

HFS24

THREE-PHASE SOLID STATE RELAY



Features

- Photo isolation
- LED status indicator
- Dielectric strength 4000V
- Zero cross or random turn-on
- Built-in snubber
- Removable finger proof cover available
- Panel mount
- Environmental friendly product (RoHS compliant)

INPUT (Ta = 25°C)

Control voltage range	4VDC to 32VDC
Must operate voltage	4VDC
Must release voltage	1VDC
Max. input current	35mA
Max. reverse protection voltage	-32VDC

GENERAL (Ta = 25°C)

Dielectric strength (input to output)	4000VAC 50Hz/60Hz, 1min	
Insulation resistance	1000MQ (at 500VDC)	
Max. capacitance (input to output)	10pF	
Ambient temperature	Operating	-30°C to 80°C
	Storage	-30°C to 100°C
Ambient humidity	45% to 85% RH	
Termination	Screw	
Mounting model	Panel mount	
Unit weight	Approx. 315g	

OUTPUT (Ta = 25°C)

Load voltage range	D-380: 48VAC to 440VAC D-480: 48VAC to 530VAC
Load current range	D-□□□A10Z: 10A D-□□□A15Z: 15A D-□□□A25Z: 25A D-□□□A40Z: 40A D-□□□A60Z: 60A
Max. transient overvoltage	D-380: 800Vpk D-480: 1200Vpk
Frequency range	47Hz to 63Hz
Max. surge current (10ms)	D-□□□A10Z: 100Apk D-□□□A15Z: 150Apk D-□□□A25Z: 250Apk D-□□□A40Z: 400Apk D-□□□A60Z: 600Apk
Max. I ² t for fusing (10ms, A ² s)	D-□□□A10Z: 50 D-□□□A15Z: 112 D-□□□A25Z: 312 D-□□□A40Z: 800 D-□□□A60Z: 1800
Max. on-state voltage drop	1.7Vr.m.s.
Min. load current	100mA
Max. leakage current	10mA
Min. off-state dv/dt	D-380: 200V/μs D-480: 500V/μs
Max. turn-on time	Random turn-on 1ms Zero cross turn-on 1/2cycle + 1ms
Max. turn-off time	1/2cycle + 1ms
Min. power factor	0.5

APPLICATION(Ta = 25°C)

Load current	10A	15A	25A	40A	50A	60A
Motor power	0.75kW	1.1kW	1.5kW	3kW	4kW	5kW
Heatsink part number	HF92B-150A					
Cooling fan air flow	115CFM					

DESCRIPTION

The HFS24 is three-phase AC output relay (3PST-NO).The relay offer 4VDC to 32VDC input control, with outputs rated at 10A, 15A, 25A, 40A or 60A.The relays include a LED indicator to provide input status information.All models include an internal snubber. The relays provide 4000VAC opto-isolation, between input and output.Encapsulation, thermally conductive epoxy.

INSTALLATION

1. When mounting the relays side by side,provide a space equivalent to the width of a single SSR between two adjacent SSRs.Otherwise,reduce the load current flow to 1/2 to 1/3 of the rated current.
2. When mounting relays on heat sink surface,first apply a heat conductive grease to the metal back surface of the SSR.Press the SSR firmly onto the heat sink to ensure a good seal.Screw the SSR down to the heat sink.
Next, wire the screw terminals and securely tighten the screws.



HONGFA RELAY

ISO9001, ISO/TS16949 , ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2010 Rev. 1.00

PRECAUTIONS

1. Before connect a load that generates a high surge current, such as a lamp load to the module, make sure that the module can withstand the surge current of the load.
2. The product data sheet shows the non-repetitive peak value of the surge current that flows through the module. Normally, use 1/2 of the non-repetitive peak surge current as the standard value. If a surge current exceeding that value is expected, connect a quick-acting fuse to protect the SSR. At the same time, I^2t value of the quick-acting fuse must be smaller than the module value.
3. In practice, if the transient voltage may be larger than 800V, a 750V varistor should be mounted to the load terminals.
4. Please pay more attention to actual load current and ambient temperature for SSR selection. When SSR is used for full load operation, we'd better install an adequate heatsink or take other effective cooling measures. When the ambient temperature is high, please refer to the follow-up characteristic curves for derating.
5. For phase protection SSR, when three-phase power supply occurs phase missing (lack of one phase or two phases) or phase breaking, the SSR will cut off the output quickly, close the working status indicator, and run into the self-locking state. We need to cut off the input power to reset relay.
6. Tighten the SSR terminal screw properly. If the screws are not tight, the SSR will be damaged by heat which is generated when SSR turn on. Perform wiring using the tightening torque shown in the following table.
7. It's recommended to use the matched heatsink by Hongfa. When a user need use home-made heatsink, it's needed to ensure that SSR base temperature does not exceed 85°C.
8. Please do not use the relay beyond the descriptions in the data sheet. If it is a must to use it beyond descriptions, please contact Hongfa for more technical support.

