

# AC/DC Converter

## DIN15-XX Series



15W, AC/DC DIN-Rail Power Supply



EN62368-1

### FEATURES

- Universal 85-264VAC (277VAC available) or 120-370VDC (390VDC available) 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
- Industrial product technology design
- Over-voltage class III (Designed to meet EN61558-1 safety standards)
- Low standby power consumption, high efficiency
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- DIN rail TS35X7.5/ TS35X15 mountable

The DIN15-XX series is Tiger Powers' 15W 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, EN62368, IEC62368, IEC/EN61010, IEC/EN61558 and IEC60335. 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.
CE UKCA	DIN15-5	12	5V/2.4A	4.5-5.5	80	2000
	DIN15-12	15	12V/1.25A	10.8-13.8	85	1500
	DIN15-15	15	15V/1A	13.5-18.0	85.5	1100
	DIN15-24	15.2	24V/0.63A	21.6-29.0	86	700
	DIN15-48	15.4	48V/0.32A	43.2-55.2	87	300

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	--	--	0.5	A
	230VAC	--	--	0.25	
Inrush Current	115VAC	--	15	--	A
	230VAC	--	25	--	
Leakage Current	240VAC	0.5mA			
Hot Plug		Unavailable			

### Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Output Voltage Accuracy	0% - 100% load	5V Output	--	±2	--	%
		Other output	--	±1	--	
Line Regulation	Rated load	--	±0.5	--		
Load Regulation	230VAC	--	±1	--		
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V Output	--	--	80	mV
		12V Output	--	--	120	
		15V Output	--	--	120	
		24V Output	--	--	150	

		48V Output	--	--	240	
Temperature Coefficient			--	±0.02	--	%/°C
Stand-by Power Consumption	230VAC input		--	--	0.3	W
Short Circuit Protection			Hiccup, continuous, self-recovery			
Over-current Protection	Constant voltage mode		≥110% I <sub>o</sub> , self-recovery			
	Constant current mode		Hiccup mode or constant current limiting when output voltage <50%, recovers automatically after fault condition is removed			
Over-voltage Protection	5V Output		≤6.75V (Output voltage hiccup)			
	12V Output		≤16.2V (Output voltage hiccup)			
	15V Output		≤22.5V (Output voltage hiccup)			
	24V Output		≤36V (Output voltage hiccup)			
	48V Output		≤64.8V (Output voltage hiccup)			
Minimum Load			0	--	--	%
Start-up Time			--	--	2	s
Hold-up Time	115VAC		--	12	--	ms
	230VAC		--	30	--	
Note: *The "Tip and barrel method" is used for ripple and noise test, using a 12" twisted pair-wire terminated with a 0.1uf ceramic capacitor & 47uf parallel capacitor, please refer to Enclosed Switching Power Supply 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	5.0	--	--	% / °C	
	+50°C to +70°C	2.5	--	--		
	85VAC - 100VAC	1.34	--	--	% / VAC	
Safety Standard		Design refer to UL/IEC62368-1/EN62368-1 IEC/EN61010-1 IEC/EN61558-1 IEC60335-1 EN62368-1 (Report) Safety Approval				
Safety Class		CLASS II				
MTBF	MIL-HDBK-217F@25°C	> 300,000 h				

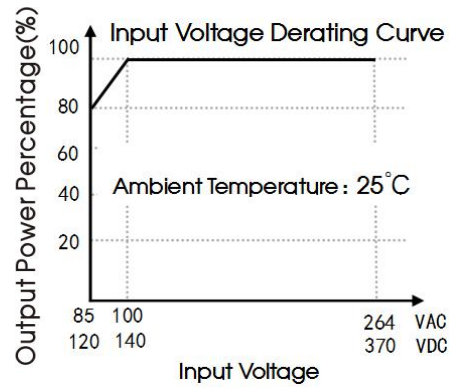
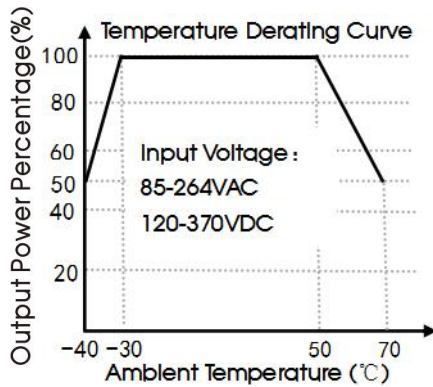
### Mechanical Specifications

