MC Brushless Servo Driver Manual

Version number: V3.0

Product Description

MC series driver is a new generation of high-performance brushless servo driver launched by Suzhou Micro Actuator Technology Ltd Co.,which can be widely used in the drive of various BLDC/PMSM motors. This series is based on years of experience in the low-voltage DC servo market and combined all kinds of end-customer demand feedback ingeniously created.

The driver includes various special functions, such as: power-off memory, data recording in case of power-off, bus current sampling: real-time knowledge of current-torque relationship, precise control of torque output. At the same time, we match the new driver with a friendly visual graphical interface, which is convenient for users to quickly familiarize themselves with the product features. For more product information and user experience exchange, please contact your exclusive technical consultant.

Chapter 1 Driver Model Description

1.1 The specific description of the driver model

MC – L– 100 – O - C - 24

① ② ③ ④ ⑤ ⑥

1: MC (Motor controller) brushless motor control drive.

2: Adapted Motor Type L： L series direct drive motor

H： H series direct drive motor

X： X series planetary actuator

R： R series harmonic actuator

3: Rated power, optional power: 100W/ 300W/ 500W.

4: Encoder Adaptation Method

O: On axis encoder is installed on the axis

H: Off axis (hollow) encoder off-axis installation

5: Communication Mode

C: CAN BUS communication

R: RS485 communication

6: Supply Voltage 24: 12V-24V

48: 24V-48V

Chapter 2 Driver Model and Classification

2.1 Driver Model

This driver can be adapted to various BLDC/PMSM motors according to the size corresponding to the driver model (see the corresponding driver size for details). The following match our company motors.

Driver Type	Matching Motor
MC-L-100-O	40/50
MC-L-200-O	70/90
MC-X-300-O	X6/X8
MC-X-500-O	X10
MC-R-100-R	R14/R17
MC-R-300-R	R20
MC-R-500-R	R32

