150-250 W BLDC IN-RUNNER MOTOR SPECIFICATIONS

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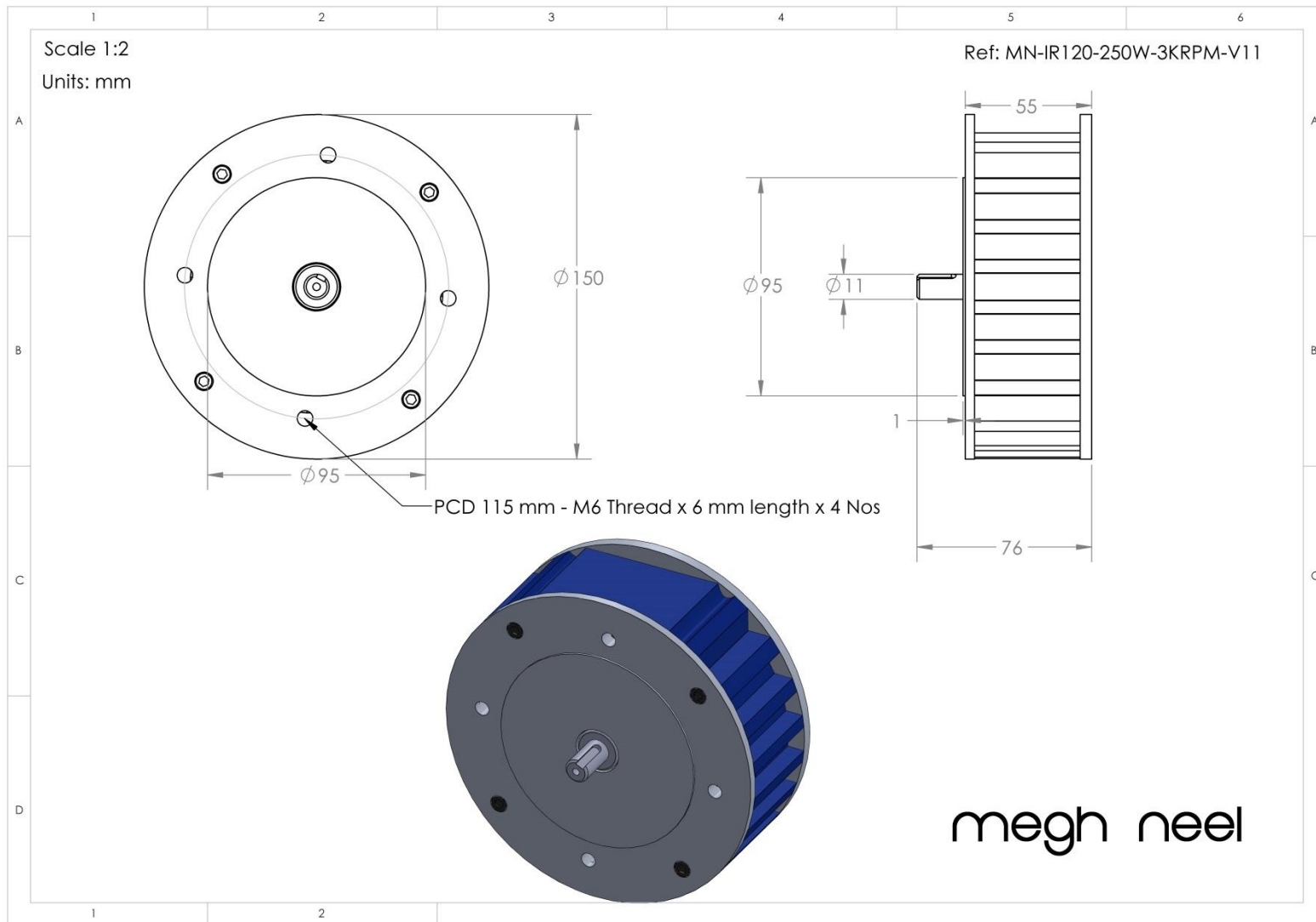# TR120-150W-250W-3000 RPM

