


CUI INC

a bel group

date 12/17/2024

page 1 of 7

SERIES: PSK-50E | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

FEATURES

- universal input range (85 ~ 264 Vac)
- Class B emissions (EN 55032/CISPR)
- certified to IEC/EN/UL 62368-1
- designed to meet IEC/EN 60335
- short circuit, over voltage protection
- <0.15 W no-load power consumption
- Class I or Class II
- up to 5,000 m operating altitude
- OVC III

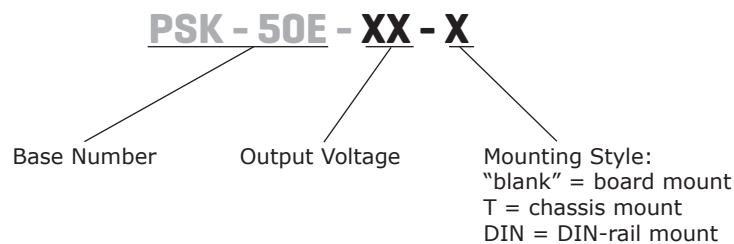


MODEL	output voltage typ (Vdc)	output current max (A)	output power max (W)	ripple and noise ¹ max (mVp-p)	efficiency ² typ (%)
PSK-50E-5	5	8.0	40	150	85
PSK-50E-12	12	4.17	50	120	87
PSK-50E-15	15	3.33	50	150	88
PSK-50E-24	24	2.08	50	240	89
PSK-50E-36	36	1.39	50	360	89
PSK-50E-48	48	1.04	50	480	89

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope with 0.1µF ceramic capacitor and 10 µF electrolytic capacitor.

2. At 230 Vac input.

3. All specifications are measured at Ta=25°C, humidity <75%, nominal input voltage, and rated output load unless otherwise specified.

PART NUMBER KEY


INPUT

parameter	conditions/description	min	typ	max	units
voltage ⁴	ac input (safety approved)	85	100~240	264	Vac
	dc input	120		370	Vdc
frequency		47	50~60	63	Hz
current	at 100 Vac, full load			1.2	A
inrush current	at 240 Vac, full load		110		A
leakage current	touch			0.25	mA
no load power consumption				0.15	W

Notes: 4. See the derating curve for more details.

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output model			8,000	μF
	12 Vdc output model			4,200	μF
	15 Vdc output model			3,400	μF
	24 Vdc output model			2,087	μF
	36 Vdc output model			1,440	μF
	48 Vdc output model			600	μF
output voltage set point	5 Vdc output model	4.90		5.10	Vdc
	12 Vdc output model	11.76		12.24	Vdc
	15 Vdc output model	14.85		15.15	Vdc
	24 Vdc output model	23.76		24.24	Vdc
	36 Vdc output model	35.64		36.36	Vdc
	48 Vdc output model	47.52		48.48	Vdc
voltage accuracy	5, 12 Vdc output model		±2		%
	all other output models		±1		%
line regulation	high line to low line			±0.5	%
load regulation	10 % to 100 % load			±1.0	%
hold-up time	at 115 Vac	8			ms
switching frequency			65		kHz

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	auto recovery, hiccup				
	5 Vdc output model			6.3	Vdc
	12 Vdc output model			15.6	Vdc
	15 Vdc output model			18.0	Vdc
	24 Vdc output model			29.1	Vdc
	36 Vdc output model			43.3	Vdc
over current protection	auto recovery, hiccup	110		140	%
	auto recovery, hiccup				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output, for 1 minunte			6,000	Vdc
safety approvals	certified to 62368-1: IEC, EN, UL designed to meet 60335: IEC, EN				
safety class	Class I or Class II				
EMC	EN 55032:2015+A11:2020 Class B, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021				
EMC immunity	EN 55035: 2017+A11:2020				
conducted emissions	EN 55032				
radiated emissions	EN 55032				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
ESD	IEC 61000-4-2:2008, Air Discharge: ± 8 kV, Contact Discharge: ± 4 kV, perf. Criteria A				
radiated immunity	IEC 61000-4-3:2020, perf. Criteria A				
EFT/burst	IEC 61000-4-4:2012, ± 0.5 kV, ± 1 kV, perf. Criteria A				
surge	IEC 61000-4-5:2014, L-N: ± 2 kV, L-E (Ground): ± 4 kV, perf. Criteria A				
conducted immunity	IEC 61000-4-6:2013, perf. Criteria A				
PFMF	IEC 61000-4-8:2009, perf. Criteria A				
voltage dips	IEC 61000-4-11:2004, Dip: 30% Reduction, Dip > 95% Reduction, perf. Criteria A				
voltage interruption	IEC 61000-4-11:2004, > 95% Reduction, perf. Criteria B				
MTBF	MIL-HDBK-217F at 25°C	1,200,000			hours
RoHS	yes				

