VCOR

ZIM1642-18-12
All-in-One Smart DC Motor

Product Description

The **ZIM1642-18-12** is an All-in-One smart DC motor for industrial/medical applications with compact system mechanism and accurate control requirements of torque/speed/position. It integrated a driver module with on-board angular sensor in a slot-less BDC motor with 16mm diameter, 18W continuous power with 12V input voltage.

VCOR's unique and advanced algorithm of motor control based on the on-board angular sensor makes it to be excellent for applications with requirements of high speed/position accuracy, fast response, high efficiency, low audiable noise, low mechanism vibration, etc.

Two-wire USART interface, which means a minimum wiring for system connection, makes **ZIM1642-18-12** to be very concise and easy to use for motion control.

Customized service for gear installation, software and protocol is also available, contact www.vcor.com.cn for more details.

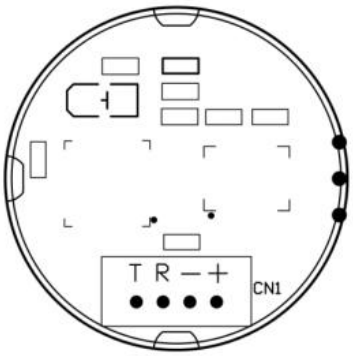
Features & Benifits

- Typical 12V Input Voltage
- Wide 3.5V~16V Input Range
- Up to 18W Power with 12Vin
- Adaptive Control-loop Parameters Adjustment with Different Input Voltage
- Position/Speed/Torque Control Mode
- On-board Angular Sensor with In-axis Mounting
- 0.2° Resolution for Position Mode
- Low Ripple for Speed Mode
- Two-wire USART Interface
- Programmable OCP, OTP, Lock Protection
- Motor Diameter: 16mm

Recommended Operation Condition

Input Voltage Range.....3.5V~16V
Typical Input Voltage.....12V
USART RX/TX Voltage Level.....0V~3.6V
Operation Temperature.....-20°C - 70°C
Storage temperature.....-40°C - 125°C

Interface & Connection



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Pin#	**Symbol**	**Definition**
1	+	VIN. Connect to the positive pole of input voltage.
2	-	GND. Connect to the negative pole of input voltage.
3	R	RX. Receive port of USART interface.
4	T	TX. Transmit port of USART interface.

Motor Control & Communication

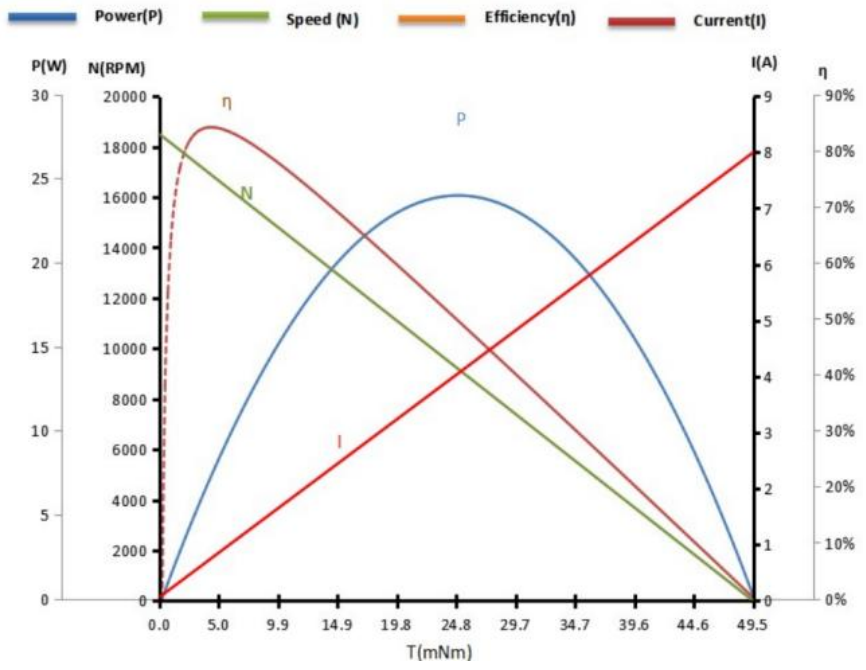
With an integrated motor driver module, the **ZIM1642-18-12** communicates with external system through a 2-wire USART interface, which means only 4 wires are required for the connection between **ZIM1642-18-12** and the system, two wires for power connections and the other two wires for USART communication with system MCU or GUI.

By communicating with USART, the system can give speed/position control command to the motor, inquire the motor operation status(including the motor speed, the motor current and the rotor position), program the threshold of OCP, etc.

The communication Baud rate is set to be 115200, and the communication protocol is illustrated in a dedicated instruction file.

Motor Parameters

Motor Parameters		
Parameters	**Value（Typ.）**	**Unit**
Nominal Voltage	12.0	V
No Load Speed	18500±15%	rpm
No Load Current	100 (Max.)	mA
Rated Speed	17480±15%	rpm
Rated Torque	2.8	mNm
Rated Current	0.7	A
Stall Torque	49.5	mNm
Stall Current	8.0	A
Terminal Resistance	1.50±15%	Ω



Motor Dimension Information