

# AC/DC Converter

## DIN100-XX Series



100W, AC/DC DIN-Rail Power Supply



### FEATURES

- Universal 85-264VAC or 120-370VDC input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40°C to +70°C
- High I/O isolation test voltage up to 4000VAC (Input -output)
- Industrial product technology design
- Over-voltage class III (Designed to meet EN61558-1 standards)
- Low standby power consumption, high efficiency
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- Withstand 300VAC surge input for 5s
- DIN rail TS35X7.5/ TS35X15 mountable

DIN100-XX is Tiger Powers' 100W Din rail series featuring a cost-effective, energy efficient solution for standard DIN-rail mounting. The products offer a high level of stability and immunity to noise, compliant with international IEC62368 standards for EMC and safety specifications meet IEC/EN61000-4, CISPR32, EN55032, UL62368, IEC62368 and EN62368. These light weight AC-DC converters also have an extremely compact design for space saving and are ideal for applications such as industrial control equipment machinery and all kinds of applications in a harsh environment.

### Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)*	Efficiency at 230VAC (%) Typ.	Capacitive Load (µF) Max.
UL/EN/IEC/ BIS/UKCA	DIN100-12	90	12V/7.5A	12.0 - 13.8	88	10000
	DIN100-15	97.5	15V/6.5A	13.5 - 18.0	89	6400
	DIN100-24	100.8	24V/4.2A	21.6 - 29.0	90	2500
	DIN100-48	100.8	48V/2.1A	43.2 - 55.2	90	1100

Note: \*The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.

### Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	--	264	VAC
	DC input	120	--	370	VDC
Input Frequency		47	--	63	Hz
Input Current	115VAC	--	--	3	A
	230VAC	--	--	1.6	
Inrush Current	115VAC	--	35	--	
	230VAC	--	70	--	
Leakage Current	240VAC/50Hz	0.5mA RMS Max.			
Hot Plug		Unavailable			

### Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Output Voltage Accuracy	0% - 100% load	--	±2	--	%	
Line Regulation	Rated load	--	±0.5	--		
Load Regulation	230VAC	--	±1.5	--		
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V output	--	--	120	mV
		15V output	--	--	120	
		24V output	--	--	150	
		48V output	--	--	240	
Temperature Coefficient		--	±0.03	--	%/°C	

Stand-by Power Consumption	230VAC input	12V/15V output	--	--	0.30	W
		24V output	--	--	0.35	
		48V output	--	--	0.40	
Short Circuit Protection			Hiccup, continuous, self-recovery			
Over-current Protection			110% - 200% I <sub>o</sub> , self-recovery			
Over-voltage Protection	12V output		≤20V			
	15V output		≤25V			
	24V output		≤35V			
	48V output		≤60V			
Minimum Load			0	--	--	%
Start-up Time			--	--	3	s
Hold-up Time	230VAC		--	30	--	ms
Note: *The "Tip and barrel method" is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.						

### General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Isolation	Input - output Electric Strength Test for 1min., leakage current < 5mA	4000	--	--	VAC	
Operating Temperature		-40	--	+70	°C	
Storage Temperature		-40	--	+85		
Storage Humidity		--	--	95	%RH	
Operating Altitude		--	--	2000	m	
Switching Frequency		--	65	--	kHz	
Power Derating	-40°C to -30°C	12V/48V output	3.00	--	--	% / °C
		24V output	7.00	--	--	
		15V output	8.00	--	--	
	+45°C to +70°C		2.00	--	--	
	85VAC - 115VAC	0.67	--	--	%/VAC	
Safety Standard	UL/IEC62368-1, IS13252 (Part1) safety approved & EN62368-1, BS EN 62368-1 (Report); Design refer to EN61558-1					
Safety Class	CLASS II					
MTBF	MIL-HDBK-217F@25°C > 300,000 h					

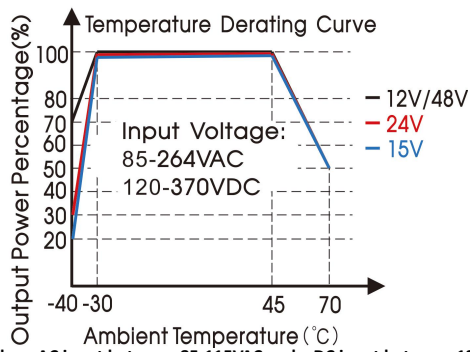
### Mechanical Specifications

Case Material	Plastic, heat-resistant (UL94V-0)
Package Dimensions	70.00 x 92.66 x 58.00mm
Weight	235g (Typ.)
Cooling method	Free air convection

