

Datasheet

KAMN40 SERIES



AC-DC POWER MODULE
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 year warranty

Model list

RS STOCK NO.	MODEL NO.	OUTPUT WATTAGE	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (TYP.)
751-1425	KAMN4005	40 watts	85-265 Vac	+ 5 Vdc	8000 mA	82%
751-1434	KAMN4012	40.8 watts	85-265 Vac	+12 Vdc	3400 mA	86%
751-1437	KAMN4015	40.5 watts	85-265 Vac	+15 Vdc	2700 mA	87%
751-1431	KAMN4024	40.8 watts	85-265 Vac	+24 Vdc	1700 mA	87%

Specification

All specifications typical at nominal line, full load, 25° C unless otherwise stated

GENERAL						
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
Switching frequency	Vi nom, Io nom		65		kHz	
Isolation voltage	Input- output	4236/6000			Vac/Vdc	
Isolation Resistance	Input- output @ 500 Vdc	100			MΩ	
Ambient temperature	Operating at Vi nom, Io nom	-40		+71	°C	
Case temperature	Operating at Vi nom, Io nom			+85	°C	
Derating	Vi nom, +61 to +71 °C			2.5	% / °C	
Storage temperature	Non operational	-40		+100	°C	
Relative humidity	Vi nom, Io nom	20		95	% RH	
Temperature coefficient	Vi nom, Io nom			± 0.03	% / °C	
Altitude during operation				3000	m	
Dimensions		L 89 x W 63.5 x H 25			mm	
Cooling	Free air convection					

RELIABILITY						
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
MTBF	Bellcore issue 6 @ 40°C, GB	5V	606000		Hours	
		12V	615000		Hours	
		15V & 24V	623000		Hours	

INPUT SPECIFICATIONS						
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
Rated input voltage	Io nom	100		240	Vac	
Input voltage range	Ta min ... Ta max, Io nom	ac in	85	265	Vac	
		dc in	120	375	Vdc	
Rated input current	Vi : 115 / 230 Vac, Io nom		0.75 - 0.45	0.8 - 0.4	A	
Line frequency	Vi nom, Io nom	47		63	Hz	
Inrush current	Vi : 115 / 230 Vac, Io nom			20 / 40	A	
Leakage current	Normal condition			100	μA	

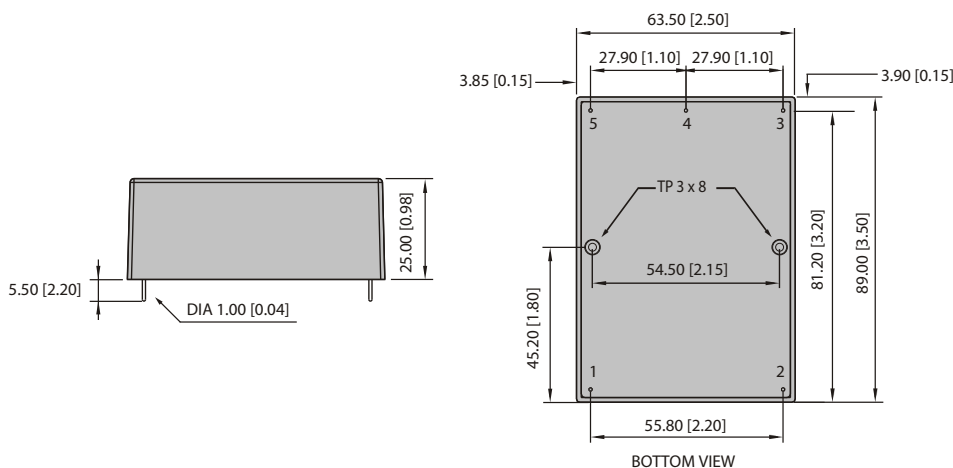
Specification

OUTPUT SPECIFICATIONS					
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output voltage accuracy	Vi nom, Io nom			± 1	%
Minimum load	Vi nom	0			%
Line regulation	Io nom, Vi min ... Vi max			± 1	%
Load regulation	Vi nom, Io min ... Io nom			± 1	%
Hold up time	Vi : 115 / 230 Vac, Io nom	20 / 100			ms
Turn on time	Vi nom, Io nom			1000	ms
Rise time	Vi nom, Io nom			150	ms
Fall time	Vi nom, Io nom			150	ms
Transient recovery time	Vi nom, 1 - 0.5 Io nom			1	ms
Ripple & noise	Vi nom, Io nom BW = 20 MHz			50	mV
External trim ADJ. Range	Io = 5% ... 100%	-10		+10	%
Efficiency	Vi nom, Io nom, Po / Pi	up to 86%, see model list & typ efficiency curve			

