50 & 100W, 14.4 to 36V Input DC-DC Converters

https://product.tdk.com/en/power/cn-a
www.emea.lambda.tdk.com/cn-a



Industrial COTS Railway

The rugged 50 and 100W quarter brick CN-A24 series of isolated DC-DC converters operate from a 14.4 to 36V (40Vdc peak) input. With an input to baseplate isolation of 2,000Vac and 3,000Vac input to output, the series is designed for use on 24V nominal input rail, vehicle and battery powered systems. In addition, the baseplate cooled modules meet the rolling stock IEC 61373 Category 1, Class B shock / vibration standards. As standard, the CN-A24 series features remote sense, remote on/off and output voltage adjustment. The board coating option provides assistance in complying with EN 50155 and IEC 60571.

Features	Benefits
• Wide Input Range	• Supports 24V Input Rail, Vehicle and Battery Powered Systems
• Quarter Brick Packages	• Less Board Area Needed
• Certified to IEC 62368-1, Designed to Meet IEC 61373	• Easier System Compliance
• Full Power at 100°C Baseplate Temperatures	• Greater Useable Power

Model Selector

Model	Output Voltage (V)	Output Voltage Adjustment (V)	Output Current (A)	Maximum Power (W)	Input Current (A) (24V input, 100% load)	Efficiency (%)(1)
CN50A24-5	5	4.5 - 6.0	10	50.0	2.48	85
CN100A24-5	5	4.5 - 6.0	20	100.0	4.91	86
CN50A24-12	12	10.8 - 13.2	4.2	50.4	2.47	86
CN100A24-12	12	10.8 - 13.2	8.4	100.8	4.83	88
CN50A24-24	24	21.6 - 26.4	2.1	50.4	2.47	86
CN100A24-24	24	21.6 - 26.4	4.2	100.8	4.83	88

Part Numbering Scheme

CN	50A	24	-12	-
Series name	**Output Power** 50A = 50W 100A = 100W	**Input Voltage** 24 = 14.4 - 36V	**Output Voltage** 5 = 5V 12 = 12V 24 = 24V	**Options:** **Blank** = Standard **/CO** = Pcb coating for EN50155 & IEC60571 compliance

Related Products

Type	Part Number	Description
Heat Sink	HAQ-10T	25mm transverse fins

Specifications

Model		CN-A24
Input		
Input Voltage Range	Vdc	14.4 - 36 (40 for 3s)
Efficiency	-	See model selector table
Conducted & Radiated EMI	-	EN55011/EN55032-A, FCC Class A, VCCI-A (External components are required, consult Evaluation Data)
Immunity	-	See model immunity table below
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark and UKCA Mark

Immunity

Test	Standard	Test Level	Criteria	Notes
ESD	EN61000-4-2	Air ± 8kV and contact ± 6kV	A	See IEC61000 immunity test report on website for external filtering circuitry
Radiated Susceptibility	EN61000-4-3	80M -1GHz: 10V/m	A	
Electrical Fast Transient Burst	EN61000-4-4	± 2kV	A	
Surge	EN61000-4-5	Common, Normal ± 2kV	A	
Conducted Susceptibility	EN61000-4-6	10Vrms	A	
Magnetic Fields	EN61000-4-8	30A/m	A	

