VSC4806L-00
BLDC MOTOR CONTROLLER
SENSORLESS VERSION
SPECIFICATION

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VSC4806L-00 Sensorless BLDC Controller

Warning:

When the first time to use this controller or change the leadwire sequence, please confirm whether the direction of motor operation meets the requirement, the best way is to test it without the load, if not, please change the connection of the phase of leadwire.

For the sensorless controller, the startup is related to the load characteristics, when the load or inertia is too big, a start failure maybe occurs, please adjust the load and then re-start.

1、Product Description

1.1、Mode Explanation

VSC4806L-00

V--------Company Code

S--------Speed Control

C--------BLDC motor Controller

48-------The Available Operate Voltage Is From 8V to 48V

06-------The Maximum Continuous Rated current is 6A

L--------Suitable For Sensorless BLDC Motor

1.2、Product Feather

1、On/Off & Direction Control

2、Over Current & Stall Protection

3、PWM & 0-5V Analog Speed Control

4、Speed Signal Feedback output

5、Suitable For Sensorless BLDC Motor

2、Absolute Maximum Ratings

Electric Performance（Ambient Temperature Tj=25℃）

Operate Voltage	8VDC～48VDC
Maximum Continuous Current	6A
Insulation resistance	>100MΩ@NPT
Dielectric strength	0.5KV,1Minute@NPT
Speed Adjust Range	10%-100%
Rated Torque	According to the Motor
Maximum Power	≤300W

3、Interface Definition

3.1 Power Supply

S/N	Designation	Interface Means	Explanation
1	VCC	Input	Power Supply
2	GND	Input	Negative Power Supply

3.2 Motor Winding and Signal Control

S/N	Designation	Interface Means	Explanation
3	MA	Input	Motor Winding A
4	MB	Input	Motor Winding B
5	MC	Input	Motor Winding C
6	GND	Output	Power Ground
7	PG	Output	Speed Signal Feedback
8	RV	Input	Analog Speed Instruction Input
9	F/R	Input	CW/CCW Direction Control
10	EN	Input	ON/OFF
11	+5V	Output	Signal Power Supply

4、Function Declaration

4.1 Motor ON/OFF（EN）

The motor running or stopping can be controlled by through connecting or disconnecting the terminal of EN to GND. When connecting the EN to the GND, the motor run, otherwise stop. Use the terminal of ON/OFF to control the motor start-stop, the start-stop character has some difference depends on the load.

4.2 CW/CCW Direction Control（F/R）

The direction of the motor running can be controlled through connecting or disconnecting the terminal of F/R to GND. When connecting the terminal F/R to the GND, the motor running on CCW direction mode(Face to the motor shaft), otherwise is CW.

When the motor working, if need to change the direction of the motor, better way is to stop the motor, change the F/R status and then start the motor again. In order to avoid the damage of the controller, it's not recommend to change the direction while motor running.

4.3 Speed Control mode

This controller supports three control methods of speed mode, the reference input can be chosed from the following methods:

1. Potentiometer mode: Connected the two fixed end of potentiometer separately to the "+5V "and "GND"of controller, Connected the adjustment end to "RV", then rotating the potentiometer(10-50K) can adjust the speed;

2. Analog voltage mode: Through the other control unit(PLC, Single chip etc.)input the analog voltage to "RV"(Compare to COM), The acceptable range of "SV" is DC 0V ～ +5V, the corresponding speed of the motor is 0 ～ Rated speed;

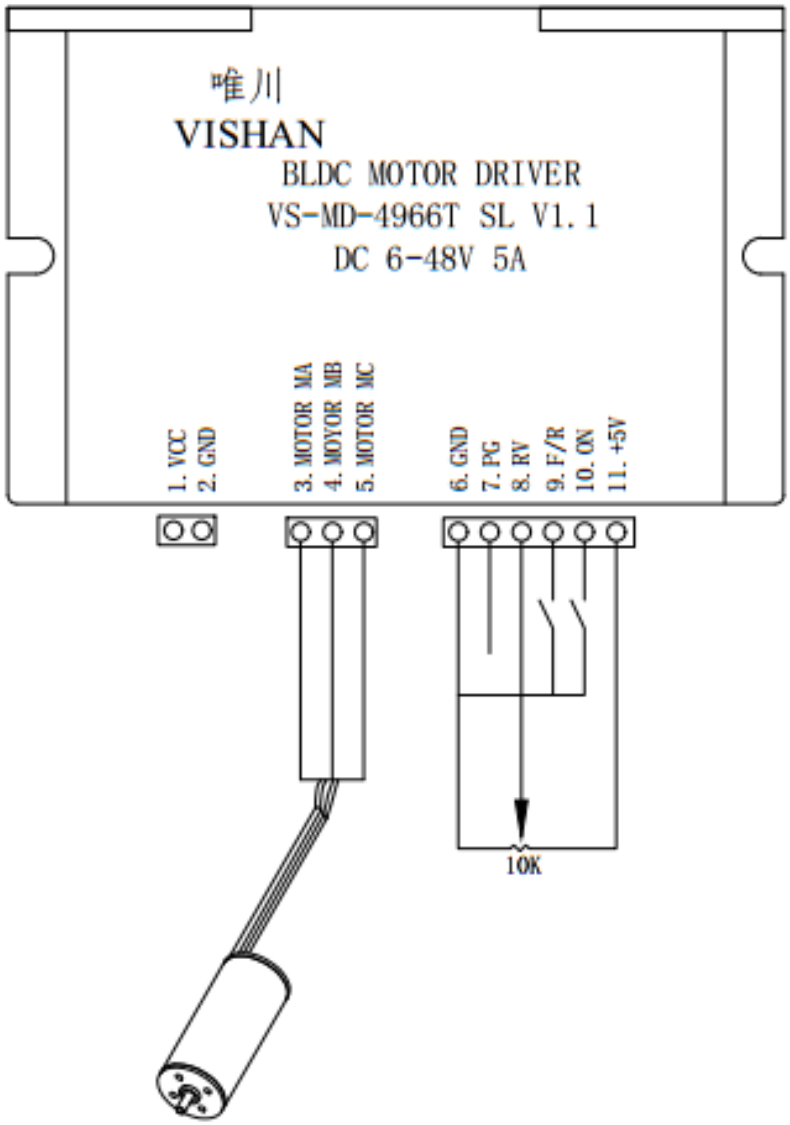
3、PWM mode: Connected the PWM signal(15KHZ-30KHZ) to "RV" and "GND", the acceptable range of RV is 0-100%PWM, The corresponding speed 0～Rated speed.

4.4 Speed Feedback（PG）

The terminal is OC output(（30V/10mA max）). Between the PG to Power supply needed to connected a 3KΩ ~10KΩ pull-up resistor.it can output the directly proportional frequency pulse compare to motor speed, The number of pulse output for each turn is N(the number of pole pairs)

5、Typical Application

If the leadwire less than 300mm, there is no need to use shielded wire. The housing of the controller should be connected to the Ground (PE)



NOTE:

1. This controller should be mounted on the baseplate or rack which is helpful for the heat dissipation, above 20mm space is needed for heat dissipation on periphery of housing, also the housing of the controller is needed to connect to the Ground (PE).

2. Please read this specification carefully before use it, according to the declaration to make the connection. If there is any alarm while using it, please stop, check and exclude the failure then continue to use it.

3. Avoid to change the F/R status on motor running(above 500rpm), the best way is to change the direction while motor stop。

4. this controller is only used in two quadrant working mode, it can not be used as servo control.