

Introducing ElectroCraft's new MobilePower™ MPW86 wheel drive, featuring a high torque-density brushless DC motor with integrated planetary gearbox and wheel assembly.

ElectroCraft's MPW86 integrates an 8-pole Brushless DC motor with a heavy-duty, single or two-stage planetary gearbox mounted inside the hub of an aluminum wheel with polyurethane tread. Designed for mobile platform traction systems with optional encoder feedback to support positioning capability and electromagnetic brake to hold position when power is removed.

The MPW86 combines optimum performance with high-efficiency, quiet operation and long life.

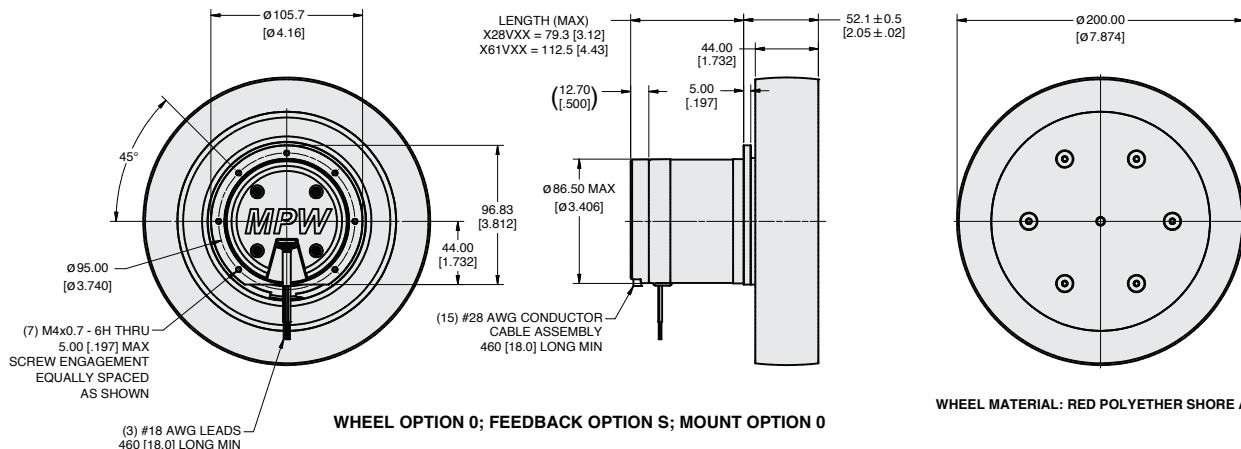
ElectroCraft MobilePower™ MPW series wheel drives feature an integrated design that provides increased performance and reliability at an affordable price compared to traditional motor/gearbox/wheel combinations. As with all ElectroCraft products, the MPW series wheel drives are customizable to meet specific application requirements.



Features:

- Smooth, efficient motion
- Compact, lightweight, durable and highly reliable integrated design
- Powerful starting torque:
 - Peak torque up to 35 Nm
 - Continuous torque up to 20 Nm
- Configurable or completely customizable designs
 - Motor, gearbox, wheel, brake, encoder, cabling
- Typical applications:
 - Automated Guided Vehicles
 - Autonomous Mobile Robots

M P W 8 6	1 8 5 V	2 4	0 0 0 0	S 020
Motor and Gearbox Type Mobile Power™ Wheel Drive 86 mm frame	Motor Stall Torque 120 Ncm 185 Ncm	Winding Voltage 24 VDC 48 VDC	Wheel X - None 0 - 200 mm	Mounting 0 - Face 1 - Foot
			Brake 0 - No Brake 1 - Brake	Leads 0 - Flying Leads
				Feedback X - Hall Sensors S - 2048 Differential, Commuting, Optical Encoder