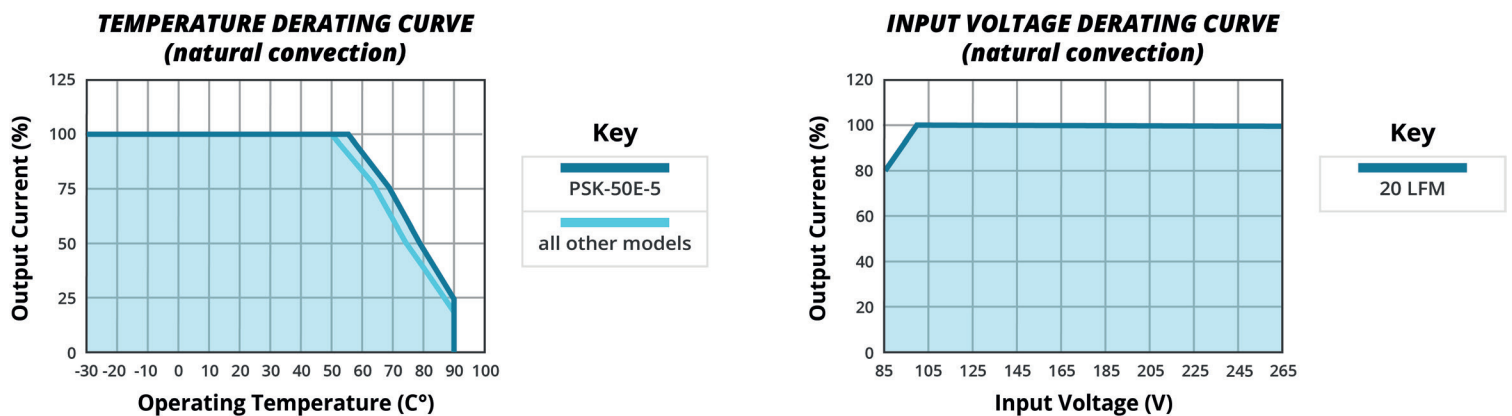
ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves (safety approved at maximum 50°C or refer to report)	-30		80	°C
storage temperature		-30		85	°C
storage humidity		0		93	%
altitude	IEC/EN/UL 62368-1 OVC II IEC/EN 62368-1 OVC III designed to meet IEC/EN 60335-1 OVC II			5,000 2,000 3,000	m m m

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	board mount: 2.170 x 3.140 x 1.201 [55.20 x 79.80 x 30.50 mm] chassis mount: 2.170 x 4.200 x 1.201 [55.20 x 106.60 x 30.50 mm] DIN-rail: 2.170 x 4.200 x 1.784 [55.20 x 106.60 x 45.31 mm]				inch inch inch
weight	board mount chassis mount DIN-rail		222 233 330		g g g

DERATING CURVES



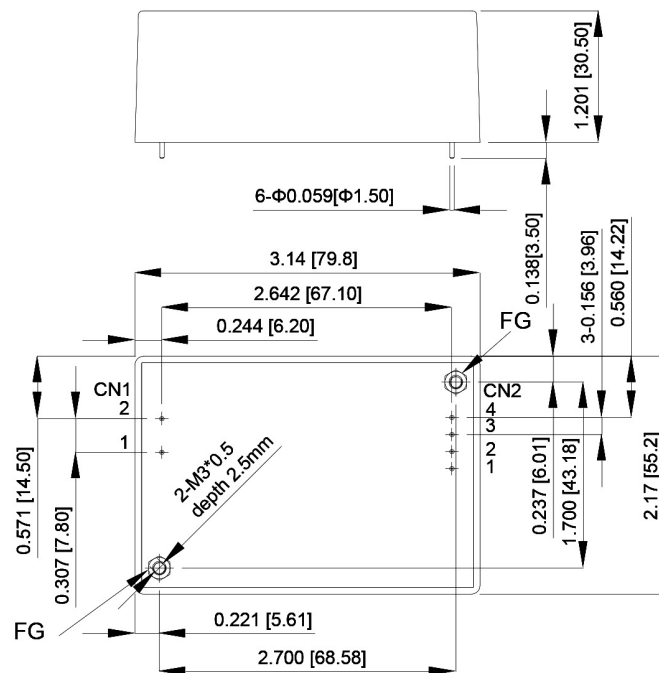
MECHANICAL DRAWING

Board mount

units: inch [mm]