Case Material	Plastic, heat-resistant (UL94V-0)
Package Dimensions	90.00 x 58.00 x 17.50mm
Weight	60g (Typ.)
Cooling method	Free air convection

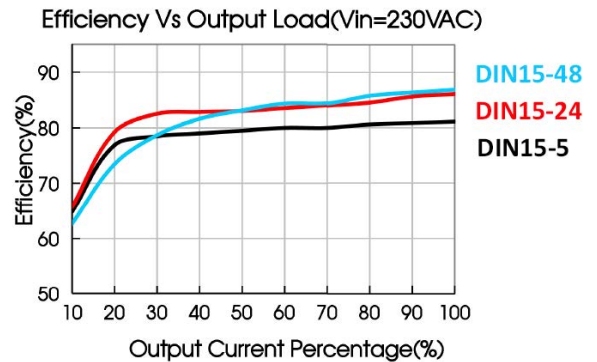
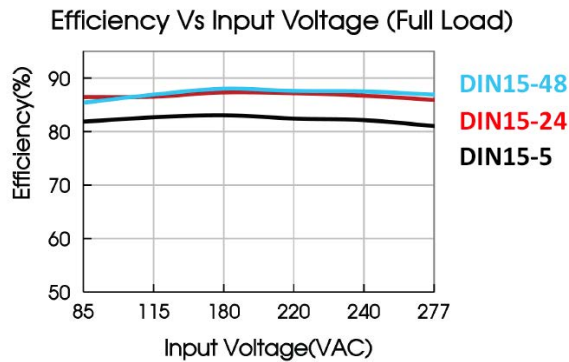
### Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact $\pm 4\text{KV}$ / Air $\pm 8\text{KV}$	Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	$\pm 2\text{KV}$	perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line $\pm 1\text{KV}$	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 B

### Product Characteristic Curve

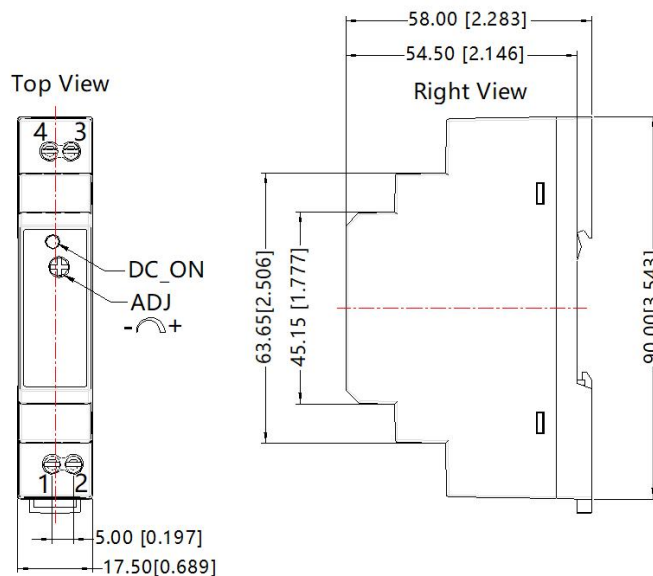


Note: ① With an AC input between 85-100VAC and a DC input between 120-140VDC, the output power must be derated as per temperature derating curves;  
 ② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.



### Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 



Pin-Out	
Pin	Mark
1	AC(N)
2	AC(L)
3	-Vo
4	+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, rail needs to connect safety ground

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.