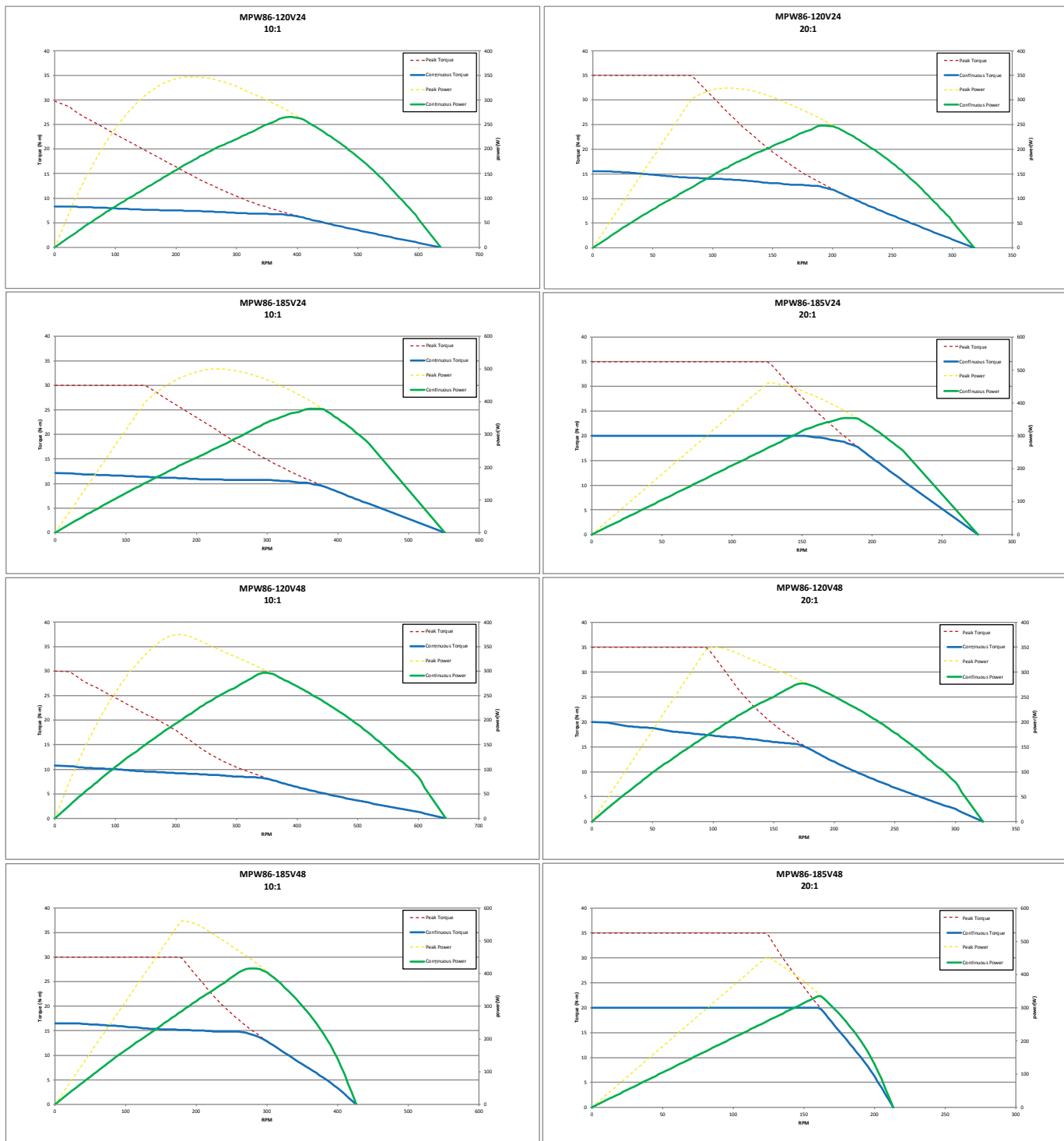


ElectroCraft MobilePower™

MPW86 Wheel Drive



MPW86 Performance



Your Genius. Our Drive.

