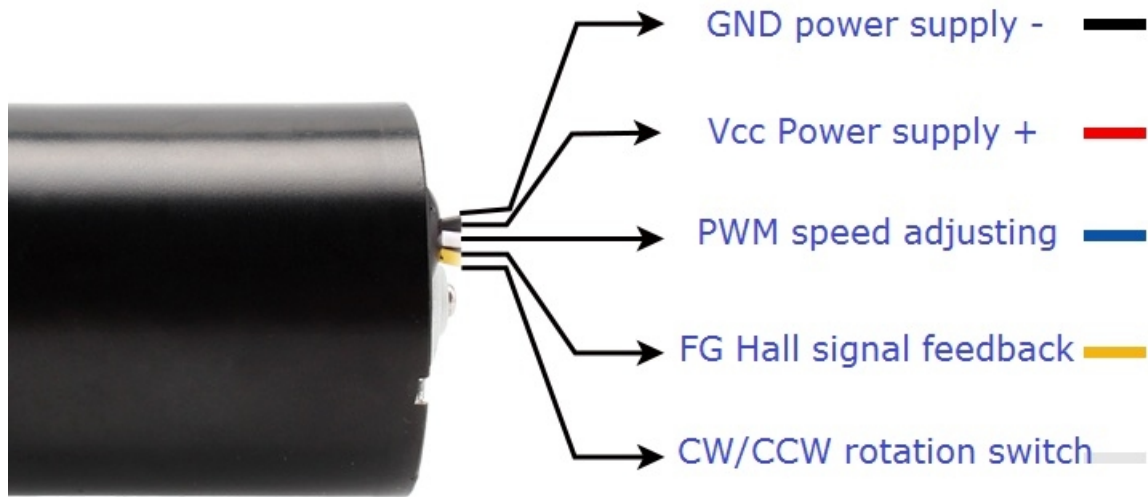


Voltage : 12 V

Max. Power : 7 Watt

Protect current : 3A

Gear ratio	L	No-load		Rated		
	mm	Speed rpm	Current mA	Speed rpm	Current A	Torque Kg.cm
6.3	19	650	< 200	530	< 0.85	0.8
10	19	415	< 200	335	< 0.85	1.2
18.8	21.5	215	< 200	178	< 0.85	2.2
23	21.5	135	< 200	112	< 0.85	3.5
50	24	82	< 200	67.5	< 0.85	6
90	24	45	< 200	37	< 0.85	11
150	26.5	27	< 200	23	< 0.85	18
260	26.5	15	< 200	13	< 0.85	32
450	29	9	< 200	7.5	< 0.85	35
650	29	6.3	< 200	5.5	< 0.85	35
810	29	5.2	< 200	4.5	< 0.85	35



—: (MOTOR TERMINATIONS)

Terminations		I/O	Conditions	Remark
GND		IN	Ground	(black wire) Ground
Vcc		IN	DC 12V / 24V	(red wire) Power supply
FG	VOH	OUT	Min4V at 5V10KΩ pull up	(yellow wire) this is the open collector output, which can detect the rotation speed using the FG output according to the phase shift
	VOL		Min0V Max0.6V	
	FG current		Max 5mA	
	FG pulse quantity		6 pulse /round	
PWM	Input voltage	IN	0~5V	(blue wire)
	VIH		Min 1.6V	Motor running
	VIL		Max1.0V	Motor stop
	PWM frequency		Max 50kHz	Advise 15~25kHz
CW/CCW	Input voltage	IN	0~5V	(white wire)
	VIH		Min 2.0V	CCW
	VIL		Max 0.6V	CW