

MC3818 AC Induction Motor Controller

Manual

I: Profile

The model MC3818 is an enhanced version to MC3336 which is developed by Zhuhai Enpower Electric Co., Ltd. Compared with the DC drive system, the AC motor has advantages of wider speed range, no carbon brush replacement procedure, completely sealed shell and free of maintenance, all above features make it more reliable and higher efficient. Also the high efficiency energy regeneration function is good to extend the vehicle mileage obviously. Advanced vector control algorithm generates the maximum possible torque and efficiency across the entire motor speed range. This series is widely applied to the sightseeing vehicles, hunting buggies, electric vehicles, heavy-duty trucks, electric yachts and other kinds of utility vehicles.

II: Features

- Drive for AC Induction motor series.
- Built-in main contactor.
- The internationally advanced high-power MOSFET tube is selected as the power device, which performs low noise and high efficiency energy conversion.
- The advanced vector control algorithm is adopted, which drive a precise control of motor torque and speed by the controller.
- Regeneration function extend



charging mileage.

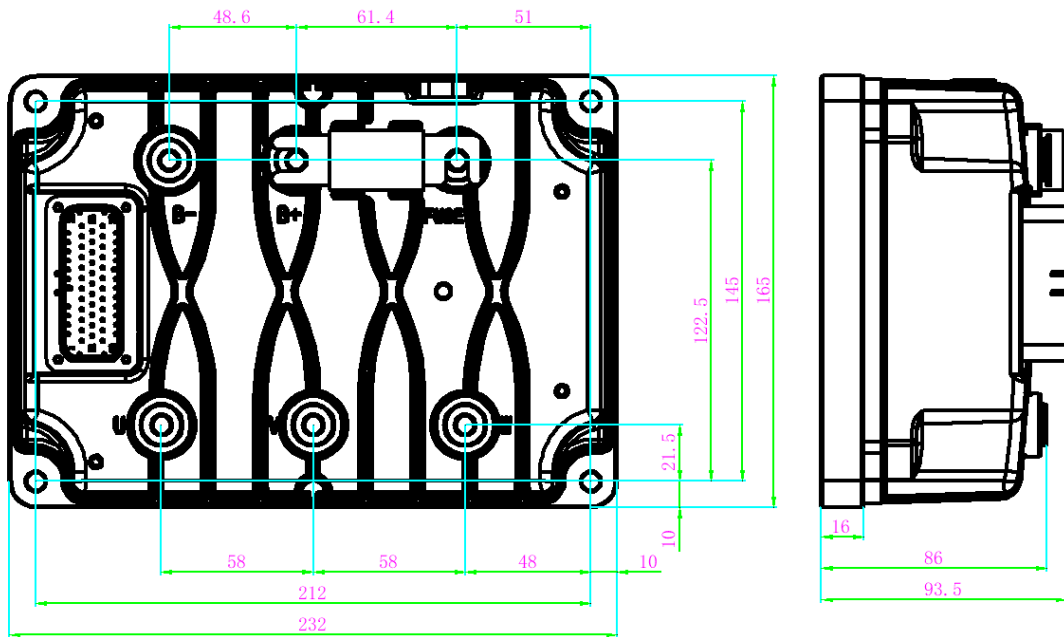
- Anti-slipping function on slope to improve driving safety.
- Controller programmable setting make sure the vehicle handling performance on different road conditions in various circumstance.
- The fault lamp design is good for vehicle diagnosis and maintenance.
- Perfect protection functions such as accelerator fault, undervoltage, overvoltage, overcurrent, overheat and motor short circuit improve the reliability of the system.
- CAN bus communication function.
- Custom-design program can satisfy the different requirements from different clients.

