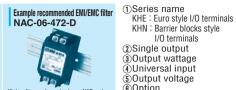
Ordering information

-240









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.

②Single output

I/O terminals

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	KHEA / KHNA240F-24
MAX OUTPUT WATTAGE[W]	240
DC OUTPUT	24V 10A (Peak 15A)

SPECIFICATIONS

MODEL MAISON MA	SPECIFICATIONS						
NPUT FREQUENCY[Hz] 50.7 69 (45 - 66) or DC 50.7 69 (45 - 66)		MODEL		KHEA / KHNA240F-24			
NPUT FREOURNCY[15] SOM 1957 95 (95 (45 - 66) or DC	INPUT	VOLTAGE[V]		·			
NPLOTE FREQUENCY[Hz]		CURRENT[A]					
ACM 1579 ACM 1579 ACM 1579 ACM 1579 ACM 2579 ACM 257			ACIN 230V				
POWER FACTOR ACM 150							
NPUT		EEEICIENCV[%]		92typ			
POWER FACTOR MRUSH CURRENT[A] A0X1192 20 typ (more than 3 sec. to re-start)		LITICILIVO I[78]	ACIN 230V	94typ			
INRUSH CURRENTIA ACRISIV 20thyr (more than 3 sec. to re-start)		POWER FACTOR		0.98typ			
CAS SIZE 10 10 10 10 10 10 10 1		TOWEITACION	ACIN 230V	21			
LEAKAGE CURRENT[mA]		INRUSH CURRENT[A]	ACIN 115V	20typ (more than 3 sec. to re-start)			
VOLTAGE[V]		*1	ACIN 230V	40typ (more than 3 sec. to re-start)			
CURRENTIA 10 PEAK CURRENTIA 15 LINE REGULATION[mV] 23 SOBREAN 15 LOAD REGULATION[mV] 23 15 LOAD REGULATION[mV] 25 15		LEAKAGE CURRENT[mA]		0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)			
PEAK CURRENT[A]		VOLTAGE[V]		24			
LINE REGULATION mV		CURRENT[A]		10			
COLIFORM COLIFOR		PEAK CURRENT[A] *2		15			
OUTPUT RIPPLE [mVp-p]		LINE REGULATION[mV] *3		96max			
OUTPUT File 10 - 3 - 300 24 0 max 4 1 1 1 1 1 1 1 1 1		LOAD REGULATION[mV] *3		150max *4			
Inc. - 30% 240 max *		_	0 to +70°C	120max			
OUTPUT RIPPLE NOISE[mVPp1 5 5 0 15 0 max 25 - 0 0 3 0 0 max 25 - 0 0 0 3 0 0 max 25 - 0 0 0 0 0 0 0 0 0 0		6 6 6 7	-25 - 0°C	240max			
RIPPLE NOISE[mVp-p] ** 25.0 C 300max 100max ** 4			lo=0 - 30%	240max *4			
RIPPEL NOISE[m/p-p] ≈ 25 - 0 C sloom ax sloom	ОИТРИТ	RIPPLE NOISE[mVp-p] *5	0 to +70°C	150max			
TEMPERATURE REGULATION mm 10 to 470C 240max #4 240max #4 240max #4 240max #4 250 to 470C 240max #4 250 to 70C 360max #4 250 to 70C 360max			-25 - 0°C	300max			
TEMPERATURE REGULATION(m) 25 to +70C 360max s4			$\overline{}$	300max *4			
PRIFT[my]		TEMPERATURE REQUIREMENT	0 to +70°C	240max *4			
START-UP TIME[ms] 750max (ACIN 115V, Io=100%)		TEMPERATURE REGULATION[mV]	-25 to +70°C	360max *4			
HOLD-UP TIME[ms] 20typ (ACIN 115V, Io=100%)				96max			
OUTPUT VOLTAGE ADJUSTMENT RANGE[V] 22.5 to 28.5		START-UP TIME[ms]		750max (ACIN 115V, Io=100%)			
OUTPUT VOLTAGE SETTING[V] 24.0±1.0%		HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)			
OVERCURRENT PROTECTION Works over 101% of peak current and recovers automatically		OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		22.5 to 28.5			
PROTECTION OVERVOLTAGE PROTECTION[V] 30.0 to 36.0		OUTPUT VOLTAGE SETTING[V]		24.0±1.0%			
CIRCUIT AND OTHERS DC_OK LAMP LED (Green)		OVERCURRENT PROTECTION		Works over 101% of peak current and recovers automatically			
OTHERS ALARM LAMP LED (Red) DC_OK CONTACT Relay contact 30VDC 1A max, 30VAC 0.5A max (resistive load) (Only KHEA) 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-RC, DC_OK AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature) OUTPUT-RC, DC_OK AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature) OUTPUT-RC, DC_OK AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature) OPERATINGTEMP,HUMID.AND ALTITUDE -25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing) STORAGE TEMP,HUMID.AND ALTITUDE -25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing) VIBRATION **9 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) MPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state) AFETY AND NOISE A GENCY APPROVALS AC input UL60950-1, C-UL (CSA60950-1), EN60950-1 CONDUCTED NOISE CO	PROTECTION	OVERVOLTAGE PROTECTION[V]		30.0 to 36.0			
DC_OK CONTACT Relay contact 30VDC 1A max, 30VAC 0.5A max (resistive load) (Only KHEA)	CIRCUIT AND	DC_OK LAMP		LED (Green)			
