

## SERIES: AE15C-UW | DESCRIPTION: DC-DC CONVERTER

### FEATURES

- up to 15 W isolated output
- ultra-wide 10:1 input voltage range, 150~1,500 Vdc
- 4,000 Vac / 5,600 Vdc isolation
- over current, short circuit, over-voltage and input reverse polarity protection
- certified to EN/IEC 62109
- certified to UL 1741, CSA C22.2 No. 107.1
- PCB, chassis and DIN-rail mounting styles available

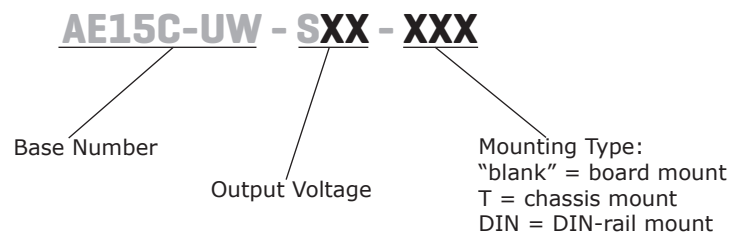


### MODEL

MODEL	input voltage range (Vdc)	output voltage (Vdc)	output current		output power max (W)	ripple & noise <sup>1</sup> max (mVp-p)	efficiency <sup>2</sup> typ (%)
			min (A)	max (A)			
AE15C-UW-S5	150~1500	5	0	2.0	10	100	73.5
AE15C-UW-S12	150~1500	12	0	1.25	15	120	81.5
AE15C-UW-S15	150~1500	15	0	1.0	15	150	83.0
AE15C-UW-S24	150~1500	24	0	0.625	15	150	86.0

Notes: 1. Measured at nominal input, 5 Hz to 20 MHz bandwidth oscilloscope, with 10  $\mu$ F electrolytic and 0.1  $\mu$ F ceramic capacitors on the output.  
2. Measured at 800 Vdc input voltage.  
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
operating input voltage	continuous	150	800	1500	Vdc
under voltage lockout	turn-on threshold, full load	125	140	147	Vdc
	turn-off threshold, full load	112	130	137	Vdc
	lockout hysteresis voltage, full load		10		Vdc
current	at 150 Vdc, full load				
	5 Vdc output model		88		mA
	all other output models		120		mA
	800 Vdc, 5 Vdc output model, full load		17		mA
	800 Vdc, 12 Vdc output model, full load		23		mA
no load current	800 Vdc, 15 Vdc output model, full load		23		mA
	800 Vdc, 24 Vdc output model, full load		22		mA
inrush current	at 800 Vdc, cold start at 25°C		65	150	A
input filter	capacitive				

## OUTPUT

parameter	conditions/description	min	typ	max	units
maximum capacitive load	5 Vdc output model			2,000	μF
	12 Vdc output model			1,250	μF
	15 Vdc output model			1,000	μF
	24 Vdc output model			625	μF
voltage accuracy	at 800 Vdc, full load at 25°C		±2		%
line regulation	from high line to low line, full load			±1	%
load regulation	from 0% to full load			±1	%
switching frequency	PWM mode	25		75.6	kHz
temperature coefficient	at -40°C ~ 80°C			±0.15	%/°C
start-up time	at minimum Vin to 10% Vout_set, Power up		200		ms
rise time	10% ~ 90% of output voltage		8		ms
transient response	75%-100% step load change			±5	%
	error band recovery time			250	μs

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	IC component to clamp, auto recovery				
	5 Vdc output model			8	Vdc
	12 Vdc output model			16	Vdc
	15 Vdc output model			19	Vdc
over current protection	auto recovery, hiccup	110		300	%
short circuit protection	continuous, auto recovery				

## SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute			4,000	Vac
				5,600	Vdc
isolation capacitance			1,100		pF
safety approvals	certified to 62109-1: EN, IEC certified to 1741: UL; CSA-C22.2 No.107.1				
EMI/EMC	EN 55032 Compliant (with external filter) Class A				
ESD	EN61000-4-2 Level 3: Air ±8 kV, Contact ±4 kV, perf. Criteria A				

