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℃ to +70℃
- 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	--	
	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	

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		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% Io, self-recovery			
	Constant current mode		Hiccup mode or constant current limiting when output voltage <50%, recovers automatically after fault condition is removed			
			Constant current limiting within 50% -100% rated output voltage, 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	℃
Storage Temperature			-40	--	+85	
Storage Humidity			--	--	95	%RH
Operating Altitude			--	--	2000	m
Switching Frequency			--	65	--	kHz
Power Derating		-40℃ to -30℃	5.0	--	--	%/℃
		+50℃ to +70℃	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 I I			
MTBF		MIL-HDBK-217F@25°C	> 300,000 h			

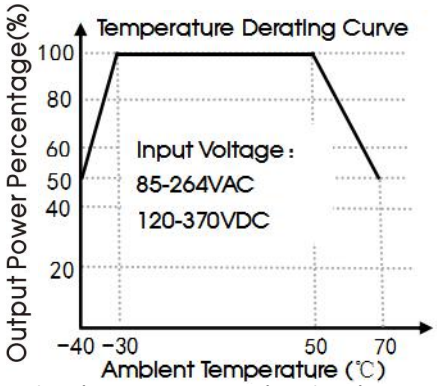
Mechanical Specifications

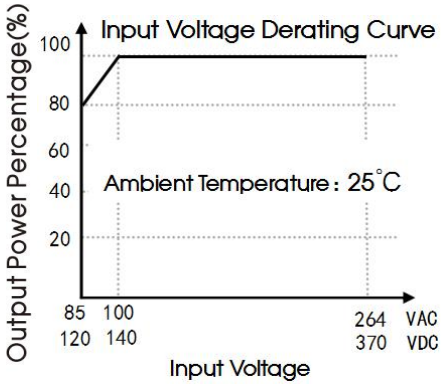
Case Material	Plastic, heat-resistant (UL94V-0)
Package Dimensions	90.00 x 58.00 x 17.50mm
Weight	60g (Typ.)
Cooling method	Free air convection

Electromagnetic Compatibility (EMC)

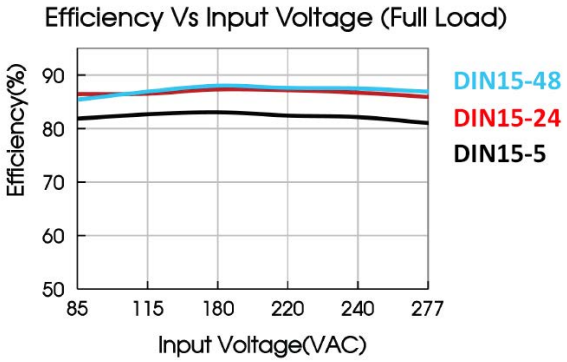
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact ±4KV/ Air ±8KV	Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV	perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line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

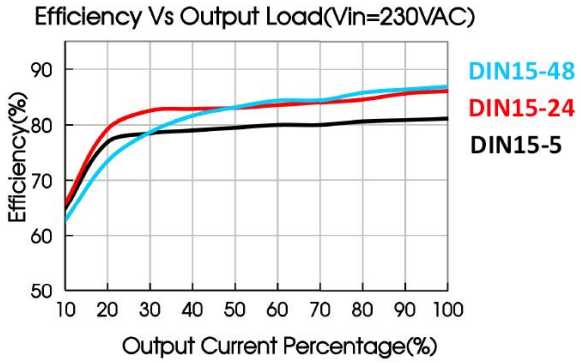
Product Characteristic Curve





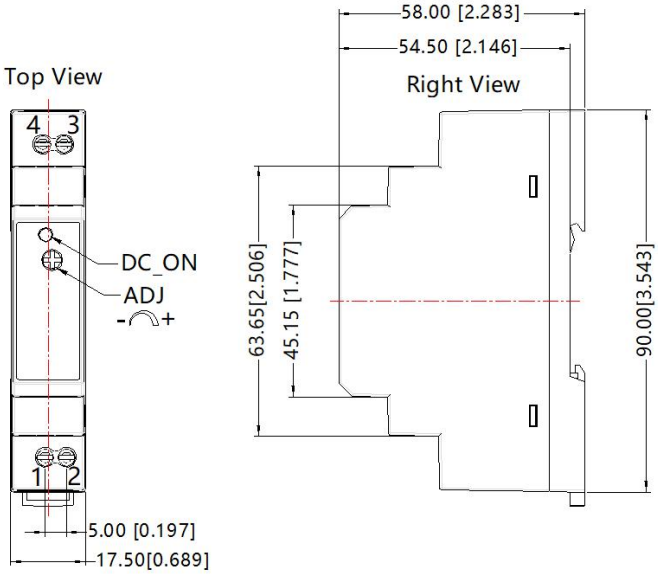
Note: ① With an AC input between 85-100VAC and a DC input between 120-140VDC, the output power must be derated as per temperature derating curves;
② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.





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: ±1.00[±0.039]

Note:

1. **For additional information on Product Packaging please refer to www.TigerPowerSupplies.com**
2. **Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, 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.**