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MPW86 Specifications

MPW86 Wheel Drive Specifications	Motor Stack Size & Winding Models							
	MPW86-120V24		MPW86-120V48		MPW86-185V24		MPW86-185V48	
	10:1	20:1	10:1	20:1	10:1	20:1	10:1	20:1
Design Voltage (VDC)	24		48		24		48	
Peak Torque (lb-in)	265	309	265	309	265	309	265	309
Peak Torque (Nm)	30	35	30	35	30	35	30	35
Peak Current (Amps)	80	47	40	23	73	43	29	17
Peak Power (Watts)	346	324	376	352	500	462	561	451
Continuous Stall Torque* (lb-in)	73	137	96	177	107	177	146	177
Continuous Stall Torque* (Nm)	8	16	11	20	12	20	17	20
Continuous Stall Current (Amps)	22	21	15	13	30	24	16	10
Continuous Torque at Rated Speed* (lb-in)	39	74	45	84	94	177	102	177
Continuous Torque at Rated Speed* (Nm)	4.5	8.4	5.1	9.5	10.7	20.0	11.6	20
Continuous Current at Rated Speed (Amps)	12	11	7	6	26	24	11	10
Continuous Power at Rated Speed (Watts)	193	180	200	184	359	314	352	314
Continuous Rated Wheel Speed (RPM)	410	205	375	185	320	150	290	150
Continuous Rated Wheel Speed (Meters/Sec)	4.3	2.2	3.9	1.9	3.4	1.6	3.0	1.6
Continuous Rated Wheel Speed (Feet/Sec)	14.1	7.1	12.9	6.4	11.0	5.2	10.0	5.2
Continuous Rated Wheel Speed (KPH)	15.5	7.7	14.1	7.0	12.1	5.7	10.9	5.7
Continuous Rated Wheel Speed (MPH)	9.6	4.8	8.8	4.3	7.5	3.5	6.8	3.5
Standard Wheel Diameter (mm)	200							
Wheel Type / Hardness	Aluminum Hub with PTMEG POLYETHER Shore A 70 (Red)							
Maximum Axial Load (N)	445							
Maximum Axial Load (lbs)	100							
Maximum Radial Load (N)	2,224							
Maximum Radial Load (lbs)	500							
Peak Acceleration at Full Radial Load (m/s ²)	1.3	1.5	1.3	1.5	1.3	1.5	1.3	1.5
Peak Efficiency (%)	75	70	77	72	78	73	82	76
Backlash (degrees)	<1							
Service Life (hours)	20,000							
Gear Motor Voltage Constant (V / kRPM)	39	78	78	157	43	86	107	213
Gear Motor Torque Constant (lb-in / Amp)	3.3	6.6	6.6	13.2	3.6	7.3	9.0	18.0
Gear Motor Torque Constant (Nm / Amp)	0.37	0.75	0.75	1.50	0.41	0.82	1.02	2.04
Motor Winding Resistance (Ohms)	0.09		0.23		0.07		0.23	
Motor Winding Inductance (mH)	0.37		1.54		0.27		1.36	
Motor Constant (oz-in / √ Watt)	17.5		22.3		21.9		30.1	
Motor Constant (mNm / √ Watt)	123		157		155		212	
Motor Electrical Constant (msec)	4.1		6.7		3.9		5.9	
Motor Mechanical Constant (msec)	7.1		4.4		8.1		4.3	
Motor Thermal Time Constant (sec)	745				1,219			
Motor Rotor inertia (oz-in ²)	5.9				10.7			
Motor Rotor inertia (g-cm ²)	1,076				1,949			
Motor Thermal Resistance (C / Watt)	1.3				1.3			
Number of Motor Poles	8							
Total Weight - no wheel (lb)	9.3	9.0	9.3	9.0	11.7	11.5	11.7	11.5
Total Weight - no wheel (Kg)	4.2	4.1	4.2	4.1	5.3	5.2	5.3	5.2
Total Length - w/out encoder & brake (inch)	5.2				6.5			
Total Length - w/out encoder & brake (mm)	131.4				164.6			
Storage Temperature	-40C to 60C							
Certifications	CE, RoHS							

Notes: *Continuous rating based on a 25°C ambient temperature, winding temperature rise of 125°C. Mounted on a 12 X 12 X 0.25 in aluminum heat sink. Performance ratings based on MPW86 in combination with ElectroCraft's CPP Series Brushless Motor Drive