SAFETY AND COMPLIANCE (CONTINUED)

parameter	conditions/description	min	typ	max	units
radiated immunity	EN61000-4-3 Level 3: 80~1000 MHz, 10 V/m, perf. Criteria A				
EFT/burst	EN61000-4-4 Level 3: On power input port, ±2 kV, external input capacitor required, perf. Criteria A				
surge	EN61000-4-5 Level 4: line to line, ±2 kV (with external components), perf. Criteria A				
conducted immunity	EN61000-4-6 Level 3: 0.15~80 MHz, 10 V, perf. Criteria A				
PFMF	EN61000-4-8 50/60 Hz, 3 A/m (r.m.s.), perf. Criteria A				
MTBF	as per MIL-HDBK-217F, Notice 1, GB at 25°C	300,000			hours
shock and vibration	MIL-STD-810F				
RoHS	yes				

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-40		80	°C
storage temperature		-40		85	°C
storage humidity	non-condensing	-		95	%
operating altitude	see derating curves			2,000	m

MECHANICAL

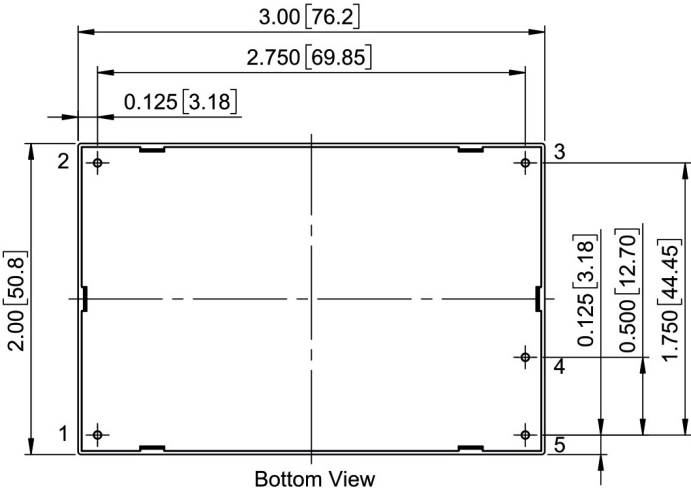
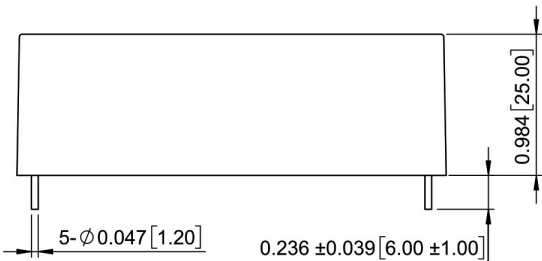
parameter	conditions/description	min	typ	max	units
dimensions	board mount: 3.00 x 2.00 x 0.984 [76.2 x 50.8 x 25.00 mm]				inch
	chassis mount: 4.81 x 2.26 x 1.26 [122.3 x 57.3 x 32.00 mm]				inch
	DIN-rail mount: 4.81 x 2.26 x 1.713 [122.3 x 57.3 x 43.50 mm]				inch
case material	plastic, PBT, UL 94V-0				
potting material	UL 94V-0				
pin material	base: copper plating: nickel with matte tin				
weight	board mount		170		g
	chassis mount		210		g
	DIN-rail mount		215		g

MECHANICAL DRAWING

**Board mount**  
units: inch [mm]  
tolerance: inches: x.xx=±0.03, x.xxx=±0.020  
mm: x.x=±0.7, x.xx=±0.50  
pin diameter tolerance: 0.047±0.004 inch [1.20±0.1 mm]