tolerance: inches: x.xx = ± 0.03 , x.xxx = ± 0.02 mm: x.x - ± 0.7 , x.xx = ± 0.5

PIN CONNECTIONS		
PIN	Function	Wafer
1	AC(L)	CN1
2	AC(N)	
1	+Vout	CN2
2	+Vout	
3	-Vout	
4	-Vout	



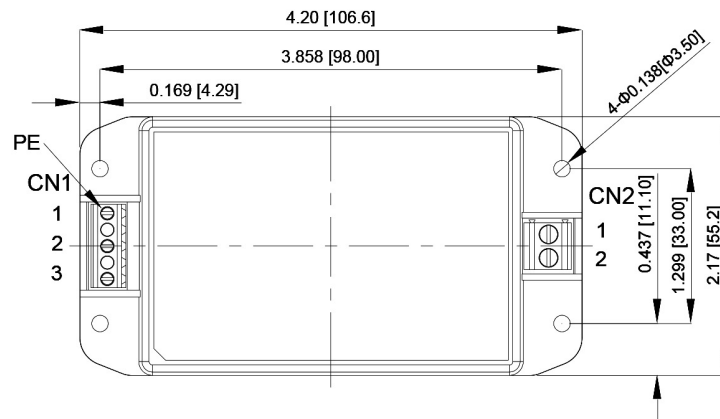
Chassis mount

units: inch [mm]

tolerance: inches: x.xx = ± 0.03 , x.xxx = ± 0.02 mm: x.x - ± 0.7 , x.xx = ± 0.5

AC Input Connector (CN1): DINKLE EK350V-03P5 or equivalent		
PIN	Function	Mating Wire Range
1	PE	16 ~ 30 AWG
2	AC(L)	
3	AC(N)	

DC Output Connector (CN2): DINKLE EK500V-02P or equivalent		
PIN	Function	Mating Wire Range
1	+Vout	12 ~ 16 AWG
2	-Vout	



MECHANICAL DRAWING (CONTINUED)

DIN-rail mount

units: inch [mm]

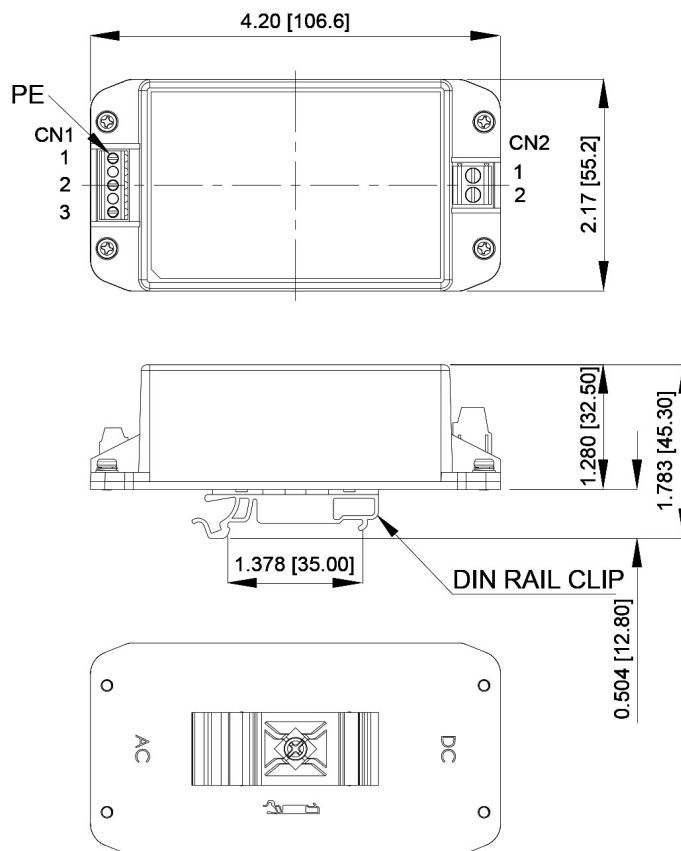
tolerance: inches: x.xx = ± 0.03 , x.xxx = ± 0.02 mm: x.x - ± 0.7 , x.xx = ± 0.5