Technical Specifications

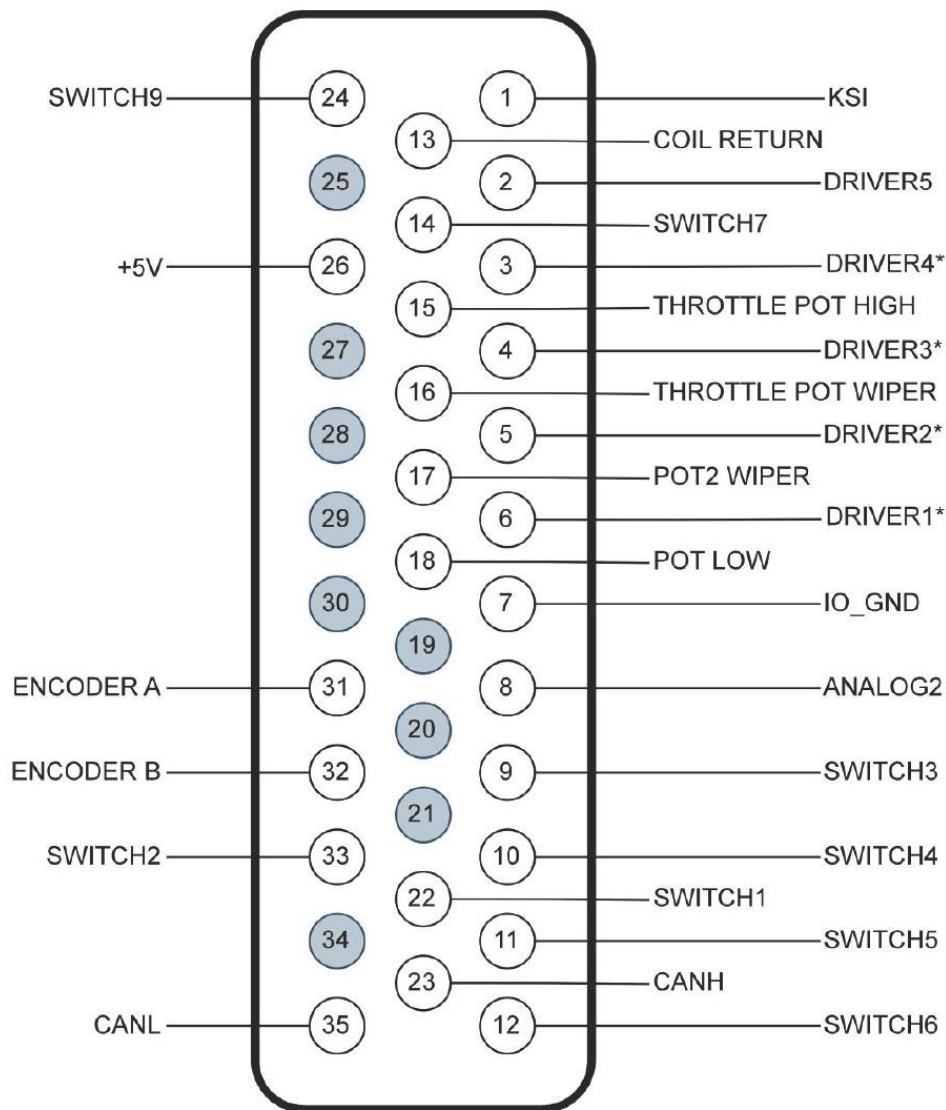
Model & Voltage level	MC3818-4840	MC3818-7240	MC3818-9640
	48V	72V	96V
Input voltage range (DC/V)	35V-60V	55V-85V	75V-135V
Peak current (AC/A)	400A	400A	350A
Rated current (AC/A)	130A	130A	130A
Starting voltage (DC/V)	35V	35V	35V
Peak power (KW)	20kW	30kW	35kW

Motor type applied	AC Induction	Encoder type	Quadrature
Working ambient temp. range	-20°C--- 55°C	Storage ambient temp. range	-40°C---85°C
The protection grade	IP67	Highest efficiency	≥98%
Cooling	natural	Communication	CAN bus
Appearance dimension	See attachment	CAN terminal resistance	120Ω
Pre-charge circuit	yes	Build-in relay	yes
Motor control	Vector control with speed sensor	Anti-vibration compliance	GB/T 18488.1-2015
Insulation performance	The leakage current of input and output to chassis DC 1000V is 0.05mA, and the insulation resistance is 20MΩ		
Heat dissipation requirements	The controller must be installed in a well-ventilated place, otherwise, forced air cooling should be added		

DIMENSIONS mm(typical)

