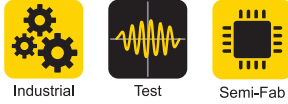


250-500W, Wide Range Input, Non-isolated, DIN Rail DC-DC Converters

<https://product.tdk.com/en/power/dda>
www.emea.lambda.tdk.com/dda



The DDA DIN rail mount, non-isolated step-down converters are ideal for creating additional high current output voltages from a single output 12V, 24V or 48V AC-DC power supply. The highly efficient DDA series accepts a very wide DC input and has a wide output adjustment range, with a choice of single or dual output models.

Features	Benefits
• 250W Single Output, 325W and 500W Dual Output Power Levels	• High Power Density
• High Efficiency up to 95%	• Less Waste Heat
• Wide Input Range - 9 up to 53V	• One Part For Multiple Applications
• Wide 3.3 to 24V Output Adjustment	• Accommodates Non-Standard Voltages
• Narrow 36.5mm Width	• More Space Available For Other DIN Rail Devices
• Convection Cooled	• Easy To Cool In End System

Model Selector

Part Number	Output Voltage 1		Output Voltage 2		Maximum Output Current	Maximum Output Power
	Nominal (V) ⁽¹⁾	Adjust Range (V)	Nominal (V) ⁽¹⁾	Adjust Range (V)		
DDA250N-S1PX-12-001	12V	3.3 to 15V	NA	NA	20A / NA	250W / NA
DDA500N-D2PP-1205-001	12V	3.3 to 15V	5V	3.3 to 15V	20A / 20A	250W / 250W
DDA325N-D2PN-1212-001	12V	3.3 to 24V	-12V	-3.3 to -24V	14A / 8A	250W / 75W

Consult factory for other output voltage combinations.

Specification

Model(s)		DDA250	DDA500	DDA325
Input				
Input Voltage range	Vdc	9 to 53V (Turn on at 10V or greater)		9 to 40V (Turn on at 10V or greater)
Input Current (Max.)	A	20A	40A	35A
Efficiency	-	92 - 95%		88 - 94%
Conducted & Radiated EMI	-	EN55032 Class A		
Immunity	-	EN55024		
Safety Certifications and Markings	-	IEC/UL/CSA/EN 62368-1, CE Mark and UKCA Mark		
Output				
Switching Frequency	kHz	400		
Line Regulation	mV	25mV		20mV
Load Regulation	mV	150mV		100mV
External Load Capacitance	uF	0 - 1000uF each output voltage		
Output Ripple & Noise (pk-pk)	mV	60mV		50mV each output voltage
Overcurrent Protection Threshold	A	28A		22 / 15A
Overvoltage Protection	V	None		
Remote On / Off	-	To enable the output(s), connect the on/off pins to the GND pin(s) on the top connector		
Remote Sense	-	(+) Sense, compensating up to 5% of output voltage		
Power Good	-	Open collector(s), low on fail		
Indicators	-	A green LED indicates the output is OK		
Parallel Operation	-	Not possible		
Series operation	-	Not possible		

Specification				
Model(s)		DDA250	DDA500	DDA325
Environmental				
Operating Temperature	°C	-40 to 100 (see full technical datasheet on website)		
Storage Temperature	°C	-55 to 125		
Cooling	-	Convection or forced air		
Other				
MTBF - Telcordia SR-332	-	>5Mhrs; 100% Load, Ta = 40°C		
Weight	g	450		
Size (WxHxD)	mm	36.5 x 123.4 x 115		
Size (WxHxD)	In	1.44 x 4.86 x 4.53		
Case Material	-	Metal		
DIN Rail type	-	Suitable for mounting on DIN Rail TS-35/7.5 or TS35/15		
Warranty	yrs	3		

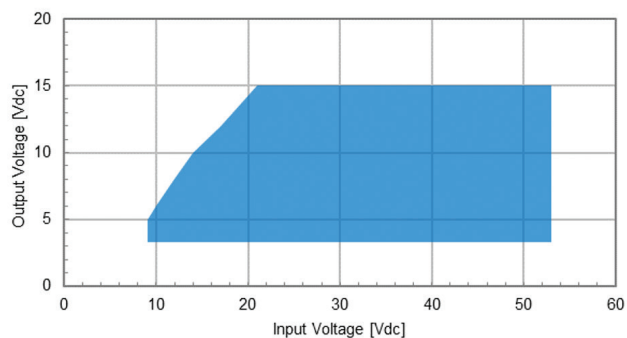
See website for detailed specifications, test methods and installation manual.

(1) Output voltage cannot exceed input voltage (see graphs below).

(2) For Output Derating, check the Installation Manual and detailed Specifications.

