

HGC Series Three Phase Solid State Relay

Load current 10,15,25,40A--100A, Output voltage range 28-280VAC or 48-480VAC
Control voltage 3-32VDC or 90-280VAC

Electronic

DESCRIPTION

QT/YHL3851-2000

Technical information

FEATURES

- ▶ TRIAC output, zero voltage turn-on, zero current turn-off
- ▶ Input and output 4000V optically isolated
- ▶ LED indicator
- ▶ Internal varistor (MOV) and RC snubber dual surge absorb protect
- ▶ Performance than price high, high reliability
- ▶ 100% tested at rated current, CE compliant



SELECTING CODE

HGC - 3 10 D

Series name	Output voltage	Output current	Input voltage
	3:24-380VAC 4:24-530VAC 5:24-660VAC	10:0.1-10A 25:0.1-25A 40:0.1-40A ----- 100: 0.1-100A	A:90-280VAC D:3-32VDC

INPUT PARAMETERS(Ta=25℃)

Input type	D:DC Control	A:AC Control
Control voltage range	3-32 VDC	90-280 Vrms (50-60Hz)
Turn-on voltage(Max.)	3.0 VDC	90 Vrms
Turn-off voltage(Min.)	1.0 VDC	10 Vrms
Nominal input impedance	1500 Ohms	60k Ohms
Typical Input current	10 mA@5 VDC 22 mA @24 VDC	5 mA@220 VAC 2.2 mA@110 VAC
Max. Reverse voltage	-32 VDC	-----

APPLICATION

HGC series three phase solid state relays, adapting ignition-proof engineering plastic cover, filled with EPOXY, screw thread connection, have the features of hard structure, vibration-proof capability high, input driving current small convenient to interface with terminals of computer and various digital tele-control circuit. This series are widely used in the fields of petrochemical equipment, foodstuff-producing machines, packaging machines, textile and plastic mechanisms, tool numerical control, gymnasium equip. Specialities be the same with canker, aqueosity request prevent explode scurvines circumstance, and often switch of occasion.

HGC Series Three Phase Solid State Relay

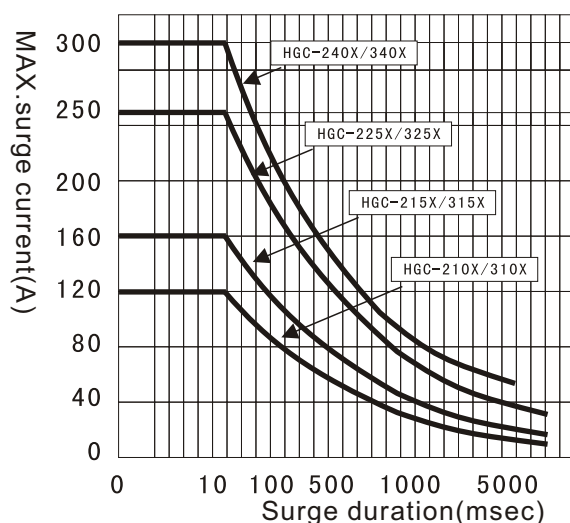
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OUTPUT PARAMETERS(Ta=25°C)

