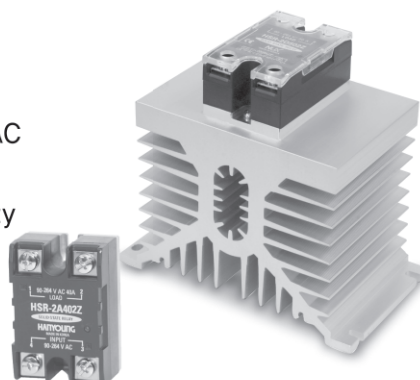


HSR-2 Series

Single phase solid state relay

- Load voltage 90 – 264 V AC / 90 – 480 V AC
- High insulation between input and output
- Compact size light weight and large capacity
- High reliability (solid state)
- C-R Snubber, Zero Cross function
- Radiator one body type so improved workability and safety (50 A, 70 A)



⚙️ Suffix code

Model	Code					Description
HSR-2	☐	☐	☐	☐	☐	Single phase solid state relay
Input voltage	D					4 – 32 V DC
	A					90 – 264 V AC
Rated load current	10					10 A
	203					20 A
	0					30 A
	40					40 A
	50					50 A
	70					70 A
Load voltage	2					90 – 264 V AC (low voltage)
	4					90 – 480 V AC (high voltage)
Operation method			Z			Zero Cross Switching
			R			Random Switching
Radiator attachment state			–			No indication (no radiator)
			T			Radiator one body type (only with 50 A and 70 A)

(Note) Operation method Z : zero cross switching, R : random switching

Low voltage specification

- DC input- AC load (low voltage : 90 – 264 V AC)

Model		HSR-2D102Z	HSR-2D202Z	HSR-2D302Z	HSR-2D402Z	HSR-2D502Z	HSR-2D702Z
		HSR-2D102R	HSR-2D202R	HSR-2D302R	HSR-2D402R	HSR-2D502R	HSR-2D702R
Load	Rated load voltage	100 – 240 V AC					
	Power supply voltage	90 – 264 V AC					
	Peak voltage(no repetition)	600 V				800 V	
	Rated load current	10 A	20 A	30 A	40 A	50 A	70 A
	Frequency	25 – 65 Hz					
	Input current	170 A	250 A	315 A		580 A	
	Leakage current	10 mA	15 mA				
	Output ON voltage dropping	1.3 V	1.6 V	1.8 V			
	Min operation current	1 A				0.5 A	
	Response speed	1/2 cycle + 1 ms max.					
Input	Rated voltage	5 – 24 V DC					
	Usable voltage range	4 – 32 V DC					
	Impedance	Max 4 KΩ					
	Operation voltage	Min 3 V DC					
	Return voltage	Max 1.5 V DC					
	Input current	Constant current method : 10 mA (±3)					

Environment specification

Insulation resistance	500 V DC, 100 MΩ (between the input / output and case)	
Dielectric strength	2500 V AC (for 1 min at 60Hz)	
Vibration resistance	10 – 55 Hz, double amplitude : 1.5 mm, each X, Y and X direction for 2 hour	
Shock resistance	1000 m/s ² , X, Y, Z each X, Y and X direction for 3 times	
Storage temperature	-30 ~ 90 °C	
Ambient temperature	-20 ~ 80 °C	
Ambient humidity	45 ~ 85 % RH	
Weight (radiator attachment type)	Approx 150 g (included the weight of box)	
Weight (radiator one body type)	50 A : approx 1400 g (included the weight of box)	70 A : approx 2050 g (included the weight of box)

- AC input – AC load (low voltage : 90 – 264 V AC)

Model		HSR-2A102Z	HSR-2A202Z	HSR-2A302Z	HSR-2A402Z	HSR-2A502Z	HSR-2A702Z
		HSR-2A102R	HSR-2A202R	HSR-2A302R	HSR-2A402R	HSR-2A502R	HSR-2A702R
Load	Rated load voltage	100 – 240 V AC					
	Power supply voltage	90 – 264 V AC					
	Peak voltage(no repetition)	600 V				800 V	
	Rated load current	10 A	20 A	30 A	40 A	50 A	70 A
	Frequency	25 – 65 Hz					
	Input current	170 A	250 A	315 A		580 A	
	Leakage current	15 mA					
	Output ON voltage dropping	1.3 V	1.6 V	1.8 V			
	Min operation current	1 A					
	Response speed	1/2 cycle + 1 ms max. Max 1 ms					
Input	Rated voltage	100 – 240 V AC					
	Usable voltage range	90 – 264 V AC					
	Impedance	Max 40 KΩ					
	Operation voltage	Min 72 V AC					
	Return voltage	Max 40 V AC					
	Input current	240 V AC / 9 mA (±4)					

