

## SSR Solid State Relay

### Description

This CSA approved, SSR Solid State Relay brings solid state reliability and trouble free switching to HVAC installations. A handy LED on the low voltage shows at a glance what is happening on the DDC controller. At high voltage it features photo- isolation to 4000V, and a built-in snubber. Each unit is tested under full load condition before delivery.

### Highlights

- Input/output-base 2,500V isolation
- 100% tested at rated current,
- CE compliant
- Thyristor Phase Control Output, adjustable wide range
- Internal Varistor (MOV) and RC Snubber with dual surge absorption protection
- Safety Cover, Panel Mount



### Technical Data

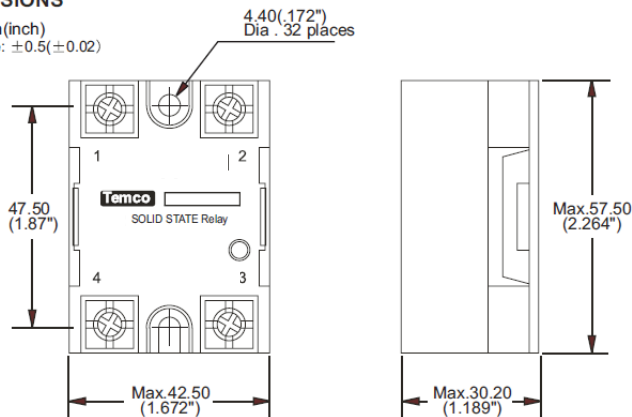
#### Selecting Code

SSR - 20 - AC/DC

Series Name	Output Current	Power Output
	5: 5A Output	AC: AC Output
	10: 10A Output	DC: DC Output
	15: 15A Output	
	20: 20A Output	
	⋮	