CONTROL AND PROTECTION					
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Input fuse		T2A / 250Vac internal			
Internal surge voltage protection	IEC 61000-4-5	Varistor			
Output short circuit		Hiccup mode			
Rated over load protection	Vi nom (see typ current limited curve)	120		160	%

APPROVALS AND STANDARDS	
UL / cUL	UL 60950-1, UL 60601-1 Recognised
TUV	EN 60950-1, EN 60601-1
CE	EN 60601-1-2, EN 55011, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3 EN 61000-6-2, EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5 EN 61000-4-6, EN 61000-4-8, EN 61000-4-11, EN 61204-3
Vibration resistance	meet IEC 60068-2-6 (10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 axes, 6 Faces, 3 times for each Face)

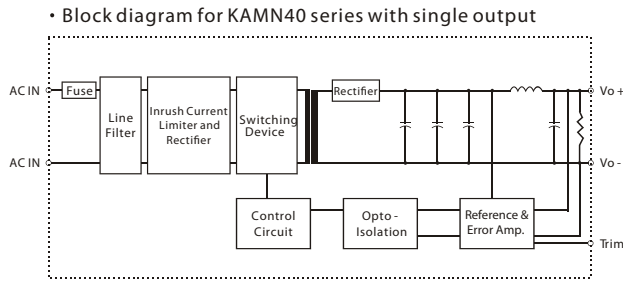
PHYSICAL CHARACTERISTICS	
Case size	89 x 63.5 x 25mm (3.5 x 2.5 x 0.98 inches)
Case material	Plastic
Weight	250g
Potting material	Epoxy

Mechanism & pin configuration


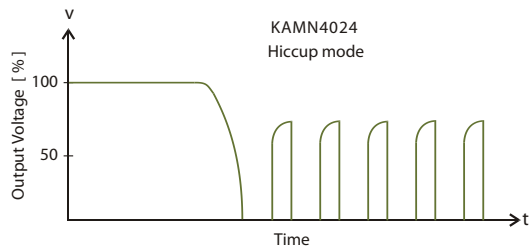
Pin assignment

GENERAL					
Pin no.	1	2	3	4	5
Single	ac in	ac in	Vo +	Vo -	Trim

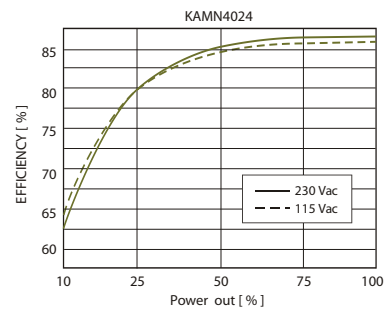
Circuit schematic



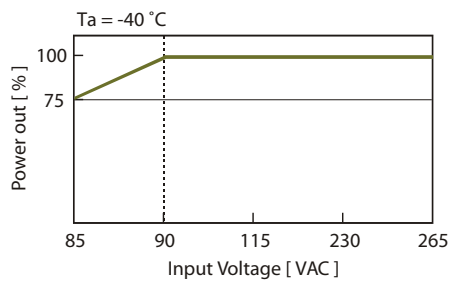
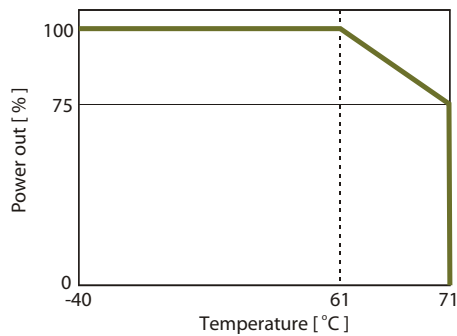
Typ. current limited curve



Typ. efficiency curve



Derating curve



Typical resistor values for various output voltage adjustment settings and max continuous power

TYPE	REXT 1		REXT 2		MAX CONTINUOUS POWER
	Vo nom -5%	Vo nom -10%	Vo nom +5%	Vo nom +5%	
KAMN4005	5.1KΩ	1KΩ	6.8KΩ	2KΩ	40W
KAMN4012	39KΩ	20KΩ	10KΩ	0Ω	40.8W
KAMN4015	180KΩ	56KΩ	30KΩ	5.1KΩ	40.5W
KAMN4024	150KΩ	51KΩ	8.2KΩ	0Ω	40.8W

Trim connection