Screw site	Recommend tightened torque
M3	0.58 N·m to 0.98 N·m
M4	0.98 N·m to 1.37 N·m

ORDERING INFORMATION

HFS24 /		D-	380	A	10	Z	S	-Y	L	P	3	(XXX)
Type												
Input voltage D: 4VDC to 32VDC												
Load voltage 380: 380V 480: 480V												
Load voltage form A: AC												
Load current 10: 10A 15: 15A 25: 25A 40: 40A 50: 50A 60: 60A												
Zero cross function Z: Zero cross turn-on P: Random turn-on												
Output component S: SCRS (Only for D-480A type) Nil: Triac (Only for D-380A type)												
Varistor protection Y: With varistor protection Nil: Without varistor protection												
LED indicator L: With LED												
Phase loss protection P: With phase loss protection Nil: Without phase loss protection												
Output number 3: Three												
Customer special code												

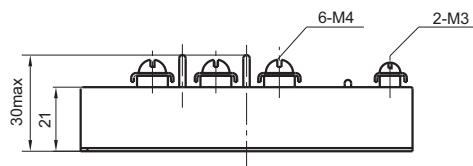
Notes: Available parts are: HFS24/D-380A□□□-□L□3, HFS24/D-480A40□S-□L□3, HFS24/D-480A50□S-□L□3, HFS24/D-480A60□S-□L□3.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND MOUNTING HOLES

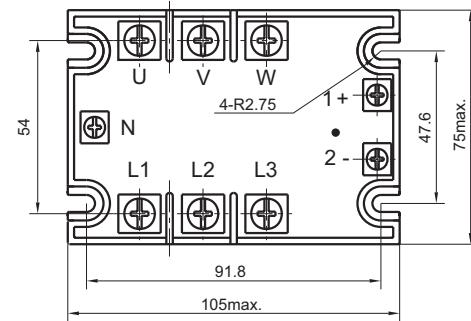
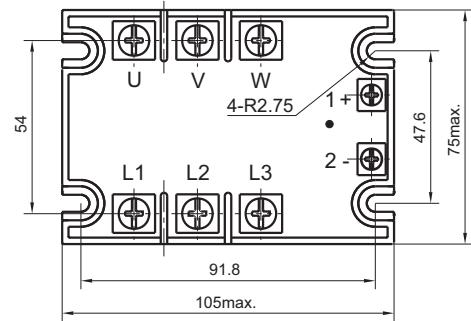
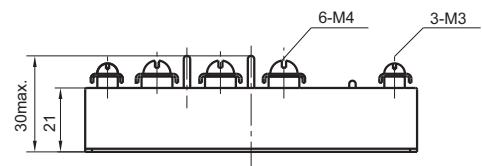
Unit: mm

Outline Dimensions

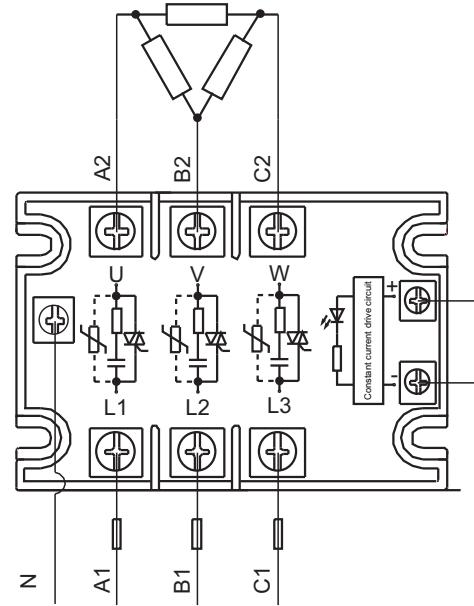
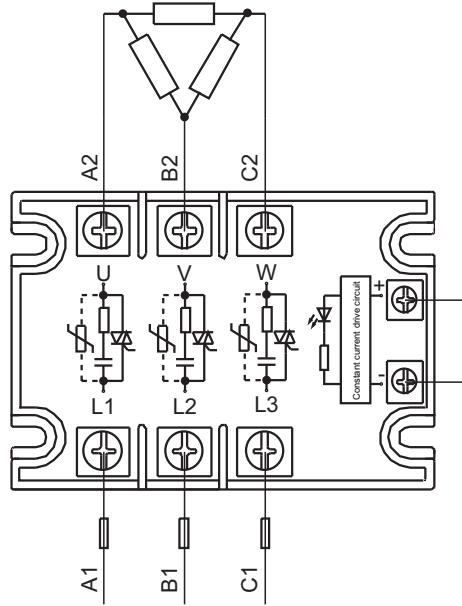
HFS24 (Non phase loss protection)