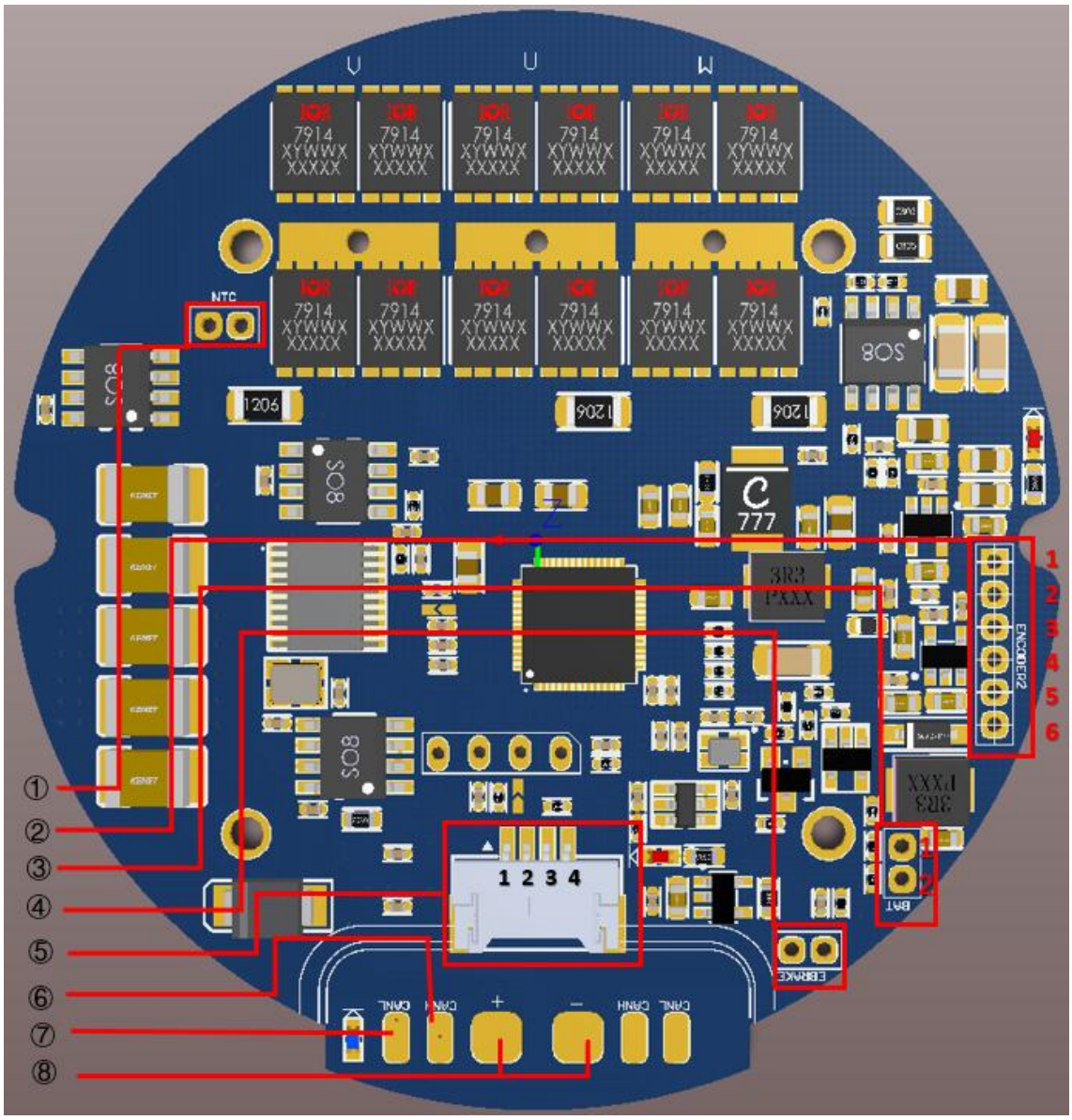
Chapter 3 Driver Function Description

3.1 Driver model description

Driver Type	Voltage	Rated Power	Rated Current	Encoder adaptation method	Communication
MC-L-100-O	12V-24V	100W	4	O	CANBUS RS485 (Optional)
MC-L-200-O		200W	8		
MC-X-300-O	24V-48V	300W	6		
MC-X-500-O		500W	10		

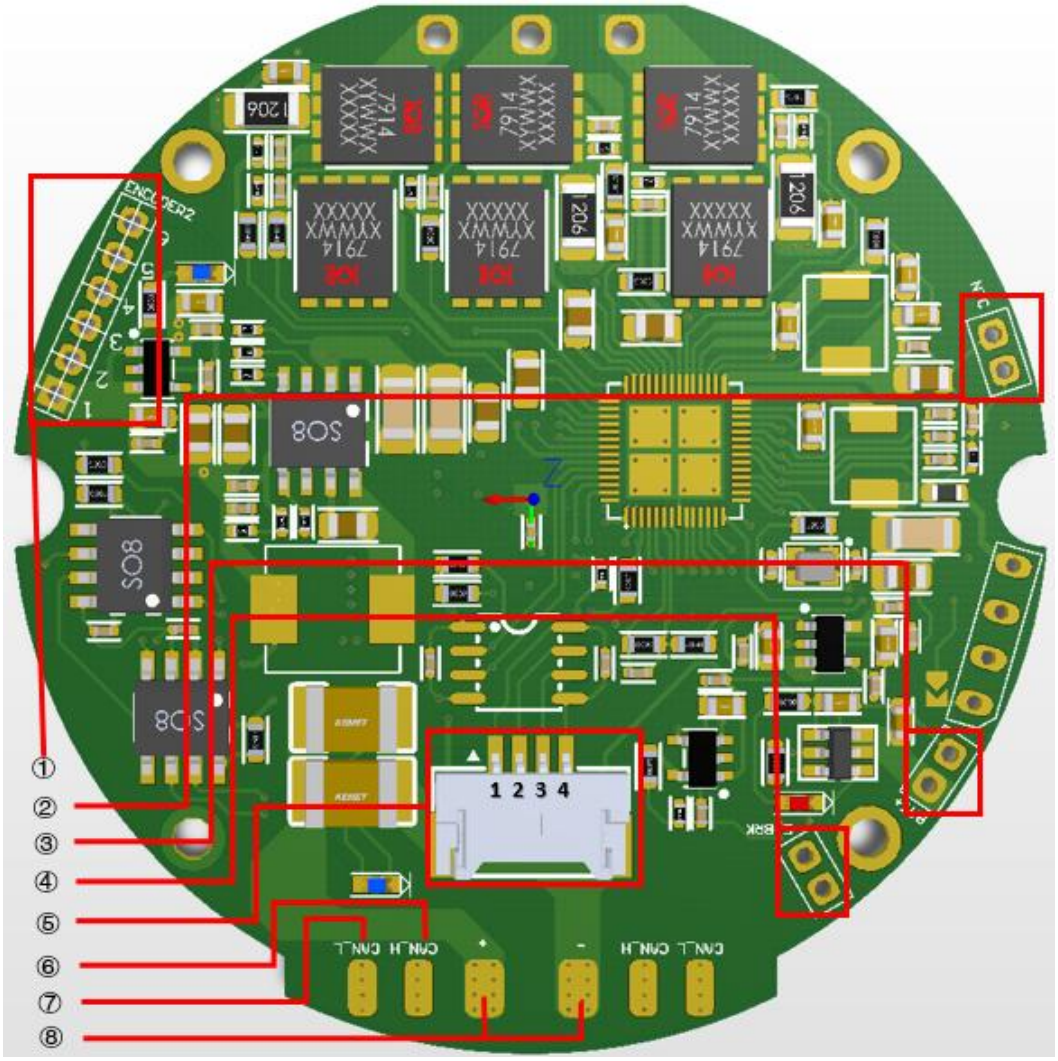
MC-R-100-R		100W	2	H	
MC-R-300-R		300W	6		
MC-R-500-R		500W	10		

