SK06816-1002 BLDC INTERFACE INSTALLATION NOTES

Features & Benefits

- PWM Speed Control
- Speed Feedback
- Locked Rotor Protection
- Over Current Protection
- Over Temperature Protection

Lead Wires & Functions:

- Red Wire: VCC - Motor Supply - 26AWG
- Brown Wire: FG - Speed Feedback - 3 pulses per revolution - 26AWG
- Yellow Wire: CW/CCW - Motor rotation direction control. Connect to - for CW as viewed from shaft. - 26AWG
- Green Wire: GND - Connect to 0V - 26AWG
- Blue Wire: PWM - Pulse width modulation for motor speed control. - 26AWG

Motor & IC Protection Functions

Function	Specification	Explanation
Current Limit	2.8A	When motor running current exceeds current limit, motor will enter protection mode and stop running. To restart motor, remove and restore power to motor.
Locked Rotor Protection	2s +/- 1s	When motor enters a locked rotor scenario and the time exceeds the specification the motor driver will stop. To restart motor either: - Remove and restore power to motor - Cut PWM and re-enable.
Thermal Protection	170°C +/- 15°C	When motor IC temperature exceeds specification the motor driver will stop. The driver will not restart until it has cooled sufficiently. Continuous running in excess of the specified temperature will induce premature failure.

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Electrical Characteristics:

Signal	Colour	I/O	Specifications	Note
VCC	Red	IN	DC 24V	Power
FG	Brown	OUT		Hall Signal Pulse Outputs
Voltage Out - High			5.5V	
Voltage Out - Low			0.5V	
FG Signal Current			2mA	
Pulse Output per Revolution			3 Pulse per Revolution	
CW/CCW	Yellow	IN		High - Motor CCW Low - Motor CW (When looking from the shaft end)
Input Voltage Range			0 - 5.5V	
Voltage In - High			2.0V Min (or open)	
Voltage In - Low			0.5V Max	
GND	Green	IN	0V	Power Ground
PWM	Blue	IN		TYP 20kHz High - Motor Off Low - Motor On
Input Voltage Range			0 - 5.5V (10kHz - 30kHz)	
Voltage In - High			2.0V Min (or open)	
Voltage In - Low			0.5V Max	

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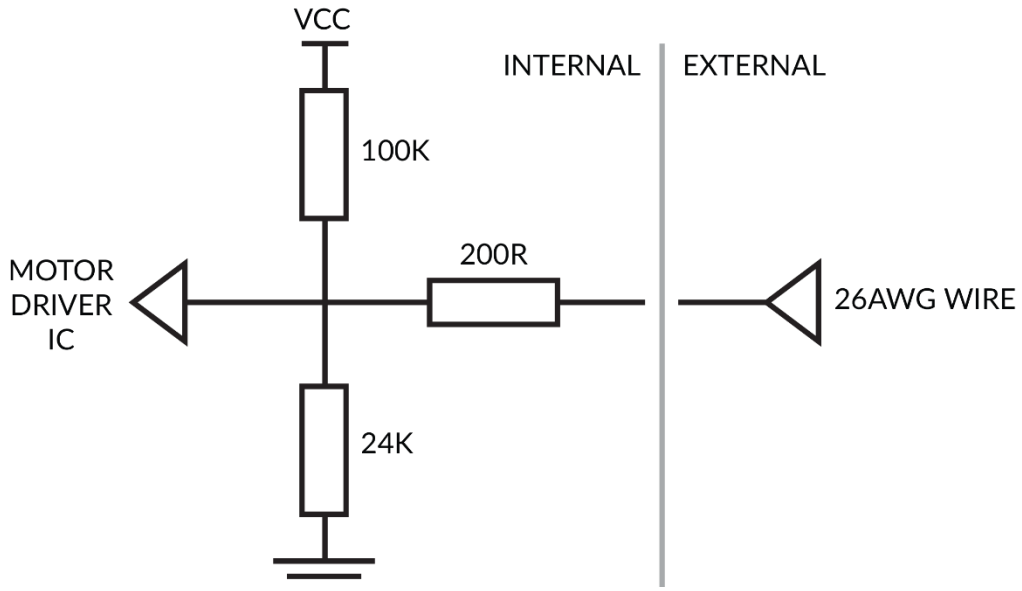

Port Diagrams

Motor Speed Control

Frequency - 10kHz to 30kHz (Typical 20kHz)
Duty: The working duty range of the motor (free running) is between 8% and 100%. If duty is below 8% the motor will not turn. If the duty is at 100% the motor will be running at full speed.
Connecting PWM to GND will run the motor at full speed.
Note: When the motor is running do not attempt to reverse direction. Motor must be stopped before setting CW/ CCW

Motor Connection Suggestion: Full Speed

In order to run the motor at full speed, connect as detailed below.

Red VCC	Connect to +24V DC
Green - GND	Connect to 0V
Yellow - CW/CCW	Isolate
Brown - FG	Isolate
Blue - PWM	Connect to 0V

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