PIN CONNECTIONS	
PIN	Function
1	-Vin
2	+Vin
3	NC
4	-Vout
5	+Vout

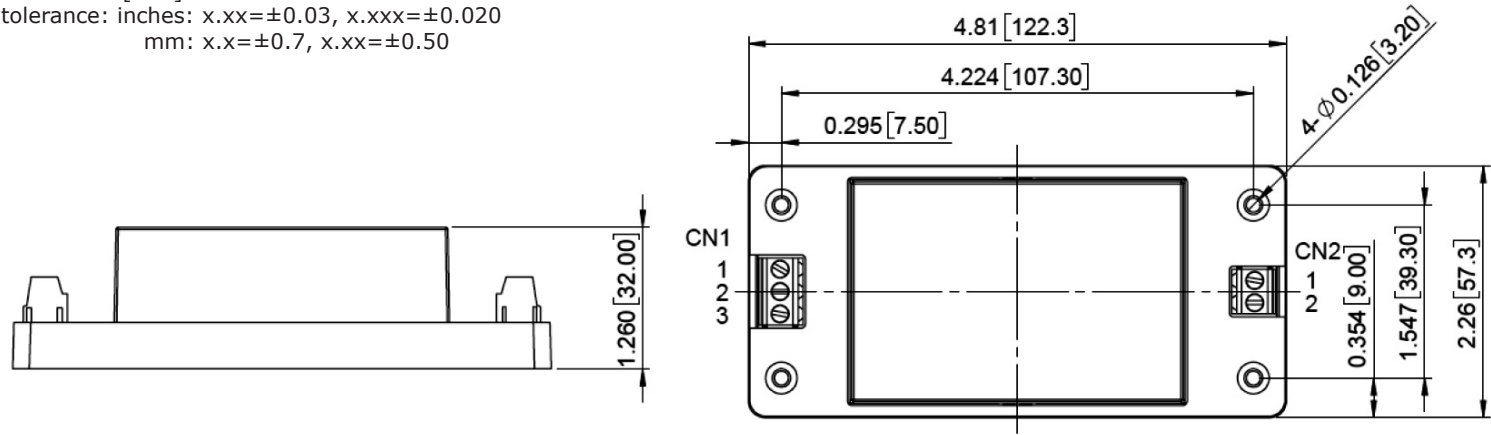
NC=no connection



MECHANICAL DRAWING (CONTINUED)

Chassis mount

units: inch [mm]  
tolerance: inches: x.xx=±0.03, x.xxx=±0.020  
mm: x.x=±0.7, x.xx=±0.50



CN1 PIN CONNECTIONS		
AC input connector: DINKLE EK508V-03P or equivalent		
PIN	Function	Mating wire range
1	-Vin	12~24 AWG
2	NC	
3	+Vin	

