

AC-DC Converter

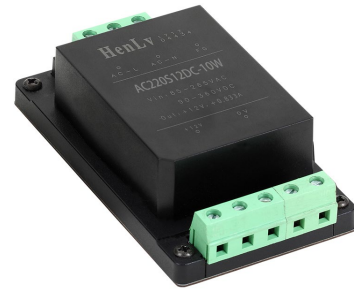
AC220D(TD)__ZD(K)-10W/12W Series

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Features

- Wide voltage input 85-308VAC/120-430VDC
- DIP
- Operating temperature range: -40°C~+85°C
- Isolation voltage 2500VAC 5mA 1Minute
- Internal SMD design
- High flame retardant plastic shell
- RoSH
- Heat dissipation mode: natural air cooling
- It has good shielding anti-interference performance and electromagnetic compatibility, lightning protection, output over current, short circuit protection, overheat protection, self-recovery and other functions

Product Picture



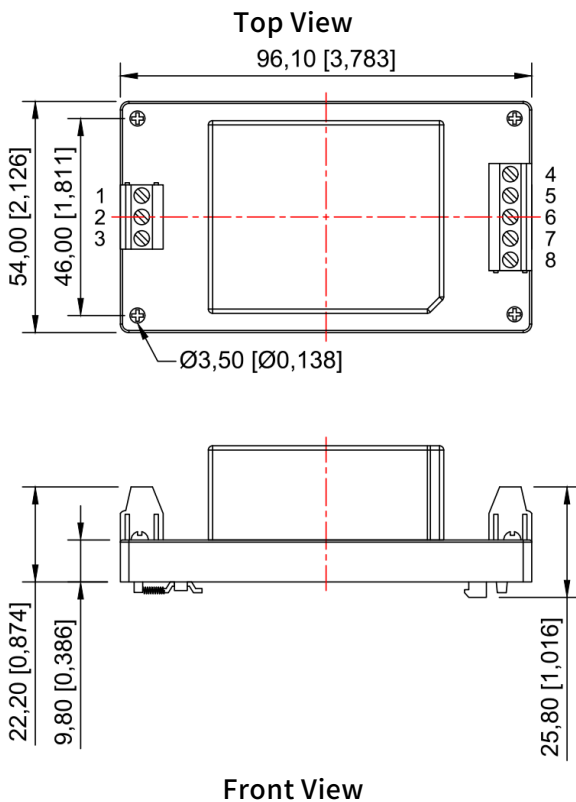
Patent Protection



EMC-EN55032
EN55035
LVD-EN62368

Dimensions

AC220D(TD)__ZDK-10W/12W Series Dimensions



Pin mode			
Pin	Single(S)	Dual(D)	Dual non-shared ground(TD)
1	FG	FG	FG
2	AC(N)	AC(N)	AC(N)
3	AC(L)	AC(L)	AC(L)
4	0V	-XXVDC	0V1
5	NC	NC	+XXVDC
6	NC	COM	NC
7	NC	NC	0V2
8	+XXVDC	+XXVDC	+XXVDC

Note:

Size unit: mm[inch]

Unmarked tolerance: $\pm 0.25[\pm 0.01]$

Wire bond strength: 24-12 AWG

Tightening torque: Max 0.4 N-m

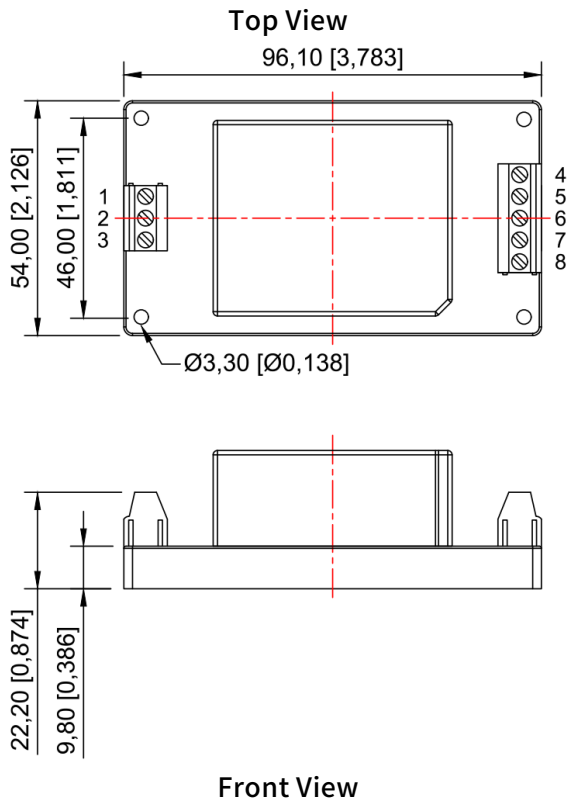
Guide rail: TS35

The device layout is for reference only.