Output current type	10	15	25	40	45
Operating voltage range	2:28~280VAC 3:48~480VAC 6: 48~660VAC				
Max. Load current	10A	15A	25A	40A	45A
Max. Surge current-Non repetitive (10ms)	120A _{pk}	160A _{pk}	250A _{pk}	300A _{pk}	350A _{pk}
Max. I ² t for fusing(10ms)	72A ² s	128A ² s	312. 5A ² s	450A ² s	550A ² s
Thermal resistance junction to case(R _{jc})	2.5℃/W	2.3℃/W	1.1℃/W	0.9℃/W	0.8℃/W
Min. Off-state dv/dt	250V/usec	500V/usec	250V/usec	250V/usec	250V/usec
Max. Over-zero voltage	±35VAC				
Min. Load current	100 mA				
Max. On-state voltage drop	1.5VAC@rated current				
Max. Off-state leakage current	5mA,1mA/no RC @rated voltage				
Transient over voltage	2:800Vpk 3:1000Vpk				
Operating frequency range	47~63Hz				
Dielectric strength(50Hz 1Min)	4000VAC input-output 2500VAC input/output-base				
Insulation resistance	1000MΩ 500VDC Voltage Test				
Vibration resistance	Destructive Functional	117.6mm/s ² (12G),10-55 Hz double Amplitude of 2 mm 117.6mm/s ² (12G),10-55 Hz double Amplitude of 2 mm			
Shock resistance	Destructive Functional	Min.980m/s ² (100G)(5 times each for X,Y,Z axis) Min.980m/s ² (100G)(4 times each for X,Y,Z axis)			
Max. Capacitance	8pF (input-output)				
Max. Turn-ontime	(1/2 cycle ofload power)+1msec(DC input) (3/2 cycle ofload power)+1msec(AC input)				
Max. Turn-offtime	(1/2 cycle ofload power)+1msec(DC input) (3/2 cycle ofload power)+1msec(AC input)				
Ambient operating temperature	-30℃ to 80℃				
Ambient storage temperature	-30℃ to 120℃				
Ambient humidity relative	45% to 85%				
Weight typical	≤85g				

MAX. SURGE vs.DURATION

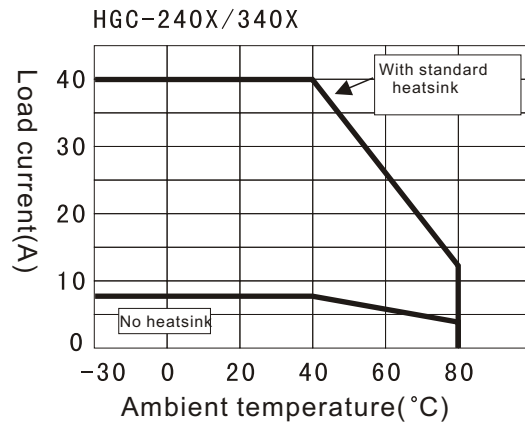
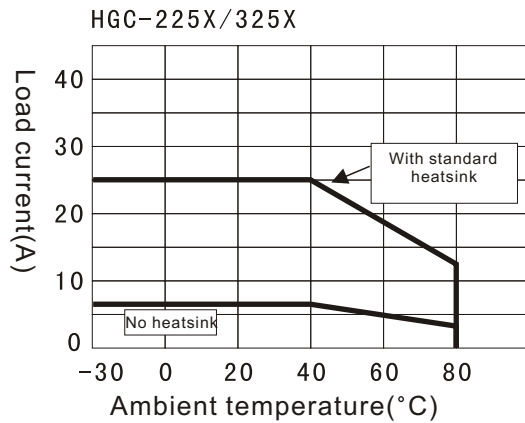
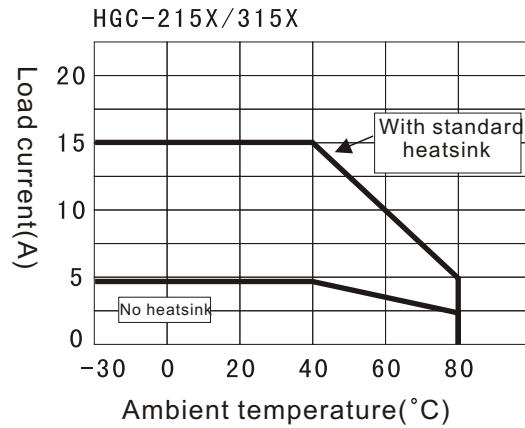
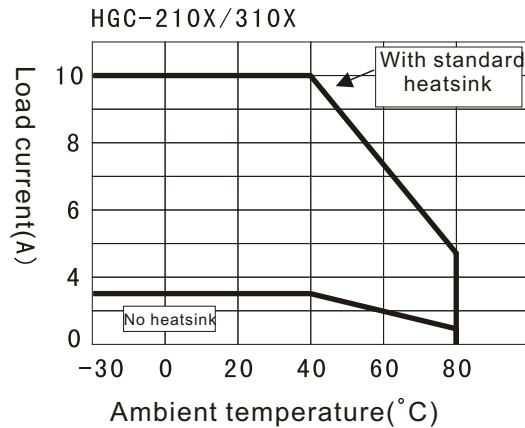