#### DIMENSIONS

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

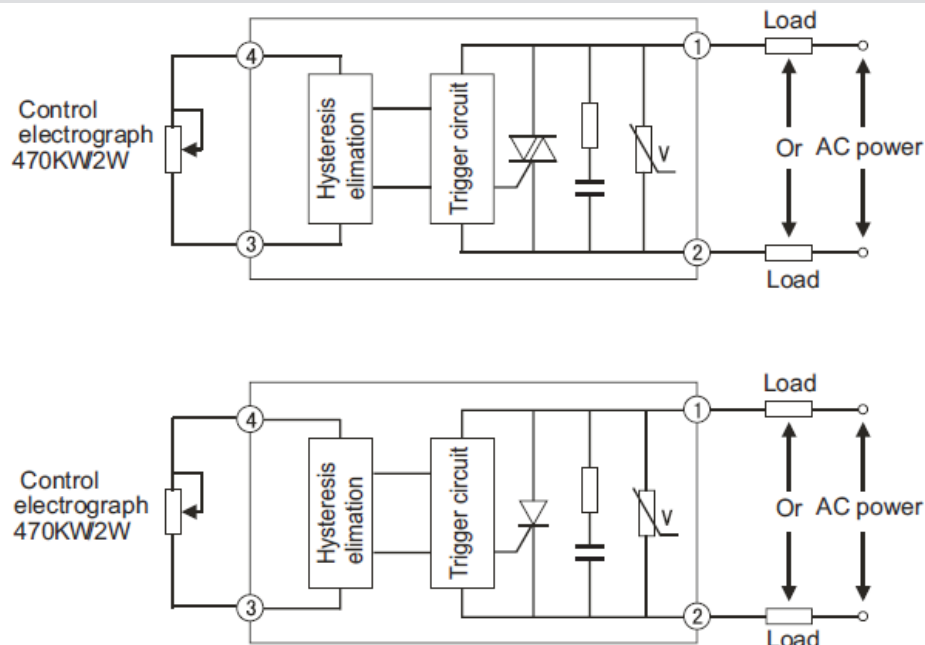


## SSR Series Solid State Relay

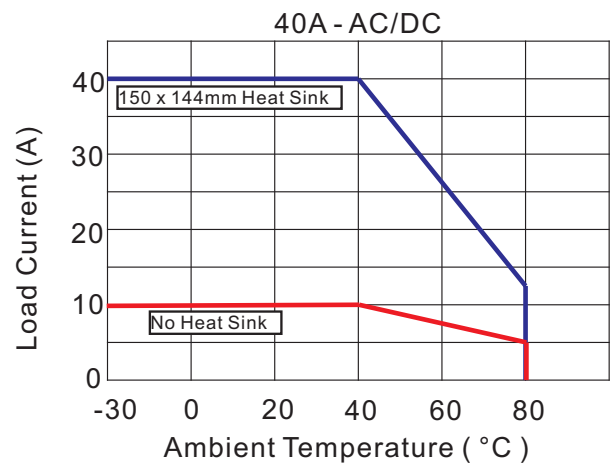
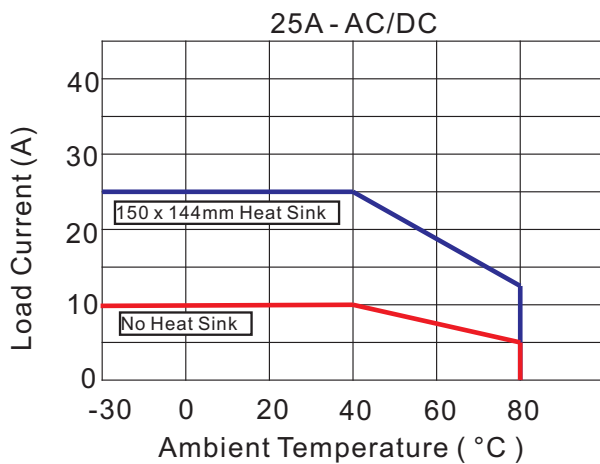
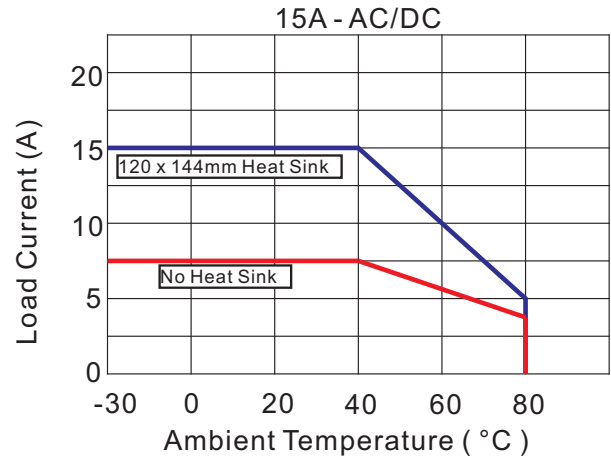
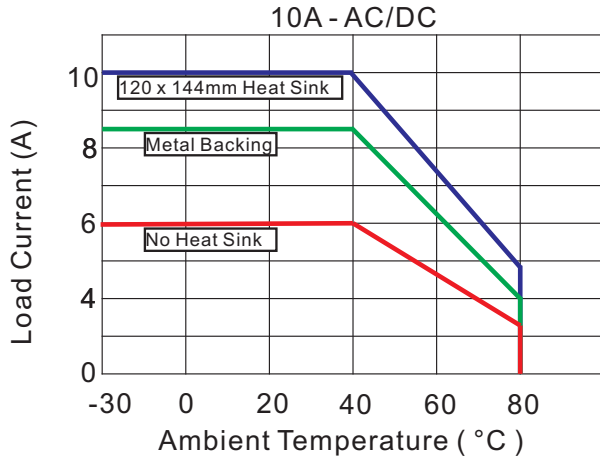
### Technical Data

