COSEL AC-DC Power Supplies DIN Rail type

KHEA/KHNA30F

Ordering information



RoHS eco





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

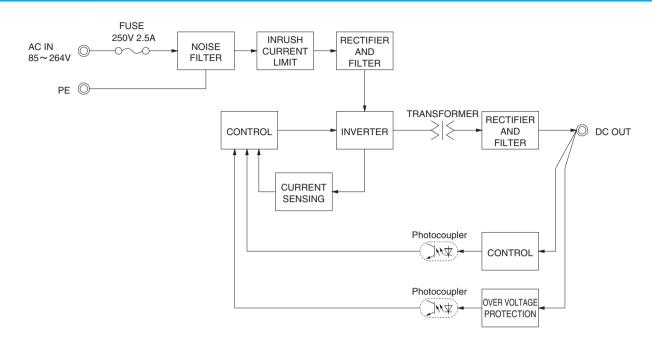
*The EMI/EMC Filter is recommended to connect with several devices



MODEL	IODEL		★KHEA/KHNA30F-5	★KHEA/KHNA30F-12	KHEA/KHNA30F-24		
ΜΑΧ ΟυΤΡυ	IT WATTAGE[W]		25	27.6	31.2		
C OUTPUT			5V 5A	12V 2.3A	24V 1.3A		
PECIF	ICATIONS		Please contact us about * marked models	S.			
	MODEL		KHEA/KHNA30F-5	KHEA/KHNA30F-12	KHEA/KHNA30F-24		
	VOLTAGE[V]		AC85 - 264 1 ϕ (Output derating is				
	ACIN 115V		0.45typ	0.50typ	0.55typ		
	CURRENT[A]	ACIN 230V	0.30typ	0.30typ	0.35typ		
INPUT	FREQUENCY[Hz]		50 / 60 (47 - 440) or DC				
		ACIN 115V	84.0typ	87.0typ	88.5typ		
	EFFICIENCY[%]	ACIN 230V	85.5typ	88.5typ	89.5typ		
	INRUSH CURRENT[A]	ACIN 115V	18typ (Io=100%) (at cold start Ta=2	25°C)			
	*1	ACIN 230V	35typ (Io=100%) (at cold start Ta=2	25°C)			
	LEAKAGE CURRENT[mA]		0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)				
	VOLTAGE[V]		5	12	24		
	CURRENT[A]		5.0	2.3	1.3		
	PEAK CURRENT[A]		-	-	-		
	LINE REGULATION[m	-	20max	48max	96max		
	LOAD REGULATION	-	80max	100max	150max		
			150max	150max	150max		
	RIPPLE[mVp-p] *3	-20 - 0 °C	300max	300max	300max		
		lo=0 - 30%		300max *4	300max *4		
UTPUT		0 to +70℃	180max	180max	180max		
	RIPPLE NOISE[mVp-p] *3	-20 - 0 °C	360max	360max	360max		
		lo=0 - 30%	360max *4	360max *4	360max *4		
	TEMPERATURE REGULATION/mV1	0 to +70℃	50max	120max	240max		
		-20 to +70℃	60max	150max	290max		
	DRIFT[mV]	*5	20max	48max	96max		
	START-UP TIME[ms]		200typ (ACIN 115V, lo=100%)				
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)	40.00 1 40.00	00 50 10 00 50		
	OUTPUT VOLTAGE ADJUSTMENT F		4.50 to 5.50 5.00 to 5.15	10.80 to 13.20 12.00 to 12.48	22.50 to 28.50 24.00 to 24.96		
DOTEOTION	OUTPUT VOLTAGE SETT				24.00 10 24.96		
ROTECTION	OVERCURRENT PROTE		Works over 105% of rating and rec 6.30 to 7.60	13.80 to 16.80	30.00 to 36.00		
THERS	DC_OK LAMP		LED (Green)	13.00 10 10.00	30.00 10 30.00		
			· · · · ·	- 10mA DC500V 50MO min (At	Room Tomporatura)		
OLATION	INPUT-OUTPUT INPUT-PE		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)				
OLATION	OUTPUT-PE		AC500V 1minute, Cutoff current = 100mA, DC500V 50M Ω min (At Room Temperature)				
	OPERATING TEMP., HUMID. AND ALTITUDE		-20 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)				
	STORAGE TEMP., HUMID.AND ALTITUDE		-30 to +85°C, 20 - 90%RH (Non condensing)				
NVIRONMENT	VIBRATION	*8					
	IMPACT		196.1m/s ² (20G), 11ms, once each X, Y and Z axis (Packing state)				
AFETY AND	AGENCY APPROVALS (At only	AC input)	UL60950-1, C-UL(CSA60950-1), UL508 (NEC Class2 per UL1310), ANSI/ISA12.12.01, EN60950-1, EN50178 Complies with DEN-AN				
OISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B				
EGULATIONS	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) *6 (Not built-in to active filter) *9				
OTHERS	CASE SIZE	*7					
	WEIGHT		165g max				
	COOLING METHOD		Convection / Forced air				
excluded. *2 Please con *3 This is the output term Measured Please refe Ripple and	tact us about dynamic load an value that measured on measuri ninal. by 20MHz oscilloscope or Rip er to the instruction manual 2. 1 ripple noise spec is change at	d input respond ng board with ple-Noise mo 7. t lo=0 to 30%	h capacitor of 22 µ F and 0.1 µ F at 150mm from eter (Equivalent to KEISOKU-GIKEN: RM103).	vibration and impact. *9 When two or more units are operating	(A). Refer to the instruction manual 5.1. orientation (A), please fix the power supply for withstand it may not comply with the IEC61000-3-2. erates continuously, the output voltage shut down. Refer 1		