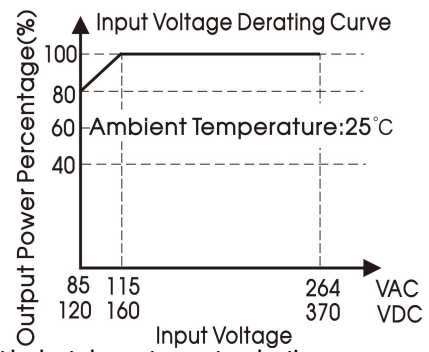
### Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m Perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV Perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line ±2KV Perf. Criteria A
	CS	IEC/EN61000-4-6	10Vr.m.s Perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods Perf. Criteria A

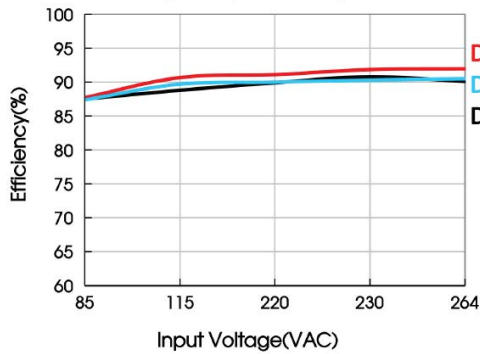
### Product Characteristic Curve



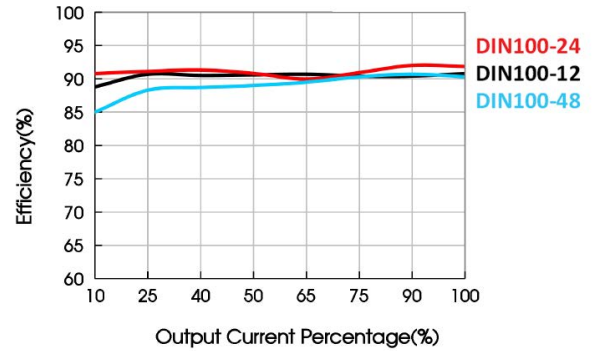
Note: ① With an AC input between 85-115VAC and a DC input between 120-160VDC, the output power must be derated as per temperature derating curves;  
 ② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.



Efficiency Vs Input Voltage (Full Load)

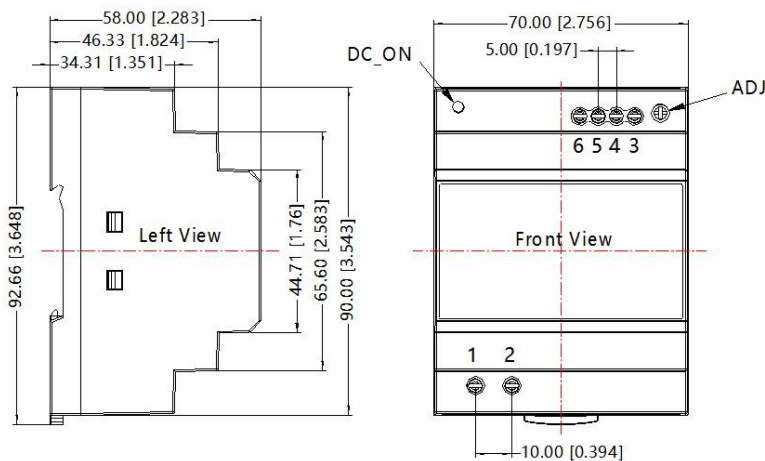


Efficiency Vs Output Load



### Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



Pin-Out	
Pin	LI100-20B
1	AC(L)
2	AC(N)
3	+Vo
4	+Vo
5	-Vo
6	-Vo

Note:  
 Unit: mm[inch]  
 ADJ: adjustable resistance to change output voltage  
 Wire range: 24-12 AWG  
 Tightening torque: Max 0.4 N·m  
 Mounting rail: TS35  
 General tolerances:  $\pm 1.00[\pm 0.039]$

**Note:**

1. For additional information on Product Packaging please refer to [www.TigerPowerSupplies.com](http://www.TigerPowerSupplies.com)
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity<75% with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Specifications are subject to change without prior notice;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.