Environment specification

Insulation resistance	500 V DC, 100 M Ω (between the input/output and case)	
Dielectric strength	2500 V AC (for 1 min at 60Hz)	
Vibration resistance	10 – 55 Hz, double amplitude : 1.5 mm, each X, Y and Z direction for 2 hour	
Shock resistance	1000 m/s ² , X, Y, Z each X, Y and Z direction for 3 times	
Storage temperature	-30 ~ 90 °C	
Ambient temperature	-20 ~ 80 °C	
Ambient humidity	45 ~ 85 % RH	
Weight (radiator attachment type)	Approx 150 g (included the weight of box)	
Weight (radiator one body type)	50 A : approx 1400 g (included the weight of box)	70 A : approx 2050 g (included the weight of box)

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Solid State
Relay

High voltage specification

- DC input- AC load (High voltage : 90 – 480 V AC)

Model		HSR-2D104Z	HSR-2D204Z	HSR-2D304Z	HSR-2D404Z	HSR-2D504Z	HSR-2D704Z
		HSR-2D104R	HSR-2D204R	HSR-2D304R	HSR-2D404R	HSR-2D504R	HSR-2D704R
Load	Rated load voltage	100 – 440 V AC					
	Power supply voltage	90 – 480 V AC					
	Peak voltage(no repetition)	800 V	1200 V				
	Rated load current	10 A	20 A	30 A	40 A	50 A	70 A
	Frequency	25 – 65 Hz					
	Input current	170 A	250 A	350 A	370 A	580 A	
	Leakage current	20 mA					
	Output ON voltage dropping	1.3 V	1.6 V	1.8 V			
	Min operation current	1 A				0.5 A	
	Response speed	1/2 cycle + 1 ms max, Max 1 ms					
Input	Rated voltage	5 – 24 V DC					
	Usable voltage range	4 – 32 V DC					
	Impedance	Max 4 KΩ					
	Operation voltage	Min 3 V DC					
	Return voltage	Max 1.4 V DC					
	Input current	Constant current method : 10 mA (±3)					

Environment specification

Insulation resistance	500 V DC, 100 MΩ (between the input/output and case)	
Dielectric strength	2500 V AC (for 1 min at 60Hz)	
Vibration resistance	10 – 55 Hz, Double amplitude : 1.5 mm, each X, Y and X direction for 2 hour	
Shock resistance	1000 m/s ² , X, Y, Z each X, Y and X direction for 3 times	
Storage temperature	-30 ~ 90 °C	
Ambient temperature	-20 ~ 80 °C	
Ambient humidity	45 ~ 85 % RH	
Weight (radiator attachment type)	Approx 150 g (included the weight of box)	
Weight (radiator one body type)	50 A : approx 1400 g (included the weight of box)	70 A : approx 2050 g (included the weight of box)

- AC input – AC load (High voltage : 90 – 480 V AC)

Model		HSR-2A104Z	HSR-2A204Z	HSR-2A304Z	HSR-2A404Z	HSR-2A504Z	HSR-2A704Z
		HSR-2A104R	HSR-2A204R	HSR-2A304R	HSR-2A404R	HSR-2A504R	HSR-2A704R
Load	Rated load voltage	100 – 440 V AC					
	Power supply voltage	90 – 480 V AC					
	Peak voltage(no repetition)	800 V		1200 V			
	Rated load current	10 A	20 A	30 A	40 A	50 A	70 A
	Frequency	25 – 65 Hz					
	Input current	170 A	250 A	350 A	370 A	580 A	
	Leakage current	15 mA				20 mA	
	Output ON voltage dropping	1.3 V	1.6 V	1.8 V			
	Min operation current	1 A					
	Response speed	1/2 cycle + 1 ms max. Max 1 ms					
Input	Rated voltage	100 – 240 V AC					
	Usable voltage range	90 – 264 V AC					
	Impedance	40 KΩ max					
	Operation voltage	Min 75 V AC					
	Return voltage	Max 40 V AC					
	Input current	240 V AC / 9 mA (±4)					

