

HGNB Series Solid State Booster

Load current 10,15,25,40,50A, Adjustable voltage range 0-220VAC or 0-380VAC
Control 470Kohms(2W) a potentiometer in need only

Electronic

DESCRIPTION

QT/YHL3850-2000

Technical information

FEATURES

- ▶ Input/output-base 2,500V isolation
- ▶ 100% tested at rated current, CE compliant
- ▶ Only a potentiometer in need to implement line adjust of output voltage, easy to use
- ▶ Internal varistor (MOV) and RC snubber dual surge absorb protect
- ▶ Thyristor phase control output, adjustable range wide



SELECTING CODE

HGNB - 2 10 R /1



Series name	Output voltage	Output current	Output type	Function option
	2: 0-220VAC 3: 0-380VAC	10: 0.1-10A 15: 0.1-15A 25: 0.1-25A 40: 0.1-40A	R: Entire wave L: Half wave	No mark: for resistant load 1: for inductive load

APPLICATIONS

HGNB series solidstate boosters are made up of TRIAC and RC phase control circuit, hysteresis elimation circuit, over voltage snubber, adapting ignition-proof cover, filled with EPOXY, screw thread connection, and have the features of hard structure, vibration-proof capability high, only a potentiometer is needed to implement AC power adjust, used widely instead of cumbersome contacting booster in many fields.

"L" type outputs through SCRs to implement half-wave adjust, mainly used for vibratory feeders.

This series are widely used in the fields of oil apparatus, foodstuff producing mechanisms, packaging and textile machines, manual adjust of power, voltage, temperature, speed etc, analog.

Typical Application:

Industrial temperature controllers
Lighting dimming
Vibratory feeders
Resistive heating element
Conveyor speed Control
Other occasion of power adjust

Unsuitable application:

AC motor control
Three-phase control
Transformers requiring pure sine wave input
Application which cannot withstand thyristor noise
Zero crossing application

