

Preliminary

KAMN40 SERIES

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AC - DC POWER MODULE
28 ~ 40W UL / cUL / TUV / CE

FEATURES

- AC/DC POWER MODULE
- UNIVERSAL INPUT 85 ~ 265 VAC
- HIGH EFFICIENCY UP TO 87%
- SHORT CIRCUIT PROTECTION
- INTERNAL INPUT FILTER
- 2 YEARS WARRANTY

MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (typ.)	EFF. (min.)
Single Output Models						
KAMN4003	85~265 VAC	28 WATTS	+3.3 VDC	8500 mA	78%	76%
KAMN4005	85~265 VAC	40 WATTS	+ 5 VDC	8000 mA	82%	80%
KAMN4012	85~265 VAC	40.8 WATTS	+ 12 VDC	3400 mA	86%	84%
KAMN4015	85~265 VAC	40.5 WATTS	+ 15 VDC	2700 mA	87%	85%
KAMN4024	85~265 VAC	40.8 WATTS	+ 24 VDC	1700 mA	87%	85%
Dual Output Models						
KAMN4012D	85~265 VAC	40.8 WATTS	± 12 VDC	± 1700 mA	85%	83%
KAMN4015D	85~265 VAC	40.5 WATTS	± 15 VDC	± 1350 mA	86%	84%
KAMN40503D	85~265 VAC	31.6 WATTS	+ 5 /+ 3.3 VDC	+5A / +2 A	82%	80%
KAMN40512D	85~265 VAC	40 WATTS	+ 5 /+ 12 VDC	+ 5A / + 1.25A	83%	81%

SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

CONTROL AND PROTECTION						
Characteristics	Conditions	min.	typ.	max.	unit	
Input fuse	T2A / 250VAC internal					
Output short circuit	Hiccup mode					
Rated over load protection		120		160	%	
APPROVALS AND STANDARDS						
UL / cUL	UL60950-1 Recognized					
TUV	EN60950-1					
CE	EN61000-6-3, EN55022 class B					
	EN61000-6-2, EN55024					
	EN61000-3-2, EN61000-3-3					
	EN61204-3					



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GENERAL

Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom		65		KHz
Isolation voltage	Input / Output	3,000			VAC
Isolation resistance	Input / Output, @ 500VDC	100			MΩ
Ambient temperature	Operating at Vi nom	-40		+ 71	°C
Derating	Vi nom, +51 to +71°C			2.5	% / °C
Storage temperature	Non operational	-40		+100	°C
Relative humidity	Vi nom, Io nom	20		95	% RH
Dimension	L 89 x W 63.5 x H 25				mm
	L 3.5 x W 2.5 x H 0.98				inches
Cooling	Free air convection				
Case material	Plastic				

INPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Rated input voltage	Io nom		100		240	VAC
Input voltage range * 1	Io nom	AC in	85		265	VAC
		DC in	120		370	VDC
Line frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Io nom	Vi : 115VAC			20	A
		Vi : 230VAC			40	A