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HenLv Technology (NingBo) Co., Ltd
www.henlv.net 2024.10

AC220D(TD)__ZD-10W/12W Series Dimensions



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Application

Industrial control and remote DC power supply system, switching system, AC/DC(5V products), railway communication, communication interface converter, cellular telephone, semiconductor laser, display screen, monitoring equipment, petrochemical, portable instrument, medical instrument, automatic control device, burglar alarm, handheld instrument, digital circuit, IC card meter, air conditioning computer controller, LED production Products, digital products, power adapters, etc.

Selection Guide

Model	Input(V)	Output(V ± 2 %)		Current(mA)	Efficiency (%)	Isolation (VAC)
AC220D05ZD(K)-10W/12W	85-308VAC (120-430VDC)	± 5		$\pm 1000/\pm 1200$	79	2500
AC220D09ZD(K)-10W/12W		± 9		$\pm 555/\pm 667$	81	2500
AC220D12ZD(K)-10W/12W		± 12		$\pm 416/\pm 500$	84	2500
AC220D15ZD(K)-10W/12W		± 15		$\pm 333/\pm 400$	84	2500
AC220D24ZD(K)-10W/12W		± 24		$\pm 208/\pm 250$	85	2500
AC220TD0505ZD(K)-10W/12W		5	5	Customization	79	2500
AC220TD0512ZD(K)-10W/12W		5	12	Customization	84	2500
AC220TD0524ZD(K)-10W/12W		5	24	Customization	85	2500

Note: The company for customers to customize any input and output module power supply, if you have special needs, please call our company, unless otherwise specified, input =Vi, the characteristics of the module power supply should meet the requirements of Table 1, and applicable to the full temperature range (-40°C \leq Tc \leq 85°C)

Electrical Specifications

Specifications	Symbol	Conditions $V_i, -40^{\circ}\text{C} \leq T_c \leq 85$ (Unless otherwise specified)	Min	Min	Unit
Output Voltage	V_o	Full Load	$V_o-2\%$	$V_o+2\%$	V
Output Current	$I_{o\max}$	—	—	$P(\text{Power})/$ $U(\text{Output voltage})$	A
Output Ripple Voltage	V_{p-p}	Full Load, V_i , BW=20MHz, Normal Temperature	80	250	mV
Output Noise Voltage	V_{p-p}	Full Load, V_i , BW=20MHz, Normal Temperature	100	300	mV
Voltage Regulation	S_v	$V_{i\min}, V_i, V_{i\max}$, Full Load	—	$\leq \pm 1$	%
Load Adjustment	S_i	$V_i, I_o=(10\% \sim 100\%)I_{o\max}$	—	$\leq \pm 1.5$	%
Insulation Resistance	RI	Input-output, Insulation Voltage: 500VDC	100	—	MΩ

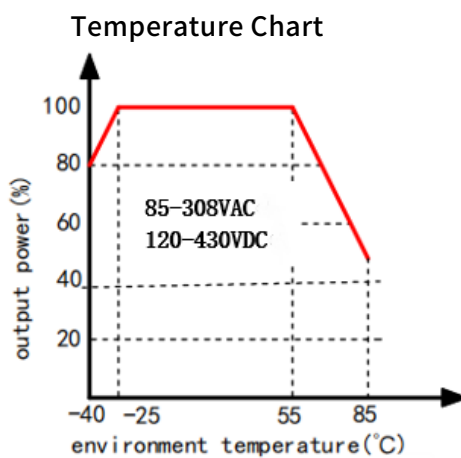
Mechanical Specifications

Size	96.10 x 54.00 mm
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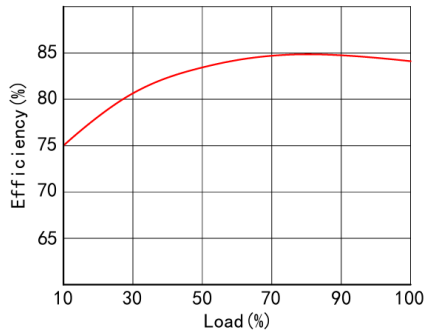
General Specifications

EMC Specifications	Magnetic Field Sensitivity Test	GB6833.2-87
	Electrostatic Discharge Sensitivity Test	GB6833.3-87
	Radiation Sensitivity Test	GB6833.5-87
	Conduction Sensitivity Test	GB6833.6-87
Temperature Drift	$\leq \pm 0.03\%/^{\circ}\text{C}$	
Storage Temperature	$-40^{\circ}\text{C} \sim 105^{\circ}\text{C}$	
Input Frequency	47Hz~63Hz	
Humidity	20%~95%RH	
Leakage Current	5mA(max)	
MTBF	$> 500000\text{H}$	