\$50% load ration.
\$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.

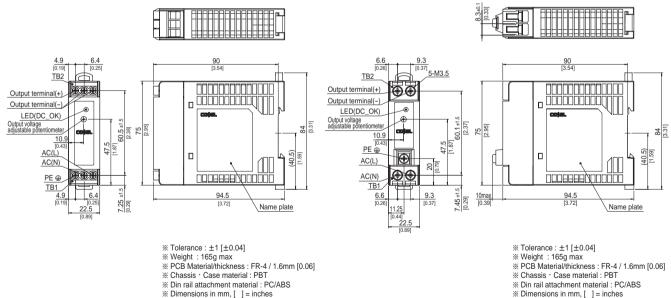




External view

<KHEA30F(Euro Style I/O Terminals)>

<KHNA30F(Barrier Blocks Style I/O Terminals)>



※ Screw tightening torque : 1N · m max

Dimensions in mm, [] = inches
 Screw tightening torque : 1N · m max

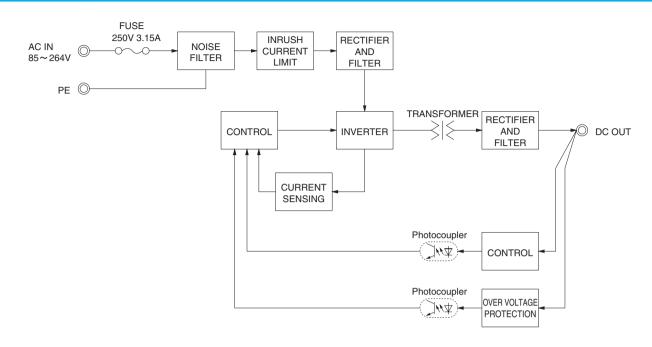
Ordering information **COSEL** AC-DC Power Supplies DIN Rail type **KHEA/KHNA60F** F 60 -[5 KH Α 1 2 I/O terminals 0.0.0.0 **RoHS** Single output Output wattage
Output wattage
Universal input
Output voltage
Option eco High voltage pulse noise type : NAP series Low leakage current type : NAM series C : with Coating *The EMI/EMC Filter is recommended to connect with several devices