Specifications

Model		CN-A24	
Output			
Output Voltage Tolerance	%	±1	
Output Voltage Adjustment	-	See model selector	
Line Regulation	mV	5V: 20, 12V: 48, 24V: 96	
Load Regulation	mV	5V: 40, 12V: 96, 24V: 192	
Switching Frequency	kHz	360	
External Load Capacitance	uF	10,000	
Ripple & Noise	mV	5V: 100, 12V: 150, 24V: 240	
Temperature Coefficient	%/°C	0.02	
Minimum Load	-	No minimum load required	
Overcurrent Protection	%	105 - 140. Auto recovery	
Overvoltage Protection	%	125 - 145 (2)	
Overtemperature Protection	°C	Operates at 105-120 baseplate. Auto recovery.	
Remote Sense	-	Yes	
Remote On/Off	-	Negative Logic ON: Short (<0.8V), OFF: Open or 4 to 35V	
Parallel Operation	-	Not possible	
Environmental			
Operating Temperature	°C	-40 to +100 (Baseplate)	
Storage Temperature	°C	-40 to +100	
Humidity (non condensing)	%RH	5 - 95 (Operating & Storage)	
Cooling	-	Conduction	
Altitude	m	3,000	
Withstand Voltage (For 1 minute)	Vac	Input to baseplate 2,000, input to output 3,000, output to baseplate 500 for 1 minute	
Isolation Resistance	MΩ	>100 at 25°C, 70%RH & Output - Baseplate 500VDC	
Vibration (Non operating)	-	10-55Hz (Sweep for 1min.) Amplitude 0.825mm Constant (Maximum 49.0m/s^2) X,Y,Z 1 hour each. IEC61373 Category 1, Grade B	
Shock (Non operating)	-	196.1m/s^2. IEC61373 Category 1 Grade B	
Other		**CN50-A24**	**CN100-A24**
Weight (Typ)	g	70	
Size (LxWxH)	mm	57.9 x 36.8 x 12.7	
Size (LxWxH)	Inches	2.28 x 1.45 x 0.5	
MTBF - Telcordia SR-332 issue 3*	Hours	1,951,887	1,918,395
Warranty	yrs	5	

Notes

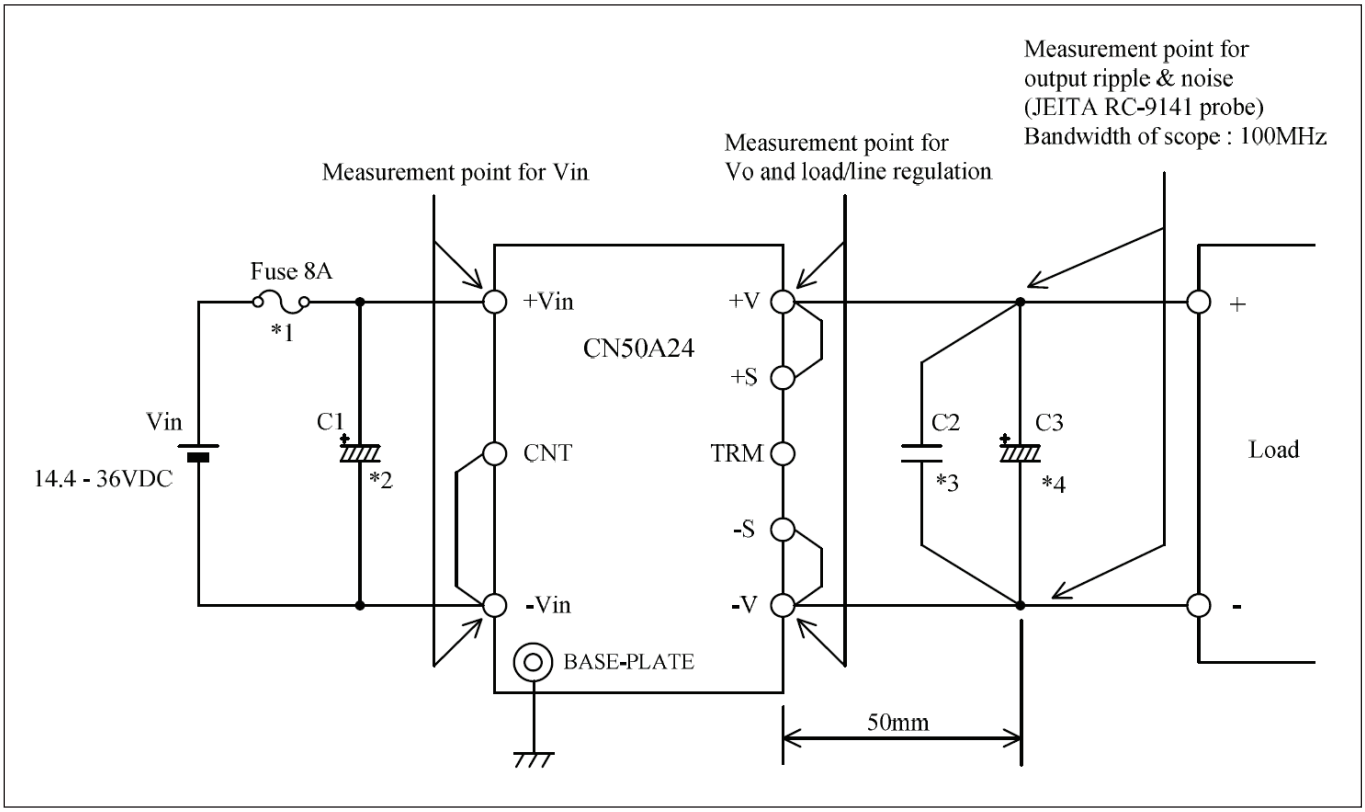
See website for detailed specifications, test methods and installation manual

