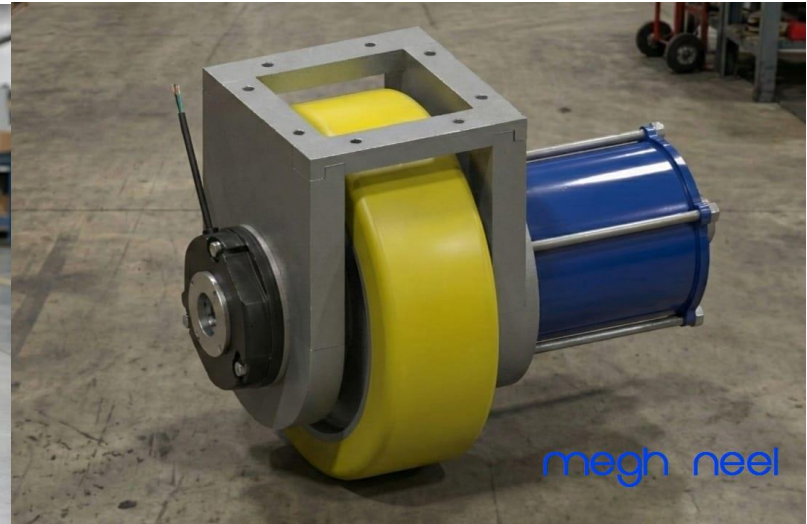


AGV & AMR SOLUTIONS – 220S & 300S



Highlights

- ✓ Available in 220 mm and 300 mm wheel diameter
- ✓ Built-in gear reduction of ratio 15, 20 and 25
- ✓ Suitable for AGV, AMR with load carrying capacity of up to 3 tons
- ✓ Available with optional external brake and absolute / incremental magnetic encoder
- ✓ Operating voltages ranging from 24VDC to 72VDC

