HNS360

High Voltage DC/DC for Solar/ESS Application

Highlight

- Cost effective
- 360W max continuous output
- 300V – 1500V wide input range
- 100mm x 237mm x 41mm compact size
- Convection cooled
- Long holdup time
- -20℃-70℃ operation temperature range
- LED DC_OK indication
- DC_OK analog indication signal
- Remote ON/OFF control
- Active current sharing support
- Support semi-custom design

Typical Application

- Solar tracking system
- ESS application

Key Specification

Model	HNS360T12	HNS360T24	HNS360T28	HNS360T48
Output voltage	12V	24V	28V	48V
Rated Current	0-30A	0-15A	0-12.8A	0-7.5A
Rated Power	360W			
Dimension	100mm x 237mm x 41mm			
EMC	CLASS B emission			

Ordering Model Name

H	N	S	360	T	24	□□
Series Name	**Package Type**	**Outputs**	**Rated Power**	**Connector Type**	**Output Voltage**	**Control Code**
	N: Natural Cooled	S: Single output	360W	T: Screw terminal		AA: Default for Standard model

Note: for any custom design and model name, please consult with WinkEE.

Input Specification

Function	Minimum	Typical	Maximum	Condition
Input Voltage Range	300VDC		1500VDC	
Input Current			3A	@300VDC Input
			0.6A	@1500VDC Input
Peak Efficiency			91%	
Inrush Current			300A	1500Vdc, cold start
Input surge voltage			1700VDC	last for 1second
Fuse Required	4A			Must be installed externally

Output Specification

Function	Minimum	Typical	Maximum	Condition
Output Voltage Trim Range	12V	12V	12.5V	12V Model
	24V	24V	26V	24V Model
	26V	28V	28V	28V Model
	42V	48V	54V	48V Model
Output Power	0W		360W	
Initial Tolerance			±0.5%	Trim in factory
Total Regulation			3%	Include line and load regulation
Output Ripple			1%	Peak-Peak value, full load measure at board end with 0.1uF Ceramic and 47uF electrolytic capacitor, 20MHz BW
Dynamic Response			5%	with 50% load step, min from 0.1A
Capacitive Load			2200uF	
Power up time			5s	
Rise time			50ms	without cap load
Hold up time	40ms			1200VDC @ 360W load 750VDC @ 200W load

Protection Specification

Function	Minimum	Typical	Maximum	Condition
Input under voltage		270VDC		Auto-restart after fault is removed
Over current protection (OCP)				Auto-restart, Clamp by constant current
Short circuit protection (SCP)				Auto-restart after fault is removed
Over voltage protection (OVP)			130%	Auto-restart after fault is removed
Over temperature protection (OTP)				Auto-restart after fault is removed

**Protection mode latch or auto-restart can be customed, contact WinkEE for more details.*

Reliability

Function	Minimum	Typical	Maximum	Condition
MTBF	500Khrs			According to Telecordia SR-332. 115Vac 25℃ ambient with rated load
Life	5 years			Rated nominal conditions

EMC

Conducted Emissions	EN 55011 / EN 55032,Class B
Radiated Emissions	EN 55011 / EN 55032,Class B
Electrostatic Discharge	IEC 61000-4-2 Level 4 (Air Discharge: 15 kV,Contact Discharge: 8 kV) Criteria A
Radiated Field	IEC 61000-4-3 Criteria A
Electrical Fast Transient / Burst	IEC 61000-4-4 Level 3 (2 kV),Criteria A
Surge	IEC 61000-4-5 Level 3 (Common Mode 2kV, Differential Mode 1kV), Criteria A
CS	IEC 61000-4-6 Level 2 (150 kHz-80 MHz, 3 Vrms, 6 Vrms at ISM bands and Amateur radio bands), Criteria A
Power Frequency Magnetic Fields	IEC 61000-4-8 Criteria A,Magnetic field strength 30 A/m

Criteria A: Normal operation within spec limit
Criteria B: Out of regulation or restart to normal operation after test