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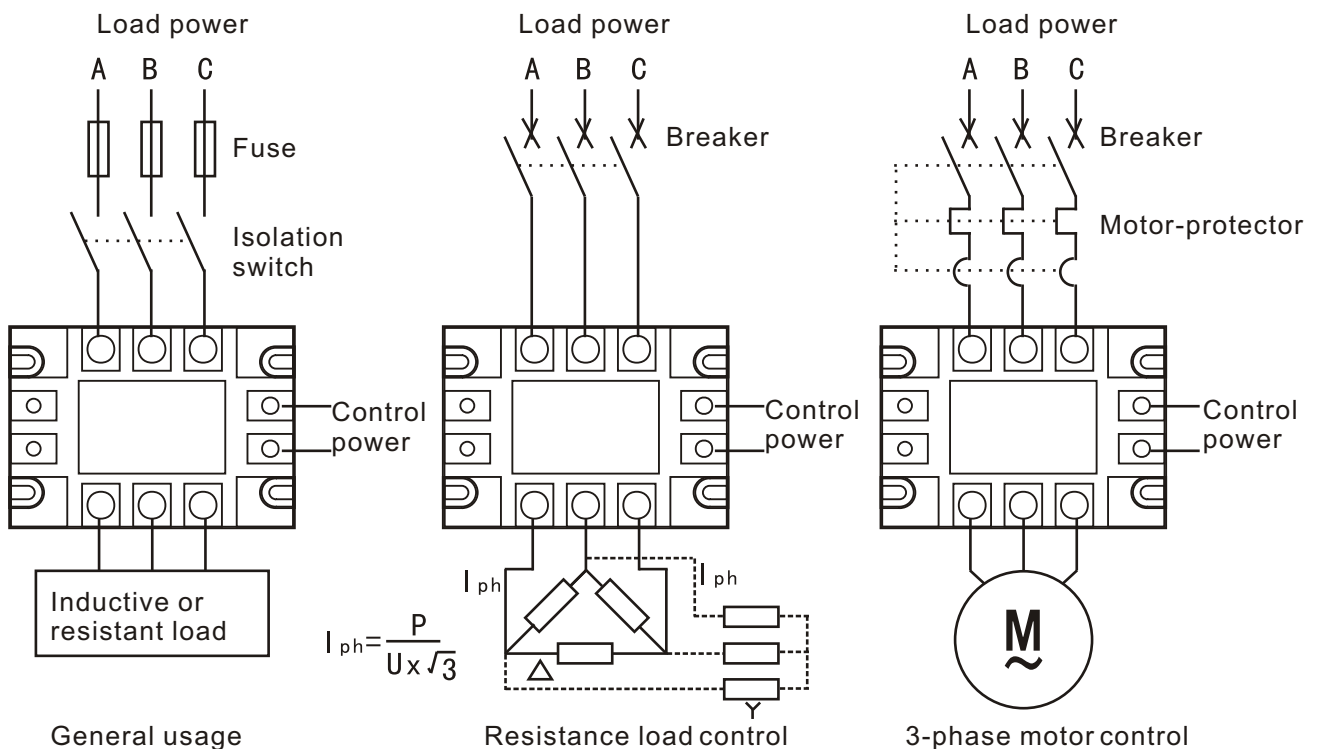
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CURRENT DERATING CURVES