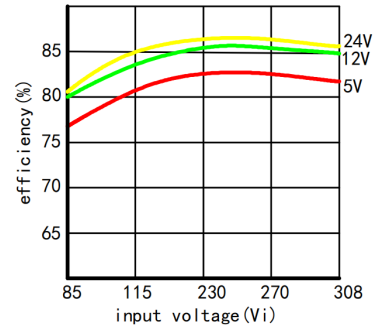
Typical Specifications Curves



Efficiency/Load Graph

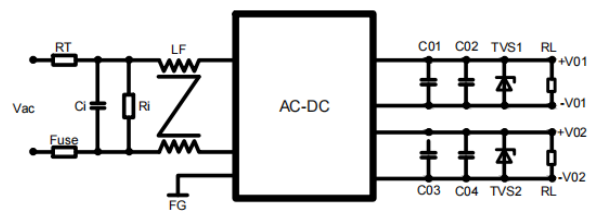
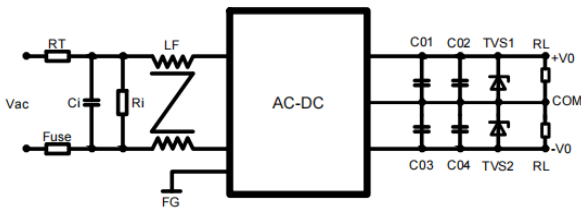


Efficiency/Load Graph



Typical Application

Design Reference



Recommendation Test

Filter: In some circuits that are sensitive to noise and ripple, an external filter capacitor can be connected to the DC/DC input and output terminals to reduce the impact of ripple on the system, but the value of the filter capacitor should be appropriate, if the capacitor is too large, it is likely to cause startup problems, for each output, under the condition of ensuring safe and reliable operation, the maximum capacitance of the filter capacitor can be referred to the external capacitance table. In order to obtain very low ripple, an "LC" filter network can be connected to the input and output end of the DC/DC converter, so that the filtering effect will be better, and it should be noted that the size of the inductance value and the frequency of the "LC" filter network should be staggered from the frequency of the DC/DC module power supply to avoid mutual interference. For each output, under safe and reliable working conditions, the recommended capacitive load value is shown in (Table 1).

型号	FUSE	MOV	C01/C03/C05	C02(UF)	C04(UF)	TVS1	TVS2
AC220TD0505 ZD(K)- 10W/12W	1A/250V Slow-Blow, Mandatory Connection	14D471K	0.1UF/50V	100	47	SMBJ7.0A	SMBJ20A
AC220TD0512 ZD(K)- 10W/12W				100	47	SMBJ7.0A	SMBJ20A
AC220TD0524 ZD(K)- 10W/12W				100	47	SMBJ7.0A	SMBJ20A

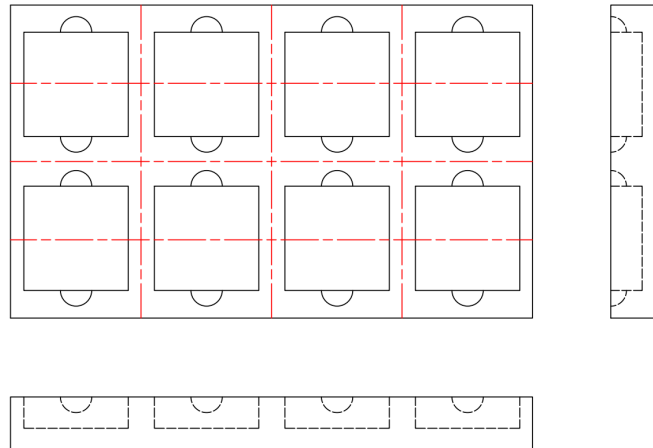
Recommended output max capacitive load value table (Table 1)

Note: Please note that the main grounding of the output and the grounding of the load are connected to the ground, so that even if the product has problems, it will not cause harm to the human body. The ground requirements for the auxiliary roads are isolated and can be grounded without grounding.

Precautions

Package

This series of modules are packed in shockproof and anti-static foam.



Transport

The package containing the module is allowed to be transported by any means of transport, which should avoid direct rain and snow and mechanical damage.

Storage

The module should be stored in a warehouse where the ambient temperature is -40 degrees ~ 105 degrees, the relative humidity is 20%~95%, and the surrounding environment is free from acidic, alkaline and other harmful gases.

Note: The above are the performance indicators of the product series listed in this manual. Some indicators of non-standard products may exceed the above requirements, so if there is any inconsistency between the manual and the product specification documents, please refer to the specification documents. If you have special needs, please contact us directly.