120









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.

- ①Series name KLE: Euro Style I/O Terminals KLN: Barrier Blocks Style
- I/O Terminals ②Single 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	
	VOLTAGE[V]		AC85 - 264 1 φ (Output derating is required) *9		
	CUDDENTIAL	ACIN 115V	1.2typ		
	CURRENT[A]	ACIN 230V	0.6typ		
	FREQUENCY[Hz]		50 / 60 (45 - 66)		
	EFFICIENOVIO/1	ACIN 115V			
INPUT	EFFICIENCY[%]	ACIN 230V	88.0typ		
	POWER FACTOR	ACIN 115V	0.98typ		
		ACIN 230V	0.90typ		
	INRUSH CURRENT[A] *1	ACIN 115V	20typ (Io=100%)(at cold start Ta=25°C)		
		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)		
	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	
		0 to +70°C	150max	150max	
	RIPPLE[mVp-p] *3	-20 - 0°C	240max	240max	
		lo=0 - 30%	500max	650max	
		0 to +70°C	180max	180max	
OUTPUT	RIPPLE NOISE[mVp-p] *3	-20 - 0°C	300max	300max	
		lo=0 - 30%	500max	650max	
	TEMPEDATURE RECUI ATIONSVI	0 to +70°C	240max	480max	
	TEMPERATURE REGULATION[mV]	-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 SETT	ING[V]	24.00 to 24.96	48.00 to 49.92	
PROTECTION	OVERCURRENT PROTE	TECTION Works over 105% of rating and recovers automatically			
CIRCUIT AND	OVERVOLTAGE PROTE	CTION[V]	27.60 to 33.60 54.00 to 67.20		
OTHERS	DC_OK LAMP		LED (Green)		
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)		
ISOLATION	INPUT-PE		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)		
	OUTPUT-PE		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)		
	OPERATING TEMP., HUMID. AND ALTITUDE		-20 to +70°C, 20 - 90%RH (Non condensing), Type tested for -40°C start-up (Derating is required)		
ENVIRONMENT	STORAGE TEMP., HUMID. AND ALTITUDE		-30 to +85°C, 20 - 90%RH (Non condensing)		
	VIBRATION *7		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail)		
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state)		
SAFETY AND		AGENCY APPROVALS UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, Complies with DEN-AN			
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B		
REGULATIONS	HARMONIC ATTENU		Complies with IEC61000-3-2 (Class A) *5		
OTHERS	CASE SIZE *6		38×124×117mm (W×H×D) [1.5×4.88×4.61 inches]		
	WEIGHT		580g max		
	COOLING METHOD		Convection		

- The value is primary surge. The current of input surge to a built-in EMI/EMC *4
 Filter(0.2ms or less) is excluded.
 Please contact us about dynamic load and input response.
 This is the value that measured on measuring board with capacitor of 22 µF *5
 and 0.1 µF at 150mm from output terminal.

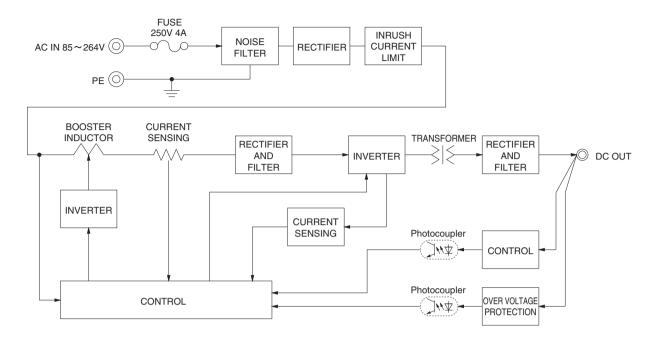
 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to *7
 KEISOKU-GIRKN: RM103).
 Please refer to the instruction manual 2.5.
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Please contact us about another class.
- Case size contains neither the umbo.

 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.
- Burst operation at 30% load or less. 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.





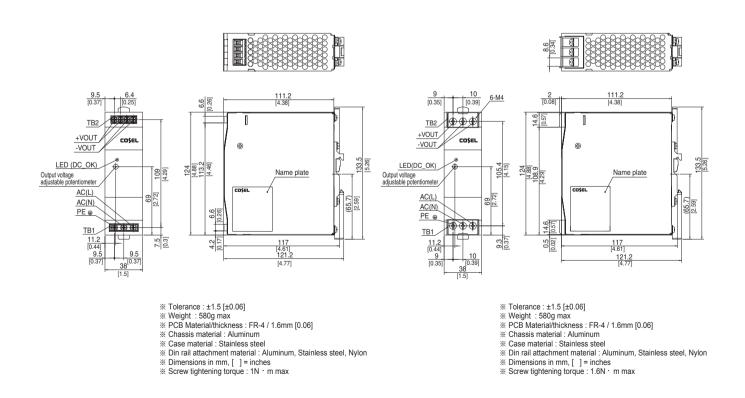
Block diagram



External view

<KLEA120F(Euro Style I/O Terminals)>

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



Ordering information

240





KI EA/KI NIAO40E 04





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.