* Full load, 24V output, 40°C baseplate temperature. See reliability data on website for other temperatures.

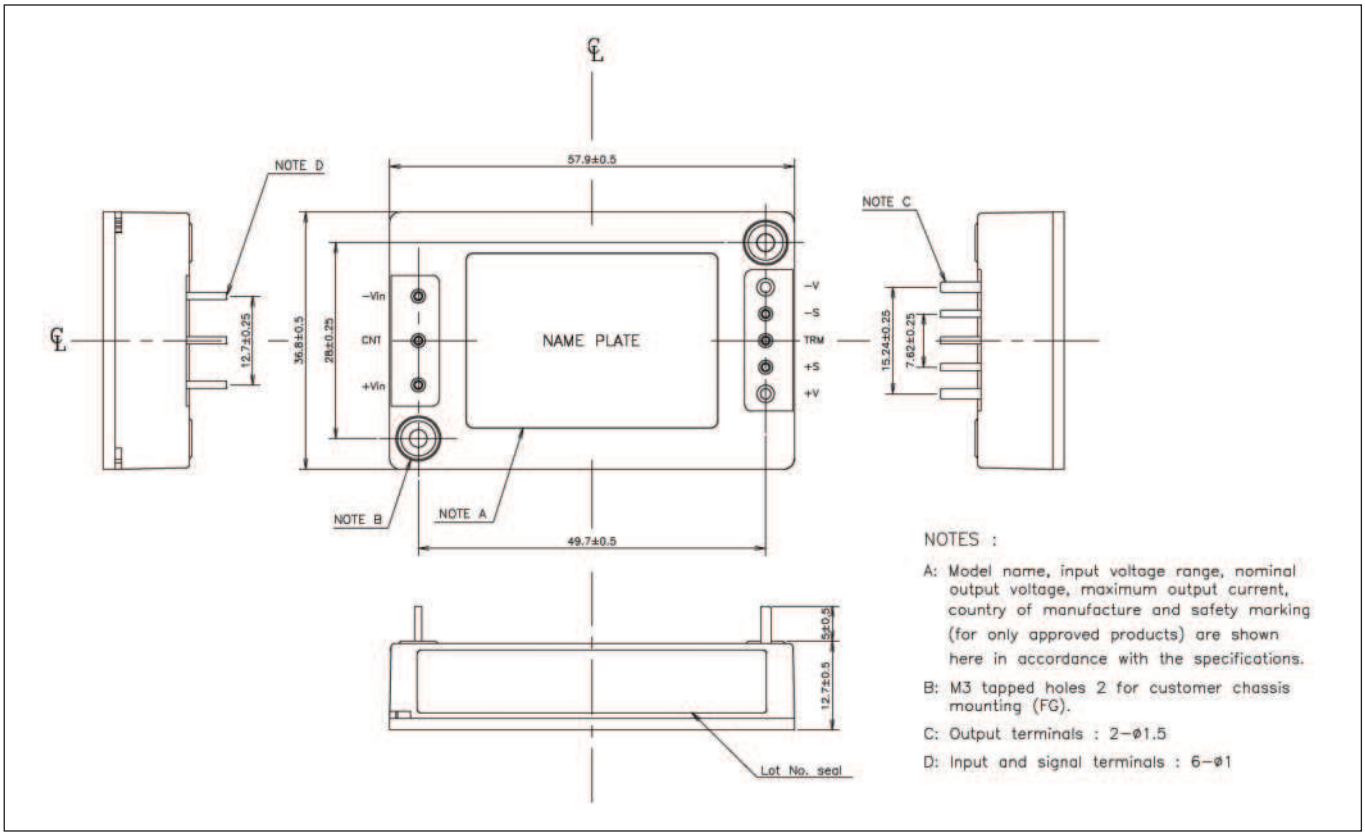
(1) 24V model, 24Vdc Input, maximum output current, 40°C baseplate temperature