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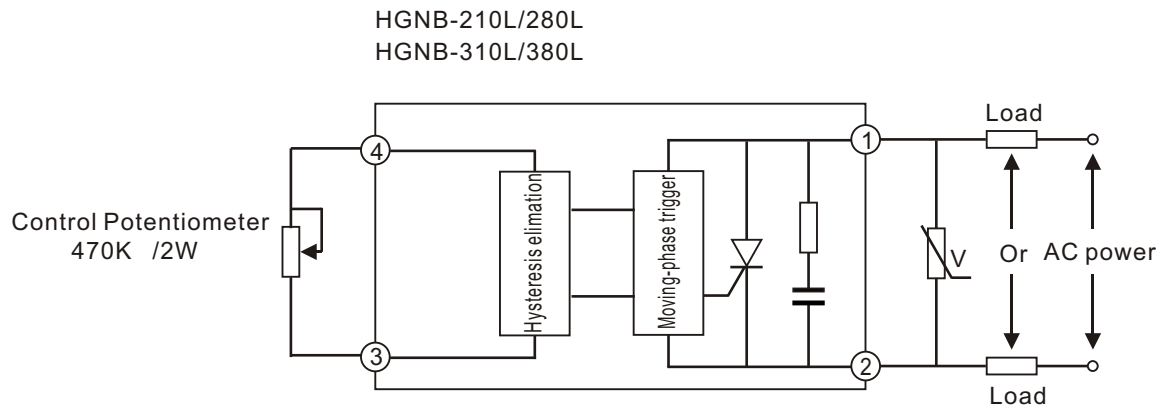
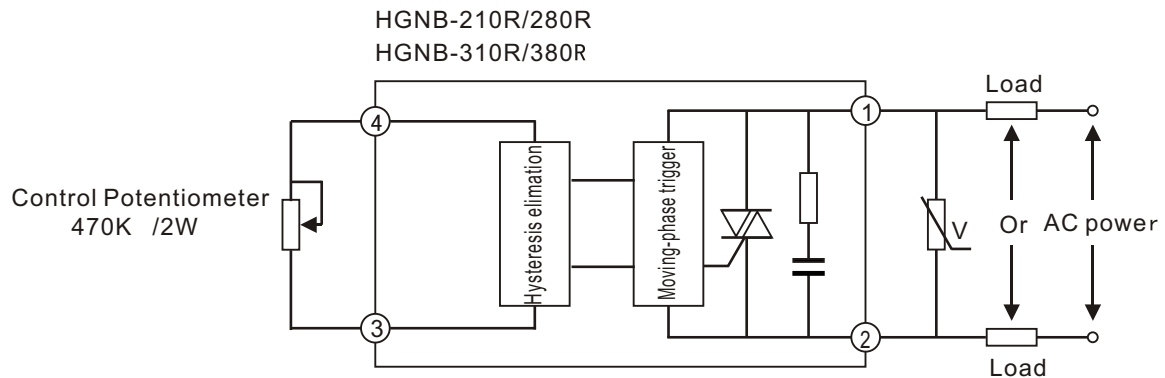
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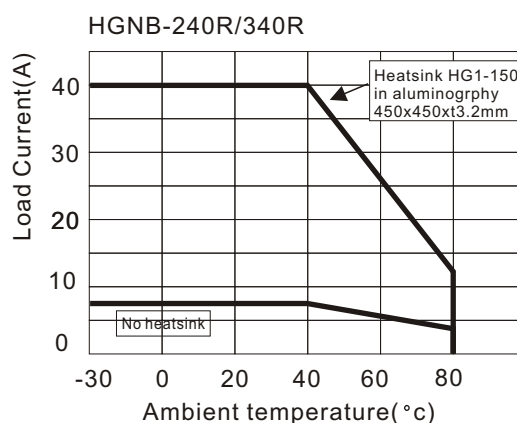
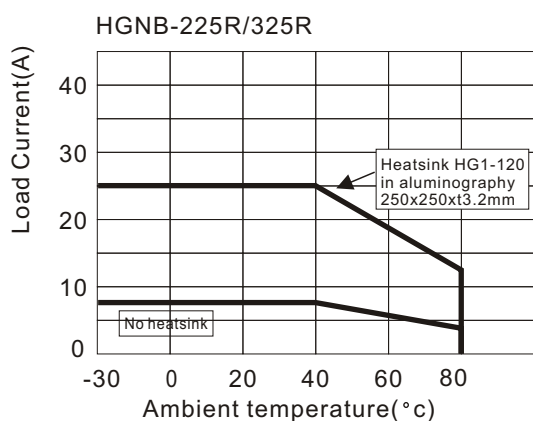
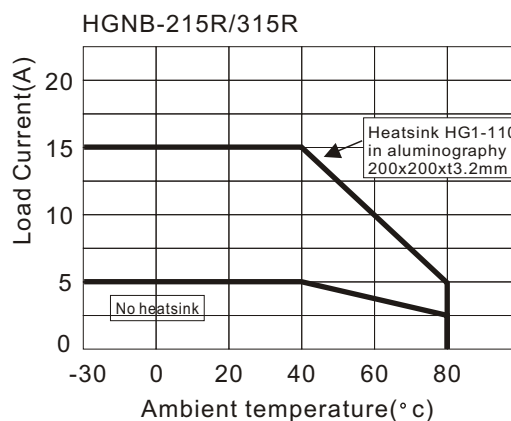
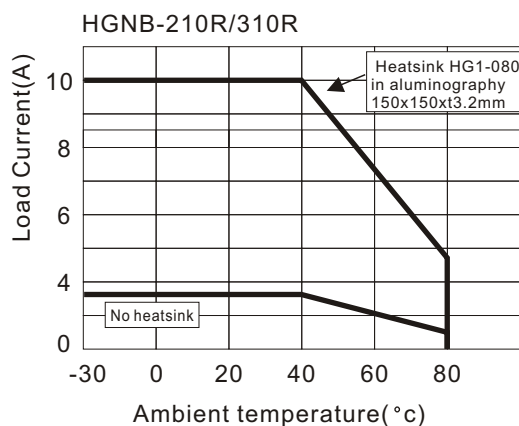
OUTPUT PARAMETERS(Ta=25℃)