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MODEL			★KHEA/KHNA60F-12	KHEA/KHNA60F-24			
MAX OUTPUT WATTAGE[W]			54	60			
DC OUTPUT			12V 4.5A	24V 2.5A			
PECIFIC	CATIONS		Please contact us about ★ marked model.				
MODEL			KHEA/KHNA60F-12	KHEA/KHNA60F-24			
V	VOLTAGE[V]		AC85 - 264 1 ϕ (Output derating is required) or DC120 - 370				
	AC		1.00typ	1.10typ			
	CURRENT[A]	ACIN 230V	0.60typ	0.70typ			
F	REQUENCY[Hz]		50 / 60 (47 - 440) or DC				
NPUT		ACIN 115V	86.0typ 89.0typ				
	EFFICIENCY[%]	ACIN 230V	88.0typ	91.0typ			
11	NRUSH CURRENT[A]	ACIN 115V	18typ (lo=100%) (at cold start Ta=25°C)				
		ACIN 230V	35typ (lo=100%) (at cold start Ta=25°C)				
L	EAKAGE CURRENT	[mA]	0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)				
	/OLTAGE[V]		12	24			
	CURRENT[A]		4.5	2.5			
	PEAK CURRENT[A]		-	-			
	INE REGULATION[m	ıV1 ∗ 2	48max	96max			
	OAD REGULATION	-	100max	150max			
		0 to +70℃	200max	200max			
F	RIPPLE[mVp-p] *3	-20 - 0°C	300max	300max			
		lo=0 - 30%	300max *4	300max *4			
-		0 to +70℃	260max	260max			
UTPUT	RIPPLE NOISE[mVp-p] *3	-20 - 0°C	360max	360max			
"		lo=0 - 30%	360max *4	360max *4			
-		0 to +70℃	120max	240max			
TE	EMPERATURE REGULATION[mV]	-20 to +70°C	150max	290max			
		*5	48max	96max			
	DRIFT[mV] START-UP TIME[ms]	÷0					
			200typ (ACIN 115V, Io=100%)				
	IOLD-UP TIME[ms] UTPUT VOLTAGE ADJUSTMENT R		20typ (ACIN 115V, Io=100%) 10.80 to 13.20 22.50 to 28.50				
				22.50 to 28.50			
	OUTPUT VOLTAGE SETTI		12.00 to 12.48	24.00 to 24.96			
	OVERCURRENT PROTE			*10			
	OVERVOLTAGE PROTEC		13.80 to 16.80	30.00 to 36.00			
			LED (Green)				
	NPUT-OUTPUT		AC3,000V 1 minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)				
	NPUT-PE		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)				
	DUTPUT-PE		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)				
	PERATING TEMP., HUMID.AND		-20 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)				
NVIRONMENT —	TORAGE TEMP., HUMID.AND A		-30 to +85℃, 20 - 90%RH (Non condensing)				
	/IBRATION	*8	······································				
	MPACT		196.1m/s ² (20G), 11ms, once each X, Y and Z axis (Packing state)				
	GENCY APPROVALS (At only	AC input)	UL60950-1, C-UL(CSA60950-1), UL508 (NEC Class2 pe EN50178 Complies with DEN-AN	r UL1310), ANSI/ISA12.12.01, 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) *6 (Not built-in to active filter) *9				
C	CASE SIZE *7		32×90×90mm (W×H×D) [1.26×3.54×3.54 inches]				
THERS V	WEIGHT		270g max				
C	COOLING METHOD		Convection / Forced air				
excluded. *2 Please contact *3 This is the value output termina	ct us about dynamic load and ue that measured on measuri al.	d input resp ng board wit	n capacitor of 22 µ F and 0.1 µ F at 150mm from If install other than station and impact.	It another class. ther the umbo. nting orientation (A). Refer to the instruction manual 5.1. ndard mounting orientation (A), please fix the power supply for withst ts are operating it may not comply with the IEC61000-3-2.			

Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). Please refer to the instruction manual 2.7. Ripple and ripple noise spec is change at lo=0 to 30% by burst operation. *4 In case of operating under 0°C ambient temperature, the value is two times of specification at 0 to 30% load factor. *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.