INPUT-OUTPUTAC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)INPUT-PEAC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)OUTPUT-PEAC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)OUTPUT-RC, DC_OKAC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)OPERATINGTEMP,HUMID.AND ALTITUDE-25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)STORAGE TEMP,HUMID.AND ALTITUDE-40 to +85°C, 20 - 90%RH (Non condensing)VIBRATION*910 - 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 NOISE REGULATIONSAC input DL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, ANSI/ISA12.12.01, ATEX, GL Complies with DEN-AN DC input DL60950-1, C-UL (CSA60950-1), EN60950-1CONDUCTED NOISE HARMONIC ATTENUATORComplies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-BOTHERS*850×124×117mm (W×H×D) [1.97×4.88×4.61 inches]OTHERSWEIGHT900g max	OTHERS	ALARM LAMP		LED (Red)			
ISOLATIONINPUT-PEAC2,000V 1 minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)OUTPUT-RC, DC_OKAC500V 1 minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)OUTPUT-RC, DC_OKAC500V 1 minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)ENVIRONMENTOPERATINGTEMP,HUMID.AND ALTITUDE-25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)STORAGE TEMP,HUMID.AND ALTITUDE-40 to +85°C, 20 - 90%RH (Non condensing)VIBRATION*9 10 - 55Hz, 19.6m/s² (2G), 3 minutes 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 NOISE REGULATIONSAC input UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, ANSI/ISA12.12.01, ATEX, GL Complies with DEN-ANDC input UL60950-1, C-UL (CSA60950-1), EN60950-1COMDUCTED NOISECONDUCTED NOISEComplies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-BHARMONIC ATTENUATORComplies with IEC61000-3-2 (Class A) *7CASE SIZE*8 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches]OTHERSWEIGHT900g max		DC_OK CONTACT		Relay contact 30VDC 1A max, 30VAC 0.5A max (resistive load) (Only KHEA)			
OUTPUT-PE AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)	ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)			
OUTPUT-PE AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature) OUTPUT-RC, DC_OK AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature) OPERATING TEMP,HUMID.AND ALTITUDE -25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing) STORAGE TEMP,HUMID.AND ALTITUDE -25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing) VIBRATION ***9 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) MPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis (Packing state) SAFETY AND NOISE AC input UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, ANSI/ISA12.12.01, ATEX, GL Complies with DEN-AN DC input UL60950-1, C-UL (CSA60950-1), EN60950-1 CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *7 CASE SIZE ** 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS		INPUT-PE		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)			
OPERATING TEMP,HUMID.AND ALTITUDE -25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)		OUTPUT-PE		AC500V 1minute, Cutoff current = 100mA, DC500V 50M Ω min (At Room Temperature)			
STORAGE TEMP,HUMID.AND ALTITUDE		OUTPUT-RC, DC_OK		AC500V 1minute, Cutoff current = 100mA, DC500V 50M Ω min (At Room Temperature)			
VIBRATION *9 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail)	ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE		-25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)			
VIBRATION *9 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail)		STORAGE TEMP., HUMID. AND ALTITUDE		-40 to +85°C, 20 - 90%RH (Non condensing)			
AGENCY APPROVALS AGENCY APPROVALS AC input UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, ANSI/ISA12.12.01, ATEX, GL Complies with DEN-AN		VIBRATION *9		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail)			
NOISE CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B							
DC input UL60950-1, C-UL (CSA60950-1), EN60950-1	NOISE	AGENCY ADDROVALS	AC input	UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, ANSI/ISA12.12.01, ATEX, GL Complies with DEN-AN			
REGULATIONS CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *7 CASE SIZE *8 50×124×117mm (W×H×D) [1.97×4.88×4.61 inches] OTHERS WEIGHT 900g max		DC input					
HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *7				Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B			
OTHERS WEIGHT 900g max				Complies with IEC61000-3-2 (Class A) *7			
·	OTHERS			50×124×117mm (W×H×D) [1.97×4.88×4.61 inches]			
COOLING METHOD Convection				900g max			
		COOLING METHOD		Convection			