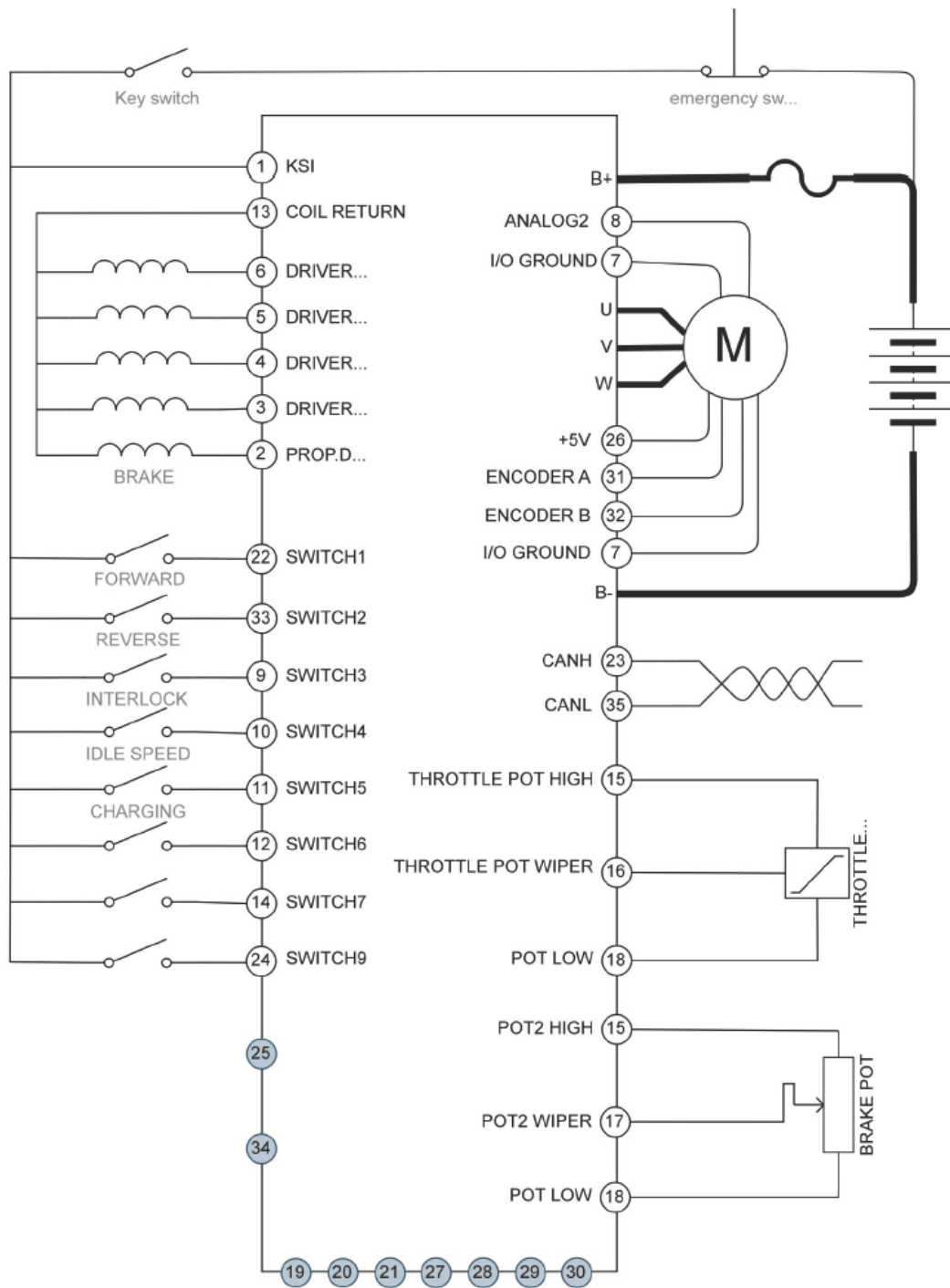


CONNECTOR WIRING



Drive 1*, Drive 2*, Drive 3* and Drive 4* are reserved functions....

WIRING DIAGRAM FOR AC MOTOR



Drive 1*, Drive 2*, Drive 3* and Drive 4* are reserved functions....

CONNECTOR PIN DEFINATION

PIN NO.	DEFINATION	SIGNAL TYPE	MAX. VOLT/ CURRENT	REMARKS
1	KSI	Power input	105V/8A	Key switch input, power for controller and all coil drivers.
2	Drive output 5	Switch signal output	105V/2A	To connect with the relay coil/proportional valve Duty cycle: 0-100% Frequency: 18kHz
3	Drive output 4	Switch signal output	105V/2A	To connect with relay coil Duty cycle: 0-100% Frequency: 120-1000Hz Bus voltage compensation
4	Drive output 3		105V/2A	
5	Drive output 2		105V/3A	
6	Drive output 1		105V/2A	
7	I/O GND	Analog signal	\	GND of motor temp. sensor and encoder wiring.
8	Motor temp. sensor positive pole	Analog signal input	5V/5mA	To Match with model KTY84-150 or PT1000
9	Throttle Switch	Switch signal input	105V/10mA	Throttle switch signal
10	Econ mode switch	Switch signal input	105V/10mA	Low speed mode switch
11	Charging mode	Switch signal input	105V/10mA	Driving prohibited when charging
12	Switch input 6	Switch signal input	105V/10mA	
13	Coil return	Power	105V/7A	Connect with the other end of the coil
14	Switch input 7	Switch signal input	105V/10mA	
15	5V+	Power	5V/100mA	Power supply to the throttle/potentiometer
16	Throttle pot wiper	Analog signal input	5V/10mA	Throttle signal input.
17	Pot wiper 2	Analog signal input	5V/10mA	
18	5V-	Power	\	GND of throttle/potentiometer wiring
19	\	\	\	
20	\	\	\	
21	\	\	\	
22	Forward switch	Switch signal input	105V/10mA	Connect with forward gear
23	CAN H	CAN BUS communication	\	\
24	Switch signal 9	Switch signal input	105V/10mA	
25	Fan wiring in	Internal relay contact	12V/9W	Fan switch internal relay contact 1
26	5V+	Power	\	Power supply to NC/encoder
27	\	\	\	
28	\	\	\	
29	\	\	\	
30	\	\	\	
31	Encoder A	Encoder input	5V/10mA	Orthogonal encoder a
32	Encoder B	Encoder input	5V/10mA	Orthogonal encoder b
33	Reverse switch	Switch signal input	105V/10mA	To connect with reverse gear
34	Fan wiring out	Internal relay contact	12V/9W	Fan switch internal relay contact 2
35	CAN L	CAN BUS communication	\	\

Note:

- 1, If the "Drive Output" pin is used to control the external relay/solenoid valve, the other end of the coil must be connected to the No.13 pin of the controller, and it is forbidden to directly connect to the high voltage positive pole!
- 2, Pins 7, 8, 15, 16, 17, 18, 23, 26, 31, 32 and 35 are prohibited to connect with high-volt power.
- 3, Drive 1, 2, 3, 4 are for reserved functions.