Current Output		5	10	25	40
Operating Voltage Range					
Max. Load Current		5A	10A	25A	40A
Max. Surge current-Non repetitive(10ms)		120A <sub>pk</sub>	160A <sub>pk</sub>	250A <sub>pk</sub>	300A <sub>pk</sub>
Max. I²t for Fusing(10ms)		72A²s	128A²s	312.5A²s	450A²s
Thermal Resistance Junction to Case (RJC)		2.5°C /W	2.3°C /W	1.1°C /W	0.9°C /W
Minmum Off-State DV/DT		250V/usec	500V/usec	250V/usec	250V/usec
Min. Load Current		100mA			
Max. On-State Voltage Drop		2.2VAC @ Rated Current			
Max. Off-State Leaking Current		5mA @ Rated Voltage			
Transient Over Voltage		2:800Vpk 3:1000Vpk			
Operating Frequency Range		47 63Hz			
Dielectric Strength 50Hz 1Min (50Hz 1Min)		2500VAC Input/Output-Base			
Insulation Resistance		1000M Ω 500VDC VoltageTest			
Vibration Resistance	Destructive	117.6mm/s²(12G),10-55 Hz double Amplitude of 2 mm			
	Functional	117.6mm/s²(12G),10-55 Hz double Amplitude of 2 mm			
Shock Resistance	Destructive	Min.980m/s²(100G)(5 times each for X,Y,Z axis)			
	Functional	Min.980m/s²(100G)(4 times each for X,Y,Z axis)			
Ambient Operating Temperature		-30°C to 80°C			
Optimal Storage Temperature		-30°C to 120°C			
Optimal Relative Humidity		45% to 85%			
Average Weight		≤85g			