*1 : 89Vac ~ 85Vac input is permissible, but output is derated to 75%

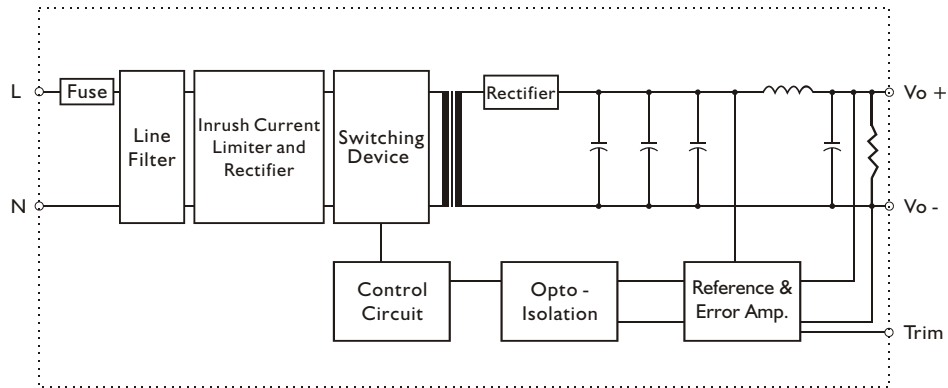
OUTPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Output voltage accuracy	Vi nom, Io nom				± 2	%
Minimum load	Vi nom	single output models	0			%
		dual output models (each output)	20			%
Line regulation	Io nom, Vi min ... Vi max				± 1	%
Load regulation	Vi nom, Io min ... Io nom	single output models			± 1	%
		dual output models			± 2	%
Hold up time			10			ms
Transient recovery time	Vi nom, Io nom = I ↔ 0.5 Io nom			1000		μs
Temperature coefficient	Vi nom, Io nom				± 0.02	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz	3.3V, 5V models			100	mV
		12V ... 24V models			200	mV
External trim ADJ. Range 1) (for single output only)	Io = 5% ... 100%	3.3V models	- 5		+ 5	%
		5V ... 24V models	-10		+10	%
Efficiency	Vi nom, Io nom, Po / Pi		Up to 87%, See model list			

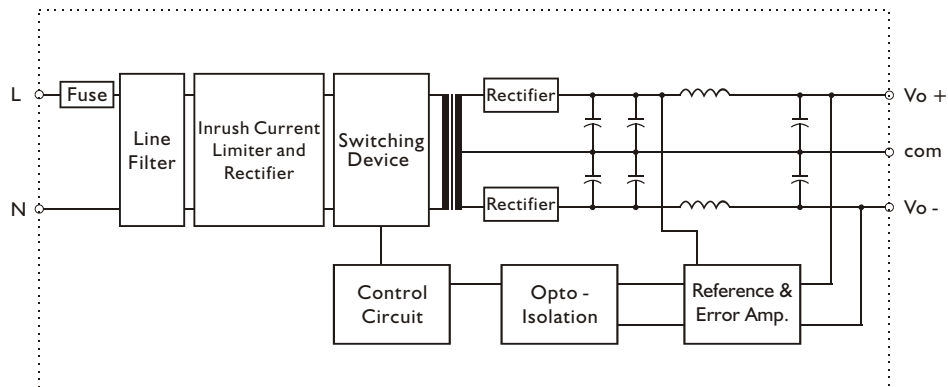
NOTE 1 : Pls refer to Fig 1 & Table 1 for connection and resistance recommended.

CIRCUIT SCHEMATIC

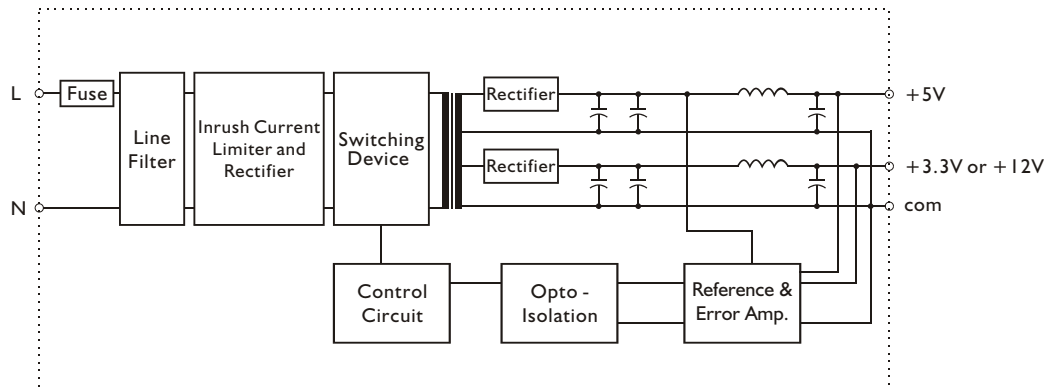
- Block diagram for KAMN40 series with single output



