

HFS21 (HF5421) THREE-PHASE MOTOR CONTROL MODULE



Features

- Photo isolation
- LED status indication
- 4000V dielectric strength
- zero cross
- Built-in snubber
- Min. switch time for forward and reverse operation: 300μs (user offer)
- Panel mount
- RoHS compliant

INPUT (TA = 25°C)

Control voltage	12D	12VDC
	24D	24VDC
Must operate voltage	12D	9.6VDC
	24D	19.2VDC
Must release voltage	12D	3VDC
	24D	10VDC
Max. input current		35mA
Max. reverse protection voltage	12D	-12VDC
	24D	-24VDC
Min. switch time for motor forward and reverse operation		300μs (User offer)

OUTPUT (TA = 25°C)

Load current range	380A10Z: 10A
	380A15Z: 15A
	380A25Z: 25A
	380A40Z: 40A
Load voltage range	48 to 440VAC
Transient overvoltage	800Vpk
Max. on-state voltage drop	1.5Vrms
Min. load current	100mA
Max. leakage current	5mA
Min. off-state dv/dt	200V/μs
Delay turn-on time	20 to 80ms
Max. turn-off time	1/2cycle + 1ms (on request)
Max. surge current (10ms)	380A10Z: 100Apk
	380A15Z: 150 Apk
	380A25Z: 250 Apk
	380A40Z: 400 Apk

GENERAL (TA = 25°C)

Dielectric strength (input to output)		4000VAC, 50Hz/60Hz, 1min
Insulation resistance		1000MΩ (at 500VDC)
Ambient temperature	Operating	-30°C ~ 80°C
	Storage	-30°C ~ 100°C
Ambient humidity		45% ~ 85% RH
Termination		Screw
Mounting model		Panel mount
Unit weight		Approx. 335g
Operating status indication		Forward: green Reverse: red

DESCRIPTION

The HFS21 motor control module is a special power control module only using for three phase motor forward and reverse operation. It contains logic interlock circuit and delay turn-on circuit. So when it used for motor forward and reverse switching operation, it can avoid destruction by wrong operations or destruction caused by triac not being shut off immediately when ensuring that switch time is more than 300μs, and so that it can protect our power supply system, motor and the module itself. In the meantime, the module includes three internal snubbers, so when it put into use, the reliability of itself would be improved.

The module offer 12VDC or 24VDC input control, with outputs rated at 10, 15, 25 or 40 Amps. The modules include a double color LED indicator to provide motor running status information. The modules are widely used for motor control in the modern industrial application.



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001 CERTIFIED

2007 Rev. 1.00

INSTALLATION

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

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-blowing fuse to protect the module.
3. When using the HFS21 for an AC three phase motor with a peak voltage of more than 750V,connect the load terminals of the module to an inrush absorber.
4. Please ensure the switching time for motor forward and reverse operation more than 300s while the module is put into use.

ORDERING INFORMATION

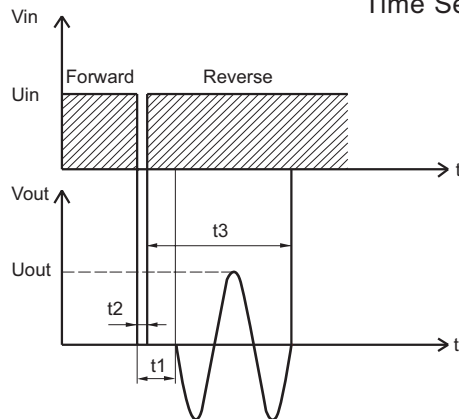
	HFS21 / 24D- 380 A 25 Z -L 3 (XXX)									
Type										
Input voltage	12D: 12VDC		24D: 24VDC							
Load voltage	380: 380V									
Load voltage form	A: AC									
Load current	10: 10A	15: 15A	25: 25A	40: 40A						
Zero cross function	Z: Zero cross turn on									
LED indicator	L: With LED									
Output number	3: Three									
Customer special code	Only for special requirements, e.g. (555) stands for RoHS compliant									

Notes: HFS21 is an environmental friendly product, please mark special code (555) when order.