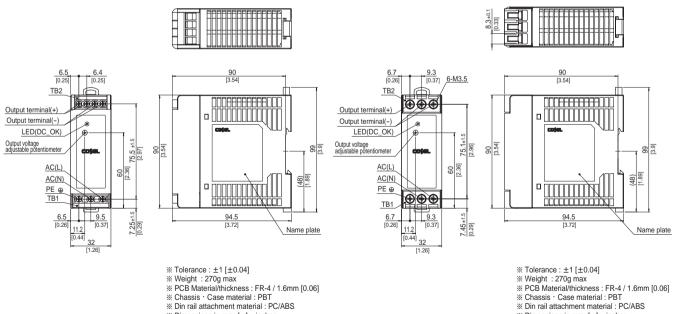




External view

<KHEA60F(Euro Style I/O Terminals)>

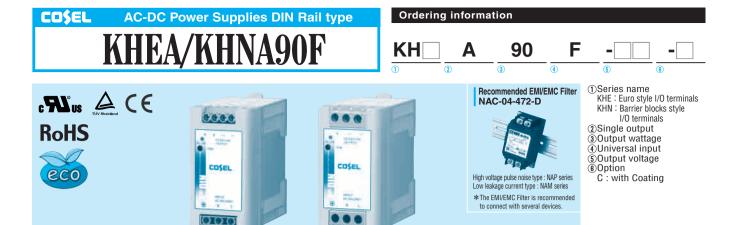
<KHNA60F(Barrier Blocks Style I/O Terminals)>



* Din rail attachment material : PC/ABS

% Dimensions in mm, [] = inches
% Screw tightening torque : 1N · m max

% Dimensions in mm, [] = inches % Screw tightening torque : 1N · m max

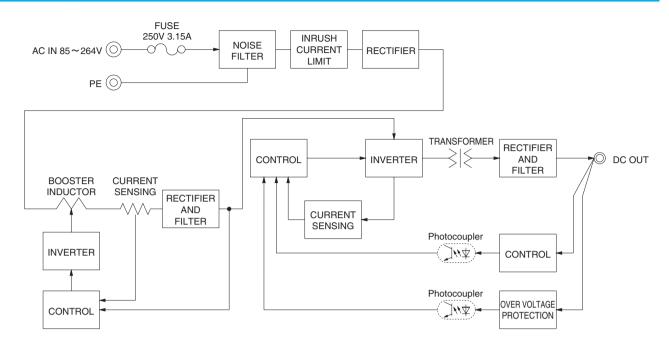


MODEL			★KHEA/KHNA90F-12	KHEA/KHNA90F-24		
MAX OUTPUT WATTAGE[W]			81.6	91.2		
DC OUTPUT			12V 6.8A	24V 3.8A		
SPECIF	ICATIONS		Please contact us about ★ marked model.			
	MODEL		KHEA/KHNA90F-12	KHEA/KHNA90F-24		
	VOLTAGE[V]		AC85 - 264 1 ¢ (Output derating is required) *10			
INPUT		ACIN 115V	0.85typ	0.95typ		
	CURRENT[A]	ACIN 230V	0.45typ	0.55typ		
	FREQUENCY[Hz]	Addit 2001	50 / 60 (47 - 63)	0.000		
	I TEGOENOT[T2]	ACIN 115V	87.0typ	89.0typ		
	EFFICIENCY[%]	ACIN 230V	88.0typ	91.0typ		
	POWER FACTOR	ACIN 115V	0.98typ			
	(lo=100%)	ACIN 230V	0.86typ			
	, ,	ACIN 230V ACIN 115V	18typ (lo=100%) (at cold start Ta=25°C)			
	INRUSH CURRENT[A]	ACIN 113V	35typ (lo=100%) (at cold start Ta=25°C) (at cold start Ta=25°C)			
	LEAKAGE CURRENT		0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)			
		[IIIA]	12 24			
	VOLTAGE[V] CURRENT[A]		6.8	3.8		
	PEAK CURRENT[A]		-	5.0		
		nV1 *2	- 48max	96max		
	LINE REGULATION[n		4011ax 100max	150max		
	LUAD REGULATION	0 to +70℃	200max	200max		
	RIPPLE[mVp-p] *3	-20 - 0°C		300max		
	RIPPLE[mvp-p] *3		300max 300max *4			
				300max *4		
OUTPUT			260max	260max		
	RIPPLE NOISE[mVp-p] *3		360max	360max		
			360max *4	360max *4		
	TEMPERATURE REGULATION[mV]		120max	240max		
			150max	290max		
	DRIFT[mV] *5					
	START-UP TIME[ms]		500typ (ACIN 115V, Io=100%)			
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)			