Environment specification

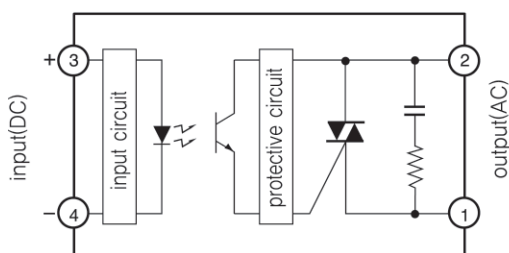
Insulation resistance	500 V DC, 100 M Ω (between the input/output and case)	
Dielectric strength	2500 V AC (for 1 min at 60Hz)	
Vibration resistance	10 – 55 Hz, double amplitude : 1.5 mm, each X, Y and Z direction for 2 hour	
Shock resistance	1000 m/s ² , X, Y, Z each X, Y and Z direction for 3 times	
Storage temperature	-30 ~ 90 °C	
Ambient temperature	-20 ~ 80 °C	
Ambient humidity	45 ~ 85 % RH	
Weight (radiator attachment type)	Approx 150 g (included the weight of box)	
Weight (radiator one body type)	50 A : approx 1400 g (included the weight of box)	70 A : approx 2050 g (included the weight of box)

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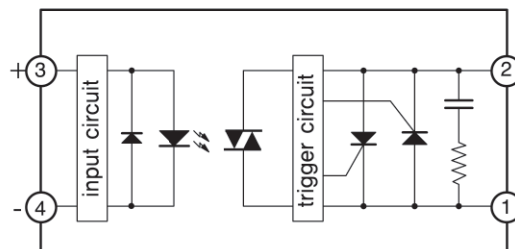
Solid State
Relay

Circuit

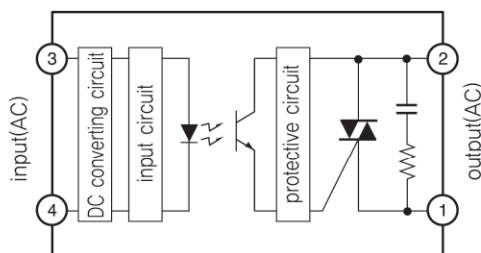
■ DC input type (10 A - 40 A)



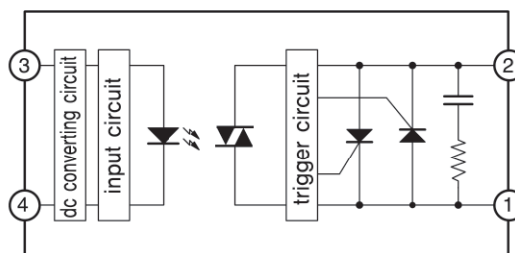
■ DC input type (50 A / 70 A)



■ AC input type (10 A - 40 A)

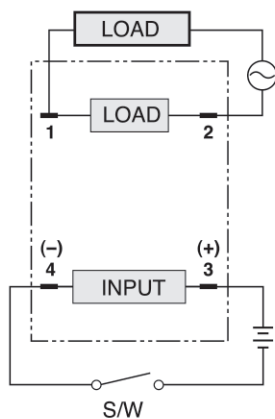


■ AC input type (50 A / 70 A)

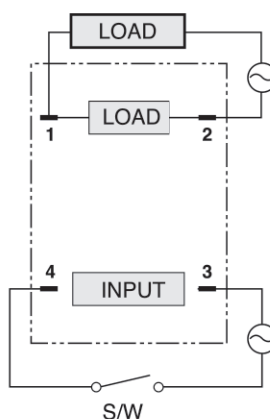


Connection diagram

DC input type

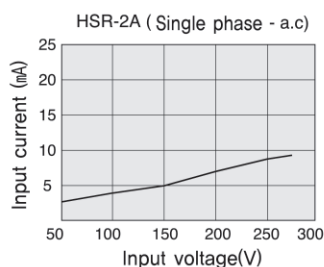
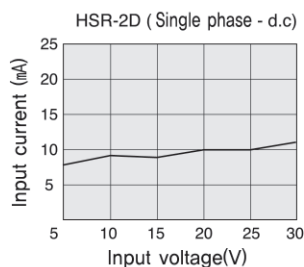