CONNECTION/WIRING



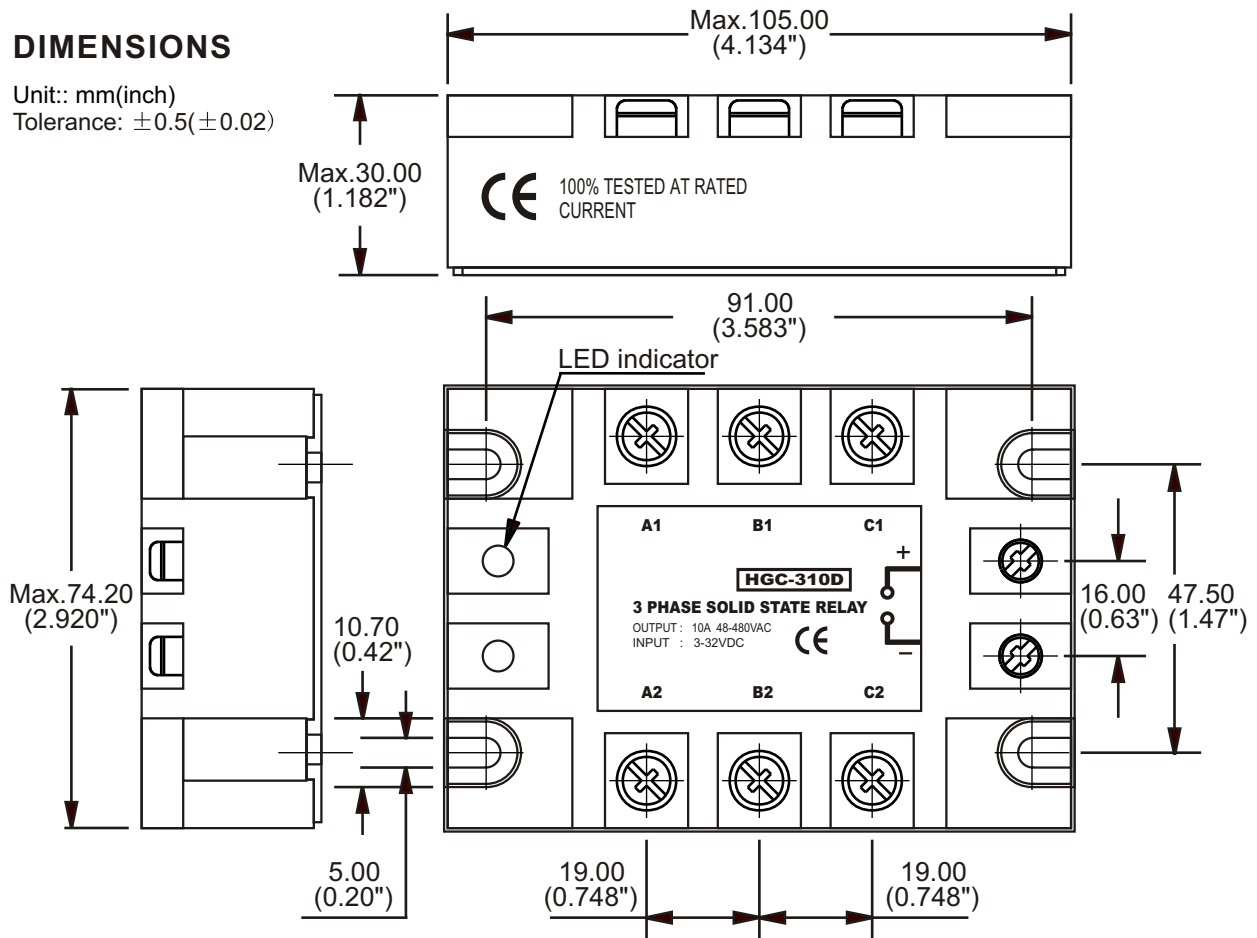
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DIMENSIONS

Unit:: mm(inch)
Tolerance: $\pm 0.5(\pm 0.02)$



PRECAUTIONS

- ▶ 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 to control voltage, such as zener diode, varistor (MOV).
- ▶ When controlling a small current(close to Min. load current)load, 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 regaded ,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, however can be used in series for higher suitable operating voltage.
- ▶ The input end can be used either mean when sharing a control power supply.
- ▶ Please contact HALON application engineering department for additional information and specific application questions.