KI EA/KI NIAOAOE AO

- I/O Terminals ②Single output
- 3 Output wattage Universal input ⑤Output voltage ® 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/KLNA240F-24	KLEA/KLNA240F-48
MAX OUTPUT WATTAGE[W]	240	240
DC OUTPUT	24V 10A	48V 5A

SPECIFICATIONS

POWER FACTOR ACM 1159/ 0.981yp 0.901yp		MODEL		KLEA/KLNA240F-24	KLEA/KLNA240F-48	
CURRENT A		VOLTAGE[V]		AC85 - 264 1 φ (Output derating is required) *8		
PREQUENCY 13 50 / 60 (45 - 66)		CUDDENTIAL	ACIN 115V	2.4typ		
		CURRENT[A]	ACIN 230V	1.3typ		
POWER FACTOR ACM 230V 901yp ACM 230V 901yp ACM 230V 0.991yp ACM 230V 0.991yp ACM 230V 0.991yp ACM 230V 0.991yp ACM 230V ACM		FREQUENCY[Hz]		50 / 60 (45 - 66)		
NPUT	INPUT	EEEICIENCVI9/1	ACIN 115V	88typ		
POWER FACTOR RM239V 0.901yp		EFFICIENCY[%]	ACIN 230V	90typ		
NRUSH CURRENT[A] ACMITSW 20typ (10-100%){at cold start Ta=25°C}		INRUSH CURRENT[A]	ACIN 115V	0.98typ		
LEAKAGE CURRENT MA 0.45 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC60950-1 and DEN-AN)			ACIN 230V	0.90typ		
LEAKAGE CURRENT[ma] 0.45 / 0.75max (ACIN 100V / 240V 60Hz, 1o=100%, According to IEC60950-1 and DEN-AN)			ACIN 115V	20typ (Io=100%)(at cold start Ta=25°C)		
VOLTAGE[V]			ACIN 230V			
CURRENTIA		LEAKAGE CURRENT[mA]		0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)		
LINE REGULATION[mV]		VOLTAGE[V]		24	48	
COLIPUT CO		CURRENT[A]		10	5	
New Color		LINE REGULATION[n	nV] *2	96max	192max	
New York Condition Cond		LOAD REGULATION[mV] *2	150max	300max	
240max		DIDDI E[ms\/m m1	0 to +70°C	150max	150max	
OUTPUT RIPPLE NOISE[mVp-p] ** 20 - 0°C 300max 300max 300max 480max 480max 480max 600max		RIPPLE[mvp-p] *3	-20 - 0°C	240max	240max	
10 to +70°C 20 max 300max 300m		DIDDLE NOIGETV1 40	0 to +70°C	180max	180max	
TEMPERATURE REGULATION(NIV) 200 max 600 max 192	OUTPUT	KIPPLE NOISE[mvp-p] *3	-20 - 0°C	300max	300max	
DRIFT[mV]		TEMPEDATURE RECUI ATIONSVI	0 to +70°C	240max	480max	
START-UP TIME[ms] 500typ (ACIN 115V, Io=100%)		TEMPERATURE REGULATION[MV]	-20 to +70°C	290max	600max	
HOLD-UP TIME[ms] 20typ (ACIN 115V, Io=100%)		DRIFT[mV] *4		96max	192max	
OUTPUT VOLTAGE ADJUSTMENT RANGE[V] 21.60 to 26.40 43.20 to 52.80		START-UP TIME[ms]		500typ (ACIN 115V, Io=100%)		
OUTPUT VOLTAGE SETTING[V] 24.00 to 24.96 48.00 to 49.92		HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)		
PROTECTION CIRCUIT AND OVERVOLTAGE PROTECTION[V] 27.60 to 33.60 54.00 to 67.20 DC_OK LAMP LED (Green) 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 = 10mA, DC500V 50MΩ min (At Room Temperature) OPERATINGTEMP,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 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state) SAFETY AND NOISE 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 REGULATIONS HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *5 CASE SIZE *6 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS OTHERS VEGHT 750g max		OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		21.60 to 26.40	43.20 to 52.80	
CIRCUIT AND OTHERS OVERVOLTAGE PROTECTION[V] 27.60 to 33.60 54.00 to 67.20 DC_OK LAMP LED (Green) 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) 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/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state) SAFETY AND NOISE AGENCY APPROVALS UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, Complies with DEN-AN NOISE REGULATIONS HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *5 CASE SIZE *6 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS WEIGHT 750g max		OUTPUT VOLTAGE SETT	ING[V]	24.00 to 24.96	48.00 to 49.92	
OTHERSDC_OK LAMPLED (Green)INPUT-OUTPUTAC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)ISOLATIONINPUT-PEAC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)OUTPUT-PEAC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)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*710 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail)IMPACT196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state)SAFETY AND NOISEAGENCY APPROVALSUL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, Complies with DEN-ANCONDUCTED NOISEComplies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-BREGULATIONSHARMONIC ATTENUATORComplies with IEC61000-3-2 (Class A) *5CASE SIZE*650×124×117mm (W×H×D) [1.97×4.88×4.61 inches]OTHERSWEIGHT750g max	PROTECTION	OVERCURRENT PROTE	ECTION	Works over 105% of rating and recovers automatically		
INPUT-OUTPUT AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)	CIRCUIT AND	OVERVOLTAGE PROTE	CTION[V]	27.60 to 33.60 54.00 to 67.20		
INPUT-PE AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)	OTHERS	DC_OK LAMP		LED (Green)		
OUTPUT-PE AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature) OPERATING TEMP, HUMID.AND ALTITUDE STORAGE TEMP, HUMID.AND ALTITUDE -20 to +70°C, 20 - 90%RH (Non condensing), Type tested for -40°C start-up (Derating is required) VIBRATION *7 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state) SAFETY AND NOISE 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 REGULATIONS HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *5 CASE SIZE *6 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS		INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)		
PENVIRONMENT ENVIRONMENT ENVI	ISOLATION	INPUT-PE				
ENVIRONMENT STORAGE TEMP, HUMID.AND ALTITUDE -30 to +85°C, 20 - 90% RH (Non condensing) VIBRATION **7 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state) SAFETY AND NOISE 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 REGULATIONS HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *5 CASE SIZE **6 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS		OUTPUT-PE				
VIBRATION *7 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state)		OPERATING TEMP., HUMID. AND ALTITUDE		7 (077 31		
VIBRATION *7 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state) SAFETY AND NOISE 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 CASE SIZE *6 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS WEIGHT 750g max	ENVIDONMENT	STORAGE TEMP., HUMID. AND ALTITUDE		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
SAFETY AND NOISE AGENCY APPROVALS UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, Complies with DEN-AN NOISE REGULATIONS CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *5 CASE SIZE *6 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS WEIGHT 750g max	LIVIIIONMENT	VIBRATION *7		, , , , , , , , , , , , , , , , , , , ,		
NOISE REGULATIONS CONDUCTED NOISE HARMONIC ATTENUATOR Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B CASE SIZE *6 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS WEIGHT 750g max		IMPACT				
REGULATIONS HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *5 CASE SIZE *6 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS WEIGHT 750g max	SAFETY AND		CY APPROVALS UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, Complies with DEN-AN			
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OTHERS WEIGHT 750g max	REGULATIONS		ATOR	ļ <u>'</u> '		
· · ·	OTHERS			1 / 1		
COOLING METHOD Convection						
		COOLING METHOD		Convection		