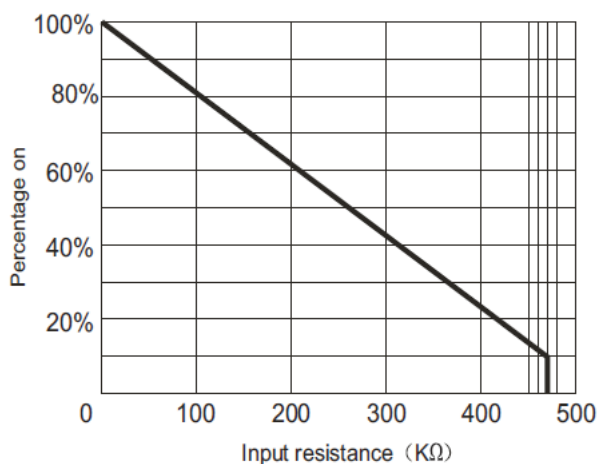
### Connection / Wiring



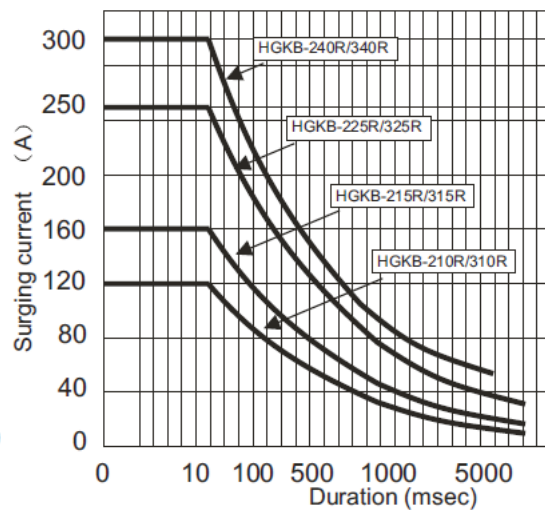
## Current Derating Curves



## PERCENTAGE ON vs. INPUT RESISTANCE



## MAX.SURGE vs.DURATION

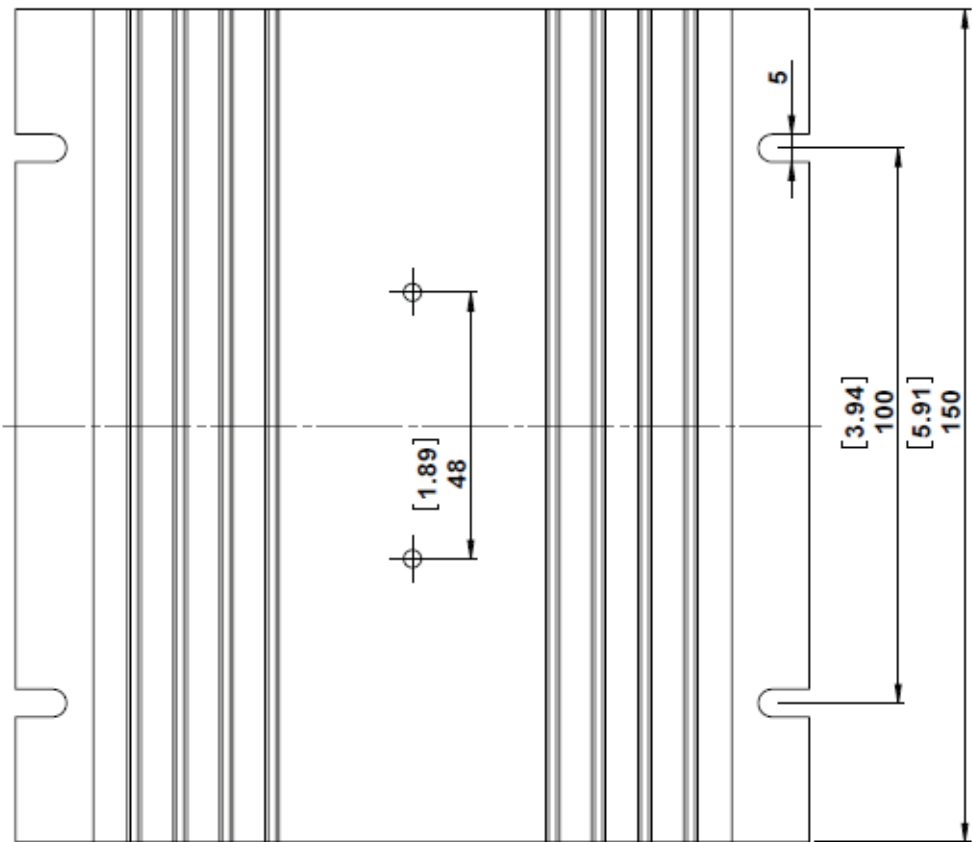
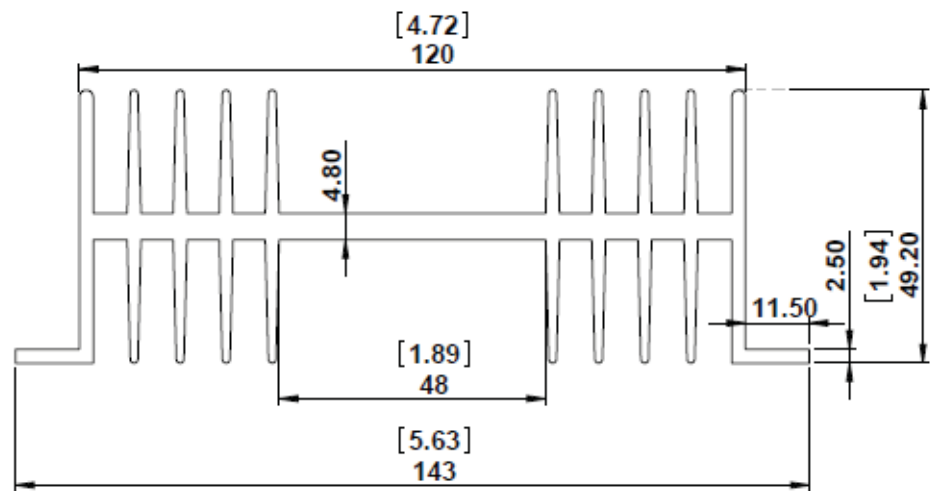


Heat Sink for SSR

Dimensions for 155 x 144 mm

Heat Sink

UNIT: mm[in]