	OUTPUT VOLTAGE ADJUSTMENT		10.80 to 13.20 22.50 to 28.50			
	OUTPUT VOLTAGE SETT		12.00 to 12.48 24.00 to 24.96			
PROTECTION	OVERCURRENT PROTE		Works over 105% of rating and recovers automatical			
CIRCUIT AND OTHERS	OVERVOLTAGE PROTE	CHON[V]	13.80 to 16.80	30.00 to 36.00		
UTHENS	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 50MΩ min (At Room Temperature) AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)			
	OPERATING TEMP., HUMID.AND		-20 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)			
ENVIRONMENT	STORAGE TEMP., HUMID.AND		-30 to +85°C, 20 - 90%RH (Non condensing)			
	VIBRATION	*8	······································			
	IMPACT		196.1m/s ² (20G), 11ms, X, Y and Z axis (Packing state)			
SAFETY AND	AGENCY APPROVALS (At only	y AC input)	UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178, UL508, ANSI/ISA12.12.01 Compliies with DEN-AN			
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B			
REGULATIONS	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) *6			
OTHERS	CASE SIZE *7					
	WEIGHT		405g max			
excluded. *2 Please con *3 This is the output term Measured Please ref Ripple and	ntact us about dynamic load an value that measured on measur ninal. I by 20MHz oscilloscope or Rip er to the instruction manual 2. d ripple noise spec is change a	d input resp ing board wit ple-Noise m 7. t Io=0 to 30°	h capacitor of 22 µ F and 0.1 µ F at 150mm from eter (Equivalent to KEISOKU-GIKEN: RM103). % by burst operation. (% by burst operation. (% b) full contact us	s neither the umbo. mounting orientation (A). Refer to the instruction manual 5.1. n standard mounting orientation (A), please fix the power supply for withstand t act. protection circuit operates continuously, the output voltage shut down. Refer to		