AC input type

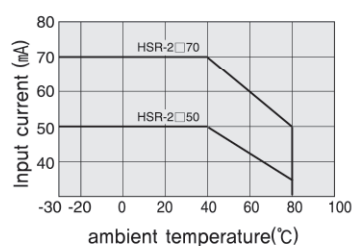
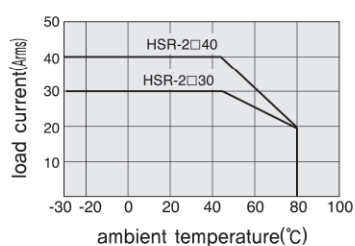
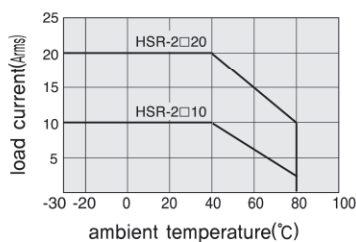


○ Load current characteristic

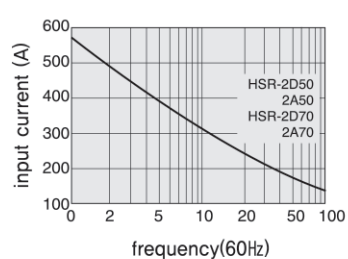
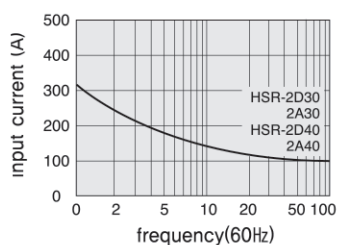
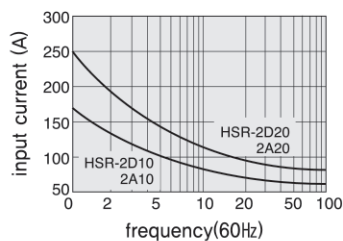
■ Input voltage–current characteristic



■ Load current characteristic

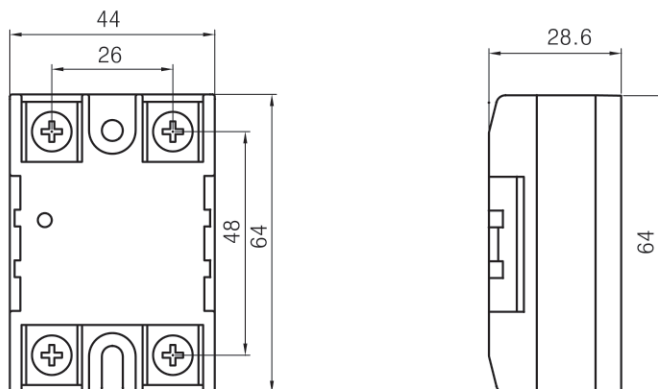


■ Surge Current characteristic

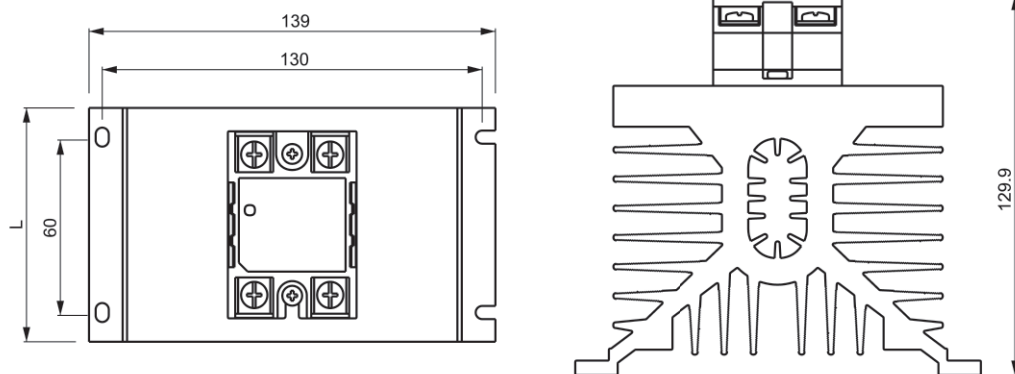


Dimension (Unit : mm)

10 A - 70 A



Radiator one body type (50 A / 70 A)



Rated load current	50 A	70 A
L	80 mm	120 mm