Output current type	10	15	25	40
Operating voltage range	2:0~220VAC 3:0~380VAC			
Max. Load current	10A	15A	25A	40A
Max. Surge current-Non repetitive(10ms)	120A _{pk}	160A _{pk}	250A _{pk}	300A _{pk}
Max. I ² t for fusing(10ms)	72A ² s	128A ² s	312. 5A ² s	450A ² s
Thermal resistance junction to case(R _{jc})	2.5℃/W	2.3℃/W	1.1℃/W	0.9℃/W
Minmum off-state dv/dt	250V/usec	500V/usec	250V/usec	250V/usec
Min. Load current	100 mA			
Max. On-state voltage drop	2.2VAC@rated current			
Max. Off-state leakage current	5mA@rated voltage			
Transient over voltage	2:800V _{pk} 3:1000V _{pk}			
Operating frequency range	47~63Hz			
Dielectric strength(50Hz 1Min)	2500VAC input/output-base			
Insulation resistance	1000MΩ 500VDC Voltage Test			
Vibration resistance	Destructive	117.6mm/s ² (12G),10-55 Hz double Amplitude of 2 mm		
	Functional	117.6mm/s ² (12G),10-55 Hz double Amplitude of 2 mm		
Shock resistance	Destructive	Min.980m/s ² (100G)(5 times each for X,Y,Z axis)		
	Functional	Min.980m/s ² (100G)(4 times each for X,Y,Z axis)		
Ambient operating temperature	-30℃ to 80℃			
Ambient storage temperature	-30℃ to 120℃			
Ambient humidity relative	45% to 85%			
Weight typical	≤85g			