Safety / Directives

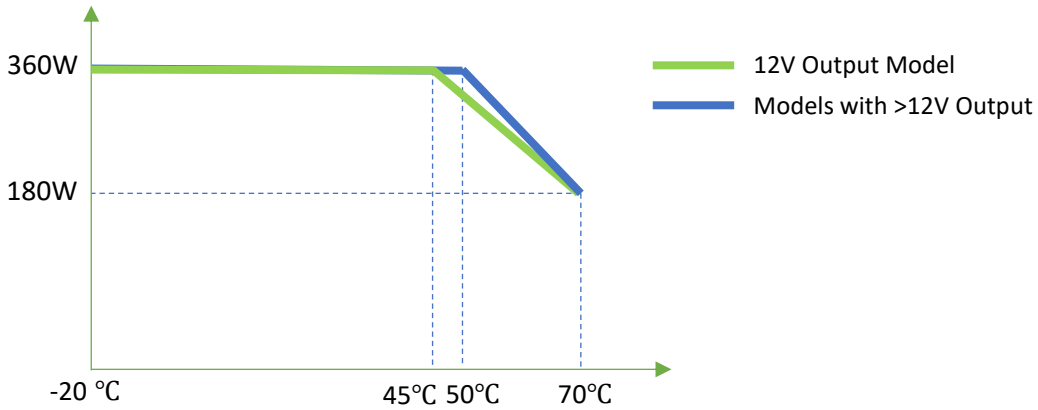
Solar System, ESS		IEC62109-1:2010 UL1741
Dielectric Voltage	Input to/Output	4000Vac
	Input to/Ground	4000Vac
	Output to/Ground	4000Vac

**Compliance only, contact WinkEE for detailed safety certifications*

Environmental

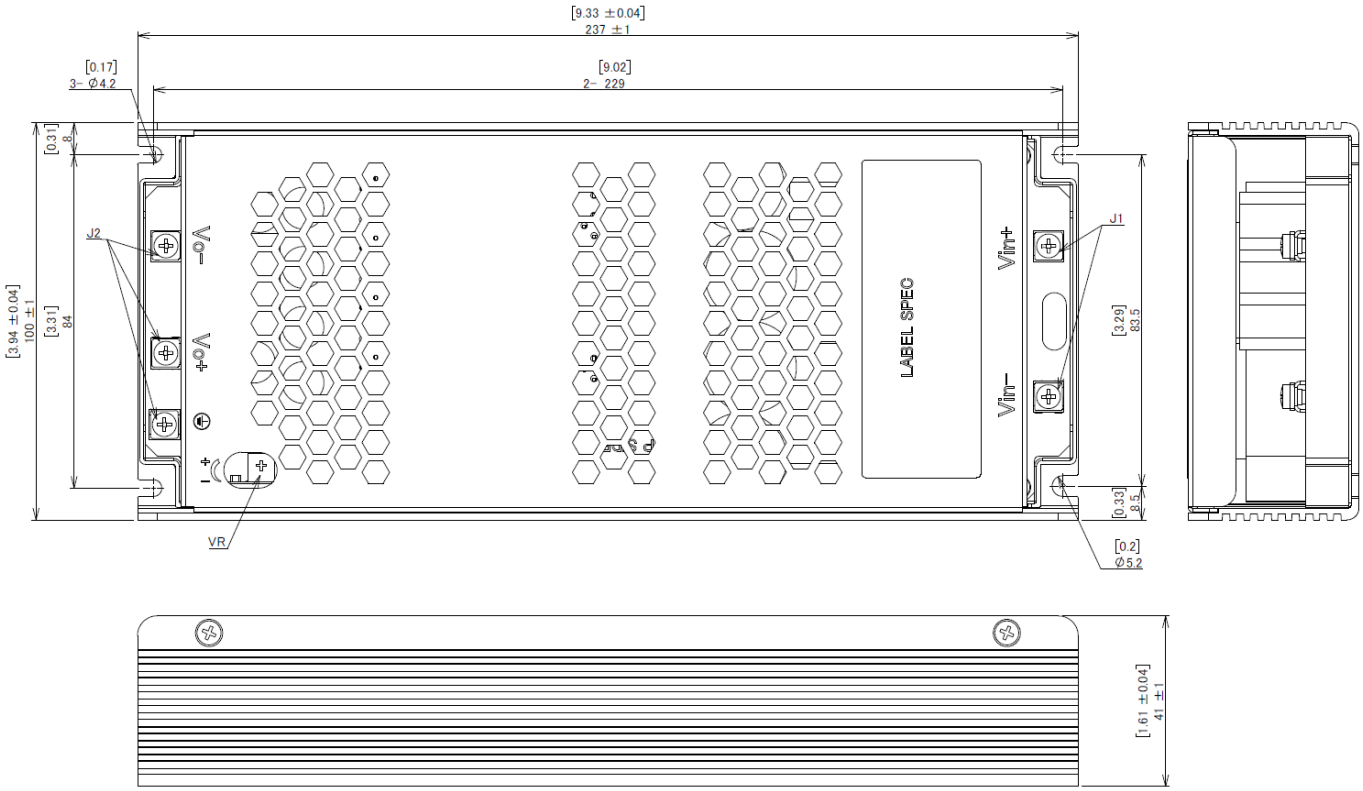
Function	Min	Typical	Max	Condition
Operation Temperature	-20℃		70℃	See power derating curve
Operation Humidity	10%RH		90%RH	Non-condensing
Storage Temperature	-40℃		70℃	
Storage Humidity	10%RH		90%RH	Non-condensing
Operation Altitude			5000m or 16,405 feet	
Shock			196m/s2	Non-Package
Vibration			19.6m/s2	10-55Hz 1 Hour for each axis. Non-package