AC Input Connector (CN1): DINKLE EK350V-03P5 or equivalent

PIN	Function	Mating Wire Range
1	PE	16 ~ 30 AWG
2	AC(L)	
3	AC(N)	

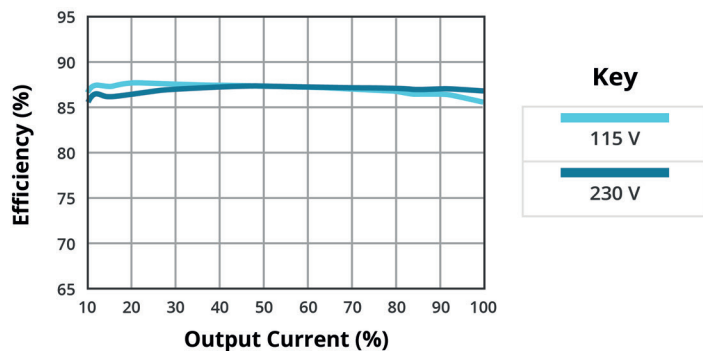
DC Output Connector (CN2): DINKLE EK500V-02P or equivalent

PIN	Function	Mating Wire Range
1	+Vout	12 ~ 16 AWG
2	-Vout	

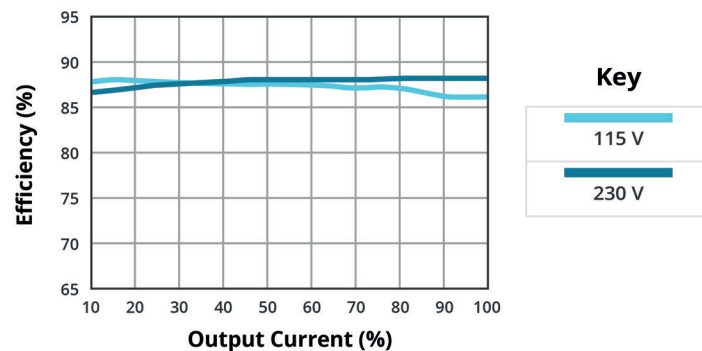


EFFICIENCY CURVES

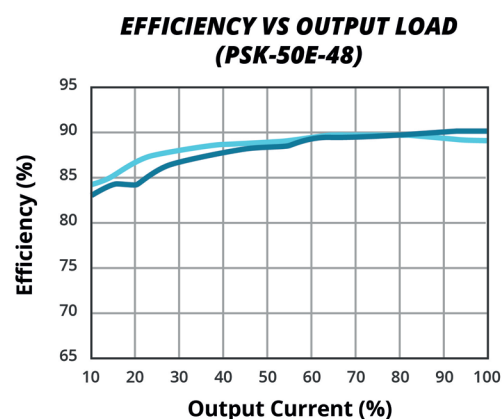
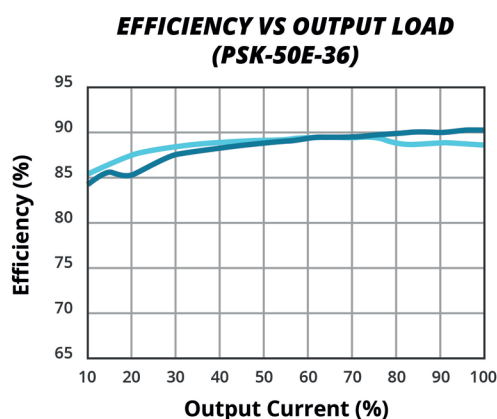
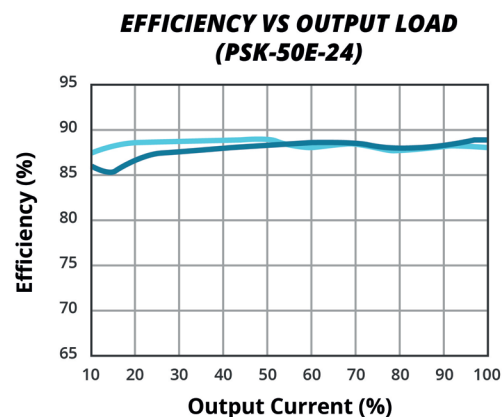
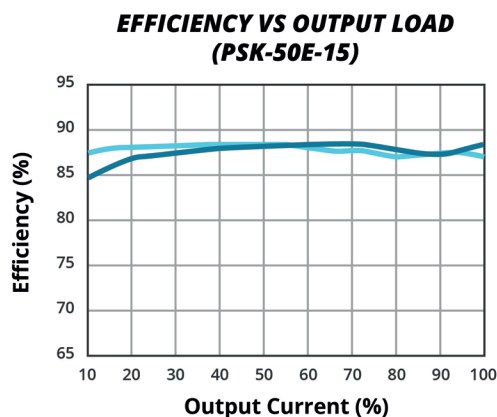
**EFFICIENCY VS OUTPUT LOAD
(PSK-50E-5)**