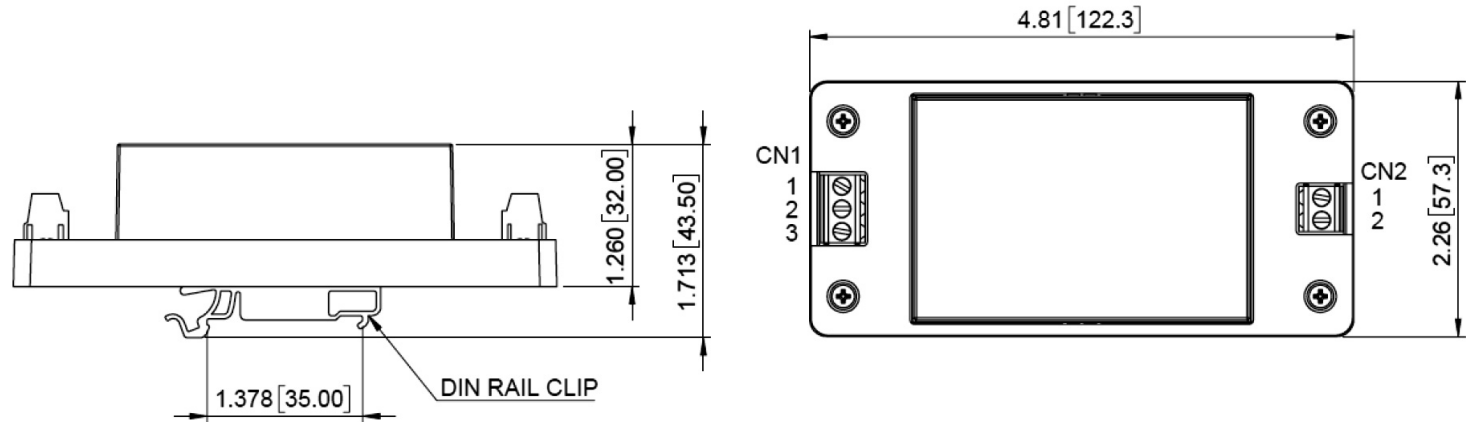
NC=no connection

CN2 PIN CONNECTIONS		
DC input connector: DINKLE EK508V-02P or equivalent		
PIN	Function	Mating wire range
1	+Vout	12~24 AWG
2	-Vout	

Note: Recommended torque setting for terminal is 5kgf-cm.

DIN-rail mount

units: inch [mm]  
tolerance: inches: x.xx=±0.03, x.xxx=±0.020  
mm: x.x=±0.7, x.xx=±0.50



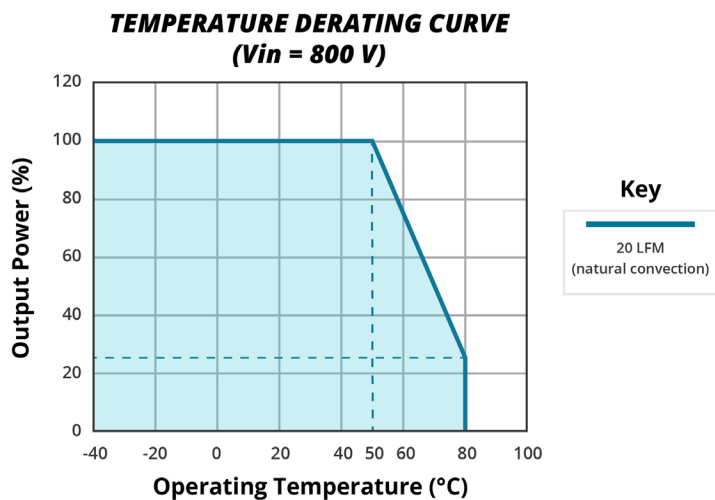
CN1 PIN CONNECTIONS		
AC input connector: DINKLE EK508V-03P or equivalent		
PIN	Function	Mating wire range
1	-Vin	12~24 AWG
2	NC	
3	+Vin	