output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). Please refer to the instruction manual 2.7. Ripple and ripple noise spec is change at Io=0 to 30% by burst operation. *4 In case of operating under O°C ambient temperature, the value is two times of specification at 0 to 30% load factor. *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.

KH series | CO\$EL

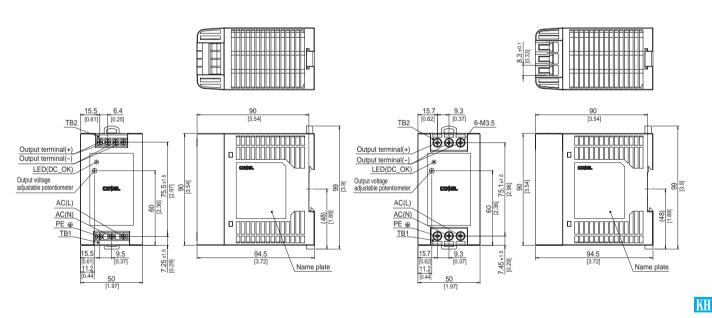
Block diagram



External view

<KHEA90F(Euro Style I/O Terminals)>

<KHNA90F(Barrier Blocks Style I/O Terminals)>



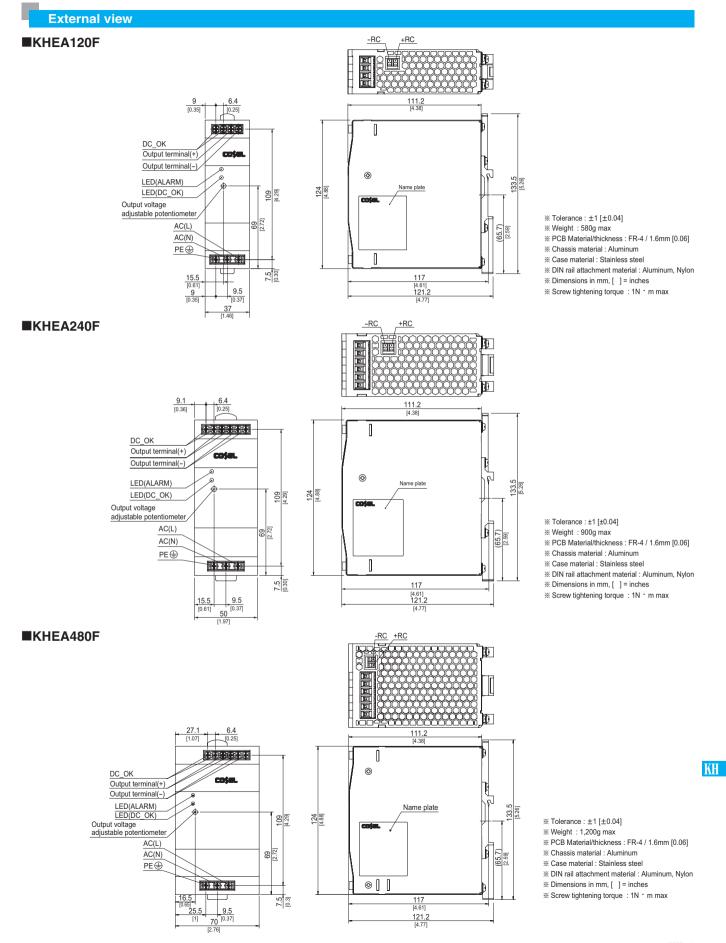
- % Tolerance : ±1 [±0.04]
- Weight : 405g max
 PCB Material/thickness : FR-4 / 1.6mm [0.06]
- * Chassis · Case material : PBT
- Din rail attachment material : PC/ABS
 Dimensions in mm, [] = inches
 Screw tightening torque : 1N · m max