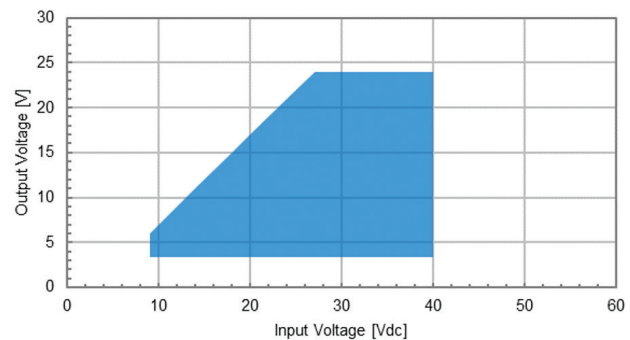
Output vs. Input Voltage Operating Range

DDA250N-S1PX-12-001 & DDA500N-D2PP-1205-001



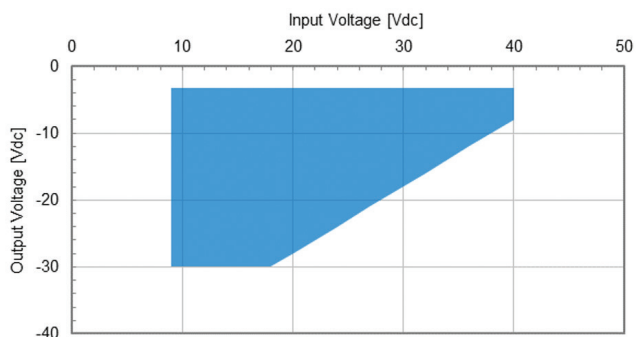
Output vs. Input Voltage Operating Range

DDA325N-D2PN-1212-001 (V1)

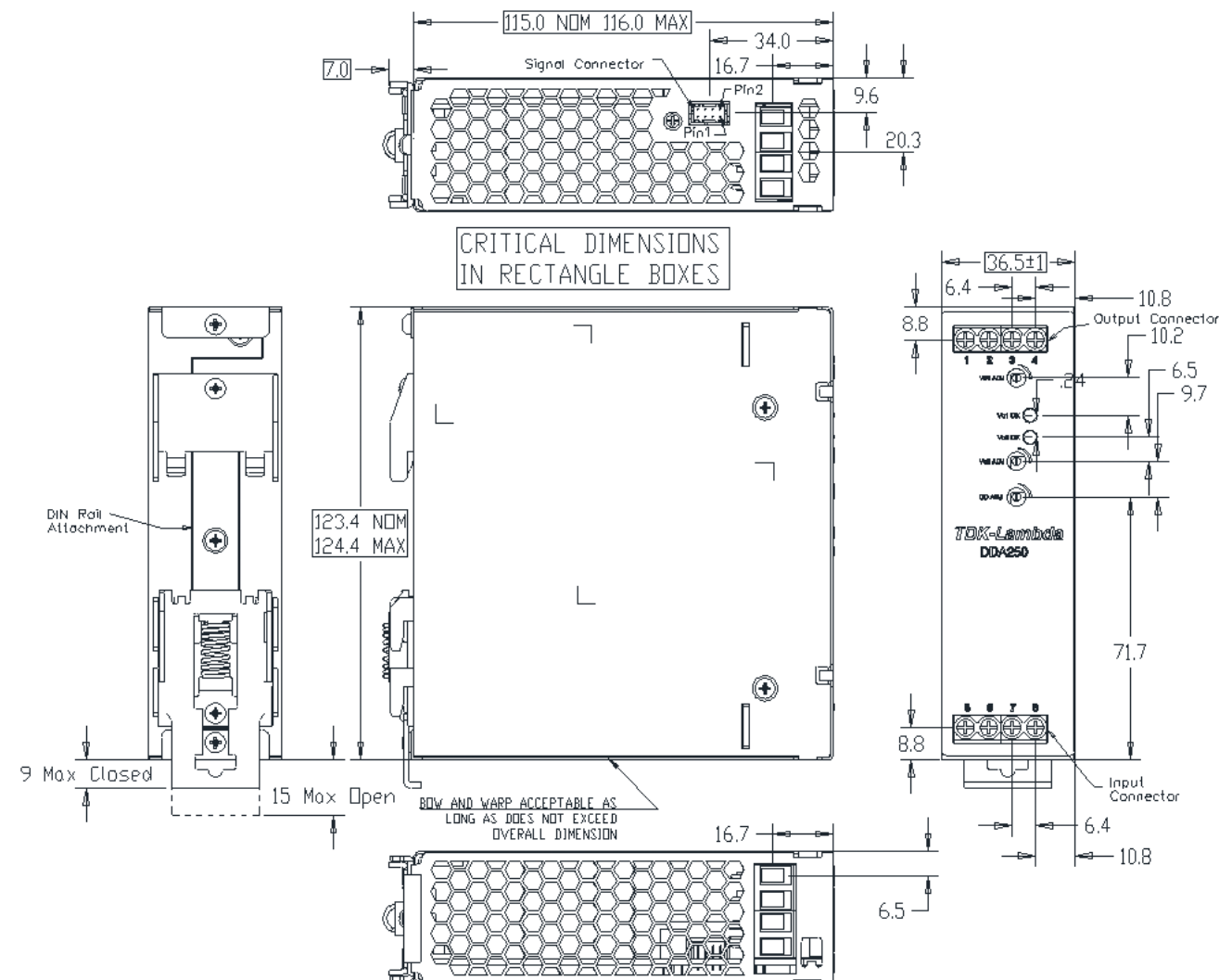


Output vs Input Voltage Operating Range

DDA325N-D2PN-1212-001 (V2)



Recommended Hole Pattern (top view)



Signal Collector Pinout

#	Function	#	Function
1	Vo2 (-)	5	On/Off Vo2
2	Vo2 (+)	6	On/Off Vo1
3	Vo1 (-)	7	VIN (-)
4	Vo1 (+)	8	VIN (+)

PIN	Function	PIN	Function
1	Vo1 SENSE (+)	5	Vo1 PWR GOOD
2	Vo2 SENSE (+)	6	Vo2 PWR GOOD
3	N/C	7	CC Ref (N/C)
4	Signal GND	8	Signal GND



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