Highlights

- ✓ 150W-250Watts (Input), 3000 RPM Brushless DC Motor
- ✓ In-runner rotor
- ✓ Operating temperature up to 80°C
- ✓ External Control with Sensor / sensor-less commutation
- ✓ Made in Coimbatore, India

Specifications

Parameter	Value	
Rated Voltage	24VDC	230VAC
Rated Current	12 A	1.15 A
Rated Power (Input)	250 Watts Max	
Rated Speed (RPM)	3000 RPM	
Rated Torque (Nm)	0.67 Nm	
No Load Current (A)	< 3.0 A	< 0.1 A
No Load RPM	4000+ RPM	
Current Density (A/square mm)	4 A/square mm	
Variable Speed Range	0-4000 RPM	
Motor Mounting	Face	
Motor Dimensions	160 mm diameter x 55 mm width	
Shaft Diameter	11 mm / 12 mm / 19 mm diameter	
Shaft Length	20 mm length	
Finish	Powder Coated	

Dimensions

Scale 1:2
Units: mm

Ref: MN-IR120-250W-3KRPM-V11

Ø150

Ø95

PCD 115 mm - M6 Thread x 6 mm length x 4 Nos

55

Ø95

Ø11

1

76

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Controller Specifications – 24VDC

Parameter	Value
Rated Voltage	24VDC
Controller Current Limit	12 A
Rated Speed (RPM)	4000 RPM
Variable Speed	3 Pin Plug with analog voltage input from 0 to 5VDC
	Or 2 Pin PWM control
	5VDC – Maximum Speed
	0.8VDC – Start Motor
	0VDC – Stop Motor
Commutation	Sensored / Sensorless
Reverse Option	2 Pin (Short the pins to enable full speed reverse)
RPM Output	Digital Pulse Output - 12 Pulses Per Rotation
Fault Conditions	Over Voltage, Under Voltage, Over Temperature, Rotor Lock, Phase Loss
Auto Restart Count (After Fault Condition)	10 with 1 Second delay between restarts
Others	Configurable using programming tool
Place of Origin	India

Connection Sequence

Supply: Connect the 24V Positive Supply to the Controller Red Wire via a key switch. Connect the 24V Ground to the Controller Black Wire.

Motor Connection:

Connect the Controller Phase Wires to the respective wires from the motor as given below

