

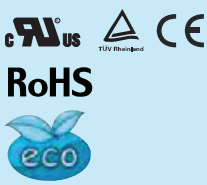
COSEL AC-DC Power Supplies DIN Rail type

# KHNA series

Ordering information

KHN A    F -24 -

① ② ③ ④ ⑤ ⑥



Recommended EMI/EMC Filter  
KHNA120F NAC-04-472-D  
KHNA240F NAC-06-472-D  
KHNA480F NAC-10-472-D



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

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

- ① Series name
  - ② Single output
  - ③ Output wattage
  - ④ Universal input
  - ⑤ Output voltage
  - ⑥ Option
- C : with Coating  
N2: Screw mounting

MODEL	KHNA120F-24	KHNA240F-24	KHNA480F-24
MAX OUTPUT WATTAGE[W]	120	240	480
DC OUTPUT	24V 5A (Peak 7.5A)	24V 10A (Peak 15A)	24V 20A (Peak 30A)

## SPECIFICATIONS

	MODEL	KHNA120F-24	KHNA240F-24	KHNA480F-24	
INPUT	VOLTAGE[V]	AC85 - 264 1 φ or DC120 - 370		AC85 - 264 1 φ *11 *12	
	CURRENT[A]	ACIN 115V	1.2typ	2.3typ	4.6typ
		ACIN 230V	0.6typ	1.2typ	2.3typ
	FREQUENCY[Hz]	50 / 60 (47 - 63) or DC		50 / 60 (47 - 63)	
	EFFICIENCY[%]	ACIN 115V	90typ	92typ	92typ
		ACIN 230V	92typ	94typ	94typ
	POWER FACTOR	ACIN 115V	0.98typ	0.98typ	0.98typ
		ACIN 230V	0.93typ	0.93typ	0.93typ
	INRUSH CURRENT[A]	ACIN 115V	15typ (at cold start Ta=25°C)	20typ (more than 3 sec. to re-start)	
		ACIN 230V	30typ (at cold start Ta=25°C)	40typ (more than 3 sec. to re-start)	
LEAKAGE CURRENT[mA]	0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)			0.75 / 1.5max	
OUTPUT	VOLTAGE[V]	24	24	24	
	CURRENT[A]	5	10	20	
	PEAK CURRENT[A]	*2 7.5	15	30	
	LINE REGULATION[mV]	*3 96max		96max (Io=30-100%) *10	
	LOAD REGULATION[mV]	*3 150max *4		150max (Io=30-100%) *10	
	RIPPLE[mVp-p]	*5 0 to +70°C	120max		120max
		-25 - 0°C	240max		240max
		Io=0 - 30%	240max *4		500max
	RIPPLE NOISE[mVp-p]	*5 0 to +70°C	150max		150max
		-25 - 0°C	300max		300max
		Io=0 - 30%	300max *4		600max
	TEMPERATURE REGULATION[mV]	0 to +70°C	240max *4		240max
		-25 to +70°C	360max *4		360max
	DRIFT[mV]	*6 96max		96max	
	START-UP TIME[ms]	750max (ACIN 115V, Io=100%)		750max (ACIN 115V, Io=100%)	
HOLD-UP TIME[ms]	20typ (ACIN 115V, Io=100%)		20typ (ACIN 115V, Io=100%)		
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	22.5 to 28.5		22.5 to 26.4		
OUTPUT VOLTAGE SETTING[V]	24.0±1.0%		24.0±1.0%		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 101% of peak current and recovers automatically			
	OVERVOLTAGE PROTECTION[V]	30.0 to 36.0			
	DC_OK LAMP	LED (Green)			
	ALARM LAMP	LED (Red)			
DC_OK CONTACT	-				
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)			
	OUTPUT-RC	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)			
ENVIRONMENT	OPERATING TEMP., 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/s <sup>2</sup> (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail)			
SAFETY AND NOISE REGULATIONS	IMPACT	196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis (Packing state)			
	AGENCY APPROVALS (At only AC input)	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178, UL508, ANSI / ISA12.12.01 Complies with DEN-AN			
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B			
OTHERS	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 (Class A) *7			
	CASE SIZE	*8 37 × 124 × 117mm (W × H × D) [1.46 × 4.88 × 4.61 inches]	50 × 124 × 117mm (W × H × D) [1.97 × 4.88 × 4.61 inches]	70 × 124 × 117mm (W × H × D) [2.76 × 4.88 × 4.61 inches]	
	WEIGHT	580g max	900g max	1,200g max	
COOLING METHOD	Convection / Forced air				

\*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 Refer to 3, instruction manual.  
\*3 Please contact us about dynamic load and input response.  
\*4 The output voltage is below 23.5V, the value is equal to three times of the specification.  
\*5 This is the value that measured on measuring board with capacitor of 22μF and 0.1μF 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.  
\*6 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.  
\*7 Please contact us about another class.  
\*8 Case size contains neither the umbo.