- Block diagram for KAMN40 series with dual output



- Block diagram for KAMN40503D & KAMN40512D

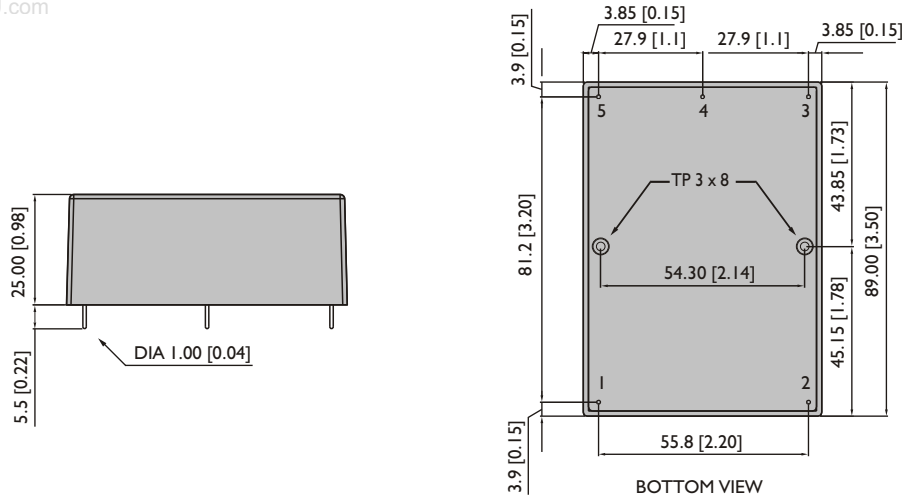


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MECHANISM & PIN CONFIGURATION

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mm [inch]



PHYSICAL CHARACTERISTICS

CASE SIZE	L 89 x W 63.5 x H25mm (L 3.5 x W 2.5 x H 0.98 inches)
CASE MATERIAL	Plastic
WEIGHT	250g

PIN ASSIGNMENT

GENERAL

PIN NO.	1	2	3	4	5
SINGLE	N	L	Vo +	Vo -	Trim
DUAL	N	L	Vo + or +5V	com	Vo- or +3.3V or +12V

DERATING

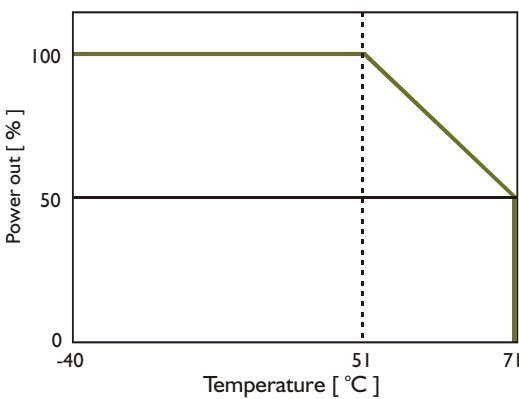


Fig. 1 Trim connection

(For single output only)

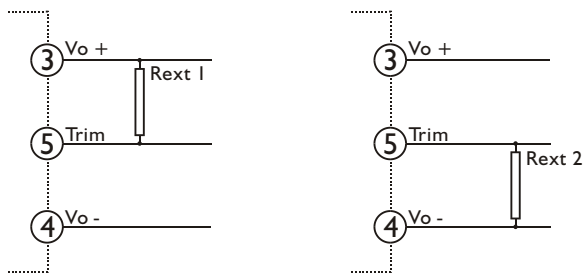


Table 1 Typical resistor values for various output voltage adjustment settings

Type	Rext 1		Rext 2	
	Uo nom -5%	Uo nom -10%	Uo nom +5%	Uo nom +10%
KAMN4003	100KΩ	N / A	12KΩ	N / A
KAMN4005	4.7KΩ	0KΩ	5.6KΩ	820Ω
KAMN4012	39KΩ	15KΩ	15KΩ	2.7KΩ
KAMN4015	120KΩ	51KΩ	22KΩ	2.7KΩ
KAMN4024	130KΩ	56KΩ	8.66KΩ	510Ω