KH series



- The value is primary surge. The current of input surge to a built-in EMI/EMC Filter(0.2ms or less) is excluded.
- Refer to 3, instruction manual.
- Refer to 3, instruction manual. Please contact us about dynamic load and input response. The output voltage is below 23.5V, the value is equal to three times of the specification. 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 2.7
- Please refer to the instruction manual 2.7. Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/ output. Please contact us about another class. Case size contains neither the umbo.

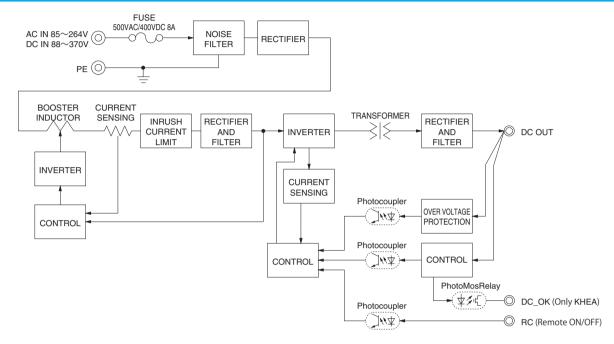
- Only as standard mounting orientation (A). Refer to the instruction manual 5.1 If install other than standard mounting orientation (A), please fix the power
- ri install other than standard mounting orientation (A), please if it the powe supply for withstand the vibration and impact.

 *10 Under low DC input voltage below DC110V, the temperature derating -1°5/V are required.

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

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

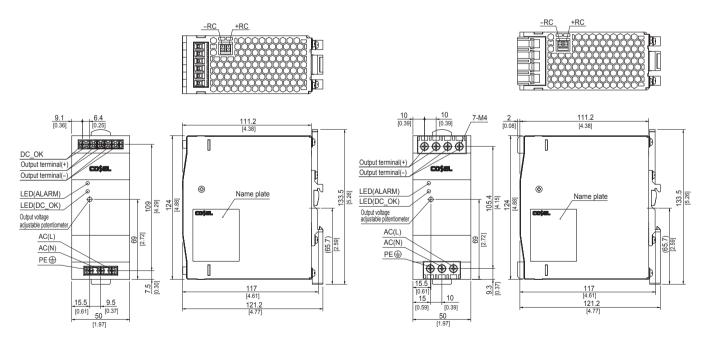
Block diagram



External view

<KHEA240F(Euro Style I/O Terminals)>

<KHNA240F(Barrier Blocks Style I/O Terminals)>



- X Tolerance: ±1 [±0.04]
- ※ Weight : 900g 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

- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 900g 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: 1.6N m max