HFS24 (With phase loss protection)

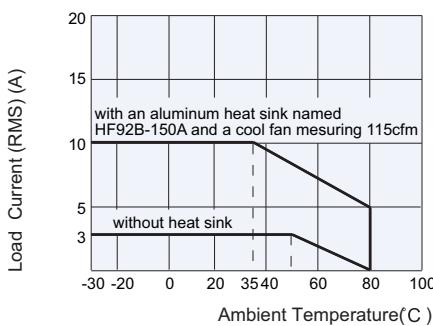


Wiring Diagram

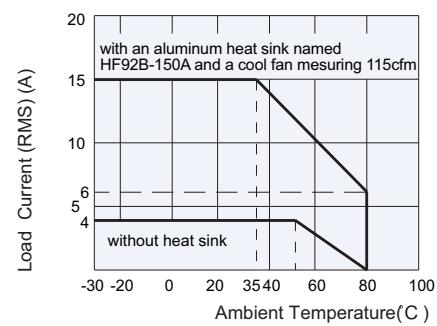


CHARACTERISTIC CURVES

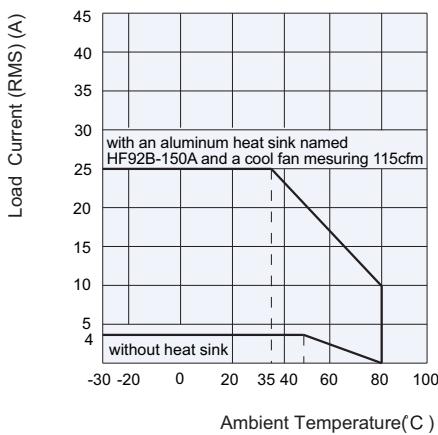
Max. Load Current vs. Ambient Temp. (10A)



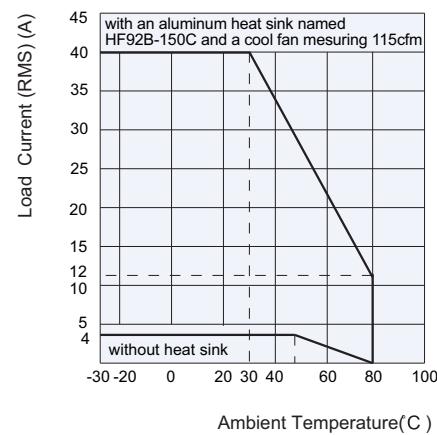
Max. Load Current vs. Ambient Temp. (15A)



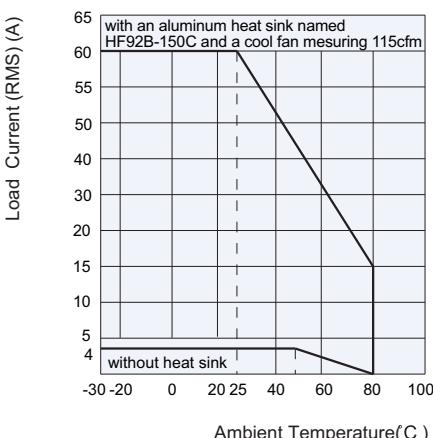
Max. Load Current vs. Ambient Temp. (25A)



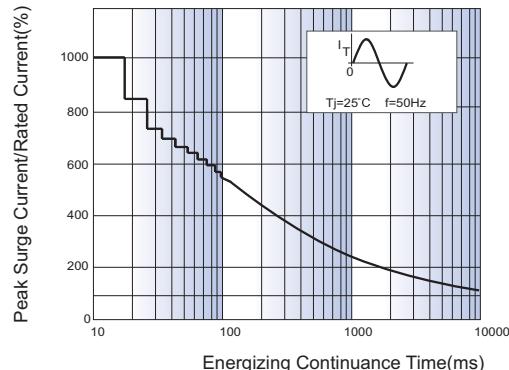
Max. Load Current vs. Ambient Temp. (40A)



Max. Load Current vs. Ambient Temp. (60A)



Max. Permissible Non-repetitive Peak Surge Current rate vs. Continuance Time



Disclaimer

This datasheet is for the customers' reference. All the specifications are subject to change without notice.

We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.