Motor Phase Connection	Yellow	Blue	Green
Controller Phase Connection	U	V	W

Connect the 6 pin motor sensor plug to the controller plug
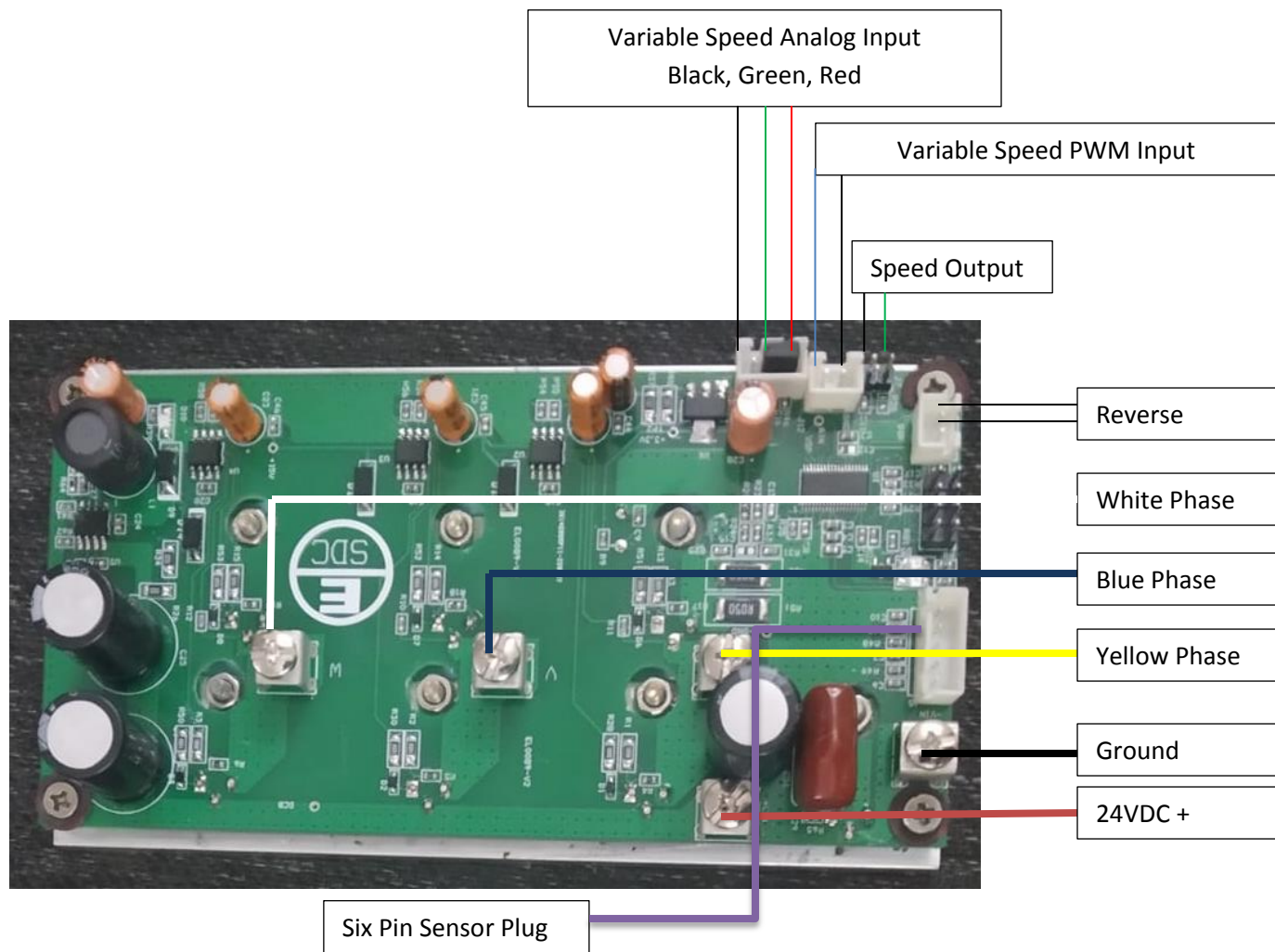
Throttle / Accelerator

Connect the 3 pin connector (Red, Black, Green) to 3 pin on the board. While connecting, ensure that the color codes match as per the diagram provided. Red: +5 VDC, Black: Ground, Green: 0-5 VDC

Reverse

Short the 2 pins indicated in the diagram to achieve reverse direction. There is no RPM limit during reverse and maximum RPM is achieved during reverse

Connection Diagram

Variable Speed Analog Input
Black, Green, Red

Variable Speed PWM Input

Speed Output

Reverse

White Phase

Blue Phase

Yellow Phase

Ground

24VDC +

Six Pin Sensor Plug

Controller Specifications – 230VAC

Parameter	Value
Rated Voltage	96-230VAC
Controller Current Limit	3 A
Rated Speed (RPM)	4000 RPM
Commutation	Sensorless
Variable Speed	3 Pin Plug with analog voltage input from 0 to 5VDC 5VDC – Maximum Speed 0.8VDC – Start Motor 0VDC – Stop Motor
RPM Output	Digital Pulse Output - 12 Pulses Per Rotation
Fault Conditions	Over Voltage, Under Voltage, Over Temperature, Rotor Lock, Phase Loss
Others	Configurable using programming tool
Place of Origin	India

Connection Sequence

Supply: Connect the 230VAC wires via a key switch as shown in the diagram.