**EFFICIENCY VS OUTPUT LOAD
(PSK-50E-12)**

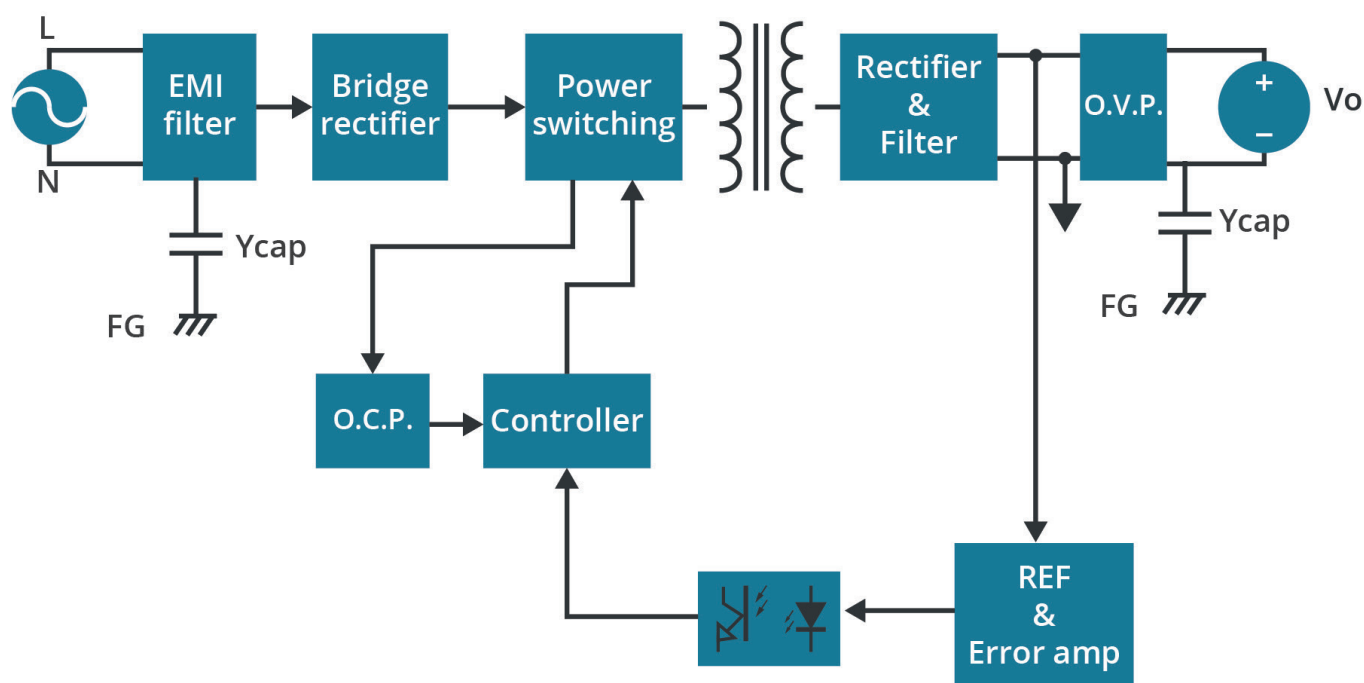


EFFICIENCY CURVES (CONTINUED)



ELECTRICAL BLOCK DIAGRAM

Figure 1



REVISION HISTORY

rev.	description	date
1.0	initial release	12/17/2024

The revision history provided is for informational purposes only and is believed to be accurate.



Headquarters
15575 SW Sequoia Pkwy #100
Portland, OR 97224
800.275.4899

Fax 503.612.2383
cui.com
techsupport@cui.com

CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.