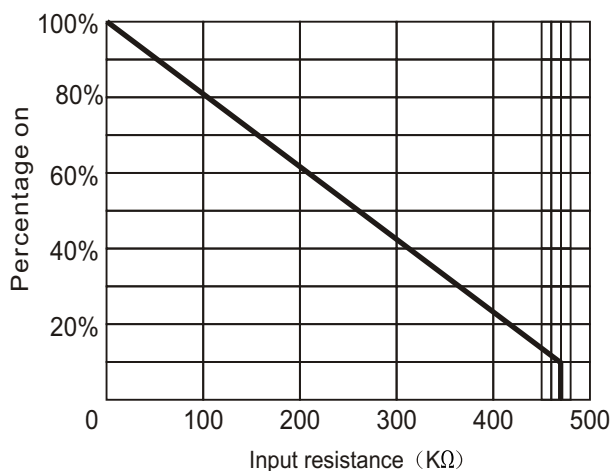
CONNECTION/WIRING



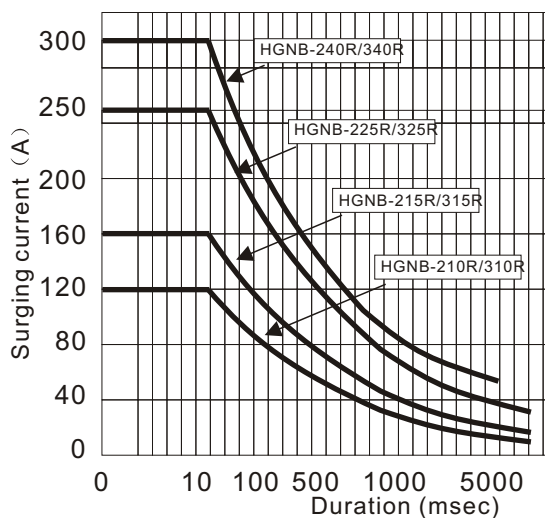
CURRENT DERATING CURVES



PERCENTAGE ON vs. INPUT RESISTANCE



MAX.SURGE vs.DURATION

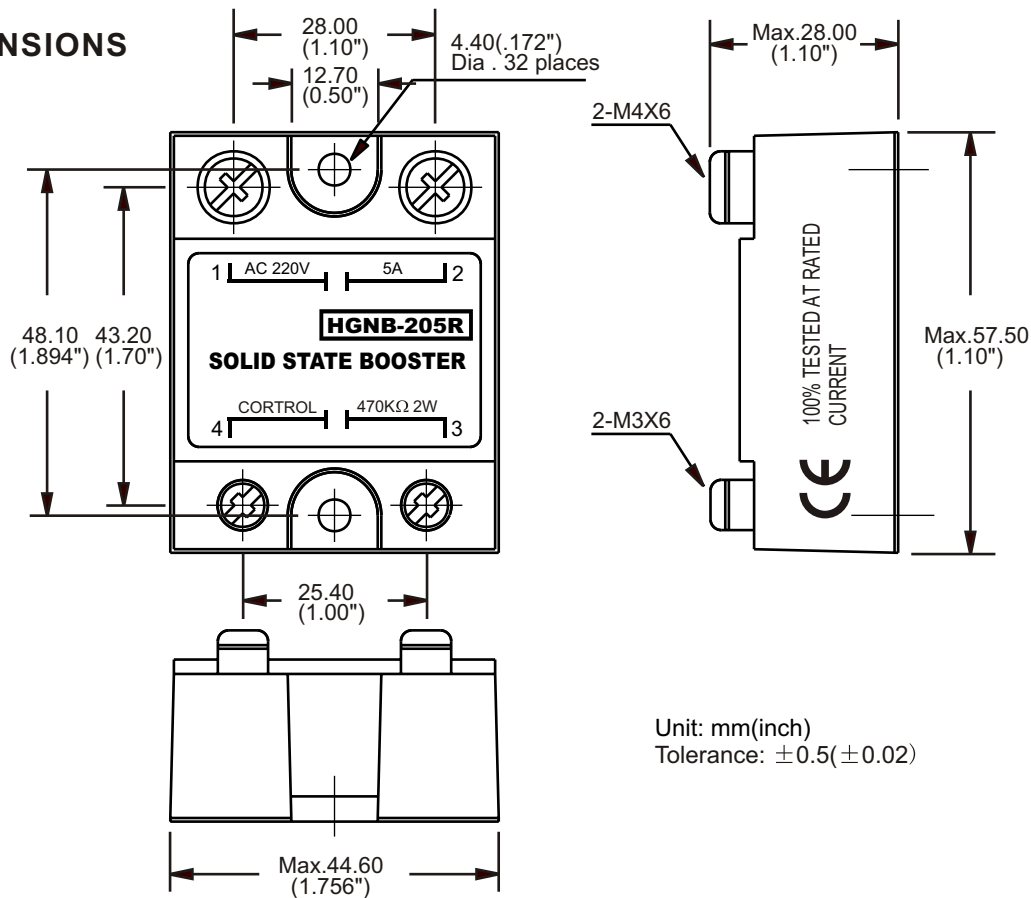


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DIMENSIONS



PRECAUTIONS

- ▶ RFI will be brought on the output with Thyristor phase control output (The interference will be reduced when seriesing an inductive with the load).
- ▶ Shielding wires or metal tube should be used when the control potentiometer connection line is too long.
- ▶ This series products control to load is not isolated:
 - I. Potentiometer should be selected with regards to line voltage isolation;
 - II. Exercise care to avoid the risk of electric shock;
 - III. The control end can not be connected to other electro circuit.
- ▶ Heatsink should be used when the current is up to 5 Amperes, and heat-conductive silicate should be spreaded between the heatsink and the base.
- ▶ When controlling inductive load, the SSR may be damaged by the high transient voltage and surge current added on the output, so some special clamping devices should be used to control voltage, such as zener diode, varistor (MOV).
- ▶ When controlling a small current (close to Min. Load current), a dummy load resistance should be paralleled to reduce the rest higher voltage produced by the leakage current on the output.
- ▶ To avoid the temperature exceeding the allowance, heatsink efficiency and the mounting position should be regarded, suitable space will be left when two or more SSR are mounted.
- ▶ The output end must not be used in parallel to enlarge the current, nor can it be used in series for higher suitable operating voltage.