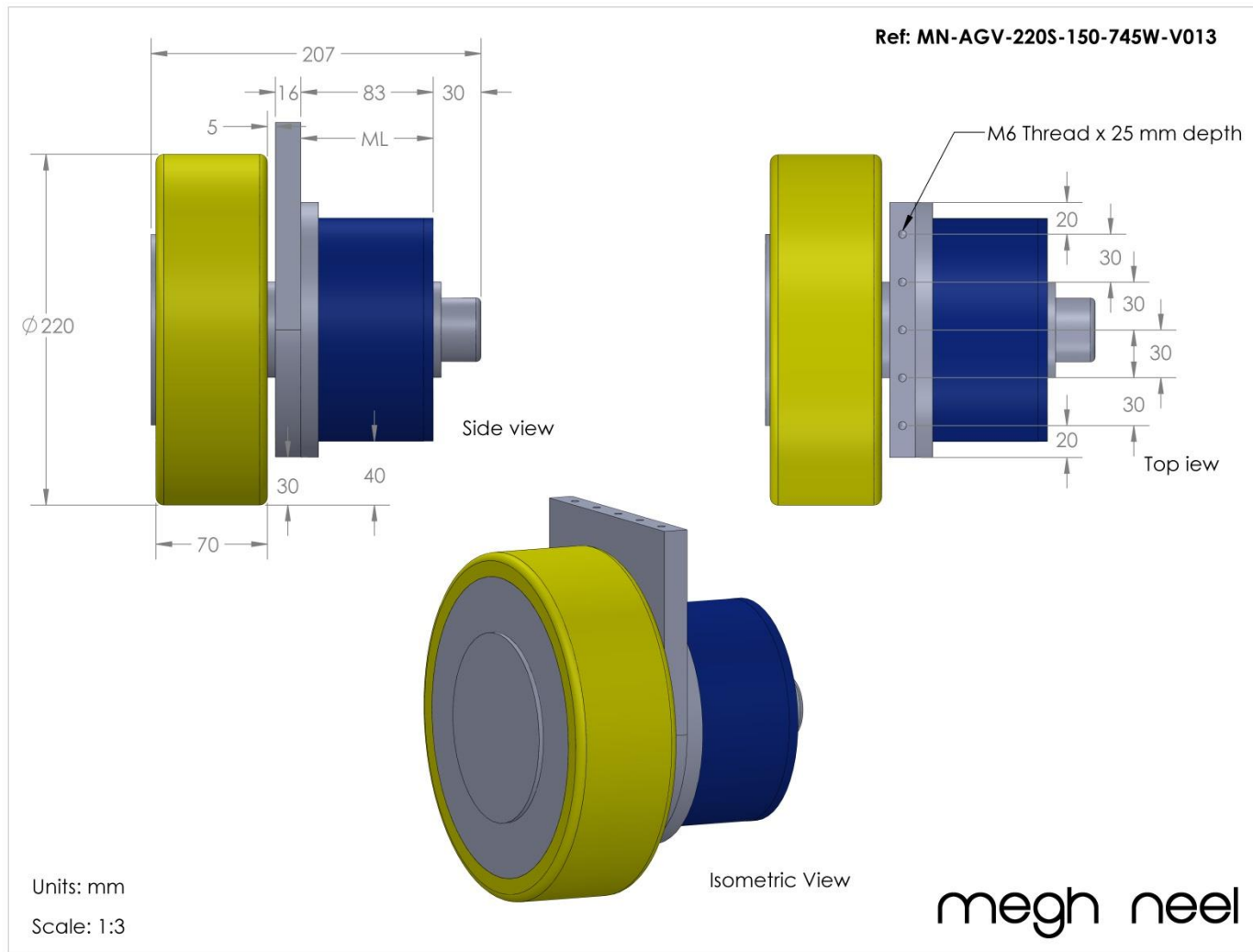
Megh Neel AGV 220 Series

Model

Motor Rated Power	150W	350W	500W	745W
Motor RPM	1500	1500	1500	1500
Motor Output Torque (Nm)	0.95	2.2	3.18	4.7
Motor Axial Length ML (mm)	83	83	117	117
Wheel Dimensions (mm)	220Dx70L	220Dx70L	220Dx70L	220Dx70L
Gear Box Reduction	15/20/25	15/20/25	15/20/25	15/20/25
Gear Box Output Torque (Nm)	14.25 / 19 / 23.75	33 / 44 / 55	47.7 / 63.6 / 79.5	70.5 / 94 / 117.5
Gear Box Output RPM	100 / 75 / 60	100 / 75 / 60	100 / 75 / 60	100 / 75 / 60
Operating Voltage (VDC)	12-60	24-60	48-60	48-72
External Brake	NA	NA	NA	NA
Encoder (Optional)	Absolute / Incremental	Absolute / Incremental	Absolute / Incremental	Absolute / Incremental