NC=no connection

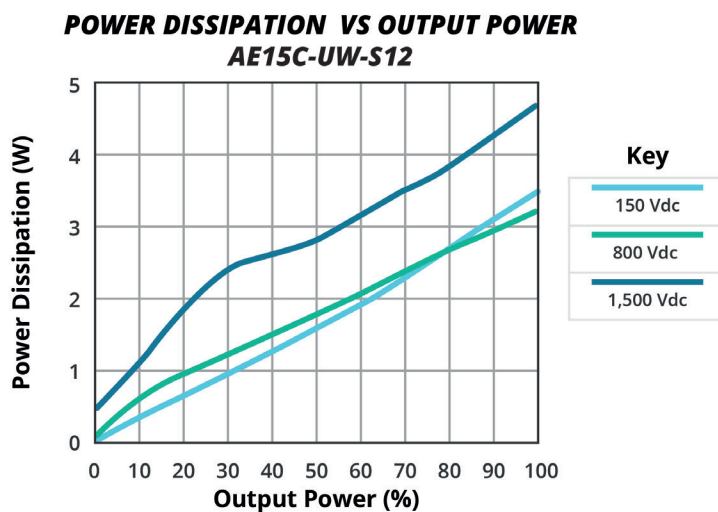
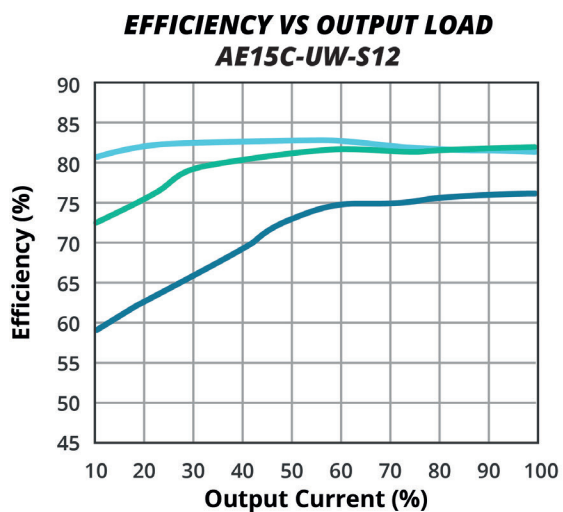
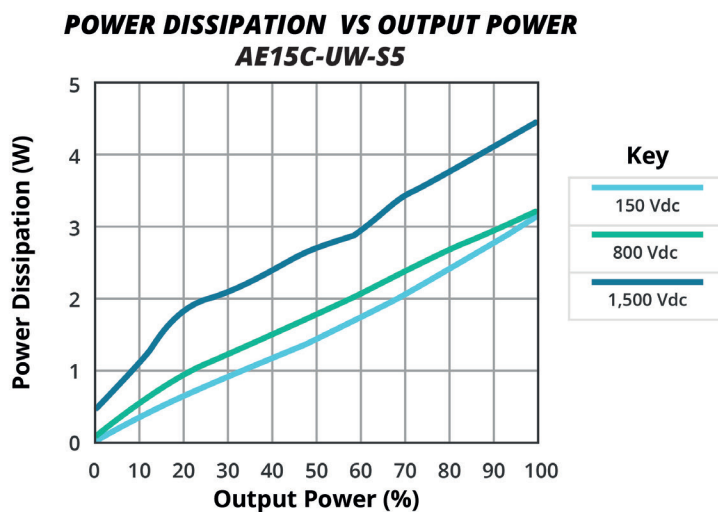
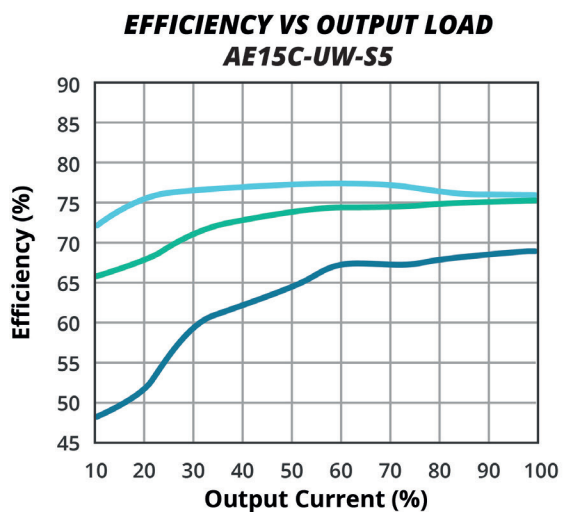
CN2 PIN CONNECTIONS		
DC input connector: DINKLE EK508V-02P or equivalent		
PIN	Function	Mating wire range
1	+Vout	12~24 AWG
2	-Vout	

Note: Recommended torque setting for terminal is 5kgf-cm.