Motor Connection:

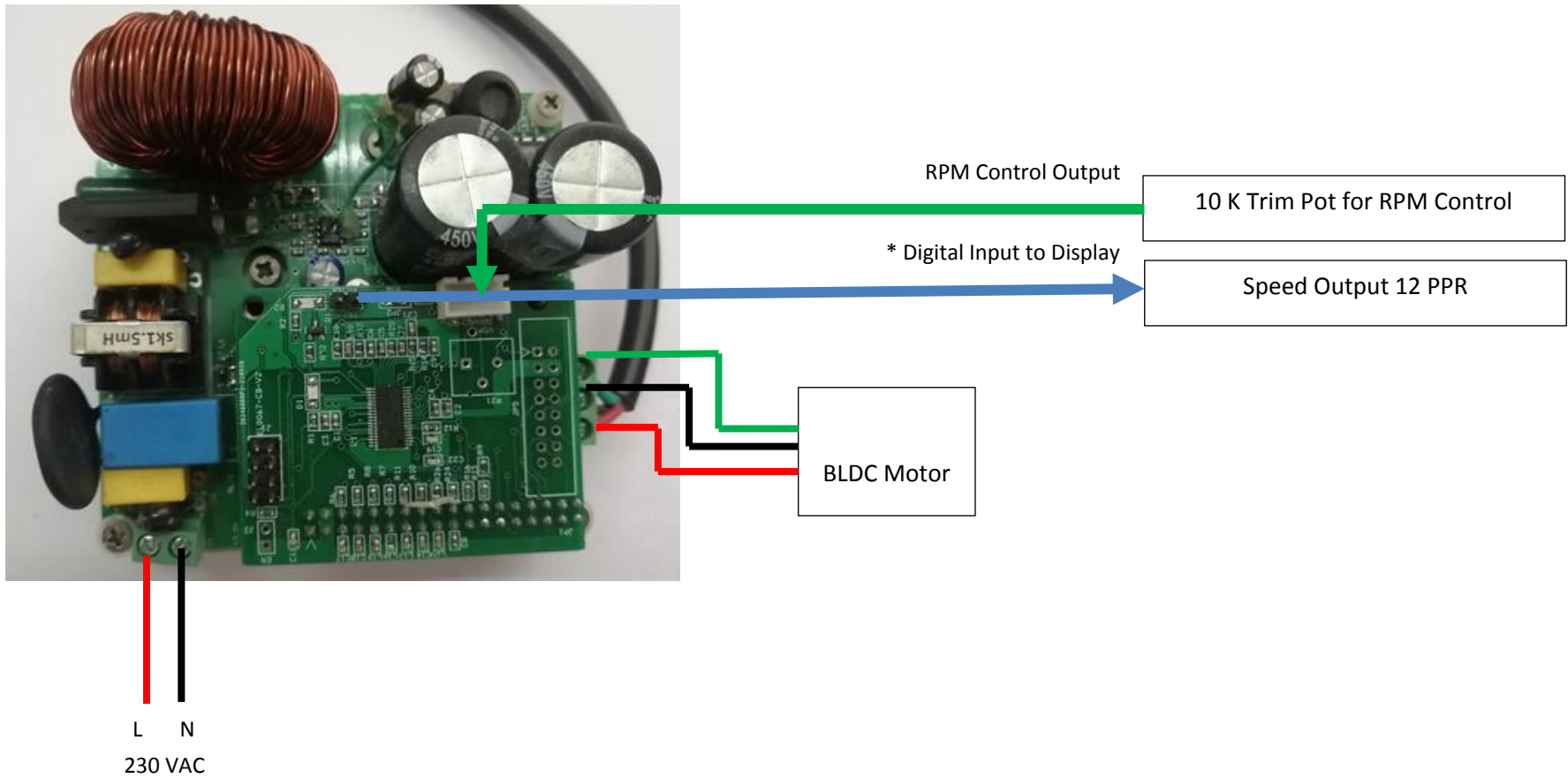Connect the Controller Phase Wires to the respective wires from the motor as given below

Motor Phase Connection	Red	Black	Green
Controller Phase Connection	U	V	W

Speed Control

Connect the 3 pin connector (Red, Black, Green) to 3 pin on the board. While connecting, ensure that the color codes match as per the diagram provided. Red: +5 VDC, Black: Ground, Green: 0-5 VDC

Connection Diagram

RPM Control Output

10 K Trim Pot for RPM Control

* Digital Input to Display

Speed Output 12 PPR

BLDC Motor

L   N

230 VAC

Contact Information

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