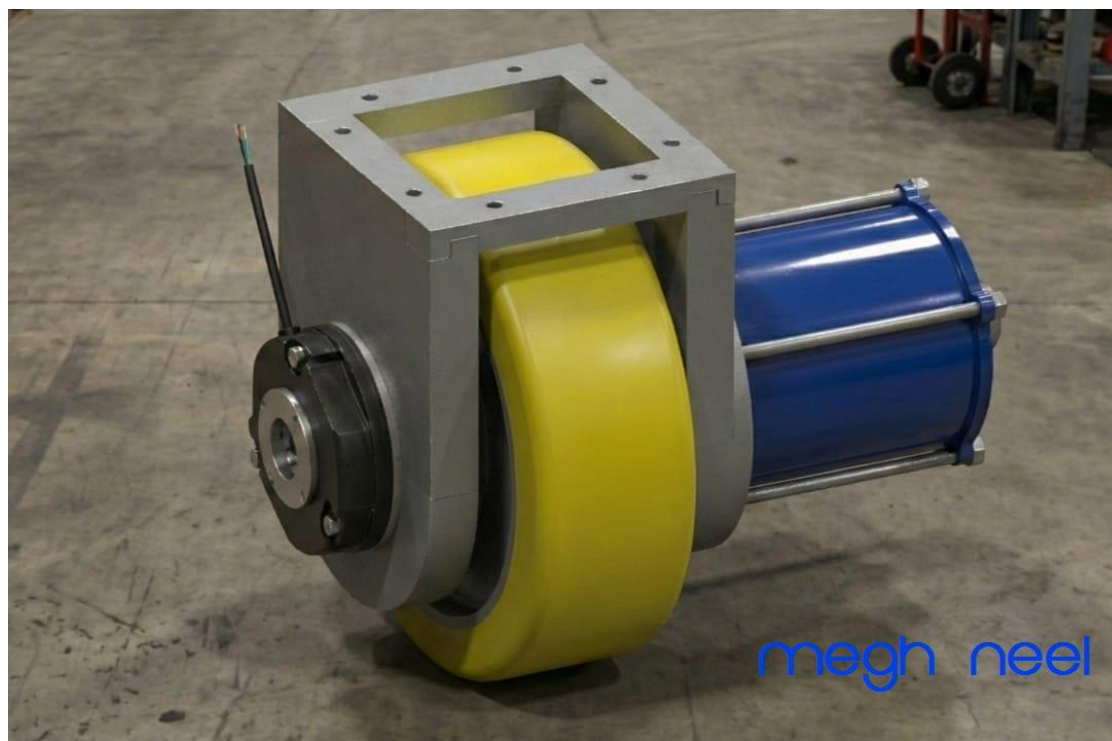
Dimensions

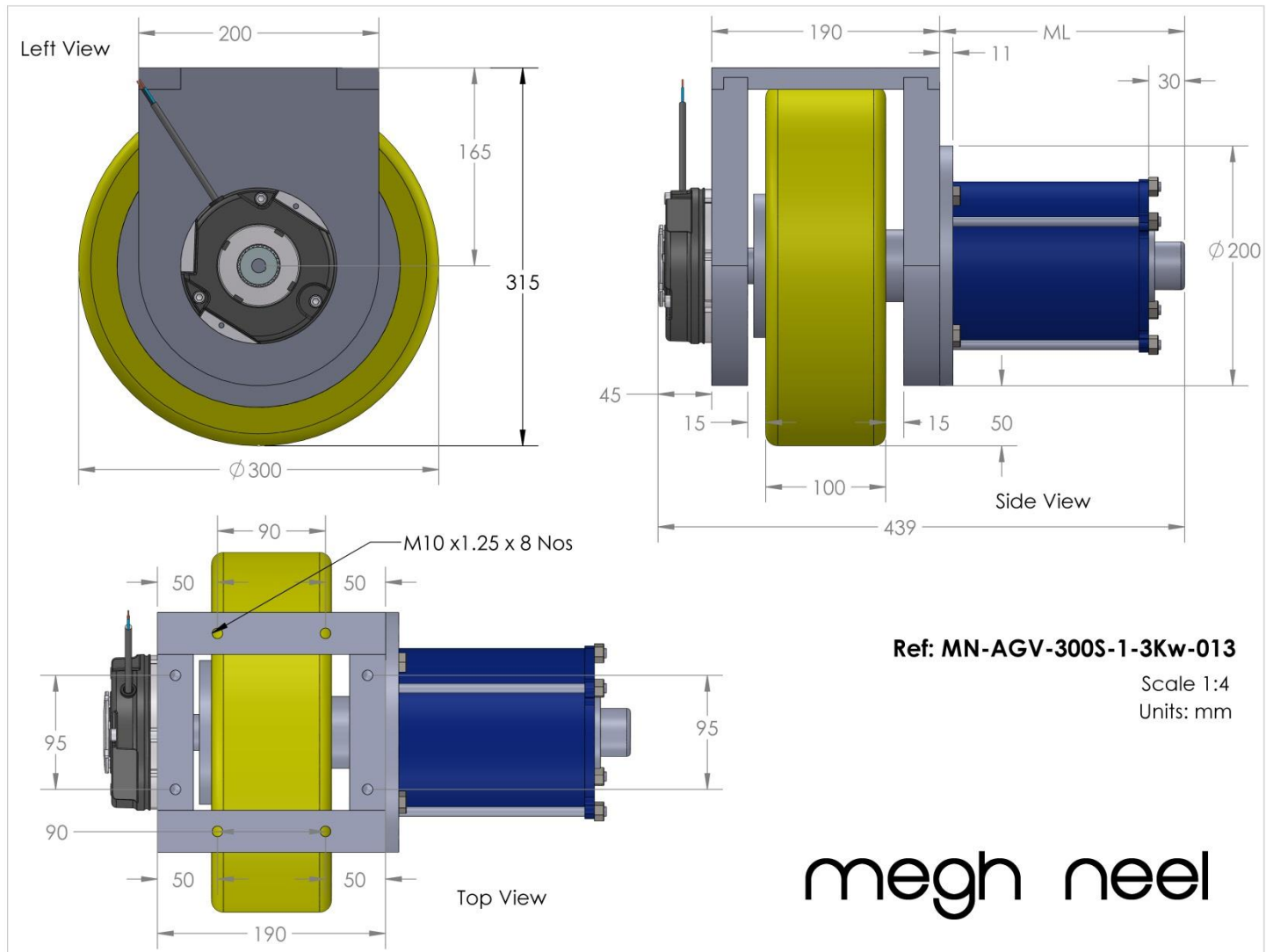


Megh Neel AGV 300 Series

Model

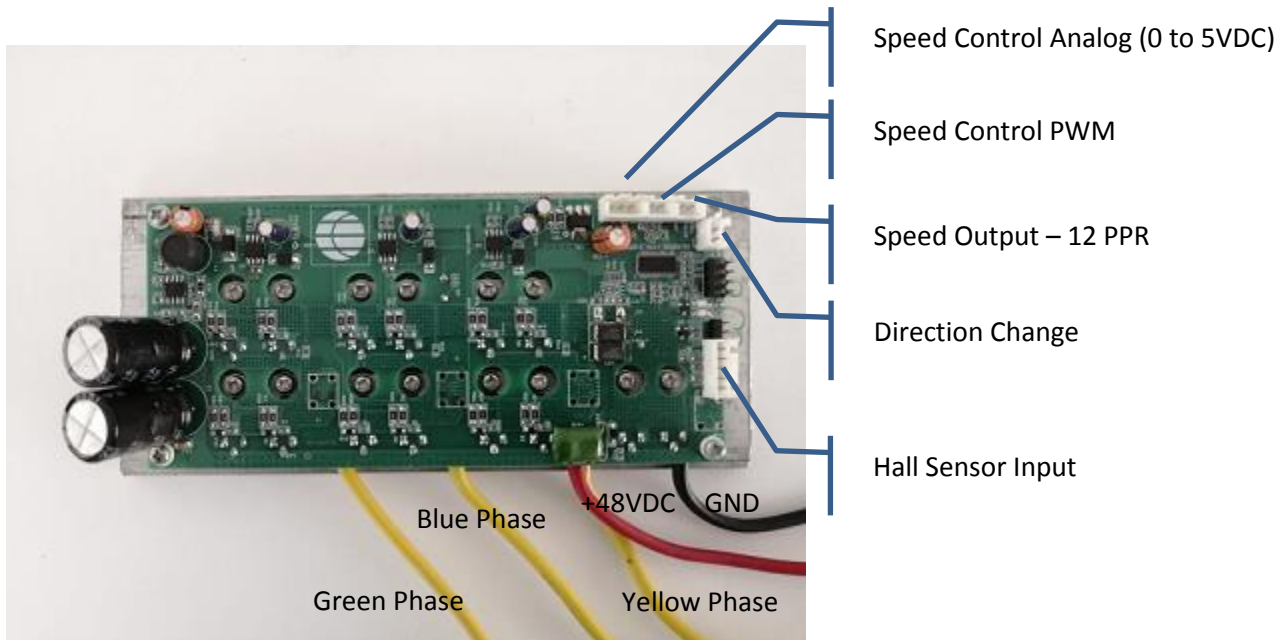
Motor Rated Power	1000W	1500W	2000W	3000W
Motor RPM	1500	1500	1500	1500
Motor Output Torque (Nm)	6.36	9.55	12.73	19.1
Motor Axial Length ML (mm)	204	204	249	249
Wheel Dimensions (mm)	300Dx100L	300Dx100L	300Dx100L	300Dx100L
Gear Box Reduction	15/20/25	15/20/25	15/20/25	15/20/25
Gear Box Output Torque	95.5 / 127.3 / 159.1	143.2 / 191 / 238.7	191 / 254.6 / 318.3	286.5 / 382 / 477.5
Operating Voltage (VDC)	48-72	48-72	48-72	48-72
Output RPM	100 / 75 / 60	100 / 75 / 60	100 / 75 / 60	100 / 75 / 60
External Brake	Optional	Optional	Optional	Optional
Encoder (Optional)	Absolute / Incremental	Absolute / Incremental	Absolute / Incremental	Absolute / Incremental