- The value is primary surge. The current of input surge to a built-in EMI/EMC *4
 Filter(0.2ms or less) is excluded.
 Please contact us about dynamic load and input response.
 This is the value that measured on measuring board with capacitor of 22 µF *5
 and 0.1 µF at 150mm from output terminal.

 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to *7
 KEISOKU-GIRKN: RM103).
 Please refer to the instruction manual 2.5.
 - 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 another class.
 - Case size contains neither the umbo.

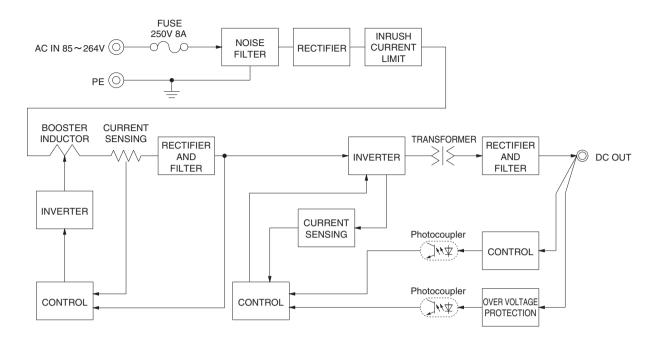
 Only as standard mounting orientation (A). Refer to the instruction manual 4.1. If install other than standard mounting orientation (A), please fix the power supply for withstand the vibration and impact.
- Please contact us about DC input voltage.

 To meet the specifications. Do not operate over-loaded condition.

 A sound may occur from power supply at light or peak loading.



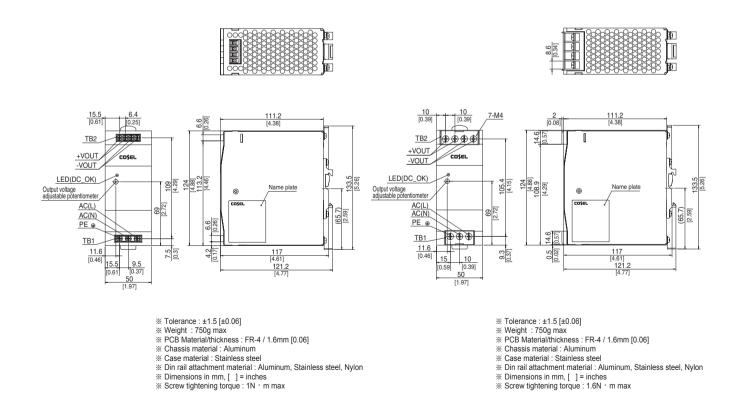
Block diagram



External view

<KLEA240F(Euro Style I/O Terminals)>

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



Mouser Electronics

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