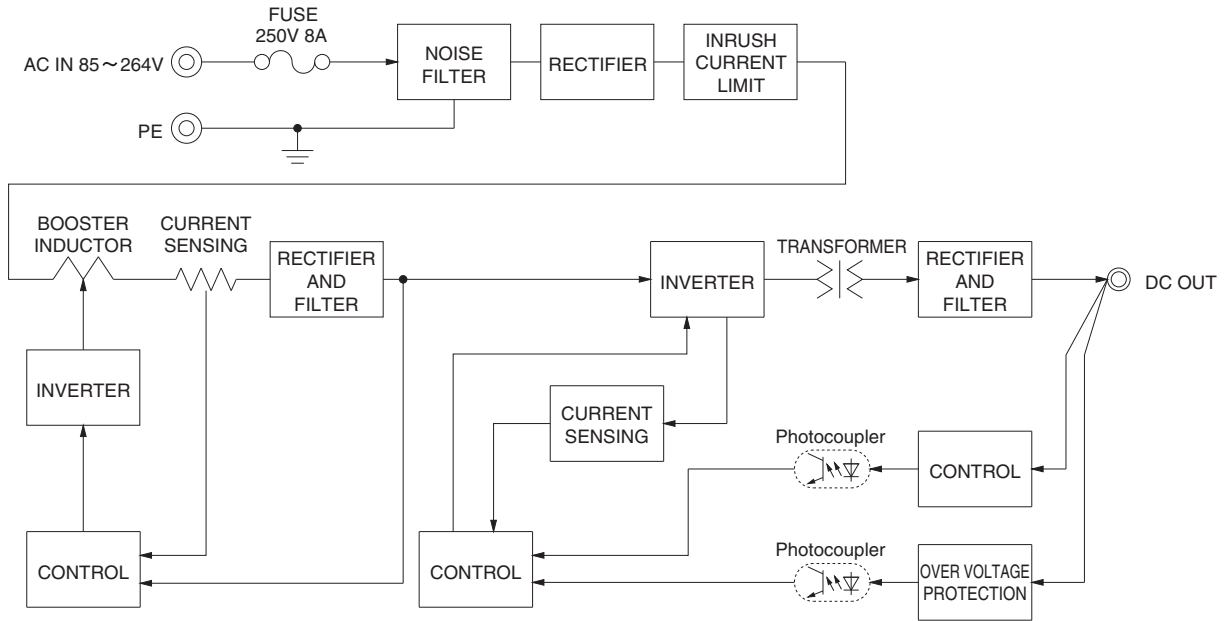
| | MODEL | KLEA/KLNA240F-24 | KLEA/KLNA240F-48 | |
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| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Output derating is required) *8 | | |
| | CURRENT[A] | ACIN 115V | 2.4typ | |
| | | ACIN 230V | 1.3typ | |
| | FREQUENCY[Hz] | 50 / 60 (45 - 66) | | |
| | EFFICIENCY[%] | ACIN 115V | 88typ | |
| | | ACIN 230V | 90typ | |
| | POWER FACTOR | ACIN 115V | 0.98typ | |
| | | ACIN 230V | 0.90typ | |
| INRUSH CURRENT[A] | ACIN 115V | 20typ (Io=100%)(at cold start Ta=25°C) | | |
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| LEAKAGE CURRENT[ma] | 0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) | | | |
| OUTPUT | VOLTAGE[V] | 24 | 48 | |
| | CURRENT[A] | 10 | 5 | |
| | LINE REGULATION[mV] *2 | 96max | 192max | |
| | LOAD REGULATION[mV] *2 | 150max | 300max | |
| | RIPPLE[mVp-p] *3 | 0 to +70°C | 150max | 150max |
| | | -20 - 0°C | 240max | 240max |
| | RIPPLE NOISE[mVp-p] *3 | 0 to +70°C | 180max | 180max |
| | | -20 - 0°C | 300max | 300max |
| | TEMPERATURE REGULATION[mV] | 0 to +70°C | 240max | 480max |
| | | -20 to +70°C | 290max | 600max |
| | DRIFT[mV] *4 | 96max | 192max | |
| | START-UP TIME[ms] | 500typ (ACIN 115V, Io=100%) | | |
| HOLD-UP TIME[ms] | 20typ (ACIN 115V, Io=100%) | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 21.60 to 26.40 | 43.20 to 52.80 | | |
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| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -20 to +70°C, 20 - 90%RH (Non condensing), Type tested for -40°C start-up (Derating is required) | | |
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| OTHERS | CASE SIZE *6 | 50 × 124 × 117mm (W × H × D) [1.97 × 4.88 × 4.61 inches] | | |
| | WEIGHT | 750g max | | |
| | COOLING METHOD | Convection | | |

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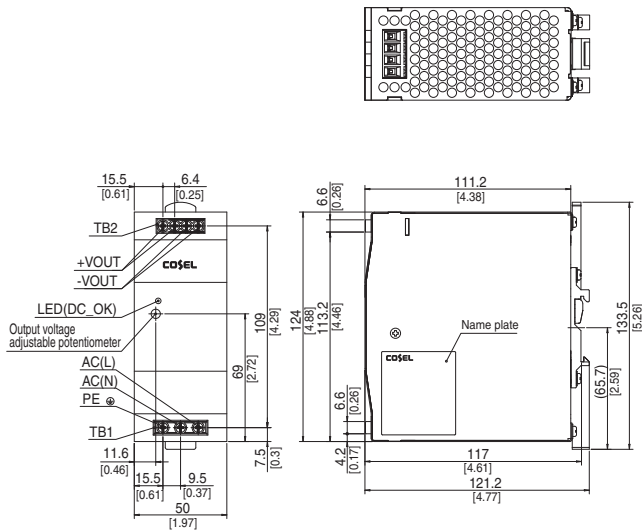
Block diagram



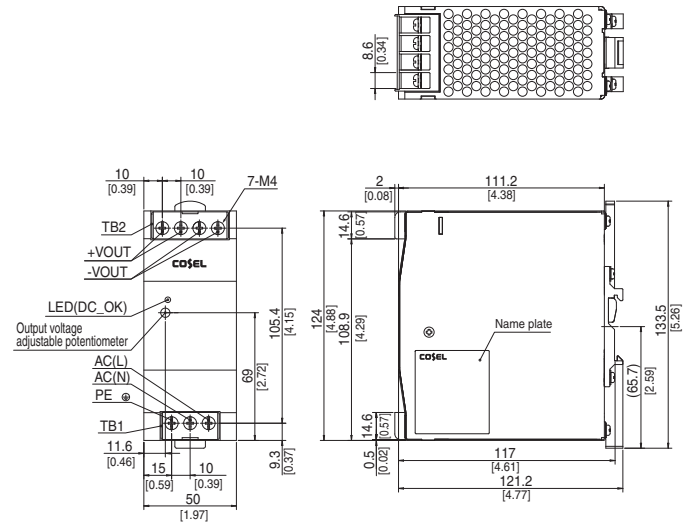
External view

<KLEA240F(Euro Style I/O Terminals)>

<KLNA240F(Barrier Blocks Style I/O Terminals)>



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- ※ Weight : 750g max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Case material : Stainless steel
- ※ Din rail attachment material : Aluminum, Stainless steel, Nylon
- ※ Dimensions in mm, [] = inches
- ※ Screw tightening torque : 1N · m max



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- ※ Screw tightening torque : 1.6N · m max

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