Output Power De-rating Curve



Power Derating Curve

Mechanical Drawing



Notes:
1. J1 is input terminal block, 11.5kgf.cm (10 Lbf.in) rated torque.
2. J2 is output terminal block,11.5kgf.cm(10 Lbf.in) rated torque.
3. VR: clockwise is to increase the output voltage, anti-clockwise is to reduce the output voltage.

Connector and Pin Assignment

Position	Connector / Connection	
Input Connector J1	Input screw terminal connector	
	Enclosure Mark	**Designation**
	Vin+	DC Input positive
	Vin-	DC Input return

Position	Connector / Connection	
Main Output Connector J2	Output screw terminal connector	
	Enclosure Mark	**Designation**
	Vo+	Output positive
	Vo-	Output return

Voltage Trimming

The power supply provides a potentiometer for user to adjust the output voltage. Switch the potentiometer clockwise to increase the output voltage, switch the potentiometer counterclockwise to decrease the output voltage.
Please reference to Output Specification for the output voltage range which user shall trim the voltage within.
When the output is adjusted below nominal value, the maximum output current is the same as the nominal output, when the output is adjusted above nominal value, the output power cannot exceed the nominal maximum power (the maximum output current used should be reduced accordingly).

External Fuse

External fuse must be series with DC input positive line to break circuit, to avoid any hazardous may be caused by fault situation.

About WinkEE

WinkEE provides AC/DC power solution with world leading power electronics design. We are devoted to develop high efficient conversion for true green energy to a next level, and bring value to our customers.

WinkEE products are suitable for various applications including medical, industrial equipment, semi-conductor manufacture equipment, consumer and house appliances, we support flexible custom design to maximum the application possibility.

ATTENTION

WinkEE PROVIDES TECHNICAL FILES AND DATA (INCLUDING DATASHEET) WITH “AS IS” BASIS, AND DOES NOT OFFER ANY WARRANTY FOR USING THE PRODUCT, THESE RESOUCES ARE INTENDED FOR SKILLED PERSONNEL TO DESIGN WITH WinkEE PRODUCS, IT IS THE SOLE RESPONSIBILITY FOR CUSTOMER TO SELECT THE APPROPIATE PRODUCT AND TO VALIDATE WITH TESTING TO ENSURE THE PRODUCT CAN MEET APPLICATION REQUIREMENT.

WinkEE reserves the rights to chang e the resources without notice, object s to and rejects additional or different terms may be proposed.

www.winkeelife.com

CHEERY ENERGY

Power Essential to Critical