\*9 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 supply for withstand the vibration and impact.  
\*10 Burst operation at 30% load or less.  
\*11 Output derating is required. Please refer to the instruction manual 5.2.  
\*12 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.

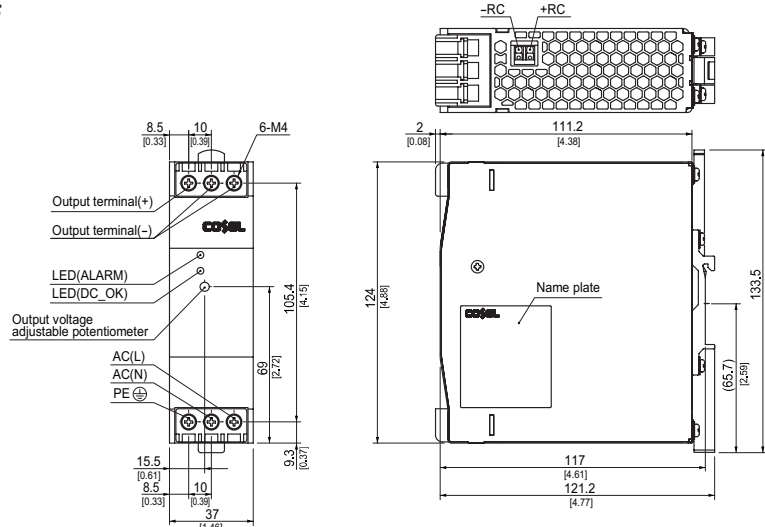
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Click below for more details, to buy on-line or request volume pricing:  
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**(866) 588-1750**  
power@sager.com  
<http://power.sager.com>

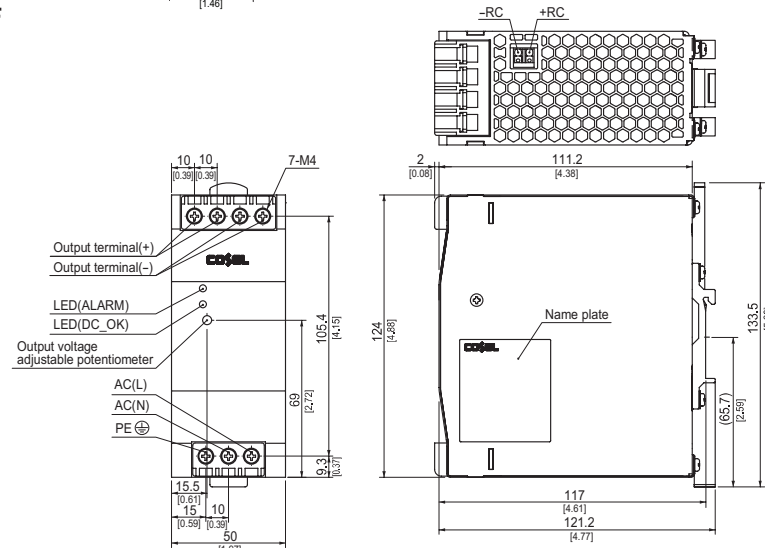
External view

■ KHNA120F



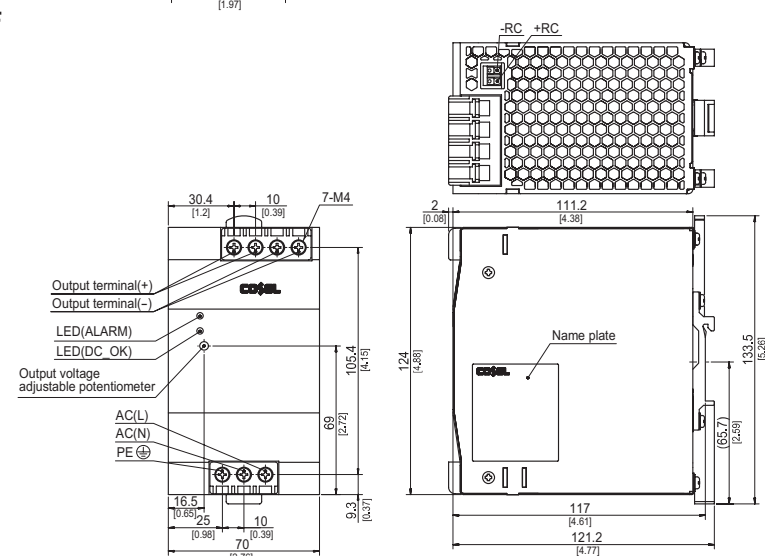
- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 580g max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Case material : Stainless steel
- ※ DIN rail attachment material : Aluminum, Nylon
- ※ Dimensions in mm, [ ] = inches
- ※ Screw tightening torque : 1.6N · m max

■ KHNA240F



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

■ KHNA480F



- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 1,200g max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Case material : Stainless steel
- ※ DIN rail attachment material : Aluminum, Nylon
- ※ Dimensions in mm, [ ] = inches
- ※ Screw tightening torque : 1.6N · m max



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