# SSR3 Series Three Phase Solid State Relay

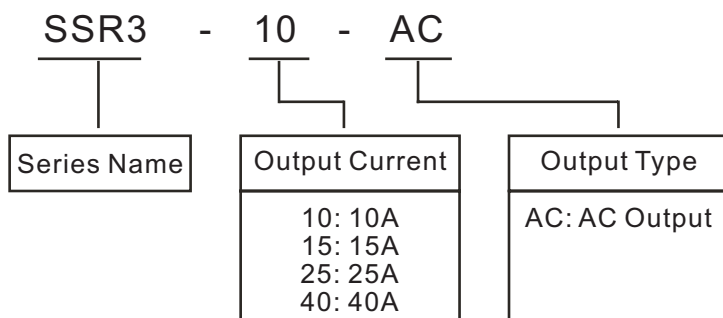
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## Features

- ▶ TRIAC output, zero voltage turn-on, zero current turn-off
- ▶ Input and output 4000V optically isolated
- ▶ LED indicator
- ▶ Internal varistor(MOV) and RC snubber circuit
- ▶ High Performance and reliability at a low price
- ▶ 100% tested at rated current  
Tested to comply with CE and UL 508



## Ordering Information



## Input Parameters (Ta=25°C )

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

## Applications

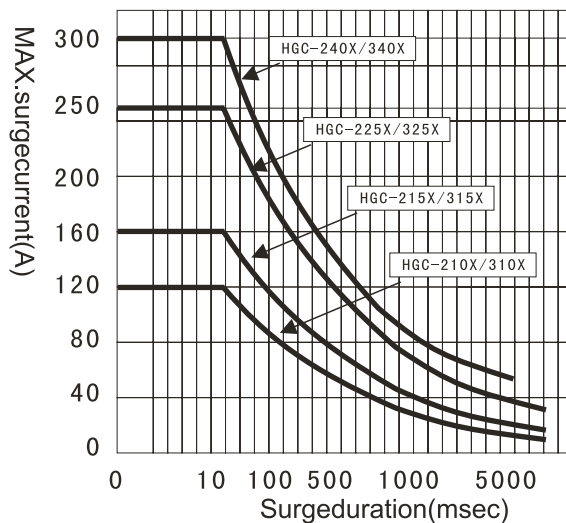
Three phase solid state relays, epoxy filled for industrial reliability in vibrating environments and improved heat transfer. The cover is made from UL listed file E194560 engineering plastics rated for flame and smoke. The sturdy threaded screw connections withstand heavy torque providing reliable screw termination. The high efficiency input LED operates the relay at currents as low as 10ma/5V. These relays are ideal for reducing panel size in a wide range of air conditioning, industrial and OEM applications.