- % Tolerance : ±1 [±0.04]
- Weight : 405g max
 PCB Material/thickness : FR-4 / 1.6mm [0.06]
- Chassis · Case material : PBT
 Din rail attachment material : PC/ABS
 Dimensions in mm, [] = inches
- ※ Screw tightening torque : 1N ⋅ m max

COŞEL	AC-DC Po	wer S	upplies DIN Rail type	Ordering information		
	KUC				F -24 -	
	пе	AS	eries		F <u>24</u>	
c AU us RoHS	TUV Rented	1		Recommended EN KHEA120F NAC KHEA240F NAC KHEA480F NAC High voltage pulse noise typ Low leakage current type * The EMI/EMC Filter is to connect with several	WEMC Filter -04-472-D -06-472-D -10-472-D	
MODEL			KHEA120F-24	KHEA240F-24	KHEA480F-24	
MAX OUTPU DC OUTPUT	JT WATTAGE[W]		120 24V 5A (Peak 7.5A)	240 24V 10A (Peak 15A)	480 24V 20A (Peak 30A)	
	ICATIONS		240 SA (Fear 7.5A)		24V ZOA (Feak JOA)	
	MODEL		KHEA120F-24	KHEA240F-24	KHEA480F-24	
	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	
	FREQUENCY[Hz]	ACIN 230V	0.6typ 50 / 60 (47 - 63) or DC	1.2typ	2.3typ 50 / 60 (47 - 63)	
		ACIN 115V	90typ	92typ	92typ	
INPUT	EFFICIENCY[%]	ACIN 230V	92typ	94typ	94typ	
	POWER FACTOR	ACIN 115V	0.98typ	0.98typ	0.98typ	
	INRUSH CURRENT[A]	ACIN 230V ACIN 115V	0.93typ 15typ (at cold start Ta=25℃)	0.93typ 20typ (more than 3 sec. to re-start)	0.93typ	
		ACIN 230V	30typ (at cold start Ta=25°C)	40typ (more than 3 sec. to re-start)		
	LEAKAGE CURRENT	[mA]	0.45 / 0.75max		0.75 / 1.5max	
	VOLTAGE[V]		(ACIN 100V / 240V 60Hz, Io=100%, 24	According to IEC60950-1 and DEN-A	N) 24	
	CURRENT[A]		5	10	20	
	PEAK CURRENT[A]	*2	7.5	15	30	
	LINE REGULATION[m	-			96max (lo=30-100%) *10	
	LOAD REGULATION[mV] *3 0 to +70℃	150max *4 120max		150max (lo=30-100%) *10 120max	
	RIPPLE[mVp-p] *5	-25 - 0°C	240max		240max	
		lo=0 - 30%			500max	
OUTPUT		0 to +70℃	150max	150max		
	RIPPLE NOISE[mVp-p] *5	-25 - 0℃ lo=0 - 30%	300max 300max *4	300max 600max		
			240max *4	240max		
	-25 to +70°C		360max *4	360max		
	DRIFT[mV] *6		96max 750max (ACIN 115V. Io=100%)		96max 750max (ACIN 115V, Io=100%)	
	START-UP TIME[ms] HOLD-UP TIME[ms]		20typ (ACIN 115V, I0=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%			
DEATEATION	OVERCURRENT PROTE		Works over 101% of peak current and recovers automatically 30.0 to 36.0			
PROTECTION CIRCUIT AND	DC_OK LAMP	[1]	LED (Green)			
OTHERS	ALARM LAMP		LED (Red)			
	DC_OK CONTACT		Relay contact 30VDC 1A max, 30VAC 0.5A max (resistive load) AC3.000V 1minute. Cutoff current = 10mA. DC500V 50MΩ min (At Room Temperature)			
	INPUT-OUTPUT INPUT-PE		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room 1emperature) AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)			
ISOLATION	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 A STORAGE TEMP., HUMID.AND A		-25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing) -40 to +85°C, 20 - 90%RH (Non condensing)			
ENVIRONMENT	VIBRATION	*9				
	IMPACT		196.1m/s ² (20G), 11ms, once each X, Y and Z axis (Packing state)			
SAFETY AND NOISE	AGENCY APPROVALS (At only CONDUCTED NOISE	AC input)	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178, UL508, ANSI / ISA12.12.01 Complies with DEN-AN			
REGULATIONS	HARMONIC ATTENUA	TOR	Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B Complies with IEC61000-3-2 (Class A) *7			
	CASE SIZE	*8	37×124×117mm (W×H×D)	50×124×117mm (W×H×D)	70×124×117mm (W×H×D)	
OTHERS	WEIGHT		[1.46×4.88×4.61 inches] 580g max	[1.97×4.88×4.61 inches] 900g max	[2.76×4.88×4.61 inches] 1,200g max	
	COOLING METHOD		Convection / Forced air	1 500y max	ן ו,בטטע ווומא	
	primary surge. The current of input	surge to a bui	1		ard mounting orientation (A). Refer to the instruction manual 5.1.	
*2 Refer to 3, instruction manual. Please refer to the instruction manual 2.7. supply for withstand the vibration and impact. *3 Please contact us about dynamic load and input response. *6 Drift is the change in DC output for an eight hour period after a half-hour specification. supply for withstand the vibration and impact. *10 Uptus to the sequel to three times of the specification. *10 Burst operation at 30% load or less. *11 Please refer to the instruction manual 5.2. *11 Please refer to the instruction manual 5.2.						
and 0.1µFa	alue that measured on measuring bo It 150mm from output terminal.	aru witti capa	citor of 22 µF *7 Please contact us about another class. *8 Case size contains neither the umbo.		specifications. Do not operate over-loaded condition. occur from power supply at light or peak loading.	
КН-8						