## DERATING CURVE

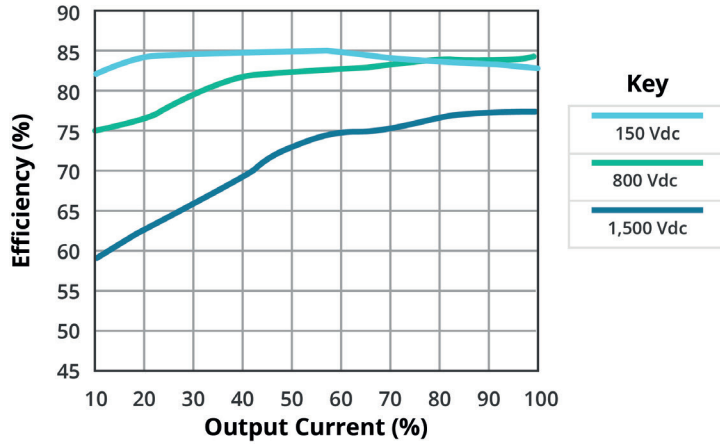


## EFFICIENCY CURVES

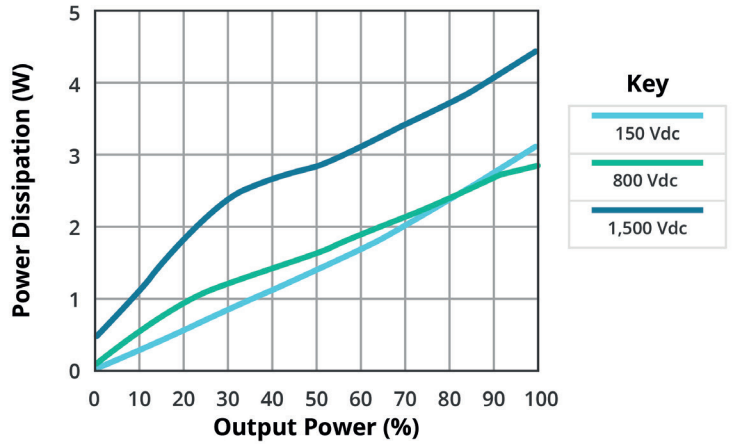


## EFFICIENCY CURVES (CONTINUED)

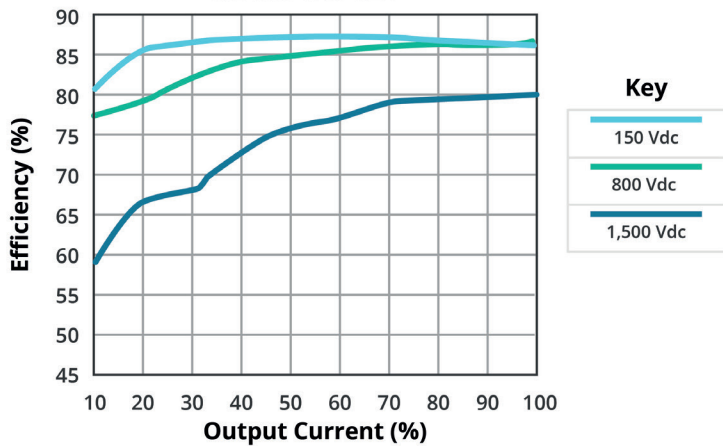
**EFFICIENCY VS OUTPUT LOAD  
AE15C-UW-S15**



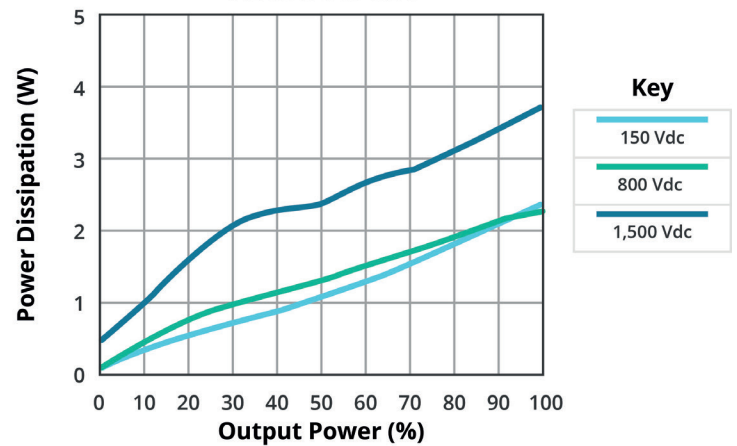
**POWER DISSIPATION VS OUTPUT POWER  
AE15C-UW-S15**