# SSR3 Series Three Phase Solid State Relay

## Output Parameters (Ta=25℃)

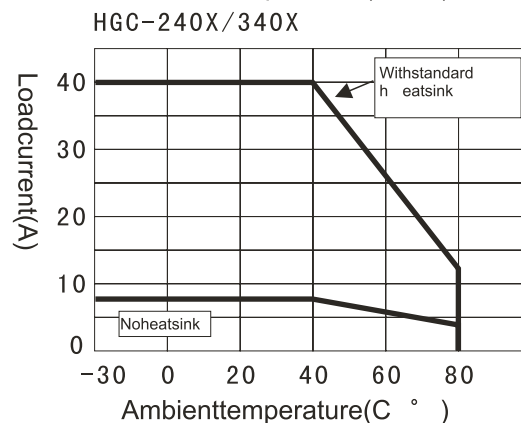
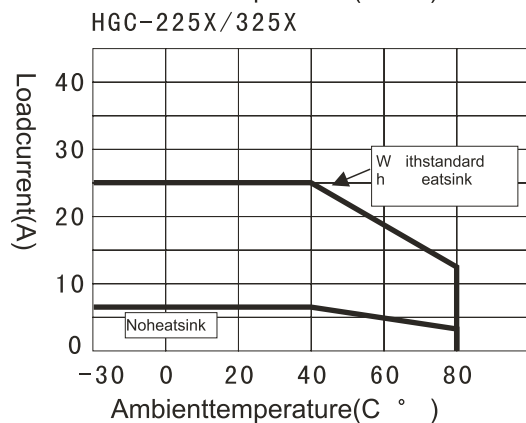
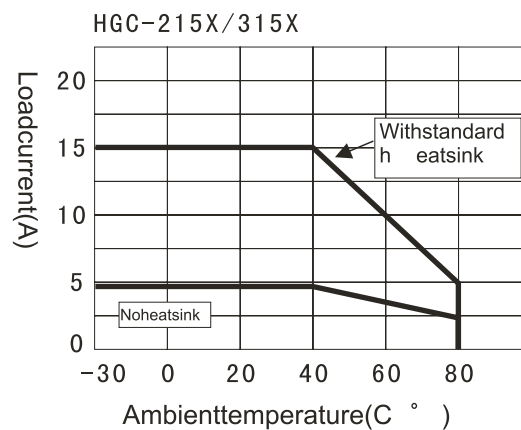
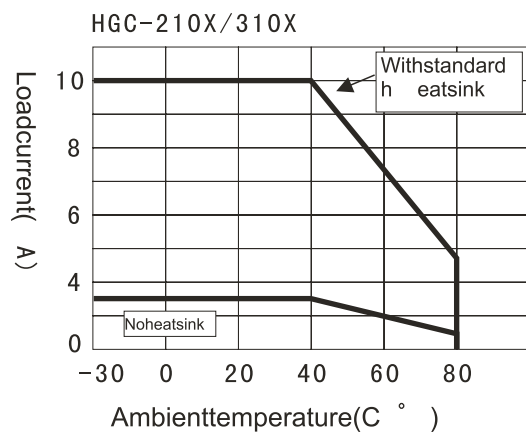
Outputcurrenttype	10	15	25	40
Operatingvoltage range	2:28 ~280VAC3:48 ~480VAC			
Max.Loadcurrent	10A	15A	25A	40A
Max.Surgecurrent-Non repetitive( 10ms )	120Apk	160Apk	250Apk	300Apk
Max. I <sup>2</sup> tforfusing (10ms)	72A <sup>2</sup> s	128A <sup>2</sup> s	312.5A <sup>2</sup> s	450A <sup>2</sup> s
Thermalresistancejunction tocase(Rjc)	2.5℃/W	2.3℃/W	1.1℃/W	0.9℃/W
Min.Off-state dv/dt	250V/usec	500V/usec	250V/usec	250V/usec
Max.Over-zero voltage	±35VAC			
Min.Loadcurrent	100 mA			
Max.On-state voltagedrop	1.5VAC@ratedcurrent			
Max.Off-state leakagecurrent	5mA,1 mA/noRC @ratedvoltage			
Transientover voltage	2:800Vpk3:1000Vpk			
Operatingfrequency range	47~63Hz			
Dielectricstrength (50Hz1Min )	4000V ACinput-output 2500VACinput/output-base			
Insulationresistance	1000M Ω500VDCV oltage Test			
Vibrationresistance	Destructive Functional	117.6mm/s2(12G),10-55HzdoubleAmplitudeof2mm 117.6mm/s2(12G), 10-55HzdoubleAmplitudeof2mm		
Shock resistance	Destructive Functional	Min.980m/s2(100G)(5timeseach forX,Y ,Zaxis) Min.980m/s2(100G)(4timeseach forX,Y ,Zaxis)		
Max.Capacitance	8pF (input-output )			
Max.Turn-on time	(1/2cycleof loadpower)+1msec(DCinput) (3/2cycleof loadpower)+1msec(ACinput)			
Max.Turn-off time	(1/2cycleof loadpower)+1msec(DCinput) (3/2cycleof loadpower)+1msec(ACinput)			
Ambientoperatingtemperature	-30℃to80℃			
Ambientstoragetemperature	-30℃to120℃			
Ambienthumidityrelative	45%to85%			
Weighttypical	≤85g			

## Max Surge v.s. Duration



# SSR3 Series Three Phase Solid State Relay

## Current Derating Curves



## Wiring