KH





COŞEL AC-DC Power Supplies DIN Rail type				Ordering information			
	KHN	٨	series	KHN A		F -24 -	
			001100	$\frac{1}{1}$ $\frac{1}{2}$	3		
e PU ⁱ us RoHS	TV Redeted				Recommended EMI KHNA120F NAC-I KHNA240F NAC-I KHNA480F NAC-I Wigh voltage pulse noise type Low leakage current type : I * The EMI/EMC Filter is re to connect with several	04-472-D 06-472-D 10-472	
MODEL			KHNA120F-24	KHNA240F-24		KHNA480F-24	
MAX OUTPU	T WATTAGE[W]		120 24V 5A (Peak 7.5A)	240 24V 10A (Peak 15A)		480 24V 20A (Peak 30A)	
	CATIONS						
	MODEL		KHNA120F-24	KHNA240F-24		KHNA480F-24	
	VOLTAGE[V]	ACINI 11EV	AC85 - 264 1 ¢ or DC120 - 370	0.0tum		AC85 - 264 1 ¢ *11 *12	
	CURRENT[A]	ACIN 115V ACIN 230V	1.2typ 0.6typ	2.3typ 1.2typ		4.6typ 2.3typ	
	FREQUENCY[Hz]		50 / 60 (47 - 63) or DC			50 / 60 (47 - 63)	
	EFFICIENCY[%]	ACIN 115V ACIN 230V	90typ 92typ	92typ 94typ		92typ 94typ	
NPUT	POWER FACTOR	ACIN 230V ACIN 115V	0.98typ	0.98typ		0.98typ	
		ACIN 230V	0.93typ	0.93typ	000 to	0.93typ	
	INRUSH CURRENT[A] ACIN 115V *1 ACIN 230V		15typ (at cold start Ta=25℃) 30typ (at cold start Ta=25℃)	20typ (more than 3 40typ (more than 3	,		
	LEAKAGE CURRENT		0.45 / 0.75max			0.75 / 1.5max	
			(ACIN 100V / 240V 60Hz, Io=100%, 24	According to IEC609	50-1 and DEN-AN	V) 24	
	VOLTAGE[V] CURRENT[A]		5	10		20	
	PEAK CURRENT[A]	*2		15		30	
	LINE REGULATION[m	-				96max (lo=30-100%) *10 150max (lo=30-100%) *10	
	LOAD HEADEAHON	0 to +70℃				120max	
	RIPPLE[mVp-p] *5	-25 - 0°C	240max			240max 500max	
		lo=0 - 30% 0 to +70℃				150max	
DUTPUT	RIPPLE NOISE[mVp-p] *5	-25 - 0 °C	300max			300max	
		lo=0 - 30%	300max *4 240max *4			600max 240max	
			360max *4			360max	
	DRIFT[mV] *6				96max		
	START-UP TIME[ms] HOLD-UP TIME[ms]		750max (ACIN 115V, Io=100%) 20typ (ACIN 115V, Io=100%)		750max (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% Works over 101% of peak current and recovers automatically 24.0±1.0%			24.0±1.0%	
ROTECTION	OVERCURRENT PROTECTION OVERVOLTAGE PROTECTION[V]						
IRCUIT AND	DC_OK LAMP		LED (Green)				
ULEU2	ALARM LAMP DC_OK CONTACT		LED (Red)				
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)				
SOLATION			AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)				
	OUTPUT-PE OUTPUT-RC		AC500V 1minute, Cutoff current = 100mA, DC500V 50M Ω min (At Room Temperature) AC500V 1minute, Cutoff current = 100mA, DC500V 50M Ω min (At Room Temperature)				
	OPERATING TEMP., HUMID.AND		-25 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)				
NVIRONMENT	STORAGE TEMP., HUMID.AND A VIBRATION	LTITUDE *9	-40 to +85°C, 20 - 90% RH (Non condensing) 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail)				
	IMPACT *9		196.1m/s ² (20G), 11ms, once each X, Y and Z axis (Packing state)				
AFETY AND	AGENCY APPROVALS (At only CONDUCTED NOISE	AC input)	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178, UL508, ANSI / ISA12.12.01 Complies with DEN-AN Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B				
EGULATIONS	HARMONIC ATTENUA	TOR	Complies with IEC61000-3-2 (Class		3, EN55011-B, EN55022-B		
	CASE SIZE	*8	37×124×117mm (W×H×D)	50×124×117mm (,	70×124×117mm (W×H×D)	
THERS	WEIGHT		[1.46×4.88×4.61 inches] 580g max	[1.97×4.88×4.61 i 900g max	nunesj	[2.76×4.88×4.61 inches] 1,200g max	
	COOLING METHOD		Convection / Forced air				
Filter(0.2ms of *2 Refer to 3, in: *3 Please contact *4 The output vo specification.	ct us about dynamic load and input bltage is below 23.5V, the value is e	response. qual to three t	KEISOKU-GIKEN: RM103). Please refer to the instruction manua *6 Drift is the change in DC output for ar warm-up at 25 C, with the input volta output.	l 2.7. n eight hour period after a half-hou ge held constant at the rated input/	If install other supply for with r *10 Burst operatio *11 Output deratin *12 Please contac	rd mounting orientation (A). Refer to the instruction manu than standard mounting orientation (A), please fix the p stand the vibration and impact. n at 30% load or less. g is required. Please refer to the instruction manual 5.2 t us about DC input voltage. excifications. Do not operate over-loaded condition.	
and 0.1 µ F at H-10	150mm from output terminal.		*8 Case size contains neither the umbo.		* A sound may	occur from power supply at light or peak loading.	

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