Controller Specifications – 220S

Parameter	Value
Rated Voltage	48VDC (Configurable from 12 to 60VDC)
Controller Max Rated Current	30 A
Motor Current Limit	Max 30A (Configurable)
Rated Speed (RPM)	Configurable
Minimum Running Speed	>= 10 RPM Configurable
Variable Speed	3 Pin Plug with analog voltage input from 0 to 5VDC 5VDC – Maximum Speed 1.2 VDC – Start Motor 1 VDC – Stop Motor
Reverse Option	2 Pin Plug (Short the pins to enable reverse)
RPM Output	Digital Pulse Output 12 Pulses Per Rotation
Fault Conditions	Over Voltage, Under Voltage, Over Temperature, Rotor Lock, Phase Loss
Controller Dimensions	140 mm length x 80 mm width x 40 mm height
Place of Origin	India



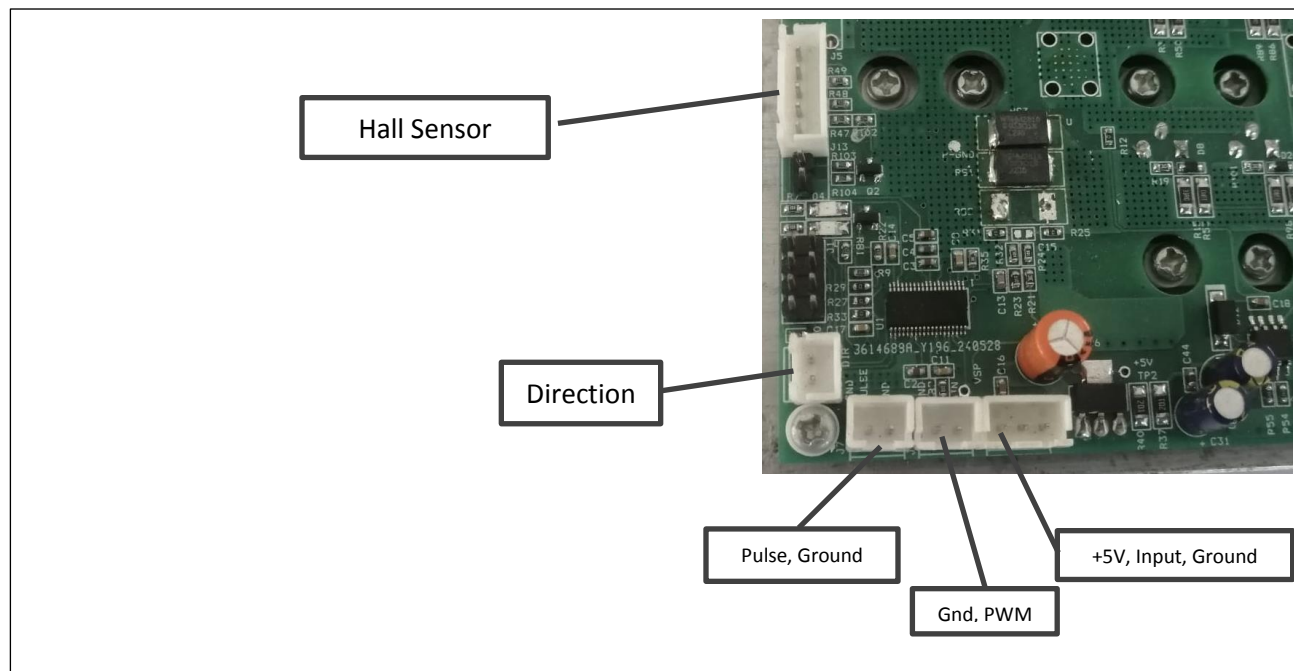
Connection Sequence

Supply: Connect the Power Source Positive Supply to the Controller Red Wire. Connect the Negative terminal to the Controller Black Wire.

Motor Connection: Connect the Controller Phase Wires to the respective wires from the motor as given below. Fasten the wires using Bolt and Nut or use a connector block.

Motor Phase Connection	Yellow	Blue	Green
Controller Phase Connection	Yellow	Blue	Green

Connect the 6 pin motor hall sensor plug to the controller sensor input plug.



Speed Control (Analog): Connect the 3 pin connector (+5V, Analog Input & GND) to 3 pin on the board. The board has been configured by default as following:-

Motor Start: 24% of 5V = 1.2 V

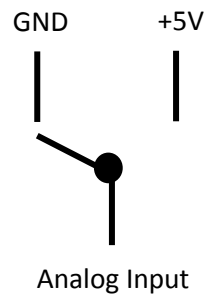
Motor Stop: 20% of 5V = 1.0 V

Max RPM: 96% of 5V = 4.8V

The following functionalities can be achieved by using the Speed Control pins:-

Full Speed: Connect the +5V to the analog input pin using a switch.

Full Stop: Connect the Ground pin to the analog input using a switch. You can achieve start and stop by using a simple 2 way switch as shown below. Important Note: Do not let the analog pin to float.



Variable Speed: Alternatively, you can vary the speed of the motor by using a potentiometer. Note that speed will vary linearly from 1.2V to 4.8V.

Speed Control (PWM): Connect to the 2 pin connector (GND, PWM Signal) shown above to control the motor RPM using PWM. While connecting, ensure that the polarity is correct.



Speed Output: From the BLDC Motor Controller, use a 2 pin connector to read the digital pulse output. The controller provides 12 pulses per rotation. Read the number of pulses per second and multiply by 5 to get the current RPM.

Direction: To change the direction of rotation, short the 2 pin indicated above to change the motor direction.

Encoder

Features

- 5 V or 3.3 V operation
- 3-wire or 2-wire SSI interface mode for absolute output
- Incremental ABI or UVW, and PWM output modes
- User-programmable zero position, direction & index pulse width
- Power-down mode to reduce current consumption
- RoHS compliant

Specifications

- Absolute 10-bits to 16-bits resolution
- Incremental output resolutions 8 to 1024 CPR
- -40° C to 125° C operating temperature range

External Brake – Specifications

Parameter	Value
Type	Spring Applied Electro Mechanical Brake
Make	Kendrion
Origin	Germany
Model No	BFK 458 10E 24 V
Power	30 W
Rated torques for holding brakes 1) @100 [min-1]	23 Nm
Maximum Speed	4000 RPM
Weight	2.5 Kilograms



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