TIME SEQUENCE DIAGRAM, OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

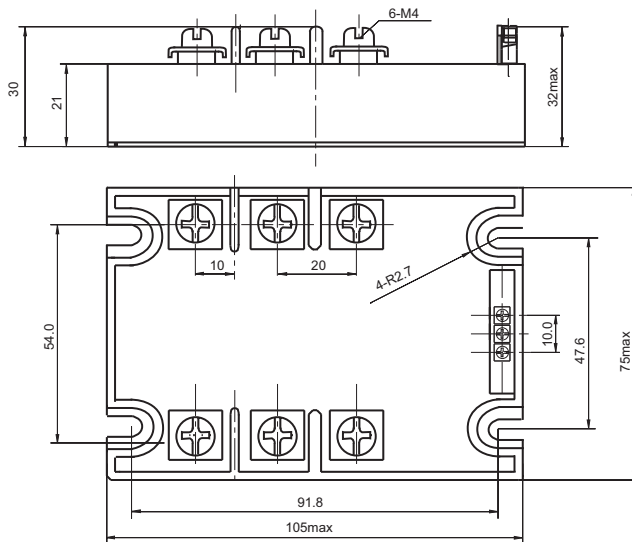
Time Sequence Diagram



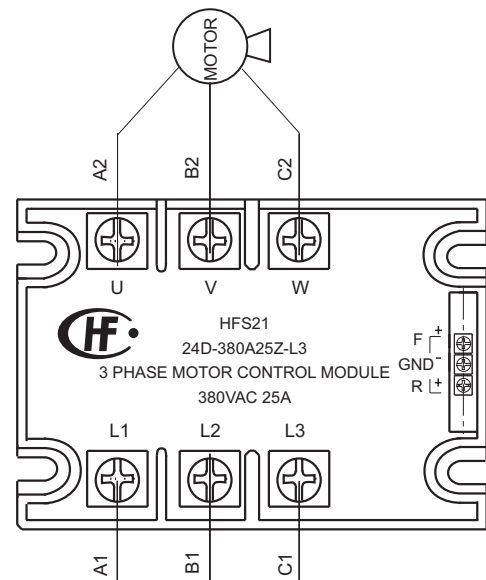
Notes:

- t1: turn-off time
- t2: Switching time
- t3: Turn-on delay time

Outline Dimensions

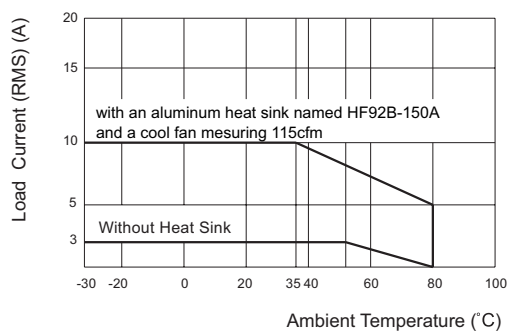


Wiring Diagram

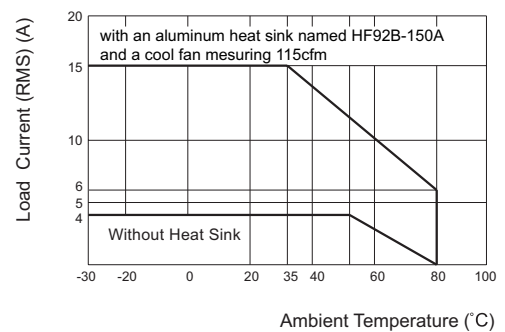


CHARACTERISTIC CURVES

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

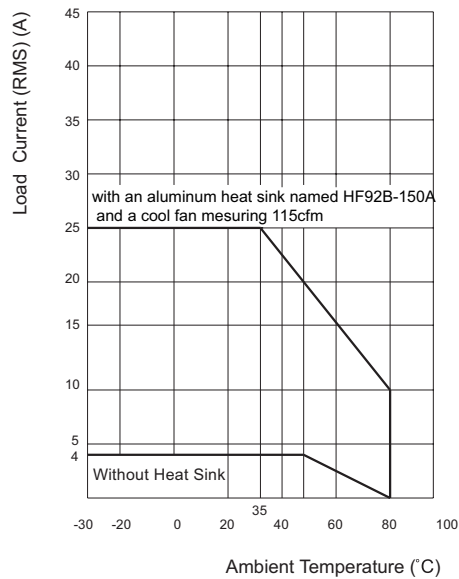


Max. Load Current vs. Ambient Temp. (15A)

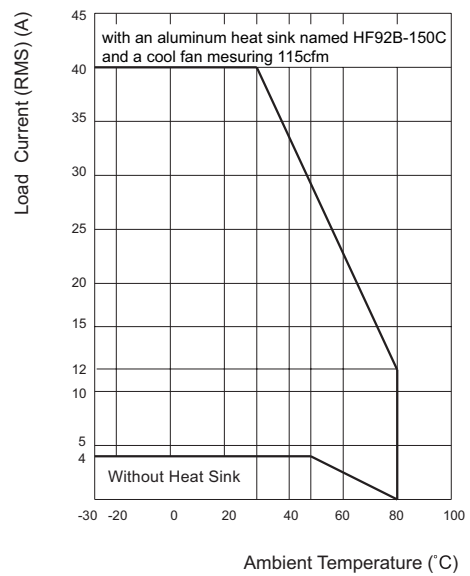


CHARACTERISTIC CURVES

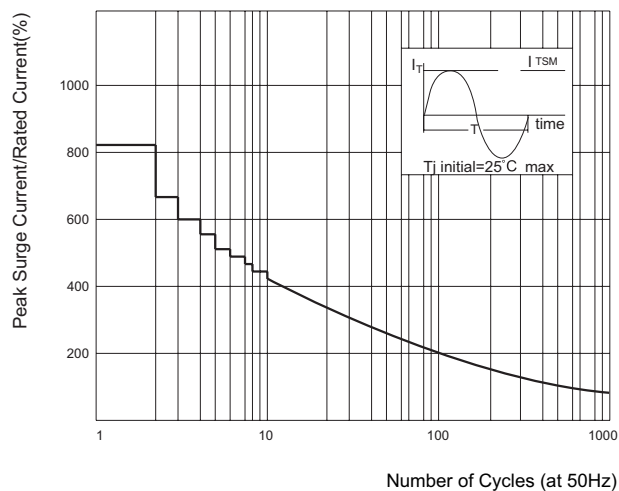
Max. Load Current vs. Ambient Temp. (25A)



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



Max. Permissible Non-repetitive
Peak Surge Current vs. Number of Cycles



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.