3.2 MC-500-DA-X



No.	Interface	Explaination	Connector Type
1	Thermistor Interface		Pad
2	Second(Output shaft) Encoder Interface	1:5V 2:GND 3:CLK 4:SIMO 5:SOMI 6:CS	Pad
3	External Battery Interface	1.5-4.2V (1:Battery+ 2:Battery-)	Pad
4	Brake Interface	No positive or negative, 12V brake is recommended	Pad
5	Serial Communication Interface	1:5V 2:TX 3:RX 4:GND	1.25mm-4P
6	CAN_H / A	CAN Communication / 485 Communication (optional)	Pad
7	CAN_L / B	CAN Communication / 485 Communication (optional)	Pad
8	Power Supply	24V-48V	Pad

3.3 MC-300-DA-X driver for RMD-X6/X8

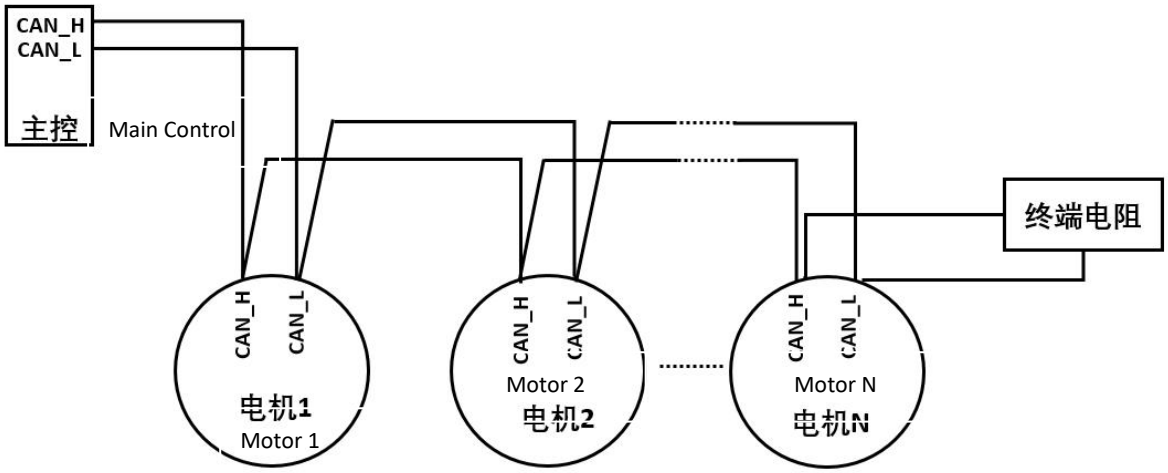


No.	Interface	Explaination	Connector Type
1	Second(Output shaft) Encoder Interface	1:5V 2:GND 3:CLK 4:SIMO 5:SOMI 6:CS	Pad
2	Thermistor Interface		Pad
3	External Battery Interface	1.5-4.2V (1:Battery+ 2:Battery-)	Pad
4	Brake Interface	No positive or negative, 12V brake is recommended	Pad

5	Serial Communication Interface	1:5V 2:TX 3:RX 4:GND	1.25mm-4P
6	CAN_H / A	CAN Communication / 485 Communication (optional)	Pad
7	CAN_L / B	CAN Communication / 485 Communication (optional)	Pad
8	Power Supply	24V-48V	Pad

3.4 CAN Communication Connection

3.4.1. Schematic Diagram



Note: The end of the motor needs to be connected to a 120 ohm terminal resistor

Chapter 4 Driver Maintenance and Precautions

4.1 Driver maintenance and precautions

Chapter 5 Common Problem Diagnosis

5.1 Diagnosis of common problems