(2) Cycle input or remote on/off to reset

Basic Connection for the CN-A24



Outline Drawing CN-A24





TDK-Lambda France SAS
Tel: +33 1 60 12 71 65
france@fr.tdk-lambda.com
www.emea.lambda.tdk.com/fr



Italy Sales Office
Tel: +39 02 61 29 38 63
info.italia@it.tdk-lambda.com
www.emea.lambda.tdk.com/it



Netherlands
info@nl.tdk-lambda.com
www.emea.lambda.tdk.com/nl



TDK-Lambda Germany GmbH
Tel: +49 7841 666 0
info@de.tdk-lambda.com
www.emea.lambda.tdk.com/de



Austria Sales Office
Tel: +43 2256 655 84
info@at.tdk-lambda.com
www.emea.lambda.tdk.com/at



Switzerland Sales Office
Tel: +41 44 850 53 53
info@ch.tdk-lambda.com
www.emea.lambda.tdk.com/ch



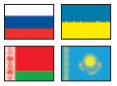
Nordic Sales Office
Tel: +45 8853 8086
info@dk.tdk-lambda.com
www.emea.lambda.tdk.com/dk



TDK-Lambda UK Ltd.
Tel: +44 (0) 12 71 85 66 66
info@uk.tdk-lambda.com
www.emea.lambda.tdk.com/uk



TDK-Lambda Ltd.
Tel: +9 723 902 4333
info@tdk-lambda.co.il
www.emea.lambda.tdk.com/il



C.I.S.
Commercial Support:
Tel: +7 (495) 665 2627
Technical Support:
Tel: +7 (812) 658 0463
info@tdk-lambda.ru
www.emea.lambda.tdk.com/ru



TDK-Lambda Americas
Tel: +1 800-LAMBDA-4 or 1-800-526-2324
powersolutions@us.tdk-lambda.com
www.us.lambda.tdk.com



TDK Electronics do Brasil Ltda
Tel: +55 11 3289-9599
sales.br@tdk-electronics.tdk.com
www.tdk-electronics.tdk.com/en



TDK-Lambda Corporation
Tel: +81-3-6778-1113
www.jp.lambda.tdk.com



TDK-Lambda (China) Electronics Co. Ltd.
Tel: +86 21 6485-0777
powersolutions@cn.tdk-lambda.com
www.lambda.tdk.com.cn



TDK-Lambda Singapore Pte Ltd.
Tel: +65 6251 7211
tls.mkt@sg.tdk-lambda.com
www.sg.lambda.tdk.com



TDK India Private Limited, Power Supply Division
Tel: +91 80 4039-0660
mathew.philip@in.tdk-lambda.com
www.sg.lambda.tdk.com

For Additional Information, please visit
https://product.tdk.com/en/power/