**EFFICIENCY VS OUTPUT LOAD  
AE15C-UW-S24**



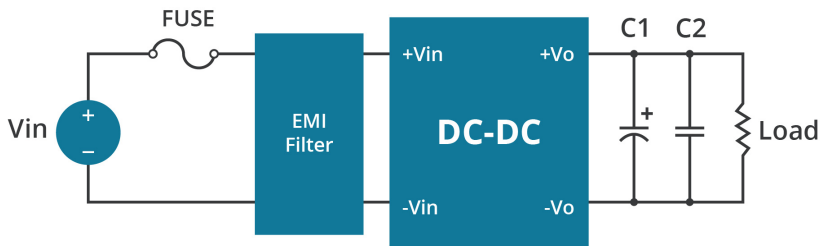
**POWER DISSIPATION VS OUTPUT POWER  
AE15C-UW-S24**



APPLICATION NOTES

The AE15C-UW series converters lack an internal fuse. To ensure maximum safety and system protection, always use an input line fuse. We recommend a 4A/1500Vdc fuse for all modules, as shown below.

Figure 1



EMC RECOMMENDED CIRCUIT

EMI Test standard: EN 55032 Conducted & Radiated Emission  
To use AE15C-UW series, connection shown below and external components are required to meet EN 55032 Class A.

Figure 2

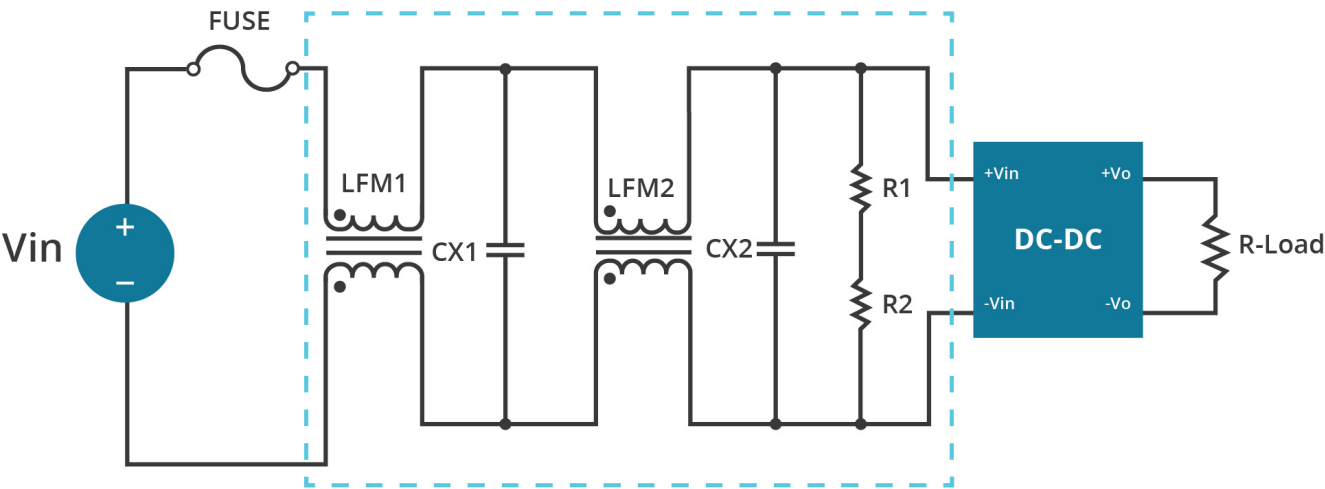


Table 1

Recommended External Circuit Components	
FUSE	4 A/1500 Vdc
LFM1, LFM2	25 mH SQ 1212
Cx1, Cx2	0.33 $\mu$ F/1,500 Vdc
R1, R2	1/2W 3M/ $\geq$ 800V

## REVISION HISTORY

rev.	description	date
1.0	initial release	03/31/2025
1.01	chassis and DIN-rail mount options added	07/07/2025

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



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

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